CORNERSTONE EARTH GROUP

Type of Services	**Updated Geotechnical Investigation**
Project Name	**River Corporate Center III**
Location	**353 West Julian Street** **San Jose, California**
Client	**The Sobrato Organization**
Client Address	**10600 North DeAnza Boulevard, Suite 200** **Cupertino, California**
Project Number	**102-7-3**
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Type of Services	**Updated Geotechnical Investigation**
Project Name	**River Corporate Center III**
Location	**353 West Julian Street** **San Jose, California**

SECTION 1: INTRODUCTION

This geotechnical report was prepared for the sole use of The Sobrato Organization for the River Corporate Center III project in San Jose, California. The location of the site is shown on the Vicinity Map, Figure 1. As you know, construction for the original building was discontinued after underground utilities, foundations (perimeter grid footings tied to a central core mat foundation), and interior slab-on-grade floors were completed. Our previous correspondence included the following:

- An update to the 1998 Lowney Associates geotechnical report for the project and acceptance of the role of Engineer-of-Record for the remaining construction in our letter titled, "Geotechnical Consultation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 17, 2008. CPT data from this investigation is included in Appendix B of this report.

- A letter titled, "Response to Comments, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 18, 2008.

- A letter titled, "Lateral Spreading Evaluation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 21, 2008.

- A letter titled, "Updated Geologic Hazards Evaluation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated August 7, 2008.

- A letter titled, "Updated Geologic Hazards Evaluation and Geotechnical Consultation, River Corporate Center - Building 3, West Julian Street, San Jose, California," dated April 18, 2012, also attached in Appendix C of this report.

For our use, we were provided with copies of the following:

- A geotechnical report titled, "Final Geotechnical Investigation, 333 West Julian Street Development, San Jose, California," prepared by Lowney Associates for Sobrato

Development Company, dated September 4, 1998. Data from this investigation is included in Appendix B of this report.

- Sheet S2.0, a plan showing the existing building foundations for the uncompleted building titled, "River Corporate Center – Bldg III, 353 West Julian Street, San Jose, CA," prepared by Nishkian Menninger, dated April 15, 2008.

- Sheet A1.02, a site plan showing the proposed building footprint and other proposed improvements over the existing footprint titled, "River Corporation Center III, 353 W. Julian St, San Jose, CA 95110," prepared by ArcTec, dated March 16, 2016.

1.1 PROJECT DESCRIPTION

Due to the column layouts for the proposed building not matching up with the footing layout currently constructed, the project will consist of removing the existing building slab, foundation, and utilities, and constructing a six-story building with a new foundation layout. Additional improvements, such as pavements, flatwork, utilities, and landscaping, are proposed. The structure will likely be of steel-frame construction.

Grading outside of the building pad is anticipated to consist of minor cuts and fills in order to reconfigure parking and flatwork areas; however, we anticipate up to 4 feet of fill will be required to fill in the excavations resulting from the removal of the existing foundations, with cuts of up to 4 feet required for excavation of the new foundations. Maximum dead plus live column loads were provided by Nishkian Menninger, the project structural engineer, and consist of 1,100 kips and 740 kips for interior and exterior columns, respectively.

1.2 SCOPE OF SERVICES

Our scope of services was presented in our proposal dated May 10, 2016 and consisted of reviewing the field and laboratory data from the 1998 Lowney Associates report and our 2008 CPT data to evaluate physical and engineering properties of the subsurface soils, engineering analysis to prepare updated recommendations for site work and grading, building foundations, flatwork, retaining walls, and pavements, and preparation of this report.

1.3 EXPLORATION PROGRAM

Digital CPT data files from the original 1998 Lowney Associates report were not available for our review; therefore, we completed two additional Cone Penetration Tests (CPTs) on March 29, 2008, with an extra CPT completed on July 28, 2008, for our previous investigations at the site to depths of about 45 feet to aid in our review of liquefaction at the site. CPT-2 terminated at a depth of about 37 feet with a tip pressure exceeding 400 tsf due to tie-down anchor pullout.

Explorations from the Lowney Associates investigation that were performed within the current site area consisted of two borings (Borings EB-1 and EB-6, where only consolidation test data was available to Boring EB-1) and one CPT (CPT-1) performed on January 1998, and on June

29, 30, and July 1, 1998. Boring EB-6 was drilled to a depth of approximately 71½ feet (the depth for Boring EB-1 was not available), while CPT-1 was pushed to approximately 92 feet.

As discussed, copies of our CPT logs and the Lowney Associates boring and CPT logs from the Building III area are attached in Appendix B of this report. The approximate locations of the explorations mentioned above are shown on the Site Plan, Figure 2.

1.4 LABORATORY TESTING PROGRAM

In addition to visual classification of samples, the laboratory program from the 1998 Lowney Associates investigation and our own 2008 investigations focused on obtaining data for foundation design and seismic ground deformation estimates. Testing included moisture contents, dry densities, washed sieve analyses, Plasticity Index tests, and consolidation tests. Lab data from the investigation mentioned above are included in Appendix B.

1.5 ENVIRONMENTAL SERVICES

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

SECTION 2: REGIONAL SETTING

2.1 GEOLOGICAL SETTING

The site is located 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 the site are anticipated to be over 500 feet (Rogers & Williams, 1974).

2.2 REGIONAL SEISMICITY

The San Francisco Bay area is one of the most seismically active areas in the Country. While seismologists cannot predict earthquake events, the U.S. Geological Survey's Working Group on California Earthquake Probabilities 2015 revised earlier estimates from their 2008 publication (UCERF2, 2008). Compared to the previous assessment issued in 2008, the estimated rate of earthquakes around magnitude 6.7 (the size of the destructive 1994 Northridge earthquake) has decreased by about 30 percent. The expected frequency of such events statewide has dropped from an average of one per 4.8 years to about one per 6.3 years.

However, in the new study, the estimate for the likelihood that California will experience a magnitude 8 or larger earthquake in the next 30 years has increased from about 4.7% for UCERF2 to about 7.0% for UCERF3.

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

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

Table 1: Approximate Fault Distances

Fault Name	Distance	
	(miles)	(kilometers)
Hayward (Southeast Extension)	6.0	9.6
Monte Vista-Shannon	7.2	11.5
Calaveras	8.8	14.1
Hayward (Total Length)	9.1	14.6
San Andreas (1906)	11.4	18.4
Sargent	14.5	23.4

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

SECTION 3: SITE CONDITIONS

3.1 SURFACE DESCRIPTION

The site is centered within the River Corporate Center office complex (Center), between Buildings 1 and 2 and the Center's parking structure (see Figure 2, Site Plan for locations). The Center is bounded by West Julian Street to the south, Highway 87 to the east, Bassett Street to the north, and the Guadalupe River to the west.

As discussed, the Building 3 site is currently occupied by an existing building foundation and slab (finished floor at Elevation 78 feet), where the original construction was discontinued after underground utilities, foundations, and interior slab-on-grade floors were completed. The areas immediately surrounding the existing building foundation have been graded to drain away from the structure but are undeveloped, with asphalt concrete parking areas located beyond.

3.2 SUBSURFACE CONDITIONS

Below the surface, the previous explorations generally encountered very stiff silty clay to depths ranging from 14 to 19 feet, followed by medium dense to dense poorly-graded sands with variable amounts of clay, silt and gravel that were encountered to depths ranging from 24 to 30 feet. The sand layers were underlain by medium stiff to stiff lean clays with variable amounts of silt and sand to depths ranging from 44 to 46 feet, followed by a thin lens that consisted of

medium dense to dense poorly-graded sand with variable amounts of clay and silt (no sand layer was encountered in Boring EB-6). The deeper sand layer was generally underlain by stiff to hard lean clay layers with variable amounts of silt and sand that were encountered to the maximum depth explored in our CPTs and to a depth of about 55 feet in CPT-1 by Lowney Associates, where the clay layers were followed by dense poorly-graded sands with variable amounts of clay, silt and gravel that were generally encountered to the maximum depth explored of about 92 feet in CPT-1 (Lowney Associates).

3.2.1 Plasticity/Expansion Potential

Lowney Associates performed a Plasticity Index (PI) test on a representative sample of the surficial soil, where the PI result indicated a PI of 11, indicating low expansion potential to wetting and drying cycles. We performed five Plasticity Index (PI) tests on representative samples during our 2008 investigation to evaluate the plasticity of the fines in potentially liquefiable layers. The results of the PI tests performed from potentially liquefiable layers indicated three PIs of 7, 12, and 18, and two PIs that were less than 5. The PI results less than 5 indicated a potential for the corresponding layers to liquefy during seismic shaking, while the samples with PIs of 7, 12 and 18 indicate the corresponding layers have fines that are unlikely to liquefy. Liquefaction potential is discussed further in the “Geologic Hazards” section of this report.

3.3 GROUND WATER

Ground water was encountered in Boring EB-1 and CPT-3, and inferred from pore pressure measurement performed in CPT-1 at depths ranging from 16 to 18 feet below grade. All measurements were taken at the time of exploration and may not represent the stabilized levels that can be higher than the initial levels encountered. Based on CGS maps and the data collected on-site, we anticipate that the design ground water level will be on the order of 10 feet below current grades.

Fluctuations in ground water levels occur due to many factors including seasonal fluctuation, underground drainage patterns, regional fluctuations, and other factors.

SECTION 4: GEOLOGIC HAZARDS

4.1 FAULT RUPTURE

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

4.2 ESTIMATED GROUND SHAKING

Moderate to severe (design-level) earthquakes can cause strong ground shaking, which is the case for most sites within the Bay Area. A peak ground acceleration (PGA) was estimated for analysis using a value equal to F_{PGA} x PGA, as allowed in the 2013 edition of the California Building Code. For our liquefaction analysis we used a PGA of 0.50g.

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

The CSR for each layer quantifies the stresses anticipated to be generated due to a design-level seismic event, is based on the peak horizontal acceleration generated at the ground surface discussed in the “Estimated Ground Shaking” section above, and is corrected for

overburden and stress reduction factors as discussed in the procedure developed by Seed and Idriss (1971) and updated in the 2008 Idriss and Boulanger monograph.

The soil's CRR is estimated from the in-situ measurements from CPTs and laboratory testing on samples retrieved from our borings. SPT "N" values obtained from hollow-stem auger borings were not used in our analyses, as the "N" values obtained are less reliable in sands below ground water. The tip pressures are corrected for effective overburden stresses, taking into consideration both the ground water level at the time of exploration and the design ground water 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.

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 non-liquefied 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-3) are presented on Figures 4A to 4C of this report. Calculations for these CPTs are attached as Appendix A.

4.3.3 Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in post-liquefaction total settlement at the ground surface ranging from ½ to 1½ inches based on the Yoshimine (2006) method. As discussed in SP 117A, differential movement for level ground sites over deep soil sites will be up to about two-thirds of the total settlement between independent foundation elements. In our opinion, differential settlements are anticipated to be on the order of ½ to 1 inch over a horizontal distance of 30 feet.

4.3.4 Ground Rupture Potential

The methods used to estimate liquefaction settlements assume that there is a sufficient cap of non-liquefiable material to prevent ground rupture or sand boils. For ground rupture to occur, the pore water pressure within the liquefiable soil layer will need to be great enough to break through the overlying non-liquefiable layer, which could cause significant ground deformation and settlement. The work of Youd and Garris (1995) indicates that the 14-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are considered 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 lateral spreading analysis performed by Cornerstone and summarized in our letters from 2008 and 2012 (attached in Appendix C) indicated that the sands in the depth range shadowed by the box culvert adjacent and parallel to the Guadalupe River (the only significant open face near the site) had the potential for lateral displacements on the order of 0.2 to 1.3 feet under homogeneous soil conditions, and the thin sand layers below the depth of the box culvert have the potential for lateral displacements less than 1¼ inches, which was judged insignificant with respect to the building. Based on our review of our prior analysis, it is our opinion that the box culvert is capable of supporting static and seismic earth pressures and that collapse of the box culvert walls is not anticipated. The box culvert also appears to be capable of resisting sliding and will act as a shear key to resist the potential lateral displacement of the shallower sands.

Based on the above, in our opinion, and as previously concluded in 2008 and 2012, the potential for liquefaction-induced lateral spreading affecting the new structure is low.

4.5 SEISMIC SETTLEMENT/UNSATURATED SAND SHAKING

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

4.6 FLOODING

Based on our internet search of the Federal Emergency Management Agency (FEMA) flood map public database, the site is located within Zone X, described as “areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage less than 1 square mile; and areas protected by levees from 1% annual chance flood.” We recommend the project civil engineer be retained to confirm this information and verify the base flood elevation, if appropriate.

SECTION 5: CONCLUSIONS

5.1 SUMMARY

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

- Potential for significant static and seismic settlement
- Variable subsurface conditions following building demolition

5.1.1 Potential for Significant Static and Seismic Settlements

Our analyses indicate that up to approximately 1½ inches of total static settlement will occur for the proposed structure, based on the column loads provided by the project structural engineer. Our analysis indicates that about 50% of this settlement will occur during construction (assumed to be about 6 months); therefore, we estimate that approximately ¾-inch of post-construction total settlement would occur. We estimate that about ½-inch of post-construction differential settlement would occur between adjacent foundation elements. In addition, we estimate that differential seismic movement will be on the order of ½ to 1 inch between adjacent foundation elements, assumed to be across a horizontal distance of 30 feet. Therefore, the combined post-construction differential footing settlement is estimated to range from 1 to 1½ inches between foundation elements.

The structural engineer should evaluate whether the combined differential settlements are tolerable. To help reduce impacts due to combined static and seismic differential settlements, columns may be supported on continuous strip footings and/or grid footings or a mat foundation. Recommendations for both spread footing and mat foundations are included in Section 7.

5.1.2 Variable Soil Conditions Following Demolition

We understand that the original building foundation constructed in the 1990s will likely be demolished to accommodate a slightly larger building footprint and revised column layout. This would require removing existing shallow footings, grade beams and larger mat footings. Based on our review of the as-built foundation plans, there is a potential that new footings will be supported on both native soils and fill materials resulting from backfilling any deeper footings that were demolished from the existing foundation system. We anticipate this condition could result in additional differential settlement for footings that straddle both native soils and new fill. To reduce the potential for differential settlement where this condition may occur, we recommend that the proposed footings be founded in uniform soil conditions, which should consist entirely of either engineered fill or native, undisturbed soil throughout each footing area.

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 the prior investigations, 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, CLEARING AND PREPARATION

6.1.1 Site Stripping

The site should be stripped of all surface vegetation, and surface and subsurface improvements within the proposed development area. Demolition of existing improvements is discussed in detail below. Surface vegetation and topsoil should be stripped to a sufficient depth to remove all material greater than 3 percent organic content by weight.

6.1.2 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.

6.1.3 Demolition of Existing Slabs, Foundations and Pavements

All existing slabs, foundations, and pavements should be completely removed from within planned building areas. A discussion of recycling existing improvements is provided later in this report.

6.1.4 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.

The risks 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. In general, the risk is relatively low for single utility lines less than 4 inches in diameter, and increases with increasing pipe diameter.

6.2 REMOVAL OF EXISTING FILLS

Although we anticipate fills on the order of 2 feet were placed during construction of the existing building pad and unless it is otherwise determined in the field during construction, the existing fills may remain in place due to the documentation and testing on the compaction of the fills by Lowney Associates. However, areas where the proposed building footprint will extend beyond the existing building foundations may be loose and originally intended for landscaping purposes. The suitability of these areas to support the proposed building should be evaluated in the field. If found to be unsuitable, these fills should be completely removed from within building areas and to a lateral distance of at least 5 feet beyond the building footprint or to a lateral distance equal to fill depth below the perimeter footing, whichever is greater. Provided the fills meet the "Material for Fill" requirements below, the fills may be reused when backfilling the excavations. 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 should be evaluated on a case-by-case basis in the field, where any new pavement and flatwork areas should be prepared by following the proceeding sections.

6.3 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, including removal of existing footings, and fill removal should be sloped at 3:1 (horizontal:vertical) within the upper 5 feet below building subgrade. Excavations extending more than 5 feet below building subgrade and excavations in pavement and flatwork areas should be sloped at a 1.5:1 inclination unless the OSHA soil classification indicates differently.

6.4 SUBGRADE PREPARATION

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

6.5 SUBGRADE STABILIZATION MEASURES

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

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

6.5.1 Scarification and Drying

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

6.5.2 Removal and Replacement

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

6.5.3 Chemical Treatment

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

6.6 MATERIAL FOR FILL

6.6.1 Re-Use of On-Site Soils

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

6.6.2 Re-Use of On-Site Site Improvements

We anticipate that significant quantities of Portland Cement Concrete (PCC) will be generated during demolition of existing foundations. If the site area allows for on-site pulverization of PCC and provided the PCC is pulverized to meet the "Material for Fill" requirements of this report, it may be used as select fill within the building pad, 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.

6.6.3 Potential Import Sources

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

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

6.7 COMPACTION REQUIREMENTS

All fills, and subgrade areas where fill, slabs-on-grade, and pavements are planned, should be placed in loose lifts 8 inches thick or less and compacted in accordance with ASTM D1557 (latest version) requirements as shown in the table below. In general, clayey soils should be compacted with sheepsfoot equipment and sandy/gravelly soils with vibratory equipment; open-graded materials such as crushed rock should be placed in lifts no thicker than 18 inches consolidated in place with vibratory equipment. Each lift of fill and all subgrade should be firm and unyielding under construction equipment loading in addition to meeting the compaction requirements to be approved. The contractor (with input from a Cornerstone representative) should evaluate the in-situ moisture conditions, as the use of vibratory equipment on soils with high moistures can cause unstable conditions. General recommendations for soil stabilization are provided in the "Subgrade Stabilization Measures" section of this report.

Table 2: Compaction Requirements

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

6.9 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.

6.10 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 are expected to have infiltration rates of less than 0.2 inches per hour. In our opinion, these clayey soils will significantly limit the infiltration of stormwater.

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

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

6.10.1 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.

6.10.1.1 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 soil.

- Bioswales constructed within 3 feet of proposed building 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.

6.10.1.2 Bioswale Infiltration Material

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

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

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

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

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

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

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

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

6.10.1.3 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.

SECTION 7: FOUNDATIONS

7.1 SUMMARY OF RECOMMENDATIONS

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

7.2 SEISMIC DESIGN CRITERIA

We understand that the project structural design will be based on the 2013 California Building Code (CBC), which provides criteria for the seismic design of buildings in Chapter 16. The "Seismic Coefficients" used to design buildings are established based on a series of tables and figures addressing different site factors, including the soil profile in the upper 100 feet below grade and mapped spectral acceleration parameters based on distance to the controlling seismic source/fault system. Based on our borings and review of local geology, the site is underlain by deep alluvial soils with typical SPT "N" values between 15 and 50 blows per foot. Therefore, we have classified the site as Soil Classification D. The mapped spectral acceleration parameters S_S and S_1 were calculated using the USGS computer program *U.S. Seismic Design Maps*, Version 5.1.0, revision date September 11, 2013, based on the site coordinates presented below and the site classification. The table below lists the various factors used to determine the seismic coefficients and other parameters.

Table 3: CBC Site Categorization and Site Coefficients

Classification/Coefficient	Design Value
Site Class	D
Site Latitude	37.337766°
Site Longitude	-121.900337°
0.2-second Period Mapped Spectral Acceleration[1], S_S	1.50g
1-second Period Mapped Spectral Acceleration[1], S_1	0.60g
Short-Period Site Coefficient – Fa	1.0
Long-Period Site Coefficient – Fv	1.5

Table 3 continued on next page.

Table 3: CBC Site Categorization and Site Coefficients, continued

0.2-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects - S_{MS}	1.50g
1-second Period, Maximum Considered Earthquake Spectral Response Acceleration Adjusted for Site Effects – S_{M1}	0.90g
0.2-second Period, Design Earthquake Spectral Response Acceleration – S_{DS}	1.00g
1-second Period, Design Earthquake Spectral Response Acceleration – S_{D1}	0.60g
Mapped MCE Geometric Mean Peak Ground Acceleration - PGA	0.50g
Site Coefficient Based on PGA and Site Class - F_{PGA}	1.0

[1]For Site Class B, 5 percent damped.

7.3 SHALLOW FOUNDATIONS

7.3.1 Spread Footings

Spread footings should bear on natural, undisturbed soil or engineered fill, and be at least 18 inches wide. To reduce the potential for differential footing movement, new footings should be designed to extend to depths at least as deep as the prior foundation, as measured below lowest adjacent grade. If this is not feasible, then it may be necessary to over-excavate old footing areas and backfill with imported select fill, such as Class 2 aggregate base or subbase, or a lean cement/sand slurry. Lowest adjacent grade is defined as the deeper of the following: 1) bottom of the adjacent interior slab-on-grade, or 2) finished exterior grade, excluding landscaping topsoil.

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

7.3.2 Footing Settlement

The typical structural loading presented in the following table was provided to us by Nishkian Menninger, the project structural engineer.

Table 4: Anticipated Structural Loading

Foundation Area	Given Loads
Interior Isolated Column Footing	1,100 kips
Exterior Isolated Column Footing	740 kips

Based on the above loading and the allowable bearing pressures presented above, we estimate that the total static footing settlement will be on the order of 1¼ to 1½ inches, with about ½-inch of post-construction differential settlement between adjacent foundation elements. In addition, we estimate that seismically-induced settlement will range from about ½ to 1½ inches following strong ground shaking in the area. We estimate that seismic differential movement will be on the order of ½ to 1-inch over a horizontal distance of 30 feet. The resulting post-construction, combined static and seismic differential footing settlement is estimated to range from approximately 1 to 1½ inches between foundation elements, assumed to be on the order of 30 feet.

7.3.3 Lateral Loading

Lateral loads may be resisted by friction between the bottom of footing and the supporting subgrade, and also by passive pressures generated against footing sidewalls. An ultimate frictional resistance of 0.40 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.

7.3.4 Spread Footing Construction Considerations

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

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

7.3.5 Reinforced Concrete Mat Foundations

If the estimated settlement for shallow footings is not feasible, a rigid mat foundation can be considered for the building. To reduce potential differential movement, the mat should be designed for a maximum average allowable bearing pressure of 1,800 psf for dead plus live loads; at column or wall loading, the maximum localized bearing pressure should be limited to 3,000 psf. When evaluating wind and seismic conditions, allowable bearing pressures may be increased by one-third.

7.3.6 Mat Foundation Settlement

We estimate total post-construction differential settlement (static plus seismic) between columns to be on the order of 1 to 1¼ inches.

7.3.7 Mat Modulus of Soil Subgrade Reaction

The modulus value of soil subgrade reaction is a model element that represents the response to a specific loading condition, including the magnitude, rate, and shape of loading, given the subsurface conditions at that location. Based on these conditions, a static preliminary mat modulus value of 10 pci should be used to input into the SAFE analysis, or similar. After we receive the initial SAFE output, we can provide modulus contours for final design.

7.3.8 Lateral Loading

Lateral loads may be resisted by friction between the bottom of mat foundation and the supporting subgrade, and also by passive pressures generated against deepened mat edges. An ultimate frictional resistance of 0.40 applied to the mat dead load, and an ultimate passive pressure based on an equivalent fluid pressure of 400 pcf may be used in design. The structural engineer should apply an appropriate factor of safety (such as 1.5) to the ultimate values above. The upper 12 inches of soil should be neglected when determining passive pressure capacity.

7.3.9 Mat Foundation Construction Considerations

Mat subgrade areas should be kept moist until concrete placement by regular sprinkling to prevent desiccation. If deep drying is allowed to occur, several days of moisture conditioning (flooding of the pads is not recommended) may be required to allow the moisture to re-penetrate the subgrade. If severe drying occurs, reworking and moisture conditioning of the pad may be required. Prior to placement of any vapor retarder and mat construction, the subgrade should be proof-rolled and visually observed by a Cornerstone representative to confirm stable subgrade conditions. The pad moisture should also be checked at least 24 hours prior to vapor barrier or mat reinforcement placement to confirm that the soil has a moisture content of at least 1 percent over optimum in the upper 12 inches.

7.3.10 Moisture Protection Considerations for Mat Foundations

The following general guidelines for concrete mat 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 mat foundation performance.

- Place a minimum 10-mil-thick vapor retarder conforming to ASTM E 1745, Class C requirements or better directly below the concrete mat; the vapor retarder should extend to within 12 to 18 inches from the mat edges and be sealed at all seams and penetrations in accordance with manufacturer's recommendations and ASTM E 1643 requirements. For mats 12 inches thick or less, a 4-inch-thick capillary break, consisting of ½- to ¾-inch crushed rock with less than 5 percent passing the No. 200 sieve, should be placed below the vapor retarder and consolidated in place with vibratory equipment.

- 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.

- 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.

SECTION 8: CONCRETE SLABS AND PEDESTRIAN PAVEMENTS

8.1 INTERIOR SLABS-ON-GRADE

As the Plasticity Index (PI) of the surficial soils is 15 or less, the proposed slabs-on-grade may be supported directly on 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 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 near 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. Consideration

should be given to limiting the control joint spacing to a maximum of about 2 feet in each direction for each inch of concrete thickness.

8.2 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 10-mil-thick 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 ½- to ¾-inch crushed rock with less than 5 percent passing the No. 200 sieve, should be placed below the vapor retarder and consolidated in place with vibratory equipment.

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

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

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

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

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

8.3 EXTERIOR FLATWORK

8.3.1 Pedestrian Concrete 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 9: VEHICULAR PAVEMENTS

9.1 ASPHALT CONCRETE

The following asphalt concrete pavement recommendations tabulated below are based on the Procedure 608 of the Caltrans Highway Design Manual, estimated traffic indices for various pavement-loading conditions, and on a design R-value of 15. The design R-value was chosen based on the results of the laboratory testing performed during the investigation by Lowney Associates on a surficial sample collected from the proposed pavement area and engineering judgment considering the variable surface conditions.

Table 5: Asphalt Concrete Pavement Recommendations, Design R-value = 15

Design Traffic Index (TI)	Asphalt Concrete (inches)	Class 2 Aggregate Base* (inches)	Total Pavement Section Thickness (inches)
4.0	2.5	7.0	9.5
4.5	2.5	8.0	10.5
5.0	3.0	9.0	12.0
5.5	3.0	10.0	13.0
6.0	3.5	11.0	14.5
6.5	4.0	12.0	16.0

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

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

9.2 PORTLAND CEMENT CONCRETE

The exterior Portland Cement Concrete (PCC) pavement recommendations tabulated below are based on methods presented in the Portland Cement Association (PCA) design manual (PCA, 1984). Recommendations for garage slabs-on-grade were provided in the “Concrete Slabs and Pedestrian Pavements” section above. We have provided a few pavement alternatives as an anticipated Average Daily Truck Traffic (ADTT) was not provided. An allowable ADTT should be chosen that is greater than what is expected for the development.

Table 6: PCC Pavement Recommendations, Design R-value = 15

Allowable ADTT	Minimum PCC Thickness (inches)
0.8	5
13	5½
130	6

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

9.2.1 Stress Pads for Trash Enclosures

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

SECTION 10: RETAINING WALLS

10.1 STATIC LATERAL EARTH PRESSURES

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

Table 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.

10.2 SEISMIC LATERAL EARTH PRESSURES

The 2013 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 4 feet or less in height) may be proposed. In our opinion, design of these walls for seismic lateral earth pressures in addition to static earth pressures is not warranted.

10.3 WALL DRAINAGE

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

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

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

10.4 BACKFILL

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

compacted to at least 90 percent. If heavy compaction equipment is used, the walls should be temporarily braced.

10.5 FOUNDATIONS

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

SECTION 11: LIMITATIONS

This report, an instrument of professional service, has been prepared for the sole use of The Sobrato Organization specifically to support the design of the River Corporate Center III 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 ground water 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.

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

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

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

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

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

SECTION 12: REFERENCES

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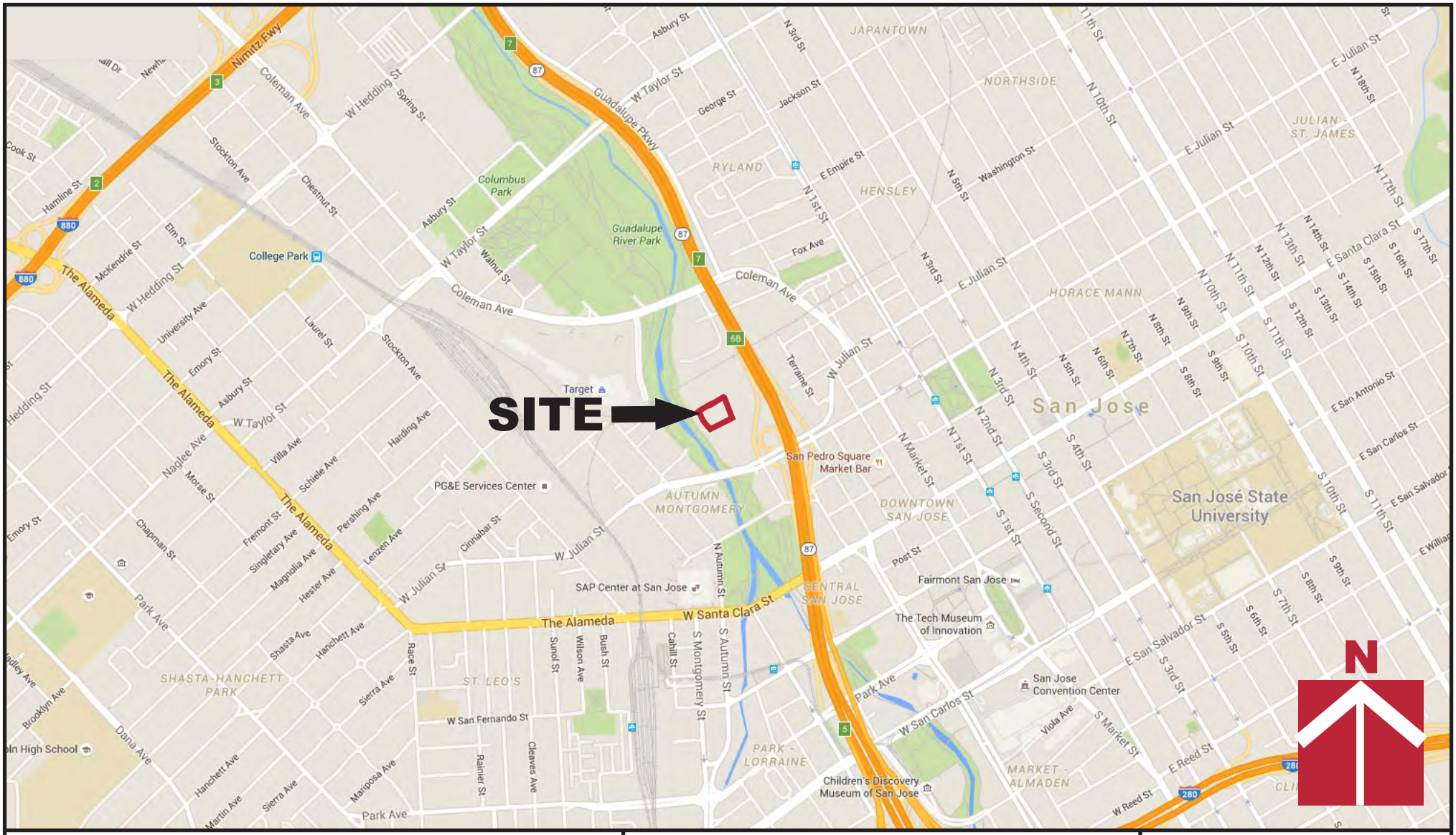

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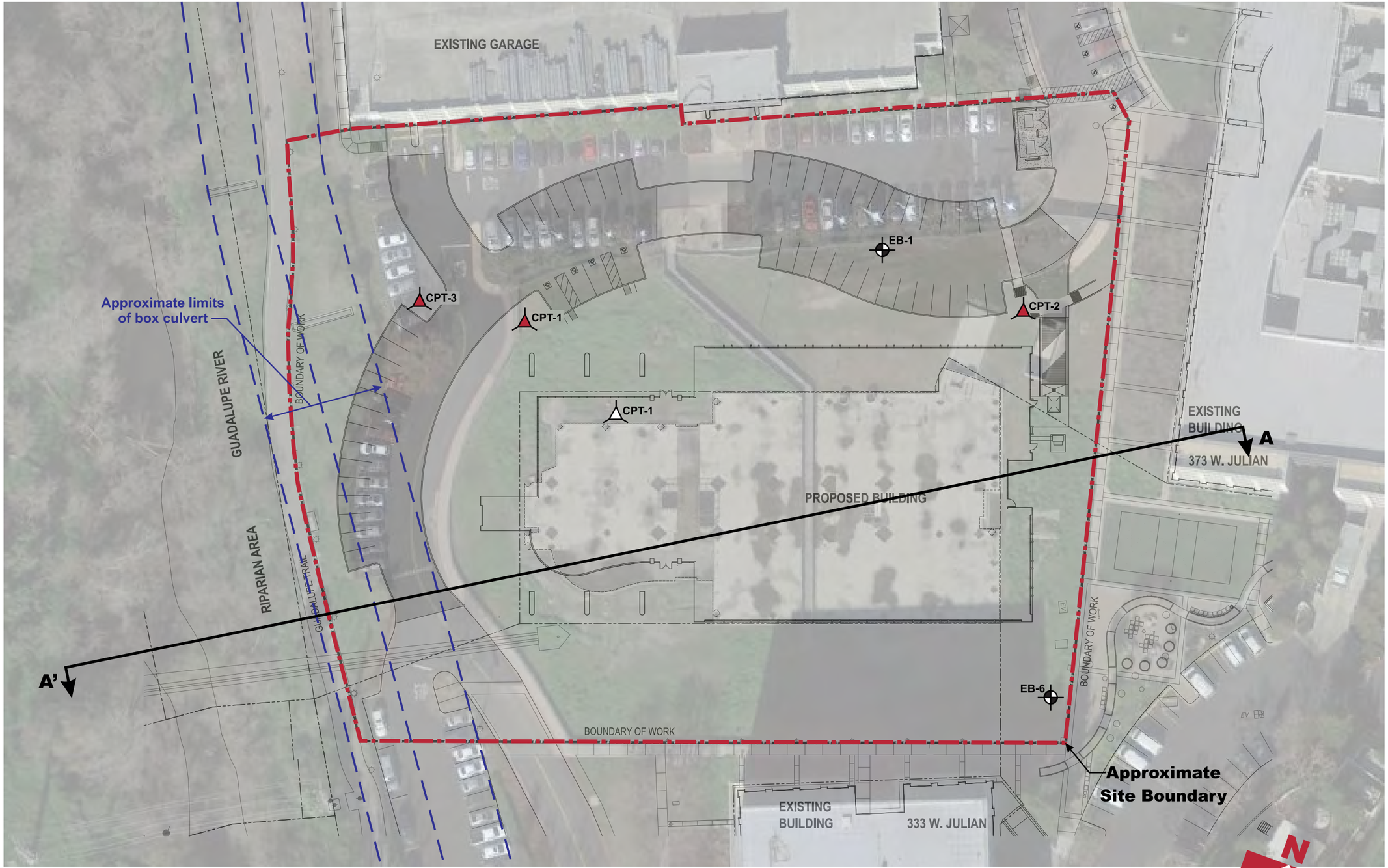
Vicinity Map

River Corporate Center III
San Jose, CA

Project Number	102-7-3
Figure Number	Figure 1
Date	May 2016
Drawn By	RRN



Legend

- Approximate location of cone penetration test (CPT) (Cornerstone, 2008)
- Approximate location of cone penetration test (CPT) (Lowney Associates, 1998)
- Approximate location of exploratory boring (EB) (Lowney Associates, 1998)

N

0 50 100

APPROXIMATE SCALE (FEET)

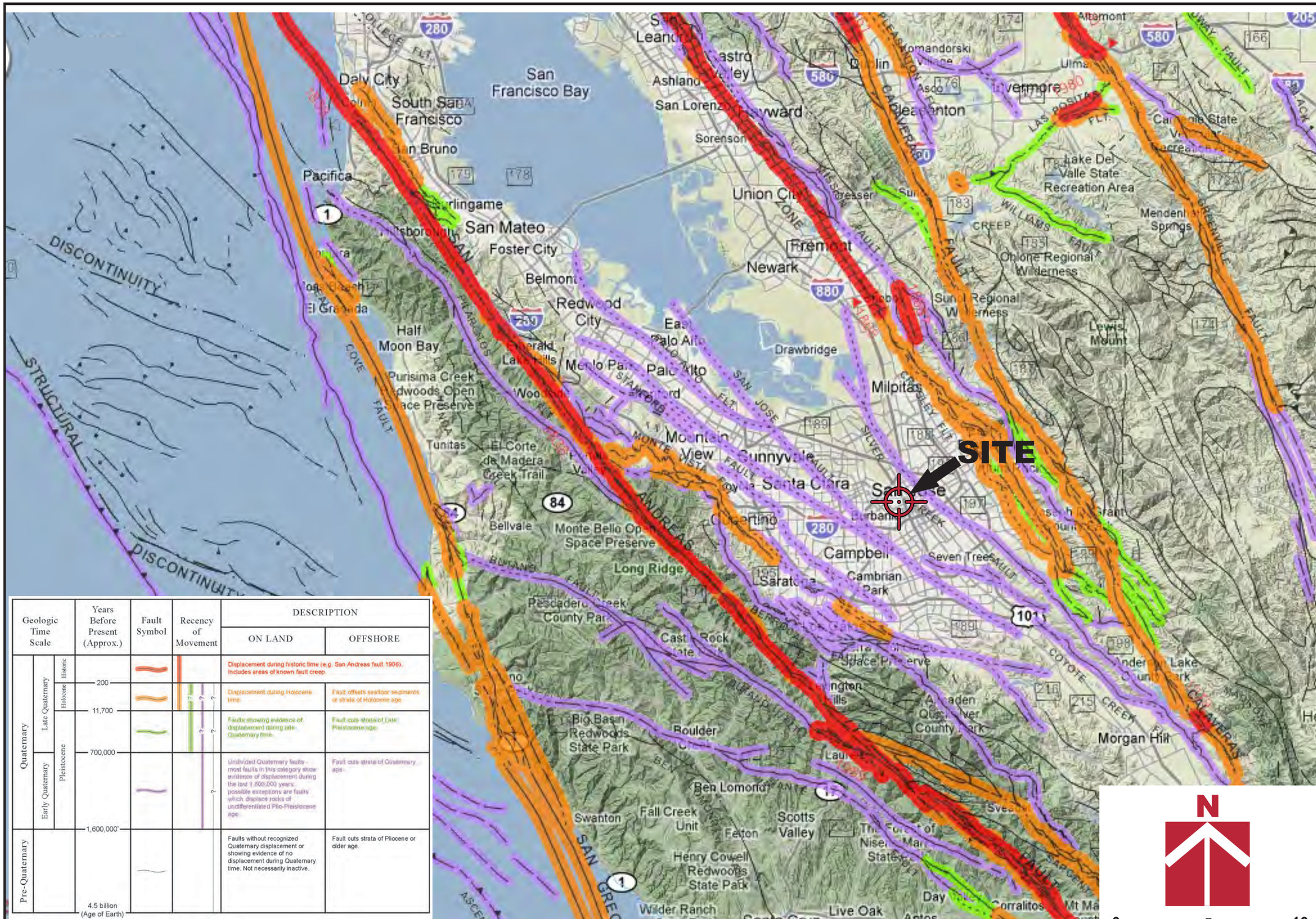
Base by Google Earth, dated 1/31/2016
Overlay by Architectural Technologies, Proposed Site Plan - A1.02, dated 3/16/2016

Project Number	102-7-3
Figure Number	Figure 2
Date	May 2016
Drawn By	RRN

Site Plan

River Corporate Center III
San Jose, CA

CORNERSTONE EARTH GROUP



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

Project Number: 102-7-3

Figure Number: Figure 3

Drawn By: RRN

Date: May 2016

Regional Fault Map

River Corporate Center III
San Jose, CA

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FIGURE 4A

CPT NO. 1

© 2014 Cornerstone Earth Group, Inc.

PROJECT/CPT DATA

Project Title	River Corporate Center III
Project No.	102-7-2
Project Manager	NBZ

SEISMIC PARAMETERS

Controlling Fault	San Andreas	
Earthquake Magnitude (Mw)	7.9	
PGA (Amax)	0.5	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	18
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	125
Ave. Unit Weight Below GW (pcf)	120

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.01	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.49	(Inches)
TOTAL SEISMIC SETTLEMENT	0.5	INCHES

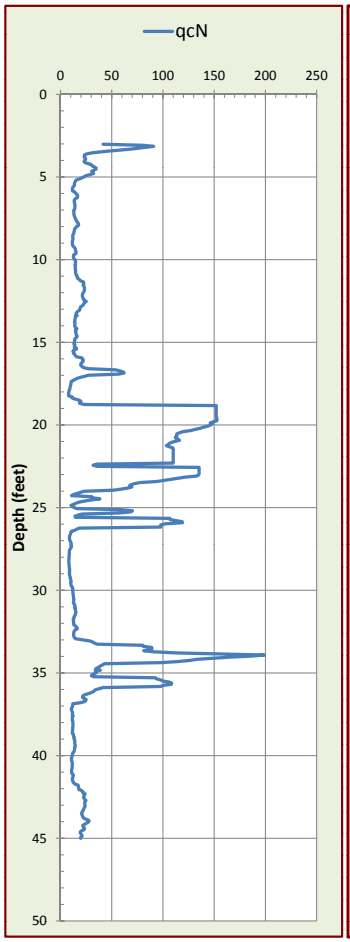
POTENTIAL LATERAL DISPLACEMENT

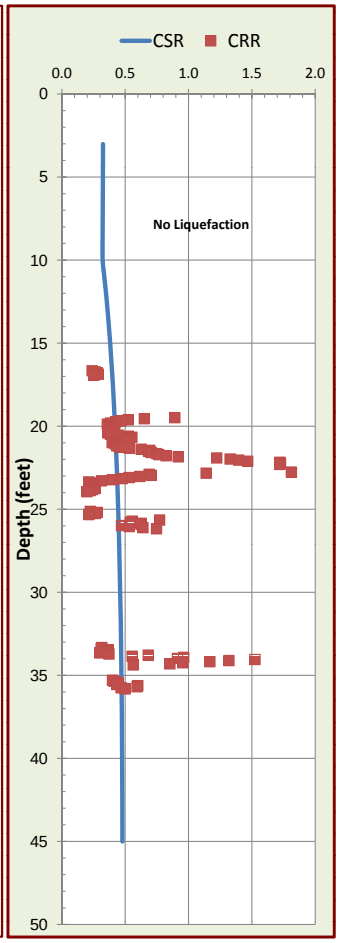
LDI[2]	0.38	L/H	7.0
LDI[1] Corrected for Distance	0.48	(4 < L/H < 40)	

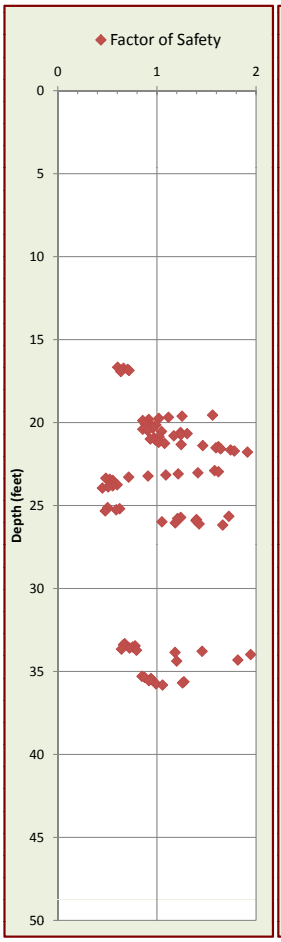
EXPECTED RANGE OF DISPLACEMENT

0.2 to 1.0 feet

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







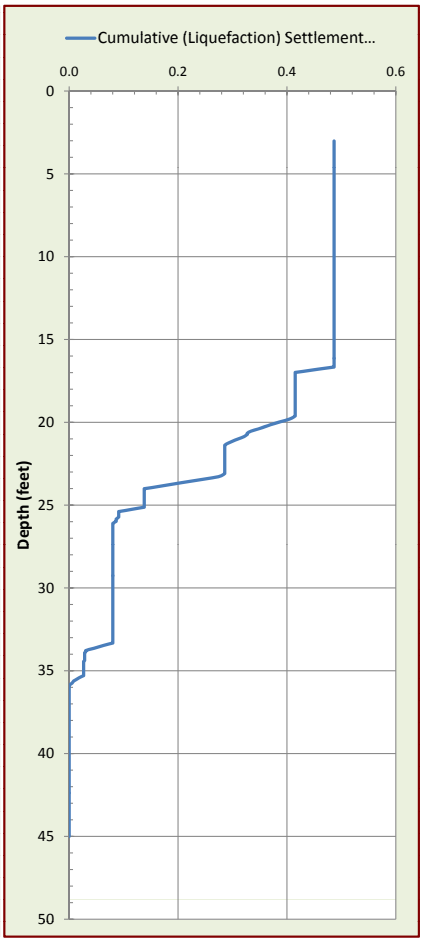


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FIGURE	4B
CPT NO.	2

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PROJECT/CPT DATA

Project Title	River Corporate Center III
Project No.	102-7-2
Project Manager	NBZ

SEISMIC PARAMETERS

Controlling Fault	San Andreas	
Earthquake Magnitude (Mw)	7.9	
PGA (Amax)	0.5	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	18
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	125
Ave. Unit Weight Below GW (pcf)	120

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.00	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	1.46	(Inches)
TOTAL SEISMIC SETTLEMENT	1.5	INCHES

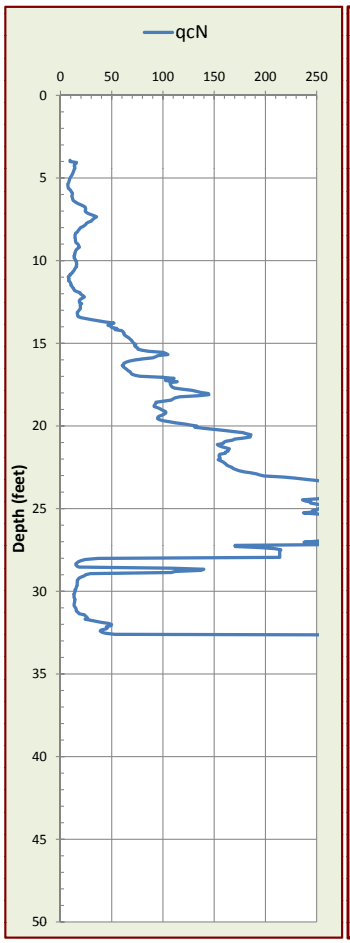
POTENTIAL LATERAL DISPLACEMENT

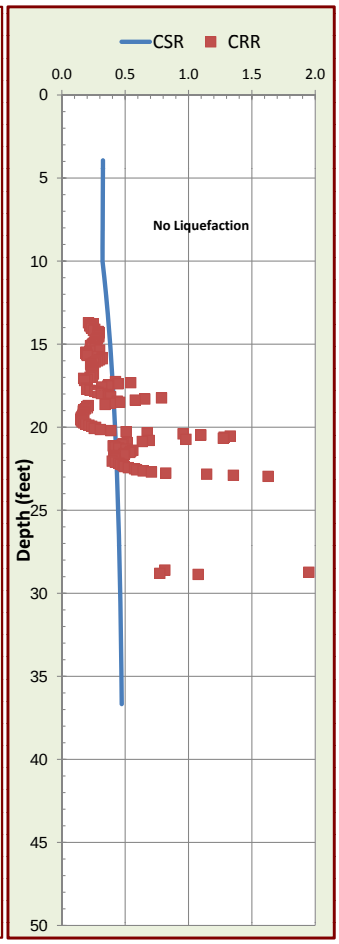
LDI[2]	1.21	L/H	19.5
LDI[1] Corrected for Distance	0.67	(4 < L/H < 40)	

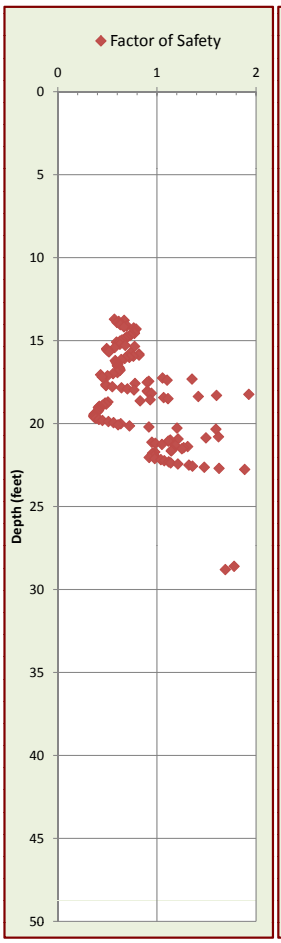
EXPECTED RANGE OF DISPLACEMENT

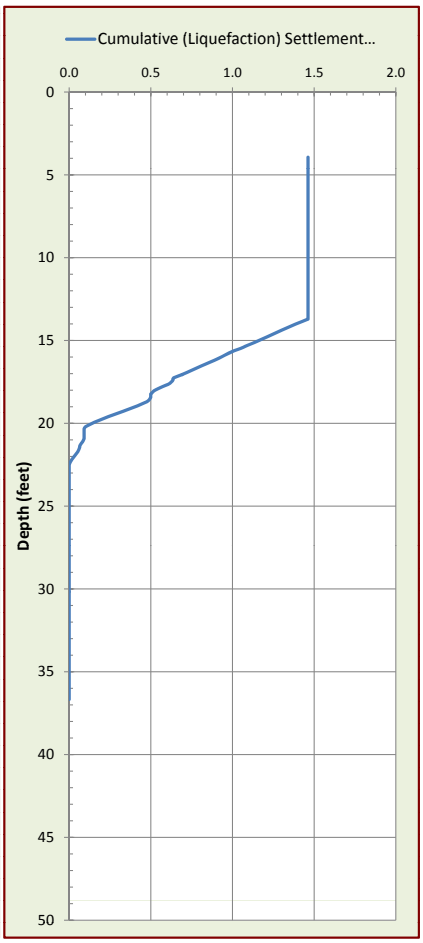
0.3 to 1.3 feet

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









CORNERSTONE EARTH GROUP

FIGURE 4C

CPT NO. 3

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PROJECT/CPT DATA

Project Title	River Corporate Center III
Project No.	102-7-2
Project Manager	LCK

SEISMIC PARAMETERS

Controlling Fault	San Andreas	
Earthquake Magnitude (Mw)	7.9	
PGA (Amax)	0.5	(g)

SITE SPECIFIC PARAMETERS

Ground Water Depth at Time of Drilling (feet)	18
Design Water Depth (feet)	10
Ave. Unit Weight Above GW (pcf)	125
Ave. Unit Weight Below GW (pcf)	120

CPT ANALYSIS RESULTS

DRY SAND SETTLEMENT FROM	10	FEET
	0.13	(Inches)
LIQUEFACTION SETTLEMENT FROM	50	FEET
	0.76	(Inches)
TOTAL SEISMIC SETTLEMENT	0.9	INCHES

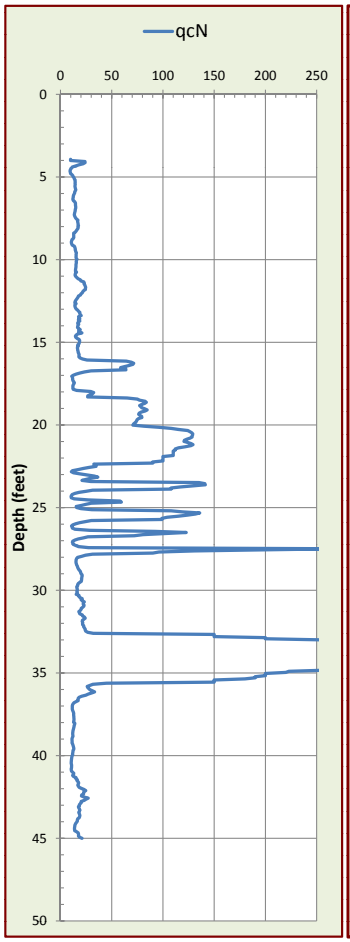
POTENTIAL LATERAL DISPLACEMENT

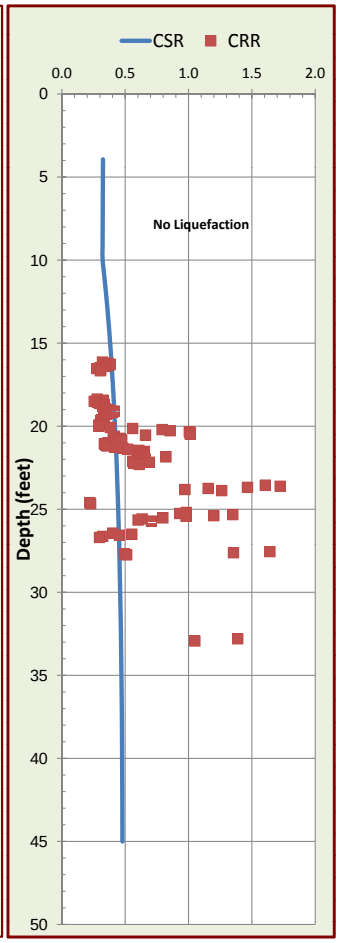
LDI[2]	0.28	L/H	4.8
LDI[1] Corrected for Distance	0.47	(4 < L/H < 40)	

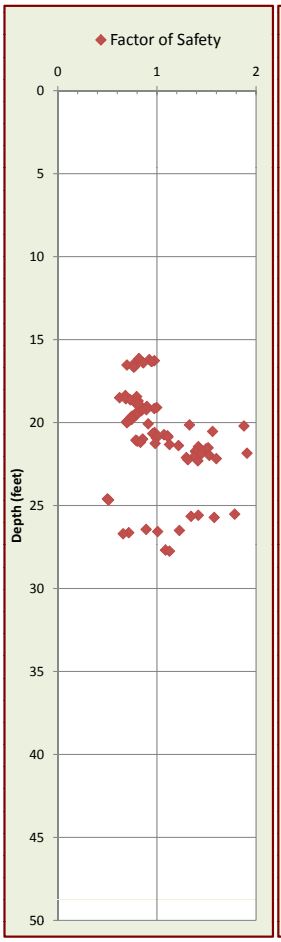
EXPECTED RANGE OF DISPLACEMENT

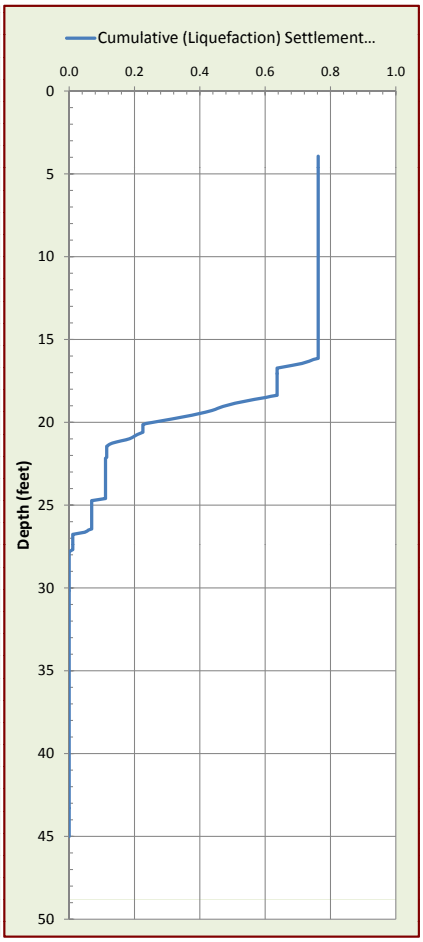
0.2 to 0.9 feet

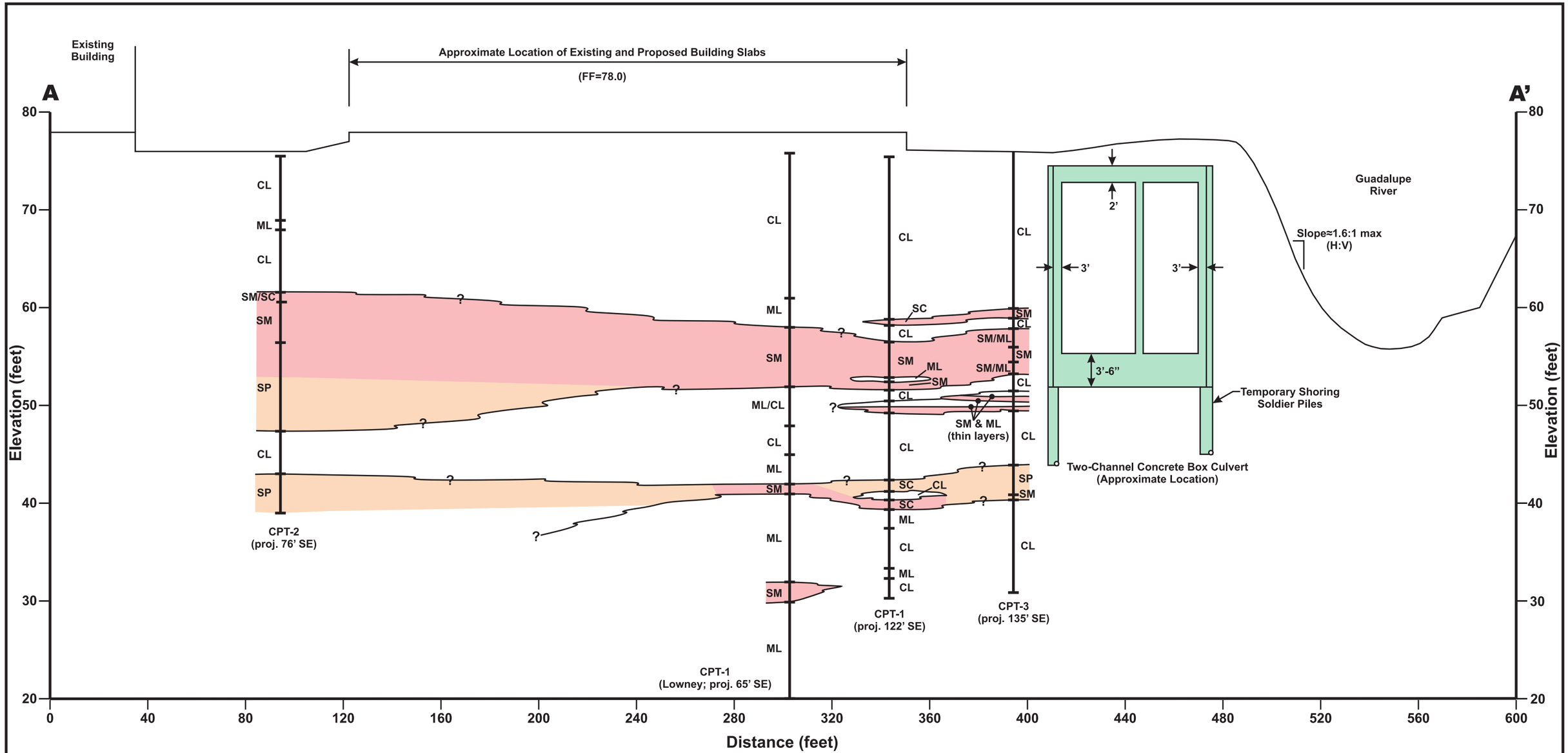
[1]Not Valid for L/H Values < 4 and > 40.
[2]LDI Values Only Summed to 2H Below Grade.











Section A-A'

(View Looking Southeast)
1"=40' Horizontal
1"=10' Vertical

Explanation

Legend

- Potentially liquefiable sands
- Non-liquefiable sands
- Concrete

Symbols

- CL Lean Clay or sandy clay
- ML Silt
- SC Clayey Sand
- SM Silty Sand

CORNERSTONE EARTH GROUP

Geologic Cross Section A-A'	Project Number 102-7-3
River Corporate Center III San Jose, CA	Figure Number Figure 5
	Date May 2016 / Drawn By RRN

APPENDIX A: LIQUEFACTION ANALYSES CALCULATIONS

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.018	43.987	0.193	377.2	377.2	98.049	0.441	1.71		Unsaturated	0.0			41.58	1.70	70.68	70.68	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.083	85.975	0.707	385.4	385.4	189.983	0.824	1.65		Unsaturated	0.0			81.26	1.70	138.15	138.15	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.149	96.112	0.976	393.6	393.6	210.200	1.018	1.68		Unsaturated	0.0			90.84	1.70	154.43	154.43	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.214	86.404	1.241	401.8	401.8	186.978	1.440	1.83		Unsaturated	9.1			81.67	1.70	138.83	145.01	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	75.736	1.982	410.0	410.0	162.183	2.624	2.07		Unsaturated	28.4			71.58	1.70	121.69	179.16	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.346	66.846	2.245	418.2	418.2	141.676	3.369	2.19		Unsaturated	38.1			63.18	1.70	107.41	173.64	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.411	56.663	2.358	426.4	426.4	118.857	4.177	2.31		Unsaturated	47.8			53.56	1.70	91.05	160.01	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.477	39.840	2.841	434.6	434.6	82.636	7.170	2.59		Unsaturated	70.4			37.66	1.70	64.02	133.36	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.542	32.251	2.713	442.8	442.8	90.486	8.470	2.63		Unsaturated	73.2			30.48	1.70	51.82	118.17	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.608	26.885	2.818	451.0	451.0	118.224	10.570	2.64		Unsaturated	74.5			25.41	1.70	43.20	107.25	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.674	24.793	2.379	459.2	459.2	106.983	9.685	2.63		Unsaturated	73.8			23.43	1.70	39.84	102.77	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.739	24.505	2.286	467.4	467.4	103.857	9.419	2.63		Unsaturated	73.5			23.16	1.70	39.37	102.13	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.805	24.598	2.117	475.6	475.6	102.440	8.690	2.61		Unsaturated	71.5			23.25	1.70	39.52	101.94	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.870	25.900	1.992	483.8	483.8	68.129	7.764	2.67		Unsaturated	76.6			24.48	1.70	41.62	105.56	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.936	25.853	1.913	492.0	492.0	67.198	7.471	2.66		Unsaturated	75.9			24.44	1.70	41.54	105.34	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	24.923	1.596	500.2	500.2	64.002	6.469	2.63		Unsaturated	73.0			23.56	1.70	40.05	102.90	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	24.439	1.436	508.4	508.4	62.026	5.938	2.61		Unsaturated	71.4			23.10	1.70	39.27	101.60	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	25.230	1.360	516.6	516.6	63.331	5.446	2.57		Unsaturated	68.7			23.85	1.70	40.54	102.70	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	29.071	1.354	524.8	524.8	54.676	4.700	2.57		Unsaturated	68.2			27.48	1.70	46.71	110.56	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	31.954	1.339	533.0	533.0	59.676	4.226	2.51		Unsaturated	63.4			30.20	1.70	51.34	115.39	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	32.996	1.308	541.2	541.2	61.162	3.997	2.48		Unsaturated	61.4			31.19	1.70	53.02	117.01	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	35.181	1.263	549.4	549.4	64.749	3.618	2.43		Unsaturated	57.6			33.25	1.70	56.53	120.34	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	36.566	1.257	557.6	557.6	66.814	3.464	2.41		Unsaturated	55.7			34.56	1.70	58.75	122.55	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.526	36.725	1.213	565.8	565.8	66.611	3.329	2.40		Unsaturated	54.8			34.71	1.70	59.01	122.55	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.592	34.297	1.228	574.0	574.0	61.720	3.611	2.45		Unsaturated	58.6			32.42	1.70	55.11	118.87	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.658	32.261	1.213	582.2	582.2	57.607	3.794	2.48		Unsaturated	61.5			30.49	1.70	51.84	115.52	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.723	33.498	1.147	590.4	590.4	59.412	3.455	2.44		Unsaturated	58.4			31.66	1.70	53.82	117.16	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.789	34.074	1.026	598.6	598.6	60.020	3.038	2.40		Unsaturated	55.0			32.21	1.70	54.75	117.21	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.854	30.578	0.918	606.8	606.8	53.435	3.032	2.44		Unsaturated	57.8			28.90	1.70	49.13	110.98	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	26.439	0.947	615.0	615.0	45.814	3.624	2.54		Unsaturated	66.0			24.99	1.70	42.48	104.62	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.986	24.439	0.987	623.2	623.2	53.659	4.091	2.53		Unsaturated	65.1			23.10	1.70	39.27	100.29	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.051	22.180	1.014	631.4	631.4	48.183	4.638	2.60		Unsaturated	70.9			20.96	1.70	35.64	96.81	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.117	19.501	1.003	639.6	639.6	41.890	5.229	2.68		Unsaturated	77.2			18.43	1.70	31.33	92.32	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.182	16.302	0.973	647.8	647.8	49.330	6.090	2.68		Unsaturated	77.3			15.41	1.70	26.19	85.66	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.248	15.409	0.928	656.0	656.0	45.979	6.153	2.70		Unsaturated	79.2			14.56	1.70	24.76	84.08	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.314	14.926	0.895	664.2	664.2	43.944	6.133	2.71		Unsaturated	80.2			14.11	1.70	23.98	83.20	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.379	14.386	0.760	672.4	672.4	41.790	5.409	2.69		Unsaturated	78.2			13.60	1.70	23.12	81.79	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.445	14.377	0.725	680.6	680.6	41.248	5.165	2.68		Unsaturated	77.3			13.59	1.70	23.10	81.65	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.510	14.331	0.675	688.8	688.8	40.611	4.826	2.66		Unsaturated	76.0			13.55	1.70	23.03	81.36	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.576	13.438	0.659	697.0	697.0	37.560	5.035	2.70		Unsaturated	78.9			12.70	1.70	21.59	79.93	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.642	12.582	0.649	705.2	705.2	34.683	5.307	2.74		Unsaturated	82.2			11.89	1.70	20.22	78.58	1.00	0.324	1.099	n.a.	n.a.	n.a.	0.00	0.00
5.707	12.332	0.646	713.4	713.4	33.572	5.394	2.75		Unsaturated	83.4			11.66	1.70	19.82	78.20	1.00	0.324	1.097	n.a.	n.a.	n.a.	0.00	0.00
5.773	12.415	0.677	721.6	721.6	33.410	5.616	2.77		Unsaturated	84.5			11.73	1.70	19.95	78.51	1.00	0.324	1.097	n.a.	n.a.	n.a.	0.00	0.00
5.838	12.304	0.735	729.8	729.8	32.719	6.156	2.80		Unsaturated	87.3			11.63	1.70	19.77	78.61	1.00	0.324	1.096	n.a.	n.a.	n.a.	0.00	0.00
5.904	14.600	0.791	738.0	738.0	38.566	5.558	2.72		Unsaturated	80.8			13.80	1.70	23.46	82.61	1.00	0.324	1.098	n.a.	n.a.	n.a.	0.00	0.00
5.970	15.549	0.840	746.2	746.2	40.675	5.535	2.70		Unsaturated	79.4			14.70	1.70	24.98	84.40	1.00	0.324	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.035	16.600	0.859	754.4	754.4	43.008	5.295	2.67		Unsaturated	76.9			15.69	1.70	26.67	86.23	1.00	0.324	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.101	17.577	0.865	762.6	762.6	45.098	5.030	2.64		Unsaturated	74.5			16.61	1.70	28.24	87.88	1.00	0.324	1.099	n.a.	n.a.	n.a.	0.00	0.00
6.166	17.632	0.887	770.8	770.8	44.750	5.143	2.65		Unsaturated	75.3			16.67	1.70	28.33	88.11	1.00	0.324	1.098	n.a.	n.a.	n.a.	0.00	0.00
6.232	17.520	0.919	779.0	779.0	43.981	5.365	2.67		Unsaturated	76.7			16.56	1.69	28.02	87.94	1.00	0.323	1.097	n.a.	n.a.	n.a.	0.00	0.00
6.298	15.960	0.908	787.2	787.2	39.549	5.833	2.73		Unsaturated	81.4			15.09	1.69	25.54	85.39	1.00	0.323	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.363	14.629	1.085	795.4	795.4	35.784	7.624	2.84		Unsaturated	90.6			13.83	1.69	23.38	83.67	1.00	0.323	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.429	14.182	1.174	803.6	803.6	34.296	8.519	2.89		Unsaturated	94.4			13.40	1.68	22.58	83.01	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.494	14.219	1.307	811.8	811.8	34.031	9.462	2.93		Unsaturated	97.3			13.44	1.67	22.50	83.19	0.99	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.560	14.498	1.337	820.0	820.0	34.361	9.490	2.93		Unsaturated	97.2			13.70	1.66	22.80	83.56	0.99	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.626	14.665	1.353	828.2	828.2	34.414	9.494	2.93		Unsaturated	97.1			13.86	1.65	22.93	83.73	0.99	0.323	1.088	n.a.	n.a.	n.a.	0.00	0.00
6.691	15.019	1.361	836.4	836.4	34.913	9.321	2.92		Unsaturated	96.3			14.20	1.64	23.33	84.19	0.99	0.323	1.087	n.a.	n.a.	n.a.	0.00	0.00
6.757	14.870	1.332	844.6	844.6	34.212	9.219	2.92		Unsaturated	96.5			14.05	1.64	23.00	83.77	0.99	0.323	1.086	n.a.	n.a.	n.a.	0.00	0.00
6.822	14.814	1.247	852.8	852.8	33.742	8.667	2.90		Unsaturated	95.2			14.00	1.63	22.82	83.41	0.99	0.323	1.085	n.a.	n.a.	n.a.	0.00	0.00
6.888	14.843	1.223	861.0	861.0	33.479	8.486	2.90		Unsaturated	94.9			14.03	1.62	22.75	83.29	0.99	0.323	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.954	14.479	1.213	869.2	869.2	32.316	8.637	2.91		Unsaturated	96.2			13.69	1.62	22.12	82.58	0.99	0.323	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.019	13.652	1.235	877.4	877.4	30.119	9.347	2.96		Unsaturated	99.8			12.90	1.61	20.81	81.19	0.99	0.323	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.085	13.801	1.249	885.6	885.6	30.168	9.350	2.96		Unsaturated	99.8			13.04	1.60	20.93	81.34	0.99	0.323	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.150	13.708	1.277	893.8	893.8	29.674	9.630	2.97		Unsaturated	100.0			12.96	1.60	20.70	81.05	0.99	0.323	1.079	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
7.216	13.856	1.337	902.0	902.0	29.723	9.974	2.99		Unsaturated	100.0			13.10	1.59	20.81	81.20	0.99	0.323	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.282	13.941	1.339	910.2	910.2	29.633	9.929	2.98		Unsaturated	100.0			13.18	1.58	20.83	81.23	0.99	0.323	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.347	14.247	1.338	918.4	918.4	30.026	9.704	2.97		Unsaturated	100.0			13.47	1.57	21.17	81.67	0.99	0.323	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.413	14.591	1.315	926.6	926.6	30.494	9.308	2.96		Unsaturated	99.4			13.79	1.56	21.55	82.13	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.478	15.205	1.298	934.8	934.8	31.531	8.807	2.93		Unsaturated	97.2			14.37	1.55	22.32	82.93	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.544	15.707	1.307	943.0	943.0	32.313	8.579	2.91		Unsaturated	96.0			14.85	1.54	22.91	83.60	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.610	16.005	1.312	951.2	951.2	32.652	8.448	2.90		Unsaturated	95.3			15.13	1.54	23.22	83.95	0.99	0.323	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.675	16.897	1.325	959.4	959.4	34.224	8.071	2.88		Unsaturated	93.1			15.97	1.52	24.34	85.19	0.99	0.323	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.741	17.623	1.355	967.6	967.6	35.426	7.906	2.86		Unsaturated	91.7			16.66	1.51	25.23	86.21	0.99	0.323	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.806	18.292	1.396	975.8	975.8	36.491	7.841	2.85		Unsaturated	90.8			17.29	1.50	26.02	87.15	0.99	0.322	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.872	18.646	1.454	984.0	984.0	36.898	8.009	2.85		Unsaturated	91.1			17.62	1.50	26.38	87.65	0.99	0.322	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.938	18.358	1.491	992.2	992.2	36.005	8.347	2.87		Unsaturated	92.8			17.35	1.49	25.88	87.17	0.99	0.322	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.003	16.488	1.516	1000.4	1000.4	31.963	9.482	2.95		Unsaturated	98.8			15.58	1.49	23.27	84.32	0.99	0.322	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.069	15.688	1.533	1008.6	1008.6	30.108	10.096	2.99		Unsaturated	100.0			14.83	1.49	22.10	82.90	0.99	0.322	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.134	14.805	1.538	1016.8	1016.8	28.121	10.758	3.03		Unsaturated	100.0			13.99	1.49	20.83	81.23	0.99	0.322	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.200	14.452	1.558	1025.0	1025.0	27.199	11.177	3.05		Unsaturated	100.0			13.66	1.48	20.28	80.50	0.99	0.322	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.266	14.191	1.539	1033.2	1033.2	26.470	11.255	3.06		Unsaturated	100.0			13.41	1.48	19.84	79.94	0.99	0.322	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.331	13.903	1.538	1041.4	1041.4	25.701	11.493	3.07		Unsaturated	100.0			13.14	1.47	19.38	79.33	0.99	0.322	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.397	13.791	1.521	1049.6	1049.6	25.279	11.465	3.08		Unsaturated	100.0			13.03	1.47	19.15	79.03	0.99	0.322	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.462	13.280	1.469	1057.8	1057.8	24.109	11.521	3.09		Unsaturated	100.0			12.55	1.47	18.40	78.04	0.99	0.322	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.528	12.620	1.337	1066.0	1066.0	22.677	11.061	3.10		Unsaturated	100.0			11.93	1.46	17.45	76.80	0.99	0.322	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.594	12.713	1.252	1074.2	1074.2	22.670	10.283	3.07		Unsaturated	100.0			12.02	1.46	17.50	76.87	0.99	0.322	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.659	12.685	1.096	1082.4	1082.4	22.439	9.025	3.04		Unsaturated	100.0			11.99	1.45	17.39	76.72	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.725	12.917	1.096	1090.6	1090.6	22.688	8.859	3.03		Unsaturated	100.0			12.21	1.44	17.63	77.03	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.790	12.759	1.027	1098.8	1098.8	22.224	8.411	3.02		Unsaturated	100.0			12.06	1.44	17.35	76.67	0.99	0.322	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.856	12.322	0.960	1107.0	1107.0	21.262	8.157	3.02		Unsaturated	100.0			11.65	1.43	16.71	75.83	0.99	0.322	1.057	n.a.	n.a.	n.a.	0.00	0.00
8.922	12.211	0.951	1115.2	1115.2	20.899	8.161	3.03		Unsaturated	100.0			11.54	1.43	16.50	75.56	0.99	0.322	1.056	n.a.	n.a.	n.a.	0.00	0.00
8.987	12.201	0.929	1123.4	1123.4	20.722	7.982	3.02		Unsaturated	100.0			11.53	1.42	16.42	75.45	0.99	0.322	1.056	n.a.	n.a.	n.a.	0.00	0.00
9.053	12.368	0.931	1131.6	1131.6	20.859	7.888	3.02		Unsaturated	100.0			11.69	1.42	16.57	75.65	0.99	0.322	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.118	12.480	0.931	1139.8	1139.8	20.899	7.817	3.01		Unsaturated	100.0			11.80	1.41	16.65	75.76	0.99	0.322	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.184	13.056	0.915	1148.0	1148.0	21.746	7.331	2.98		Unsaturated	100.0			12.34	1.40	17.33	76.64	0.99	0.322	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.250	14.108	0.886	1156.2	1156.2	23.404	6.548	2.93		Unsaturated	97.0			13.33	1.40	18.61	78.06	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.315	15.000	0.874	1164.4	1164.4	24.764	6.062	2.88		Unsaturated	93.8			14.18	1.39	19.67	79.15	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.381	0.898	1172.6	1172.6	25.234	6.070	2.88		Unsaturated	93.3			14.54	1.38	20.08	79.64	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.428	0.923	1180.8	1180.8	25.131	6.221	2.89		Unsaturated	94.0			14.58	1.38	20.06	79.69	0.99	0.321	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.512	16.042	0.919	1189.0	1189.0	25.984	5.949	2.86		Unsaturated	92.1			15.16	1.37	20.76	80.41	0.99	0.321	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.578	16.135	1.036	1197.2	1197.2	25.955	6.668	2.90		Unsaturated	94.9			15.25	1.36	20.79	80.73	0.99	0.321	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.643	15.633	1.097	1205.4	1205.4	24.938	7.299	2.94		Unsaturated	98.1			14.78	1.36	20.09	80.10	0.99	0.321	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.709	13.643	1.123	1213.6	1213.6	21.484	8.614	3.04		Unsaturated	100.0			12.90	1.36	17.55	76.93	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.774	13.298	1.137	1221.8	1221.8	20.768	8.962	3.06		Unsaturated	100.0			12.57	1.36	17.06	76.29	0.99	0.321	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.840	13.298	1.165	1230.0	1230.0	20.623	9.186	3.07		Unsaturated	100.0			12.57	1.35	17.00	76.21	0.99	0.321	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.906	13.670	1.213	1238.2	1238.2	21.080	9.294	3.06		Unsaturated	100.0			12.92	1.35	17.39	76.73	0.99	0.321	1.047	n.a.	n.a.	n.a.	0.00	0.00
9.971	14.265	1.157	1246.4	1246.4	21.890	8.481	3.03		Unsaturated	100.0			13.48	1.34	18.06	77.60	0.99	0.321	1.047	n.a.	n.a.	n.a.	0.00	0.00
10.037	15.335	1.120	1254.6	1254.6	23.446	7.615	2.97		Clay	100.0			14.49	1.15	n.a.	n.a.	0.99	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	15.605	1.090	1262.8	1262.8	23.715	7.279	2.95		Clay	99.3			14.75	1.15	n.a.	n.a.	0.99	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	15.493	1.063	1271.0	1271.0	23.379	7.155	2.95		Clay	99.2			14.64	1.14	n.a.	n.a.	0.99	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	15.419	0.940	1279.2	1279.2	23.107	6.360	2.92		Clay	96.7			14.57	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	14.954	0.976	1287.4	1287.4	22.231	6.820	2.95		Clay	99.3			14.13	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	15.474	0.901	1295.6	1295.6	22.887	6.077	2.91		Clay	95.8			14.63	1.14	n.a.	n.a.	0.99	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.279	0.929	1303.8	1303.8	22.438	6.351	2.93		Clay	97.4			14.44	1.14	n.a.	n.a.	0.99	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	15.354	0.931	1312.0	1312.0	22.405	6.334	2.93		Clay	97.3			14.51	1.13	n.a.	n.a.	0.99	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	15.205	0.925	1320.2	1320.2	22.034	6.360	2.94		Clay	97.9			14.37	1.13	n.a.	n.a.	0.99	0.329	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	15.521	0.932	1328.4	1328.4	22.368	6.273	2.93		Clay	97.1			14.67	1.13	n.a.	n.a.	0.99	0.330	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	15.661	0.926	1336.6	1336.6	22.434	6.176	2.92		Clay	96.7			14.80	1.13	n.a.	n.a.	0.99	0.331	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	15.559	0.934	1344.8	1344.8	22.140	6.274	2.93		Clay	97.4			14.71	1.13	n.a.	n.a.	0.99	0.332	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	15.754	0.922	1353.0	1353.0	22.288	6.115	2.92		Clay	96.6			14.89	1.13	n.a.	n.a.	0.99	0.333	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	15.940	0.900	1361.2	1361.2	22.421	5.898	2.91		Clay	95.6			15.07	1.12	n.a.	n.a.	0.99	0.334	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	16.999	0.893	1369.4	1369.4	23.827	5.474	2.87		Clay	92.3			16.07	1.12	n.a.	n.a.	0.99	0.335	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	16.907	0.898	1377.6	1377.6	23.546	5.537	2.87		Clay	92.9			15.98	1.12	n.a.	n.a.	0.99	0.336	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	17.734	0.903	1385.8	1385.8	24.594	5.299	2.85		Clay	90.7			16.76	1.12	n.a.	n.a.	0.99	0.337	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	18.032	0.901	1394.0	1394.0	24.871	5.198	2.84		Clay	90.0			17.04	1.12	n.a.	n.a.	0.99	0.338	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	19.799	0.902	1402.2	1402.2	27.240	4.723	2.78		Clay	85.4			18.71	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	20.719	0.938	1410.4	1410.4	28.380	4.687	2.76		Clay	84.2			19.58	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	23.789	1.021	1418.6	1418.6	32.539	4.424	2.70		Clay	79.3			22.48	1.11	n.a.	n.a.	0.98	0.340	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.414	23.658	1.035	1426.8	1426.8	32.162	4.511	2.71		Clay	80.1			22.36	1.11	n.a.	n.a.	0.98	0.341	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	24.141	1.012	1435.0	1435.0	32.646	4.320	2.70		Clay	78.7			22.82	1.11	n.a.	n.a.	0.98	0.342	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	23.379	1.136	1443.2	1443.2	31.399	5.014	2.75		Clay	83.3			22.10	1.11	n.a.	n.a.	0.98	0.343	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	24.124	1.155	1451.4	1451.4	32.242	4.936	2.74		Clay	82.2			22.80	1.10	n.a.	n.a.	0.98	0.344	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	24.728	1.148	1459.6	1459.6	32.883	4.784	2.72		Clay	81.0			23.37	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	24.755	1.152	1467.8	1467.8	32.731	4.796	2.73		Clay	81.1			23.40	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.808	24.755	1.181	1476.0	1476.0	32.543	4.917	2.74		Clay	81.9			23.40	1.10	n.a.	n.a.	0.98	0.346	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	24.551	1.211	1484.2	1484.2	32.083	5.086	2.75		Clay	83.1			23.21	1.10	n.a.	n.a.	0.98	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	24.217	1.171	1492.4	1492.4	31.454	4.989	2.75		Clay	83.1			22.89	1.10	n.a.	n.a.	0.98	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	23.593	1.178	1500.6	1500.6	30.445	5.157	2.77		Clay	84.7			22.30	1.09	n.a.	n.a.	0.98	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	22.822	1.192	1508.8	1508.8	29.252	5.402	2.80		Clay	86.8			21.57	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	22.523	1.134	1517.0	1517.0	28.694	5.210	2.79		Clay	86.4			21.29	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	22.747	1.134	1525.2	1525.2	28.828	5.158	2.79		Clay	86.1			21.50	1.09	n.a.	n.a.	0.98	0.351	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	22.756	1.107	1533.4	1533.4	28.680	5.034	2.78		Clay	85.6			21.51	1.09	n.a.	n.a.	0.98	0.352	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.333	23.137	1.085	1541.6	1541.6	29.017	4.851	2.77		Clay	84.4			21.87	1.09	n.a.	n.a.	0.98	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	24.207	1.070	1549.8	1549.8	30.239	4.566	2.74		Clay	82.0			22.88	1.09	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	24.311	1.076	1558.0	1558.0	30.208	4.572	2.74		Clay	82.0			22.98	1.08	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	26.551	1.076	1566.2	1566.2	32.905	4.176	2.68		Clay	77.7			25.10	1.08	n.a.	n.a.	0.98	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	25.119	1.124	1574.4	1574.4	30.909	4.619	2.73		Clay	81.7			23.74	1.08	n.a.	n.a.	0.98	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	24.096	1.160	1582.6	1582.6	29.451	4.978	2.77		Clay	84.7			22.78	1.08	n.a.	n.a.	0.98	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.726	23.649	1.219	1590.8	1590.8	28.732	5.334	2.80		Clay	87.0			22.35	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	22.413	1.196	1599.0	1599.0	27.034	5.534	2.83		Clay	89.4			21.18	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	20.812	1.181	1607.2	1607.2	24.898	5.903	2.87		Clay	93.0			19.67	1.08	n.a.	n.a.	0.98	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	20.283	1.141	1615.4	1615.4	24.112	5.859	2.88		Clay	93.6			19.17	1.07	n.a.	n.a.	0.98	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	20.022	1.101	1623.6	1623.6	23.664	5.731	2.88		Clay	93.6			18.92	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	19.697	1.051	1631.8	1631.8	23.141	5.566	2.88		Clay	93.4			18.62	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	18.041	0.999	1640.0	1640.0	21.001	5.801	2.92		Clay	96.9			17.05	1.07	n.a.	n.a.	0.98	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	16.814	0.969	1648.2	1648.2	19.403	6.060	2.96		Clay	99.9			15.89	1.07	n.a.	n.a.	0.98	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	16.302	0.851	1656.4	1656.4	18.684	5.500	2.95		Clay	98.6			15.41	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	15.866	0.798	1664.6	1664.6	18.063	5.308	2.95		Clay	98.7			15.00	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	17.242	0.758	1672.8	1672.8	19.615	4.620	2.88		Clay	93.4			16.30	1.06	n.a.	n.a.	0.98	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	15.364	0.728	1681.0	1681.0	17.280	5.013	2.94		Clay	98.6			14.52	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	15.364	0.715	1689.2	1689.2	17.191	4.924	2.94		Clay	98.3			14.52	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	15.057	0.663	1697.4	1697.4	16.741	4.666	2.93		Clay	97.8			14.23	1.06	n.a.	n.a.	0.98	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	14.917	0.620	1705.6	1705.6	16.492	4.408	2.92		Clay	96.9			14.10	1.06	n.a.	n.a.	0.98	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	14.731	0.592	1713.8	1713.8	16.191	4.267	2.92		Clay	96.7			13.92	1.06	n.a.	n.a.	0.98	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.776	14.498	0.546	1722.0	1722.0	15.839	4.004	2.91		Clay	95.9			13.70	1.06	n.a.	n.a.	0.98	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.842	14.964	0.545	1730.2	1730.2	16.297	3.866	2.89		Clay	94.4			14.14	1.05	n.a.	n.a.	0.98	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.907	14.843	0.505	1738.4	1738.4	16.077	3.614	2.88		Clay	93.3			14.03	1.05	n.a.	n.a.	0.98	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.973	14.674	0.504	1746.6	1746.6	15.803	3.652	2.89		Clay	94.0			13.87	1.05	n.a.	n.a.	0.98	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.038	14.805	0.507	1754.8	1754.8	15.874	3.640	2.88		Clay	93.8			13.99	1.05	n.a.	n.a.	0.98	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.104	15.614	0.514	1763.0	1763.0	16.713	3.489	2.86		Clay	91.5			14.76	1.05	n.a.	n.a.	0.98	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.170	16.888	0.488	1771.2	1771.2	18.070	3.050	2.79		Clay	86.5			15.96	1.05	n.a.	n.a.	0.98	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.235	15.735	0.609	1779.4	1779.4	16.686	4.102	2.90		Clay	95.0			14.87	1.05	n.a.	n.a.	0.98	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.301	15.493	0.572	1787.6	1787.6	16.334	3.918	2.89		Clay	94.6			14.64	1.05	n.a.	n.a.	0.98	0.375	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.366	16.052	0.577	1795.8	1795.8	16.877	3.808	2.88		Clay	93.1			15.17	1.04	n.a.	n.a.	0.98	0.375	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.432	15.800	0.587	1804.0	1804.0	16.517	3.940	2.89		Clay	94.4			14.93	1.04	n.a.	n.a.	0.98	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.498	16.033	0.574	1812.2	1812.2	16.695	3.795	2.88		Clay	93.3			15.15	1.04	n.a.	n.a.	0.98	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.563	16.563	0.609	1820.4	1820.4	17.197	3.891	2.88		Clay	93.1			15.66	1.04	n.a.	n.a.	0.98	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.629	17.232	0.623	1828.6	1828.6	17.847	3.818	2.86		Clay	91.6			16.29	1.04	n.a.	n.a.	0.98	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.694	16.637	0.560	1836.8	1836.8	17.115	3.563	2.85		Clay	91.3			15.72	1.04	n.a.	n.a.	0.98	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	15.317	0.596	1845.0	1845.0	15.604	4.140	2.93		Clay	97.0			14.48	1.04	n.a.	n.a.	0.98	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.826	14.767	0.600	1853.2	1853.2	14.937	4.335	2.95		Clay	99.2			13.96	1.04	n.a.	n.a.	0.98	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.891	14.629	0.556	1861.4	1861.4	14.718	4.059	2.94		Clay	98.2			13.83	1.03	n.a.	n.a.	0.98	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.957	14.554	0.537	1869.6	1869.6	14.569	3.943	2.94		Clay	97.8			13.76	1.03	n.a.	n.a.	0.98	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.022	14.359	0.509	1877.8	1877.8	14.293	3.793	2.93		Clay	97.5			13.57	1.03	n.a.	n.a.	0.98	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.088	13.801	0.489	1886.0	1886.0	13.635	3.803	2.95		Clay	98.9			13.04	1.03	n.a.	n.a.	0.98	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.154	14.861	0.466	1894.2	1894.2	14.691	3.349	2.89		Clay	94.1			14.05	1.03	n.a.	n.a.	0.98	0.383	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.219	14.452	0.445	1902.4	1902.4	14.193	3.296	2.90		Clay	94.8			13.66	1.03	n.a.	n.a.	0.98	0.384	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.285	14.303	0.431	1910.6	1910.6	13.972	3.229	2.90		Clay	94.8			13.52	1.03	n.a.	n.a.	0.98	0.384	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.350	16.311	0.451	1918.8	1918.8	16.001	2.938	2.83		Clay	89.0			15.42	1.03	n.a.	n.a.	0.98	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.416	16.423	0.413	1927.0	1927.0	16.045	2.671	2.80		Clay	87.0			15.52	1.02	n.a.	n.a.	0.97	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.482	13.541	0.389	1935.2	1935.2	12.994	3.094	2.91		Clay	95.9			12.80	1.02	n.a.	n.a.	0.97	0.386	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.547	12.843	0.390	1943.4	1943.4	12.217	3.285	2.95		Clay	98.9			12.14	1.02	n.a.	n.a.	0.97	0.387	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
15.613	13.791	0.382	1951.6	1951.6	13.133	2.981	2.90		Clay	94.9			13.03	1.02	n.a.	n.a.	0.97	0.387	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.678	13.577	0.421	1959.8	1959.8	12.855	3.342	2.94		Clay	97.8			12.83	1.02	n.a.	n.a.	0.97	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.744	14.731	0.451	1968.0	1968.0	13.971	3.281	2.90		Clay	95.1			13.92	1.02	n.a.	n.a.	0.97	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.810	15.428	0.528	1976.2	1976.2	14.614	3.657	2.91		Clay	96.1			14.58	1.02	n.a.	n.a.	0.97	0.389	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.875	16.563	0.528	1984.4	1984.4	15.693	3.391	2.87		Clay	92.6			15.66	1.02	n.a.	n.a.	0.97	0.390	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.941	22.049	0.601	1992.6	1992.6	21.131	2.855	2.72		Clay	80.8			20.84	1.02	n.a.	n.a.	0.97	0.390	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.006	22.765	0.601	2000.8	2000.8	21.756	2.761	2.70		Clay	79.2			21.52	1.01	n.a.	n.a.	0.97	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.072	23.361	0.711	2009.0	2009.0	22.256	3.180	2.73		Clay	81.7			22.08	1.01	n.a.	n.a.	0.97	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.138	23.091	0.751	2017.2	2017.2	21.894	3.401	2.76		Clay	83.6			21.83	1.01	n.a.	n.a.	0.97	0.392	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.203	22.570	0.776	2025.4	2025.4	21.287	3.600	2.78		Clay	85.6			21.33	1.01	n.a.	n.a.	0.97	0.392	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.269	21.333	0.751	2033.6	2033.6	19.981	3.697	2.81		Clay	87.9			20.16	1.01	n.a.	n.a.	0.97	0.393	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.334	20.952	0.754	2041.8	2041.8	19.523	3.783	2.83		Clay	89.0			19.80	1.01	n.a.	n.a.	0.97	0.393	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	21.036	0.744	2050.0	2050.0	19.523	3.718	2.82		Clay	88.6			19.88	1.01	n.a.	n.a.	0.97	0.394	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.466	22.217	0.727	2058.2	2058.2	20.589	3.431	2.78		Clay	85.4			21.00	1.01	n.a.	n.a.	0.97	0.395	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.531	23.789	0.739	2066.4	2066.4	22.025	3.248	2.74		Clay	82.4			22.48	1.01	n.a.	n.a.	0.97	0.395	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.597	28.615	0.761	2074.6	2074.6	26.586	2.759	2.63		Clay	73.8			27.05	1.01	n.a.	n.a.	0.97	0.396	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.662	31.452	0.791	2082.8	2082.8	28.972	2.601	2.59		Sand	70.2		1.8	53.51	1.01	53.90	120.25	0.97	0.396	1.002	0.172	0.239	0.60	0.03	0.01
16.728	34.129	0.807	2091.0	2091.0	31.456	2.439	2.54		Sand	66.5		1.8	58.06	1.01	58.37	125.21	0.97	0.397	1.002	0.184	0.263	0.66	0.03	0.01
16.794	35.924	0.804	2099.2	2099.2	33.094	2.305	2.51		Sand	63.9		1.8	61.12	1.00	61.33	128.36	0.97	0.397	1.001	0.192	0.280	0.70	0.02	0.01
16.859	36.501	0.812	2107.4	2107.4	33.572	2.291	2.51		Sand	63.4		1.8	62.10	1.00	62.21	129.34	0.97	0.398	1.001	0.195	0.286	0.72	0.02	0.01
16.925	33.311	0.820	2115.6	2115.6	30.488	2.542	2.57		Sand	68.3		1.8	56.67	1.00	56.68	123.43	0.97	0.398	1.000	0.179	0.253	0.64	0.03	0.01
16.990	28.801	0.820	2123.8	2123.8	26.122	2.956	2.66		Clay	75.8			27.22	1.00	n.a.	n.a.	0.97	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.056	25.221	0.645	2132.0	2132.0	22.659	2.670	2.68		Clay	77.4			23.84	1.00	n.a.	n.a.	0.97	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.122	20.245	0.645	2140.2	2140.2	17.919	3.364	2.82		Clay	88.8			19.14	1.00	n.a.	n.a.	0.97	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.187	17.046	0.660	2148.4	2148.4	14.869	4.132	2.94		Clay	98.3			16.11	1.00	n.a.	n.a.	0.97	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.253	14.861	0.722	2156.6	2156.6	12.782	5.238	3.06		Clay	100.0			14.05	0.99	n.a.	n.a.	0.97	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.318	12.508	0.714	2164.8	2164.8	10.556	6.249	3.17		Clay	100.0			11.82	0.99	n.a.	n.a.	0.97	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.384	10.964	0.668	2173.0	2173.0	9.091	6.763	3.24		Clay	100.0			10.36	0.99	n.a.	n.a.	0.97	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.450	10.928	0.632	2181.2	2181.2	9.020	6.424	3.23		Clay	100.0			10.33	0.99	n.a.	n.a.	0.97	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.515	10.723	0.620	2189.4	2189.4	8.795	6.439	3.24		Clay	100.0			10.14	0.99	n.a.	n.a.	0.97	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.581	10.583	0.579	2197.6	2197.6	8.631	6.105	3.23		Clay	100.0			10.00	0.99	n.a.	n.a.	0.97	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.646	10.174	0.553	2205.8	2205.8	8.225	6.096	3.25		Clay	100.0			9.62	0.99	n.a.	n.a.	0.97	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.712	9.960	0.536	2214.0	2214.0	7.997	6.054	3.26		Clay	100.0			9.41	0.99	n.a.	n.a.	0.97	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.778	9.700	0.468	2222.2	2222.2	7.730	5.449	3.24		Clay	100.0			9.17	0.99	n.a.	n.a.	0.97	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.843	9.541	0.451	2230.4	2230.4	7.555	5.353	3.24		Clay	100.0			9.02	0.99	n.a.	n.a.	0.97	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.909	9.012	0.444	2238.6	2238.6	7.051	5.625	3.28		Clay	100.0			8.52	0.99	n.a.	n.a.	0.97	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.974	8.686	0.417	2246.8	2246.8	6.732	5.514	3.29		Clay	100.0			8.21	0.98	n.a.	n.a.	0.97	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	8.444	0.352	2254.8	2252.3	6.497	4.811	3.27		Clay	100.0			7.98	0.98	n.a.	n.a.	0.97	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.106	8.444	0.318	2262.7	2256.1	6.483	4.349	3.24		Clay	100.0			7.98	0.98	n.a.	n.a.	0.97	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.171	8.360	0.282	2270.5	2259.9	6.394	3.903	3.22		Clay	100.0			7.90	0.98	n.a.	n.a.	0.97	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.237	8.379	0.238	2278.4	2263.6	6.397	3.287	3.18		Clay	100.0			7.92	0.98	n.a.	n.a.	0.97	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.302	11.966	0.188	2286.3	2267.4	9.546	1.737	2.89		Clay	93.9			11.31	0.98	n.a.	n.a.	0.97	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.368	12.090	0.226	2294.2	2271.2	9.636	2.065	2.92		Clay	96.7			11.43	0.98	n.a.	n.a.	0.97	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.434	15.242	0.288	2302.0	2275.0	12.388	2.044	2.83		Clay	89.2			14.41	0.98	n.a.	n.a.	0.97	0.410	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.499	19.279	0.365	2309.9	2278.8	15.907	2.014	2.73		Clay	81.6			18.22	0.98	n.a.	n.a.	0.97	0.410	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.565	21.017	0.457	2317.8	2282.5	17.400	2.301	2.73		Clay	81.7			19.86	0.98	n.a.	n.a.	0.97	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.630	19.548	0.554	2325.6	2286.3	16.083	3.013	2.83		Clay	89.4			18.48	0.98	n.a.	n.a.	0.97	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.696	19.967	0.689	2333.5	2290.1	16.419	3.665	2.88		Clay	93.0			18.87	0.98	n.a.	n.a.	0.97	0.411	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.762	24.793	0.778	2341.4	2293.9	20.596	3.293	2.77		Clay	84.5			23.43	0.98	n.a.	n.a.	0.97	0.412	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.827	34.483	0.869	2349.3	2297.6	30.212	2.609	2.58		Sand	69.1	152		152.00	0.98	148.57	242.20	0.97	0.412	0.975	54.165	116.220	281.84	0.00	0.00
18.893	54.914	0.984	2357.1	2301.4	48.701	1.831	2.32		Sand	48.5	152		152.00	0.98	148.36	232.71	0.97	0.413	0.975	21.035	45.110	109.28	0.00	0.00
18.958	60.150	1.058	2365.0	2305.2	53.399	1.794	2.28		Sand	45.6	152		152.00	0.98	148.26	230.59	0.97	0.413	0.974	17.311	37.106	89.79	0.00	0.00
19.024	66.502	1.170	2372.9	2309.0	59.099	1.791	2.25		Sand	42.9	152		152.00	0.97	148.15	228.36	0.97	0.414	0.974	14.188	30.397	73.48	0.00	0.00
19.090	73.003	1.305	2380.8	2312.8	64.924	1.817	2.22		Sand	40.7	152		152.00	0.97	148.05	226.39	0.97	0.414	0.973	11.974	25.641	61.92	0.00	0.00
19.155	80.219	1.444	2388.6	2316.5	71.386	1.827	2.19		Sand	38.4	152		152.00	0.97	147.94	224.02	0.97	0.415	0.973	9.825	21.027	50.72	0.00	0.00
19.221	96.940	1.520	2396.5	2320.3	86.417	1.588	2.09		Sand	30.2	152		152.00	0.97	147.69	213.29	0.97	0.415	0.972	4.356	9.319	22.46	0.00	0.00
19.286	105.058	1.629	2404.4	2324.1	93.665	1.569	2.06		Sand	27.9	152		152.00	0.97	147.54	209.18	0.96	0.415	0.972	3.300	7.060	17.00	0.00	0.00
19.352	117.361	1.790	2412.2	2327.9	104.672	1.541	2.02		Sand	24.7	152		152.00	0.97	147.34	202.56	0.96	0.416	0.974	2.189	4.692	11.28	0.00	0.00
19.418	133.934	1.895	2420.1	2331.7	119.506	1.428	1.96		Sand	19.5	152		152.00	0.97	147.00	189.03	0.96	0.416	0.977	1.074	2.310	5.55	0.00	0.00
19.483	154.114	1.973	2428.0	2335.4	137.561	1.290	1.88		Sand	13.6	152		152.00	0.96	146.49	168.31	0.96	0.417	0.981	0.476	0.892	2.14	0.00	0.00
19.549	161.256	1.964	2435.9	2339.2	143.867	1.227	1.85		Sand	11.3			152.42	0.96	146.61	159.88	0.96	0.417	0.982	0.370	0.651	1.56	0.00	0.00
19.614	161.256	1.811	2443.7	2343.0	143.747	1.132	1.83		Sand	9.3			152.42	0.96	146.36	153.27	0.96	0.418	0.983	0.312	0.523	1.25	0.01	0.00
19.680	161.675	1.699	2451.6	2346.8	144.004	1.059	1.81		Sand	7.7			152.81	0.96	146.55	149.49	0.96	0.418	0.984	0.285	0.466	1.12	0.01	0.00
19.746	161.275	1.534	2459.5	2350.5	143.526	0.958	1.78		Sand	5.4			152.43	0.96	146.01	146.34	0.96	0.418	0.984	0.266	0.426	1.02	0.01	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
19.811	157.527	1.416	2467.3	2354.3	140.049	0.906	1.77		Sand	4.7			148.89	0.96	142.43	142.54	0.96	0.419	0.984	0.246	0.384	0.92	0.01	0.01
19.877	154.691	1.380	2475.2	2358.1	137.394	0.899	1.78		Sand	5.0			146.21	0.96	139.70	139.89	0.96	0.419	0.984	0.234	0.359	0.86	0.01	0.01
19.942	156.457	1.463	2483.1	2361.9	138.860	0.943	1.79		Sand	5.8			147.88	0.96	141.25	141.84	0.96	0.420	0.984	0.243	0.377	0.90	0.01	0.01
20.008	154.421	1.521	2491.0	2365.7	136.926	0.993	1.81		Sand	7.4			145.96	0.95	139.32	141.76	0.96	0.420	0.983	0.242	0.376	0.90	0.01	0.01
20.074	151.947	1.525	2498.8	2369.4	134.603	1.012	1.82		Sand	8.3			143.62	0.95	136.98	141.15	0.96	0.420	0.983	0.240	0.370	0.88	0.01	0.01
20.139	147.418	1.619	2506.7	2373.2	130.450	1.108	1.85		Sand	11.2			139.34	0.95	132.92	145.55	0.96	0.421	0.982	0.262	0.416	0.99	0.01	0.01
20.205	143.893	1.535	2514.6	2377.0	127.200	1.076	1.85		Sand	11.2			136.00	0.95	129.57	141.93	0.96	0.421	0.983	0.243	0.378	0.90	0.01	0.01
20.270	138.741	1.556	2522.4	2380.8	122.504	1.132	1.88		Sand	13.3			131.14	0.95	124.91	144.40	0.96	0.422	0.982	0.256	0.403	0.96	0.01	0.01
20.336	134.762	1.537	2530.3	2384.6	118.861	1.151	1.89		Sand	14.5			127.37	0.95	121.25	144.49	0.96	0.422	0.982	0.256	0.404	0.96	0.01	0.01
20.402	126.345	1.415	2538.2	2388.3	111.275	1.131	1.91		Sand	15.8			119.42	0.95	113.50	140.29	0.96	0.422	0.982	0.236	0.362	0.86	0.01	0.01
20.467	122.979	1.444	2546.1	2392.1	108.192	1.186	1.93		Sand	17.6			116.24	0.95	110.46	142.47	0.96	0.423	0.982	0.246	0.383	0.91	0.01	0.01
20.533	120.338	1.565	2553.9	2395.9	105.757	1.314	1.97		Sand	20.6			113.74	0.95	108.13	147.79	0.96	0.423	0.981	0.275	0.443	1.05	0.01	0.00
20.598	119.863	1.737	2561.8	2399.7	105.248	1.465	2.00		Sand	23.3			113.29	0.95	107.76	153.46	0.96	0.423	0.979	0.313	0.524	1.24	0.01	0.00
20.664	120.105	1.796	2569.7	2403.4	105.377	1.512	2.01		Sand	24.1			113.52	0.95	107.95	155.15	0.96	0.424	0.979	0.327	0.553	1.30	0.00	0.00
20.730	118.617	1.754	2577.6	2407.2	103.972	1.495	2.01		Sand	24.1			112.11	0.95	106.51	153.61	0.96	0.424	0.979	0.314	0.526	1.24	0.01	0.00
20.795	119.148	1.688	2585.4	2411.0	104.357	1.432	2.00		Sand	23.0			112.62	0.95	106.88	151.75	0.96	0.425	0.979	0.301	0.497	1.17	0.01	0.00
20.861	121.751	1.553	2593.3	2414.8	106.575	1.289	1.96		Sand	20.0			115.08	0.95	109.04	147.20	0.96	0.425	0.979	0.271	0.435	1.02	0.01	0.00
20.926	122.802	1.512	2601.2	2418.6	107.417	1.244	1.95		Sand	18.9			116.07	0.95	109.87	145.43	0.96	0.425	0.979	0.261	0.414	0.97	0.01	0.01
20.992	118.227	1.471	2609.0	2422.3	103.289	1.258	1.97		Sand	20.2			111.75	0.95	105.67	143.95	0.96	0.426	0.979	0.253	0.397	0.93	0.01	0.01
21.058	114.432	1.535	2616.9	2426.1	99.855	1.357	2.00		Sand	22.8			108.16	0.95	102.26	146.06	0.96	0.426	0.979	0.265	0.421	0.99	0.01	0.00
21.123	112.173	1.588	2624.8	2429.9	97.781	1.432	2.02		Sand	24.7			106.02	0.95	100.21	147.25	0.96	0.426	0.978	0.271	0.435	1.02	0.01	0.00
21.189	111.271	1.595	2632.7	2433.7	96.907	1.451	2.03		Sand	25.2			105.17	0.94	99.34	147.20	0.96	0.427	0.978	0.271	0.434	1.02	0.01	0.00
21.254	109.336	1.703	2640.5	2437.5	95.124	1.577	2.06		Sand	27.6			103.34	0.94	97.60	149.24	0.96	0.427	0.978	0.284	0.460	1.08	0.01	0.00
21.320	112.554	1.871	2648.4	2441.2	97.879	1.682	2.07		Sand	28.5			106.38	0.94	100.52	154.01	0.96	0.428	0.976	0.317	0.532	1.24	0.01	0.00
21.386	116.004	2.055	2656.3	2445.0	100.833	1.792	2.08		Sand	29.3			109.64	0.95	103.65	158.96	0.96	0.428	0.975	0.361	0.626	1.46	0.00	0.00
21.451	116.487	2.225	2664.1	2448.8	101.176	1.932	2.10		Sand	31.1			110.10	0.95	104.09	161.92	0.96	0.428	0.974	0.392	0.694	1.62	0.00	0.00
21.517	116.302	2.202	2672.0	2452.6	100.933	1.915	2.10		Sand	30.9	110		110.00	0.94	103.93	161.51	0.96	0.429	0.974	0.387	0.684	1.60	0.00	0.00
21.582	115.883	2.246	2679.9	2456.3	100.484	1.961	2.11		Sand	31.6	110		110.00	0.94	103.88	162.35	0.96	0.429	0.973	0.397	0.704	1.64	0.00	0.00
21.648	113.530	2.277	2687.8	2460.1	98.341	2.030	2.12		Sand	33.0	110		110.00	0.94	103.86	164.00	0.96	0.429	0.973	0.417	0.748	1.74	0.00	0.00
21.714	108.396	2.123	2695.6	2463.9	93.765	1.983	2.13		Sand	33.6	110		110.00	0.94	103.82	164.62	0.96	0.430	0.972	0.424	0.765	1.78	0.00	0.00
21.779	99.720	1.926	2703.5	2467.7	86.096	1.958	2.15		Sand	35.4	110		110.00	0.94	103.80	166.52	0.96	0.430	0.971	0.450	0.823	1.91	0.00	0.00
21.845	88.282	1.689	2711.4	2471.5	76.023	1.943	2.19		Sand	38.3	110		110.00	0.94	103.81	169.33	0.96	0.430	0.970	0.492	0.919	2.13	0.00	0.00
21.910	69.403	1.497	2719.2	2475.2	59.463	2.200	2.31		Sand	47.5	110		110.00	0.94	103.91	176.05	0.96	0.431	0.968	0.623	1.222	2.84	0.00	0.00
21.976	61.796	1.350	2727.1	2479.0	52.772	2.234	2.35		Sand	50.9	110		110.00	0.94	103.90	177.88	0.96	0.431	0.967	0.668	1.328	3.08	0.00	0.00
22.042	56.095	1.209	2735.0	2482.8	47.754	2.209	2.38		Sand	53.2	110		110.00	0.94	103.87	178.97	0.96	0.431	0.967	0.697	1.396	3.24	0.00	0.00
22.107	53.231	1.200	2742.9	2486.6	45.217	2.314	2.41		Sand	55.7	110		110.00	0.94	103.84	180.02	0.96	0.432	0.966	0.727	1.467	3.40	0.00	0.00
22.173	45.159	1.243	2750.7	2490.4	38.146	2.839	2.52		Sand	64.8	110		110.00	0.94	103.86	183.29	0.96	0.432	0.964	0.832	1.721	3.98	0.00	0.00
22.238	44.029	1.197	2758.6	2494.1	37.130	2.807	2.53		Sand	65.3	110		110.00	0.94	103.81	183.36	0.96	0.432	0.964	0.834	1.726	3.99	0.00	0.00
22.304	44.029	1.197	2766.5	2497.9	37.099	2.807	2.53		Sand	65.3	110		110.00	0.94	103.75	183.29	0.96	0.433	0.964	0.832	1.720	3.97	0.00	0.00
22.370	37.896	1.094	2774.4	2501.7	29.187	2.997	2.63		Clay	73.1			35.82	0.96	n.a.	n.a.	0.96	0.433	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.435	33.730	1.134	2782.2	2505.5	25.815	3.507	2.71		Clay	79.9			31.88	0.96	n.a.	n.a.	0.96	0.433	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.501	38.063	1.300	2790.1	2509.2	29.226	3.545	2.67		Clay	76.9			35.98	0.96	n.a.	n.a.	0.96	0.434	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.566	50.218	1.499	2798.0	2513.0	42.341	3.071	2.51		Sand	64.0	89	1.52	135.28	0.95	128.24	214.36	0.96	0.434	0.948	4.697	9.800	22.58	0.00	0.00
22.632	75.290	1.385	2805.8	2516.8	64.035	1.874	2.24		Sand	41.8	89	1.52	135.28	0.94	127.83	202.14	0.96	0.434	0.953	2.136	4.479	10.31	0.00	0.00
22.698	78.349	1.186	2813.7	2520.6	66.632	1.541	2.17		Sand	36.3	89	1.52	135.28	0.94	127.60	196.73	0.96	0.435	0.956	1.579	3.320	7.64	0.00	0.00
22.763	83.111	0.912	2821.6	2524.4	70.700	1.116	2.06		Sand	27.6	89	1.52	135.28	0.94	127.16	184.37	0.96	0.435	0.961	0.871	1.812	4.16	0.00	0.00
22.829	87.984	0.833	2829.5	2528.1	74.858	0.962	2.00		Sand	22.9	89	1.52	135.28	0.94	126.77	174.56	0.95	0.435	0.964	0.590	1.139	2.62	0.00	0.00
22.894	93.955	0.778	2837.3	2531.9	79.958	0.841	1.94		Sand	18.3	89	1.52	135.28	0.93	126.27	161.89	0.95	0.436	0.968	0.392	0.689	1.58	0.00	0.00
22.960	94.168	0.791	2845.2	2535.7	80.079	0.853	1.94		Sand	18.5		1.52	135.29	0.93	126.23	162.58	0.95	0.436	0.968	0.399	0.706	1.62	0.00	0.00
23.026	93.731	0.744	2853.1	2539.5	79.638	0.806	1.93		Sand	17.5		1.52	134.66	0.93	125.43	158.71	0.95	0.436	0.968	0.358	0.616	1.41	0.00	0.00
23.091	92.429	0.691	2860.9	2543.3	78.453	0.759	1.92		Sand	16.7		1.52	132.79	0.93	123.45	154.12	0.95	0.437	0.970	0.318	0.530	1.21	0.01	0.00
23.157	84.729	0.642	2868.8	2547.0	71.758	0.771	1.96		Sand	19.6		1.52	121.73	0.93	112.98	150.64	0.95	0.437	0.970	0.293	0.476	1.09	0.01	0.00
23.222	80.052	0.567	2876.7	2550.8	67.675	0.721	1.96		Sand	20.0		1.52	115.01	0.93	106.47	144.30	0.95	0.437	0.972	0.255	0.398	0.91	0.01	0.01
23.288	75.122	0.461	2884.6	2554.6	63.381	0.626	1.95		Sand	19.3		1.52	107.93	0.92	99.54	134.63	0.95	0.437	0.974	0.213	0.313	0.71	0.02	0.01
23.354	70.343	0.296	2892.4	2558.4	59.223	0.430	1.90		Sand	15.0		1.52	101.06	0.92	92.49	114.86	0.95	0.438	0.977	0.161	0.212	0.48	0.03	0.01
23.419	65.516	0.311	2900.3	2562.1	55.030	0.485	1.95		Sand	19.2		1.52	94.13	0.92	86.23	119.45	0.95	0.438	0.976	0.170	0.229	0.52	0.03	0.01
23.485	53.929	0.370	2908.2	2565.9	45.040	0.705	2.11		Sand	31.6		1.52	77.48	0.92	71.01	122.52	0.95	0.438	0.976	0.177	0.243	0.55	0.03	0.01
23.550	50.367	0.441	2916.0	2569.7	41.949	0.902	2.19		Sand	38.1		1.52	72.36	0.92	66.29	122.84	0.95	0.439	0.975	0.178	0.244	0.56	0.03	0.01
23.616	47.744	0.526	2923.9	2573.5	39.667	1.137	2.26		Sand	44.2		1.52	68.59	0.92	62.79	122.50	0.95	0.439	0.975	0.177	0.243	0.55	0.03	0.01
23.682	46.945	0.697	2931.8	2577.3	38.950	1.533	2.35		Sand	50.7		1.52	67.44	0.92	61.74	124.42	0.95	0.439	0.975	0.182	0.252	0.57	0.03	0.01
23.747	48.489	0.727	2939.7	2581.0	40.239	1.546	2.34		Sand	50.0		1.52	69.66	0.92	63.78	126.69	0.95	0.440	0.974	0.188	0.263	0.60	0.03	0.01
23.813	45.903	0.670	2947.5	2584.8	37.995	1.508	2.35		Sand	51.1		1.52	65.95	0.91	60.25	122.69	0.95	0.440	0.975	0.177	0.243	0.55	0.03	0.01
23.878	41.449	0.784	2955.4	2588.6	34.158	1.961	2.46		Sand	59.6		1.52	59.55	0.91	54.27	118.07	0.95	0.440	0.975	0.167	0.224	0.51	0.03	0.01
23.944	36.026	0.805	2963.3	2592.4	29.499	2.330	2.55		Sand	67.3		1.52	51.76	0.91	47.00	110.72	0.95	0.440	0.977	0.153	0.198	0.45	0.03	0.01

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
24.010	24.439	0.801	2971.2	2596.2	17.683	3.490	2.84		Clay	89.9			23.10	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.075	20.497	0.811	2979.0	2599.9	14.622	4.267	2.96		Clay	99.5			19.37	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.141	17.102	0.746	2986.9	2603.7	11.989	4.779	3.05		Clay	100.0			16.16	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.206	13.772	0.804	2994.8	2607.5	9.415	6.550	3.22		Clay	100.0			13.02	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.272	11.373	0.824	3002.6	2611.3	7.561	8.347	3.36		Clay	100.0			10.75	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.338	32.409	0.734	3010.5	2615.0	23.635	2.375	2.63		Clay	73.8			30.63	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.403	32.409	0.722	3018.4	2618.8	23.598	2.337	2.63		Clay	73.5			30.63	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.469	40.659	0.671	3026.3	2622.6	33.235	1.714	2.43	plastic	Clay	57.5			38.43	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.534	31.647	0.656	3034.1	2626.4	22.944	2.177	2.62		Clay	72.8			29.91	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.600	24.839	0.650	3042.0	2630.2	17.731	2.788	2.78		Clay	85.1			23.48	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.666	19.362	0.538	3049.9	2633.9	13.544	3.016	2.89		Clay	94.2			18.30	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.731	15.976	0.569	3057.7	2637.7	10.954	3.938	3.03		Clay	100.0			15.10	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.797	13.791	0.569	3065.6	2641.5	9.281	4.642	3.13		Clay	100.0			13.03	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.862	10.899	0.663	3073.5	2645.3	7.078	7.082	3.34		Clay	100.0			10.30	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.928	12.294	0.674	3081.4	2649.1	8.119	6.268	3.26		Clay	100.0			11.62	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.994	13.903	0.664	3089.2	2652.8	9.317	5.373	3.17		Clay	100.0			13.14	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.059	17.111	0.668	3097.1	2656.6	11.716	4.292	3.03		Clay	100.0			16.17	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.125	34.743	0.665	3105.0	2660.4	27.978	2.004	2.53		Sand	65.5		1.8	59.11	0.90	53.20	118.30	0.95	0.445	0.972	0.168	0.224	0.50	0.03	0.01
25.190	41.263	0.728	3112.8	2664.2	33.447	1.833	2.45		Sand	58.7		1.8	70.20	0.90	63.45	129.56	0.95	0.446	0.969	0.196	0.278	0.62	0.02	0.01
25.256	40.333	0.616	3120.7	2667.9	32.637	1.589	2.42		Sand	56.4		1.8	68.62	0.90	61.91	126.83	0.95	0.446	0.970	0.188	0.263	0.59	0.03	0.01
25.322	33.795	0.551	3128.6	2671.7	27.111	1.710	2.50		Sand	63.2		1.8	57.50	0.90	51.58	115.63	0.95	0.446	0.972	0.162	0.214	0.48	0.03	0.01
25.387	22.161	0.426	3136.5	2675.5	15.394	2.069	2.75		Clay	83.1			20.95	0.94	n.a.	n.a.	0.95	0.446	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.453	18.153	0.356	3144.3	2679.3	12.377	2.147	2.84		Clay	90.1			17.16	0.94	n.a.	n.a.	0.95	0.447	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.518	14.981	0.383	3152.2	2683.1	9.992	2.857	2.99		Clay	100.0			14.16	0.94	n.a.	n.a.	0.95	0.447	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.584	15.372	0.305	3160.1	2686.8	10.266	2.211	2.91		Clay	96.1			14.53	0.94	n.a.	n.a.	0.95	0.447	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.650	43.318	0.369	3168.0	2690.6	34.981	0.884	2.25		Sand	43.1	60	1.78	106.80	0.91	97.50	165.28	0.95	0.447	0.956	0.433	0.772	1.73	0.00	0.00
25.715	58.094	0.469	3175.8	2694.4	47.330	0.830	2.13		Sand	33.1	60	1.78	106.80	0.91	97.11	155.86	0.95	0.448	0.959	0.333	0.555	1.24	0.01	0.00
25.781	66.659	0.516	3183.7	2698.2	54.463	0.793	2.06		Sand	28.1		1.78	112.15	0.91	101.88	155.07	0.95	0.448	0.959	0.326	0.541	1.21	0.01	0.00
25.846	70.557	0.546	3191.6	2702.0	57.682	0.792	2.04		Sand	26.4		1.78	118.71	0.91	107.97	159.52	0.95	0.448	0.957	0.366	0.627	1.40	0.00	0.00
25.912	70.788	0.543	3199.4	2705.7	57.831	0.785	2.04		Sand	26.2		1.78	119.10	0.91	108.26	159.44	0.95	0.448	0.957	0.366	0.625	1.39	0.00	0.00
25.978	61.033	0.526	3207.3	2709.5	49.640	0.885	2.12		Sand	32.9		1.78	102.68	0.91	92.96	150.62	0.95	0.449	0.960	0.293	0.471	1.05	0.01	0.00
26.043	49.521	0.533	3215.2	2713.3	39.993	1.112	2.26		Sand	43.5	55	1.78	97.90	0.91	88.72	154.56	0.95	0.449	0.959	0.322	0.532	1.18	0.01	0.00
26.109	39.458	0.503	3223.1	2717.1	31.568	1.329	2.39		Sand	53.8	55	1.78	97.90	0.91	88.87	160.16	0.95	0.449	0.956	0.373	0.640	1.43	0.00	0.00
26.174	30.093	0.465	3230.9	2720.8	23.737	1.633	2.54		Sand	66.0	55	1.78	97.90	0.91	88.97	164.48	0.95	0.449	0.954	0.423	0.747	1.66	0.00	0.00
26.240	19.455	0.382	3238.8	2724.6	13.092	2.142	2.82		Clay	88.4			18.39	0.94	n.a.	n.a.	0.94	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.306	16.572	0.447	3246.7	2728.4	10.958	2.990	2.96		Clay	100.0			15.66	0.94	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.371	14.647	0.518	3254.5	2732.2	9.531	3.979	3.08		Clay	100.0			13.84	0.93	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.437	11.197	0.522	3262.4	2736.0	6.993	5.457	3.27		Clay	100.0			10.58	0.93	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.502	10.564	0.481	3270.3	2739.7	6.518	5.387	3.30		Clay	100.0			9.98	0.93	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.568	10.528	0.362	3278.2	2743.5	6.480	4.072	3.23		Clay	100.0			9.95	0.93	n.a.	n.a.	0.94	0.451	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.634	10.016	0.362	3286.0	2747.3	6.095	4.323	3.26		Clay	100.0			9.47	0.93	n.a.	n.a.	0.94	0.451	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.699	9.467	0.315	3293.9	2751.1	5.685	4.028	3.27		Clay	100.0			8.95	0.93	n.a.	n.a.	0.94	0.451	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.765	9.327	0.268	3301.8	2754.9	5.573	3.491	3.24		Clay	100.0			8.82	0.93	n.a.	n.a.	0.94	0.451	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.830	9.262	0.173	3309.6	2758.6	5.515	2.274	3.15		Clay	100.0			8.75	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.896	9.374	0.165	3317.5	2762.4	5.586	2.139	3.13		Clay	100.0			8.86	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.962	9.486	0.175	3325.4	2766.2	5.656	2.237	3.14		Clay	100.0			8.97	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.027	10.183	0.194	3333.3	2770.0	6.149	2.278	3.11		Clay	100.0			9.62	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.093	10.592	0.224	3341.1	2773.7	6.433	2.511	3.12		Clay	100.0			10.01	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.158	11.038	0.226	3349.0	2777.5	6.742	2.414	3.09		Clay	100.0			10.43	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.224	10.890	0.242	3356.9	2781.3	6.624	2.627	3.12		Clay	100.0			10.29	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.290	10.918	0.256	3364.8	2785.1	6.632	2.772	3.13		Clay	100.0			10.32	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.355	11.355	0.234	3372.6	2788.9	6.934	2.420	3.08		Clay	100.0			10.73	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.421	10.899	0.260	3380.5	2792.6	6.595	2.823	3.13		Clay	100.0			10.30	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.486	10.193	0.259	3388.4	2796.4	6.078	3.047	3.18		Clay	100.0			9.63	0.93	n.a.	n.a.	0.94	0.454	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.552	9.458	0.274	3396.2	2800.2	5.542	3.531	3.25		Clay	100.0			8.94	0.93	n.a.	n.a.	0.94	0.454	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.618	9.151	0.295	3404.1	2804.0	5.313	3.960	3.29		Clay	100.0			8.65	0.93	n.a.	n.a.	0.94	0.454	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.683	9.160	0.288	3412.0	2807.8	5.310	3.864	3.29		Clay	100.0			8.66	0.93	n.a.	n.a.	0.94	0.454	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.749	9.132	0.288	3419.9	2811.5	5.280	3.880	3.29		Clay	100.0			8.63	0.93	n.a.	n.a.	0.94	0.454	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.814	8.863	0.309	3427.7	2815.3	5.079	4.322	3.33		Clay	100.0			8.38	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.880	9.012	0.321	3435.6	2819.1	5.175	4.401	3.33		Clay	100.0			8.52	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.946	8.993	0.333	3443.5	2822.9	5.152	4.580	3.34		Clay	100.0			8.50	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.011	8.751	0.327	3451.3	2826.6	4.971	4.655	3.36		Clay	100.0			8.27	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	8.834	0.332	3459.2	2830.4	5.020	4.673	3.35		Clay	100.0			8.35	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	8.723	0.348	3467.1	2834.2	4.932	4.979	3.37		Clay	100.0			8.24	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
28.208	8.546	0.350	3475.0	2838.0	4.798	5.141	3.39		Clay	100.0			8.08	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	8.574	0.345	3482.8	2841.8	4.809	5.049	3.39		Clay	100.0			8.10	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	8.695	0.343	3490.7	2845.5	4.885	4.936	3.38		Clay	100.0			8.22	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	8.817	0.324	3498.6	2849.3	4.961	4.584	3.35		Clay	100.0			8.33	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	8.817	0.287	3506.4	2853.1	4.952	4.063	3.32		Clay	100.0			8.33	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	8.891	0.275	3514.3	2856.9	4.994	3.855	3.31		Clay	100.0			8.40	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	9.086	0.257	3522.2	2860.7	5.121	3.509	3.28		Clay	100.0			8.59	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.667	9.262	0.257	3530.1	2864.4	5.235	3.428	3.26		Clay	100.0			8.75	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.733	9.355	0.261	3537.9	2868.2	5.290	3.441	3.26		Clay	100.0			8.84	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.798	9.467	0.274	3545.8	2872.0	5.358	3.561	3.26		Clay	100.0			8.95	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.864	9.272	0.299	3553.7	2875.8	5.213	3.989	3.30		Clay	100.0			8.76	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.930	9.253	0.333	3561.6	2879.5	5.190	4.457	3.33		Clay	100.0			8.75	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	9.272	0.409	3569.4	2883.3	5.194	5.463	3.38		Clay	100.0			8.76	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	9.272	0.413	3577.3	2887.1	5.184	5.519	3.38		Clay	100.0			8.76	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.126	9.681	0.414	3585.2	2890.9	5.457	5.248	3.35		Clay	100.0			9.15	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	9.923	0.409	3593.0	2894.7	5.615	5.033	3.33		Clay	100.0			9.38	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	10.164	0.402	3600.9	2898.4	5.771	4.807	3.31		Clay	100.0			9.61	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	10.378	0.390	3608.8	2902.2	5.908	4.549	3.29		Clay	100.0			9.81	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.389	10.714	0.396	3616.7	2906.0	6.129	4.447	3.27		Clay	100.0			10.13	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	10.973	0.403	3624.5	2909.8	6.297	4.399	3.26		Clay	100.0			10.37	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	10.528	0.389	3632.4	2913.6	5.980	4.465	3.28		Clay	100.0			9.95	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	10.648	0.407	3640.3	2917.3	6.052	4.610	3.28		Clay	100.0			10.06	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	10.759	0.410	3648.1	2921.1	6.117	4.589	3.28		Clay	100.0			10.17	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	11.002	0.420	3656.0	2924.9	6.273	4.578	3.27		Clay	100.0			10.40	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	11.857	0.409	3663.9	2928.7	6.846	4.080	3.21		Clay	100.0			11.21	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	12.378	0.420	3671.8	2932.4	7.190	3.984	3.18		Clay	100.0			11.70	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	12.647	0.460	3679.6	2936.2	7.361	4.256	3.19		Clay	100.0			11.95	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	12.518	0.464	3687.5	2940.0	7.261	4.347	3.20		Clay	100.0			11.83	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	12.788	0.496	3695.4	2943.8	7.433	4.534	3.21		Clay	100.0			12.09	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	12.788	0.496	3703.2	2947.6	7.421	4.535	3.21		Clay	100.0			12.09	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	12.927	0.541	3711.1	2951.3	7.503	4.886	3.22		Clay	100.0			12.22	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	12.963	0.541	3719.0	2955.1	7.515	4.872	3.22		Clay	100.0			12.25	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.307	13.298	0.548	3726.9	2958.9	7.729	4.792	3.21		Clay	100.0			12.57	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	13.298	0.549	3734.7	2962.7	7.716	4.803	3.21		Clay	100.0			12.57	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	13.531	0.536	3742.6	2966.5	7.861	4.597	3.19		Clay	100.0			12.79	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	13.391	0.530	3750.5	2970.2	7.754	4.602	3.19		Clay	100.0			12.66	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	13.912	0.532	3758.4	2974.0	8.092	4.421	3.17		Clay	100.0			13.15	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	13.698	0.543	3766.2	2977.8	7.935	4.596	3.19		Clay	100.0			12.95	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	13.401	0.553	3774.1	2981.6	7.723	4.803	3.21		Clay	100.0			12.67	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	13.373	0.566	3782.0	2985.3	7.692	4.929	3.21		Clay	100.0			12.64	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	14.112	0.569	3789.8	2989.1	8.174	4.657	3.18		Clay	100.0			13.34	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	14.824	0.572	3797.7	2992.9	8.637	4.425	3.15		Clay	100.0			14.01	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	14.824	0.525	3805.6	2996.7	8.624	4.063	3.13		Clay	100.0			14.01	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	14.554	0.514	3813.5	3000.5	8.430	4.064	3.13		Clay	100.0			13.76	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	15.419	0.503	3821.3	3004.2	8.993	3.724	3.09		Clay	100.0			14.57	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	15.149	0.469	3829.2	3008.0	8.799	3.544	3.08		Clay	100.0			14.32	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	15.614	0.443	3837.1	3011.8	9.095	3.235	3.05		Clay	100.0			14.76	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	15.791	0.416	3844.9	3015.6	9.198	3.000	3.03		Clay	100.0			14.93	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	15.940	0.428	3852.8	3019.4	9.283	3.054	3.03		Clay	100.0			15.07	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	15.326	0.441	3860.7	3023.1	8.862	3.292	3.06		Clay	100.0			14.49	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	15.252	0.491	3868.6	3026.9	8.800	3.687	3.09		Clay	100.0			14.42	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	14.554	0.512	3876.4	3030.7	8.325	4.058	3.14		Clay	100.0			13.76	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	13.968	0.488	3884.3	3034.5	7.926	4.058	3.15		Clay	100.0			13.20	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	13.968	0.477	3892.2	3038.2	7.914	3.968	3.15		Clay	100.0			13.20	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	13.113	0.482	3900.0	3042.0	7.339	4.318	3.20		Clay	100.0			12.39	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	13.391	0.444	3907.9	3045.8	7.510	3.882	3.16		Clay	100.0			12.66	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	13.466	0.419	3915.8	3049.6	7.547	3.641	3.15		Clay	100.0			12.73	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	13.541	0.400	3923.7	3053.4	7.585	3.454	3.13		Clay	100.0			12.80	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	13.587	0.380	3931.5	3057.1	7.603	3.270	3.12		Clay	100.0			12.84	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	13.698	0.370	3939.4	3060.9	7.663	3.155	3.10		Clay	100.0			12.95	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	15.195	0.370	3947.3	3064.7	8.628	2.799	3.03		Clay	100.0			14.36	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	16.190	0.373	3955.2	3068.5	9.264	2.624	2.99		Clay	100.0			15.30	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	17.279	0.405	3963.0	3072.3	9.958	2.647	2.97		Clay	100.0			16.33	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	17.111	0.450	3970.9	3076.0	9.834	2.975	3.00		Clay	100.0			16.17	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
32.406	14.972	0.462	3978.8	3079.8	8.431	3.559	3.10		Clay	100.0			14.15	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	14.155	0.442	3986.6	3083.6	7.888	3.634	3.13		Clay	100.0			13.38	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	13.791	0.427	3994.5	3087.4	7.640	3.621	3.14		Clay	100.0			13.03	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	13.661	0.427	4002.4	3091.1	7.544	3.662	3.15		Clay	100.0			12.91	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	13.587	0.432	4010.3	3094.9	7.484	3.730	3.15		Clay	100.0			12.84	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.734	13.550	0.436	4018.1	3098.7	7.449	3.778	3.16		Clay	100.0			12.81	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.800	13.856	0.407	4026.0	3102.5	7.635	3.437	3.13		Clay	100.0			13.10	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.866	14.517	0.337	4033.9	3106.3	8.048	2.696	3.05		Clay	100.0			13.72	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.931	15.828	0.325	4041.7	3110.0	8.879	2.354	2.98		Clay	100.0			14.96	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.997	23.212	0.349	4049.6	3113.8	13.609	1.647	2.74		Clay	82.4			21.94	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.062	30.261	0.382	4057.5	3117.6	21.984	1.353	2.52	plastic	Clay	64.7			28.60	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.128	33.265	0.564	4065.4	3121.4	20.012	1.806	2.62		Clay	72.9			31.44	0.90	n.a.	n.a.	0.92	0.468	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.194	35.004	0.647	4073.2	3125.2	21.098	1.963	2.63		Clay	73.0			33.09	0.90	n.a.	n.a.	0.92	0.468	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.259	37.737	0.782	4081.1	3128.9	22.817	2.191	2.63		Clay	73.1			35.67	0.90	n.a.	n.a.	0.92	0.468	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.325	44.703	0.903	4089.0	3132.7	33.137	2.117	2.49		Sand	62.0	49	1.64	80.36	0.85	67.98	136.37	0.92	0.468	0.944	0.219	0.316	0.67	0.02	0.01
33.390	52.106	1.090	4096.8	3136.5	38.862	2.177	2.44		Sand	58.4		1.64	80.77	0.85	68.25	135.58	0.92	0.468	0.944	0.216	0.310	0.66	0.02	0.01
33.456	57.370	1.009	4104.7	3140.3	42.919	1.824	2.36		Sand	51.8		1.64	88.93	0.85	75.45	142.25	0.92	0.468	0.941	0.245	0.365	0.78	0.02	0.01
33.522	57.620	0.879	4112.6	3144.0	43.084	1.582	2.32		Sand	48.6		1.64	89.32	0.85	75.68	141.07	0.92	0.468	0.941	0.239	0.354	0.76	0.02	0.01
33.587	56.161	0.896	4120.5	3147.8	41.925	1.656	2.34		Sand	50.4		1.64	87.05	0.85	73.64	139.31	0.92	0.468	0.942	0.231	0.339	0.72	0.02	0.01
33.653	52.432	0.898	4128.3	3151.6	39.009	1.783	2.39		Sand	53.9		1.64	81.27	0.84	68.47	134.26	0.92	0.468	0.944	0.212	0.301	0.64	0.02	0.01
33.718	58.486	0.955	4136.2	3155.4	43.668	1.693	2.33		Sand	49.7		1.64	90.66	0.85	76.81	143.02	0.92	0.469	0.940	0.248	0.372	0.79	0.02	0.01
33.784	71.961	1.124	4144.1	3159.2	54.062	1.608	2.25		Sand	42.8		1.64	111.55	0.86	95.68	162.77	0.92	0.469	0.928	0.402	0.682	1.46	0.00	0.00
33.850	99.981	0.631	4152.0	3162.9	75.689	0.645	1.89		Sand	14.6		1.64	154.98	0.85	132.36	156.71	0.92	0.469	0.932	0.340	0.554	1.18	0.01	0.00
33.915	128.279	0.738	4159.8	3166.7	97.504	0.585	1.78		Sand	5.4		1.64	198.84	0.86	171.33	171.68	0.92	0.469	0.921	0.533	0.962	2.05	0.00	0.00
33.981	119.667	0.801	4167.7	3170.5	90.793	0.681	1.84		Sand	10.4		1.64	185.50	0.86	159.64	170.41	0.92	0.469	0.922	0.510	0.912	1.95	0.00	0.00
34.046	106.164	0.907	4175.6	3174.3	80.316	0.871	1.95		Sand	18.9		1.64	164.56	0.87	142.54	181.97	0.92	0.469	0.912	0.787	1.524	3.25	0.00	0.00
34.112	95.721	0.910	4183.4	3178.1	72.211	0.972	2.01		Sand	24.1		1.64	148.38	0.86	128.23	178.92	0.92	0.469	0.915	0.696	1.319	2.81	0.00	0.00
34.178	85.757	1.033	4191.3	3181.8	64.485	1.235	2.12		Sand	32.3		1.64	132.93	0.86	114.65	176.25	0.92	0.469	0.917	0.628	1.168	2.49	0.00	0.00
34.243	81.158	1.033	4199.2	3185.6	60.901	1.307	2.15		Sand	35.1		1.64	125.80	0.86	108.15	171.54	0.92	0.469	0.920	0.530	0.955	2.03	0.00	0.00
34.309	63.860	1.012	4207.1	3189.4	47.545	1.639	2.30		Sand	46.7	70	1.64	114.80	0.86	98.48	168.75	0.92	0.470	0.922	0.483	0.853	1.82	0.00	0.00
34.374	47.968	1.154	4214.9	3193.2	35.286	2.516	2.51		Sand	64.2	60	1.64	98.40	0.85	83.76	157.24	0.92	0.470	0.930	0.345	0.563	1.20	0.01	0.00
34.440	45.373	1.414	4222.8	3196.9	27.064	3.268	2.68		Clay	77.1			42.89	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.506	43.699	1.498	4230.7	3200.7	25.984	3.602	2.72		Clay	80.3			41.30	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.571	41.430	1.544	4238.5	3204.5	24.535	3.928	2.76		Clay	83.8			39.16	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.637	39.877	1.607	4246.4	3208.3	23.535	4.257	2.80		Clay	86.7			37.69	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.702	37.599	1.465	4254.3	3212.1	22.087	4.130	2.81		Clay	87.7			35.54	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.768	36.176	1.178	4262.2	3215.8	21.173	3.460	2.77		Clay	84.9			34.19	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.834	41.104	1.034	4270.0	3219.6	24.207	2.653	2.66		Clay	75.5			38.85	0.90	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.899	35.971	1.165	4277.9	3223.4	20.992	3.443	2.78		Clay	85.0			34.00	0.89	n.a.	n.a.	0.92	0.470	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.965	37.208	1.015	4285.8	3227.2	21.731	2.895	2.72		Clay	80.3			35.17	0.89	n.a.	n.a.	0.92	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.030	35.562	0.838	4293.6	3231.0	20.684	2.508	2.70		Clay	78.6			33.61	0.89	n.a.	n.a.	0.92	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.096	32.986	0.751	4301.5	3234.7	19.065	2.436	2.72		Clay	80.3			31.18	0.89	n.a.	n.a.	0.92	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.162	31.944	0.650	4309.4	3238.5	18.397	2.182	2.70		Clay	79.0			30.19	0.89	n.a.	n.a.	0.92	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.227	34.362	0.757	4317.3	3242.3	19.865	2.351	2.69		Clay	78.4			32.48	0.89	n.a.	n.a.	0.92	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.293	52.432	0.874	4325.1	3246.1	38.362	1.739	2.39		Sand	53.8	52	1.78	92.56	0.84	77.66	145.91	0.92	0.471	0.934	0.264	0.400	0.85	0.01	0.00
35.358	55.854	0.971	4333.0	3249.8	40.946	1.809	2.37		Sand	52.9		1.78	93.97	0.84	78.87	147.06	0.92	0.471	0.933	0.270	0.412	0.88	0.01	0.00
35.424	58.160	0.893	4340.9	3253.6	42.677	1.595	2.33		Sand	49.1		1.78	97.85	0.84	82.24	149.56	0.92	0.471	0.931	0.286	0.443	0.94	0.01	0.00
35.490	59.313	0.800	4348.8	3257.4	43.528	1.400	2.28		Sand	45.8		1.78	99.79	0.84	83.84	149.82	0.91	0.471	0.931	0.287	0.446	0.95	0.01	0.00
35.555	63.219	0.560	4356.6	3261.2	46.473	0.917	2.16		Sand	35.5		1.78	106.36	0.84	89.26	148.82	0.91	0.471	0.932	0.281	0.433	0.92	0.01	0.00
35.621	64.502	0.944	4364.5	3265.0	47.420	1.515	2.28		Sand	45.1		1.78	108.52	0.84	91.70	159.26	0.91	0.471	0.925	0.364	0.600	1.27	0.00	0.00
35.686	64.270	0.948	4372.4	3268.7	47.213	1.527	2.28		Sand	45.4		1.78	108.13	0.84	91.31	158.94	0.91	0.472	0.925	0.361	0.593	1.26	0.00	0.00
35.752	59.453	0.909	4380.2	3272.5	43.522	1.587	2.32		Sand	48.4		1.78	100.02	0.84	83.98	151.44	0.91	0.472	0.929	0.298	0.467	0.99	0.01	0.00
35.818	54.784	1.191	4388.1	3276.3	39.947	2.265	2.44		Sand	58.5	55	1.78	97.90	0.84	82.28	153.56	0.91	0.472	0.928	0.314	0.498	1.06	0.01	0.00
35.883	44.108	1.278	4396.0	3280.1	25.554	3.049	2.68		Clay	77.0			41.69	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.949	40.174	1.130	4403.9	3283.9	23.127	2.976	2.70		Clay	79.2			37.97	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.014	36.185	1.210	4411.7	3287.6	20.671	3.561	2.79		Clay	86.2			34.20	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.080	34.707	1.064	4419.6	3291.4	19.747	3.274	2.78		Clay	85.6			32.80	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.146	33.591	1.076	4427.5	3295.2	19.044	3.429	2.81		Clay	87.5			31.75	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.211	30.828	1.073	4435.3	3299.0	17.345	3.750	2.86		Clay	92.0			29.14	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.277	27.425	0.884	4443.2	3302.7	15.262	3.507	2.89		Clay	94.1			25.92	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.342	24.114	0.528	4451.1	3306.5	13.240	2.412	2.84		Clay	90.4			22.79	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.408	22.887	0.473	4459.0	3310.3	12.481	2.290	2.85		Clay	91.1			21.63	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.474	22.728	0.435	4466.8	3314.1	12.368	2.123	2.84		Clay	89.9			21.48	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.539	24.291	0.388	4474.7	3317.9	13.294	1.759	2.77		Clay	84.3			22.96	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
36.605	26.457	0.405	4482.6	3321.6	14.581	1.672	2.72		Clay	80.7			25.01	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.670	26.076	0.500	4490.4	3325.4	14.333	2.098	2.78		Clay	85.4			24.65	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.736	24.616	0.457	4498.3	3329.2	13.437	2.043	2.80		Clay	86.8			23.27	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.802	20.459	0.348	4506.2	3333.0	10.925	1.911	2.86		Clay	91.6			19.34	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.867	12.647	0.236	4514.1	3336.8	6.228	2.271	3.11		Clay	100.0			11.95	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.933	12.647	0.205	4521.9	3340.5	6.218	1.974	3.08		Clay	100.0			11.95	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.998	12.471	0.163	4529.8	3344.3	6.104	1.597	3.04		Clay	100.0			11.79	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.064	12.201	0.175	4537.7	3348.1	5.933	1.762	3.07		Clay	100.0			11.53	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.130	11.364	0.186	4545.6	3351.9	5.425	2.046	3.13		Clay	100.0			10.74	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.195	11.095	0.189	4553.4	3355.6	5.256	2.143	3.16		Clay	100.0			10.49	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.261	11.661	0.165	4561.3	3359.4	5.585	1.759	3.09		Clay	100.0			11.02	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.326	11.932	0.128	4569.2	3363.2	5.737	1.327	3.03		Clay	100.0			11.28	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.392	12.480	0.141	4577.0	3367.0	6.054	1.384	3.01		Clay	100.0			11.80	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.458	12.425	0.146	4584.9	3370.8	6.012	1.441	3.02		Clay	100.0			11.74	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.523	12.182	0.152	4592.8	3374.5	5.859	1.538	3.05		Clay	100.0			11.51	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.589	13.056	0.164	4600.7	3378.3	6.367	1.525	3.01		Clay	100.0			12.34	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.654	12.182	0.171	4608.5	3382.1	5.841	1.731	3.07		Clay	100.0			11.51	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.720	12.368	0.169	4616.4	3385.9	5.942	1.680	3.06		Clay	100.0			11.69	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.786	12.108	0.160	4624.3	3389.7	5.780	1.633	3.06		Clay	100.0			11.44	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.851	12.118	0.141	4632.1	3393.4	5.777	1.438	3.04		Clay	100.0			11.45	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.917	12.592	0.161	4640.0	3397.2	6.047	1.567	3.04		Clay	100.0			11.90	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.982	12.732	0.193	4647.9	3401.0	6.121	1.854	3.07		Clay	100.0			12.03	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.048	12.936	0.224	4655.8	3404.8	6.231	2.112	3.09		Clay	100.0			12.23	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.114	12.843	0.239	4663.6	3408.5	6.168	2.274	3.11		Clay	100.0			12.14	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.179	12.889	0.213	4671.5	3412.3	6.185	2.018	3.08		Clay	100.0			12.18	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.245	12.852	0.227	4679.4	3416.1	6.155	2.159	3.10		Clay	100.0			12.15	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.310	12.499	0.223	4687.2	3419.9	5.939	2.196	3.12		Clay	100.0			11.81	0.88	n.a.	n.a.	0.91	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.376	12.578	0.236	4695.1	3423.7	5.976	2.307	3.12		Clay	100.0			11.89	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.442	12.647	0.262	4703.0	3427.4	6.008	2.545	3.14		Clay	100.0			11.95	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.507	12.332	0.254	4710.9	3431.2	5.815	2.546	3.16		Clay	100.0			11.66	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.573	12.247	0.235	4718.7	3435.0	5.757	2.377	3.14		Clay	100.0			11.58	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.638	12.173	0.235	4726.6	3438.8	5.705	2.396	3.15		Clay	100.0			11.51	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.704	13.289	0.264	4734.5	3442.6	6.345	2.417	3.11		Clay	100.0			12.56	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.770	13.345	0.271	4742.4	3446.3	6.368	2.470	3.12		Clay	100.0			12.61	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.835	13.689	0.296	4750.2	3450.1	6.559	2.616	3.12		Clay	100.0			12.94	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.901	14.331	0.319	4758.1	3453.9	6.921	2.669	3.10		Clay	100.0			13.55	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.966	13.838	0.329	4766.0	3457.7	6.626	2.872	3.14		Clay	100.0			13.08	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.032	14.191	0.332	4773.8	3461.4	6.820	2.813	3.12		Clay	100.0			13.41	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.098	14.852	0.360	4781.7	3465.2	7.192	2.889	3.11		Clay	100.0			14.04	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.163	14.814	0.375	4789.6	3469.0	7.160	3.020	3.12		Clay	100.0			14.00	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.229	14.684	0.405	4797.5	3472.8	7.075	3.297	3.14		Clay	100.0			13.88	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.294	14.824	0.422	4805.3	3476.6	7.146	3.397	3.15		Clay	100.0			14.01	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.360	15.167	0.417	4813.2	3480.3	7.333	3.268	3.13		Clay	100.0			14.34	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.426	15.261	0.447	4821.1	3484.1	7.377	3.478	3.14		Clay	100.0			14.42	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.491	14.693	0.466	4828.9	3487.9	7.041	3.795	3.18		Clay	100.0			13.89	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.557	14.647	0.484	4836.8	3491.7	7.004	3.958	3.19		Clay	100.0			13.84	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.622	14.479	0.494	4844.7	3495.5	6.898	4.097	3.21		Clay	100.0			13.69	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.688	14.284	0.525	4852.6	3499.2	6.777	4.427	3.23		Clay	100.0			13.50	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.754	13.968	0.556	4860.4	3503.0	6.587	4.819	3.26		Clay	100.0			13.20	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.819	12.861	0.547	4868.3	3506.8	5.947	5.246	3.32		Clay	100.0			12.16	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.885	12.592	0.531	4876.2	3510.6	5.785	5.230	3.33		Clay	100.0			11.90	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.950	12.266	0.505	4884.0	3514.3	5.591	5.140	3.34		Clay	100.0			11.59	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.016	11.978	0.451	4891.9	3518.1	5.419	4.731	3.33		Clay	100.0			11.32	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.082	11.661	0.416	4899.8	3521.9	5.231	4.516	3.33		Clay	100.0			11.02	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.147	11.383	0.365	4907.7	3525.7	5.065	4.088	3.32		Clay	100.0			10.76	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.213	11.345	0.322	4915.5	3529.5	5.036	3.623	3.29		Clay	100.0			10.72	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.278	11.476	0.286	4923.4	3533.2	5.103	3.173	3.25		Clay	100.0			10.85	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.344	11.783	0.243	4931.3	3537.0	5.268	2.608	3.20		Clay	100.0			11.14	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.410	11.997	0.224	4939.2	3540.8	5.382	2.351	3.17		Clay	100.0			11.34	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.475	12.257	0.213	4947.0	3544.6	5.520	2.177	3.14		Clay	100.0			11.59	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.541	12.108	0.214	4954.9	3548.4	5.428	2.222	3.15		Clay	100.0			11.44	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.606	12.015	0.215	4962.8	3552.1	5.368	2.255	3.16		Clay	100.0			11.36	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.672	12.099	0.209	4970.6	3555.9	5.407	2.174	3.15		Clay	100.0			11.44	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.738	12.061	0.192	4978.5	3559.7	5.378	2.006	3.13		Clay	100.0			11.40	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
40.803	11.708	0.186	4986.4	3563.5	5.172	2.018	3.15		Clay	100.0			11.07	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.869	11.430	0.196	4994.3	3567.2	5.008	2.194	3.18		Clay	100.0			10.80	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.934	11.485	0.196	5002.1	3571.0	5.032	2.182	3.18		Clay	100.0			10.86	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.000	11.485	0.191	5010.0	3574.8	5.024	2.127	3.17		Clay	100.0			10.86	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.066	11.625	0.191	5017.9	3578.6	5.095	2.095	3.16		Clay	100.0			10.99	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.131	12.787	0.187	5025.7	3582.4	5.736	1.820	3.09		Clay	100.0			12.09	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.197	13.280	0.208	5033.6	3586.1	6.003	1.933	3.08		Clay	100.0			12.55	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.262	12.936	0.224	5041.5	3589.9	5.803	2.151	3.12		Clay	100.0			12.23	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.328	12.685	0.224	5049.4	3593.7	5.655	2.205	3.14		Clay	100.0			11.99	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.394	12.201	0.232	5057.2	3597.5	5.377	2.399	3.17		Clay	100.0			11.53	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.459	12.434	0.251	5065.1	3601.2	5.499	2.535	3.18		Clay	100.0			11.75	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.525	12.573	0.256	5073.0	3605.0	5.568	2.551	3.17		Clay	100.0			11.88	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.590	13.122	0.256	5080.8	3608.8	5.864	2.419	3.14		Clay	100.0			12.40	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.656	13.727	0.261	5088.7	3612.6	6.191	2.334	3.11		Clay	100.0			12.97	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.722	15.093	0.270	5096.6	3616.4	6.938	2.152	3.05		Clay	100.0			14.27	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.787	18.051	0.284	5104.5	3620.1	8.563	1.832	2.94		Clay	98.1			17.06	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.853	18.497	0.308	5112.3	3623.9	8.798	1.932	2.94		Clay	98.2			17.48	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.918	18.608	0.351	5120.2	3627.7	8.847	2.187	2.97		Clay	100.0			17.59	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.984	18.776	0.373	5128.1	3631.5	8.929	2.301	2.97		Clay	100.0			17.75	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.050	19.110	0.379	5136.0	3635.3	9.101	2.291	2.97		Clay	100.0			18.06	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.115	21.835	0.361	5143.8	3639.0	10.587	1.874	2.86		Clay	92.2			20.64	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.181	23.072	0.374	5151.7	3642.8	11.253	1.825	2.84		Clay	89.9			21.81	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.246	23.062	0.492	5159.6	3646.6	11.234	2.402	2.90		Clay	95.1			21.80	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.312	25.397	0.519	5167.4	3650.4	12.499	2.275	2.85		Clay	90.9			24.00	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.378	24.524	0.622	5175.3	3654.1	12.006	2.835	2.92		Clay	96.4			23.18	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.443	24.431	0.697	5183.2	3657.9	11.941	3.191	2.95		Clay	98.9			23.09	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.509	23.807	0.715	5191.1	3661.7	11.586	3.371	2.97		Clay	100.0			22.50	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.574	24.170	0.721	5198.9	3665.5	11.770	3.343	2.97		Clay	100.0			22.84	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.640	25.072	0.757	5206.8	3669.3	12.247	3.369	2.95		Clay	99.3			23.70	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.706	26.299	0.784	5214.7	3673.0	12.900	3.309	2.93		Clay	97.5			24.86	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.771	25.295	0.769	5222.5	3676.8	12.339	3.390	2.95		Clay	99.3			23.91	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.837	25.128	0.731	5230.4	3680.6	12.233	3.247	2.95		Clay	98.6			23.75	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.902	25.016	0.704	5238.3	3684.4	12.158	3.143	2.94		Clay	98.1			23.64	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.968	25.100	0.716	5246.2	3688.2	12.189	3.185	2.94		Clay	98.3			23.72	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.034	25.443	0.748	5254.0	3691.9	12.360	3.278	2.94		Clay	98.5			24.05	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.099	25.193	0.844	5261.9	3695.7	12.210	3.741	2.98		Clay	100.0			23.81	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.165	24.467	0.892	5269.8	3699.5	11.803	4.086	3.02		Clay	100.0			23.13	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.230	23.984	0.877	5277.6	3703.3	11.528	4.109	3.03		Clay	100.0			22.67	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.296	23.667	0.870	5285.5	3707.0	11.343	4.138	3.03		Clay	100.0			22.37	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.362	22.794	0.865	5293.4	3710.8	10.859	4.293	3.06		Clay	100.0			21.54	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.427	22.301	0.756	5301.3	3714.6	10.580	3.847	3.04		Clay	100.0			21.08	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.493	21.696	0.679	5309.1	3718.4	10.242	3.566	3.03		Clay	100.0			20.51	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.558	22.189	0.640	5317.0	3722.2	10.494	3.277	3.00		Clay	100.0			20.97	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.624	22.477	0.654	5324.9	3725.9	10.636	3.301	3.00		Clay	100.0			21.24	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.690	23.063	0.670	5332.8	3729.7	10.937	3.285	2.99		Clay	100.0			21.80	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.755	23.593	0.634	5340.6	3733.5	11.208	3.030	2.96		Clay	99.7			22.30	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.821	25.081	0.590	5348.5	3737.3	11.991	2.633	2.90		Clay	95.0			23.71	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.886	28.382	0.595	5356.4	3741.1	13.741	2.315	2.82		Clay	88.5			26.83	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.952	29.582	0.619	5364.2	3744.8	14.366	2.301	2.80		Clay	87.2			27.96	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.018	28.708	0.624	5372.1	3748.6	13.884	2.398	2.82		Clay	88.9			27.13	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.083	26.839	0.709	5380.0	3752.4	12.871	2.936	2.90		Clay	95.1			25.37	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.149	25.007	0.790	5387.9	3756.2	11.881	3.541	2.98		Clay	100.0			23.64	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.214	23.044	0.831	5395.7	3759.9	10.823	4.084	3.05		Clay	100.0			21.78	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.280	23.268	0.835	5403.6	3763.7	10.929	4.060	3.04		Clay	100.0			21.99	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.346	24.263	0.834	5411.5	3767.5	11.444	3.869	3.01		Clay	100.0			22.93	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.411	24.738	0.811	5419.3	3771.3	11.682	3.682	2.99		Clay	100.0			23.38	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.477	24.355	0.791	5427.2	3775.1	11.465	3.655	3.00		Clay	100.0			23.02	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.542	21.901	0.692	5435.1	3778.8	10.153	3.607	3.04		Clay	100.0			20.70	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.608	20.478	0.648	5443.0	3782.6	9.388	3.649	3.07		Clay	100.0			19.36	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.674	20.376	0.622	5450.8	3786.4	9.323	3.524	3.06		Clay	100.0			19.26	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.739	21.147	0.619	5458.7	3790.2	9.719	3.361	3.04		Clay	100.0			19.99	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.805	22.170	0.619	5466.6	3794.0	10.246	3.185	3.00		Clay	100.0			20.95	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.870	22.170	0.591	5474.4	3797.7	10.234	3.041	2.99		Clay	100.0			20.95	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.936	20.924	0.575	5482.3	3801.5	9.566	3.162	3.03		Clay	100.0			19.78	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.50

Total Settlement:	0.49	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
45.002	20.887	0.548	5490.2	3805.3	9.535	3.021	3.02		Clay	100.0			19.74	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.936	9.867	0.875	492.0	492.0	39.110	9.095	2.88		Unsaturated	93.1			9.33	1.70	15.85	74.10	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	9.867	0.875	500.2	500.2	38.452	9.099	2.88		Unsaturated	93.5			9.33	1.70	15.85	74.13	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	16.488	1.110	508.4	508.4	63.862	6.838	2.64		Unsaturated	74.6			15.58	1.70	26.49	85.62	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	15.866	1.352	516.6	516.6	60.425	8.662	2.74		Unsaturated	82.2			15.00	1.70	25.49	85.44	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	14.396	1.331	524.8	524.8	53.863	9.417	2.80		Unsaturated	86.9			13.61	1.70	23.13	82.95	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	14.219	1.290	533.0	533.0	52.355	9.246	2.80		Unsaturated	87.1			13.44	1.70	22.85	82.59	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	14.731	1.178	541.2	541.2	53.438	8.146	2.75		Unsaturated	83.2			13.92	1.70	23.67	83.20	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	14.796	1.073	549.4	549.4	52.862	7.389	2.72		Unsaturated	80.8			13.98	1.70	23.77	83.02	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	14.386	1.066	557.6	557.6	50.600	7.556	2.74		Unsaturated	82.4			13.60	1.70	23.12	82.37	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.526	13.958	1.075	565.8	565.8	48.339	7.861	2.77		Unsaturated	84.5			13.19	1.70	22.43	81.74	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.592	13.475	1.110	574.0	574.0	45.951	8.417	2.81		Unsaturated	87.4			12.74	1.70	21.65	81.07	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.658	13.150	1.135	582.2	582.2	44.173	8.827	2.83		Unsaturated	89.6			12.43	1.70	21.13	80.63	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.723	12.563	1.135	590.4	590.4	41.558	9.252	2.86		Unsaturated	92.2			11.87	1.70	20.19	79.67	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.789	12.137	1.131	598.6	598.6	39.551	9.554	2.89		Unsaturated	94.1			11.47	1.70	19.50	78.97	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.854	11.457	1.097	606.8	606.8	36.762	9.835	2.92		Unsaturated	96.6			10.83	1.70	18.41	77.76	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	10.806	1.053	615.0	615.0	34.141	10.030	2.95		Unsaturated	98.8			10.21	1.70	17.36	76.58	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.986	9.932	0.992	623.2	623.2	30.874	10.311	2.98		Unsaturated	100.0			9.39	1.70	15.96	74.85	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.051	9.588	0.813	631.4	631.4	29.371	8.768	2.95		Unsaturated	98.8			9.06	1.70	15.41	74.02	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.117	9.262	0.679	639.6	639.6	27.962	7.593	2.92		Unsaturated	96.3			8.75	1.70	14.88	73.12	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.182	8.834	0.630	647.8	647.8	26.274	7.403	2.93		Unsaturated	97.2			8.35	1.70	14.19	72.30	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.248	8.584	0.630	656.0	656.0	25.171	7.631	2.95		Unsaturated	99.0			8.11	1.70	13.79	71.93	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.314	8.118	0.623	664.2	664.2	23.444	8.002	2.99		Unsaturated	100.0			7.67	1.70	13.04	71.03	1.00	0.324	1.098	n.a.	n.a.	n.a.	0.00	0.00
5.379	7.487	0.606	672.4	672.4	21.269	8.475	3.03		Unsaturated	100.0			7.08	1.70	12.03	69.70	1.00	0.324	1.096	n.a.	n.a.	n.a.	0.00	0.00
5.445	7.598	0.565	680.6	680.6	21.327	7.785	3.01		Unsaturated	100.0			7.18	1.70	12.21	69.93	1.00	0.324	1.095	n.a.	n.a.	n.a.	0.00	0.00
5.510	7.765	0.507	688.8	688.8	21.546	6.832	2.96		Unsaturated	100.0			7.34	1.70	12.48	70.28	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.576	7.970	0.490	697.0	697.0	21.869	6.429	2.94		Unsaturated	98.3			7.53	1.70	12.81	70.57	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.642	8.342	0.474	705.2	705.2	22.659	5.933	2.91		Unsaturated	95.5			7.88	1.70	13.40	71.11	1.00	0.324	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.707	9.848	0.483	713.4	713.4	26.609	5.089	2.81		Unsaturated	87.8			9.31	1.70	15.82	73.51	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.773	10.657	0.504	721.6	721.6	28.537	4.895	2.78		Unsaturated	85.1			10.07	1.70	17.12	74.90	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.838	11.280	0.472	729.8	729.8	29.913	4.324	2.72		Unsaturated	80.9			10.66	1.70	18.12	75.69	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.904	12.275	0.578	738.0	738.0	32.266	4.855	2.73		Unsaturated	81.8			11.60	1.70	19.72	77.88	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
5.970	12.294	0.661	746.2	746.2	31.951	5.545	2.78		Unsaturated	85.3			11.62	1.70	19.75	78.35	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.035	12.061	0.694	754.4	754.4	30.975	5.940	2.81		Unsaturated	87.7			11.40	1.70	19.38	78.15	1.00	0.324	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.101	11.745	0.740	762.6	762.6	29.803	6.512	2.85		Unsaturated	91.0			11.10	1.70	18.87	77.83	1.00	0.324	1.091	n.a.	n.a.	n.a.	0.00	0.00
6.166	12.080	0.762	770.8	770.8	30.344	6.516	2.84		Unsaturated	90.5			11.42	1.70	19.41	78.49	1.00	0.324	1.091	n.a.	n.a.	n.a.	0.00	0.00
6.232	12.461	0.788	779.0	779.0	30.992	6.528	2.84		Unsaturated	90.1			11.78	1.70	20.02	79.24	1.00	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.298	12.675	0.847	787.2	787.2	31.203	6.897	2.85		Unsaturated	91.3			11.98	1.70	20.37	79.81	1.00	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.363	13.196	0.837	795.4	795.4	32.181	6.540	2.83		Unsaturated	89.2			12.47	1.70	21.20	80.69	1.00	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.429	14.796	0.816	803.6	803.6	35.824	5.669	2.75		Unsaturated	83.0			13.98	1.68	23.55	83.03	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.494	16.442	0.817	811.8	811.8	39.508	5.095	2.69		Unsaturated	78.0			15.54	1.67	25.88	85.37	0.99	0.323	1.091	n.a.	n.a.	n.a.	0.00	0.00
6.560	18.497	0.822	820.0	820.0	44.115	4.545	2.62		Unsaturated	72.5			17.48	1.65	28.77	88.22	0.99	0.323	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.626	21.250	0.720	828.2	828.2	37.975	3.456	2.58		Unsaturated	69.6			20.09	1.62	32.56	92.58	0.99	0.323	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.691	23.491	0.619	836.4	836.4	34.687	2.683	2.54		Unsaturated	66.1			22.20	1.60	35.57	95.73	0.99	0.323	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.757	25.407	0.562	844.6	844.6	37.378	2.249	2.46		Unsaturated	60.1			24.01	1.59	38.14	97.58	0.99	0.323	1.096	n.a.	n.a.	n.a.	0.00	0.00
6.822	25.862	0.527	852.8	852.8	37.870	2.072	2.44		Unsaturated	58.0			24.44	1.58	38.63	97.59	0.99	0.323	1.095	n.a.	n.a.	n.a.	0.00	0.00
6.888	25.974	0.450	861.0	861.0	37.849	1.762	2.39		Unsaturated	54.5			24.55	1.58	38.69	96.58	0.99	0.323	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.954	25.667	0.410	869.2	869.2	37.211	1.625	2.38		Unsaturated	53.2			24.26	1.57	38.14	95.45	0.99	0.323	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.019	25.602	0.375	877.4	877.4	36.935	1.490	2.36		Unsaturated	51.7			24.20	1.57	37.92	94.61	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.085	26.839	0.387	885.6	885.6	38.565	1.466	2.34		Unsaturated	50.1			25.37	1.56	39.46	95.96	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.150	28.745	0.420	893.8	893.8	41.154	1.484	2.32		Unsaturated	48.5			27.17	1.54	41.87	98.36	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.216	31.489	0.449	902.0	902.0	44.933	1.447	2.28		Unsaturated	45.6			29.76	1.53	45.39	101.42	0.99	0.323	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.282	34.734	0.470	910.2	910.2	49.400	1.371	2.24		Unsaturated	41.8			32.83	1.51	49.56	104.59	0.99	0.323	1.093	n.a.	n.a.	n.a.	0.00	0.00
7.347	37.254	0.518	918.4	918.4	52.789	1.408	2.22		Unsaturated	40.6			35.21	1.49	52.64	107.63	0.99	0.323	1.094	n.a.	n.a.	n.a.	0.00	0.00
7.413	35.459	0.607	926.6	926.6	49.985	1.734	2.29		Unsaturated	46.6			33.52	1.49	49.89	107.57	0.99	0.323	1.093	n.a.	n.a.	n.a.	0.00	0.00
7.478	33.953	0.714	934.8	934.8	47.618	2.132	2.37		Unsaturated	52.5			32.09	1.48	47.60	107.20	0.99	0.323	1.092	n.a.	n.a.	n.a.	0.00	0.00
7.544	32.679	0.992	943.0	943.0	45.601	3.080	2.49		Unsaturated	62.2			30.89	1.48	45.59	107.67	0.99	0.323	1.091	n.a.	n.a.	n.a.	0.00	0.00
7.610	31.749	1.088	951.2	951.2	44.087	3.479	2.54		Unsaturated	66.0			30.01	1.47	44.17	106.78	0.99	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
7.675	28.791	1.204	959.4	959.4	46.552	4.253	2.58		Unsaturated	69.5			27.21	1.48	40.19	102.42	0.99	0.323	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.741	26.849	1.328	967.6	967.6	43.094	5.037	2.66		Unsaturated	75.6			25.38	1.48	37.47	100.02	0.99	0.323	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.806	26.150	1.448	975.8	975.8	52.597	5.643	2.64		Unsaturated	73.8			24.72	1.47	36.45	98.39	0.99	0.322	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.872	24.812	1.621	984.0	984.0	49.431	6.665	2.71		Unsaturated	79.6			23.45	1.47	34.53	96.83	0.99	0.322	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.938	23.101	1.663	992.2	992.2	45.565	7.357	2.76		Unsaturated	84.1			21.83	1.47	32.15	94.35	0.99	0.322	1.077	n.a.	n.a.	n.a.	0.00	0.00
8.003	20.747	1.655	1000.4	1000.4	40.477	8.174	2.83		Unsaturated	89.5			19.61	1.48	28.93	90.81	0.99	0.322	1.074	n.a.	n.a.	n.a.	0.00	0.00
8.069	19.874	1.643	1008.6	1008.6	38.409	8.482	2.86		Unsaturated	91.7			18.78	1.47	27.67	89.39	0.99	0.322	1.073	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
8.134	18.972	1.608	1016.8	1016.8	36.317	8.709	2.88		Unsaturated	93.7			17.93	1.47	26.37	87.90	0.99	0.322	1.071	n.a.	n.a.	n.a.	0.00	0.00
8.200	18.097	1.389	1025.0	1025.0	34.311	7.899	2.87		Unsaturated	92.5			17.10	1.47	25.13	86.15	0.99	0.322	1.069	n.a.	n.a.	n.a.	0.00	0.00
8.266	17.418	1.279	1033.2	1033.2	32.717	7.567	2.87		Unsaturated	92.5			16.46	1.47	24.14	84.86	0.99	0.322	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.331	15.716	1.179	1041.4	1041.4	29.182	7.759	2.91		Unsaturated	95.8			14.85	1.47	21.79	82.12	0.99	0.322	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.397	15.307	1.101	1049.6	1049.6	28.167	7.448	2.91		Unsaturated	95.7			14.47	1.46	21.17	81.29	0.99	0.322	1.064	n.a.	n.a.	n.a.	0.00	0.00
8.462	14.981	0.946	1057.8	1057.8	27.325	6.546	2.88		Unsaturated	93.2			14.16	1.46	20.66	80.39	0.99	0.322	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.528	15.047	0.896	1066.0	1066.0	27.231	6.173	2.86		Unsaturated	91.9			14.22	1.45	20.67	80.27	0.99	0.322	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.594	14.888	0.871	1074.2	1074.2	26.719	6.069	2.86		Unsaturated	91.9			14.07	1.45	20.38	79.90	0.99	0.322	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.659	15.252	0.824	1082.4	1082.4	27.182	5.601	2.83		Unsaturated	89.5			14.42	1.44	20.78	80.17	0.99	0.322	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.725	15.372	0.813	1090.6	1090.6	27.190	5.483	2.83		Unsaturated	89.0			14.53	1.44	20.86	80.22	0.99	0.322	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.790	15.447	0.789	1098.8	1098.8	27.116	5.296	2.82		Unsaturated	88.2			14.60	1.43	20.88	80.16	0.99	0.322	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.856	15.698	0.783	1107.0	1107.0	27.361	5.170	2.81		Unsaturated	87.4			14.84	1.42	21.12	80.39	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.922	16.154	0.775	1115.2	1115.2	27.971	4.969	2.79		Unsaturated	85.9			15.27	1.42	21.63	80.88	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.987	17.790	0.781	1123.4	1123.4	30.672	4.533	2.73		Unsaturated	81.4			16.81	1.41	23.65	82.94	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.053	18.618	0.797	1131.6	1131.6	31.906	4.415	2.71		Unsaturated	79.8			17.60	1.40	24.61	83.97	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
9.118	18.972	0.872	1139.8	1139.8	32.290	4.739	2.73		Unsaturated	81.2			17.93	1.39	24.96	84.61	0.99	0.322	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.184	19.493	0.972	1148.0	1148.0	32.960	5.138	2.75		Unsaturated	82.6			18.42	1.38	25.51	85.52	0.99	0.322	1.058	n.a.	n.a.	n.a.	0.00	0.00
9.250	18.134	1.030	1156.2	1156.2	30.368	5.867	2.81		Unsaturated	87.9			17.14	1.38	23.70	83.81	0.99	0.321	1.057	n.a.	n.a.	n.a.	0.00	0.00
9.315	16.749	1.059	1164.4	1164.4	27.768	6.550	2.87		Unsaturated	92.8			15.83	1.38	21.87	81.94	0.99	0.321	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.902	1.071	1172.6	1172.6	26.123	6.993	2.91		Unsaturated	95.9			15.03	1.38	20.73	80.73	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.391	1.101	1180.8	1180.8	25.069	7.439	2.94		Unsaturated	98.5			14.55	1.38	20.01	80.02	0.99	0.321	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.512	15.214	1.138	1189.0	1189.0	24.591	7.784	2.96		Unsaturated	100.0			14.38	1.37	19.71	79.76	0.99	0.321	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.578	14.545	1.160	1197.2	1197.2	23.298	8.318	3.00		Unsaturated	100.0			13.75	1.37	18.80	78.57	0.99	0.321	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.643	14.750	1.125	1205.4	1205.4	23.473	7.952	2.98		Unsaturated	100.0			13.94	1.36	18.99	78.82	0.99	0.321	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.709	13.894	1.087	1213.6	1213.6	21.897	8.181	3.01		Unsaturated	100.0			13.13	1.36	17.86	77.34	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.774	14.293	0.998	1221.8	1221.8	22.397	7.294	2.97		Unsaturated	100.0			13.51	1.35	18.29	77.90	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.840	14.172	0.967	1230.0	1230.0	22.044	7.133	2.97		Unsaturated	100.0			13.40	1.35	18.08	77.62	0.99	0.321	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.906	15.113	0.925	1238.2	1238.2	23.411	6.382	2.92		Unsaturated	96.4			14.28	1.34	19.18	78.75	0.99	0.321	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.971	15.326	0.917	1246.4	1246.4	23.592	6.237	2.91		Unsaturated	95.7			14.49	1.34	19.37	78.94	0.99	0.321	1.048	n.a.	n.a.	n.a.	0.00	0.00
10.037	16.581	0.843	1254.6	1254.6	25.432	5.284	2.84		Clay	89.8			15.67	1.15	n.a.	n.a.	0.99	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	16.414	0.863	1262.8	1262.8	24.996	5.468	2.85		Clay	91.1			15.51	1.15	n.a.	n.a.	0.99	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	16.600	0.904	1271.0	1271.0	25.121	5.663	2.86		Clay	91.8			15.69	1.14	n.a.	n.a.	0.99	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	16.711	0.922	1279.2	1279.2	25.127	5.737	2.86		Clay	92.1			15.79	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	16.340	1.041	1287.4	1287.4	24.384	6.632	2.92		Clay	96.3			15.44	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	16.647	1.068	1295.6	1295.6	24.698	6.675	2.91		Clay	96.2			15.73	1.14	n.a.	n.a.	0.99	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.586	1.112	1303.8	1303.8	22.909	7.446	2.97		Clay	100.0			14.73	1.14	n.a.	n.a.	0.99	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	14.861	1.195	1312.0	1312.0	21.654	8.413	3.03		Clay	100.0			14.05	1.13	n.a.	n.a.	0.99	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	14.293	1.266	1320.2	1320.2	20.653	9.286	3.07		Clay	100.0			13.51	1.13	n.a.	n.a.	0.99	0.329	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	13.577	1.271	1328.4	1328.4	19.441	9.843	3.11		Clay	100.0			12.83	1.13	n.a.	n.a.	0.99	0.330	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	12.425	1.229	1336.6	1336.6	17.592	10.454	3.16		Clay	100.0			11.74	1.13	n.a.	n.a.	0.99	0.331	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	11.932	1.352	1344.8	1344.8	16.745	12.008	3.21		Clay	100.0			11.28	1.13	n.a.	n.a.	0.99	0.332	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	10.062	1.257	1353.0	1353.0	13.874	13.393	3.31		Clay	100.0			9.51	1.13	n.a.	n.a.	0.99	0.333	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	9.914	1.156	1361.2	1361.2	13.567	12.520	3.29		Clay	100.0			9.37	1.12	n.a.	n.a.	0.99	0.334	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	8.239	1.079	1369.4	1369.4	11.033	14.283	3.40		Clay	100.0			7.79	1.12	n.a.	n.a.	0.99	0.335	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	8.175	1.011	1377.6	1377.6	10.868	13.505	3.38		Clay	100.0			7.73	1.12	n.a.	n.a.	0.99	0.336	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	8.909	0.923	1385.8	1385.8	11.858	11.234	3.30		Clay	100.0			8.42	1.12	n.a.	n.a.	0.99	0.337	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	8.379	0.784	1394.0	1394.0	11.022	10.206	3.30		Clay	100.0			7.92	1.12	n.a.	n.a.	0.99	0.338	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	8.407	0.650	1402.2	1402.2	10.991	8.435	3.24		Clay	100.0			7.95	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	9.690	0.548	1410.4	1410.4	12.741	6.099	3.10		Clay	100.0			9.16	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	10.350	0.513	1418.6	1418.6	13.592	5.321	3.04		Clay	100.0			9.78	1.11	n.a.	n.a.	0.98	0.340	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.414	10.759	0.462	1426.8	1426.8	14.081	4.599	2.99		Clay	100.0			10.17	1.11	n.a.	n.a.	0.98	0.341	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	10.695	0.460	1435.0	1435.0	13.906	4.610	2.99		Clay	100.0			10.11	1.11	n.a.	n.a.	0.98	0.342	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	11.745	0.466	1443.2	1443.2	15.276	4.227	2.94		Clay	98.1			11.10	1.11	n.a.	n.a.	0.98	0.343	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	12.294	0.475	1451.4	1451.4	15.941	4.106	2.92		Clay	96.3			11.62	1.10	n.a.	n.a.	0.98	0.344	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	13.503	0.518	1459.6	1459.6	17.502	4.055	2.88		Clay	93.5			12.76	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	13.819	0.518	1467.8	1467.8	17.830	3.959	2.87		Clay	92.5			13.06	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.808	14.619	0.537	1476.0	1476.0	18.809	3.869	2.84		Clay	90.5			13.82	1.10	n.a.	n.a.	0.98	0.346	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	17.139	0.582	1484.2	1484.2	22.095	3.549	2.77		Clay	84.3			16.20	1.10	n.a.	n.a.	0.98	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	20.152	0.627	1492.4	1492.4	26.006	3.231	2.69		Clay	77.9			19.05	1.10	n.a.	n.a.	0.98	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	20.571	0.699	1500.6	1500.6	26.417	3.527	2.71		Clay	79.4			19.44	1.09	n.a.	n.a.	0.98	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	22.030	0.725	1508.8	1508.8	28.202	3.408	2.67		Clay	76.9			20.82	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	23.714	0.829	1517.0	1517.0	30.264	3.611	2.67		Clay	76.4			22.41	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	24.635	0.892	1525.2	1525.2	31.304	3.737	2.67		Clay	76.3			23.28	1.09	n.a.	n.a.	0.98	0.351	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	22.737	1.039	1533.4	1533.4	28.656	4.729	2.76		Clay	84.1			21.49	1.09	n.a.	n.a.	0.98	0.352	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
12.333	20.719	1.141	1541.6	1541.6	25.880	5.720	2.85		Clay	91.3			19.58	1.09	n.a.	n.a.	0.98	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	19.631	1.217	1549.8	1549.8	24.334	6.454	2.91		Clay	95.7			18.55	1.09	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	19.446	1.271	1558.0	1558.0	23.963	6.809	2.93		Clay	97.4			18.38	1.08	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	19.641	1.354	1566.2	1566.2	24.081	7.180	2.94		Clay	98.6			18.56	1.08	n.a.	n.a.	0.98	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	21.854	1.429	1574.4	1574.4	26.762	6.783	2.89		Clay	94.6			20.66	1.08	n.a.	n.a.	0.98	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	20.404	1.513	1582.6	1582.6	24.785	7.714	2.96		Clay	99.6			19.29	1.08	n.a.	n.a.	0.98	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.726	20.571	1.537	1590.8	1590.8	24.862	7.772	2.96		Clay	99.7			19.44	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	20.440	1.527	1599.0	1599.0	24.566	7.775	2.96		Clay	100.0			19.32	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	20.636	1.539	1607.2	1607.2	24.679	7.760	2.96		Clay	99.9			19.50	1.08	n.a.	n.a.	0.98	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	20.292	1.553	1615.4	1615.4	24.123	7.971	2.98		Clay	100.0			19.18	1.07	n.a.	n.a.	0.98	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	19.343	1.562	1623.6	1623.6	22.827	8.429	3.01		Clay	100.0			18.28	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	18.562	1.631	1631.8	1631.8	21.750	9.191	3.05		Clay	100.0			17.54	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	17.456	1.605	1640.0	1640.0	20.288	9.648	3.09		Clay	100.0			16.50	1.07	n.a.	n.a.	0.98	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	17.270	1.581	1648.2	1648.2	19.956	9.613	3.09		Clay	100.0			16.32	1.07	n.a.	n.a.	0.98	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	17.670	1.547	1656.4	1656.4	20.335	9.185	3.07		Clay	100.0			16.70	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	17.632	1.537	1664.6	1664.6	20.185	9.149	3.07		Clay	100.0			16.67	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	18.358	1.537	1672.8	1672.8	20.949	8.772	3.05		Clay	100.0			17.35	1.06	n.a.	n.a.	0.98	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	21.204	1.439	1681.0	1681.0	24.228	7.067	2.94		Clay	98.0			20.04	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	26.997	1.415	1689.2	1689.2	30.964	5.411	2.78		Clay	85.5			25.52	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	33.098	1.400	1697.4	1697.4	37.998	4.341	2.65		Clay	75.0			31.28	1.06	n.a.	n.a.	0.98	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	39.588	1.661	1705.6	1705.6	42.576	4.288	2.61	plastic	Clay	71.9			37.42	1.06	n.a.	n.a.	0.98	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	46.387	1.515	1713.8	1713.8	47.818	3.327	2.50		Sand	62.8			43.84	1.11	48.45	111.52	0.98	0.369	1.025	0.155	0.210	0.57	0.03	0.02
13.776	55.203	1.626	1722.0	1722.0	56.937	2.992	2.41		Sand	55.9			52.18	1.10	57.31	120.79	0.98	0.369	1.026	0.173	0.247	0.67	0.03	0.02
13.842	50.655	1.642	1730.2	1730.2	52.043	3.298	2.47		Sand	60.5			47.88	1.10	52.57	116.17	0.98	0.370	1.024	0.163	0.227	0.61	0.03	0.02
13.907	49.037	1.719	1738.4	1738.4	50.229	3.569	2.50		Sand	63.3			46.35	1.10	50.81	114.68	0.98	0.371	1.023	0.160	0.221	0.60	0.03	0.02
13.973	52.311	1.591	1746.6	1746.6	53.513	3.093	2.44		Sand	58.3			49.44	1.09	54.02	117.37	0.98	0.371	1.023	0.166	0.232	0.62	0.03	0.02
14.038	52.739	1.691	1754.8	1754.8	53.828	3.261	2.46		Sand	59.4			49.85	1.09	54.33	118.11	0.98	0.372	1.023	0.167	0.235	0.63	0.03	0.02
14.104	58.123	1.734	1763.0	1763.0	59.273	3.029	2.40		Sand	55.2			54.94	1.09	59.64	123.52	0.98	0.373	1.023	0.179	0.260	0.70	0.03	0.02
14.170	56.421	1.672	1771.2	1771.2	57.373	3.011	2.41		Sand	55.9			53.33	1.08	57.81	121.42	0.98	0.373	1.022	0.174	0.249	0.67	0.03	0.02
14.235	63.144	1.794	1779.4	1779.4	64.166	2.882	2.36		Sand	52.1			59.68	1.08	64.42	128.38	0.98	0.374	1.023	0.193	0.286	0.77	0.02	0.01
14.301	64.605	1.854	1787.6	1787.6	65.517	2.910	2.36		Sand	51.8			61.06	1.08	65.75	129.95	0.98	0.375	1.023	0.197	0.296	0.79	0.02	0.01
14.366	65.572	1.622	1795.8	1795.8	66.355	2.508	2.31		Sand	47.8			61.98	1.07	66.61	129.24	0.98	0.375	1.022	0.195	0.291	0.78	0.02	0.01
14.432	65.433	1.603	1804.0	1804.0	66.058	2.484	2.31		Sand	47.7			61.85	1.07	66.34	128.84	0.98	0.376	1.021	0.194	0.288	0.77	0.02	0.01
14.498	66.139	1.583	1812.2	1812.2	66.625	2.427	2.30		Sand	46.9			62.51	1.07	66.92	129.17	0.98	0.377	1.021	0.195	0.290	0.77	0.02	0.01
14.563	67.711	1.469	1820.4	1820.4	68.072	2.199	2.26		Sand	44.0			64.00	1.07	68.37	129.39	0.98	0.377	1.020	0.196	0.292	0.77	0.02	0.01
14.629	69.469	1.213	1828.6	1828.6	69.703	1.769	2.19		Sand	38.3			65.66	1.07	70.04	127.59	0.98	0.378	1.019	0.190	0.280	0.74	0.02	0.01
14.694	71.059	1.104	1836.8	1836.8	71.156	1.574	2.15		Sand	35.0			67.16	1.06	71.52	126.66	0.98	0.379	1.019	0.188	0.275	0.73	0.03	0.01
14.760	72.073	0.994	1845.0	1845.0	72.020	1.397	2.11		Sand	32.0			68.12	1.06	72.43	124.74	0.98	0.379	1.018	0.183	0.264	0.70	0.03	0.02
14.826	73.496	0.971	1853.2	1853.2	73.293	1.338	2.09		Sand	30.6			69.47	1.06	73.72	124.66	0.98	0.380	1.017	0.182	0.264	0.69	0.03	0.02
14.891	74.109	0.922	1861.4	1861.4	73.745	1.260	2.08		Sand	29.1			70.05	1.06	74.21	123.38	0.98	0.381	1.016	0.179	0.257	0.68	0.03	0.02
14.957	74.853	0.856	1869.6	1869.6	74.327	1.158	2.05		Sand	27.0			70.75	1.06	74.84	121.29	0.98	0.381	1.016	0.174	0.247	0.65	0.03	0.02
15.022	76.340	0.813	1877.8	1877.8	75.653	1.078	2.03		Sand	25.0			72.16	1.06	76.21	119.72	0.98	0.382	1.015	0.171	0.240	0.63	0.03	0.02
15.088	77.763	0.749	1886.0	1886.0	76.909	0.975	1.99		Sand	22.4			73.50	1.05	77.53	116.57	0.98	0.382	1.014	0.164	0.226	0.59	0.03	0.02
15.154	76.713	0.781	1894.2	1894.2	75.689	1.031	2.01		Sand	24.0			72.51	1.05	76.30	118.16	0.98	0.383	1.014	0.167	0.233	0.61	0.03	0.02
15.219	77.801	0.820	1902.4	1902.4	76.606	1.067	2.02		Sand	24.4			73.54	1.05	77.20	119.93	0.98	0.384	1.013	0.171	0.240	0.63	0.03	0.02
15.285	79.660	0.925	1910.6	1910.6	78.287	1.175	2.04		Sand	26.0			75.29	1.05	78.82	124.35	0.98	0.384	1.013	0.182	0.261	0.68	0.03	0.01
15.350	79.912	1.138	1918.8	1918.8	78.365	1.441	2.09		Sand	30.5			75.53	1.04	78.83	130.72	0.98	0.385	1.013	0.200	0.298	0.77	0.02	0.01
15.416	83.846	0.751	1927.0	1927.0	82.091	0.906	1.95		Sand	19.1			79.25	1.04	82.78	115.26	0.97	0.385	1.011	0.161	0.221	0.57	0.03	0.02
15.482	90.597	0.675	1935.2	1935.2	88.585	0.753	1.88		Sand	13.1			85.63	1.04	89.42	105.92	0.97	0.386	1.010	0.146	0.190	0.49	0.03	0.02
15.547	106.090	0.729	1943.4	1943.4	103.674	0.694	1.80		Sand	7.0			100.27	1.04	104.50	106.10	0.97	0.387	1.009	0.146	0.191	0.49	0.03	0.02
15.613	108.732	0.751	1951.6	1951.6	106.052	0.697	1.79		Sand	6.5			102.77	1.04	106.85	107.87	0.97	0.387	1.009	0.149	0.196	0.51	0.03	0.02
15.678	110.880	0.765	1959.8	1959.8	107.936	0.696	1.79		Sand	6.0			104.80	1.04	108.72	109.32	0.97	0.388	1.009	0.151	0.200	0.52	0.03	0.02
15.744	100.641	1.048	1968.0	1968.0	97.671	1.052	1.93		Sand	17.6			95.12	1.03	98.21	128.65	0.97	0.388	1.010	0.193	0.284	0.73	0.02	0.01
15.810	98.399	1.143	1976.2	1976.2	95.272	1.173	1.97		Sand	20.7			93.00	1.03	95.78	133.88	0.97	0.389	1.010	0.210	0.319	0.82	0.02	0.01
15.875	95.405	1.146	1984.4	1984.4	92.149	1.214	1.99		Sand	22.3			90.17	1.03	92.70	133.96	0.97	0.390	1.009	0.210	0.319	0.82	0.02	0.01
15.941	85.343	1.105	1992.6	1992.6	82.154	1.310	2.05		Sand	27.1			80.66	1.03	82.81	130.84	0.97	0.390	1.008	0.200	0.297	0.76	0.02	0.01
16.006	77.011	1.139	2000.8	2000.8	73.883	1.498	2.12		Sand	32.9			72.79	1.02	74.61	128.36	0.97	0.391	1.007	0.192	0.282	0.72	0.02	0.01
16.072	71.459	1.142	2009.0	2009.0	68.343	1.621	2.17		Sand	36.8			67.54	1.02	69.13	125.24	0.97	0.391	1.007	0.184	0.264	0.68	0.03	0.01
16.138	67.953	1.119	2017.2	2017.2	64.806	1.672	2.20		Sand	38.9			64.23	1.02	65.63	122.58	0.97	0.392	1.006	0.177	0.251	0.64	0.03	0.01
16.203	65.609	0.902	2025.4	2025.4	62.406	1.396	2.16		Sand	35.8			62.01	1.02	63.28	117.27	0.97	0.392	1.005	0.165	0.227	0.58	0.03	0.02
16.269	65.126	0.965	2033.6	2033.6	61.810	1.505	2.18		Sand	37.8			61.56	1.02	62.69	118.10	0.97	0.393	1.005	0.167	0.231	0.59	0.03	0.02
16.334	63.786	1.063	2041.8	2041.8	60.393	1.694	2.23		Sand	41.0			60.29	1.02	61.29	118.69	0.97	0.393	1.004	0.168	0.233	0.59	0.03	0.02
16.400	64.558	1.147	2050.0	2050.0	61.009	1.805	2.24		Sand	42.2			61.02	1.01	61.91	120.22	0.97	0.394	1.004	0.172	0.239	0.61	0.03	0.02
16.466	65.804	1.050	2058.2	2058.2	62.078	1.621	2.20		Sand	39.3			62.20	1.01	62.99	119.62	0.97	0.395	1.003	0.170	0.237	0.60	0.03	0.02

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
16.531	67.358	1.020	2066.4	2066.4	63.437	1.538	2.18		Sand	37.5			63.67	1.01	64.36	119.99	0.97	0.395	1.003	0.171	0.238	0.60	0.03	0.02
16.597	68.836	1.043	2074.6	2074.6	64.718	1.538	2.18		Sand	37.0			65.06	1.01	65.65	121.17	0.97	0.396	1.002	0.174	0.243	0.61	0.03	0.01
16.662	69.962	1.050	2082.8	2082.8	65.659	1.523	2.17		Sand	36.4			66.13	1.01	66.60	121.84	0.97	0.396	1.002	0.175	0.246	0.62	0.03	0.01
16.728	71.877	1.025	2091.0	2091.0	67.348	1.447	2.14		Sand	34.6			67.94	1.01	68.30	122.30	0.97	0.397	1.002	0.177	0.248	0.63	0.03	0.01
16.794	72.649	1.021	2099.2	2099.2	67.945	1.426	2.14		Sand	34.0			68.67	1.00	68.91	122.52	0.97	0.397	1.001	0.177	0.249	0.63	0.03	0.01
16.859	73.551	0.941	2107.4	2107.4	68.663	1.298	2.11		Sand	31.7			69.52	1.00	69.65	120.97	0.97	0.398	1.001	0.173	0.242	0.61	0.03	0.01
16.925	76.369	0.893	2115.6	2115.6	71.189	1.186	2.07		Sand	28.7			72.18	1.00	72.19	120.47	0.97	0.398	1.000	0.172	0.239	0.60	0.03	0.01
16.990	81.809	0.780	2123.8	2123.8	76.180	0.966	1.99		Sand	22.5			77.32	1.00	77.19	116.32	0.97	0.399	1.000	0.163	0.222	0.56	0.03	0.02
17.056	104.881	0.641	2132.0	2132.0	97.755	0.617	1.79		Sand	6.4			99.13	1.00	98.76	99.64	0.97	0.399	0.999	0.137	0.172	0.43	0.03	0.02
17.122	117.175	0.491	2140.2	2140.2	109.118	0.423	1.66		Sand	0.0			110.75	0.99	110.15	110.15	0.97	0.400	0.999	0.152	0.201	0.50	0.03	0.02
17.187	108.500	0.690	2148.4	2148.4	100.768	0.642	1.79		Sand	6.3			102.55	0.99	101.79	102.60	0.97	0.400	0.998	0.141	0.179	0.45	0.03	0.02
17.253	108.500	1.474	2156.6	2156.6	100.573	1.372	2.00		Sand	22.9			102.55	0.99	101.75	145.64	0.97	0.401	0.997	0.262	0.423	1.06	0.01	0.00
17.318	120.524	1.686	2164.8	2164.8	111.614	1.412	1.97		Sand	21.0			113.92	0.99	112.89	154.05	0.97	0.401	0.996	0.318	0.543	1.35	0.00	0.00
17.384	113.316	1.512	2173.0	2173.0	104.677	1.347	1.98		Sand	21.5			107.10	0.99	105.95	147.30	0.97	0.402	0.996	0.272	0.443	1.10	0.01	0.00
17.450	113.298	1.349	2181.2	2181.2	104.459	1.202	1.95		Sand	18.9			107.09	0.99	105.73	140.55	0.97	0.402	0.996	0.237	0.369	0.92	0.01	0.01
17.515	113.791	1.338	2189.4	2189.4	104.717	1.187	1.94		Sand	18.5			107.55	0.99	106.02	139.92	0.97	0.403	0.995	0.234	0.363	0.90	0.01	0.01
17.581	114.329	1.225	2197.6	2197.6	105.017	1.082	1.92		Sand	16.3			108.06	0.98	106.31	133.90	0.97	0.403	0.995	0.210	0.314	0.78	0.02	0.01
17.646	115.455	0.820	2205.8	2205.8	105.860	0.717	1.80		Sand	7.1			109.13	0.98	106.97	108.73	0.97	0.404	0.995	0.150	0.196	0.48	0.03	0.02
17.712	117.920	0.615	2214.0	2214.0	107.938	0.526	1.72		Sand	0.4			111.46	0.98	109.07	109.07	0.97	0.404	0.995	0.150	0.196	0.49	0.03	0.02
17.778	126.290	0.509	2222.2	2222.2	115.455	0.407	1.63		Sand	0.0			119.37	0.98	116.69	116.69	0.97	0.405	0.994	0.164	0.222	0.55	0.03	0.02
17.843	135.588	0.545	2230.4	2230.4	123.798	0.405	1.61		Sand	0.0			128.16	0.98	125.17	125.17	0.97	0.405	0.993	0.184	0.260	0.64	0.03	0.01
17.909	140.536	0.526	2238.6	2238.6	128.115	0.377	1.58		Sand	0.0			132.83	0.98	129.59	129.59	0.97	0.406	0.992	0.196	0.285	0.70	0.02	0.01
17.974	145.242	0.672	2246.8	2246.8	132.193	0.466	1.62		Sand	0.0			137.28	0.97	133.78	133.78	0.97	0.406	0.992	0.210	0.312	0.77	0.02	0.01
18.040	152.570	0.564	2254.8	2252.3	138.742	0.372	1.55		Sand	0.0			144.21	0.97	140.48	140.48	0.97	0.407	0.991	0.236	0.367	0.90	0.01	0.01
18.106	153.184	0.861	2262.7	2256.1	139.184	0.566	1.65		Sand	0.0			144.79	0.97	140.95	140.95	0.97	0.407	0.991	0.239	0.371	0.91	0.01	0.01
18.171	142.527	1.527	2270.5	2259.9	129.317	1.080	1.85		Sand	10.9			134.71	0.97	131.08	142.38	0.97	0.408	0.990	0.245	0.385	0.94	0.01	0.01
18.237	122.941	2.099	2278.4	2263.6	111.307	1.723	2.04		Sand	25.9			116.20	0.97	113.26	164.93	0.97	0.408	0.988	0.428	0.787	1.93	0.00	0.00
18.302	118.227	1.948	2286.3	2267.4	106.906	1.664	2.04		Sand	26.0			111.75	0.97	108.79	159.86	0.97	0.409	0.988	0.370	0.654	1.60	0.00	0.00
18.368	116.088	1.829	2294.2	2271.2	104.862	1.591	2.03		Sand	25.4			109.72	0.97	106.71	156.31	0.97	0.409	0.988	0.336	0.580	1.42	0.00	0.00
18.434	114.265	1.529	2302.0	2275.0	103.110	1.352	1.99		Sand	21.9			108.00	0.97	104.85	147.09	0.97	0.410	0.989	0.270	0.437	1.07	0.01	0.00
18.499	106.742	1.637	2309.9	2278.8	96.169	1.550	2.05		Sand	27.0			100.89	0.97	97.90	148.53	0.97	0.410	0.988	0.279	0.456	1.11	0.01	0.00
18.565	98.595	1.494	2317.8	2282.5	88.671	1.533	2.07		Sand	28.8			93.19	0.97	90.30	142.18	0.97	0.411	0.989	0.244	0.382	0.93	0.01	0.01
18.630	98.325	1.323	2325.6	2286.3	88.349	1.362	2.04		Sand	26.1			92.93	0.97	89.93	137.66	0.97	0.411	0.989	0.224	0.341	0.83	0.02	0.01
18.696	97.618	0.809	2333.5	2290.1	87.630	0.839	1.91		Sand	15.6			92.27	0.96	88.90	112.90	0.97	0.411	0.991	0.157	0.208	0.51	0.03	0.02
18.762	96.707	0.758	2341.4	2293.9	86.727	0.793	1.90		Sand	14.8			91.41	0.96	87.95	109.35	0.97	0.412	0.991	0.151	0.197	0.48	0.03	0.02
18.827	96.716	0.777	2349.3	2297.6	86.661	0.813	1.90		Sand	15.3			91.41	0.96	87.91	110.86	0.97	0.412	0.990	0.153	0.201	0.49	0.03	0.02
18.893	100.259	0.738	2357.1	2301.4	89.797	0.745	1.87		Sand	12.5			94.76	0.96	90.97	105.71	0.97	0.413	0.991	0.145	0.186	0.45	0.03	0.02
18.958	102.706	0.690	2365.0	2305.2	91.936	0.680	1.84		Sand	10.0			97.08	0.96	93.03	100.56	0.97	0.413	0.991	0.138	0.173	0.42	0.03	0.02
19.024	104.574	0.672	2372.9	2309.0	93.547	0.650	1.82		Sand	8.6			98.84	0.96	94.62	98.87	0.97	0.414	0.991	0.136	0.169	0.41	0.03	0.02
19.090	107.253	0.694	2380.8	2312.8	95.889	0.654	1.81		Sand	8.1			101.37	0.96	96.98	100.14	0.97	0.414	0.991	0.137	0.172	0.42	0.03	0.02
19.155	108.713	0.685	2388.6	2316.5	97.126	0.637	1.80		Sand	7.2			102.75	0.96	98.22	99.97	0.97	0.415	0.990	0.137	0.171	0.41	0.03	0.02
19.221	108.648	0.668	2396.5	2320.3	96.985	0.622	1.80		Sand	6.7			102.69	0.95	98.07	99.29	0.97	0.415	0.990	0.136	0.170	0.41	0.03	0.02
19.286	107.066	0.622	2404.4	2324.1	95.476	0.588	1.79		Sand	6.1			101.20	0.95	96.52	97.17	0.96	0.415	0.990	0.134	0.165	0.40	0.03	0.02
19.352	104.593	0.516	2412.2	2327.9	93.166	0.499	1.76		Sand	3.7			98.86	0.95	94.15	94.16	0.96	0.416	0.990	0.130	0.159	0.38	0.03	0.02
19.418	101.478	0.421	2420.1	2331.7	90.282	0.420	1.73		Sand	1.7			95.91	0.95	91.21	91.21	0.96	0.416	0.990	0.127	0.153	0.37	0.04	0.02
19.483	100.529	0.303	2428.0	2335.4	89.352	0.305	1.67		Sand	0.0			95.02	0.95	90.26	90.26	0.96	0.417	0.990	0.126	0.152	0.36	0.04	0.02
19.549	100.185	0.292	2435.9	2339.2	88.967	0.295	1.67		Sand	0.0			94.69	0.95	89.87	89.87	0.96	0.417	0.990	0.125	0.151	0.36	0.04	0.02
19.614	101.925	0.383	2443.7	2343.0	90.454	0.380	1.71		Sand	0.0			96.34	0.95	91.39	91.39	0.96	0.418	0.990	0.127	0.154	0.37	0.04	0.02
19.680	105.830	0.431	2451.6	2346.8	93.883	0.412	1.71		Sand	0.2			100.03	0.95	94.89	94.89	0.96	0.418	0.989	0.131	0.160	0.38	0.03	0.02
19.746	112.461	0.455	2459.5	2350.5	99.750	0.409	1.69		Sand	0.0			106.30	0.95	100.89	100.89	0.96	0.418	0.989	0.138	0.173	0.41	0.03	0.02
19.811	118.841	0.473	2467.3	2354.3	105.384	0.402	1.67		Sand	0.0			112.33	0.95	106.67	106.67	0.96	0.419	0.988	0.147	0.188	0.45	0.03	0.02
19.877	127.730	0.455	2475.2	2358.1	113.254	0.360	1.61		Sand	0.0			120.73	0.95	114.77	114.77	0.96	0.419	0.987	0.160	0.214	0.51	0.03	0.01
19.942	133.934	0.568	2483.1	2361.9	118.711	0.428	1.63		Sand	0.0			126.59	0.95	120.40	120.40	0.96	0.420	0.986	0.172	0.236	0.56	0.03	0.01
20.008	140.909	0.735	2491.0	2365.7	124.847	0.526	1.67		Sand	0.0			133.18	0.95	126.75	126.75	0.96	0.420	0.985	0.188	0.267	0.63	0.03	0.01
20.074	138.751	0.645	2498.8	2369.4	122.817	0.469	1.64		Sand	0.0			131.14	0.95	124.67	124.67	0.96	0.420	0.985	0.182	0.256	0.61	0.03	0.01
20.139	147.827	0.577	2506.7	2373.2	130.816	0.394	1.58		Sand	0.0			139.72	0.95	132.96	132.96	0.96	0.421	0.984	0.207	0.304	0.72	0.02	0.01
20.205	158.615	0.621	2514.6	2377.0	140.329	0.395	1.55		Sand	0.0			149.92	0.95	142.85	142.85	0.96	0.421	0.983	0.248	0.387	0.92	0.01	0.01
20.270	168.937	0.582	2522.4	2380.8	149.411	0.347	1.50		Sand	0.0			159.68	0.95	152.33	152.33	0.96	0.422	0.981	0.305	0.507	1.20	0.01	0.00
20.336	178.284	0.691	2530.3	2384.6	157.612	0.390	1.51		Sand	0.0			168.51	0.95	160.92	160.92	0.96	0.422	0.979	0.381	0.673	1.59	0.00	0.00
20.402	188.318	0.726	2538.2	2388.3	166.410	0.388	1.49		Sand	0.0			177.99	0.96	170.16	170.16	0.96	0.422	0.977	0.506	0.957	2.27	0.00	0.00
20.467	191.926	0.817	2546.1	2392.1	169.483	0.429	1.51		Sand	0.0			181.40	0.96	173.43	173.43	0.96	0.423	0.976	0.567	1.097	2.59	0.00	0.00
20.533	196.659	0.649	2553.9	2395.9	173.550	0.332	1.44		Sand	0.0			185.88	0.96	177.74	177.74	0.96	0.423	0.974	0.664	1.329	3.14	0.00	0.00
20.598	195.916	0.535	2561.8	2399.7	172.750	0.275	1.40		Sand	0.0			185.18	0.96	176.94	176.94	0.96	0.423	0.974	0.645	1.281	3.02	0.00	0.00
20.664	195.916	0.748	2569.7	2403.4	172.611	0.384	1.47		Sand	0.0			185.18	0.95	176.84	176.84	0.96	0.424	0.974	0.642	1.274	3.01	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
20.730	189.527	0.753	2577.6	2407.2	166.810	0.400	1.49		Sand	0.0			179.14	0.95	170.78	170.78	0.96	0.424	0.975	0.517	0.980	2.31	0.00	0.00
20.795	179.790	0.768	2585.4	2411.0	158.054	0.430	1.53		Sand	0.0			169.93	0.95	161.61	161.61	0.96	0.425	0.977	0.388	0.688	1.62	0.00	0.00
20.861	177.437	0.688	2593.3	2414.8	155.845	0.391	1.51		Sand	0.0			167.71	0.95	159.33	159.33	0.96	0.425	0.977	0.364	0.635	1.49	0.00	0.00
20.926	170.714	0.939	2601.2	2418.6	149.776	0.554	1.61		Sand	0.0			161.36	0.95	152.99	152.99	0.96	0.425	0.978	0.310	0.516	1.21	0.01	0.00
20.992	168.501	0.955	2609.0	2422.3	147.700	0.571	1.63		Sand	0.0			159.26	0.95	150.84	150.84	0.96	0.426	0.978	0.294	0.483	1.13	0.01	0.00
21.058	167.998	0.973	2616.9	2426.1	147.138	0.584	1.63		Sand	0.0			158.79	0.95	150.28	150.28	0.96	0.426	0.978	0.290	0.475	1.11	0.01	0.00
21.123	162.018	1.328	2624.8	2429.9	141.746	0.826	1.74		Sand	2.3			153.14	0.94	144.65	144.65	0.96	0.426	0.979	0.257	0.405	0.95	0.01	0.01
21.189	163.608	1.307	2632.7	2433.7	143.033	0.805	1.73		Sand	1.5			154.64	0.94	146.02	146.02	0.96	0.427	0.978	0.264	0.420	0.98	0.01	0.00
21.254	166.240	1.349	2640.5	2437.5	145.237	0.818	1.73		Sand	1.4			157.13	0.94	148.36	148.36	0.96	0.427	0.978	0.278	0.449	1.05	0.01	0.00
21.320	170.760	1.400	2648.4	2441.2	149.098	0.826	1.72		Sand	1.0			161.40	0.94	152.44	152.44	0.96	0.428	0.977	0.306	0.507	1.18	0.01	0.00
21.386	174.331	1.262	2656.3	2445.0	152.120	0.729	1.68		Sand	0.0			164.77	0.94	155.65	155.65	0.96	0.428	0.976	0.331	0.560	1.31	0.00	0.00
21.451	173.429	1.258	2664.1	2448.8	151.206	0.731	1.69		Sand	0.0			163.92	0.94	154.72	154.72	0.96	0.428	0.976	0.323	0.544	1.27	0.00	0.00
21.517	173.075	1.292	2672.0	2452.6	150.775	0.752	1.69		Sand	0.0			163.59	0.94	154.29	154.29	0.96	0.429	0.975	0.320	0.536	1.25	0.01	0.00
21.582	170.398	1.068	2679.9	2456.3	148.308	0.632	1.65		Sand	0.0			161.06	0.94	151.72	151.72	0.96	0.429	0.976	0.300	0.495	1.15	0.01	0.00
21.648	170.221	1.217	2687.8	2460.1	148.035	0.721	1.69		Sand	0.0			160.89	0.94	151.46	151.46	0.96	0.429	0.976	0.298	0.491	1.14	0.01	0.00
21.714	164.529	1.262	2695.6	2463.9	142.932	0.773	1.72		Sand	0.6			155.51	0.94	146.11	146.11	0.96	0.430	0.976	0.265	0.420	0.98	0.01	0.00
21.779	163.786	1.328	2703.5	2467.7	142.169	0.818	1.74		Sand	2.0			154.81	0.94	145.33	145.33	0.96	0.430	0.976	0.260	0.411	0.96	0.01	0.01
21.845	163.813	1.319	2711.4	2471.5	142.081	0.812	1.74		Sand	1.8			154.83	0.94	145.26	145.26	0.96	0.430	0.976	0.260	0.410	0.95	0.01	0.01
21.910	164.709	1.180	2719.2	2475.2	142.752	0.722	1.70		Sand	0.0			155.68	0.94	145.99	145.99	0.96	0.431	0.976	0.264	0.418	0.97	0.01	0.00
21.976	164.709	1.180	2727.1	2479.0	142.639	0.722	1.70		Sand	0.0			155.68	0.94	145.89	145.89	0.96	0.431	0.976	0.264	0.417	0.97	0.01	0.01
22.042	162.874	0.963	2735.0	2482.8	140.926	0.596	1.65		Sand	0.0			153.95	0.94	144.11	144.11	0.96	0.431	0.976	0.254	0.397	0.92	0.01	0.01
22.107	165.385	1.065	2742.9	2486.6	143.005	0.649	1.67		Sand	0.0			156.32	0.94	146.33	146.33	0.96	0.432	0.975	0.266	0.422	0.98	0.01	0.00
22.173	167.868	1.142	2750.7	2490.4	145.056	0.686	1.68		Sand	0.0			158.67	0.94	148.52	148.52	0.96	0.432	0.974	0.279	0.449	1.04	0.01	0.00
22.238	169.226	1.204	2758.6	2494.1	146.125	0.717	1.69		Sand	0.0			159.95	0.94	149.67	149.67	0.96	0.432	0.974	0.286	0.464	1.07	0.01	0.00
22.304	170.844	1.261	2766.5	2497.9	147.419	0.744	1.70		Sand	0.0			161.48	0.94	151.07	151.07	0.96	0.433	0.973	0.296	0.484	1.12	0.01	0.00
22.370	171.616	1.336	2774.4	2501.7	147.975	0.785	1.71		Sand	0.0			162.21	0.94	151.69	151.69	0.96	0.433	0.973	0.300	0.493	1.14	0.01	0.00
22.435	173.931	1.354	2782.2	2505.5	149.871	0.785	1.71		Sand	0.0			164.40	0.94	153.73	153.73	0.96	0.433	0.972	0.315	0.525	1.21	0.01	0.00
22.501	177.037	1.193	2790.1	2509.2	152.450	0.679	1.66		Sand	0.0			167.33	0.94	156.50	156.50	0.96	0.434	0.971	0.338	0.574	1.32	0.00	0.00
22.566	178.051	1.484	2798.0	2513.0	153.212	0.840	1.72		Sand	0.6			168.29	0.93	157.34	157.34	0.96	0.434	0.971	0.346	0.590	1.36	0.00	0.00
22.632	180.869	1.425	2805.8	2516.8	155.536	0.794	1.70		Sand	0.0			170.95	0.94	159.84	159.84	0.96	0.434	0.970	0.370	0.642	1.48	0.00	0.00
22.698	183.938	1.429	2813.7	2520.6	158.073	0.783	1.69		Sand	0.0			173.85	0.94	162.58	162.58	0.96	0.435	0.969	0.399	0.707	1.63	0.00	0.00
22.763	188.337	1.430	2821.6	2524.4	161.758	0.765	1.68		Sand	0.0			178.01	0.94	166.55	166.55	0.96	0.435	0.967	0.450	0.820	1.88	0.00	0.00
22.829	197.161	1.474	2829.5	2528.1	169.264	0.753	1.66		Sand	0.0			186.35	0.94	174.63	174.63	0.95	0.435	0.964	0.592	1.143	2.63	0.00	0.00
22.894	201.319	1.496	2837.3	2531.9	172.727	0.748	1.65		Sand	0.0			190.28	0.94	178.39	178.39	0.95	0.436	0.963	0.682	1.354	3.11	0.00	0.00
22.960	205.578	1.527	2845.2	2535.7	176.272	0.748	1.64		Sand	0.0			194.31	0.94	182.25	182.25	0.95	0.436	0.961	0.796	1.628	3.73	0.00	0.00
23.026	210.395	1.468	2853.1	2539.5	180.294	0.702	1.62		Sand	0.0			198.86	0.94	186.64	186.64	0.95	0.436	0.959	0.962	2.030	4.65	0.00	0.00
23.091	230.733	1.509	2860.9	2543.3	197.691	0.658	1.57		Sand	0.0			218.08	0.94	205.54	205.54	0.95	0.437	0.948	2.619	5.465	12.52	0.00	0.00
23.157	242.461	1.489	2868.8	2547.0	207.644	0.618	1.53		Sand	0.0			229.17	0.94	216.44	216.44	0.95	0.437	0.944	5.456	11.336	25.95	0.00	0.00
23.222	252.449	1.387	2876.7	2550.8	216.085	0.553	1.49		Sand	0.0			238.61	0.95	225.74	225.74	0.95	0.437	0.944	11.332	23.532	53.83	0.00	0.00
23.288	263.087	1.506	2884.6	2554.6	225.073	0.576	1.49		Sand	0.0			248.66	0.95	235.67	235.67	0.95	0.437	0.943	27.881	57.873	132.30	0.00	0.00
23.354	272.489	1.630	2892.4	2558.4	232.985	0.601	1.49		Sand	0.0			257.55	0.95	244.47	244.47	0.95	0.438	0.943	69.263	143.699	328.27	0.00	0.00
23.419	280.812	1.848	2900.3	2562.1	239.959	0.662	1.51		Sand	0.0			265.42	0.95	252.26	252.26	0.95	0.438	0.943	170.878	354.355	808.94	0.00	0.00
23.485	282.923	2.097	2908.2	2565.9	241.591	0.745	1.54		Sand	0.0			267.41	0.95	254.15	254.15	0.95	0.438	0.942	215.902	447.512	1020.90	0.00	0.00
23.550	288.373	1.736	2916.0	2569.7	246.084	0.605	1.47		Sand	0.0			272.56	0.95	258.95	258.95	0.95	0.439	0.942	401.066	830.923	1894.29	0.00	0.00
23.616	302.657	1.569	2923.9	2573.5	258.142	0.521	1.41		Sand	0.0			286.07	0.95	271.67	271.67	0.95	0.439	0.941	2523.241	5225.171	11904.05	0.00	0.00
23.682	326.725	1.394	2931.8	2577.3	278.562	0.429	1.33		Sand	0.0			308.81	0.95	293.16	293.16	0.95	0.439	0.941	#########	########	548692.32	0.00	0.00
23.747	303.410	1.968	2939.7	2581.0	258.402	0.652	1.48		Sand	0.0			286.78	0.95	272.13	272.13	0.95	0.440	0.940	2714.235	5615.431	12776.12	0.00	0.00
23.813	286.968	1.821	2947.5	2584.8	244.149	0.638	1.49		Sand	0.0			271.24	0.95	257.29	257.29	0.95	0.440	0.940	322.256	666.398	1515.18	0.00	0.00
23.878	276.878	1.828	2955.4	2588.6	235.345	0.664	1.51		Sand	0.0			261.70	0.95	247.80	247.80	0.95	0.440	0.940	100.685	208.112	472.87	0.00	0.00
23.944	271.066	1.918	2963.3	2592.4	230.207	0.711	1.54		Sand	0.0			256.21	0.95	242.18	242.18	0.95	0.440	0.939	54.083	111.735	253.72	0.00	0.00
24.010	276.069	2.055	2971.2	2596.2	234.305	0.748	1.55		Sand	0.0			260.93	0.95	246.82	246.82	0.95	0.441	0.939	90.073	186.004	422.09	0.00	0.00
24.075	272.256	1.955	2979.0	2599.9	230.880	0.722	1.55		Sand	0.0			257.33	0.94	243.10	243.10	0.95	0.441	0.938	59.688	123.201	279.39	0.00	0.00
24.141	277.130	1.945	2986.9	2603.7	234.862	0.706	1.53		Sand	0.0			261.94	0.95	247.62	247.62	0.95	0.441	0.938	98.677	203.582	461.38	0.00	0.00
24.206	275.688	1.774	2994.8	2607.5	233.461	0.647	1.51		Sand	0.0			260.57	0.94	246.15	246.15	0.95	0.442	0.937	83.490	172.169	389.95	0.00	0.00
24.272	277.539	1.505	3002.6	2611.3	234.863	0.545	1.46		Sand	0.0			262.32	0.94	247.80	247.80	0.95	0.442	0.937	100.756	207.677	470.07	0.00	0.00
24.338	269.793	1.535	3010.5	2615.0	228.104	0.572	1.48		Sand	0.0			255.00	0.94	240.36	240.36	0.95	0.442	0.936	44.632	91.953	208.00	0.00	0.00
24.403	265.784	1.290	3018.4	2618.8	224.530	0.488	1.44		Sand	0.0			251.21	0.94	236.46	236.46	0.95	0.442	0.936	30.103	61.991	140.14	0.00	0.00
24.469	249.956	1.099	3026.3	2622.6	210.927	0.442	1.44		Sand	0.0			236.25	0.94	221.42	221.42	0.95	0.443	0.936	7.970	16.406	37.07	0.00	0.00
24.534	252.616	0.989	3034.1	2626.4	213.029	0.394	1.40		Sand	0.0			238.77	0.94	223.82	223.82	0.95	0.443	0.935	9.668	19.891	44.91	0.00	0.00
24.600	258.372	1.138	3042.0	2630.2	217.752	0.443	1.43		Sand	0.0			244.21	0.94	229.15	229.15	0.95	0.443	0.935	15.213	31.286	70.60	0.00	0.00
24.666	258.437	0.697	3049.9	2633.9	217.648	0.271	1.31		Sand	0.0			244.27	0.94	229.11	229.11	0.95	0.443	0.934	15.158	31.158	70.26	0.00	0.00
24.731	265.207	0.703	3057.7	2637.7	223.220	0.267	1.29		Sand	0.0			250.67	0.94	235.40	235.40	0.95	0.444	0.934	27.147	55.775	125.70	0.00	0.00
24.797	270.992	1.433	3065.6	2641.5	227.950	0.532	1.46		Sand	0.0			256.14	0.94	240.77	240.77	0.95	0.444	0.933	46.609	95.716	215.59	0.00	0.00
24.862	269.978	1.713	3073.5	2645.3	226.927	0.638	1.51		Sand	0.0			255.18	0.94	239.71	239.71	0.95	0.444	0.933	41.747	85.692	192.90	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
24.928	279.277	1.584	3081.4	2649.1	234.617	0.570	1.47		Sand	0.0			263.97	0.94	248.42	248.42	0.95	0.445	0.933	108.271	222.142	499.76	0.00	0.00
24.994	266.965	1.396	3089.2	2652.8	224.053	0.526	1.46		Sand	0.0			252.33	0.94	236.65	236.65	0.95	0.445	0.932	30.685	62.928	141.49	0.00	0.00
25.059	265.012	1.047	3097.1	2656.6	222.243	0.397	1.39		Sand	0.0			250.48	0.94	234.70	234.70	0.95	0.445	0.932	25.388	52.041	116.94	0.00	0.00
25.125	260.195	1.948	3105.0	2660.4	218.022	0.753	1.58		Sand	0.0			245.93	0.94	230.05	230.05	0.95	0.445	0.931	16.489	33.785	75.87	0.00	0.00
25.190	263.441	1.859	3112.8	2664.2	220.598	0.710	1.55		Sand	0.0			249.00	0.94	233.02	233.02	0.95	0.446	0.931	21.635	44.307	99.45	0.00	0.00
25.256	250.960	2.078	3120.7	2667.9	209.932	0.833	1.62		Sand	0.0			237.20	0.93	221.15	221.15	0.95	0.446	0.930	7.799	15.965	35.81	0.00	0.00
25.322	264.631	1.704	3128.6	2671.7	221.280	0.648	1.53		Sand	0.0			250.12	0.94	233.94	233.94	0.95	0.446	0.930	23.597	48.282	108.24	0.00	0.00
25.387	274.758	1.207	3136.5	2675.5	229.633	0.442	1.41		Sand	0.0			259.70	0.94	243.42	243.42	0.95	0.446	0.930	61.799	126.389	283.19	0.00	0.00
25.453	285.695	1.826	3144.3	2679.3	238.654	0.643	1.50		Sand	0.0			270.03	0.94	253.71	253.71	0.95	0.447	0.929	204.380	417.798	935.61	0.00	0.00
25.518	311.882	1.593	3152.2	2683.1	260.464	0.513	1.41		Sand	0.0			294.78	0.94	276.89	276.89	0.95	0.447	0.929	5858.900	11971.468	26793.74	0.00	0.00
25.584	317.732	2.213	3160.1	2686.8	265.184	0.700	1.49		Sand	0.0			300.31	0.94	281.97	281.97	0.95	0.447	0.928	14044.572	28684.172	64163.34	0.00	0.00
25.650	345.240	1.790	3168.0	2690.6	288.052	0.521	1.38		Sand	0.0			326.31	0.94	306.27	306.27	0.95	0.447	0.928	#########	########	9159002.60	0.00	0.00
25.715	388.734	1.683	3175.8	2694.4	324.277	0.435	1.29		Sand	0.0			367.42	0.94	344.73	344.73	0.95	0.448	0.928	#########	########	##########	0.00	0.00
25.781	377.804	2.758	3183.7	2698.2	314.898	0.733	1.46		Sand	0.0			357.09	0.94	334.91	334.91	0.95	0.448	0.927	#########	########	##########	0.00	0.00
25.846	377.804	1.376	3191.6	2702.0	314.675	0.366	1.25		Sand	0.0			357.09	0.94	334.79	334.79	0.95	0.448	0.927	#########	########	##########	0.00	0.00
25.912	412.458	2.075	3199.4	2705.7	343.417	0.505	1.31		Sand	0.0			389.85	0.94	365.36	365.36	0.95	0.448	0.926	#########	########	##########	0.00	0.00
25.978	412.597	3.121	3207.3	2709.5	343.290	0.759	1.44		Sand	0.0			389.98	0.94	365.35	365.35	0.95	0.449	0.926	#########	########	##########	0.00	0.00
26.043	390.064	2.874	3215.2	2713.3	324.240	0.740	1.45		Sand	0.0			368.68	0.94	345.27	345.27	0.95	0.449	0.925	#########	########	##########	0.00	0.00
26.109	409.027	5.041	3223.1	2717.1	339.828	1.237	1.61		Sand	0.0			386.60	0.94	361.93	361.93	0.95	0.449	0.925	#########	########	##########	0.00	0.00
26.174	430.778	3.723	3230.9	2720.8	357.719	0.868	1.48		Sand	0.0			407.16	0.94	381.03	381.03	0.95	0.449	0.925	#########	########	##########	0.00	0.00
26.240	442.189	3.829	3238.8	2724.6	366.972	0.869	1.47		Sand	0.0			417.95	0.94	390.98	390.98	0.94	0.449	0.924	#########	########	##########	0.00	0.00
26.306	449.796	3.795	3246.7	2728.4	373.047	0.847	1.46		Sand	0.0			425.14	0.94	397.56	397.56	0.94	0.450	0.924	#########	########	##########	0.00	0.00
26.371	432.704	4.818	3254.5	2732.2	358.568	1.118	1.56		Sand	0.0			408.98	0.93	382.32	382.32	0.94	0.450	0.923	#########	########	##########	0.00	0.00
26.437	437.660	5.861	3262.4	2736.0	362.437	1.344	1.63		Sand	0.0			413.67	0.93	386.55	386.55	0.94	0.450	0.923	#########	########	##########	0.00	0.00
26.502	383.248	5.625	3270.3	2739.7	316.986	1.474	1.69		Sand	0.0			362.24	0.93	338.37	338.37	0.94	0.450	0.922	#########	########	##########	0.00	0.00
26.568	384.448	4.182	3278.2	2743.5	317.761	1.092	1.59		Sand	0.0			363.37	0.93	339.31	339.31	0.94	0.451	0.922	#########	########	##########	0.00	0.00
26.634	379.082	5.219	3286.0	2747.3	313.088	1.383	1.67		Sand	0.0			358.30	0.93	334.45	334.45	0.94	0.451	0.922	#########	########	##########	0.00	0.00
26.699	325.571	5.079	3293.9	2751.1	268.512	1.568	1.76		Sand	3.6			307.72	0.93	287.14	287.15	0.94	0.451	0.921	36096.430	73159.302	162195.46	0.00	0.00
26.765	321.395	4.143	3301.8	2754.9	264.866	1.296	1.69		Sand	0.0			303.78	0.93	283.35	283.35	0.94	0.451	0.921	17954.179	36372.797	80599.20	0.00	0.00
26.830	297.737	4.972	3309.6	2758.6	245.097	1.679	1.80		Sand	7.4			281.41	0.93	262.40	265.64	0.94	0.452	0.920	1017.706	2060.818	4564.36	0.00	0.00
26.896	272.331	4.451	3317.5	2762.4	223.909	1.644	1.82		Sand	8.7			257.40	0.93	239.35	246.08	0.94	0.452	0.920	82.870	167.734	371.32	0.00	0.00
26.962	266.091	3.576	3325.4	2766.2	218.595	1.352	1.76		Sand	3.9			251.50	0.93	232.81	232.84	0.94	0.452	0.920	21.278	43.048	95.25	0.00	0.00
27.027	251.630	3.280	3333.3	2770.0	206.496	1.312	1.77		Sand	4.4			237.84	0.92	219.09	219.16	0.94	0.452	0.919	6.689	13.527	29.92	0.00	0.00
27.093	269.299	4.453	3341.1	2773.7	220.938	1.664	1.83		Sand	9.3			254.54	0.93	236.35	245.15	0.94	0.452	0.919	74.675	150.946	333.67	0.00	0.00
27.158	309.827	3.850	3349.0	2777.5	254.220	1.249	1.69		Sand	0.0			292.84	0.93	272.56	272.56	0.94	0.453	0.918	2903.894	5867.198	12963.51	0.00	0.00
27.224	180.321	8.068	3356.9	2781.3	147.276	4.516	2.28		Sand	45.6			170.44	0.93	158.03	242.87	0.94	0.453	0.918	58.243	117.625	259.77	0.00	0.00
27.290	180.321	8.068	3364.8	2785.1	147.173	4.516	2.28		Sand	45.6			170.44	0.93	157.97	242.81	0.94	0.453	0.918	57.820	116.719	257.65	0.00	0.00
27.355	206.247	5.749	3372.6	2788.9	168.415	2.810	2.08		Sand	29.5			194.94	0.93	181.15	252.26	0.94	0.453	0.917	170.987	345.013	761.23	0.00	0.00
27.421	221.359	4.021	3380.5	2792.6	180.731	1.830	1.92		Sand	16.2			209.22	0.92	192.88	228.79	0.94	0.453	0.917	14.745	29.739	65.58	0.00	0.00
27.486	227.442	3.689	3388.4	2796.4	185.607	1.634	1.87		Sand	12.6			214.97	0.92	197.41	218.49	0.94	0.454	0.916	6.354	12.810	28.24	0.00	0.00
27.552	218.932	3.662	3396.2	2800.2	178.487	1.686	1.89		Sand	14.3	214		214.00	0.92	196.89	225.23	0.94	0.454	0.916	10.859	21.881	48.21	0.00	0.00
27.618	204.750	3.257	3404.1	2804.0	166.718	1.604	1.89		Sand	14.6	214		214.00	0.92	196.88	226.21	0.94	0.454	0.916	11.793	23.753	52.31	0.00	0.00
27.683	186.588	2.967	3412.0	2807.8	151.701	1.605	1.92		Sand	16.7	214		214.00	0.92	197.44	235.79	0.94	0.454	0.915	28.201	56.778	124.99	0.00	0.00
27.749	154.848	2.186	3419.9	2811.5	125.569	1.427	1.94		Sand	18.3	214		214.00	0.92	197.78	242.14	0.94	0.454	0.915	53.824	108.317	238.33	0.00	0.00
27.814	91.844	0.778	3427.7	2815.3	73.855	0.863	1.98		Sand	21.0	214		214.00	0.93	198.34	251.95	0.94	0.455	0.914	164.614	331.128	728.26	0.00	0.00
27.880	79.605	0.849	3435.6	2819.1	63.780	1.090	2.09		Sand	29.9	214		214.00	0.93	198.40	273.81	0.94	0.455	0.914	3541.278	7120.289	15653.03	0.00	0.00
27.946	54.570	1.604	3443.5	2822.9	43.247	3.035	2.50		Sand	63.2	214		214.00	0.93	198.33	304.10	0.94	0.455	0.914	#########	########	5365684.82	0.00	0.00
28.011	38.984	1.563	3451.3	2826.6	26.362	4.195	2.76		Clay	83.5			36.85	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	25.537	1.855	3459.2	2830.4	16.822	7.792	3.08		Clay	100.0			24.14	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	21.417	2.088	3467.1	2834.2	13.890	10.608	3.23		Clay	100.0			20.24	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.208	18.572	2.144	3475.0	2838.0	11.864	12.736	3.34		Clay	100.0			17.55	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	17.158	2.112	3482.8	2841.8	10.850	13.700	3.39		Clay	100.0			16.22	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	15.828	2.126	3490.7	2845.5	9.898	15.097	3.45		Clay	100.0			14.96	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	16.033	1.654	3498.6	2849.3	10.026	11.580	3.36		Clay	100.0			15.15	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	16.878	1.190	3506.4	2853.1	10.602	7.868	3.23		Clay	100.0			15.95	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	18.990	1.042	3514.3	2856.9	12.064	6.047	3.12		Clay	100.0			17.95	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	59.081	0.978	3522.2	2860.7	46.596	1.706	2.31		Sand	48.1	60	1.8	108.00	0.89	96.41	166.96	0.94	0.457	0.944	0.456	0.813	1.78	0.00	0.00
28.667	82.218	0.971	3530.1	2864.4	65.357	1.207	2.11		Sand	31.4		1.8	139.88	0.90	126.02	188.89	0.94	0.457	0.930	1.067	2.183	4.77	0.00	0.00
28.733	80.619	0.949	3537.9	2868.2	64.013	1.204	2.11		Sand	31.9		1.8	137.16	0.90	123.38	186.38	0.94	0.457	0.931	0.951	1.949	4.26	0.00	0.00
28.798	65.823	0.856	3545.8	2872.0	51.964	1.336	2.21		Sand	39.9		1.8	111.99	0.89	99.76	165.67	0.94	0.458	0.944	0.438	0.773	1.69	0.00	0.00
28.864	39.272	0.811	3553.7	2875.8	30.400	2.163	2.52		Sand	64.9	60	1.8	108.00	0.89	96.53	173.86	0.94	0.458	0.939	0.575	1.076	2.35	0.00	0.00
28.930	30.866	0.824	3561.6	2879.5	20.201	2.833	2.74		Clay	81.8			29.17	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	26.235	0.981	3569.4	2883.3	16.960	4.012	2.89		Clay	94.1			24.80	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	24.662	0.984	3577.3	2887.1	15.845	4.302	2.93		Clay	97.5			23.31	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
29.126	21.845	1.077	3585.2	2890.9	13.873	5.371	3.04		Clay	100.0			20.65	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	19.501	0.972	3593.0	2894.7	12.233	5.490	3.08		Clay	100.0			18.43	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	18.413	0.982	3600.9	2898.4	11.463	5.911	3.13		Clay	100.0			17.40	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	17.483	0.923	3608.8	2902.2	10.805	5.887	3.15		Clay	100.0			16.52	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.389	17.335	0.885	3616.7	2906.0	10.686	5.700	3.14		Clay	100.0			16.38	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	17.316	0.806	3624.5	2909.8	10.656	5.199	3.12		Clay	100.0			16.37	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	17.223	0.669	3632.4	2913.6	10.576	4.342	3.07		Clay	100.0			16.28	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	17.185	0.589	3640.3	2917.3	10.534	3.833	3.04		Clay	100.0			16.24	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	17.297	0.577	3648.1	2921.1	10.594	3.729	3.03		Clay	100.0			16.35	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	16.488	0.570	3656.0	2924.9	10.024	3.888	3.06		Clay	100.0			15.58	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	16.219	0.570	3663.9	2928.7	9.825	3.962	3.07		Clay	100.0			15.33	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	15.968	0.639	3671.8	2932.4	9.638	4.522	3.11		Clay	100.0			15.09	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	14.898	0.643	3679.6	2936.2	8.895	4.924	3.16		Clay	100.0			14.08	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	15.307	0.717	3687.5	2940.0	9.159	5.326	3.17		Clay	100.0			14.47	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	14.814	0.731	3695.4	2943.8	8.809	5.638	3.20		Clay	100.0			14.00	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	14.582	0.725	3703.2	2947.6	8.638	5.695	3.21		Clay	100.0			13.78	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	13.865	0.737	3711.1	2951.3	8.138	6.137	3.25		Clay	100.0			13.10	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	13.958	0.719	3719.0	2955.1	8.188	5.943	3.24		Clay	100.0			13.19	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.307	14.043	0.726	3726.9	2958.9	8.233	5.961	3.24		Clay	100.0			13.27	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	13.977	0.695	3734.7	2962.7	8.175	5.739	3.23		Clay	100.0			13.21	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	14.591	0.716	3742.6	2966.5	8.576	5.629	3.21		Clay	100.0			13.79	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	15.047	0.737	3750.5	2970.2	8.869	5.595	3.20		Clay	100.0			14.22	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	14.582	0.748	3758.4	2974.0	8.543	5.888	3.23		Clay	100.0			13.78	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	14.629	0.752	3766.2	2977.8	8.561	5.900	3.23		Clay	100.0			13.83	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	14.359	0.748	3774.1	2981.6	8.366	5.997	3.24		Clay	100.0			13.57	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	14.117	0.743	3782.0	2985.3	8.191	6.077	3.25		Clay	100.0			13.34	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	14.024	0.726	3789.8	2989.1	8.115	5.986	3.25		Clay	100.0			13.26	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	14.368	0.729	3797.7	2992.9	8.332	5.846	3.23		Clay	100.0			13.58	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	15.047	0.680	3805.6	2996.7	8.773	5.173	3.18		Clay	100.0			14.22	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	15.828	0.648	3813.5	3000.5	9.279	4.655	3.13		Clay	100.0			14.96	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	16.237	0.670	3821.3	3004.2	9.537	4.677	3.13		Clay	100.0			15.35	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	16.181	0.683	3829.2	3008.0	9.486	4.787	3.13		Clay	100.0			15.29	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	16.851	0.701	3837.1	3011.8	9.916	4.694	3.11		Clay	100.0			15.93	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	18.488	0.689	3844.9	3015.6	10.987	4.159	3.05		Clay	100.0			17.47	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	19.250	0.714	3852.8	3019.4	11.475	4.122	3.03		Clay	100.0			18.19	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	24.644	0.770	3860.7	3023.1	15.027	3.390	2.88		Clay	93.8			23.29	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	25.853	0.841	3868.6	3026.9	15.804	3.516	2.88		Clay	93.2			24.44	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	26.978	0.931	3876.4	3030.7	16.524	3.718	2.88		Clay	93.1			25.50	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	27.946	1.085	3884.3	3034.5	17.139	4.172	2.90		Clay	94.7			26.41	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	25.453	1.220	3892.2	3038.2	15.474	5.190	2.99		Clay	100.0			24.06	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	31.126	1.299	3900.0	3042.0	19.182	4.452	2.88		Clay	93.1			29.42	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	36.771	1.383	3907.9	3045.8	22.862	3.972	2.79		Clay	85.9			34.76	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	42.397	1.574	3915.8	3049.6	26.521	3.892	2.73		Clay	81.6			40.07	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	50.097	1.927	3923.7	3053.4	31.529	4.003	2.68		Clay	77.8			47.35	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	52.711	2.115	3931.5	3057.1	33.198	4.168	2.68		Clay	77.4			49.82	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	52.254	2.178	3939.4	3060.9	32.856	4.331	2.69		Clay	78.6			49.39	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	47.373	2.230	3947.3	3064.7	29.627	4.912	2.77		Clay	84.2			44.78	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	48.349	2.537	3955.2	3068.5	30.224	5.471	2.79		Clay	86.3			45.70	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	46.945	2.837	3963.0	3072.3	29.271	6.310	2.85		Clay	90.6			44.37	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	41.895	2.822	3970.9	3076.0	25.949	7.071	2.92		Clay	96.4			39.60	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.406	41.049	2.708	3978.8	3079.8	25.365	6.933	2.92		Clay	96.4			38.80	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	42.751	2.577	3986.6	3083.6	26.435	6.323	2.88		Clay	93.2			40.41	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	46.609	2.609	3994.5	3087.4	28.900	5.848	2.83		Clay	89.1			44.05	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	56.123	2.315	4002.4	3091.1	35.017	4.277	2.67		Clay	76.7			53.05	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	69.589	2.280	4010.3	3094.9	52.819	3.374	2.47		Sand	60.7	494		494.00	0.90	446.85	621.42	0.92	0.467	0.886	#########	########	##########	0.00	0.00
32.734	72.063	1.861	4018.1	3098.7	54.716	2.657	2.39		Sand	54.1	494		494.00	0.90	446.70	615.37	0.92	0.467	0.886	#########	########	##########	0.00	0.00
32.800	76.647	1.807	4026.0	3102.5	58.258	2.421	2.34		Sand	50.3	494		494.00	0.90	446.56	611.12	0.92	0.467	0.885	#########	########	##########	0.00	0.00
32.866	81.428	1.857	4033.9	3106.3	61.949	2.338	2.31		Sand	47.9	494		494.00	0.90	446.42	608.06	0.92	0.467	0.885	#########	########	##########	0.00	0.00
32.931	83.027	1.732	4041.7	3110.0	63.155	2.138	2.28		Sand	45.3	494		494.00	0.90	446.27	604.35	0.92	0.467	0.884	#########	########	##########	0.00	0.00
32.997	91.954	1.680	4049.6	3113.8	70.069	1.868	2.21		Sand	39.4	494		494.00	0.90	446.13	594.64	0.92	0.467	0.884	#########	########	##########	0.00	0.00
33.062	95.907	1.594	4057.5	3117.6	73.102	1.698	2.16		Sand	36.1	494		494.00	0.90	445.99	587.71	0.92	0.467	0.884	#########	########	##########	0.00	0.00
33.128	108.201	1.326	4065.4	3121.4	82.622	1.249	2.04		Sand	25.9	494		494.00	0.90	445.85	557.20	0.92	0.468	0.883	#########	########	##########	0.00	0.00
33.194	109.020	1.253	4073.2	3125.2	83.206	1.171	2.02		Sand	24.2	494		494.00	0.90	445.70	550.34	0.92	0.468	0.883	#########	########	##########	0.00	0.00
33.259	110.369	1.422	4081.1	3128.9	84.201	1.313	2.04		Sand	26.5	494		494.00	0.90	445.56	559.27	0.92	0.468	0.883	#########	########	##########	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.50

Total Settlement:	1.46	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.325	125.871	1.654	4089.0	3132.7	96.189	1.336	2.01		Sand	23.4	494		494.00	0.90	445.42	546.40	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.390	158.717	1.890	4096.8	3136.5	121.628	1.206	1.90		Sand	15.0	494		494.00	0.90	445.28	497.69	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.456	190.048	1.437	4104.7	3140.3	145.860	0.764	1.71		Sand	0.0	494		494.00	0.90	445.14	445.14	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.522	229.906	1.521	4112.6	3144.0	176.675	0.668	1.61		Sand	0.0	494		494.00	0.90	445.00	445.00	0.92	0.468	0.881	#########	########	##########	0.00	0.00
33.587	313.194	2.189	4120.5	3147.8	241.109	0.704	1.52		Sand	0.0	494		494.00	0.90	444.86	444.86	0.92	0.468	0.881	#########	########	##########	0.00	0.00
33.653	320.726	2.189	4128.3	3151.6	246.795	0.687	1.51		Sand	0.0	494		494.00	0.90	444.71	444.71	0.92	0.468	0.880	#########	########	##########	0.00	0.00
33.718	350.131	3.169	4136.2	3155.4	269.404	0.910	1.57		Sand	0.0	494		494.00	0.90	444.57	444.57	0.92	0.469	0.880	#########	########	##########	0.00	0.00
33.784	382.392	3.180	4144.1	3159.2	294.195	0.836	1.52		Sand	0.0	494		494.00	0.90	444.43	444.43	0.92	0.469	0.880	#########	########	##########	0.00	0.00
33.850	381.350	3.416	4152.0	3162.9	293.211	0.901	1.54		Sand	0.0	494		494.00	0.90	444.29	444.29	0.92	0.469	0.879	#########	########	##########	0.00	0.00
33.915	395.844	3.416	4159.8	3166.7	304.231	0.868	1.52		Sand	0.0	494		494.00	0.90	444.15	444.15	0.92	0.469	0.879	#########	########	##########	0.00	0.00
33.981	417.601	4.053	4167.7	3170.5	320.847	0.975	1.55		Sand	0.0	494		494.00	0.90	444.01	444.01	0.92	0.469	0.879	#########	########	##########	0.00	0.00
34.046	409.231	3.960	4175.6	3174.3	314.194	0.973	1.55		Sand	0.0	494		494.00	0.90	443.87	443.87	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.112	434.358	3.945	4183.4	3178.1	333.383	0.913	1.51		Sand	0.0	494		494.00	0.90	443.74	443.74	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.178	480.122	3.950	4191.3	3181.8	368.456	0.826	1.45		Sand	0.0	494		494.00	0.90	443.60	443.60	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.243	522.687	3.786	4199.2	3185.6	401.023	0.727	1.39		Sand	0.0			494.03	0.90	443.49	443.49	0.92	0.469	0.877	#########	########	##########	0.00	0.00
34.309	512.811	4.019	4207.1	3189.4	393.179	0.787	1.42		Sand	0.0			484.70	0.90	434.97	434.97	0.92	0.470	0.877	#########	########	##########	0.00	0.00
34.374	536.823	4.226	4214.9	3193.2	411.419	0.790	1.41		Sand	0.0			507.39	0.90	455.20	455.20	0.92	0.470	0.877	#########	########	##########	0.00	0.00
34.440	556.788	4.400	4222.8	3196.9	426.525	0.793	1.40		Sand	0.0			526.26	0.90	471.98	471.98	0.92	0.470	0.876	#########	########	##########	0.00	0.00
34.506	584.092	4.026	4230.7	3200.7	447.253	0.692	1.34		Sand	0.0			552.07	0.90	494.97	494.97	0.92	0.470	0.876	#########	########	##########	0.00	0.00
34.571	608.662	4.666	4238.5	3204.5	465.858	0.769	1.37		Sand	0.0			575.29	0.90	515.63	515.63	0.92	0.470	0.875	#########	########	##########	0.00	0.00
34.637	574.160	5.193	4246.4	3208.3	439.097	0.908	1.44		Sand	0.0			542.68	0.90	486.25	486.25	0.92	0.470	0.875	#########	########	##########	0.00	0.00
34.702	548.689	5.179	4254.3	3212.1	419.295	0.948	1.47		Sand	0.0			518.61	0.90	464.53	464.53	0.92	0.470	0.875	#########	########	##########	0.00	0.00
34.768	517.721	4.936	4262.2	3215.8	395.303	0.957	1.48		Sand	0.0			489.34	0.90	438.18	438.18	0.92	0.470	0.874	#########	########	##########	0.00	0.00
34.834	516.409	6.204	4270.0	3219.6	394.062	1.206	1.57		Sand	0.0			488.10	0.90	436.93	436.93	0.92	0.470	0.874	#########	########	##########	0.00	0.00
34.899	517.061	5.416	4277.9	3223.4	394.327	1.052	1.52		Sand	0.0			488.72	0.89	437.35	437.35	0.92	0.470	0.874	#########	########	##########	0.00	0.00
34.965	522.826	5.983	4285.8	3227.2	398.506	1.149	1.55		Sand	0.0			494.16	0.89	442.09	442.09	0.92	0.471	0.873	#########	########	##########	0.00	0.00
35.030	522.780	6.179	4293.6	3231.0	398.234	1.187	1.56		Sand	0.0			494.12	0.89	441.91	441.91	0.92	0.471	0.873	#########	########	##########	0.00	0.00
35.096	581.981	6.013	4301.5	3234.7	443.255	1.037	1.48		Sand	0.0			550.08	0.89	491.81	491.81	0.92	0.471	0.873	#########	########	##########	0.00	0.00
35.162	541.045	6.498	4309.4	3238.5	411.718	1.206	1.56		Sand	0.0			511.38	0.89	457.07	457.07	0.92	0.471	0.872	#########	########	##########	0.00	0.00
35.227	559.291	4.928	4317.3	3242.3	425.407	0.885	1.44		Sand	0.0			528.63	0.89	472.34	472.34	0.92	0.471	0.872	#########	########	##########	0.00	0.00
35.293	607.816	4.349	4325.1	3246.1	462.187	0.718	1.34		Sand	0.0			574.50	0.89	513.16	513.16	0.92	0.471	0.872	#########	########	##########	0.00	0.00
35.358	577.740	5.399	4333.0	3249.8	438.977	0.938	1.45		Sand	0.0			546.07	0.89	487.62	487.62	0.92	0.471	0.871	#########	########	##########	0.00	0.00
35.424	550.716	5.444	4340.9	3253.6	418.120	0.992	1.48		Sand	0.0			520.53	0.89	464.67	464.67	0.92	0.471	0.871	#########	########	##########	0.00	0.00
35.490	536.181	5.072	4348.8	3257.4	406.802	0.950	1.47		Sand	0.0			506.79	0.89	452.27	452.27	0.91	0.471	0.871	#########	########	##########	0.00	0.00
35.555	524.510	6.171	4356.6	3261.2	397.678	1.181	1.56		Sand	0.0			495.76	0.89	442.29	442.29	0.91	0.471	0.870	#########	########	##########	0.00	0.00
35.621	521.821	5.679	4364.5	3265.0	395.398	1.093	1.53		Sand	0.0			493.21	0.89	439.89	439.89	0.91	0.471	0.870	#########	########	##########	0.00	0.00
35.686	537.678	4.871	4372.4	3268.7	407.226	0.910	1.46		Sand	0.0			508.20	0.89	453.12	453.12	0.91	0.472	0.870	#########	########	##########	0.00	0.00
35.752	421.126	6.547	4380.2	3272.5	318.404	1.563	1.71		Sand	0.0			398.04	0.89	354.79	354.79	0.91	0.472	0.869	#########	########	##########	0.00	0.00
35.818	405.679	6.042	4388.1	3276.3	306.484	1.497	1.71		Sand	0.0			383.44	0.89	341.67	341.67	0.91	0.472	0.869	#########	########	##########	0.00	0.00
35.883	395.421	6.266	4396.0	3280.1	298.517	1.593	1.74		Sand	1.9			373.74	0.89	332.93	332.93	0.91	0.472	0.868	#########	########	##########	0.00	0.00
35.949	395.895	5.360	4403.9	3283.9	298.702	1.361	1.68		Sand	0.0			374.19	0.89	333.23	333.23	0.91	0.472	0.868	#########	########	##########	0.00	0.00
36.014	388.865	5.688	4411.7	3287.6	293.197	1.471	1.71		Sand	0.0			367.55	0.89	327.21	327.21	0.91	0.472	0.868	#########	########	##########	0.00	0.00
36.080	393.329	5.314	4419.6	3291.4	296.408	1.359	1.68		Sand	0.0			371.77	0.89	330.87	330.87	0.91	0.472	0.867	#########	########	##########	0.00	0.00
36.146	405.037	5.055	4427.5	3295.2	305.103	1.255	1.65		Sand	0.0			382.83	0.89	340.61	340.61	0.91	0.472	0.867	#########	########	##########	0.00	0.00
36.211	401.261	3.739	4435.3	3299.0	302.067	0.937	1.55		Sand	0.0			379.26	0.89	337.33	337.33	0.91	0.472	0.867	#########	########	##########	0.00	0.00
36.277	408.348	3.929	4443.2	3302.7	307.253	0.967	1.56		Sand	0.0			385.96	0.89	343.19	343.19	0.91	0.472	0.866	#########	########	##########	0.00	0.00
36.342	402.898	3.603	4451.1	3306.5	302.953	0.899	1.53		Sand	0.0			380.81	0.89	338.51	338.51	0.91	0.472	0.866	#########	########	##########	0.00	0.00
36.408	422.790	4.002	4459.0	3310.3	317.810	0.952	1.54		Sand	0.0			399.61	0.89	355.11	355.11	0.91	0.472	0.866	#########	########	##########	0.00	0.00
36.474	431.569	3.129	4466.8	3314.1	324.256	0.729	1.45		Sand	0.0			407.91	0.89	362.38	362.38	0.91	0.473	0.865	#########	########	##########	0.00	0.00
36.539	429.393	3.797	4474.7	3317.9	322.426	0.889	1.51		Sand	0.0			405.85	0.89	360.44	360.44	0.91	0.473	0.865	#########	########	##########	0.00	0.00
36.605	455.776	4.192	4482.6	3321.6	342.142	0.924	1.51		Sand	0.0			430.79	0.89	382.47	382.47	0.91	0.473	0.865	#########	########	##########	0.00	0.00
36.670	468.889	4.192	4490.4	3325.4	351.831	0.898	1.49		Sand	0.0			443.18	0.89	393.36	393.36	0.91	0.473	0.864	#########	########	##########	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.936	10.388	0.265	492.0	492.0	26.615	2.613	2.62		Unsaturated	72.6			9.82	1.70	16.69	72.61	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	10.388	0.265	500.2	500.2	26.298	2.614	2.62		Unsaturated	72.9			9.82	1.70	16.69	72.66	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	25.276	0.450	508.4	508.4	48.249	1.798	2.32		Unsaturated	48.3			23.89	1.70	40.61	96.68	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	25.369	0.502	516.6	516.6	48.035	1.999	2.35		Unsaturated	50.8			23.98	1.70	40.76	97.89	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	23.408	0.554	524.8	524.8	43.928	2.394	2.43		Unsaturated	57.3			22.12	1.70	37.61	96.09	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	19.074	0.694	533.0	533.0	46.666	3.690	2.54		Unsaturated	66.0			18.03	1.70	30.65	89.38	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	15.754	0.775	541.2	541.2	38.009	5.005	2.69		Unsaturated	78.5			14.89	1.70	25.31	84.70	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	12.313	0.803	549.4	549.4	43.823	6.670	2.74		Unsaturated	82.4			11.64	1.70	19.78	78.04	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	11.383	0.838	557.6	557.6	39.829	7.547	2.81		Unsaturated	87.8			10.76	1.70	18.29	76.73	1.00	0.325	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.526	10.500	0.903	565.8	565.8	36.116	8.838	2.89		Unsaturated	94.2			9.92	1.70	16.87	75.53	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.592	9.997	0.947	574.0	574.0	33.833	9.753	2.94		Unsaturated	98.2			9.45	1.70	16.06	74.84	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.658	9.895	0.838	582.2	582.2	32.992	8.726	2.91		Unsaturated	95.9			9.35	1.70	15.90	74.42	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.723	10.118	0.838	590.4	590.4	33.275	8.531	2.90		Unsaturated	95.2			9.56	1.70	16.26	74.82	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.789	10.397	0.809	598.6	598.6	33.738	8.012	2.88		Unsaturated	93.2			9.83	1.70	16.71	75.22	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.854	11.727	0.765	606.8	606.8	37.652	6.697	2.79		Unsaturated	86.0			11.08	1.70	18.84	77.26	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	12.666	0.709	615.0	615.0	40.190	5.737	2.72		Unsaturated	80.6			11.97	1.70	20.35	78.54	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.986	13.122	0.682	623.2	623.2	41.112	5.324	2.69		Unsaturated	78.1			12.40	1.70	21.08	79.16	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.051	13.986	0.646	631.4	631.4	43.302	4.726	2.64		Unsaturated	73.9			13.22	1.70	22.47	80.31	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.117	14.368	0.661	639.6	639.6	43.928	4.705	2.63		Unsaturated	73.5			13.58	1.70	23.09	81.03	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.182	15.084	0.693	647.8	647.8	45.570	4.695	2.62		Unsaturated	72.5			14.26	1.70	24.24	82.36	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.248	15.047	0.773	656.0	656.0	44.875	5.252	2.66		Unsaturated	75.7			14.22	1.70	24.18	82.80	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.314	15.186	0.797	664.2	664.2	44.727	5.366	2.67		Unsaturated	76.3			14.35	1.70	24.40	83.19	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.379	15.028	0.900	672.4	672.4	43.700	6.126	2.72		Unsaturated	80.3			14.20	1.70	24.15	83.43	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.445	15.233	0.951	680.6	680.6	43.763	6.386	2.73		Unsaturated	81.3			14.40	1.70	24.48	84.00	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.510	15.028	1.007	688.8	688.8	42.635	6.858	2.76		Unsaturated	83.8			14.20	1.70	24.15	83.89	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.576	14.964	1.036	697.0	697.0	41.938	7.088	2.77		Unsaturated	85.0			14.14	1.70	24.04	83.91	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.642	15.177	1.045	705.2	705.2	42.043	7.049	2.77		Unsaturated	84.8			14.34	1.70	24.39	84.33	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.707	15.456	1.049	713.4	713.4	42.331	6.947	2.77		Unsaturated	84.3			14.61	1.70	24.83	84.85	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.773	15.809	1.049	721.6	721.6	42.817	6.790	2.75		Unsaturated	83.4			14.94	1.70	25.40	85.48	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.838	15.233	1.066	729.8	729.8	40.746	7.170	2.79		Unsaturated	86.0			14.40	1.70	24.48	84.59	1.00	0.324	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.904	14.712	1.079	738.0	738.0	38.870	7.523	2.82		Unsaturated	88.3			13.91	1.70	23.64	83.77	1.00	0.324	1.099	n.a.	n.a.	n.a.	0.00	0.00
5.970	14.582	1.093	746.2	746.2	38.083	7.692	2.83		Unsaturated	89.3			13.78	1.70	23.43	83.61	1.00	0.324	1.097	n.a.	n.a.	n.a.	0.00	0.00
6.035	14.043	1.097	754.4	754.4	36.230	8.027	2.86		Unsaturated	91.6			13.27	1.70	22.56	82.72	1.00	0.324	1.096	n.a.	n.a.	n.a.	0.00	0.00
6.101	13.512	1.116	762.6	762.6	34.437	8.499	2.89		Unsaturated	94.3			12.77	1.70	21.71	81.87	1.00	0.324	1.094	n.a.	n.a.	n.a.	0.00	0.00
6.166	13.224	1.108	770.8	770.8	33.312	8.630	2.91		Unsaturated	95.4			12.50	1.70	21.25	81.37	1.00	0.324	1.093	n.a.	n.a.	n.a.	0.00	0.00
6.232	13.141	1.105	779.0	779.0	32.738	8.666	2.91		Unsaturated	95.9			12.42	1.70	21.12	81.24	1.00	0.323	1.092	n.a.	n.a.	n.a.	0.00	0.00
6.298	12.880	1.094	787.2	787.2	31.724	8.762	2.92		Unsaturated	97.0			12.17	1.70	20.70	80.79	1.00	0.323	1.090	n.a.	n.a.	n.a.	0.00	0.00
6.363	12.815	1.042	795.4	795.4	31.223	8.392	2.92		Unsaturated	96.2			12.11	1.70	20.59	80.58	1.00	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.429	13.336	1.042	803.6	803.6	32.191	8.056	2.89		Unsaturated	94.5			12.60	1.69	21.32	81.37	0.99	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.494	14.600	1.042	811.8	811.8	34.969	7.341	2.84		Unsaturated	90.1			13.80	1.67	23.10	83.26	0.99	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.560	15.364	0.997	820.0	820.0	36.473	6.667	2.80		Unsaturated	86.7			14.52	1.66	24.12	84.21	0.99	0.323	1.089	n.a.	n.a.	n.a.	0.00	0.00
6.626	15.512	0.986	828.2	828.2	36.460	6.531	2.79		Unsaturated	86.2			14.66	1.65	24.22	84.28	0.99	0.323	1.088	n.a.	n.a.	n.a.	0.00	0.00
6.691	15.456	1.028	836.4	836.4	35.958	6.836	2.81		Unsaturated	87.7			14.61	1.64	24.01	84.18	0.99	0.323	1.087	n.a.	n.a.	n.a.	0.00	0.00
6.757	15.652	1.097	844.6	844.6	36.064	7.203	2.82		Unsaturated	88.9			14.79	1.63	24.17	84.53	0.99	0.323	1.087	n.a.	n.a.	n.a.	0.00	0.00
6.822	15.754	1.101	852.8	852.8	35.947	7.183	2.82		Unsaturated	88.9			14.89	1.63	24.20	84.57	0.99	0.323	1.086	n.a.	n.a.	n.a.	0.00	0.00
6.888	15.707	1.140	861.0	861.0	35.485	7.462	2.84		Unsaturated	90.2			14.85	1.62	24.01	84.46	0.99	0.323	1.085	n.a.	n.a.	n.a.	0.00	0.00
6.954	15.354	1.159	869.2	869.2	34.329	7.768	2.86		Unsaturated	92.0			14.51	1.61	23.39	83.83	0.99	0.323	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.019	15.195	1.182	877.4	877.4	33.636	8.010	2.88		Unsaturated	93.3			14.36	1.60	23.05	83.51	0.99	0.323	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.085	15.047	1.270	885.6	885.6	32.981	8.696	2.91		Unsaturated	95.9			14.22	1.60	22.72	83.33	0.99	0.323	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.150	14.721	1.300	893.8	893.8	31.940	9.107	2.93		Unsaturated	97.8			13.91	1.59	22.14	82.76	0.99	0.323	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.216	14.489	1.301	902.0	902.0	31.126	9.268	2.95		Unsaturated	98.8			13.69	1.59	21.71	82.28	0.99	0.323	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.282	14.229	1.286	910.2	910.2	30.266	9.336	2.96		Unsaturated	99.7			13.45	1.58	21.24	81.74	0.99	0.323	1.078	n.a.	n.a.	n.a.	0.00	0.00
7.347	14.554	1.281	918.4	918.4	30.694	9.088	2.95		Unsaturated	98.7			13.76	1.57	21.60	82.13	0.99	0.323	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.413	15.047	1.220	926.6	926.6	31.478	8.366	2.91		Unsaturated	96.0			14.22	1.56	22.20	82.67	0.99	0.323	1.077	n.a.	n.a.	n.a.	0.00	0.00
7.478	15.642	1.169	934.8	934.8	32.466	7.704	2.88		Unsaturated	93.1			14.78	1.55	22.94	83.36	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.544	16.572	1.142	943.0	943.0	34.147	7.093	2.84		Unsaturated	89.8			15.66	1.54	24.13	84.57	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.610	17.967	1.137	951.2	951.2	36.778	6.500	2.79		Unsaturated	85.8			16.98	1.53	25.94	86.48	0.99	0.323	1.076	n.a.	n.a.	n.a.	0.00	0.00
7.675	17.670	1.168	959.4	959.4	35.836	6.795	2.81		Unsaturated	87.6			16.70	1.52	25.42	86.01	0.99	0.323	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.741	17.874	1.193	967.6	967.6	35.945	6.860	2.81		Unsaturated	87.8			16.89	1.51	25.58	86.24	0.99	0.323	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.806	18.106	1.260	975.8	975.8	36.110	7.152	2.82		Unsaturated	88.7			17.11	1.51	25.78	86.61	0.99	0.322	1.074	n.a.	n.a.	n.a.	0.00	0.00
7.872	18.172	1.318	984.0	984.0	35.935	7.455	2.84		Unsaturated	89.9			17.18	1.50	25.76	86.70	0.99	0.322	1.073	n.a.	n.a.	n.a.	0.00	0.00
7.938	18.553	1.361	992.2	992.2	36.398	7.537	2.84		Unsaturated	89.9			17.54	1.49	26.16	87.22	0.99	0.322	1.073	n.a.	n.a.	n.a.	0.00	0.00
8.003	17.994	1.410	1000.4	1000.4	34.974	8.060	2.87		Unsaturated	92.5			17.01	1.49	25.30	86.38	0.99	0.322	1.072	n.a.	n.a.	n.a.	0.00	0.00
8.069	18.265	1.451	1008.6	1008.6	35.219	8.170	2.87		Unsaturated	92.7			17.26	1.48	25.55	86.73	0.99	0.322	1.071	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
8.134	17.837	1.478	1016.8	1016.8	34.085	8.529	2.89		Unsaturated	94.6			16.86	1.48	24.88	86.04	0.99	0.322	1.070	n.a.	n.a.	n.a.	0.00	0.00
8.200	16.878	1.439	1025.0	1025.0	31.933	8.793	2.92		Unsaturated	96.9			15.95	1.47	23.51	84.46	0.99	0.322	1.068	n.a.	n.a.	n.a.	0.00	0.00
8.266	16.163	1.433	1033.2	1033.2	30.287	9.159	2.95		Unsaturated	99.2			15.28	1.47	22.46	83.30	0.99	0.322	1.067	n.a.	n.a.	n.a.	0.00	0.00
8.331	15.317	1.440	1041.4	1041.4	28.416	9.732	2.99		Unsaturated	100.0			14.48	1.47	21.25	81.78	0.99	0.322	1.065	n.a.	n.a.	n.a.	0.00	0.00
8.397	13.680	1.441	1049.6	1049.6	25.067	10.954	3.07		Unsaturated	100.0			12.93	1.47	19.00	78.84	0.99	0.322	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.462	13.605	1.396	1057.8	1057.8	24.723	10.676	3.06		Unsaturated	100.0			12.86	1.46	18.83	78.60	0.99	0.322	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.528	13.643	1.336	1066.0	1066.0	24.597	10.191	3.05		Unsaturated	100.0			12.90	1.46	18.80	78.57	0.99	0.322	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.594	13.661	1.194	1074.2	1074.2	24.435	9.098	3.01		Unsaturated	100.0			12.91	1.45	18.75	78.50	0.99	0.322	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.659	13.717	1.137	1082.4	1082.4	24.346	8.629	3.00		Unsaturated	100.0			12.97	1.45	18.75	78.50	0.99	0.322	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.725	13.122	1.085	1090.6	1090.6	23.064	8.627	3.01		Unsaturated	100.0			12.40	1.44	17.89	77.38	0.99	0.322	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.790	11.932	1.048	1098.8	1098.8	20.718	9.207	3.07		Unsaturated	100.0			11.28	1.44	16.27	75.25	0.99	0.322	1.057	n.a.	n.a.	n.a.	0.00	0.00
8.856	11.559	1.037	1107.0	1107.0	19.883	9.423	3.09		Unsaturated	100.0			10.93	1.44	15.71	74.52	0.99	0.322	1.056	n.a.	n.a.	n.a.	0.00	0.00
8.922	11.225	1.057	1115.2	1115.2	19.131	9.909	3.11		Unsaturated	100.0			10.61	1.43	15.21	73.87	0.99	0.322	1.055	n.a.	n.a.	n.a.	0.00	0.00
8.987	11.262	1.101	1123.4	1123.4	19.050	10.289	3.13		Unsaturated	100.0			10.64	1.43	15.20	73.85	0.99	0.322	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.053	11.606	1.083	1131.6	1131.6	19.513	9.810	3.11		Unsaturated	100.0			10.97	1.42	15.59	74.36	0.99	0.322	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.118	12.127	1.024	1139.8	1139.8	20.279	8.860	3.06		Unsaturated	100.0			11.46	1.41	16.20	75.16	0.99	0.322	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.184	14.210	0.949	1148.0	1148.0	23.756	6.960	2.94		Unsaturated	98.2			13.43	1.40	18.80	78.42	0.99	0.322	1.055	n.a.	n.a.	n.a.	0.00	0.00
9.250	14.814	0.873	1156.2	1156.2	24.625	6.132	2.89		Unsaturated	94.2			14.00	1.39	19.51	78.98	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.315	15.131	0.825	1164.4	1164.4	24.989	5.671	2.86		Unsaturated	91.9			14.30	1.39	19.84	79.20	0.99	0.321	1.054	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.288	0.860	1172.6	1172.6	25.075	5.850	2.87		Unsaturated	92.6			14.45	1.38	19.97	79.42	0.99	0.321	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.493	0.908	1180.8	1180.8	25.242	6.093	2.88		Unsaturated	93.4			14.64	1.38	20.15	79.74	0.99	0.321	1.053	n.a.	n.a.	n.a.	0.00	0.00
9.512	15.716	0.980	1189.0	1189.0	25.436	6.481	2.90		Unsaturated	94.7			14.85	1.37	20.35	80.13	0.99	0.321	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.578	16.395	1.059	1197.2	1197.2	26.389	6.704	2.90		Unsaturated	94.6			15.50	1.36	21.12	81.12	0.99	0.321	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.643	16.266	1.123	1205.4	1205.4	25.989	7.170	2.92		Unsaturated	96.7			15.37	1.36	20.88	81.00	0.99	0.321	1.052	n.a.	n.a.	n.a.	0.00	0.00
9.709	16.023	1.159	1213.6	1213.6	25.406	7.518	2.94		Unsaturated	98.4			15.14	1.35	20.50	80.66	0.99	0.321	1.051	n.a.	n.a.	n.a.	0.00	0.00
9.774	16.228	1.136	1221.8	1221.8	25.564	7.274	2.93		Unsaturated	97.4			15.34	1.35	20.68	80.81	0.99	0.321	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.840	15.986	1.086	1230.0	1230.0	24.993	7.065	2.93		Unsaturated	97.3			15.11	1.34	20.31	80.31	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.906	16.173	1.034	1238.2	1238.2	25.123	6.648	2.91		Unsaturated	95.6			15.29	1.34	20.47	80.38	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
9.971	16.981	0.967	1246.4	1246.4	26.248	5.912	2.86		Unsaturated	91.7			16.05	1.33	21.39	81.20	0.99	0.321	1.049	n.a.	n.a.	n.a.	0.00	0.00
10.037	16.590	0.929	1254.6	1254.6	25.447	5.820	2.86		Clay	92.1			15.68	1.15	n.a.	n.a.	0.99	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	16.228	0.885	1262.8	1262.8	24.702	5.674	2.87		Clay	92.2			15.34	1.15	n.a.	n.a.	0.99	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	16.368	0.861	1271.0	1271.0	24.756	5.473	2.85		Clay	91.3			15.47	1.14	n.a.	n.a.	0.99	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	16.237	0.844	1279.2	1279.2	24.386	5.411	2.86		Clay	91.4			15.35	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	15.968	0.854	1287.4	1287.4	23.807	5.573	2.87		Clay	92.7			15.09	1.14	n.a.	n.a.	0.99	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	15.968	0.825	1295.6	1295.6	23.650	5.385	2.86		Clay	92.1			15.09	1.14	n.a.	n.a.	0.99	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.968	0.805	1303.8	1303.8	23.495	5.256	2.86		Clay	91.7			15.09	1.14	n.a.	n.a.	0.99	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	15.856	0.806	1312.0	1312.0	23.171	5.303	2.87		Clay	92.3			14.99	1.13	n.a.	n.a.	0.99	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	15.652	0.780	1320.2	1320.2	22.712	5.203	2.87		Clay	92.3			14.79	1.13	n.a.	n.a.	0.99	0.329	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	15.466	0.760	1328.4	1328.4	22.285	5.135	2.87		Clay	92.5			14.62	1.13	n.a.	n.a.	0.99	0.330	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	15.502	0.738	1336.6	1336.6	22.196	4.975	2.86		Clay	91.9			14.65	1.13	n.a.	n.a.	0.99	0.331	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	16.516	0.746	1344.8	1344.8	23.563	4.709	2.83		Clay	89.0			15.61	1.13	n.a.	n.a.	0.99	0.332	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	15.512	0.806	1353.0	1353.0	21.930	5.433	2.89		Clay	94.2			14.66	1.13	n.a.	n.a.	0.99	0.333	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	15.140	0.834	1361.2	1361.2	21.245	5.768	2.92		Clay	96.5			14.31	1.12	n.a.	n.a.	0.99	0.334	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	15.121	0.858	1369.4	1369.4	21.084	5.943	2.93		Clay	97.4			14.29	1.12	n.a.	n.a.	0.99	0.335	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	15.847	0.870	1377.6	1377.6	22.007	5.739	2.91		Clay	95.4			14.98	1.12	n.a.	n.a.	0.99	0.336	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	16.935	0.884	1385.8	1385.8	23.441	5.443	2.87		Clay	92.6			16.01	1.12	n.a.	n.a.	0.99	0.337	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	18.172	0.885	1394.0	1394.0	25.072	5.064	2.83		Clay	89.2			17.18	1.12	n.a.	n.a.	0.99	0.338	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	20.348	0.845	1402.2	1402.2	28.023	4.301	2.74		Clay	82.5			19.23	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	21.054	0.822	1410.4	1410.4	28.855	4.040	2.72		Clay	80.3			19.90	1.11	n.a.	n.a.	0.98	0.339	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	24.039	0.834	1418.6	1418.6	32.891	3.575	2.64		Clay	74.0			22.72	1.11	n.a.	n.a.	0.98	0.340	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.414	24.541	0.884	1426.8	1426.8	33.400	3.710	2.64		Clay	74.5			23.20	1.11	n.a.	n.a.	0.98	0.341	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	24.477	0.945	1435.0	1435.0	33.114	3.977	2.67		Clay	76.4			23.14	1.11	n.a.	n.a.	0.98	0.342	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	25.193	1.108	1443.2	1443.2	33.913	4.528	2.70		Clay	78.9			23.81	1.11	n.a.	n.a.	0.98	0.343	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	25.611	1.177	1451.4	1451.4	34.291	4.730	2.71		Clay	79.6			24.21	1.10	n.a.	n.a.	0.98	0.344	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	26.021	1.248	1459.6	1459.6	34.655	4.935	2.72		Clay	80.4			24.59	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	25.778	1.333	1467.8	1467.8	34.125	5.323	2.75		Clay	82.7			24.36	1.10	n.a.	n.a.	0.98	0.345	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.808	25.723	1.498	1476.0	1476.0	33.855	5.996	2.79		Clay	85.8			24.31	1.10	n.a.	n.a.	0.98	0.346	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	24.003	1.565	1484.2	1484.2	31.345	6.728	2.84		Clay	90.5			22.69	1.10	n.a.	n.a.	0.98	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	23.017	1.573	1492.4	1492.4	29.846	7.063	2.87		Clay	92.9			21.76	1.10	n.a.	n.a.	0.98	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	22.551	1.553	1500.6	1500.6	29.056	7.124	2.88		Clay	93.8			21.31	1.09	n.a.	n.a.	0.98	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	21.194	1.521	1508.8	1508.8	27.094	7.441	2.92		Clay	96.6			20.03	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	20.580	1.487	1517.0	1517.0	26.132	7.502	2.93		Clay	97.7			19.45	1.09	n.a.	n.a.	0.98	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	18.572	1.406	1525.2	1525.2	23.354	7.895	2.98		Clay	100.0			17.55	1.09	n.a.	n.a.	0.98	0.351	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	18.087	1.337	1533.4	1533.4	22.591	7.719	2.99		Clay	100.0			17.10	1.09	n.a.	n.a.	0.98	0.352	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
12.333	17.363	1.295	1541.6	1541.6	21.526	7.805	3.00		Clay	100.0			16.41	1.09	n.a.	n.a.	0.98	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	16.516	1.206	1549.8	1549.8	20.314	7.661	3.02		Clay	100.0			15.61	1.09	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	15.716	1.191	1558.0	1558.0	19.175	7.973	3.05		Clay	100.0			14.85	1.08	n.a.	n.a.	0.98	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	15.103	1.128	1566.2	1566.2	18.286	7.877	3.06		Clay	100.0			14.28	1.08	n.a.	n.a.	0.98	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	14.861	1.041	1574.4	1574.4	17.878	7.397	3.05		Clay	100.0			14.05	1.08	n.a.	n.a.	0.98	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	16.107	1.003	1582.6	1582.6	19.355	6.549	2.99		Clay	100.0			15.22	1.08	n.a.	n.a.	0.98	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.726	14.954	0.958	1590.8	1590.8	17.801	6.766	3.02		Clay	100.0			14.13	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	14.861	0.982	1599.0	1599.0	17.588	6.984	3.03		Clay	100.0			14.05	1.08	n.a.	n.a.	0.98	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	15.084	0.956	1607.2	1607.2	17.771	6.694	3.02		Clay	100.0			14.26	1.08	n.a.	n.a.	0.98	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	15.568	0.934	1615.4	1615.4	18.274	6.328	2.99		Clay	100.0			14.71	1.07	n.a.	n.a.	0.98	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	16.274	0.920	1623.6	1623.6	19.047	5.950	2.96		Clay	100.0			15.38	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	17.706	0.931	1631.8	1631.8	20.701	5.512	2.91		Clay	96.1			16.74	1.07	n.a.	n.a.	0.98	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	18.599	0.912	1640.0	1640.0	21.682	5.130	2.88		Clay	93.2			17.58	1.07	n.a.	n.a.	0.98	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	19.948	0.904	1648.2	1648.2	23.206	4.727	2.83		Clay	89.5			18.85	1.07	n.a.	n.a.	0.98	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	19.948	0.903	1656.4	1656.4	23.086	4.723	2.83		Clay	89.6			18.85	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	20.366	0.932	1664.6	1664.6	23.470	4.771	2.83		Clay	89.5			19.25	1.07	n.a.	n.a.	0.98	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	21.361	1.007	1672.8	1672.8	24.539	4.906	2.82		Clay	89.0			20.19	1.06	n.a.	n.a.	0.98	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	18.665	1.091	1681.0	1681.0	21.207	6.121	2.94		Clay	97.9			17.64	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	18.850	1.132	1689.2	1689.2	21.318	6.287	2.94		Clay	98.4			17.82	1.06	n.a.	n.a.	0.98	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	19.920	1.150	1697.4	1697.4	22.471	6.030	2.91		Clay	96.1			18.83	1.06	n.a.	n.a.	0.98	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	18.515	1.205	1705.6	1705.6	20.711	6.822	2.98		Clay	100.0			17.50	1.06	n.a.	n.a.	0.98	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	19.902	1.134	1713.8	1713.8	22.226	5.954	2.91		Clay	96.1			18.81	1.06	n.a.	n.a.	0.98	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.776	18.367	1.232	1722.0	1722.0	20.332	7.038	2.99		Clay	100.0			17.36	1.06	n.a.	n.a.	0.98	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.842	17.753	1.179	1730.2	1730.2	19.521	6.981	3.00		Clay	100.0			16.78	1.05	n.a.	n.a.	0.98	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.907	18.803	1.101	1738.4	1738.4	20.633	6.139	2.95		Clay	98.7			17.77	1.05	n.a.	n.a.	0.98	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.973	18.106	1.066	1746.6	1746.6	19.733	6.186	2.96		Clay	100.0			17.11	1.05	n.a.	n.a.	0.98	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.038	17.772	1.059	1754.8	1754.8	19.255	6.268	2.97		Clay	100.0			16.80	1.05	n.a.	n.a.	0.98	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.104	17.577	1.028	1763.0	1763.0	18.940	6.157	2.97		Clay	100.0			16.61	1.05	n.a.	n.a.	0.98	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.170	18.943	1.004	1771.2	1771.2	20.390	5.560	2.92		Clay	96.6			17.90	1.05	n.a.	n.a.	0.98	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.235	20.357	1.002	1779.4	1779.4	21.881	5.147	2.88		Clay	93.0			19.24	1.05	n.a.	n.a.	0.98	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.301	18.807	0.952	1787.6	1787.6	20.042	5.315	2.91		Clay	96.0			17.78	1.05	n.a.	n.a.	0.98	0.375	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.366	18.807	0.968	1795.8	1795.8	19.946	5.405	2.92		Clay	96.6			17.78	1.04	n.a.	n.a.	0.98	0.375	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.432	22.096	1.001	1804.0	1804.0	23.497	4.723	2.83		Clay	89.2			20.88	1.04	n.a.	n.a.	0.98	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.498	17.753	1.071	1812.2	1812.2	18.593	6.357	2.99		Clay	100.0			16.78	1.04	n.a.	n.a.	0.98	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.563	16.116	1.060	1820.4	1820.4	16.706	6.971	3.05		Clay	100.0			15.23	1.04	n.a.	n.a.	0.98	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.629	15.447	1.047	1828.6	1828.6	15.895	7.204	3.08		Clay	100.0			14.60	1.04	n.a.	n.a.	0.98	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.694	15.772	1.022	1836.8	1836.8	16.173	6.880	3.06		Clay	100.0			14.91	1.04	n.a.	n.a.	0.98	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	17.075	0.981	1845.0	1845.0	17.509	6.073	3.00		Clay	100.0			16.14	1.04	n.a.	n.a.	0.98	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.826	19.120	0.933	1853.2	1853.2	19.635	5.128	2.91		Clay	95.7			18.07	1.04	n.a.	n.a.	0.98	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.891	19.771	0.916	1861.4	1861.4	20.243	4.862	2.88		Clay	93.7			18.69	1.03	n.a.	n.a.	0.98	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.957	19.697	0.874	1869.6	1869.6	20.071	4.658	2.87		Clay	93.0			18.62	1.03	n.a.	n.a.	0.98	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.022	19.464	0.881	1877.8	1877.8	19.731	4.756	2.89		Clay	93.9			18.40	1.03	n.a.	n.a.	0.98	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.088	19.055	0.950	1886.0	1886.0	19.207	5.245	2.92		Clay	96.8			18.01	1.03	n.a.	n.a.	0.98	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.154	17.892	0.980	1894.2	1894.2	17.891	5.783	2.97		Clay	100.0			16.91	1.03	n.a.	n.a.	0.98	0.383	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.219	18.460	1.011	1902.4	1902.4	18.407	5.774	2.96		Clay	100.0			17.45	1.03	n.a.	n.a.	0.98	0.384	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.285	17.585	1.050	1910.6	1910.6	17.408	6.314	3.01		Clay	100.0			16.62	1.03	n.a.	n.a.	0.98	0.384	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.350	17.483	1.072	1918.8	1918.8	17.223	6.488	3.02		Clay	100.0			16.52	1.03	n.a.	n.a.	0.98	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.416	17.697	1.042	1927.0	1927.0	17.367	6.227	3.01		Clay	100.0			16.73	1.02	n.a.	n.a.	0.97	0.385	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.482	17.763	1.009	1935.2	1935.2	17.358	6.008	2.99		Clay	100.0			16.79	1.02	n.a.	n.a.	0.97	0.386	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.547	18.218	0.962	1943.4	1943.4	17.749	5.578	2.97		Clay	100.0			17.22	1.02	n.a.	n.a.	0.97	0.387	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.613	18.284	0.941	1951.6	1951.6	17.737	5.437	2.96		Clay	99.7			17.28	1.02	n.a.	n.a.	0.97	0.387	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.678	18.794	0.916	1959.8	1959.8	18.180	5.142	2.94		Clay	97.8			17.76	1.02	n.a.	n.a.	0.97	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.744	19.195	0.928	1968.0	1968.0	18.507	5.096	2.93		Clay	97.1			18.14	1.02	n.a.	n.a.	0.97	0.388	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.810	19.036	0.929	1976.2	1976.2	18.265	5.147	2.93		Clay	97.7			17.99	1.02	n.a.	n.a.	0.97	0.389	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.875	18.990	0.990	1984.4	1984.4	18.139	5.501	2.96		Clay	99.4			17.95	1.02	n.a.	n.a.	0.97	0.390	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.941	20.124	1.017	1992.6	1992.6	19.199	5.317	2.93		Clay	97.2			19.02	1.02	n.a.	n.a.	0.97	0.390	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.006	22.747	1.018	2000.8	2000.8	21.738	4.681	2.85		Clay	91.0			21.50	1.01	n.a.	n.a.	0.97	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.072	27.341	1.015	2009.0	2009.0	26.219	3.854	2.73		Clay	81.6			25.84	1.01	n.a.	n.a.	0.97	0.391	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.138	37.775	0.997	2017.2	2017.2	35.592	2.712	2.53		Sand	65.6		1.8	64.27	1.02	65.60	134.29	0.97	0.392	1.007	0.212	0.321	0.82	0.02	0.01
16.203	40.640	0.973	2025.4	2025.4	38.283	2.455	2.48		Sand	61.4		1.8	69.14	1.02	70.43	139.33	0.97	0.392	1.006	0.231	0.362	0.92	0.01	0.01
16.269	41.988	0.955	2033.6	2033.6	39.502	2.331	2.46		Sand	59.4		1.8	71.44	1.02	72.63	141.53	0.97	0.393	1.006	0.241	0.383	0.97	0.01	0.01
16.334	41.476	0.957	2041.8	2041.8	38.926	2.366	2.46		Sand	60.2		1.8	70.56	1.02	71.63	140.48	0.97	0.393	1.005	0.236	0.372	0.95	0.01	0.01
16.400	39.505	0.972	2050.0	2050.0	36.951	2.526	2.50		Sand	63.0		1.8	67.21	1.01	68.12	136.83	0.97	0.394	1.005	0.221	0.340	0.86	0.01	0.01
16.466	36.854	0.979	2058.2	2058.2	34.333	2.733	2.55		Sand	66.7		1.8	62.70	1.01	63.46	131.81	0.97	0.395	1.004	0.203	0.302	0.77	0.02	0.02

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	q_{c1N-CS}	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
16.531	34.539	1.022	2066.4	2066.4	32.199	3.050	2.60		Mixed	70.9		1.8	58.76	1.01	59.38	127.49	0.97	0.395	1.003	0.190	0.275	0.70	0.02	0.02
16.597	37.422	0.972	2074.6	2074.6	34.732	2.671	2.54		Sand	65.9		1.8	63.67	1.01	64.21	132.58	0.97	0.396	1.003	0.206	0.307	0.78	0.02	0.02
16.662	37.524	0.881	2082.8	2082.8	34.756	2.415	2.51		Sand	63.6		1.8	63.84	1.01	64.28	132.07	0.97	0.396	1.002	0.204	0.304	0.77	0.02	0.02
16.728	31.544	0.930	2091.0	2091.0	29.171	3.049	2.63		Clay	73.5			29.81	1.00	n.a.	n.a.	0.97	0.397	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.794	24.700	1.025	2099.2	2099.2	22.533	4.334	2.82		Clay	88.3			23.35	1.00	n.a.	n.a.	0.97	0.397	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.859	20.050	1.178	2107.4	2107.4	18.028	6.201	2.99		Clay	100.0			18.95	1.00	n.a.	n.a.	0.97	0.398	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.925	16.181	1.336	2115.6	2115.6	14.297	8.834	3.17		Clay	100.0			15.29	1.00	n.a.	n.a.	0.97	0.398	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.990	13.308	1.420	2123.8	2123.8	11.532	11.596	3.32		Clay	100.0			12.58	1.00	n.a.	n.a.	0.97	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.056	11.857	1.316	2132.0	2132.0	10.123	12.195	3.38		Clay	100.0			11.21	1.00	n.a.	n.a.	0.97	0.399	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.122	12.368	1.128	2140.2	2140.2	10.558	9.984	3.30		Clay	100.0			11.69	1.00	n.a.	n.a.	0.97	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.187	12.563	0.928	2148.4	2148.4	10.695	8.077	3.24		Clay	100.0			11.87	1.00	n.a.	n.a.	0.97	0.400	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.253	12.518	0.763	2156.6	2156.6	10.609	6.670	3.19		Clay	100.0			11.83	0.99	n.a.	n.a.	0.97	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.318	12.917	0.773	2164.8	2164.8	10.934	6.532	3.17		Clay	100.0			12.21	0.99	n.a.	n.a.	0.97	0.401	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.384	13.708	0.784	2173.0	2173.0	11.617	6.212	3.14		Clay	100.0			12.96	0.99	n.a.	n.a.	0.97	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.450	14.322	0.782	2181.2	2181.2	12.132	5.910	3.11		Clay	100.0			13.54	0.99	n.a.	n.a.	0.97	0.402	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.515	13.810	0.784	2189.4	2189.4	11.615	6.166	3.13		Clay	100.0			13.05	0.99	n.a.	n.a.	0.97	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.581	13.122	0.812	2197.6	2197.6	10.942	6.754	3.18		Clay	100.0			12.40	0.99	n.a.	n.a.	0.97	0.403	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.646	12.787	0.743	2205.8	2205.8	10.594	6.359	3.17		Clay	100.0			12.09	0.99	n.a.	n.a.	0.97	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.712	12.852	0.575	2214.0	2214.0	10.610	4.896	3.10		Clay	100.0			12.15	0.99	n.a.	n.a.	0.97	0.404	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.778	12.768	0.589	2222.2	2222.2	10.491	5.053	3.11		Clay	100.0			12.07	0.99	n.a.	n.a.	0.97	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.843	13.224	0.596	2230.4	2230.4	10.858	4.922	3.10		Clay	100.0			12.50	0.99	n.a.	n.a.	0.97	0.405	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.909	16.609	0.649	2238.6	2238.6	13.839	4.190	2.97		Clay	100.0			15.70	0.99	n.a.	n.a.	0.97	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.974	31.266	0.785	2246.8	2246.8	26.832	2.604	2.62		Clay	72.3			29.55	0.98	n.a.	n.a.	0.97	0.406	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	34.205	0.806	2254.8	2252.3	30.303	2.437	2.56	plastic	Clay	67.5			32.33	0.98	n.a.	n.a.	0.97	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.106	33.070	0.864	2262.7	2256.1	28.313	2.705	2.61		Clay	71.6			31.26	0.98	n.a.	n.a.	0.97	0.407	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.171	30.419	0.875	2270.5	2259.9	25.916	2.988	2.67		Clay	76.2			28.75	0.98	n.a.	n.a.	0.97	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.237	28.225	0.920	2278.4	2263.6	23.931	3.397	2.73		Clay	81.2			26.68	0.98	n.a.	n.a.	0.97	0.408	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.302	28.066	0.939	2286.3	2267.4	23.748	3.488	2.74		Clay	82.0			26.53	0.98	n.a.	n.a.	0.97	0.409	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.368	44.545	0.939	2294.2	2271.2	39.593	2.164	2.43		Sand	57.7	65		65.00	0.97	63.01	128.66	0.97	0.409	0.991	0.193	0.279	0.68	0.02	0.02
18.434	57.128	0.947	2302.0	2275.0	51.026	1.692	2.28		Sand	45.5	75		75.00	0.97	72.71	135.67	0.97	0.410	0.990	0.217	0.326	0.79	0.02	0.02
18.499	81.614	1.024	2309.9	2278.8	73.282	1.273	2.08		Sand	29.5			77.14	0.97	74.62	124.38	0.97	0.410	0.990	0.182	0.255	0.62	0.03	0.02
18.565	87.287	1.133	2317.8	2282.5	78.381	1.315	2.07		Sand	28.4			82.50	0.97	79.80	129.18	0.97	0.411	0.990	0.195	0.282	0.69	0.02	0.02
18.630	88.607	1.235	2325.6	2286.3	79.512	1.412	2.08		Sand	29.7			83.75	0.97	80.98	132.25	0.97	0.411	0.989	0.205	0.301	0.73	0.02	0.02
18.696	86.906	1.516	2333.5	2290.1	77.898	1.768	2.16		Sand	35.4			82.14	0.97	79.42	136.69	0.97	0.411	0.989	0.221	0.333	0.81	0.02	0.01
18.762	83.753	1.634	2341.4	2293.9	74.968	1.979	2.20		Sand	39.1			79.16	0.97	76.48	136.16	0.97	0.412	0.989	0.219	0.329	0.80	0.02	0.01
18.827	81.735	1.707	2349.3	2297.6	73.072	2.119	2.23		Sand	41.4			77.25	0.97	74.58	135.45	0.97	0.412	0.988	0.216	0.323	0.78	0.02	0.02
18.893	82.887	1.748	2357.1	2301.4	74.053	2.139	2.23		Sand	41.3			78.34	0.96	75.59	136.64	0.97	0.413	0.988	0.220	0.333	0.81	0.02	0.01
18.958	83.957	1.798	2365.0	2305.2	74.957	2.172	2.23		Sand	41.3			79.35	0.96	76.53	137.85	0.97	0.413	0.988	0.225	0.342	0.83	0.02	0.01
19.024	87.082	1.907	2372.9	2309.0	77.720	2.220	2.22		Sand	41.0			82.31	0.96	79.36	141.13	0.97	0.414	0.987	0.239	0.372	0.90	0.01	0.01
19.090	89.434	2.176	2380.8	2312.8	79.779	2.466	2.25		Sand	42.9			84.53	0.96	81.49	145.12	0.97	0.414	0.986	0.259	0.413	1.00	0.01	0.01
19.155	87.342	2.305	2388.6	2316.5	77.821	2.676	2.28		Sand	45.6			82.55	0.96	79.52	144.27	0.97	0.415	0.986	0.255	0.403	0.97	0.01	0.01
19.221	83.279	2.356	2396.5	2320.3	74.087	2.870	2.32		Sand	48.5			78.71	0.96	75.74	141.07	0.97	0.415	0.986	0.239	0.371	0.89	0.01	0.01
19.286	81.297	2.258	2404.4	2324.1	72.235	2.819	2.32		Sand	48.7			76.84	0.96	73.86	138.78	0.96	0.415	0.986	0.229	0.350	0.84	0.02	0.01
19.352	80.712	2.026	2412.2	2327.9	71.646	2.548	2.29		Sand	46.3			76.29	0.96	73.25	136.82	0.96	0.416	0.986	0.221	0.334	0.80	0.02	0.01
19.418	82.116	1.879	2420.1	2331.7	72.848	2.322	2.26		Sand	43.7			77.61	0.96	74.47	136.81	0.96	0.416	0.986	0.221	0.333	0.80	0.02	0.01
19.483	83.855	1.715	2428.0	2335.4	74.351	2.075	2.22		Sand	40.4			79.26	0.96	75.99	136.56	0.96	0.417	0.986	0.220	0.331	0.80	0.02	0.01
19.549	84.041	1.683	2435.9	2339.2	74.454	2.032	2.21		Sand	39.9			79.43	0.96	76.11	136.31	0.96	0.417	0.986	0.219	0.329	0.79	0.02	0.02
19.614	80.591	1.716	2443.7	2343.0	71.292	2.162	2.24		Sand	42.5			76.17	0.96	72.90	134.10	0.96	0.418	0.986	0.211	0.313	0.75	0.02	0.02
19.680	79.140	1.784	2451.6	2346.8	69.928	2.290	2.27		Sand	44.3			74.80	0.96	71.53	133.53	0.96	0.418	0.986	0.209	0.309	0.74	0.02	0.02
19.746	78.591	1.850	2459.5	2350.5	69.376	2.391	2.28		Sand	45.6			74.28	0.96	70.99	133.56	0.96	0.418	0.985	0.209	0.309	0.74	0.02	0.02
19.811	77.977	2.000	2467.3	2354.3	68.767	2.606	2.31		Sand	47.9			73.70	0.96	70.39	134.04	0.96	0.419	0.985	0.211	0.312	0.75	0.02	0.02
19.877	76.825	1.930	2475.2	2358.1	67.677	2.553	2.31		Sand	47.8			72.61	0.95	69.28	132.59	0.96	0.419	0.985	0.206	0.302	0.72	0.02	0.02
19.942	75.476	1.876	2483.1	2361.9	66.412	2.527	2.31		Sand	48.0			71.34	0.95	68.00	131.07	0.96	0.420	0.985	0.201	0.292	0.70	0.02	0.02
20.008	74.760	2.008	2491.0	2365.7	65.716	2.731	2.34		Sand	50.2			70.66	0.95	67.31	131.22	0.96	0.420	0.985	0.201	0.293	0.70	0.02	0.02
20.074	86.347	2.272	2498.8	2369.4	76.009	2.670	2.29		Sand	46.1			81.61	0.95	77.86	142.47	0.96	0.420	0.983	0.246	0.383	0.91	0.01	0.01
20.139	101.497	2.416	2506.7	2373.2	89.466	2.410	2.21		Sand	39.6			95.93	0.96	91.69	155.41	0.96	0.421	0.981	0.329	0.559	1.33	0.00	0.00
20.205	114.162	2.522	2514.6	2377.0	100.686	2.234	2.15		Sand	34.8			107.90	0.96	103.25	165.31	0.96	0.421	0.979	0.433	0.791	1.88	0.00	0.00
20.270	121.593	2.342	2522.4	2380.8	107.224	1.946	2.09		Sand	29.9			114.93	0.96	109.94	167.32	0.96	0.422	0.978	0.461	0.854	2.03	0.00	0.00
20.336	131.442	2.324	2530.3	2384.6	115.905	1.785	2.04		Sand	25.8			124.24	0.96	118.87	171.37	0.96	0.422	0.977	0.527	1.006	2.38	0.00	0.00
20.402	133.580	2.300	2538.2	2388.3	117.712	1.738	2.02		Sand	24.8			126.26	0.96	120.73	171.56	0.96	0.422	0.976	0.531	1.014	2.40	0.00	0.00
20.467	135.412	2.277	2546.1	2392.1	119.244	1.697	2.01		Sand	23.9			127.99	0.96	122.32	171.55	0.96	0.423	0.976	0.531	1.013	2.40	0.00	0.00
20.533	136.528	1.900	2553.9	2395.9	120.138	1.405	1.95		Sand	19.0			129.04	0.95	122.99	160.42	0.96	0.423	0.978	0.376	0.661	1.56	0.00	0.00
20.598	136.407	1.563	2561.8	2399.7	119.932	1.157	1.89		Sand	14.4			128.93	0.95	122.43	145.36	0.96	0.423	0.981	0.261	0.413	0.98	0.01	0.01
20.664	135.924	1.548	2569.7	2403.4	119.406	1.150	1.89		Sand	14.4			128.47	0.95	121.90	144.69	0.96	0.424	0.981	0.257	0.406	0.96	0.01	0.01

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
20.730	135.878	1.627	2577.6	2407.2	119.268	1.209	1.91		Sand	15.6			128.43	0.95	121.89	148.72	0.96	0.424	0.980	0.280	0.454	1.07	0.01	0.01
20.795	133.794	1.642	2585.4	2411.0	117.326	1.239	1.92		Sand	16.6			126.46	0.95	119.97	149.84	0.96	0.425	0.979	0.287	0.469	1.11	0.01	0.01
20.861	130.455	1.637	2593.3	2414.8	114.276	1.267	1.93		Sand	17.8			123.30	0.95	116.91	150.09	0.96	0.425	0.979	0.289	0.473	1.11	0.01	0.01
20.926	128.001	1.544	2601.2	2418.6	112.014	1.219	1.93		Sand	17.4			120.98	0.95	114.54	146.22	0.96	0.425	0.979	0.265	0.423	0.99	0.01	0.01
20.992	127.573	1.430	2609.0	2422.3	111.545	1.133	1.91		Sand	15.8			120.58	0.94	113.94	140.64	0.96	0.426	0.980	0.237	0.364	0.86	0.01	0.01
21.058	131.292	1.390	2616.9	2426.1	114.737	1.069	1.88		Sand	13.7			124.09	0.94	117.09	137.31	0.96	0.426	0.980	0.223	0.335	0.79	0.02	0.01
21.123	134.752	1.424	2624.8	2429.9	117.696	1.067	1.88		Sand	13.0			127.36	0.94	120.12	138.13	0.96	0.426	0.980	0.226	0.342	0.80	0.02	0.01
21.189	136.770	1.463	2632.7	2433.7	119.380	1.080	1.87		Sand	12.9			129.27	0.94	121.89	139.70	0.96	0.427	0.980	0.233	0.356	0.83	0.02	0.01
21.254	134.510	1.568	2640.5	2437.5	117.294	1.177	1.90		Sand	15.4			127.14	0.94	119.97	145.98	0.96	0.427	0.978	0.264	0.419	0.98	0.01	0.01
21.320	128.605	1.653	2648.4	2441.2	112.003	1.299	1.95		Sand	18.9			121.55	0.94	114.77	150.78	0.96	0.428	0.977	0.294	0.482	1.13	0.01	0.01
21.386	121.761	1.736	2656.3	2445.0	105.895	1.441	2.00		Sand	22.8			115.09	0.94	108.66	153.35	0.96	0.428	0.976	0.312	0.521	1.22	0.01	0.00
21.451	113.251	1.784	2664.1	2448.8	98.333	1.594	2.05		Sand	27.1	112		112.00	0.94	105.79	158.08	0.96	0.428	0.975	0.352	0.607	1.42	0.00	0.00
21.517	110.387	1.782	2672.0	2452.6	95.740	1.634	2.07		Sand	28.3	112		112.00	0.94	105.78	160.07	0.96	0.429	0.974	0.372	0.650	1.52	0.00	0.00
21.582	107.662	1.789	2679.9	2456.3	93.272	1.683	2.08		Sand	29.7	110		110.00	0.94	103.82	159.72	0.96	0.429	0.974	0.368	0.642	1.50	0.00	0.00
21.648	105.253	1.659	2687.8	2460.1	91.085	1.597	2.08		Sand	29.0	110		110.00	0.94	103.73	158.67	0.96	0.429	0.974	0.358	0.619	1.44	0.00	0.00
21.714	102.380	1.522	2695.6	2463.9	88.495	1.506	2.07		Sand	28.4	110		110.00	0.94	103.64	157.61	0.96	0.430	0.974	0.348	0.597	1.39	0.00	0.00
21.779	98.501	1.409	2703.5	2467.7	85.029	1.450	2.07		Sand	28.5	110		110.00	0.94	103.59	157.75	0.96	0.430	0.974	0.349	0.600	1.39	0.00	0.00
21.845	84.590	1.365	2711.4	2471.5	72.794	1.640	2.16		Sand	35.4	110		110.00	0.94	103.74	166.49	0.96	0.430	0.971	0.450	0.821	1.91	0.00	0.00
21.910	76.499	1.348	2719.2	2475.2	65.665	1.794	2.21		Sand	40.2	100		100.00	0.94	94.08	158.82	0.96	0.431	0.973	0.360	0.622	1.44	0.00	0.00
21.976	71.970	1.304	2727.1	2479.0	61.656	1.847	2.24		Sand	42.5	100		100.00	0.94	94.07	160.51	0.96	0.431	0.972	0.377	0.659	1.53	0.00	0.00
22.042	71.923	1.104	2735.0	2482.8	61.565	1.565	2.20		Sand	38.7	100		100.00	0.94	93.94	157.50	0.96	0.431	0.973	0.347	0.594	1.38	0.00	0.00
22.107	75.438	1.126	2742.9	2486.6	64.579	1.520	2.17		Sand	36.8	100		100.00	0.94	93.84	155.70	0.96	0.432	0.973	0.331	0.560	1.30	0.00	0.00
22.173	69.264	1.323	2750.7	2490.4	59.148	1.949	2.27		Sand	44.8	100		100.00	0.94	93.93	161.88	0.96	0.432	0.971	0.391	0.691	1.60	0.00	0.00
22.238	50.683	1.199	2758.6	2494.1	42.923	2.432	2.44		Sand	58.2	90		90.00	0.94	84.36	156.12	0.96	0.432	0.972	0.335	0.567	1.31	0.00	0.00
22.304	43.894	1.196	2766.5	2497.9	36.981	2.813	2.53		Sand	65.4	90		90.00	0.94	84.36	158.38	0.96	0.433	0.971	0.355	0.611	1.41	0.00	0.00
22.370	34.465	1.146	2774.4	2501.7	26.444	3.465	2.70		Clay	79.0			32.58	0.96	n.a.	n.a.	0.96	0.433	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.435	36.468	1.192	2782.2	2505.5	28.000	3.398	2.68		Clay	77.0			34.47	0.96	n.a.	n.a.	0.96	0.433	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.501	36.697	1.191	2790.1	2509.2	28.137	3.374	2.67		Clay	76.8			34.69	0.96	n.a.	n.a.	0.96	0.434	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.566	29.619	1.323	2798.0	2513.0	22.459	4.688	2.84		Clay	90.2			28.00	0.96	n.a.	n.a.	0.96	0.434	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.632	23.453	1.271	2805.8	2516.8	17.522	5.764	2.98		Clay	100.0			22.17	0.96	n.a.	n.a.	0.96	0.434	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.698	18.320	1.201	2813.7	2520.6	13.420	7.101	3.13		Clay	100.0			17.32	0.95	n.a.	n.a.	0.96	0.435	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.763	12.471	1.190	2821.6	2524.4	8.763	10.759	3.38		Clay	100.0			11.79	0.95	n.a.	n.a.	0.96	0.435	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.829	11.262	1.150	2829.5	2528.1	7.790	11.678	3.45		Clay	100.0			10.64	0.95	n.a.	n.a.	0.95	0.435	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.894	13.466	0.977	2837.3	2531.9	9.516	8.110	3.28		Clay	100.0			12.73	0.95	n.a.	n.a.	0.95	0.436	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.960	20.310	0.830	2845.2	2535.7	14.897	4.394	2.96		Clay	99.6			19.20	0.95	n.a.	n.a.	0.95	0.436	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.026	27.582	0.807	2853.1	2539.5	20.599	3.085	2.75		Clay	83.1			26.07	0.95	n.a.	n.a.	0.95	0.436	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.091	34.939	0.856	2860.9	2543.3	26.351	2.555	2.62		Clay	72.3			33.02	0.95	n.a.	n.a.	0.95	0.437	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.157	38.491	0.899	2868.8	2547.0	31.924	2.426	2.54	plastic	Clay	66.0			36.38	0.95	n.a.	n.a.	0.95	0.437	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.222	31.302	0.818	2876.7	2550.8	23.415	2.739	2.68		Clay	77.1			29.59	0.95	n.a.	n.a.	0.95	0.437	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.288	26.569	0.759	2884.6	2554.6	19.672	3.021	2.76		Clay	83.9			25.11	0.95	n.a.	n.a.	0.95	0.437	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.354	22.254	0.737	2892.4	2558.4	16.266	3.542	2.87		Clay	92.5			21.03	0.95	n.a.	n.a.	0.95	0.438	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.419	31.414	0.888	2900.3	2562.1	23.390	2.964	2.70		Clay	78.8			29.69	0.95	n.a.	n.a.	0.95	0.438	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.485	60.783	0.850	2908.2	2565.9	50.923	1.433	2.24		Sand	41.9	75	1.8	135.00	0.94	126.72	200.84	0.95	0.438	0.949	1.982	4.137	9.44	0.00	0.00
23.550	82.785	0.743	2916.0	2569.7	69.753	0.914	2.01		Sand	23.8		1.8	140.84	0.93	131.48	182.04	0.95	0.439	0.958	0.789	1.606	3.66	0.00	0.00
23.616	83.074	0.764	2923.9	2573.5	69.946	0.936	2.02		Sand	24.2		1.8	141.34	0.93	131.92	183.47	0.95	0.439	0.957	0.838	1.723	3.93	0.00	0.00
23.682	76.285	0.807	2931.8	2577.3	64.077	1.079	2.08		Sand	29.6		1.8	129.79	0.93	120.96	180.16	0.95	0.439	0.958	0.731	1.465	3.34	0.00	0.00
23.747	66.195	0.846	2939.7	2581.0	55.392	1.307	2.18		Sand	37.7	65	1.8	117.00	0.93	108.83	174.96	0.95	0.440	0.960	0.599	1.154	2.63	0.00	0.00
23.813	53.817	0.788	2947.5	2584.8	44.763	1.505	2.29		Sand	46.5	60	1.8	108.00	0.93	100.28	170.92	0.95	0.440	0.961	0.519	0.972	2.21	0.00	0.00
23.878	42.285	0.805	2955.4	2588.6	34.872	1.973	2.45		Sand	59.1	60	1.8	108.00	0.93	100.41	176.96	0.95	0.440	0.959	0.645	1.262	2.87	0.00	0.00
23.944	33.265	0.809	2963.3	2592.4	24.521	2.545	2.64		Clay	74.2			31.44	0.95	n.a.	n.a.	0.95	0.440	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.010	26.830	0.820	2971.2	2596.2	19.525	3.235	2.78		Clay	85.6			25.36	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.075	19.148	0.949	2979.0	2599.9	13.584	5.374	3.04		Clay	100.0			18.10	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.141	14.814	1.142	2986.9	2603.7	10.232	8.573	3.27		Clay	100.0			14.00	0.95	n.a.	n.a.	0.95	0.441	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.206	12.061	1.276	2994.8	2607.5	8.103	12.079	3.44		Clay	100.0			11.40	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.272	11.225	1.132	3002.6	2611.3	7.447	11.642	3.46		Clay	100.0			10.61	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.338	10.918	1.066	3010.5	2615.0	7.199	11.325	3.46		Clay	100.0			10.32	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.403	11.159	0.972	3018.4	2618.8	7.370	10.073	3.42		Clay	100.0			10.55	0.95	n.a.	n.a.	0.95	0.442	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.469	14.155	0.827	3026.3	2622.6	9.641	6.542	3.21		Clay	100.0			13.38	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.534	28.857	0.751	3034.1	2626.4	20.819	2.747	2.72		Clay	80.3			27.28	0.94	n.a.	n.a.	0.95	0.443	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.600	34.139	0.670	3042.0	2630.2	27.653	2.054	2.54		Sand	66.4		1.8	58.08	0.90	52.54	117.65	0.95	0.443	0.973	0.166	0.222	0.50	0.03	0.02
24.666	34.902	0.691	3049.9	2633.9	28.276	2.070	2.54		Sand	65.9		1.8	59.38	0.90	53.71	119.05	0.95	0.443	0.973	0.169	0.227	0.51	0.03	0.02
24.731	31.851	0.699	3057.7	2637.7	22.991	2.305	2.64		Clay	73.9			30.10	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.797	26.551	0.714	3065.6	2641.5	18.942	2.854	2.76		Clay	83.8			25.10	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.862	21.956	0.706	3073.5	2645.3	15.438	3.458	2.88		Clay	93.5			20.75	0.94	n.a.	n.a.	0.95	0.444	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
24.928	16.293	0.661	3081.4	2649.1	11.138	4.481	3.06		Clay	100.0			15.40	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.994	16.749	0.717	3089.2	2652.8	11.463	4.716	3.07		Clay	100.0			15.83	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.059	21.138	0.718	3097.1	2656.6	14.748	3.665	2.91		Clay	95.9			19.98	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.125	32.382	0.711	3105.0	2660.4	23.177	2.306	2.63		Clay	73.7			30.61	0.94	n.a.	n.a.	0.95	0.445	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.190	50.571	0.774	3112.8	2664.2	41.287	1.579	2.33		Sand	49.8	60	1.8	108.00	0.92	99.18	171.33	0.95	0.446	0.955	0.527	0.982	2.20	0.00	0.00
25.256	70.008	0.738	3120.7	2667.9	57.616	1.078	2.12		Sand	32.5		1.8	119.11	0.92	109.27	170.04	0.95	0.446	0.956	0.504	0.931	2.09	0.00	0.00
25.322	79.847	0.731	3128.6	2671.7	65.848	0.934	2.04		Sand	25.9		1.8	135.85	0.92	124.93	178.57	0.95	0.446	0.951	0.686	1.349	3.02	0.00	0.00
25.387	77.373	0.718	3136.5	2675.5	63.719	0.947	2.05		Sand	27.1		1.8	131.64	0.92	120.89	176.00	0.95	0.446	0.952	0.622	1.200	2.69	0.00	0.00
25.453	72.882	0.701	3144.3	2679.3	59.898	0.983	2.08		Sand	29.6		1.8	124.00	0.92	113.63	171.32	0.95	0.447	0.954	0.527	0.981	2.20	0.00	0.00
25.518	67.460	0.711	3152.2	2683.1	55.301	1.079	2.13		Sand	33.7		1.8	114.77	0.91	104.93	166.13	0.95	0.447	0.956	0.444	0.797	1.78	0.00	0.00
25.584	61.126	0.769	3160.1	2686.8	49.946	1.291	2.22		Sand	40.3		1.8	104.00	0.91	94.80	159.81	0.95	0.447	0.958	0.369	0.634	1.42	0.00	0.00
25.650	54.170	0.783	3168.0	2690.6	44.077	1.489	2.30		Sand	46.7	55	1.8	99.00	0.91	90.15	158.28	0.95	0.447	0.959	0.354	0.601	1.34	0.00	0.00
25.715	47.001	0.872	3175.8	2694.4	38.038	1.920	2.41		Sand	56.2	55	1.8	99.00	0.91	90.26	162.89	0.95	0.448	0.957	0.403	0.706	1.58	0.00	0.00
25.781	31.702	0.912	3183.7	2698.2	22.319	3.029	2.72		Clay	80.5			29.96	0.94	n.a.	n.a.	0.95	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.846	25.443	0.801	3191.6	2702.0	17.652	3.359	2.83		Clay	89.2			24.05	0.94	n.a.	n.a.	0.95	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.912	19.827	0.731	3199.4	2705.7	13.473	4.010	2.97		Clay	100.0			18.74	0.94	n.a.	n.a.	0.95	0.448	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.978	15.661	0.687	3207.3	2709.5	10.376	4.887	3.11		Clay	100.0			14.80	0.94	n.a.	n.a.	0.95	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.043	12.666	0.627	3215.2	2713.3	8.151	5.670	3.23		Clay	100.0			11.97	0.94	n.a.	n.a.	0.95	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.109	11.430	0.613	3223.1	2717.1	7.227	6.243	3.30		Clay	100.0			10.80	0.94	n.a.	n.a.	0.95	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.174	11.922	0.602	3230.9	2720.8	7.576	5.841	3.26		Clay	100.0			11.27	0.94	n.a.	n.a.	0.95	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.240	12.304	0.577	3238.8	2724.6	7.843	5.400	3.23		Clay	100.0			11.63	0.94	n.a.	n.a.	0.94	0.449	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.306	14.954	0.542	3246.7	2728.4	9.772	4.066	3.08		Clay	100.0			14.13	0.94	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.371	30.243	0.614	3254.5	2732.2	20.947	2.146	2.65		Clay	75.0			28.59	0.93	n.a.	n.a.	0.94	0.450	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.437	54.263	0.557	3262.4	2736.0	43.749	1.058	2.21		Sand	40.0		1.8	92.32	0.90	83.05	145.01	0.94	0.450	0.961	0.259	0.401	0.89	0.01	0.01
26.502	72.091	0.470	3270.3	2739.7	58.524	0.667	2.00		Sand	22.8		1.8	122.65	0.90	110.79	155.81	0.94	0.450	0.957	0.332	0.552	1.23	0.01	0.00
26.568	59.900	0.502	3278.2	2743.5	48.361	0.862	2.13		Sand	33.1		1.8	101.91	0.90	91.75	149.43	0.94	0.451	0.959	0.285	0.454	1.01	0.01	0.01
26.634	47.316	0.606	3286.0	2747.3	37.886	1.327	2.32		Sand	48.6		1.8	80.50	0.89	72.02	136.42	0.94	0.451	0.963	0.220	0.322	0.72	0.02	0.02
26.699	36.911	0.793	3293.9	2751.1	29.232	2.249	2.55		Sand	66.8	40	1.8	72.00	0.89	64.27	132.86	0.94	0.451	0.964	0.207	0.297	0.66	0.02	0.02
26.765	28.317	0.875	3301.8	2754.9	19.359	3.281	2.79		Clay	86.1			26.76	0.93	n.a.	n.a.	0.94	0.451	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.830	23.565	1.017	3309.6	2758.6	15.885	4.642	2.95		Clay	99.1			22.27	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.896	18.218	1.220	3317.5	2762.4	11.989	7.367	3.17		Clay	100.0			17.22	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.962	14.833	1.301	3325.4	2766.2	9.522	9.878	3.33		Clay	100.0			14.02	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.027	12.703	1.352	3333.3	2770.0	7.969	12.250	3.45		Clay	100.0			12.01	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.093	12.304	1.192	3341.1	2773.7	7.667	11.210	3.44		Clay	100.0			11.63	0.93	n.a.	n.a.	0.94	0.452	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.158	12.741	1.048	3349.0	2777.5	7.969	9.470	3.38		Clay	100.0			12.04	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.224	13.280	0.934	3356.9	2781.3	8.343	8.051	3.32		Clay	100.0			12.55	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.290	15.754	0.830	3364.8	2785.1	10.105	5.898	3.17		Clay	100.0			14.89	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.355	18.599	0.708	3372.6	2788.9	12.129	4.186	3.01		Clay	100.0			17.58	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.421	28.950	0.630	3380.5	2792.6	19.523	2.311	2.69		Clay	78.5			27.36	0.93	n.a.	n.a.	0.94	0.453	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.486	159.470	0.729	3388.4	2796.4	129.721	0.462	1.62		Sand	0.0		1.8	271.31	0.93	251.90	251.90	0.94	0.454	0.916	163.653	329.923	727.26	0.00	0.00
27.552	117.854	0.696	3396.2	2800.2	95.438	0.599	1.79		Sand	6.5		1.8	200.51	0.91	181.63	182.89	0.94	0.454	0.939	0.818	1.642	3.62	0.00	0.00
27.618	76.927	0.824	3404.1	2804.0	61.766	1.095	2.10		Sand	30.9		1.8	130.88	0.90	118.30	178.89	0.94	0.454	0.941	0.695	1.355	2.98	0.00	0.00
27.683	56.477	0.803	3412.0	2807.8	44.941	1.466	2.29		Sand	45.9		1.8	96.09	0.89	85.82	152.35	0.94	0.454	0.954	0.305	0.493	1.09	0.01	0.01
27.749	43.764	1.144	3419.9	2811.5	34.483	2.720	2.54		Sand	66.5	50	1.8	90.00	0.89	80.39	153.55	0.94	0.454	0.953	0.314	0.512	1.13	0.01	0.01
27.814	33.042	1.828	3427.7	2815.3	22.256	5.835	2.91		Clay	95.5			31.23	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.880	25.611	2.103	3435.6	2819.1	16.951	8.802	3.12		Clay	100.0			24.21	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.946	21.761	2.230	3443.5	2822.9	14.198	11.128	3.24		Clay	100.0			20.57	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.011	17.660	2.143	3451.3	2826.6	11.274	13.449	3.37		Clay	100.0			16.69	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	16.675	2.066	3459.2	2830.4	10.561	13.824	3.40		Clay	100.0			15.76	0.93	n.a.	n.a.	0.94	0.455	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	16.209	1.765	3467.1	2834.2	10.215	12.193	3.37		Clay	100.0			15.32	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.208	16.079	1.288	3475.0	2838.0	10.107	8.981	3.29		Clay	100.0			15.20	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	15.995	0.852	3482.8	2841.8	10.032	5.977	3.17		Clay	100.0			15.12	0.93	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	16.061	0.573	3490.7	2845.5	10.062	4.003	3.07		Clay	100.0			15.18	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	16.414	0.468	3498.6	2849.3	10.293	3.191	3.00		Clay	100.0			15.51	0.92	n.a.	n.a.	0.94	0.456	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	16.730	0.455	3506.4	2853.1	10.499	3.038	2.98		Clay	100.0			15.81	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	17.353	0.413	3514.3	2856.9	10.918	2.648	2.93		Clay	97.8			16.40	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	17.744	0.390	3522.2	2860.7	11.174	2.440	2.91		Clay	95.5			16.77	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.667	18.162	0.357	3530.1	2864.4	11.449	2.177	2.87		Clay	92.7			17.17	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.733	18.739	0.403	3537.9	2868.2	11.833	2.375	2.88		Clay	93.4			17.71	0.92	n.a.	n.a.	0.94	0.457	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.798	19.688	0.444	3545.8	2872.0	12.476	2.478	2.87		Clay	92.7			18.61	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.864	20.543	0.472	3553.7	2875.8	13.051	2.515	2.86		Clay	91.7			19.42	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.930	20.822	0.531	3561.6	2879.5	13.225	2.789	2.88		Clay	93.3			19.68	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	21.259	0.547	3569.4	2883.3	13.508	2.809	2.87		Clay	92.9			20.09	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	22.235	0.547	3577.3	2887.1	14.164	2.675	2.84		Clay	90.6			21.02	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
29.126	22.394	0.555	3585.2	2890.9	14.253	2.694	2.84		Clay	90.5			21.17	0.92	n.a.	n.a.	0.94	0.458	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	22.096	0.548	3593.0	2894.7	14.025	2.700	2.85		Clay	91.0			20.88	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	21.919	0.559	3600.9	2898.4	13.882	2.779	2.86		Clay	91.9			20.72	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	21.845	0.643	3608.8	2902.2	13.811	3.208	2.90		Clay	95.0			20.65	0.92	n.a.	n.a.	0.94	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.389	21.742	0.690	3616.7	2906.0	13.719	3.461	2.92		Clay	96.7			20.55	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	21.501	0.698	3624.5	2909.8	13.533	3.545	2.93		Clay	97.6			20.32	0.92	n.a.	n.a.	0.93	0.459	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	19.929	0.701	3632.4	2913.6	12.433	3.870	2.99		Clay	100.0			18.84	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	18.441	0.732	3640.3	2917.3	11.395	4.404	3.05		Clay	100.0			17.43	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	17.772	0.746	3648.1	2921.1	10.919	4.678	3.08		Clay	100.0			16.80	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	17.697	0.767	3656.0	2924.9	10.851	4.833	3.09		Clay	100.0			16.73	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	16.814	0.756	3663.9	2928.7	10.231	5.046	3.12		Clay	100.0			15.89	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	16.870	0.745	3671.8	2932.4	10.254	4.955	3.12		Clay	100.0			15.95	0.92	n.a.	n.a.	0.93	0.460	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	17.251	0.704	3679.6	2936.2	10.497	4.568	3.09		Clay	100.0			16.31	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	17.363	0.673	3687.5	2940.0	10.557	4.337	3.07		Clay	100.0			16.41	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	16.888	0.636	3695.4	2943.8	10.218	4.229	3.08		Clay	100.0			15.96	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	17.279	0.616	3703.2	2947.6	10.468	3.993	3.05		Clay	100.0			16.33	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	17.111	0.572	3711.1	2951.3	10.338	3.749	3.04		Clay	100.0			16.17	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	16.302	0.542	3719.0	2955.1	9.775	3.753	3.06		Clay	100.0			15.41	0.92	n.a.	n.a.	0.93	0.461	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.307	19.036	0.567	3726.9	2958.9	11.607	3.302	2.97		Clay	100.0			17.99	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	19.036	0.567	3734.7	2962.7	11.590	3.303	2.97		Clay	100.0			17.99	0.92	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	20.103	0.532	3742.6	2966.5	12.292	2.918	2.92		Clay	96.3			19.00	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	22.375	0.462	3750.5	2970.2	13.803	2.254	2.81		Clay	87.9			21.15	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	21.324	0.474	3758.4	2974.0	13.077	2.438	2.85		Clay	91.0			20.16	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	22.542	0.577	3766.2	2977.8	13.875	2.793	2.86		Clay	92.0			21.31	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	24.569	0.597	3774.1	2981.6	15.215	2.632	2.82		Clay	88.2			23.22	0.91	n.a.	n.a.	0.93	0.462	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	23.630	0.701	3782.0	2985.3	14.564	3.225	2.88		Clay	93.6			22.33	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	23.453	0.754	3789.8	2989.1	14.424	3.498	2.91		Clay	95.6			22.17	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	24.310	0.952	3797.7	2992.9	14.976	4.248	2.95		Clay	98.7			22.98	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	24.067	1.046	3805.6	2996.7	14.793	4.719	2.98		Clay	100.0			22.75	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	22.858	1.158	3813.5	3000.5	13.965	5.527	3.04		Clay	100.0			21.60	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	21.482	1.136	3821.3	3004.2	13.029	5.804	3.08		Clay	100.0			20.30	0.91	n.a.	n.a.	0.93	0.463	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	21.204	1.116	3829.2	3008.0	12.825	5.786	3.08		Clay	100.0			20.04	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	20.292	1.213	3837.1	3011.8	12.201	6.602	3.14		Clay	100.0			19.18	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	18.953	1.126	3844.9	3015.6	11.295	6.612	3.16		Clay	100.0			17.91	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	19.529	1.126	3852.8	3019.4	11.660	6.397	3.14		Clay	100.0			18.46	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	19.957	1.104	3860.7	3023.1	11.926	6.124	3.12		Clay	100.0			18.86	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	22.421	0.901	3868.6	3026.9	13.536	4.398	2.99		Clay	100.0			21.19	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	22.979	0.886	3876.4	3030.7	13.885	4.211	2.97		Clay	100.0			21.72	0.91	n.a.	n.a.	0.93	0.464	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	24.691	0.933	3884.3	3034.5	14.994	4.101	2.94		Clay	97.9			23.34	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	25.490	0.966	3892.2	3038.2	15.498	4.103	2.93		Clay	97.0			24.09	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	24.114	1.095	3900.0	3042.0	14.572	4.940	3.00		Clay	100.0			22.79	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	22.682	1.160	3907.9	3045.8	13.611	5.596	3.05		Clay	100.0			21.44	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	22.421	1.263	3915.8	3049.6	13.420	6.172	3.09		Clay	100.0			21.19	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	22.933	1.301	3923.7	3053.4	13.736	6.204	3.08		Clay	100.0			21.68	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	22.784	1.312	3931.5	3057.1	13.619	6.302	3.09		Clay	100.0			21.53	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	22.858	1.294	3939.4	3060.9	13.648	6.195	3.08		Clay	100.0			21.60	0.91	n.a.	n.a.	0.93	0.465	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	23.900	1.226	3947.3	3064.7	14.309	5.591	3.04		Clay	100.0			22.59	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	23.956	1.176	3955.2	3068.5	14.325	5.351	3.02		Clay	100.0			22.64	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	24.700	1.066	3963.0	3072.3	14.789	4.692	2.98		Clay	100.0			23.35	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	25.453	1.029	3970.9	3076.0	15.258	4.385	2.95		Clay	98.9			24.06	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.406	25.537	1.049	3978.8	3079.8	15.292	4.455	2.95		Clay	99.2			24.14	0.91	n.a.	n.a.	0.93	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	26.085	1.109	3986.6	3083.6	15.626	4.603	2.95		Clay	99.3			24.66	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	28.048	1.270	3994.5	3087.4	16.876	4.875	2.94		Clay	98.6			26.51	0.91	n.a.	n.a.	0.92	0.466	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	33.953	1.415	4002.4	3091.1	20.673	4.429	2.85		Clay	91.0			32.09	0.90	n.a.	n.a.	0.92	0.467	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	66.762	1.305	4010.3	3094.9	50.610	2.015	2.33		Sand	49.6	150		150.00	0.89	133.28	214.36	0.92	0.467	0.886	4.696	9.153	19.61	0.00	0.00
32.734	87.463	1.206	4018.1	3098.7	66.744	1.411	2.14		Sand	34.3	150		150.00	0.88	132.30	200.19	0.92	0.467	0.900	1.910	3.781	8.10	0.00	0.00
32.800	112.861	1.296	4026.0	3102.5	86.526	1.169	2.00		Sand	23.2	150		150.00	0.87	130.83	179.90	0.92	0.467	0.919	0.723	1.388	2.97	0.00	0.00
32.866	138.751	1.245	4033.9	3106.3	106.667	0.911	1.86		Sand	12.0	200		200.00	0.88	175.60	193.07	0.92	0.467	0.907	1.306	2.606	5.58	0.00	0.00
32.931	171.235	1.297	4041.7	3110.0	131.925	0.766	1.74		Sand	2.5	200		200.00	0.87	173.68	173.68	0.92	0.467	0.923	0.572	1.050	2.25	0.00	0.00
32.997	269.569	1.229	4049.6	3113.8	208.459	0.459	1.45		Sand	0.0			254.79	0.89	227.37	227.37	0.92	0.467	0.884	13.020	25.325	54.20	0.00	0.00
33.062	309.129	1.298	4057.5	3117.6	239.135	0.423	1.38		Sand	0.0			292.18	0.90	263.79	263.79	0.92	0.467	0.884	779.897	1516.297	3244.12	0.00	0.00
33.128	361.310	1.422	4065.4	3121.4	279.595	0.396	1.31		Sand	0.0			341.50	0.90	308.21	308.21	0.92	0.468	0.883	#########	########	##########	0.00	0.00
33.194	397.997	1.394	4073.2	3125.2	307.956	0.352	1.25		Sand	0.0			376.18	0.90	339.40	339.40	0.92	0.468	0.883	#########	########	##########	0.00	0.00
33.259	435.372	1.252	4081.1	3128.9	336.817	0.289	1.16		Sand	0.0			411.50	0.90	371.16	371.16	0.92	0.468	0.883	#########	########	##########	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.325	465.791	1.275	4089.0	3132.7	360.241	0.275	1.13		Sand	0.0			440.26	0.90	396.96	396.96	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.390	505.836	2.091	4096.8	3136.5	391.109	0.415	1.21		Sand	0.0			478.11	0.90	430.95	430.95	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.456	524.342	2.843	4104.7	3140.3	405.229	0.544	1.29		Sand	0.0			495.60	0.90	446.58	446.58	0.92	0.468	0.882	#########	########	##########	0.00	0.00
33.522	523.227	3.020	4112.6	3144.0	404.118	0.579	1.31		Sand	0.0			494.54	0.90	445.49	445.49	0.92	0.468	0.881	#########	########	##########	0.00	0.00
33.587	530.526	3.064	4120.5	3147.8	409.528	0.580	1.30		Sand	0.0			501.44	0.90	451.56	451.56	0.92	0.468	0.881	#########	########	##########	0.00	0.00
33.653	532.414	4.100	4128.3	3151.6	410.742	0.773	1.40		Sand	0.0			503.23	0.90	453.02	453.02	0.92	0.468	0.880	#########	########	##########	0.00	0.00
33.718	532.461	3.731	4136.2	3155.4	410.529	0.703	1.37		Sand	0.0			503.27	0.90	452.92	452.92	0.92	0.469	0.880	#########	########	##########	0.00	0.00
33.784	524.212	3.688	4144.1	3159.2	403.900	0.706	1.37		Sand	0.0			495.47	0.90	445.76	445.76	0.92	0.469	0.880	#########	########	##########	0.00	0.00
33.850	509.434	4.072	4152.0	3162.9	392.231	0.803	1.43		Sand	0.0			481.51	0.90	433.06	433.06	0.92	0.469	0.879	#########	########	##########	0.00	0.00
33.915	504.265	3.585	4159.8	3166.7	388.000	0.714	1.39		Sand	0.0			476.62	0.90	428.53	428.53	0.92	0.469	0.879	#########	########	##########	0.00	0.00
33.981	488.939	3.764	4167.7	3170.5	375.931	0.773	1.42		Sand	0.0			462.14	0.90	415.37	415.37	0.92	0.469	0.879	#########	########	##########	0.00	0.00
34.046	485.088	3.502	4175.6	3174.3	372.733	0.725	1.41		Sand	0.0			458.50	0.90	411.97	411.97	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.112	475.547	4.602	4183.4	3178.1	365.149	0.972	1.51		Sand	0.0			449.48	0.90	403.74	403.74	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.178	450.066	4.086	4191.3	3181.8	345.289	0.912	1.50		Sand	0.0			425.39	0.90	381.99	381.99	0.92	0.469	0.878	#########	########	##########	0.00	0.00
34.243	445.174	3.418	4199.2	3185.6	341.313	0.771	1.45		Sand	0.0			420.77	0.90	377.72	377.72	0.92	0.469	0.877	#########	########	##########	0.00	0.00
34.309	431.578	4.033	4207.1	3189.4	330.640	0.939	1.53		Sand	0.0			407.92	0.90	366.07	366.07	0.92	0.470	0.877	#########	########	##########	0.00	0.00
34.374	427.226	3.753	4214.9	3193.2	327.093	0.883	1.51		Sand	0.0			403.81	0.90	362.26	362.26	0.92	0.470	0.877	#########	########	##########	0.00	0.00
34.440	403.846	3.607	4222.8	3196.9	308.918	0.898	1.53		Sand	0.0			381.71	0.90	342.33	342.33	0.92	0.470	0.876	#########	########	##########	0.00	0.00
34.506	398.667	4.014	4230.7	3200.7	304.753	1.012	1.57		Sand	0.0			376.81	0.90	337.84	337.84	0.92	0.470	0.876	#########	########	##########	0.00	0.00
34.571	367.234	4.515	4238.5	3204.5	280.428	1.237	1.66		Sand	0.0			347.10	0.90	311.10	311.10	0.92	0.470	0.875	#########	########	##########	0.00	0.00
34.637	349.001	3.626	4246.4	3208.3	266.264	1.045	1.62		Sand	0.0			329.87	0.90	295.57	295.57	0.92	0.470	0.875	#########	########	779868.18	0.00	0.00
34.702	332.838	3.630	4254.3	3212.1	253.705	1.098	1.65		Sand	0.0			314.59	0.90	281.79	281.79	0.92	0.470	0.875	13591.809	26157.793	55637.99	0.00	0.00
34.768	318.524	3.723	4262.2	3215.8	242.578	1.177	1.69		Sand	0.0			301.06	0.90	269.59	269.59	0.92	0.470	0.874	1829.928	3520.325	7486.20	0.00	0.00
34.834	272.898	3.622	4270.0	3219.6	207.472	1.338	1.77		Sand	4.8			257.94	0.88	228.01	228.18	0.92	0.470	0.874	13.971	26.865	57.12	0.00	0.00
34.899	235.857	3.474	4277.9	3223.4	178.981	1.486	1.85		Sand	10.9			222.93	0.87	195.02	208.99	0.92	0.470	0.877	3.260	6.288	13.37	0.00	0.00
34.965	232.640	3.470	4285.8	3227.2	176.411	1.505	1.86		Sand	11.6			219.89	0.87	192.27	208.81	0.92	0.471	0.877	3.223	6.217	13.21	0.00	0.00
35.030	209.763	3.017	4293.6	3231.0	158.806	1.453	1.88		Sand	13.1	200		200.00	0.87	173.50	195.26	0.92	0.471	0.895	1.461	2.876	6.11	0.00	0.00
35.096	189.257	2.421	4301.5	3234.7	143.035	1.294	1.87		Sand	12.7	200		200.00	0.87	173.23	193.31	0.92	0.471	0.897	1.323	2.609	5.54	0.00	0.00
35.162	158.261	2.108	4309.4	3238.5	119.267	1.350	1.94		Sand	18.2	200		200.00	0.88	175.45	216.86	0.92	0.471	0.872	5.628	10.802	22.94	0.00	0.00
35.227	151.723	1.923	4317.3	3242.3	114.202	1.286	1.94		Sand	18.2	190		190.00	0.87	165.59	205.54	0.92	0.471	0.880	2.621	5.075	10.78	0.00	0.00
35.293	140.918	1.452	4325.1	3246.1	105.887	1.046	1.90		Sand	15.3	190		190.00	0.87	164.46	194.16	0.92	0.471	0.895	1.381	2.719	5.77	0.00	0.00
35.358	130.446	1.604	4333.0	3249.8	97.836	1.250	1.98		Sand	21.5	180		180.00	0.87	156.76	205.60	0.92	0.471	0.879	2.629	5.087	10.80	0.00	0.00
35.424	80.647	1.168	4340.9	3253.6	59.818	1.488	2.19		Sand	38.4	150		150.00	0.87	130.34	202.22	0.92	0.471	0.884	2.146	4.173	8.86	0.00	0.00
35.490	77.113	1.165	4348.8	3257.4	57.088	1.555	2.22		Sand	40.6	150		150.00	0.87	130.45	204.38	0.91	0.471	0.881	2.441	4.728	10.03	0.00	0.00
35.555	62.875	1.809	4356.6	3261.2	46.211	2.980	2.48		Sand	61.1	150		150.00	0.88	131.34	217.28	0.91	0.471	0.870	5.806	11.116	23.58	0.00	0.00
35.621	47.410	1.969	4364.5	3265.0	27.705	4.354	2.75		Clay	83.0			44.81	0.89	n.a.	n.a.	0.91	0.471	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.686	33.432	2.451	4372.4	3268.7	19.118	7.844	3.04		Clay	100.0			31.60	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.752	30.373	2.626	4380.2	3272.5	17.224	9.318	3.13		Clay	100.0			28.71	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.818	27.658	2.655	4388.1	3276.3	15.544	10.427	3.19		Clay	100.0			26.14	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.883	28.187	2.491	4396.0	3280.1	15.847	9.585	3.16		Clay	100.0			26.64	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.949	29.210	2.191	4403.9	3283.9	16.449	8.112	3.10		Clay	100.0			27.61	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.014	30.428	2.168	4411.7	3287.6	17.169	7.682	3.07		Clay	100.0			28.76	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.080	33.106	1.313	4419.6	3291.4	18.774	4.250	2.87		Clay	92.7			31.29	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.146	35.143	1.359	4427.5	3295.2	19.986	4.127	2.84		Clay	90.3			33.22	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.211	32.047	1.353	4435.3	3299.0	18.084	4.536	2.90		Clay	95.1			30.29	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.277	28.745	1.335	4443.2	3302.7	16.061	5.033	2.97		Clay	100.0			27.17	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.342	26.235	1.437	4451.1	3306.5	14.522	5.985	3.05		Clay	100.0			24.80	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.408	21.808	1.574	4459.0	3310.3	11.829	8.039	3.20		Clay	100.0			20.61	0.89	n.a.	n.a.	0.91	0.472	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.474	19.203	1.598	4466.8	3314.1	10.241	9.417	3.30		Clay	100.0			18.15	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.539	18.265	1.434	4474.7	3317.9	9.661	8.947	3.30		Clay	100.0			17.26	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.605	18.227	1.157	4482.6	3321.6	9.625	7.238	3.24		Clay	100.0			17.23	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.670	18.208	1.077	4490.4	3325.4	9.600	6.747	3.22		Clay	100.0			17.21	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.736	15.930	0.963	4498.3	3329.2	8.219	7.039	3.29		Clay	100.0			15.06	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.802	13.941	0.828	4506.2	3333.0	7.014	7.084	3.34		Clay	100.0			13.18	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.867	13.020	0.691	4514.1	3336.8	6.451	6.420	3.34		Clay	100.0			12.31	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.933	12.425	0.621	4521.9	3340.5	6.085	6.110	3.35		Clay	100.0			11.74	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.998	12.154	0.533	4529.8	3344.3	5.914	5.390	3.33		Clay	100.0			11.49	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.064	12.229	0.471	4537.7	3348.1	5.950	4.729	3.29		Clay	100.0			11.56	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.130	12.182	0.401	4545.6	3351.9	5.913	4.047	3.26		Clay	100.0			11.51	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.195	12.201	0.375	4553.4	3355.6	5.915	3.779	3.24		Clay	100.0			11.53	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.261	12.499	0.333	4561.3	3359.4	6.083	3.259	3.20		Clay	100.0			11.81	0.89	n.a.	n.a.	0.91	0.473	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.326	12.992	0.322	4569.2	3363.2	6.367	3.007	3.16		Clay	100.0			12.28	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.392	13.466	0.339	4577.0	3367.0	6.639	3.033	3.15		Clay	100.0			12.73	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.458	13.680	0.357	4584.9	3370.8	6.757	3.135	3.15		Clay	100.0			12.93	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	CRR$_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
37.523	13.550	0.372	4592.8	3374.5	6.670	3.306	3.17		Clay	100.0			12.81	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.589	13.634	0.381	4600.7	3378.3	6.710	3.362	3.17		Clay	100.0			12.89	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.654	13.829	0.398	4608.5	3382.1	6.815	3.453	3.17		Clay	100.0			13.07	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.720	13.782	0.409	4616.4	3385.9	6.777	3.565	3.18		Clay	100.0			13.03	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.786	13.958	0.403	4624.3	3389.7	6.871	3.460	3.17		Clay	100.0			13.19	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.851	13.894	0.403	4632.1	3393.4	6.824	3.481	3.17		Clay	100.0			13.13	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.917	13.652	0.423	4640.0	3397.2	6.671	3.733	3.20		Clay	100.0			12.90	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.982	13.558	0.417	4647.9	3401.0	6.606	3.712	3.20		Clay	100.0			12.81	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.048	14.796	0.424	4655.8	3404.8	7.324	3.401	3.14		Clay	100.0			13.98	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.114	14.591	0.498	4663.6	3408.5	7.193	4.062	3.19		Clay	100.0			13.79	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.179	14.126	0.505	4671.5	3412.3	6.910	4.283	3.22		Clay	100.0			13.35	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.245	13.986	0.506	4679.4	3416.1	6.818	4.345	3.23		Clay	100.0			13.22	0.88	n.a.	n.a.	0.91	0.474	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.310	13.708	0.538	4687.2	3419.9	6.646	4.734	3.26		Clay	100.0			12.96	0.88	n.a.	n.a.	0.91	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.376	13.448	0.544	4695.1	3423.7	6.485	4.901	3.27		Clay	100.0			12.71	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.442	13.141	0.540	4703.0	3427.4	6.296	5.005	3.29		Clay	100.0			12.42	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.507	12.870	0.514	4710.9	3431.2	6.129	4.888	3.29		Clay	100.0			12.16	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.573	12.787	0.477	4718.7	3435.0	6.071	4.574	3.28		Clay	100.0			12.09	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.638	12.620	0.448	4726.6	3438.8	5.965	4.368	3.27		Clay	100.0			11.93	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.704	12.620	0.413	4734.5	3442.6	5.956	4.028	3.25		Clay	100.0			11.93	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.770	12.768	0.340	4742.4	3446.3	6.034	3.270	3.20		Clay	100.0			12.07	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.835	12.861	0.324	4750.2	3450.1	6.079	3.090	3.18		Clay	100.0			12.16	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.901	12.322	0.328	4758.1	3453.9	5.758	3.299	3.22		Clay	100.0			11.65	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.966	11.940	0.319	4766.0	3457.7	5.528	3.338	3.24		Clay	100.0			11.29	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.032	11.876	0.321	4773.8	3461.4	5.483	3.383	3.24		Clay	100.0			11.22	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.098	11.950	0.314	4781.7	3465.2	5.517	3.285	3.23		Clay	100.0			11.29	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.163	12.034	0.329	4789.6	3469.0	5.557	3.413	3.24		Clay	100.0			11.37	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.229	11.913	0.338	4797.5	3472.8	5.479	3.553	3.25		Clay	100.0			11.26	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.294	12.480	0.307	4805.3	3476.6	5.797	3.046	3.20		Clay	100.0			11.80	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.360	12.852	0.306	4813.2	3480.3	6.003	2.930	3.18		Clay	100.0			12.15	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.426	13.196	0.317	4821.1	3484.1	6.191	2.939	3.17		Clay	100.0			12.47	0.88	n.a.	n.a.	0.90	0.475	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.491	13.484	0.340	4828.9	3487.9	6.347	3.071	3.17		Clay	100.0			12.74	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.557	13.736	0.355	4836.8	3491.7	6.483	3.137	3.16		Clay	100.0			12.98	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.622	13.661	0.388	4844.7	3495.5	6.430	3.452	3.19		Clay	100.0			12.91	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.688	12.982	0.423	4852.6	3499.2	6.033	4.007	3.25		Clay	100.0			12.27	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.754	12.870	0.452	4860.4	3503.0	5.960	4.330	3.27		Clay	100.0			12.16	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.819	12.713	0.476	4868.3	3506.8	5.862	4.631	3.29		Clay	100.0			12.02	0.88	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.885	12.471	0.466	4876.2	3510.6	5.716	4.645	3.30		Clay	100.0			11.79	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.950	12.601	0.455	4884.0	3514.3	5.781	4.479	3.29		Clay	100.0			11.91	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.016	11.940	0.460	4891.9	3518.1	5.397	4.845	3.34		Clay	100.0			11.29	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.082	11.727	0.431	4899.8	3521.9	5.268	4.646	3.33		Clay	100.0			11.08	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.147	11.597	0.403	4907.7	3525.7	5.187	4.408	3.33		Clay	100.0			10.96	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.213	11.373	0.372	4915.5	3529.5	5.052	4.173	3.32		Clay	100.0			10.75	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.278	11.206	0.352	4923.4	3533.2	4.950	4.025	3.32		Clay	100.0			10.59	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.344	11.225	0.335	4931.3	3537.0	4.953	3.824	3.31		Clay	100.0			10.61	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.410	11.057	0.323	4939.2	3540.8	4.851	3.761	3.31		Clay	100.0			10.45	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.475	11.076	0.304	4947.0	3544.6	4.854	3.534	3.30		Clay	100.0			10.47	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.541	11.392	0.267	4954.9	3548.4	5.025	2.995	3.25		Clay	100.0			10.77	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.606	11.494	0.261	4962.8	3552.1	5.074	2.896	3.24		Clay	100.0			10.86	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.672	11.447	0.250	4970.6	3555.9	5.040	2.790	3.23		Clay	100.0			10.82	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.738	11.355	0.258	4978.5	3559.7	4.981	2.910	3.24		Clay	100.0			10.73	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.803	11.076	0.275	4986.4	3563.5	4.817	3.204	3.28		Clay	100.0			10.47	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.869	11.104	0.270	4994.3	3567.2	4.826	3.137	3.27		Clay	100.0			10.50	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.934	11.364	0.255	5002.1	3571.0	4.964	2.877	3.24		Clay	100.0			10.74	0.87	n.a.	n.a.	0.90	0.476	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.000	12.396	0.243	5010.0	3574.8	5.534	2.457	3.17		Clay	100.0			11.72	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.066	13.634	0.212	5017.9	3578.6	6.218	1.906	3.07		Clay	100.0			12.89	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.131	13.494	0.199	5025.7	3582.4	6.131	1.812	3.06		Clay	100.0			12.75	0.87	n.a.	n.a.	0.90	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.197	12.573	0.184	5033.6	3586.1	5.608	1.830	3.10		Clay	100.0			11.88	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.262	13.550	0.192	5041.5	3589.9	6.145	1.741	3.05		Clay	100.0			12.81	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.328	15.949	0.191	5049.4	3593.7	7.471	1.423	2.94		Clay	98.0			15.07	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.394	15.995	0.211	5057.2	3597.5	7.487	1.567	2.96		Clay	99.5			15.12	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.459	17.344	0.221	5065.1	3601.2	8.226	1.492	2.91		Clay	95.8			16.39	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.525	17.213	0.213	5073.0	3605.0	8.142	1.451	2.91		Clay	95.7			16.27	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.590	18.376	0.264	5080.8	3608.8	8.776	1.667	2.91		Clay	95.7			17.37	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.656	18.748	0.328	5088.7	3612.6	8.971	2.024	2.94		Clay	98.5			17.72	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.50

Total Settlement:	0.76	(Inches)

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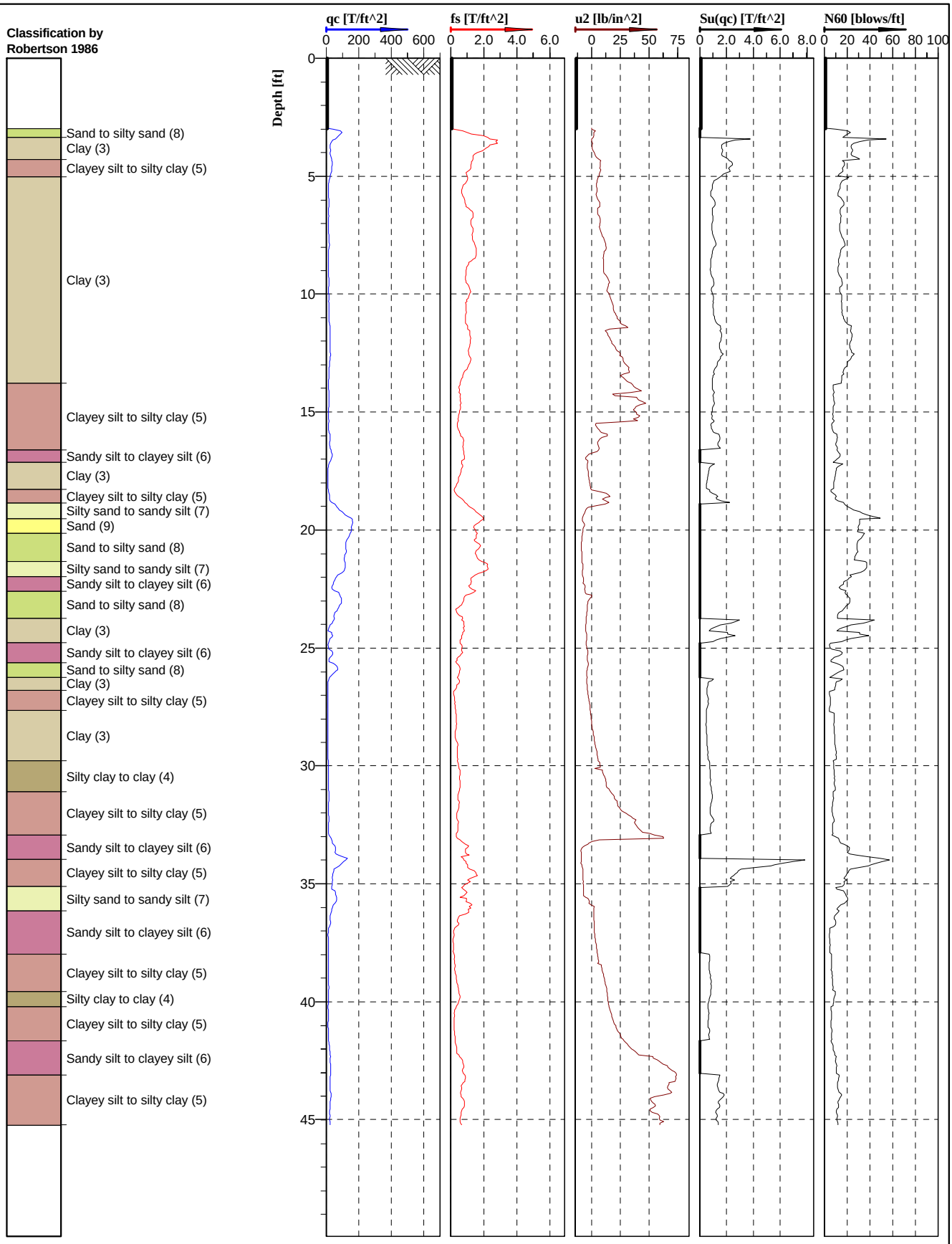
Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
41.722	18.330	0.395	5096.6	3616.4	8.728	2.503	3.00		Clay	100.0			17.33	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.787	17.920	0.417	5104.5	3620.1	8.490	2.713	3.03		Clay	100.0			16.94	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.853	18.413	0.431	5112.3	3623.9	8.751	2.718	3.02		Clay	100.0			17.40	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.918	19.343	0.453	5120.2	3627.7	9.253	2.699	3.00		Clay	100.0			18.28	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.984	21.613	0.532	5128.1	3631.5	10.491	2.793	2.96		Clay	100.0			20.43	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.050	24.346	0.607	5136.0	3635.3	11.982	2.787	2.91		Clay	96.1			23.01	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.115	26.039	0.685	5143.8	3639.0	12.897	2.919	2.90		Clay	95.0			24.61	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.181	24.263	0.791	5151.7	3642.8	11.907	3.647	2.98		Clay	100.0			22.93	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.246	23.844	0.860	5159.6	3646.6	11.663	4.044	3.02		Clay	100.0			22.54	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.312	23.853	0.897	5167.4	3650.4	11.653	4.217	3.03		Clay	100.0			22.55	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.378	21.956	0.988	5175.3	3654.1	10.601	5.101	3.11		Clay	100.0			20.75	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.443	21.696	0.991	5183.2	3657.9	10.445	5.187	3.12		Clay	100.0			20.51	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.509	24.474	1.000	5191.1	3661.7	11.950	4.571	3.04		Clay	100.0			23.13	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.574	28.560	1.087	5198.9	3665.5	14.165	4.187	2.96		Clay	99.9			26.99	0.87	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.640	26.290	1.112	5206.8	3669.3	12.911	4.695	3.02		Clay	100.0			24.85	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.706	24.486	1.057	5214.7	3673.0	11.913	4.831	3.06		Clay	100.0			23.14	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.771	21.417	1.057	5222.5	3676.8	10.229	5.621	3.15		Clay	100.0			20.24	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.837	21.482	1.057	5230.4	3680.6	10.252	5.602	3.15		Clay	100.0			20.30	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.902	20.515	1.046	5238.3	3684.4	9.714	5.845	3.18		Clay	100.0			19.39	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.968	19.520	1.022	5246.2	3688.2	9.163	6.048	3.21		Clay	100.0			18.45	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.034	19.548	1.002	5254.0	3691.9	9.166	5.922	3.20		Clay	100.0			18.48	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.099	18.534	1.024	5261.9	3695.7	8.606	6.439	3.25		Clay	100.0			17.52	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.165	18.888	1.034	5269.8	3699.5	8.787	6.362	3.24		Clay	100.0			17.85	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.230	19.576	1.036	5277.6	3703.3	9.147	6.117	3.21		Clay	100.0			18.50	0.86	n.a.	n.a.	0.89	0.477	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.296	19.864	0.911	5285.5	3707.0	9.291	5.290	3.17		Clay	100.0			18.78	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.362	19.567	0.854	5293.4	3710.8	9.119	5.047	3.16		Clay	100.0			18.49	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.427	18.906	0.736	5301.3	3714.6	8.752	4.528	3.15		Clay	100.0			17.87	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.493	19.213	0.609	5309.1	3718.4	8.906	3.678	3.09		Clay	100.0			18.16	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.558	19.771	0.606	5317.0	3722.2	9.195	3.541	3.07		Clay	100.0			18.69	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.624	20.003	0.601	5324.9	3725.9	9.308	3.466	3.06		Clay	100.0			18.91	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.690	19.771	0.620	5332.8	3729.7	9.172	3.625	3.07		Clay	100.0			18.69	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.755	19.288	0.608	5340.6	3733.5	8.902	3.659	3.09		Clay	100.0			18.23	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.821	17.827	0.561	5348.5	3737.3	8.109	3.702	3.12		Clay	100.0			16.85	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.886	17.409	0.529	5356.4	3741.1	7.875	3.591	3.13		Clay	100.0			16.45	0.86	n.a.	n.a.	0.89	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.952	17.418	0.556	5364.2	3744.8	7.870	3.773	3.14		Clay	100.0			16.46	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.018	16.758	0.491	5372.1	3748.6	7.508	3.489	3.14		Clay	100.0			15.84	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.083	15.874	0.437	5380.0	3752.4	7.027	3.315	3.15		Clay	100.0			15.00	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.149	15.298	0.410	5387.9	3756.2	6.711	3.253	3.16		Clay	100.0			14.46	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.214	14.870	0.428	5395.7	3759.9	6.475	3.516	3.19		Clay	100.0			14.05	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.280	14.759	0.457	5403.6	3763.7	6.407	3.790	3.21		Clay	100.0			13.95	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.346	14.572	0.454	5411.5	3767.5	6.299	3.826	3.22		Clay	100.0			13.77	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.411	14.443	0.458	5419.3	3771.3	6.222	3.903	3.23		Clay	100.0			13.65	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.477	14.479	0.467	5427.2	3775.1	6.233	3.969	3.23		Clay	100.0			13.69	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.542	14.712	0.452	5435.1	3778.8	6.348	3.768	3.22		Clay	100.0			13.91	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.608	16.777	0.476	5443.0	3782.6	7.432	3.387	3.13		Clay	100.0			15.86	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.674	18.255	0.478	5450.8	3786.4	8.203	3.078	3.07		Clay	100.0			17.25	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.739	18.636	0.441	5458.7	3790.2	8.394	2.772	3.04		Clay	100.0			17.61	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.805	18.599	0.430	5466.6	3794.0	8.364	2.710	3.04		Clay	100.0			17.58	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.870	18.627	0.474	5474.4	3797.7	8.368	2.983	3.06		Clay	100.0			17.61	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.936	19.724	0.555	5482.3	3801.5	8.935	3.268	3.06		Clay	100.0			18.64	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.002	22.199	0.584	5490.2	3805.3	10.225	3.002	2.99		Clay	100.0			20.98	0.86	n.a.	n.a.	0.88	0.478	n.a.	n.a.	n.a.	n.a.	0.00	0.00

APPENDIX B: DATA FROM PREVIOUS INVESTIGATIONS

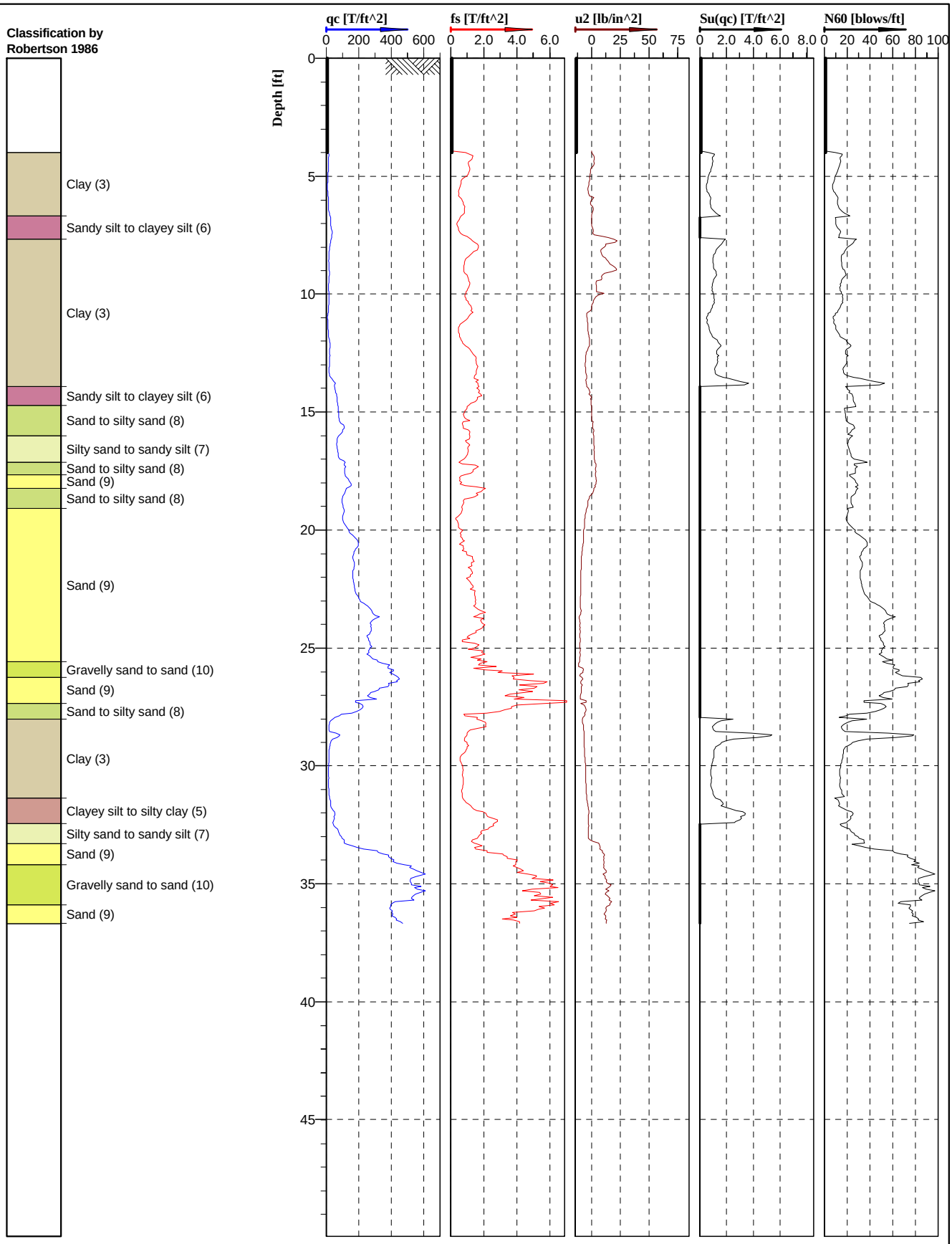


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-1
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 3/29/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-1.cpd	

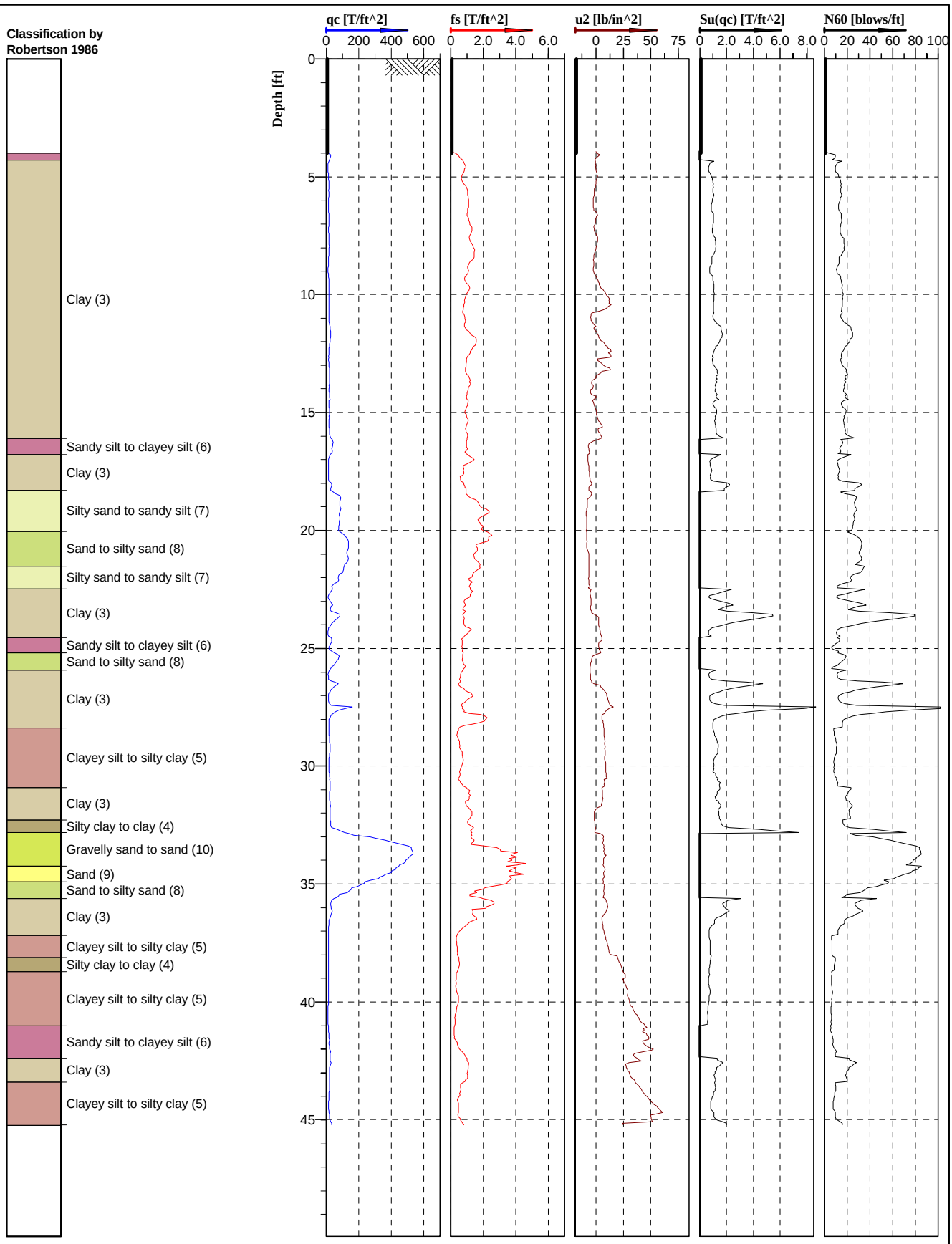


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-2
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 3/29/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-2.cpd	



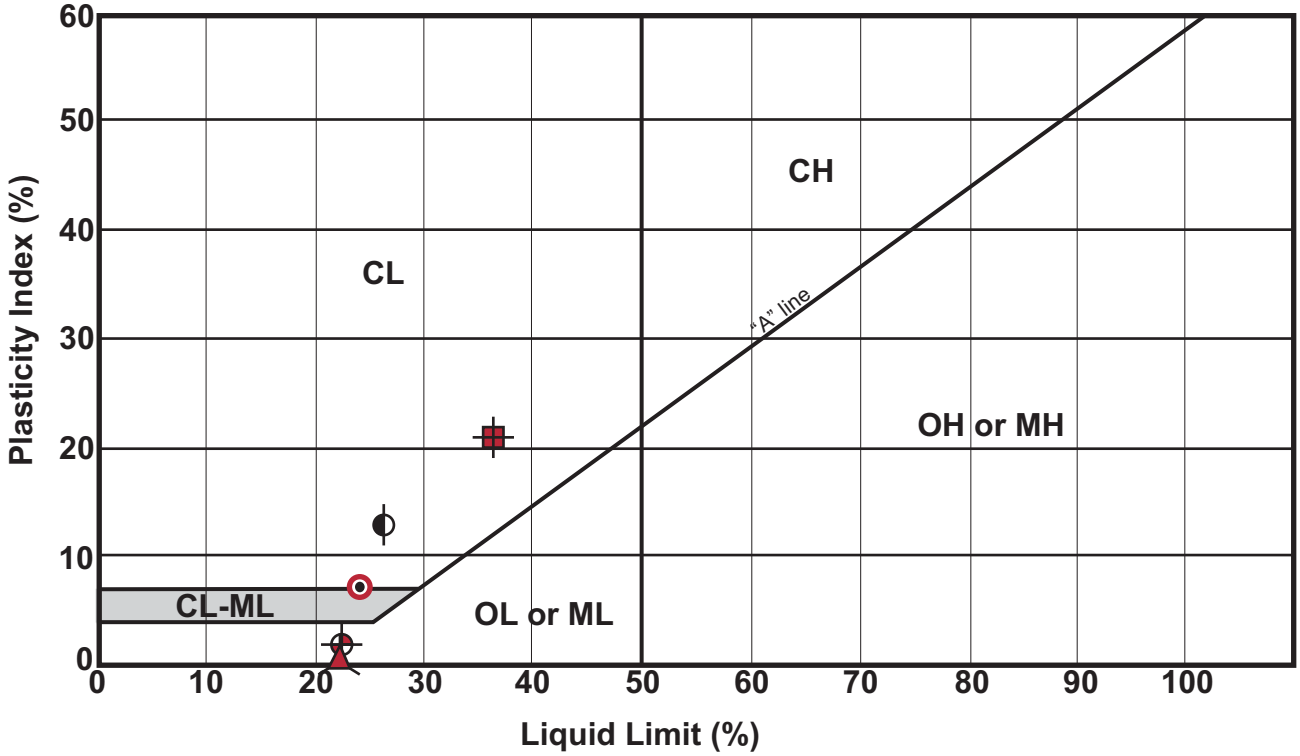
CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-3
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 7/28/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-3.cpd	

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)
	CPT-1	16.5	22	23	21	2	45	Silty Sand (SM)
	CPT-1	25.0	27	38	21	17	71	Lean Clay with Sand (CL)
	CPT-1	33.0	19	24	17	7	37	Clayey Sand (SC) (CL fines)
	CPT-3	16.0	—	21	20	1	—	Silty Sand (SM)
	CPT-3	22.5	23	27	15	12	—	Sandy Lean Clay (CL)

CORNERSTONE EARTH GROUP

Plasticity Index Testing Summary

River Corporate Center III
San Jose, CA

Project Number: 102-7-1

Figure Number: Figure B1

Date: May 2016

Drawn By: FLL

DRILL RIG: Failing 1500 | SURFACE ELEVATION: -- | LOGGED BY: DGB

BORING TYPE: Rotary wash | DEPTH TO GROUND WATER: ND | DATE DRILLED: 7/1/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
									4 inches asphaltic concrete over 2 inches soil over 6 inches asphaltic concrete over 3 inches aggregate base
								CL	SILTY CLAY (CL)
4.2		94	17		19				very stiff, moist, brown/yellowish brown, fine to coarse sand, trace gravel, low plasticity
						5			
6.5		79	21		26				Plasticity Index = 11, Liquid Limit = 28
									very stiff
									increasing gravels
4.0	2.0	113	14		3				
			11		11	10			
						15		SC SP	SAND (SC-SP)
			13		21				medium dense, wet, trace gravel and clay, fine to coarse sand
									Percent passing #200 sieve = 7 %
									increasing gravel
			37		40	20			Percent passing #200 sieve = 12 %
								CL	SILTY CLAY (CL)
						25			medium stiff, wet, dark gray, trace fine sand, moderate plasticity
					12				
						30			stiff
					18				
								CL	SILTY CLAY (CL)
									stiff, wet, red and yellowish brown mottled, trace fine sand, moderate plasticity
								CL	SANDY CLAY (CL)
2.5	1.3	107	22		16	35			stiff, wet, red and yellowish brown mottled, fine sand, low to moderate plasticity
						40			

EXPLORATORY BORING - EB-6

WEST JULIAN STREET DEVELOPMENT
San Jose, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

EB-6
699-10A

DRILL RIG: Failing 1500 | SURFACE ELEVATION: -- | LOGGED BY: DGB

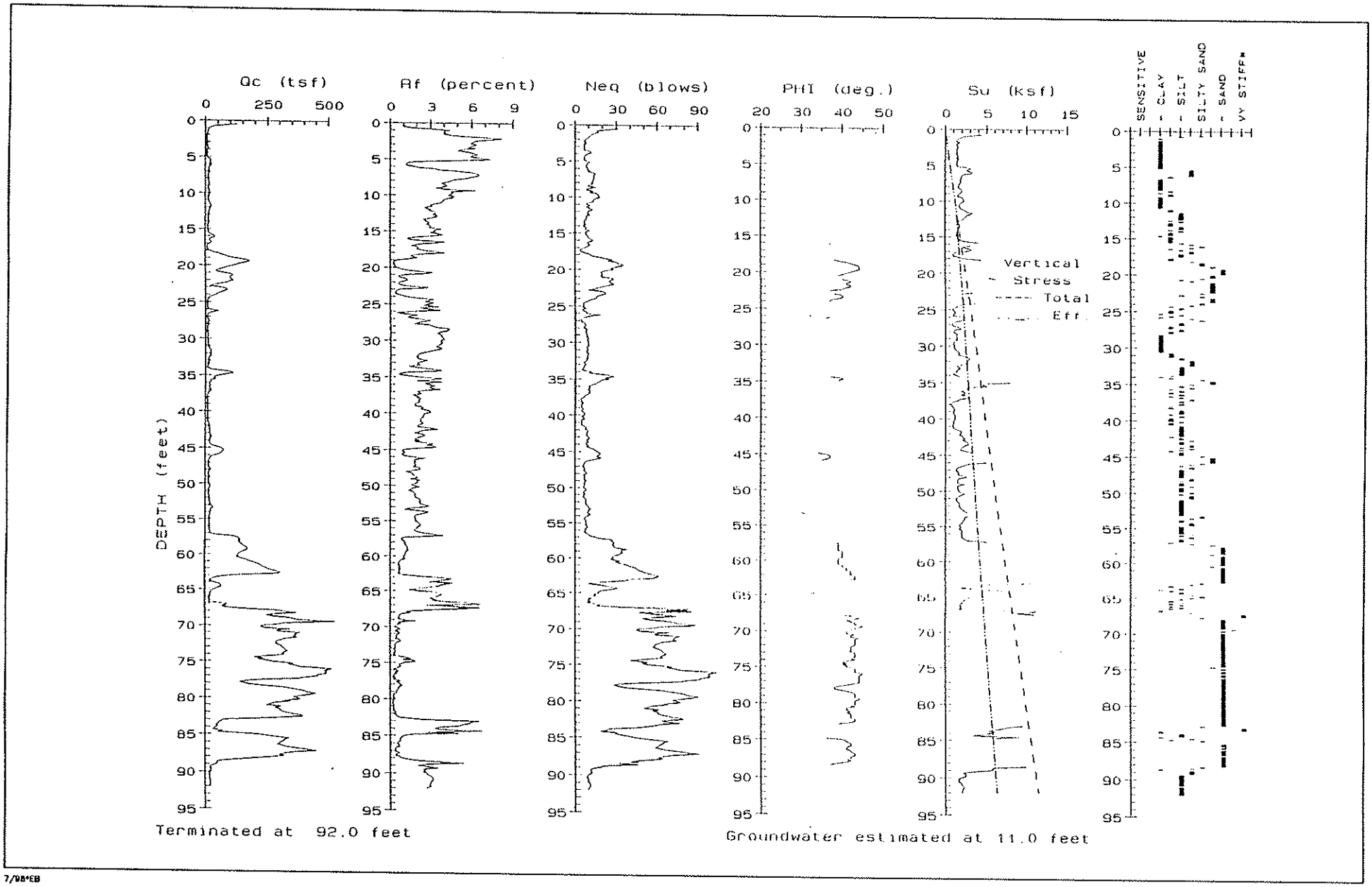
BORING TYPE: Rotary wash | DEPTH TO GROUND WATER: ND | DATE DRILLED: 7/1/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
2.0	1.0	96	26		34			CL	SANDY CLAY (CL) [continued] color grades to gray
9.0+	4.5+	109	21		14	45		CL	SILTY CLAY (CL) hard, moist, gray, trace claystone inclusions, fine sand, trace rootlets, moderate plasticity Triaxial UU = 1.0 ksf
					17	50			gray with reddish brown mottling increasing silt, no inclusions
2.0	1.0	100	24		24	55			stiff
5.0	2.5	93	31		29	60			very stiff, Triaxial UU = 1.4 ksf
5.0	2.5	102	23		37	65			
3.0	1.5	104	22		27	70			stiff
						75			Bottom of Boring = 71 1/2 feet Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual. *Pocket Penetrometer Strength
						80			

EXPLORATORY BORING - EB-6

WEST JULIAN STREET DEVELOPMENT
San Jose, California

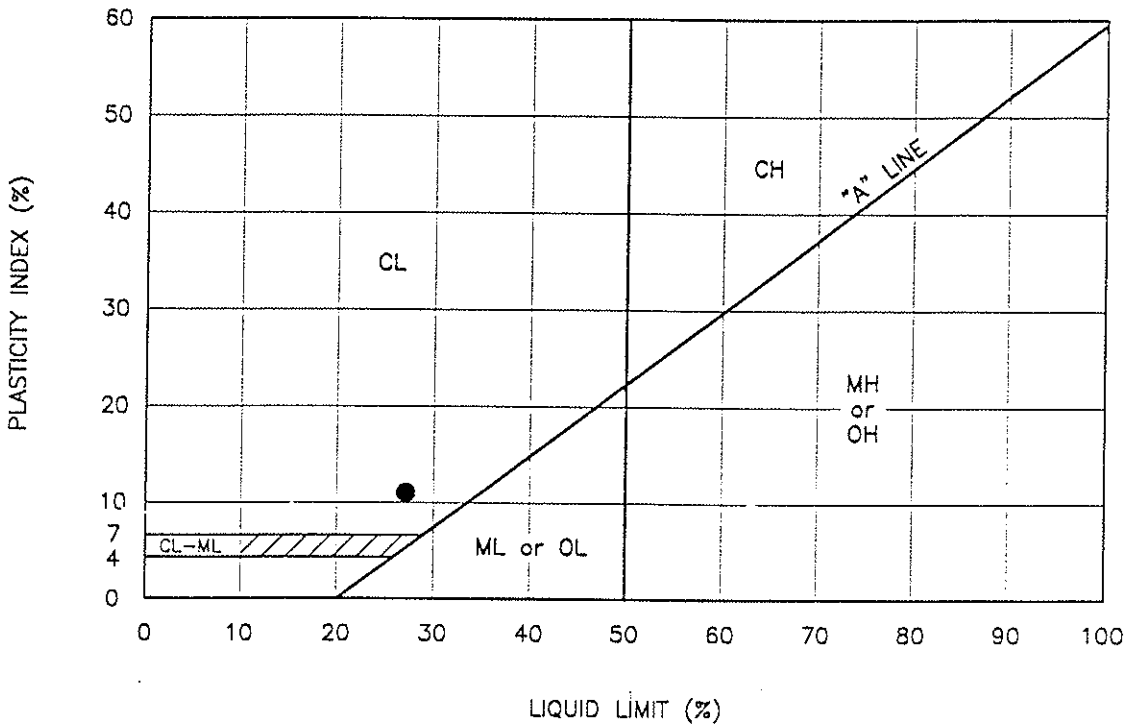
LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services



7/98-EB

CONE PENETRATION TEST LOG – CPT-1

LOVNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

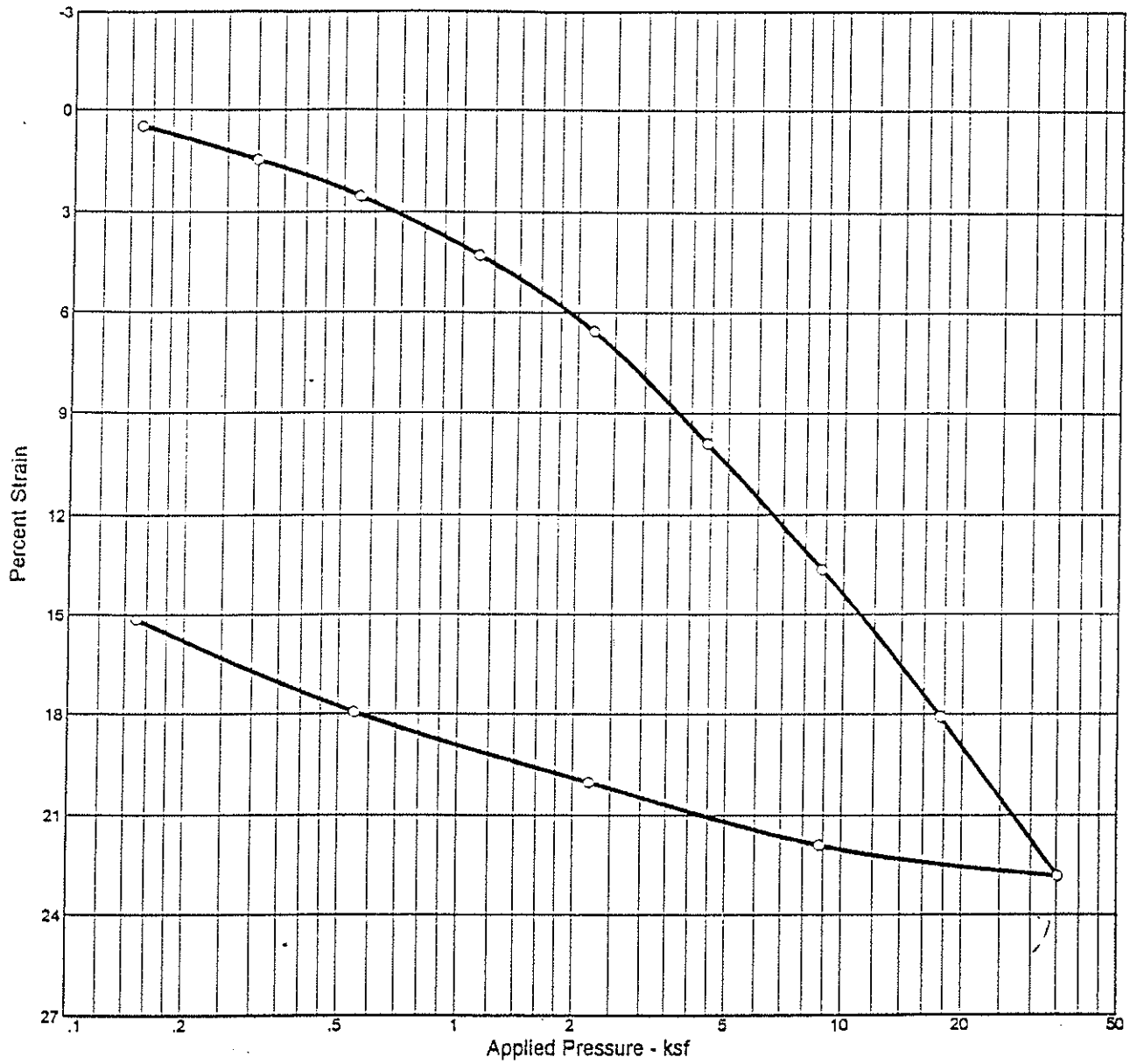


KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	PASSING #200 SIEVE (%)	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
●	EB-1/1	2	--	28	11	--	--	CL

PLASTICITY CHART AND DATA

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE B-1
699-10A



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
98.9 %	37.7 %	83.0			2.7			1.030

MATERIAL DESCRIPTION

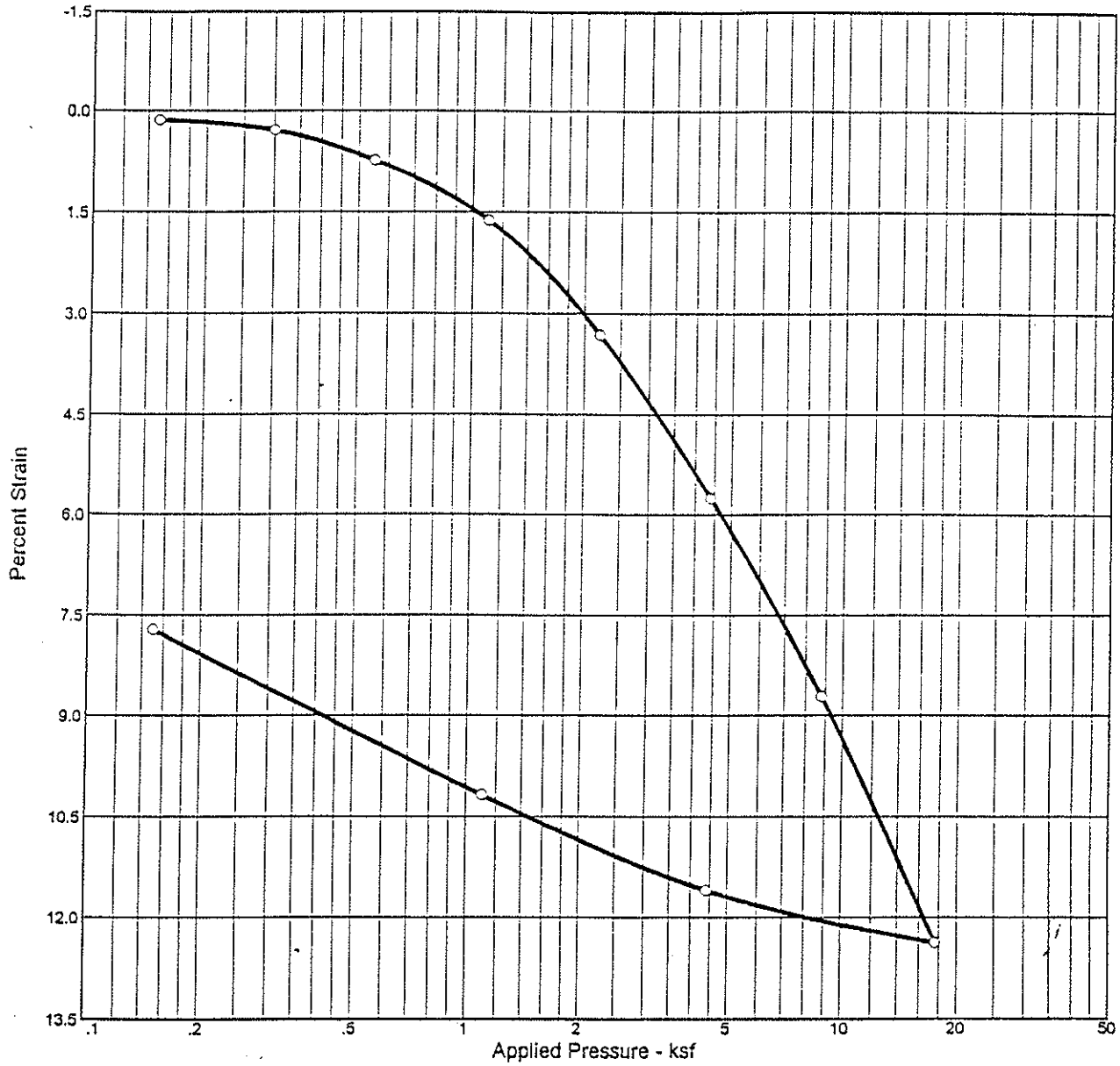
gray SILT, bay mud

Source: EB-1 **Sample No.:** 7 **Elev./Depth:** 26.3'

CONSOLIDATION TEST

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE B-2
699-10A



Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
96.4 %	23.9 %	101.0			2.7			0.669

MATERIAL DESCRIPTION

gray sandy CLAY, bay mud

Source: EB-1 **Sample No.:** 8 **Elev./Depth:** 30.7'

7/98-CB

CONSOLIDATION TEST

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE B-3
699-10A

APPENDIX C: PREVIOUS GEOTECHNICAL DOCUMENTS

CORNERSTONE EARTH GROUP

Date:	April 18, 2012
Project No.:	102-7-2
Prepared For:	Mr. Rich Truempler **THE SOBRATO ORGANIZATION** 10600 North DeAnza Boulevard, Suite 200 Cupertino, California 95014
Re:	Updated Geologic Hazards Evaluation and Geotechnical Consultation River Corporate Center - Building 3 West Julian Street San Jose, California

Dear Mr. Truempler:

As requested, this letter updates the results of our geologic hazards evaluation for the above referenced project. As you know, we provided consultation in 2008 when plans were made to finish construction of the third office building at the site, which were again put on hold at that time. Our previous correspondence included the following:

- An update to the 1998 Lowney Associates geotechnical report for the project and acceptance of the role of Engineer-of-Record for the remaining construction in our letter titled, "Geotechnical Consultation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 17, 2008.

- A letter titled, "Response to Comments, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 18, 2008.

- A letter titled, "Lateral Spreading Evaluation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated June 21, 2008.

- A letter titled, "Updated Geologic Hazards Evaluation, River Corporate Center – Building 3, West Julian Street, San Jose, California," dated August 7, 2008.

For our use, we were provided with copies of the following:

- A geotechnical report titled, "Final Geotechnical Investigation, 333 West Julian Street Development, San Jose, California," prepared by Lowney Associates for Sobrato Development Company, dated September 4, 1998.

- A site topographic plan prepared by Kier & Wright, printed June 27, 2008.

- Structural plan sheets S2.0 and S6.2 titled, ""River Corporate Center, Building III, West Julian Street, San Jose, California," prepared by Nishkian Menninger, dated May 16, 2000.

- Updated structural plan sheets S1.1, S1.1A, S1.1B, S1.2 through S1.5, S2.0 through S2.6, S3.1 through S3.4, S4.1 through S4.5, S6.1, and S7.1 titled, River Corporate Center, Building III, 353 Julian Street, San Jose, California," prepared by Nishkian Menninger, dated March 2, 2012.

- A technical memorandum prepared by URS, dated June 18, 2002, regarding the Guadalupe River Project with the subject header of *Estimated Settlements of Sobrato Garage*.

- A one-page document that includes four construction photographs of the box culvert located immediately west of the onsite structures.

- Electronic copies of as-built plans and log of test boring sheets for the "Guadalupe River, Contract 3A, Phase 1" project, prepared by URS. Sheets included C-20, C-21, C-50, C-51, S-56, and B-1 through B-20.

The following presents our updated liquefaction and lateral spreading analyses, the only updates needed to the geologic hazards evaluation. Our understanding of the project as presently planned is that the previously planned seven-story office building will now be constructed at five stories. The original construction was discontinued after underground utilities, foundations (perimeter grid footings tied to a central core mat foundation), and interior slab-on-grade floors were completed. While the number of stories has been reduced, the existing foundation system will still be utilized, reducing the final applied pressures from what was previously evaluated.

Summary of Previous Work

As part of our consultation in 2008, we performed supplemental subsurface investigation, including advancing three Cone Penetration Test (CPT) and collect soil samples adjacent to two of our CPTs. The CPT plots are attached. The locations of the CPTs are shown on the attached Site Plan, Figure 1.

The following table presents the summary of the laboratory testing results from samples collected adjacent to two of our CPT locations.

Table 1: Summary of Laboratory Test Results

CPT Number	Sample Depth (feet)	Sample Soil Classification	Moisture Content (%)	Percent Passing #200 Sieve	D_{50} (mm)	Plasticity Index
CPT-1	16½	SC	22	45	0.09	NP
	23½	SM	21	14	0.21	--
	24	CL	23	50	0.08	--
	25	CL	34	--	--	--
	25½	CL	27	71	<0.08	18
	26	SM	21	21	0.15	--
	33	SC	19	37	0.14	7
	35	SC	26	47	0.08	--
CPT-3	16	SM	22	44	0.08	NP
	22½	CL	23	--	--	12
	24½	SM	33	--	--	NP

Updated Liquefaction Analysis

The following presents our updates to our liquefaction analyses performed in 2008 and utilizes the results of the previous field and laboratory programs.

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 3 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.

Analysis

As discussed in the “Subsurface” section above, several sand layers were encountered below the design ground water depth of 4 feet. Following the procedures in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008) 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.

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 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 peak horizontal acceleration is equal to the calculated S_{DS} value of 1.0g (obtained by the USGS computer program *Earthquake Ground Motion Parameters*, Version 5.1.0, revision date February 10, 2011, based on the site coordinates presented below and the site classification of D) divided by 2.5, as allowed by the 2010 CBC.

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 unreliable in sands below ground water. The tip pressures are corrected for effective overburden stresses, taking into consideration both the ground water level at the time of exploration and the design ground water 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 CPT equipment adjacent to two CPTs were tested to evaluate grain size, as well as visually observed for confirmation of CPT soil behavior types.

The results of our CPT analyses (CPT-1 through CPT-3) are presented on Figures C-1 through C-3 of this letter. Calculations for these CPTs are also attached.

Summary

Our analyses indicate that several layers could potentially experience liquefaction triggering that could result in soil softening and post-liquefaction total settlement ranging from 1 to 2 inches based on the Yoshimine (2006) method. As discussed in the SCEC report, differential movement for level ground sites over deep soil sites will be about half to two-thirds of the total settlement. Because foundation elements are tied together with grade beams within the subject building, we recommend that this differential be assumed across typical bays, or about 30 feet. Therefore, in our opinion, differential settlements are anticipated to be on the order of ¾ to 1 inch in 30 feet within the building area, which is the same range of differential settlements provided to the design team in 2008.

Ground Rupture Potential

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

deformation and settlement. CPT-2 contained the thickest and shallowest potentially liquefiable soils and was used for the ground rupture evaluation. While we have included the 1-foot layer starting at about 13¾ feet in CPT-2 as a layer that could lose strength and result in some settlement due to strong seismic shaking, in our opinion, it is not likely that a soil with such a high fines content will be able to release pore water rapidly enough to be counted with the other sands and silty sands in a ground rupture evaluation; therefore, this layer was excluded from the ground rupture evaluation.

The work of Youd and Garris (1995) indicates that the approximately 14-foot thick layer of non-liquefiable cap is sufficient to prevent ground rupture; therefore the above total settlement estimates are reasonable.

Updated Lateral Spreading Evaluation

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 Guadalupe River is located along the west side of the project area, and has an estimated bank height of about 18 feet. In general, lateral spreading is considered when an open face (Height = D) is within about 40D of a site. Since the project site is within this criteria (< 7D), we re-analyzed the site for lateral spreading using analytical methods outlined in the 2008 monograph, *Soil Liquefaction During Earthquakes* (Idriss and Boulanger, 2008) by calculating Lateral Displacement Index (LDI) values at each CPT location. The LDI is calculated by integrating maximum shear strains versus depth, representing a measure of the potential maximum displacement (Zhang et al., 2004), and is based on homogeneous soil conditions.

Our analysis indicates a potential for lateral displacement at the site with cumulative LDI values 0.54 to 0.66, and potential lateral displacements ranging from 0.3 to 1.3 feet for homogeneous soil conditions across the site, which we do not have. The LDI values do not include the effects of the existing box culvert acting as a shear key or the shadowing effects of denser sands encountered in CPT-3, closer to the river.

Utilizing the site topographic plan and as-built box culvert construction plans, we prepared a geologic cross section A-A' (attached for reference) that illustrates the site topography and geology, and the approximate location of the existing box culvert structure that was constructed as part of the Guadalupe River Improvement Project. The depth of the box culvert was obtained from the as-built plans. The as-built box culvert plan sheets and the Log of Test boring sheets for that project are also attached, providing additional confirmation of soil profile.

As shown in Section A-A', the sand layer in CPT-3 at depths of 32 to 36 feet is dense and is not considered liquefiable; therefore, LDI values calculated in the thin layers in CPT-1, which is

further away from the river, at a similar depth are excluded from the lateral spreading contribution. The potentially liquefiable sands encountered between depths of 16 and 24 feet are shadowed by the box culvert, which as discussed below, will act as a shear key to resist lateral spreading. The remaining potentially liquefiable layers contributing to the LDI value include one layer in CPT-1 at a depth of 26 feet and two layers in CPT-3 at depths of 25½ and 26½ feet, with thicknesses of 3 to 6 inches. The calculated LDIs for each of these layers ranged from 0.02 to 0.05, with potential lateral displacements on the order of 0.1 to 1¼ inches. These displacement estimates for these thin layers are considered very low and unlikely to contribute to appreciable lateral movement. In addition, as discussed below, the box culvert construction included soldier beams as part of the temporary shoring system, which will also serve as shear resistance within those thin layers.

Box Culvert Evaluation

As illustrated in the cross section, the box culvert extends near the bottom of the shallow, potentially liquefiable sand layer noted in our CPT-3, and to the bottom or through the sand layers based on the subsurface work performed by URS, during the box culvert design/construction project. As part of considering the box culvert as also providing lateral resistance (act as a shear key), we asked that the project structural engineer evaluate the box culvert based on the structural as-built sheet and the following parameters:

Wall pressures:

- Static – 45 pcf + 8H
- Hydrostatic – 40 pcf added to static below a depth of 12 feet
- Seismic – 15H applied as a uniform pressure along the wall

For sliding resistance there are the following:

- Sliding coefficient of 0.45 (no Factor of Safety). As the earth pressures used above are not factored to allowable values, in our opinion, this is reasonable.

- Lateral resistance from the outboard only row of shoring piles – assume ultimate passive resistance of 1,800 psf (a conservative estimate of shear strength) acting against 2 pier diameters, pier diameter of 2 feet, maximum pile depth of 5 feet below bottom of mat, pier spacing 9 feet on center. Ignores contribution of inboard piers as row of ground improvement.

- No more than 1 foot of soil over the top of the box culvert.

- No water weight within the box culvert.

- Ignore any passive resistance from the soil between the river and the wall (assumes some slumping, resulting in low passive resistance adjacent to wall. We have ignored any remaining contribution from slumped soil, which is conservative, in our opinion.

Based on their structural evaluation, they estimate that the box culvert has a Factor of Safety of 1.4 against sliding, and that the walls are capable of resisting the earth pressures.

Based on the above evaluation, in our opinion, the box culvert will act in a similar manner to a shear key to resist lateral soil movement. As the box culvert is continuous along the length of the overall site, it will also resist localized zones of weaker sands, if present, not encountered in the subsurface work.

Conclusion

To summarize, the seismic differential settlement estimates are similar to what was estimated in 2008 – on the order of ¾ to 1 inch in 30 feet within the building area. The lateral spreading analysis indicated that the sands in the depth range shadowed by the box culvert had the potential for lateral displacements on the order of 0.3 to 1.3 feet under homogeneous soil conditions, and the thin sand layers below the depth of the box culvert have the potential for lateral displacements less than 1¼ inches, which is judged insignificant with respect to the building. As the box culvert is capable of supporting static and seismic earth pressures, collapse of the box culvert walls is not anticipated. The box culvert also appears to be capable of resisting sliding and will act as a shear key to resist the potential lateral displacement of the shallower sands.

Based on the above, in our opinion, and as previously concluded in 2008, the potential for liquefaction-induced lateral spreading affecting the new structure is low. As we have judged the potential for ground rupture/sand boil development and lateral spreading due to liquefaction to be low, and the total and differential seismic settlements to be tolerable to the existing shallow foundation system without ground improvement, we have judged that the site conditions do not indicate collapsible soils that would require a Soil Classification F. Therefore, we have classified the site as Soil Classification D.

Closure

We hope this provides the information you need at this time. The conclusions presented in this letter have been prepared for the sole use of The Sobrato Organization specifically for the property at West Julian Street in San Jose, California. Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices at this time and location. No warranties are either expressed or implied.

CORNERSTONE
EARTH GROUP

If you have any questions or need any additional information from us, please call and we will be glad to discuss them with you.

Sincerely,

Cornerstone Earth Group, Inc.

Laura C. Knutson, P.E., G.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
LAURA C. KNUTSON
No. 2652
Exp. 6/30/12
GEOTECHNICAL
STATE OF CALIFORNIA

LCK:CBB

Attachments: Figure 1 – Site Plan
Logs of CPT-1 through CPT-3
Figures C-1 through C-3 – Liquefaction Analysis Summary
Cross Section A – A'
Box Culvert As-Built Sheets and Log of Test Boring Sheets

Copies: Addressee (1 by email)

References:

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

California Building Code, 2010, Structural Engineering Design Provisions, Vol. 2.

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

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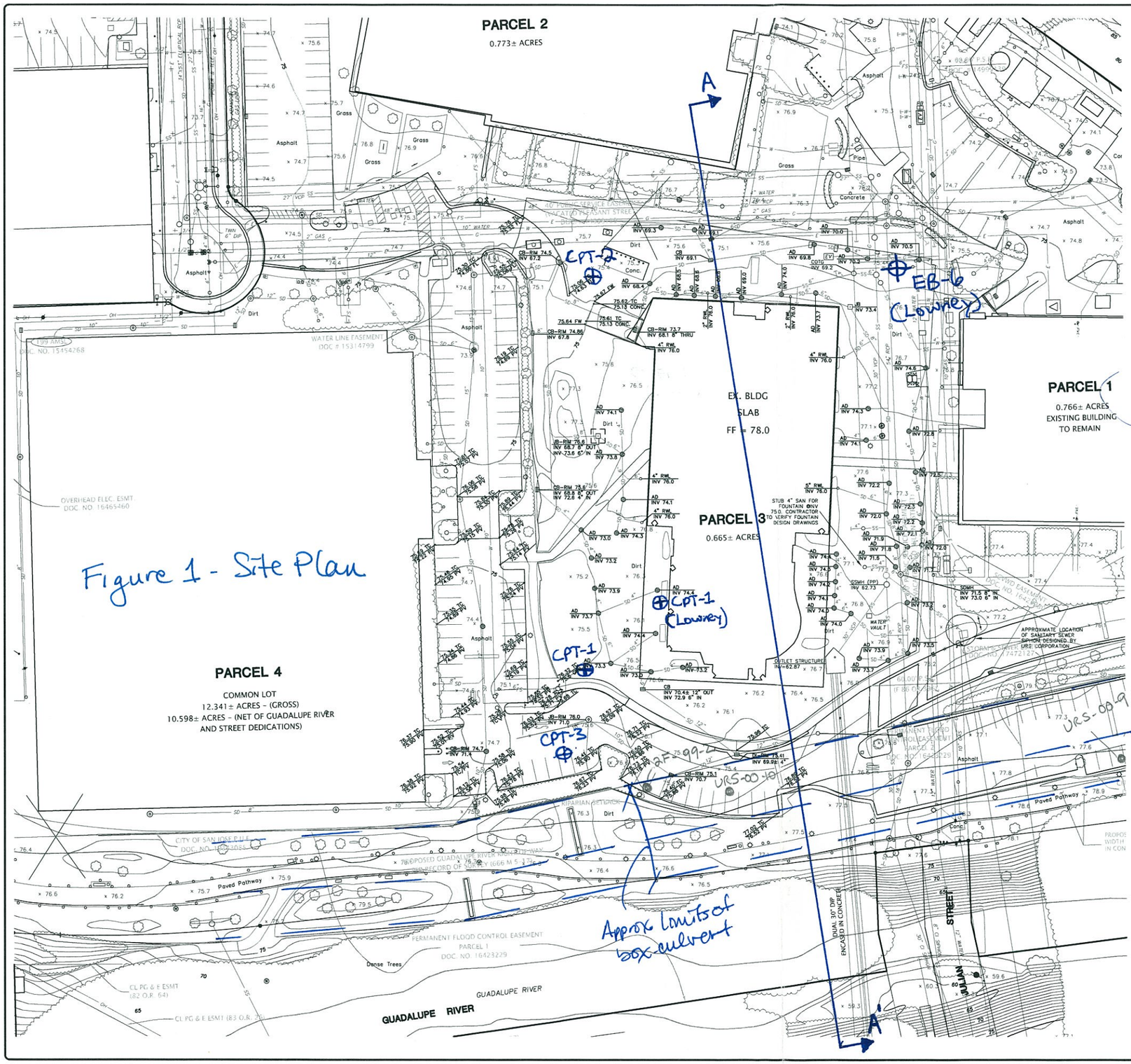
Youd, T.L. and C.T. Garris, 1995, Liquefaction-Induced Ground-Surface Disruption: Journal of Geotechnical Engineering, Vol. 121, No. 11, pp. 805 - 809.

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

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

Zhang, G., P.K. Robertson, and R. W. I. Brachman, 2004. "*Estimating Liquefaction-Induced Lateral Displacements Using the Standard Penetration Test or Cone Penetration Test*", Journal of Geotechnical and Geoenvironmental Engineering, ASCE, August, 2004, 861-871



TOPOGRAPHIC AND BOUNDARY SURVEY NOTES

NOTES

1. THIS SURVEY WAS PREPARED FROM INFORMATION FURNISHED IN A PRELIMINARY TITLE REPORT, PREPARED BY FIRST AMERICAN TITLE, DATED MARCH 24, 2008, NUMBER NCS-345806-SC. NO LIABILITY IS ASSUMED FOR MATTERS OF RECORD NOT STATED IN SAID PRELIMINARY TITLE REPORT THAT MAY AFFECT THE TITLE LINES, OR EXCEPTIONS, OR EASEMENTS OF THE PROPERTY.

2. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS TOPOGRAPHIC AND BOUNDARY SURVEY WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS AND DEPTHS OF SUCH UNDERGROUND UTILITIES. (A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOW UNDERGROUND UTILITIES.) HOWEVER, THE ENGINEER CAN ASSUME NO RESPONSIBILITY FOR THE COMPLETENESS OR ACCURACY OF ITS DELINEATION OF SUCH UNDERGROUND UTILITIES WHICH MAY BE ENCOUNTERED, BUT WHICH ARE NOT SHOWN ON THESE DRAWINGS.

3. BENCHMARK: "674" USC&GS F-175, ALONG W. JULIAN STREET, AT A CONCRETE BRIDGE OVER GUADALUPE RIVER, IN THE TOP OF THE CONCRETE ABUTMENT, 29.0 FEET NORTH OF THE CENTERLINE OF THE STREET, 0.8 FOOT EAST OF THE WEST END OF THE ABUTMENT, 0.3 FOOT SOUTH OF THE CONCRETE GUARDRAIL, AND ABOUT LEVEL WITH THE SIDEWALK. ELEVATION:79.09.

4. FLOOD ZONE NOTE: X
THIS SITE IS IN FLOOD ZONE "X"; AREAS OF 500-YEAR FLOOD; AREAS OF 100-YEAR FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 100-YEAR FLOOD. PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 25 OF 64 DATED OCTOBER 25, 2006.

5. BASIS OF BEARINGS:
THE BEARING OF NORTH 81°28'31" EAST ALONG THE CENTERLINE OF JULIAN STREET AS SHOWN ON THAT CERTAIN RECORD OF SURVEY FILED FOR RECORD ON JUNE 1ST, 1995 IN BOOK 666 OF MAPS AT PAGE 5-17, SANTA CLARA COUNTY RECORDS AND AS FOUND MONUMENTED, WAS TAKEN AS THE BASIS FOR ALL BEARINGS SHOWN HEREON.

6. THIS MAP WAS PREPARED USING COMPUTER ASSISTED, PHOTOGRAMMETRIC METHODS BY HJW GEOSPATIAL, INC., IN OAKLAND CALIFORNIA. IN AREAS OF DENSE VEGETATION, ACCURACY OF CONTOURS MAY DEVIATE FROM ACCEPTED ACCURACY STANDARDS. THE DATE OF PHOTOGRAPHY WAS APRIL 4, 2008 AS JOB NO. 97058-15.

TOPO LEGEND

ADJACENT PROPERTY LINE
CENTERLINE
EASEMENT
BUILDING LINE
BUILDING PROPERTY LINE
FOUND MONUMENT AS NOTED
BENCHMARK
ELECTROLIER
TRANSFORMER
FIRE HYDRANT
STORM DRAIN MANHOLE
MANHOLE
CLEAN OUT
GAS METER
UTILITY POLE
VALVE
CATCH BASIN
WATER METER
FIRE DEPARTMENT CONNECTION
BACK FLOW PREVENTER
POST INDICATOR VALVE
MONITORING WELL
SIGN
POST
SPOT ELEVATION — 100.00
AERIAL SPOT ELEVATION — × 32.1
CONTOUR
INDEX CONTOUR — 15
CURB
CURB & GUTTER
CONCRETE
FENCE
RETAINING WALL
SINGLE TREE
TREES AND BRUSH
SANITARY SEWER — SS
STORM DRAIN — SD
WATER — W
GAS — G
UNDERGROUND ELECTRIC — E
TELEPHONE — T
OVERHEAD — OH
CABLE TV — TV

ABBREVIATIONS

(PP)	PER PLAN
AD	AREA DRAIN
CB	CATCH BASIN
CI	CAST IRON
CMP	CORRUGATED METAL PIPE
COTG	CLEAN OUT TO GRADE
DI	DROP INLET
DIP	DUCTILE IRON PIPE
EV	ELECTRIC VAULT
FL	FLOW LINE
FS	FIRE SERVICE or FINISH SURFACE
FW	FACE OF WALL
GM	GAS METER
GRN	GROUND
GRN	GROUND
INV	INVERT ELEVATION
IRR	IRRIGATION
JB	JUNCTION BOX
JT	JOINT TRENCH
MH	MANHOLE
OH	OVERHEAD
PB	PACBELL
PV	PAVEMENT
RCP	REINFORCED CONCRETE PIPE
RIM	RIM ELEVATION
RWL	RAIN WATER LEADER
SD	STORM DRAIN
SDMH	STORM DRAIN MANHOLE
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
TC	TOP OF CURB
TV	CABLE TELEVISION LINE
VCP	VITRIFIED CLAY PIPE
WM	WATER METER

North

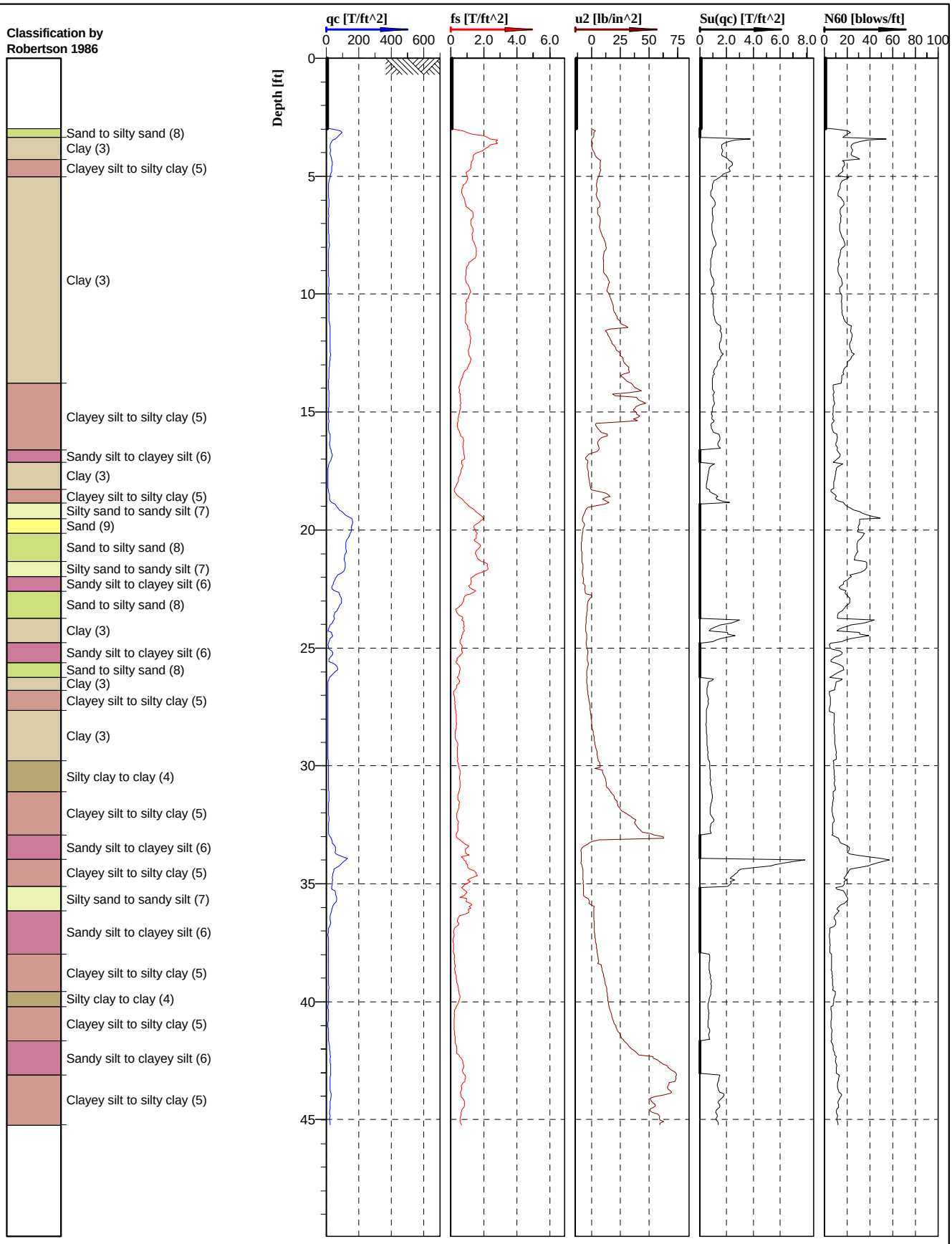
0 30 60 90
Scale 1" = 30 ft

No.	REVISION	BY

No.	REVISION	BY

KIER & WRIGHT
CIVIL ENGINEERS & SURVEYORS, INC.
3350 Scott Boulevard, Building 22 • (408) 727 6665
Santa Clara, California 95054 • (408) 727 5641

DATE
SCALE
DESIGNER
DRAFTER
JOB
SHEET
OF SHEETS

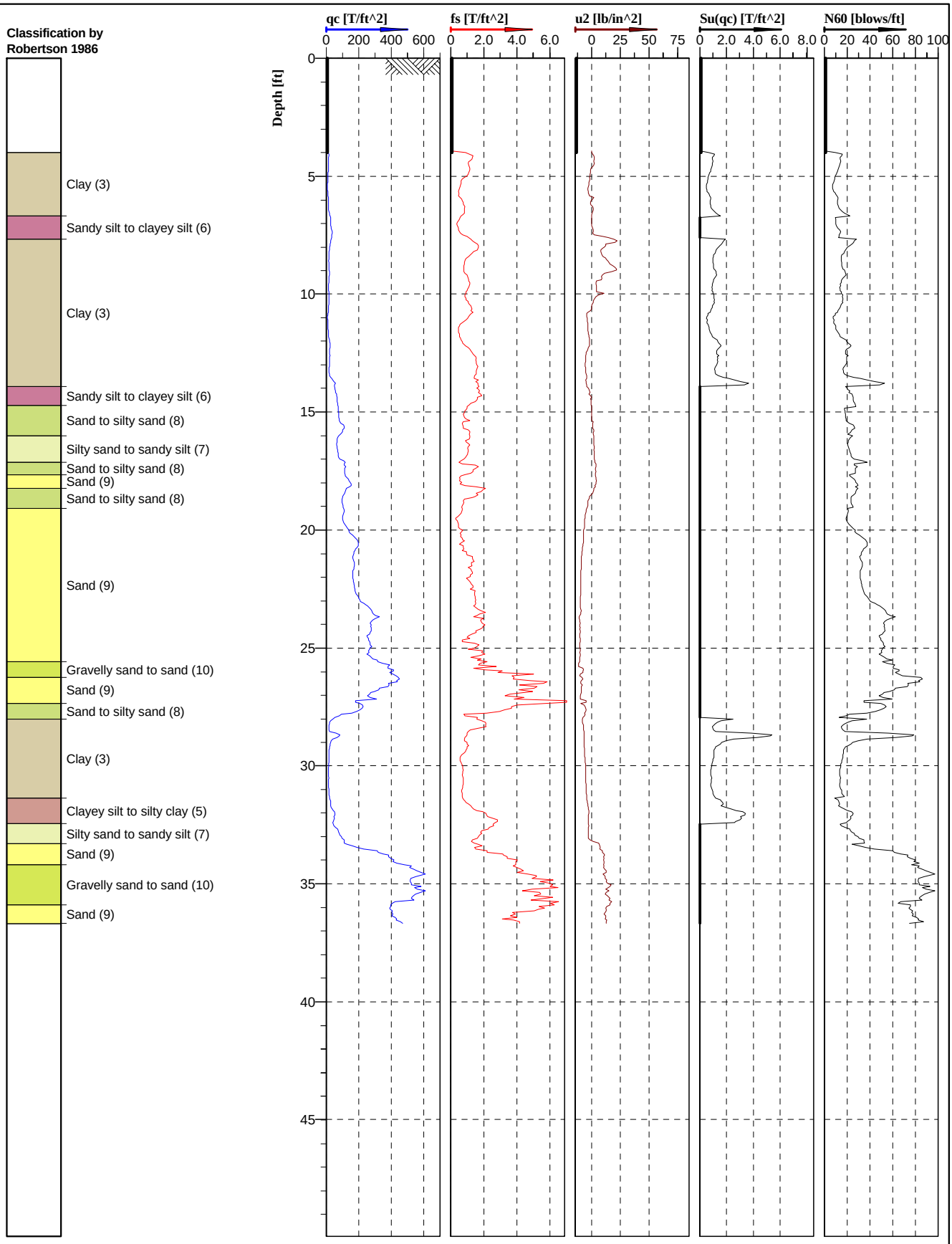


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-1
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 3/29/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-1.cpd	

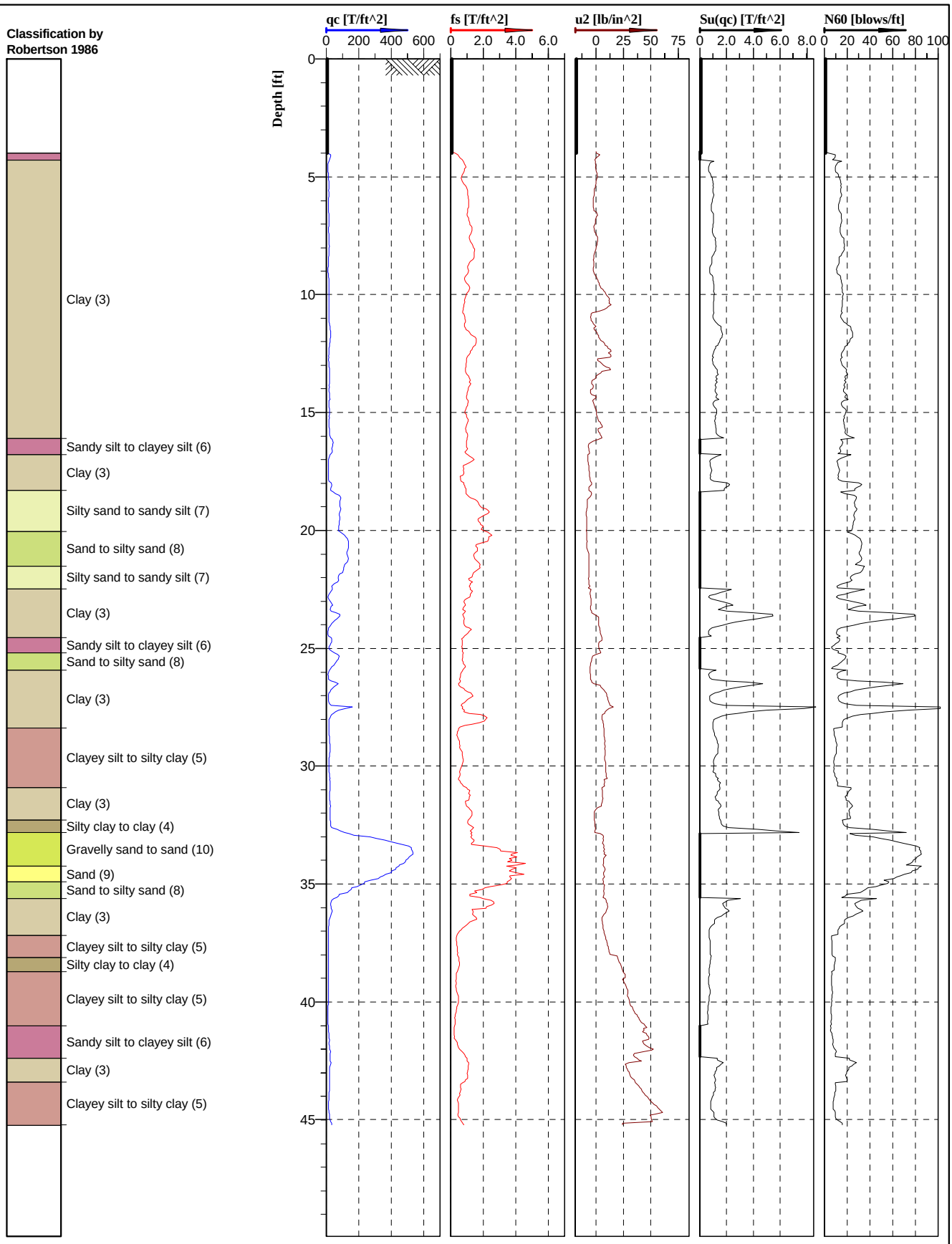


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-2
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 3/29/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-2.cpd	

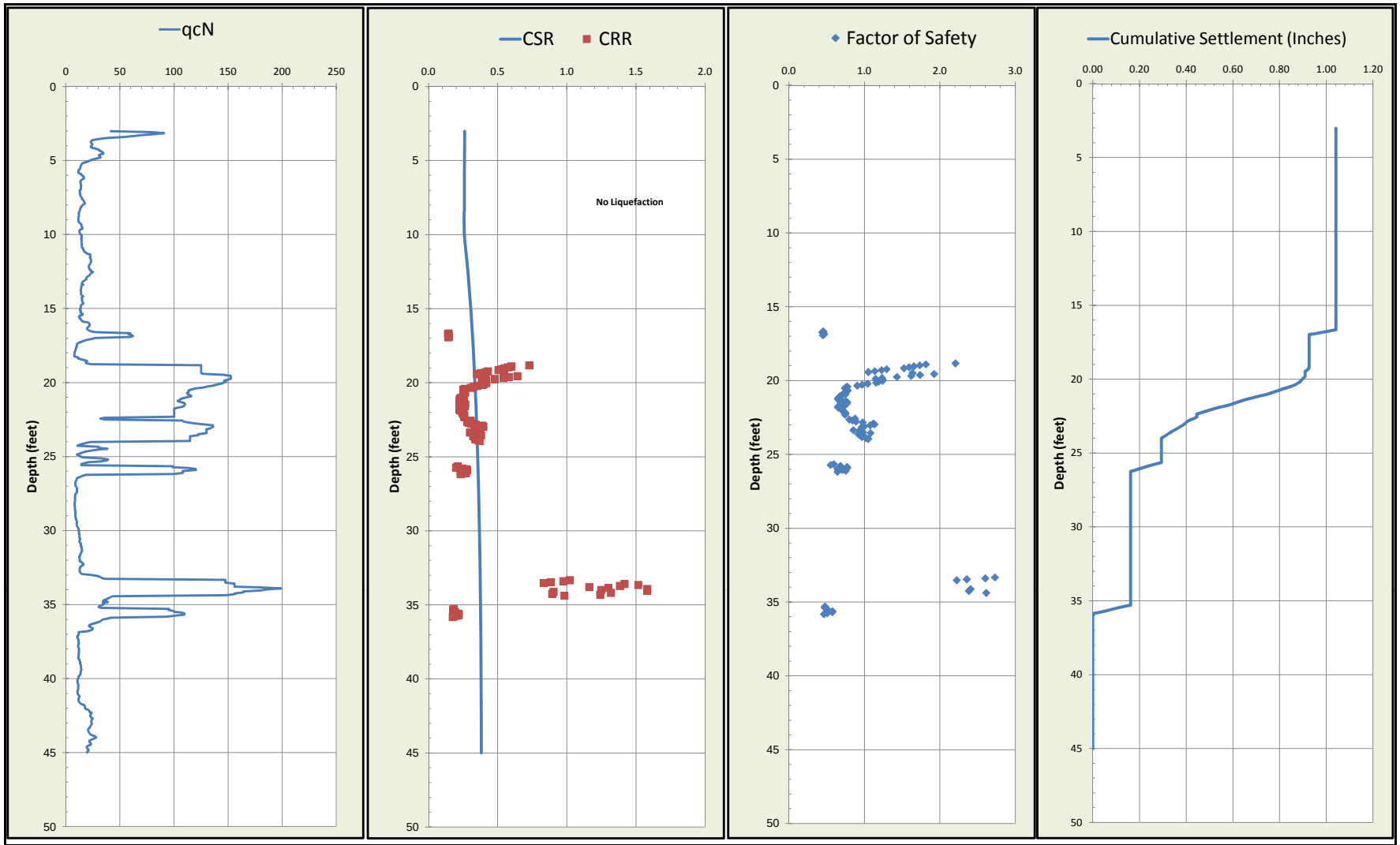


CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

U2

Cone No: 3794
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: San Jose, California	Position:	Ground level:	Test no: CPT-3
Project ID: 102-7-1	Client: Cornerstone Earth Group	Date: 7/28/2008	Scale: 1 : 70
Project: River Corporate Center - Building 3		Page: 1/1	Fig:
		File: CPT-3.cpd	



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

River Corp. III

San Jose, California

Project Number	102-7-2
Figure Number	Figure C-1
4/18/2012	CPT No. 1

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.018	43.987	0.193	377.2	377.2	98.049	0.441	1.71		Unsaturated	11.3			41.58	1.70	70.68	88.06	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.083	85.975	0.707	385.4	385.4	189.983	0.824	1.65		Unsaturated	10.2			81.26	1.70	138.15	155.76	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.149	96.112	0.976	393.6	393.6	210.200	1.018	1.68		Unsaturated	10.8			90.84	1.70	154.43	177.25	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.214	86.404	1.241	401.8	401.8	186.978	1.440	1.83		Unsaturated	13.4			81.67	1.70	138.83	176.46	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.280	75.736	1.982	410.0	410.0	162.183	2.624	2.07		Unsaturated	18.5			71.58	1.70	121.69	176.30	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.346	66.846	2.245	418.2	418.2	141.676	3.369	2.19		Unsaturated	21.5			63.18	1.70	107.41	164.33	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.411	56.663	2.358	426.4	426.4	118.857	4.177	2.31		Unsaturated	24.7			53.56	1.70	91.05	147.01	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.477	39.840	2.841	434.6	434.6	82.636	7.170	2.59		Unsaturated	33.3			37.66	1.70	64.02	115.43	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.542	32.251	2.713	442.8	442.8	90.486	8.470	2.63		Unsaturated	34.5			30.48	1.70	51.82	99.31	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.608	26.885	2.818	451.0	451.0	118.224	10.570	2.64		Unsaturated	35.1			25.41	1.70	43.20	87.81	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.674	24.793	2.379	459.2	459.2	106.983	9.685	2.63		Unsaturated	34.8			23.43	1.70	39.84	83.25	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.739	24.505	2.286	467.4	467.4	103.857	9.419	2.63		Unsaturated	34.7			23.16	1.70	39.37	82.61	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.805	24.598	2.117	475.6	475.6	102.440	8.690	2.61		Unsaturated	33.8			23.25	1.70	39.52	82.66	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.870	25.900	1.992	483.8	483.8	68.129	7.764	2.67		Unsaturated	36.0			24.48	1.70	41.62	85.82	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
3.936	25.853	1.913	492.0	492.0	67.198	7.471	2.66		Unsaturated	35.7			24.44	1.70	41.54	85.67	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	24.923	1.596	500.2	500.2	64.002	6.469	2.63		Unsaturated	34.4			23.56	1.70	40.05	83.47	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	24.439	1.436	508.4	508.4	62.026	5.938	2.61		Unsaturated	33.8			23.10	1.70	39.27	82.31	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	25.230	1.360	516.6	516.6	63.331	5.446	2.57		Unsaturated	32.6			23.85	1.70	40.54	83.78	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	29.071	1.354	524.8	524.8	54.676	4.700	2.57		Unsaturated	32.4			27.48	1.70	46.71	92.01	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	31.954	1.339	533.0	533.0	59.676	4.226	2.51		Unsaturated	30.5			30.20	1.70	51.34	97.68	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	32.996	1.308	541.2	541.2	61.162	3.997	2.48		Unsaturated	29.7			31.19	1.70	53.02	99.65	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	35.181	1.263	549.4	549.4	64.749	3.618	2.43		Unsaturated	28.2			33.25	1.70	56.53	103.72	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	36.566	1.257	557.6	557.6	66.814	3.464	2.41		Unsaturated	27.5			34.56	1.70	58.75	106.34	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.526	36.725	1.213	565.8	565.8	66.611	3.329	2.40		Unsaturated	27.2			34.71	1.70	59.01	106.49	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.592	34.297	1.228	574.0	574.0	61.720	3.611	2.45		Unsaturated	28.6			32.42	1.70	55.11	102.01	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.658	32.261	1.213	582.2	582.2	57.607	3.794	2.48		Unsaturated	29.8			30.49	1.70	51.84	98.09	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.723	33.498	1.147	590.4	590.4	59.412	3.455	2.44		Unsaturated	28.6			31.66	1.70	53.82	100.27	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.789	34.074	1.026	598.6	598.6	60.020	3.038	2.40		Unsaturated	27.3			32.21	1.70	54.75	100.89	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.854	30.578	0.918	606.8	606.8	53.435	3.032	2.44		Unsaturated	28.3			28.90	1.70	49.13	93.92	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.920	26.439	0.947	615.0	615.0	45.814	3.624	2.54		Unsaturated	31.5			24.99	1.70	42.48	86.12	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.986	24.439	0.987	623.2	623.2	53.659	4.091	2.53		Unsaturated	31.2			23.10	1.70	39.27	81.73	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.051	22.180	1.014	631.4	631.4	48.183	4.638	2.60		Unsaturated	33.5			20.96	1.70	35.64	77.39	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.117	19.501	1.003	639.6	639.6	41.890	5.229	2.68		Unsaturated	36.3			18.43	1.70	31.33	72.02	1.00	0.259	1.100	n.a.	n.a.	n.a.	0.00	0.00
5.182	16.302	0.973	647.8	647.8	49.330	6.090	2.68		Unsaturated	36.3			15.41	1.70	26.19	65.11	1.00	0.259	1.096	n.a.	n.a.	n.a.	0.00	0.00
5.248	15.409	0.928	656.0	656.0	45.979	6.153	2.70		Unsaturated	37.1			14.56	1.70	24.76	63.27	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.314	14.926	0.895	664.2	664.2	43.944	6.133	2.71		Unsaturated	37.6			14.11	1.70	23.98	62.26	1.00	0.259	1.091	n.a.	n.a.	n.a.	0.00	0.00
5.379	14.386	0.760	672.4	672.4	41.790	5.409	2.69		Unsaturated	36.7			13.60	1.70	23.12	61.01	1.00	0.259	1.089	n.a.	n.a.	n.a.	0.00	0.00
5.445	14.377	0.725	680.6	680.6	41.248	5.165	2.68		Unsaturated	36.3			13.59	1.70	23.10	60.95	1.00	0.259	1.088	n.a.	n.a.	n.a.	0.00	0.00
5.510	14.331	0.675	688.8	688.8	40.611	4.826	2.66		Unsaturated	35.7			13.55	1.70	23.03	60.78	1.00	0.259	1.087	n.a.	n.a.	n.a.	0.00	0.00
5.576	13.438	0.659	697.0	697.0	37.560	5.035	2.70		Unsaturated	37.0			12.70	1.70	21.59	58.99	1.00	0.259	1.085	n.a.	n.a.	n.a.	0.00	0.00
5.642	12.582	0.649	705.2	705.2	34.683	5.307	2.74		Unsaturated	38.5			11.89	1.70	20.22	57.27	1.00	0.259	1.083	n.a.	n.a.	n.a.	0.00	0.00
5.707	12.332	0.646	713.4	713.4	33.572	5.394	2.75		Unsaturated	39.0			11.66	1.70	19.82	56.77	1.00	0.259	1.082	n.a.	n.a.	n.a.	0.00	0.00
5.773	12.415	0.677	721.6	721.6	33.410	5.616	2.77		Unsaturated	39.5			11.73	1.70	19.95	56.98	1.00	0.259	1.081	n.a.	n.a.	n.a.	0.00	0.00
5.838	12.304	0.735	729.8	729.8	32.719	6.156	2.80		Unsaturated	40.9			11.63	1.70	19.77	56.82	1.00	0.259	1.080	n.a.	n.a.	n.a.	0.00	0.00
5.904	14.600	0.791	738.0	738.0	38.566	5.558	2.72		Unsaturated	37.8			13.80	1.70	23.46	61.58	1.00	0.259	1.083	n.a.	n.a.	n.a.	0.00	0.00
5.970	15.549	0.840	746.2	746.2	40.675	5.535	2.70		Unsaturated	37.2			14.70	1.70	24.98	63.58	1.00	0.259	1.083	n.a.	n.a.	n.a.	0.00	0.00
6.035	16.600	0.859	754.4	754.4	43.008	5.295	2.67		Unsaturated	36.1			15.69	1.70	26.67	65.73	1.00	0.259	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.101	17.577	0.865	762.6	762.6	45.098	5.030	2.64		Unsaturated	35.1			16.61	1.70	28.24	67.71	1.00	0.259	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.166	17.632	0.887	770.8	770.8	44.750	5.143	2.65		Unsaturated	35.4			16.67	1.70	28.33	67.87	1.00	0.259	1.083	n.a.	n.a.	n.a.	0.00	0.00
6.232	17.520	0.919	779.0	779.0	43.981	5.365	2.67		Unsaturated	36.0			16.56	1.70	28.15	67.71	1.00	0.259	1.082	n.a.	n.a.	n.a.	0.00	0.00
6.298	15.960	0.908	787.2	787.2	39.549	5.833	2.73		Unsaturated	38.1			15.09	1.70	25.64	64.55	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
6.363	14.629	1.085	795.4	795.4	35.784	7.624	2.84		Unsaturated	42.4			13.83	1.70	23.51	61.93	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
6.429	14.182	1.174	803.6	803.6	34.296	8.519	2.89		Unsaturated	44.3			13.40	1.70	22.79	61.03	0.99	0.259	1.076	n.a.	n.a.	n.a.	0.00	0.00
6.494	14.219	1.307	811.8	811.8	34.031	9.462	2.93		Unsaturated	45.8			13.44	1.70	22.85	61.14	0.99	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.560	14.498	1.337	820.0	820.0	34.361	9.490	2.93		Unsaturated	45.7			13.70	1.70	23.30	61.75	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.626	14.665	1.353	828.2	828.2	34.414	9.494	2.93		Unsaturated	45.7			13.86	1.70	23.56	62.11	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.691	15.019	1.361	836.4	836.4	34.913	9.321	2.92		Unsaturated	45.3			14.20	1.70	24.13	62.87	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.757	14.870	1.332	844.6	844.6	34.212	9.219	2.92		Unsaturated	45.4			14.05	1.70	23.89	62.55	0.99	0.259	1.073	n.a.	n.a.	n.a.	0.00	0.00
6.822	14.814	1.247	852.8	852.8	33.742	8.667	2.90		Unsaturated	44.7			14.00	1.70	23.80	62.41	0.99	0.258	1.072	n.a.	n.a.	n.a.	0.00	0.00
6.888	14.843	1.223	861.0	861.0	33.479	8.486	2.90		Unsaturated	44.5			14.03	1.70	23.85	62.47	0.99	0.258	1.071	n.a.	n.a.	n.a.	0.00	0.00
6.954	14.479	1.213	869.2	869.2	32.316	8.637	2.91		Unsaturated	45.2			13.69	1.70	23.26	61.69	0.99	0.258	1.070	n.a.	n.a.	n.a.	0.00	0.00
7.019	13.652	1.235	877.4	877.4	30.119	9.347	2.96		Unsaturated	47.1			12.90	1.70	21.94	59.93	0.99	0.258	1.068	n.a.	n.a.	n.a.	0.00	0.00
7.085	13.801	1.249	885.6	885.6	30.168	9.350	2.96		Unsaturated	47.0			13.04	1.69	22.07	60.11	0.99	0.258	1.067	n.a.	n.a.	n.a.	0.00	0.00
7.150	13.708	1.277	893.8	893.8	29.674	9.630	2.97		Unsaturated	47.6			12.96	1.68	21.82	59.78	0.99	0.258	1.067	n.a.	n.a.	n.a.	0.00	0.00
7.216	13.856	1.337	902.0	902.0	29.723	9.974	2.99		Unsaturated	48.1			13.10	1.67	21.93	59.93	0.99	0.258	1.066	n.a.	n.a.	n.a.	0.00	0.00
7.282	13.941	1.339	910.2	910.2	29.633	9.929	2.98		Unsaturated	48.1			13.18	1.66	21.94	59.95	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.347	14.247	1.338	918.4	918.4	30.026	9.704	2.97		Unsaturated	47.6			13.47	1.65	22.27	60.39	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
7.413	14.591	1.315	926.6	926.6	30.494	9.308	2.96		Unsaturated	46.9			13.79	1.64	22.66	60.90	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.478	15.205	1.298	934.8	934.8	31.531	8.807	2.93		Unsaturated	45.7			14.37	1.63	23.42	61.92	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.544	15.707	1.307	943.0	943.0	32.313	8.579	2.91		Unsaturated	45.1			14.85	1.62	24.02	62.71	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.610	16.005	1.312	951.2	951.2	32.652	8.448	2.90		Unsaturated	44.8			15.13	1.61	24.33	63.12	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.675	16.897	1.325	959.4	959.4	34.224	8.071	2.88		Unsaturated	43.6			15.97	1.59	25.46	64.62	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.741	17.623	1.355	967.6	967.6	35.426	7.906	2.86		Unsaturated	43.0			16.66	1.58	26.35	65.79	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.806	18.292	1.396	975.8	975.8	36.491	7.841	2.85		Unsaturated	42.6			17.29	1.57	27.15	66.85	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.872	18.646	1.454	984.0	984.0	36.898	8.009	2.85		Unsaturated	42.7			17.62	1.56	27.51	67.34	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.938	18.358	1.491	992.2	992.2	36.005	8.347	2.87		Unsaturated	43.5			17.35	1.56	26.99	66.68	0.99	0.258	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.003	16.488	1.516	1000.4	1000.4	31.963	9.482	2.95		Unsaturated	46.5			15.58	1.56	24.32	63.15	0.99	0.258	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.069	15.688	1.533	1008.6	1008.6	30.108	10.096	2.99		Unsaturated	48.1			14.83	1.56	23.12	61.54	0.99	0.258	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.134	14.805	1.538	1016.8	1016.8	28.121	10.758	3.03		Unsaturated	49.8			13.99	1.56	21.80	59.77	0.99	0.258	1.057	n.a.	n.a.	n.a.	0.00	0.00
8.200	14.452	1.558	1025.0	1025.0	27.199	11.177	3.05		Unsaturated	50.8			13.66	1.55	21.22	58.98	0.99	0.258	1.056	n.a.	n.a.	n.a.	0.00	0.00
8.266	14.191	1.539	1033.2	1033.2	26.470	11.255	3.06		Unsaturated	51.2			13.41	1.55	20.76	58.37	0.99	0.258	1.055	n.a.	n.a.	n.a.	0.00	0.00
8.331	13.903	1.538	1041.4	1041.4	25.701	11.493	3.07		Unsaturated	51.9			13.14	1.54	20.27	57.71	0.99	0.258	1.054	n.a.	n.a.	n.a.	0.00	0.00
8.397	13.791	1.521	1049.6	1049.6	25.279	11.465	3.08		Unsaturated	52.0			13.03	1.54	20.03	57.38	0.99	0.258	1.053	n.a.	n.a.	n.a.	0.00	0.00
8.462	13.280	1.469	1057.8	1057.8	24.109	11.521	3.09		Unsaturated	52.7			12.55	1.53	19.24	56.31	0.99	0.258	1.052	n.a.	n.a.	n.a.	0.00	0.00
8.528	12.620	1.337	1066.0	1066.0	22.677	11.061	3.10		Unsaturated	52.9			11.93	1.53	18.26	54.98	0.99	0.258	1.051	n.a.	n.a.	n.a.	0.00	0.00
8.594	12.713	1.252	1074.2	1074.2	22.670	10.283	3.07		Unsaturated	51.9			12.02	1.52	18.30	55.04	0.99	0.258	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.659	12.685	1.096	1082.4	1082.4	22.439	9.025	3.04		Unsaturated	50.3			11.99	1.52	18.18	54.88	0.99	0.258	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.725	12.917	1.096	1090.6	1090.6	22.688	8.859	3.03		Unsaturated	49.9			12.21	1.51	18.41	55.20	0.99	0.257	1.049	n.a.	n.a.	n.a.	0.00	0.00
8.790	12.759	1.027	1098.8	1098.8	22.224	8.411	3.02		Unsaturated	49.5			12.06	1.50	18.12	54.80	0.99	0.257	1.049	n.a.	n.a.	n.a.	0.00	0.00
8.856	12.322	0.960	1107.0	1107.0	21.262	8.157	3.02		Unsaturated	49.7			11.65	1.50	17.46	53.90	0.99	0.257	1.048	n.a.	n.a.	n.a.	0.00	0.00
8.922	12.211	0.951	1115.2	1115.2	20.899	8.161	3.03		Unsaturated	49.9			11.54	1.49	17.23	53.60	0.99	0.257	1.047	n.a.	n.a.	n.a.	0.00	0.00
8.987	12.201	0.929	1123.4	1123.4	20.722	7.982	3.02		Unsaturated	49.7			11.53	1.49	17.14	53.48	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
9.053	12.368	0.931	1131.6	1131.6	20.859	7.888	3.02		Unsaturated	49.5			11.69	1.48	17.29	53.68	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
9.118	12.480	0.931	1139.8	1139.8	20.899	7.817	3.01		Unsaturated	49.3			11.80	1.47	17.36	53.78	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.184	13.056	0.915	1148.0	1148.0	21.746	7.331	2.98		Unsaturated	48.0			12.34	1.46	18.05	54.69	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.250	14.108	0.886	1156.2	1156.2	23.404	6.548	2.93		Unsaturated	45.6			13.33	1.45	19.35	56.41	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.315	15.000	0.874	1164.4	1164.4	24.764	6.062	2.88		Unsaturated	44.0			14.18	1.44	20.43	57.83	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.381	0.898	1172.6	1172.6	25.234	6.070	2.88		Unsaturated	43.8			14.54	1.43	20.83	58.37	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.428	0.923	1180.8	1180.8	25.131	6.221	2.89		Unsaturated	44.1			14.58	1.43	20.81	58.35	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.512	16.042	0.919	1189.0	1189.0	25.984	5.949	2.86		Unsaturated	43.2			15.16	1.42	21.51	59.26	0.99	0.257	1.044	n.a.	n.a.	n.a.	0.00	0.00
9.578	16.135	1.036	1197.2	1197.2	25.955	6.668	2.90		Unsaturated	44.6			15.25	1.41	21.54	59.35	0.99	0.257	1.044	n.a.	n.a.	n.a.	0.00	0.00
9.643	15.633	1.097	1205.4	1205.4	24.938	7.299	2.94		Unsaturated	46.2			14.78	1.41	20.82	58.41	0.99	0.257	1.043	n.a.	n.a.	n.a.	0.00	0.00
9.709	13.643	1.123	1213.6	1213.6	21.484	8.614	3.04		Unsaturated	50.2			12.90	1.41	18.21	54.92	0.99	0.257	1.041	n.a.	n.a.	n.a.	0.00	0.00
9.774	13.298	1.137	1221.8	1221.8	20.768	8.962	3.06		Unsaturated	51.2			12.57	1.41	17.70	54.23	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
9.840	13.298	1.165	1230.0	1230.0	20.623	9.186	3.07		Unsaturated	51.6			12.57	1.40	17.63	54.14	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
9.906	13.670	1.213	1238.2	1238.2	21.080	9.294	3.06		Unsaturated	51.5			12.92	1.40	18.03	54.68	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
9.971	14.265	1.157	1246.4	1246.4	21.890	8.481	3.03		Unsaturated	49.8			13.48	1.39	18.71	55.59	0.99	0.257	1.039	n.a.	n.a.	n.a.	0.00	0.00
10.037	15.335	1.120	1254.6	1254.6	23.446	7.615	2.97		Clay	47.5			14.49	1.15	n.a.	n.a.	0.99	0.257	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	15.605	1.090	1262.8	1262.8	23.715	7.279	2.95		Clay	46.8			14.75	1.15	n.a.	n.a.	0.99	0.258	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	15.493	1.063	1271.0	1271.0	23.379	7.155	2.95		Clay	46.7			14.64	1.14	n.a.	n.a.	0.99	0.259	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	15.419	0.940	1279.2	1279.2	23.107	6.360	2.92		Clay	45.4			14.57	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	14.954	0.976	1287.4	1287.4	22.231	6.820	2.95		Clay	46.8			14.13	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	15.474	0.901	1295.6	1295.6	22.887	6.077	2.91		Clay	45.0			14.63	1.14	n.a.	n.a.	0.99	0.261	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.279	0.929	1303.8	1303.8	22.438	6.351	2.93		Clay	45.8			14.44	1.14	n.a.	n.a.	0.99	0.262	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	15.354	0.931	1312.0	1312.0	22.405	6.334	2.93		Clay	45.8			14.51	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	15.205	0.925	1320.2	1320.2	22.034	6.360	2.94		Clay	46.0			14.37	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	15.521	0.932	1328.4	1328.4	22.368	6.273	2.93		Clay	45.7			14.67	1.13	n.a.	n.a.	0.99	0.264	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	15.661	0.926	1336.6	1336.6	22.434	6.176	2.92		Clay	45.5			14.80	1.13	n.a.	n.a.	0.99	0.265	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	15.559	0.934	1344.8	1344.8	22.140	6.274	2.93		Clay	45.8			14.71	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	15.754	0.922	1353.0	1353.0	22.288	6.115	2.92		Clay	45.4			14.89	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	15.940	0.900	1361.2	1361.2	22.421	5.898	2.91		Clay	44.9			15.07	1.12	n.a.	n.a.	0.99	0.267	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	16.999	0.893	1369.4	1369.4	23.827	5.474	2.87		Clay	43.3			16.07	1.12	n.a.	n.a.	0.99	0.268	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	16.907	0.898	1377.6	1377.6	23.546	5.537	2.87		Clay	43.5			15.98	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	17.734	0.903	1385.8	1385.8	24.594	5.299	2.85		Clay	42.5			16.76	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	18.032	0.901	1394.0	1394.0	24.871	5.198	2.84		Clay	42.1			17.04	1.12	n.a.	n.a.	0.99	0.270	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	19.799	0.902	1402.2	1402.2	27.240	4.723	2.78		Clay	40.0			18.71	1.11	n.a.	n.a.	0.98	0.271	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	20.719	0.938	1410.4	1410.4	28.380	4.687	2.76		Clay	39.4			19.58	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	23.789	1.021	1418.6	1418.6	32.539	4.424	2.70		Clay	37.2			22.48	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.414	23.658	1.035	1426.8	1426.8	32.162	4.511	2.71		Clay	37.5			22.36	1.11	n.a.	n.a.	0.98	0.273	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	24.141	1.012	1435.0	1435.0	32.646	4.320	2.70		Clay	36.9			22.82	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	23.379	1.136	1443.2	1443.2	31.399	5.014	2.75		Clay	39.0			22.10	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	24.124	1.155	1451.4	1451.4	32.242	4.936	2.74		Clay	38.5			22.80	1.10	n.a.	n.a.	0.98	0.275	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	24.728	1.148	1459.6	1459.6	32.883	4.784	2.72		Clay	37.9			23.37	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	24.755	1.152	1467.8	1467.8	32.731	4.796	2.73		Clay	38.0			23.40	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
11.808	24.755	1.181	1476.0	1476.0	32.543	4.917	2.74		Clay	38.3			23.40	1.10	n.a.	n.a.	0.98	0.277	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	24.551	1.211	1484.2	1484.2	32.083	5.086	2.75		Clay	38.9			23.21	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	24.217	1.171	1492.4	1492.4	31.454	4.989	2.75		Clay	38.9			22.89	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	23.593	1.178	1500.6	1500.6	30.445	5.157	2.77		Clay	39.6			22.30	1.09	n.a.	n.a.	0.98	0.279	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	22.822	1.192	1508.8	1508.8	29.252	5.402	2.80		Clay	40.6			21.57	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	22.523	1.134	1517.0	1517.0	28.694	5.210	2.79		Clay	40.4			21.29	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	22.747	1.134	1525.2	1525.2	28.828	5.158	2.79		Clay	40.3			21.50	1.09	n.a.	n.a.	0.98	0.281	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	22.756	1.107	1533.4	1533.4	28.680	5.034	2.78		Clay	40.1			21.51	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.333	23.137	1.085	1541.6	1541.6	29.017	4.851	2.77		Clay	39.5			21.87	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	24.207	1.070	1549.8	1549.8	30.239	4.566	2.74		Clay	38.4			22.88	1.09	n.a.	n.a.	0.98	0.283	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	24.311	1.076	1558.0	1558.0	30.208	4.572	2.74		Clay	38.4			22.98	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	26.551	1.076	1566.2	1566.2	32.905	4.176	2.68		Clay	36.5			25.10	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	25.119	1.124	1574.4	1574.4	30.909	4.619	2.73		Clay	38.2			23.74	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	24.096	1.160	1582.6	1582.6	29.451	4.978	2.77		Clay	39.6			22.78	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.726	23.649	1.219	1590.8	1590.8	28.732	5.334	2.80		Clay	40.7			22.35	1.08	n.a.	n.a.	0.98	0.286	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	22.413	1.196	1599.0	1599.0	27.034	5.534	2.83		Clay	41.8			21.18	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	20.812	1.181	1607.2	1607.2	24.898	5.903	2.87		Clay	43.6			19.67	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	20.283	1.141	1615.4	1615.4	24.112	5.859	2.88		Clay	43.9			19.17	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	20.022	1.101	1623.6	1623.6	23.664	5.731	2.88		Clay	43.9			18.92	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	19.697	1.051	1631.8	1631.8	23.141	5.566	2.88		Clay	43.8			18.62	1.07	n.a.	n.a.	0.98	0.289	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	18.041	0.999	1640.0	1640.0	21.001	5.801	2.92		Clay	45.6			17.05	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	16.814	0.969	1648.2	1648.2	19.403	6.060	2.96		Clay	47.1			15.89	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	16.302	0.851	1656.4	1656.4	18.684	5.500	2.95		Clay	46.5			15.41	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	15.866	0.798	1664.6	1664.6	18.063	5.308	2.95		Clay	46.5			15.00	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	17.242	0.758	1672.8	1672.8	19.615	4.620	2.88		Clay	43.8			16.30	1.06	n.a.	n.a.	0.98	0.292	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	15.364	0.728	1681.0	1681.0	17.280	5.013	2.94		Clay	46.4			14.52	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	15.364	0.715	1689.2	1689.2	17.191	4.924	2.94		Clay	46.3			14.52	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	15.057	0.663	1697.4	1697.4	16.741	4.666	2.93		Clay	46.0			14.23	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	14.917	0.620	1705.6	1705.6	16.492	4.408	2.92		Clay	45.6			14.10	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	14.731	0.592	1713.8	1713.8	16.191	4.267	2.92		Clay	45.5			13.92	1.06	n.a.	n.a.	0.98	0.295	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.776	14.498	0.546	1722.0	1722.0	15.839	4.004	2.91		Clay	45.1			13.70	1.06	n.a.	n.a.	0.98	0.295	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.842	14.964	0.545	1730.2	1730.2	16.297	3.866	2.89		Clay	44.3			14.14	1.05	n.a.	n.a.	0.98	0.296	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.907	14.843	0.505	1738.4	1738.4	16.077	3.614	2.88		Clay	43.8			14.03	1.05	n.a.	n.a.	0.98	0.297	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.973	14.674	0.504	1746.6	1746.6	15.803	3.652	2.89		Clay	44.1			13.87	1.05	n.a.	n.a.	0.98	0.297	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.038	14.805	0.507	1754.8	1754.8	15.874	3.640	2.88		Clay	44.0			13.99	1.05	n.a.	n.a.	0.98	0.298	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.104	15.614	0.514	1763.0	1763.0	16.713	3.489	2.86		Clay	42.9			14.76	1.05	n.a.	n.a.	0.98	0.298	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.170	16.888	0.488	1771.2	1771.2	18.070	3.050	2.79		Clay	40.5			15.96	1.05	n.a.	n.a.	0.98	0.299	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.235	15.735	0.609	1779.4	1779.4	16.686	4.102	2.90		Clay	44.6			14.87	1.05	n.a.	n.a.	0.98	0.299	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.301	15.493	0.572	1787.6	1787.6	16.334	3.918	2.89		Clay	44.4			14.64	1.05	n.a.	n.a.	0.98	0.300	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.366	16.052	0.577	1795.8	1795.8	16.877	3.808	2.88		Clay	43.7			15.17	1.04	n.a.	n.a.	0.98	0.300	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.432	15.800	0.587	1804.0	1804.0	16.517	3.940	2.89		Clay	44.3			14.93	1.04	n.a.	n.a.	0.98	0.301	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.498	16.033	0.574	1812.2	1812.2	16.695	3.795	2.88		Clay	43.8			15.15	1.04	n.a.	n.a.	0.98	0.301	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.563	16.563	0.609	1820.4	1820.4	17.197	3.891	2.88		Clay	43.6			15.66	1.04	n.a.	n.a.	0.98	0.302	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.629	17.232	0.623	1828.6	1828.6	17.847	3.818	2.86		Clay	42.9			16.29	1.04	n.a.	n.a.	0.98	0.302	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.694	16.637	0.560	1836.8	1836.8	17.115	3.563	2.85		Clay	42.8			15.72	1.04	n.a.	n.a.	0.98	0.303	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	15.317	0.596	1845.0	1845.0	15.604	4.140	2.93		Clay	45.6			14.48	1.04	n.a.	n.a.	0.98	0.303	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.826	14.767	0.600	1853.2	1853.2	14.937	4.335	2.95		Clay	46.7			13.96	1.04	n.a.	n.a.	0.98	0.304	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.891	14.629	0.556	1861.4	1861.4	14.718	4.059	2.94		Clay	46.2			13.83	1.03	n.a.	n.a.	0.98	0.304	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.957	14.554	0.537	1869.6	1869.6	14.569	3.943	2.94		Clay	46.0			13.76	1.03	n.a.	n.a.	0.98	0.305	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.022	14.359	0.509	1877.8	1877.8	14.293	3.793	2.93		Clay	45.9			13.57	1.03	n.a.	n.a.	0.98	0.305	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.088	13.801	0.489	1886.0	1886.0	13.635	3.803	2.95		Clay	46.6			13.04	1.03	n.a.	n.a.	0.98	0.306	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.154	14.861	0.466	1894.2	1894.2	14.691	3.349	2.89		Clay	44.2			14.05	1.03	n.a.	n.a.	0.98	0.306	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.219	14.452	0.445	1902.4	1902.4	14.193	3.296	2.90		Clay	44.5			13.66	1.03	n.a.	n.a.	0.98	0.307	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.285	14.303	0.431	1910.6	1910.6	13.972	3.229	2.90		Clay	44.5			13.52	1.03	n.a.	n.a.	0.98	0.307	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.350	16.311	0.451	1918.8	1918.8	16.001	2.938	2.83		Clay	41.7			15.42	1.03	n.a.	n.a.	0.98	0.308	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.416	16.423	0.413	1927.0	1927.0	16.045	2.671	2.80		Clay	40.7			15.52	1.02	n.a.	n.a.	0.97	0.308	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.482	13.541	0.389	1935.2	1935.2	12.994	3.094	2.91		Clay	45.1			12.80	1.02	n.a.	n.a.	0.97	0.309	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.547	12.843	0.390	1943.4	1943.4	12.217	3.285	2.95		Clay	46.6			12.14	1.02	n.a.	n.a.	0.97	0.309	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.613	13.791	0.382	1951.6	1951.6	13.133	2.981	2.90		Clay	44.5			13.03	1.02	n.a.	n.a.	0.97	0.310	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.678	13.577	0.421	1959.8	1959.8	12.855	3.342	2.94		Clay	46.0			12.83	1.02	n.a.	n.a.	0.97	0.310	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.744	14.731	0.451	1968.0	1968.0	13.971	3.281	2.90		Clay	44.7			13.92	1.02	n.a.	n.a.	0.97	0.311	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.810	15.428	0.528	1976.2	1976.2	14.614	3.657	2.91		Clay	45.2			14.58	1.02	n.a.	n.a.	0.97	0.311	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.875	16.563	0.528	1984.4	1984.4	15.693	3.391	2.87		Clay	43.4			15.66	1.02	n.a.	n.a.	0.97	0.312	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.941	22.049	0.601	1992.6	1992.6	21.131	2.855	2.72		Clay	37.8			20.84	1.02	n.a.	n.a.	0.97	0.312	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.006	22.765	0.601	2000.8	2000.8	21.756	2.761	2.70		Clay	37.2			21.52	1.01	n.a.	n.a.	0.97	0.313	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.072	23.361	0.711	2009.0	2009.0	22.256	3.180	2.73		Clay	38.3			22.08	1.01	n.a.	n.a.	0.97	0.313	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.138	23.091	0.751	2017.2	2017.2	21.894	3.401	2.76		Clay	39.1			21.83	1.01	n.a.	n.a.	0.97	0.313	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
16.203	22.570	0.776	2025.4	2025.4	21.287	3.600	2.78		Clay	40.1			21.33	1.01	n.a.	n.a.	0.97	0.314	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.269	21.333	0.751	2033.6	2033.6	19.981	3.697	2.81		Clay	41.1			20.16	1.01	n.a.	n.a.	0.97	0.314	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.334	20.952	0.754	2041.8	2041.8	19.523	3.783	2.83		Clay	41.7			19.80	1.01	n.a.	n.a.	0.97	0.315	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.400	21.036	0.744	2050.0	2050.0	19.523	3.718	2.82		Clay	41.5			19.88	1.01	n.a.	n.a.	0.97	0.315	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.466	22.217	0.727	2058.2	2058.2	20.589	3.431	2.78		Clay	40.0			21.00	1.01	n.a.	n.a.	0.97	0.316	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.531	23.789	0.739	2066.4	2066.4	22.025	3.248	2.74		Clay	38.6			22.48	1.01	n.a.	n.a.	0.97	0.316	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.597	28.615	0.761	2074.6	2074.6	26.586	2.759	2.63		Clay	34.8			27.05	1.01	n.a.	n.a.	0.97	0.317	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.662	31.452	0.791	2082.8	2082.8	28.972	2.601	2.59		Sand	33.2	33	1.8	59.40	1.01	59.85	109.82	0.97	0.317	1.002	0.160	0.144	0.45	0.03	0.02
16.728	34.129	0.807	2091.0	2091.0	31.456	2.439	2.54		Sand	31.7		1.8	58.06	1.01	58.40	107.49	0.97	0.317	1.001	0.155	0.140	0.44	0.03	0.02
16.794	35.924	0.804	2099.2	2099.2	33.094	2.305	2.51		Sand	30.7		1.8	61.12	1.00	61.35	111.12	0.97	0.318	1.001	0.162	0.146	0.46	0.03	0.02
16.859	36.501	0.812	2107.4	2107.4	33.572	2.291	2.51		Sand	30.5		1.8	62.10	1.00	62.22	112.21	0.97	0.318	1.000	0.164	0.148	0.46	0.03	0.02
16.925	33.311	0.820	2115.6	2115.6	30.488	2.542	2.57		Sand	32.5	33	1.8	59.40	1.00	59.41	109.04	0.97	0.319	1.000	0.158	0.142	0.45	0.03	0.02
16.990	28.801	0.820	2123.8	2123.8	26.122	2.956	2.66		Clay	35.6			27.22	1.00	n.a.	n.a.	0.97	0.319	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.056	25.221	0.645	2132.0	2132.0	22.659	2.670	2.68		Clay	36.3			23.84	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.122	20.245	0.645	2140.2	2140.2	17.919	3.364	2.82		Clay	41.6			19.14	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.187	17.046	0.660	2148.4	2148.4	14.869	4.132	2.94		Clay	46.3			16.11	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.253	14.861	0.722	2156.6	2156.6	12.782	5.238	3.06		Clay	51.2			14.05	0.99	n.a.	n.a.	0.97	0.321	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.318	12.508	0.714	2164.8	2164.8	10.556	6.249	3.17		Clay	56.2			11.82	0.99	n.a.	n.a.	0.97	0.321	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.384	10.964	0.668	2173.0	2173.0	9.091	6.763	3.24		Clay	59.6			10.36	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.450	10.928	0.632	2181.2	2181.2	9.020	6.424	3.23		Clay	59.1			10.33	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.515	10.723	0.620	2189.4	2189.4	8.795	6.439	3.24		Clay	59.5			10.14	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.581	10.583	0.579	2197.6	2197.6	8.631	6.105	3.23		Clay	59.1			10.00	0.99	n.a.	n.a.	0.97	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.646	10.174	0.553	2205.8	2205.8	8.225	6.096	3.25		Clay	59.9			9.62	0.99	n.a.	n.a.	0.97	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.712	9.960	0.536	2214.0	2214.0	7.997	6.054	3.26		Clay	60.2			9.41	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.778	9.700	0.468	2222.2	2222.2	7.730	5.449	3.24		Clay	59.5			9.17	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.843	9.541	0.451	2230.4	2230.4	7.555	5.353	3.24		Clay	59.6			9.02	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.909	9.012	0.444	2238.6	2238.6	7.051	5.625	3.28		Clay	61.4			8.52	0.99	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.974	8.686	0.417	2246.8	2246.8	6.732	5.514	3.29		Clay	61.9			8.21	0.98	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	8.444	0.352	2254.8	2252.3	6.497	4.811	3.27		Clay	60.9			7.98	0.98	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.106	8.444	0.318	2262.7	2256.1	6.483	4.349	3.24		Clay	59.7			7.98	0.98	n.a.	n.a.	0.97	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.171	8.360	0.282	2270.5	2259.9	6.394	3.903	3.22		Clay	58.6			7.90	0.98	n.a.	n.a.	0.97	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.237	8.379	0.238	2278.4	2263.6	6.397	3.287	3.18		Clay	56.7			7.92	0.98	n.a.	n.a.	0.97	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.302	11.966	0.188	2286.3	2267.4	9.546	1.737	2.89		Clay	44.1			11.31	0.98	n.a.	n.a.	0.97	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.368	12.090	0.226	2294.2	2271.2	9.636	2.065	2.92		Clay	45.5			11.43	0.98	n.a.	n.a.	0.97	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.434	15.242	0.288	2302.0	2275.0	12.388	2.044	2.83		Clay	41.7			14.41	0.98	n.a.	n.a.	0.97	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.499	19.279	0.365	2309.9	2278.8	15.907	2.014	2.73		Clay	38.2			18.22	0.98	n.a.	n.a.	0.97	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.565	21.017	0.457	2317.8	2282.5	17.400	2.301	2.73		Clay	38.3			19.86	0.98	n.a.	n.a.	0.97	0.328	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.630	19.548	0.554	2325.6	2286.3	16.083	3.013	2.83		Clay	41.9			18.48	0.98	n.a.	n.a.	0.97	0.329	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.696	19.967	0.689	2333.5	2290.1	16.419	3.665	2.88		Clay	43.6			18.87	0.98	n.a.	n.a.	0.97	0.329	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.762	24.793	0.778	2341.4	2293.9	20.596	3.293	2.77		Clay	39.6			23.43	0.98	n.a.	n.a.	0.97	0.330	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.827	34.483	0.869	2349.3	2297.6	30.212	2.609	2.58		Sand	32.8	125		125.00	0.97	121.55	192.46	0.97	0.330	0.980	0.825	0.727	2.20	0.00	0.00
18.893	54.914	0.984	2357.1	2301.4	48.701	1.831	2.32		Sand	24.9	125		125.00	0.97	121.41	187.21	0.97	0.330	0.981	0.678	0.599	1.81	0.00	0.00
18.958	60.150	1.058	2365.0	2305.2	53.399	1.794	2.28		Sand	23.9	125		125.00	0.97	121.32	185.95	0.97	0.331	0.981	0.649	0.573	1.73	0.00	0.00
19.024	66.502	1.170	2372.9	2309.0	59.099	1.791	2.25		Sand	23.0	125		125.00	0.97	121.23	184.63	0.97	0.331	0.981	0.621	0.548	1.65	0.00	0.00
19.090	73.003	1.305	2380.8	2312.8	64.924	1.817	2.22		Sand	22.3	125		125.00	0.97	121.15	183.49	0.97	0.331	0.980	0.598	0.527	1.59	0.00	0.00
19.155	80.219	1.444	2388.6	2316.5	71.386	1.827	2.19		Sand	21.6	125		125.00	0.97	121.06	182.15	0.97	0.332	0.980	0.573	0.505	1.52	0.00	0.00
19.221	96.940	1.520	2396.5	2320.3	86.417	1.588	2.09		Sand	19.0	125		125.00	0.97	120.90	176.70	0.97	0.332	0.981	0.486	0.429	1.29	0.00	0.00
19.286	105.058	1.629	2404.4	2324.1	93.665	1.569	2.06		Sand	18.4	125		125.00	0.97	120.80	174.78	0.96	0.332	0.981	0.461	0.407	1.22	0.00	0.00
19.352	117.361	1.790	2412.2	2327.9	104.672	1.541	2.02		Sand	17.4	125		125.00	0.97	120.68	171.95	0.96	0.333	0.981	0.428	0.378	1.14	0.01	0.00
19.418	133.934	1.895	2420.1	2331.7	119.506	1.428	1.96		Sand	16.0			126.59	0.96	122.08	168.83	0.96	0.333	0.982	0.396	0.350	1.05	0.01	0.01
19.483	154.114	1.973	2428.0	2335.4	137.561	1.290	1.88		Sand	14.5			145.67	0.97	140.71	184.57	0.96	0.333	0.978	0.620	0.545	1.64	0.00	0.00
19.549	161.256	1.964	2435.9	2339.2	143.867	1.227	1.85		Sand	13.9			152.42	0.97	147.25	189.26	0.96	0.334	0.977	0.730	0.642	1.92	0.00	0.00
19.614	161.256	1.811	2443.7	2343.0	143.747	1.132	1.83		Sand	13.5			152.42	0.97	147.10	186.40	0.96	0.334	0.977	0.659	0.579	1.73	0.00	0.00
19.680	161.675	1.699	2451.6	2346.8	144.004	1.059	1.81		Sand	13.1			152.81	0.96	147.36	184.39	0.96	0.334	0.977	0.616	0.541	1.62	0.00	0.00
19.746	161.275	1.534	2459.5	2350.5	143.526	0.958	1.78		Sand	12.5			152.43	0.96	146.83	180.50	0.96	0.335	0.978	0.544	0.478	1.43	0.00	0.00
19.811	157.527	1.416	2467.3	2354.3	140.049	0.906	1.77		Sand	12.4			148.89	0.96	143.22	175.40	0.96	0.335	0.978	0.469	0.413	1.23	0.00	0.00
19.877	154.691	1.380	2475.2	2358.1	137.394	0.899	1.78		Sand	12.5			146.21	0.96	140.50	172.76	0.96	0.335	0.979	0.437	0.385	1.15	0.01	0.00
19.942	156.457	1.463	2483.1	2361.9	138.860	0.943	1.79		Sand	12.6			147.88	0.96	142.09	175.73	0.96	0.336	0.978	0.473	0.416	1.24	0.00	0.00
20.008	154.421	1.521	2491.0	2365.7	136.926	0.993	1.81		Sand	13.0			145.96	0.96	140.16	175.71	0.96	0.336	0.977	0.473	0.416	1.24	0.00	0.00
20.074	151.947	1.525	2498.8	2369.4	134.603	1.012	1.82		Sand	13.2			143.62	0.96	137.80	174.18	0.96	0.336	0.977	0.454	0.399	1.19	0.01	0.00
20.139	147.418	1.619	2506.7	2373.2	130.450	1.108	1.85		Sand	13.9			139.34	0.96	133.59	173.12	0.96	0.337	0.977	0.441	0.388	1.15	0.01	0.00
20.205	143.893	1.535	2514.6	2377.0	127.200	1.076	1.85		Sand	13.9			136.00	0.96	130.23	169.10	0.96	0.337	0.978	0.399	0.351	1.04	0.01	0.01
20.270	138.741	1.556	2522.4	2380.8	122.504	1.132	1.88		Sand	14.4			131.14	0.96	125.42	166.03	0.96	0.337	0.978	0.371	0.326	0.97	0.01	0.01
20.336	134.762	1.537	2530.3	2384.6	118.861	1.151	1.89		Sand	14.7			127.37	0.96	121.68	162.93	0.96	0.338	0.979	0.346	0.305	0.90	0.01	0.01
20.402	126.345	1.415	2538.2	2388.3	111.275	1.131	1.91		Sand	15.1			119.42	0.95	113.84	154.92	0.96	0.338	0.980	0.296	0.261	0.77	0.01	0.01
20.467	122.979	1.444	2546.1	2392.1	108.192	1.186	1.93		Sand	15.5			116.24	0.95	110.69	153.02	0.96	0.338	0.980	0.286	0.252	0.74	0.02	0.01
20.533	120.338	1.565	2553.9	2395.9	105.757	1.314	1.97		Sand	16.3			113.74	0.95	108.25	152.90	0.96	0.338	0.980	0.285	0.251	0.74	0.02	0.01

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
20.598	119.863	1.737	2561.8	2399.7	105.248	1.465	2.00		Sand	17.1			113.29	0.95	107.79	154.74	0.96	0.339	0.979	0.295	0.260	0.77	0.02	0.01
20.664	120.105	1.796	2569.7	2403.4	105.377	1.512	2.01		Sand	17.3			113.52	0.95	107.96	155.56	0.96	0.339	0.979	0.299	0.263	0.78	0.01	0.01
20.730	118.617	1.754	2577.6	2407.2	103.972	1.495	2.01		Sand	17.3			112.11	0.95	106.52	153.83	0.96	0.339	0.979	0.290	0.255	0.75	0.02	0.01
20.795	119.148	1.688	2585.4	2411.0	104.357	1.432	2.00		Sand	17.0			112.62	0.95	106.92	153.38	0.96	0.340	0.979	0.288	0.253	0.75	0.02	0.01
20.861	121.751	1.553	2593.3	2414.8	106.575	1.289	1.96		Sand	16.2			115.08	0.95	109.19	153.45	0.96	0.340	0.978	0.288	0.253	0.75	0.02	0.01
20.926	122.802	1.512	2601.2	2418.6	107.417	1.244	1.95		Sand	15.9			116.07	0.95	110.06	153.53	0.96	0.340	0.978	0.288	0.254	0.75	0.02	0.01
20.992	118.227	1.471	2609.0	2422.3	103.289	1.258	1.97		Sand	16.2			111.75	0.95	105.80	149.51	0.96	0.341	0.978	0.269	0.237	0.70	0.02	0.02
21.058	114.432	1.535	2616.9	2426.1	99.855	1.357	2.00		Sand	16.9			108.16	0.95	102.30	147.51	0.96	0.341	0.979	0.260	0.229	0.67	0.02	0.02
21.123	112.173	1.588	2624.8	2429.9	97.781	1.432	2.02		Sand	17.4			106.02	0.94	100.19	146.37	0.96	0.341	0.979	0.256	0.225	0.66	0.02	0.02
21.189	111.271	1.595	2632.7	2433.7	96.907	1.451	2.03		Sand	17.6			105.17	0.94	99.30	145.67	0.96	0.341	0.978	0.253	0.223	0.65	0.02	0.02
21.254	109.336	1.703	2640.5	2437.5	95.124	1.577	2.06		Sand	18.3			103.34	0.94	97.50	145.23	0.96	0.342	0.978	0.251	0.221	0.65	0.02	0.02
21.320	112.554	1.871	2648.4	2441.2	97.879	1.682	2.07		Sand	18.5			106.38	0.94	100.41	149.50	0.96	0.342	0.977	0.269	0.237	0.69	0.02	0.02
21.386	116.004	2.055	2656.3	2445.0	100.833	1.792	2.08		Sand	18.8			109.64	0.94	103.53	154.02	0.96	0.342	0.976	0.291	0.255	0.75	0.02	0.01
21.451	116.487	2.225	2664.1	2448.8	101.176	1.932	2.10		Sand	19.3			110.10	0.94	103.94	155.74	0.96	0.343	0.975	0.300	0.263	0.77	0.01	0.01
21.517	116.302	2.202	2672.0	2452.6	100.933	1.915	2.10		Sand	19.2			109.93	0.94	103.71	155.33	0.96	0.343	0.975	0.298	0.261	0.76	0.02	0.01
21.582	115.883	2.246	2679.9	2456.3	100.484	1.961	2.11		Sand	19.5			109.53	0.94	103.27	155.23	0.96	0.343	0.975	0.297	0.261	0.76	0.02	0.01
21.648	113.530	2.277	2687.8	2460.1	98.341	2.030	2.12		Sand	19.9			107.31	0.94	101.06	153.27	0.96	0.343	0.975	0.287	0.252	0.73	0.02	0.01
21.714	108.396	2.123	2695.6	2463.9	93.765	1.983	2.13		Sand	20.0			102.45	0.94	96.29	147.52	0.96	0.344	0.976	0.261	0.229	0.67	0.02	0.02
21.779	99.720	1.926	2703.5	2467.7	86.096	1.958	2.15		Sand	20.6	100		100.00	0.94	93.88	145.41	0.96	0.344	0.976	0.252	0.221	0.64	0.02	0.02
21.845	88.282	1.689	2711.4	2471.5	76.023	1.943	2.19		Sand	21.5	100		100.00	0.94	93.85	146.87	0.96	0.344	0.976	0.258	0.226	0.66	0.02	0.02
21.910	69.403	1.497	2719.2	2475.2	59.463	2.200	2.31		Sand	24.6	100		100.00	0.94	93.89	150.64	0.96	0.345	0.975	0.274	0.240	0.70	0.02	0.02
21.976	61.796	1.350	2727.1	2479.0	52.772	2.234	2.35		Sand	25.8	100		100.00	0.94	93.86	151.67	0.96	0.345	0.974	0.279	0.245	0.71	0.02	0.01
22.042	56.095	1.209	2735.0	2482.8	47.754	2.209	2.38		Sand	26.6	100		100.00	0.94	93.81	152.27	0.96	0.345	0.974	0.282	0.247	0.72	0.02	0.01
22.107	53.231	1.200	2742.9	2486.6	45.217	2.314	2.41		Sand	27.5	100		100.00	0.94	93.77	152.83	0.96	0.345	0.974	0.285	0.249	0.72	0.02	0.01
22.173	45.159	1.243	2750.7	2490.4	38.146	2.839	2.52		Sand	31.1	100		100.00	0.94	93.76	154.59	0.96	0.346	0.973	0.294	0.257	0.74	0.02	0.01
22.238	44.029	1.197	2758.6	2494.1	37.130	2.807	2.53		Sand	31.2	100		100.00	0.94	93.70	154.58	0.96	0.346	0.973	0.294	0.257	0.74	0.02	0.01
22.304	44.029	1.197	2766.5	2497.9	37.099	2.807	2.53		Sand	31.2	100		100.00	0.94	93.64	154.50	0.96	0.346	0.972	0.294	0.257	0.74	0.02	0.01
22.370	37.896	1.094	2774.4	2501.7	29.187	2.997	2.63		Clay	34.5			35.82	0.96	n.a.	n.a.	0.96	0.346	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.435	33.730	1.134	2782.2	2505.5	25.815	3.507	2.71		Clay	37.4			31.88	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.501	38.063	1.300	2790.1	2509.2	29.226	3.545	2.67		Clay	36.1			35.98	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.566	50.218	1.499	2798.0	2513.0	42.341	3.071	2.51		Sand	30.7	70	1.53	107.10	0.94	100.29	163.18	0.96	0.347	0.969	0.348	0.304	0.87	0.01	0.01
22.632	75.290	1.385	2805.8	2516.8	64.035	1.874	2.24		Sand	22.7		1.53	108.88	0.93	101.77	158.78	0.96	0.347	0.970	0.318	0.278	0.80	0.01	0.01
22.698	78.349	1.186	2813.7	2520.6	66.632	1.541	2.17		Sand	20.9		1.53	113.30	0.93	105.92	161.43	0.96	0.348	0.969	0.336	0.293	0.84	0.01	0.01
22.763	83.111	0.912	2821.6	2524.4	70.700	1.116	2.06		Sand	18.3		1.53	120.19	0.93	112.37	163.94	0.96	0.348	0.968	0.354	0.308	0.89	0.01	0.01
22.829	87.984	0.833	2829.5	2528.1	74.858	0.962	2.00		Sand	16.9		1.53	127.24	0.94	119.03	168.30	0.95	0.348	0.966	0.391	0.340	0.98	0.01	0.01
22.894	93.955	0.778	2837.3	2531.9	79.958	0.841	1.94		Sand	15.7		1.53	135.87	0.94	127.23	173.76	0.95	0.348	0.964	0.449	0.389	1.12	0.01	0.00
22.960	94.168	0.791	2845.2	2535.7	80.079	0.853	1.94		Sand	15.8		1.53	136.18	0.94	127.47	174.32	0.95	0.349	0.964	0.455	0.395	1.13	0.01	0.00
23.026	93.731	0.744	2853.1	2539.5	79.638	0.806	1.93		Sand	15.5		1.53	135.55	0.94	126.74	172.35	0.95	0.349	0.964	0.432	0.375	1.07	0.01	0.01
23.091	92.429	0.691	2860.9	2543.3	78.453	0.759	1.92		Sand	15.3		1.53	133.66	0.93	124.80	169.16	0.95	0.349	0.965	0.399	0.346	0.99	0.01	0.01
23.157	84.729	0.642	2868.8	2547.0	71.758	0.771	1.96		Sand	16.0	85	1.53	130.05	0.93	121.32	167.92	0.95	0.349	0.965	0.388	0.336	0.96	0.01	0.01
23.222	80.052	0.567	2876.7	2550.8	67.675	0.721	1.96		Sand	16.2	85	1.53	130.05	0.93	121.26	168.26	0.95	0.350	0.965	0.391	0.339	0.97	0.01	0.01
23.288	75.122	0.461	2884.6	2554.6	63.381	0.626	1.95		Sand	16.0	85	1.53	130.05	0.93	121.16	167.42	0.95	0.350	0.965	0.383	0.332	0.95	0.01	0.01
23.354	70.343	0.296	2892.4	2558.4	59.223	0.430	1.90		Sand	14.9	85	1.53	130.05	0.93	120.92	162.54	0.95	0.350	0.966	0.344	0.299	0.85	0.01	0.01
23.419	65.516	0.311	2900.3	2562.1	55.030	0.485	1.95		Sand	15.9	85	1.53	130.05	0.93	121.02	167.17	0.95	0.350	0.964	0.381	0.330	0.94	0.01	0.01
23.485	53.929	0.370	2908.2	2565.9	45.040	0.705	2.11		Sand	19.4	80	1.53	122.40	0.93	113.89	168.74	0.95	0.351	0.963	0.395	0.342	0.98	0.01	0.01
23.550	50.367	0.441	2916.0	2569.7	41.949	0.902	2.19		Sand	21.5	80	1.53	122.40	0.93	113.96	172.82	0.95	0.351	0.962	0.438	0.379	1.08	0.01	0.01
23.616	47.744	0.526	2923.9	2573.5	39.667	1.137	2.26		Sand	23.5	75	1.53	114.75	0.93	106.57	166.06	0.95	0.351	0.964	0.371	0.322	0.92	0.01	0.01
23.682	46.945	0.697	2931.8	2577.3	38.950	1.533	2.35		Sand	25.7	75	1.53	114.75	0.93	106.59	168.44	0.95	0.351	0.963	0.392	0.340	0.97	0.01	0.01
23.747	48.489	0.727	2939.7	2581.0	40.239	1.546	2.34		Sand	25.5	75	1.53	114.75	0.93	106.52	168.12	0.95	0.352	0.963	0.389	0.337	0.96	0.01	0.01
23.813	45.903	0.670	2947.5	2584.8	37.995	1.508	2.35		Sand	25.9	75	1.53	114.75	0.93	106.47	168.40	0.95	0.352	0.962	0.392	0.339	0.96	0.01	0.01
23.878	41.449	0.784	2955.4	2588.6	34.158	1.961	2.46		Sand	29.0	75	1.53	114.75	0.93	106.48	170.61	0.95	0.352	0.961	0.414	0.358	1.02	0.01	0.01
23.944	36.026	0.805	2963.3	2592.4	29.499	2.330	2.55		Sand	32.0	75	1.53	114.75	0.93	106.47	171.97	0.95	0.352	0.960	0.428	0.370	1.05	0.01	0.01
24.010	24.439	0.801	2971.2	2596.2	17.683	3.490	2.84		Clay	42.1			23.10	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.075	20.497	0.811	2979.0	2599.9	14.622	4.267	2.96		Clay	46.9			19.37	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.141	17.102	0.746	2986.9	2603.7	11.989	4.779	3.05		Clay	51.0			16.16	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.206	13.772	0.804	2994.8	2607.5	9.415	6.550	3.22		Clay	58.6			13.02	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.272	11.373	0.824	3002.6	2611.3	7.561	8.347	3.36		Clay	65.5			10.75	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.338	32.409	0.734	3010.5	2615.0	23.635	2.375	2.63		Clay	34.8			30.63	0.95	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.403	32.409	0.722	3018.4	2618.8	23.598	2.337	2.63		Clay	34.6			30.63	0.95	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.469	40.659	0.671	3026.3	2622.6	33.235	1.714	2.43	plastic	Clay	28.2			38.43	0.94	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.534	31.647	0.656	3034.1	2626.4	22.944	2.177	2.62		Clay	34.3			29.91	0.94	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.600	24.839	0.650	3042.0	2630.2	17.731	2.788	2.78		Clay	39.8			23.48	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.666	19.362	0.538	3049.9	2633.9	13.544	3.016	2.89		Clay	44.2			18.30	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.731	15.976	0.569	3057.7	2637.7	10.954	3.938	3.03		Clay	50.1			15.10	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.797	13.791	0.569	3065.6	2641.5	9.281	4.642	3.13		Clay	54.6			13.03	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.862	10.899	0.663	3073.5	2645.3	7.078	7.082	3.34		Clay	64.4			10.30	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.928	12.294	0.674	3081.4	2649.1	8.119	6.268	3.26		Clay	60.4			11.62	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
24.994	13.903	0.664	3089.2	2652.8	9.317	5.373	3.17		Clay	56.3			13.14	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.059	17.111	0.668	3097.1	2656.6	11.716	4.292	3.03		Clay	50.1			16.17	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.125	34.743	0.665	3105.0	2660.4	27.978	2.004	2.53	plastic	Clay	31.3			32.84	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.190	41.263	0.728	3112.8	2664.2	33.447	1.833	2.45	plastic	Clay	28.7			39.00	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.256	40.333	0.616	3120.7	2667.9	32.637	1.589	2.42	plastic	Clay	27.8			38.12	0.94	n.a.	n.a.	0.95	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.322	33.795	0.551	3128.6	2671.7	27.111	1.710	2.50	plastic	Clay	30.4			31.94	0.94	n.a.	n.a.	0.95	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.387	22.161	0.426	3136.5	2675.5	15.394	2.069	2.75		Clay	38.9			20.95	0.94	n.a.	n.a.	0.95	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.453	18.153	0.356	3144.3	2679.3	12.377	2.147	2.84		Clay	42.2			17.16	0.94	n.a.	n.a.	0.95	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.518	14.981	0.383	3152.2	2683.1	9.992	2.857	2.99		Clay	48.1			14.16	0.94	n.a.	n.a.	0.95	0.357	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.584	15.372	0.305	3160.1	2686.8	10.266	2.211	2.91		Clay	45.2			14.53	0.94	n.a.	n.a.	0.95	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.650	43.318	0.369	3168.0	2690.6	34.981	0.884	2.25		Sand	23.1	55	1.8	99.00	0.91	89.62	143.49	0.95	0.358	0.964	0.245	0.212	0.59	0.02	0.02
25.715	58.094	0.469	3175.8	2694.4	47.330	0.830	2.13		Sand	19.9	55	1.8	99.00	0.90	89.38	138.38	0.95	0.358	0.965	0.227	0.197	0.55	0.02	0.02
25.781	66.659	0.516	3183.7	2698.2	54.463	0.793	2.06		Sand	18.4		1.8	113.41	0.91	102.92	152.39	0.95	0.358	0.960	0.283	0.244	0.68	0.02	0.02
25.846	70.557	0.546	3191.6	2702.0	57.682	0.792	2.04		Sand	17.9		1.8	120.04	0.91	109.16	158.96	0.95	0.358	0.958	0.319	0.275	0.77	0.01	0.01
25.912	70.788	0.543	3199.4	2705.7	57.831	0.785	2.04		Sand	17.9		1.8	120.43	0.91	109.46	159.15	0.95	0.359	0.957	0.321	0.276	0.77	0.01	0.01
25.978	61.033	0.526	3207.3	2709.5	49.640	0.885	2.12		Sand	19.8	60	1.8	108.00	0.90	97.71	148.92	0.95	0.359	0.961	0.267	0.230	0.64	0.02	0.02
26.043	49.521	0.533	3215.2	2713.3	39.993	1.112	2.26		Sand	23.2	60	1.8	108.00	0.91	97.87	154.41	0.95	0.359	0.959	0.293	0.253	0.70	0.02	0.01
26.109	39.458	0.503	3223.1	2717.1	31.568	1.329	2.39		Sand	26.8	60	1.8	108.00	0.91	97.95	157.91	0.95	0.359	0.957	0.313	0.269	0.75	0.02	0.01
26.174	30.093	0.465	3230.9	2720.8	23.737	1.633	2.54		Sand	31.5	55	1.8	99.00	0.90	89.42	148.95	0.95	0.359	0.960	0.267	0.230	0.64	0.02	0.02
26.240	19.455	0.382	3238.8	2724.6	13.092	2.142	2.82		Clay	41.4			18.39	0.94	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.306	16.572	0.447	3246.7	2728.4	10.958	2.990	2.96		Clay	47.2			15.66	0.94	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.371	14.647	0.518	3254.5	2732.2	9.531	3.979	3.08		Clay	52.4			13.84	0.93	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.437	11.197	0.522	3262.4	2736.0	6.993	5.457	3.27		Clay	61.2			10.58	0.93	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.502	10.564	0.481	3270.3	2739.7	6.518	5.387	3.30		Clay	62.2			9.98	0.93	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.568	10.528	0.362	3278.2	2743.5	6.480	4.072	3.23		Clay	58.9			9.95	0.93	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.634	10.016	0.362	3286.0	2747.3	6.095	4.323	3.26		Clay	60.7			9.47	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.699	9.467	0.315	3293.9	2751.1	5.685	4.028	3.27		Clay	61.0			8.95	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.765	9.327	0.268	3301.8	2754.9	5.573	3.491	3.24		Clay	59.7			8.82	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.830	9.262	0.173	3309.6	2758.6	5.515	2.274	3.15		Clay	55.4			8.75	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.896	9.374	0.165	3317.5	2762.4	5.586	2.139	3.13		Clay	54.5			8.86	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.962	9.486	0.175	3325.4	2766.2	5.656	2.237	3.14		Clay	54.8			8.97	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.027	10.183	0.194	3333.3	2770.0	6.149	2.278	3.11		Clay	53.5			9.62	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.093	10.592	0.224	3341.1	2773.7	6.433	2.511	3.12		Clay	53.8			10.01	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.158	11.038	0.226	3349.0	2777.5	6.742	2.414	3.09		Clay	52.6			10.43	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.224	10.890	0.242	3356.9	2781.3	6.624	2.627	3.12		Clay	53.7			10.29	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.290	10.918	0.256	3364.8	2785.1	6.632	2.772	3.13		Clay	54.3			10.32	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.355	11.355	0.234	3372.6	2788.9	6.934	2.420	3.08		Clay	52.2			10.73	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.421	10.899	0.260	3380.5	2792.6	6.595	2.823	3.13		Clay	54.6			10.30	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.486	10.193	0.259	3388.4	2796.4	6.078	3.047	3.18		Clay	56.7			9.63	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.552	9.458	0.274	3396.2	2800.2	5.542	3.531	3.25		Clay	60.0			8.94	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.618	9.151	0.295	3404.1	2804.0	5.313	3.960	3.29		Clay	62.0			8.65	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.683	9.160	0.288	3412.0	2807.8	5.310	3.864	3.29		Clay	61.7			8.66	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.749	9.132	0.288	3419.9	2811.5	5.280	3.880	3.29		Clay	61.9			8.63	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.814	8.863	0.309	3427.7	2815.3	5.079	4.322	3.33		Clay	63.9			8.38	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.880	9.012	0.321	3435.6	2819.1	5.175	4.401	3.33		Clay	63.8			8.52	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.946	8.993	0.333	3443.5	2822.9	5.152	4.580	3.34		Clay	64.3			8.50	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.011	8.751	0.327	3451.3	2826.6	4.971	4.655	3.36		Clay	65.2			8.27	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	8.834	0.332	3459.2	2830.4	5.020	4.673	3.35		Clay	65.0			8.35	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	8.723	0.348	3467.1	2834.2	4.932	4.979	3.37		Clay	66.1			8.24	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.208	8.546	0.350	3475.0	2838.0	4.798	5.141	3.39		Clay	67.1			8.08	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	8.574	0.345	3482.8	2841.8	4.809	5.049	3.39		Clay	66.8			8.10	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	8.695	0.343	3490.7	2845.5	4.885	4.936	3.38		Clay	66.2			8.22	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	8.817	0.324	3498.6	2849.3	4.961	4.584	3.35		Clay	65.0			8.33	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	8.817	0.287	3506.4	2853.1	4.952	4.063	3.32		Clay	63.6			8.33	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	8.891	0.275	3514.3	2856.9	4.994	3.855	3.31		Clay	62.8			8.40	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	9.086	0.257	3522.2	2860.7	5.121	3.509	3.28		Clay	61.3			8.59	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.667	9.262	0.257	3530.1	2864.4	5.235	3.428	3.26		Clay	60.6			8.75	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.733	9.355	0.261	3537.9	2868.2	5.290	3.441	3.26		Clay	60.5			8.84	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.798	9.467	0.274	3545.8	2872.0	5.358	3.561	3.26		Clay	60.6			8.95	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.864	9.272	0.299	3553.7	2875.8	5.213	3.989	3.30		Clay	62.4			8.76	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.930	9.253	0.333	3561.6	2879.5	5.190	4.457	3.33		Clay	63.9			8.75	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	9.272	0.409	3569.4	2883.3	5.194	5.463	3.38		Clay	66.4			8.76	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	9.272	0.413	3577.3	2887.1	5.184	5.519	3.38		Clay	66.6			8.76	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.126	9.681	0.414	3585.2	2890.9	5.457	5.248	3.35		Clay	65.0			9.15	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	9.923	0.409	3593.0	2894.7	5.615	5.033	3.33		Clay	64.0			9.38	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	10.164	0.402	3600.9	2898.4	5.771	4.807	3.31		Clay	62.9			9.61	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	10.378	0.390	3608.8	2902.2	5.908	4.549	3.29		Clay	61.8			9.81	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
29.389	10.714	0.396	3616.7	2906.0	6.129	4.447	3.27		Clay	60.9			10.13	0.92	n.a.	n.a.	0.93	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	10.973	0.403	3624.5	2909.8	6.297	4.399	3.26		Clay	60.3			10.37	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	10.528	0.389	3632.4	2913.6	5.980	4.465	3.28		Clay	61.4			9.95	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	10.648	0.407	3640.3	2917.3	6.052	4.610	3.28		Clay	61.6			10.06	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	10.759	0.410	3648.1	2921.1	6.117	4.589	3.28		Clay	61.3			10.17	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	11.002	0.420	3656.0	2924.9	6.273	4.578	3.27		Clay	60.9			10.40	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	11.857	0.409	3663.9	2928.7	6.846	4.080	3.21		Clay	58.0			11.21	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	12.378	0.420	3671.8	2932.4	7.190	3.984	3.18		Clay	56.9			11.70	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	12.647	0.460	3679.6	2936.2	7.361	4.256	3.19		Clay	57.3			11.95	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	12.518	0.464	3687.5	2940.0	7.261	4.347	3.20		Clay	57.8			11.83	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	12.788	0.496	3695.4	2943.8	7.433	4.534	3.21		Clay	57.9			12.09	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	12.788	0.496	3703.2	2947.6	7.421	4.535	3.21		Clay	57.9			12.09	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	12.927	0.541	3711.1	2951.3	7.503	4.886	3.22		Clay	58.6			12.22	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	12.963	0.541	3719.0	2955.1	7.515	4.872	3.22		Clay	58.6			12.25	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.307	13.298	0.548	3726.9	2958.9	7.729	4.792	3.21		Clay	57.9			12.57	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	13.298	0.549	3734.7	2962.7	7.716	4.803	3.21		Clay	57.9			12.57	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	13.531	0.536	3742.6	2966.5	7.861	4.597	3.19		Clay	57.1			12.79	0.91	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	13.391	0.530	3750.5	2970.2	7.754	4.602	3.19		Clay	57.4			12.66	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	13.912	0.532	3758.4	2974.0	8.092	4.421	3.17		Clay	56.2			13.15	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	13.698	0.543	3766.2	2977.8	7.935	4.596	3.19		Clay	57.0			12.95	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	13.401	0.553	3774.1	2981.6	7.723	4.803	3.21		Clay	57.9			12.67	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	13.373	0.566	3782.0	2985.3	7.692	4.929	3.21		Clay	58.3			12.64	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	14.112	0.569	3789.8	2989.1	8.174	4.657	3.18		Clay	56.6			13.34	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	14.824	0.572	3797.7	2992.9	8.637	4.425	3.15		Clay	55.1			14.01	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	14.824	0.525	3805.6	2996.7	8.624	4.063	3.13		Clay	54.2			14.01	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	14.554	0.514	3813.5	3000.5	8.430	4.064	3.13		Clay	54.5			13.76	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	15.419	0.503	3821.3	3004.2	8.993	3.724	3.09		Clay	52.5			14.57	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	15.149	0.469	3829.2	3008.0	8.799	3.544	3.08		Clay	52.3			14.32	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	15.614	0.443	3837.1	3011.8	9.095	3.235	3.05		Clay	50.8			14.76	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	15.791	0.416	3844.9	3015.6	9.198	3.000	3.03		Clay	49.9			14.93	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	15.940	0.428	3852.8	3019.4	9.283	3.054	3.03		Clay	49.9			15.07	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	15.326	0.441	3860.7	3023.1	8.862	3.292	3.06		Clay	51.4			14.49	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	15.252	0.491	3868.6	3026.9	8.800	3.687	3.09		Clay	52.8			14.42	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	14.554	0.512	3876.4	3030.7	8.325	4.058	3.14		Clay	54.7			13.76	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	13.968	0.488	3884.3	3034.5	7.926	4.058	3.15		Clay	55.5			13.20	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	13.968	0.477	3892.2	3038.2	7.914	3.968	3.15		Clay	55.3			13.20	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	13.113	0.482	3900.0	3042.0	7.339	4.318	3.20		Clay	57.5			12.39	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	13.391	0.444	3907.9	3045.8	7.510	3.882	3.16		Clay	55.9			12.66	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	13.466	0.419	3915.8	3049.6	7.547	3.641	3.15		Clay	55.1			12.73	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	13.541	0.400	3923.7	3053.4	7.585	3.454	3.13		Clay	54.4			12.80	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	13.587	0.380	3931.5	3057.1	7.603	3.270	3.12		Clay	53.8			12.84	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	13.698	0.370	3939.4	3060.9	7.663	3.155	3.10		Clay	53.3			12.95	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	15.195	0.370	3947.3	3064.7	8.628	2.799	3.03		Clay	50.1			14.36	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	16.190	0.373	3955.2	3068.5	9.264	2.624	2.99		Clay	48.4			15.30	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	17.279	0.405	3963.0	3072.3	9.958	2.647	2.97		Clay	47.4			16.33	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	17.111	0.450	3970.9	3076.0	9.834	2.975	3.00		Clay	48.7			16.17	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.406	14.972	0.462	3978.8	3079.8	8.431	3.559	3.10		Clay	53.1			14.15	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	14.155	0.442	3986.6	3083.6	7.888	3.634	3.13		Clay	54.4			13.38	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	13.791	0.427	3994.5	3087.4	7.640	3.621	3.14		Clay	54.8			13.03	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	13.661	0.427	4002.4	3091.1	7.544	3.662	3.15		Clay	55.2			12.91	0.90	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	13.587	0.432	4010.3	3094.9	7.484	3.730	3.15		Clay	55.5			12.84	0.90	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.734	13.550	0.436	4018.1	3098.7	7.449	3.778	3.16		Clay	55.7			12.81	0.90	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.800	13.856	0.407	4026.0	3102.5	7.635	3.437	3.13		Clay	54.3			13.10	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.866	14.517	0.337	4033.9	3106.3	8.048	2.696	3.05		Clay	50.8			13.72	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.931	15.828	0.325	4041.7	3110.0	8.879	2.354	2.98		Clay	48.0			14.96	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.997	23.212	0.349	4049.6	3113.8	13.609	1.647	2.74		Clay	38.6			21.94	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.062	30.261	0.382	4057.5	3117.6	21.984	1.353	2.52	plastic	Clay	31.0			28.60	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.128	33.265	0.564	4065.4	3121.4	20.012	1.806	2.62		Clay	34.4			31.44	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.194	35.004	0.647	4073.2	3125.2	21.098	1.963	2.63		Clay	34.4			33.09	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.259	37.737	0.782	4081.1	3128.9	22.817	2.191	2.63		Clay	34.5			35.67	0.90	n.a.	n.a.	0.92	0.374	n.a.	n.a.	n.a.	n.a.	0.00	0.00
33.325	44.703	0.903	4089.0	3132.7	33.137	2.117	2.49		Sand	29.9	90	1.64	147.60	0.88	129.86	202.31	0.92	0.374	0.894	1.269	1.021	2.73	0.00	0.00
33.390	52.106	1.090	4096.8	3136.5	38.862	2.177	2.44		Sand	28.5	90	1.64	147.60	0.88	129.74	201.30	0.92	0.374	0.895	1.209	0.973	2.60	0.00	0.00
33.456	57.370	1.009	4104.7	3140.3	42.919	1.824	2.36		Sand	26.1	90	1.64	147.60	0.88	129.54	199.11	0.92	0.374	0.897	1.093	0.882	2.35	0.00	0.00
33.522	57.620	0.879	4112.6	3144.0	43.084	1.582	2.32		Sand	25.0	90	1.64	147.60	0.88	129.39	197.78	0.92	0.375	0.899	1.030	0.832	2.22	0.00	0.00
33.587	56.161	0.896	4120.5	3147.8	41.925	1.656	2.34		Sand	25.6	95	1.64	155.80	0.88	137.32	208.88	0.92	0.375	0.884	1.782	1.416	3.78	0.00	0.00
33.653	52.432	0.898	4128.3	3151.6	39.009	1.783	2.39		Sand	26.9	95	1.64	155.80	0.88	137.36	210.15	0.92	0.375	0.882	1.913	1.517	4.05	0.00	0.00
33.718	58.486	0.955	4136.2	3155.4	43.668	1.693	2.33		Sand	25.4	95	1.64	155.80	0.88	137.19	208.46	0.92	0.375	0.884	1.741	1.384	3.69	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
33.784	71.961	1.124	4144.1	3159.2	54.062	1.608	2.25		Sand	23.0	95	1.64	155.80	0.88	136.89	205.05	0.92	0.375	0.888	1.454	1.161	3.10	0.00	0.00
33.850	99.981	0.631	4152.0	3162.9	75.689	0.645	1.89		Sand	14.8	110	1.64	180.40	0.88	158.63	207.29	0.92	0.375	0.885	1.634	1.300	3.47	0.00	0.00
33.915	128.279	0.738	4159.8	3166.7	97.504	0.585	1.78		Sand	12.5		1.64	198.84	0.88	175.31	213.07	0.92	0.375	0.879	2.000	1.581	4.22	0.00	0.00
33.981	119.667	0.801	4167.7	3170.5	90.793	0.681	1.84		Sand	13.7		1.64	185.50	0.88	162.92	206.51	0.92	0.375	0.885	1.568	1.249	3.33	0.00	0.00
34.046	106.164	0.907	4175.6	3174.3	80.316	0.871	1.95		Sand	15.9	110	1.64	180.40	0.88	158.93	213.12	0.92	0.375	0.878	2.000	1.580	4.21	0.00	0.00
34.112	95.721	0.910	4183.4	3178.1	72.211	0.972	2.01		Sand	17.3	100	1.64	164.00	0.87	143.41	199.73	0.92	0.375	0.893	1.124	0.903	2.41	0.00	0.00
34.178	85.757	1.033	4191.3	3181.8	64.485	1.235	2.12		Sand	19.7	100	1.64	164.00	0.88	143.96	207.58	0.92	0.375	0.883	1.660	1.318	3.51	0.00	0.00
34.243	81.158	1.033	4199.2	3185.6	60.901	1.307	2.15		Sand	20.5	95	1.64	155.80	0.87	136.12	199.53	0.92	0.376	0.893	1.114	0.895	2.38	0.00	0.00
34.309	63.860	1.012	4207.1	3189.4	47.545	1.639	2.30		Sand	24.3	95	1.64	155.80	0.88	136.57	206.43	0.92	0.376	0.884	1.562	1.241	3.30	0.00	0.00
34.374	47.968	1.154	4214.9	3193.2	35.286	2.516	2.51		Sand	30.8	90	1.64	147.60	0.87	129.00	201.60	0.92	0.376	0.890	1.226	0.981	2.61	0.00	0.00
34.440	45.373	1.414	4222.8	3196.9	27.064	3.268	2.68		Clay	36.2			42.89	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.506	43.699	1.498	4230.7	3200.7	25.984	3.602	2.72		Clay	37.6			41.30	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.571	41.430	1.544	4238.5	3204.5	24.535	3.928	2.76		Clay	39.2			39.16	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.637	39.877	1.607	4246.4	3208.3	23.535	4.257	2.80		Clay	40.6			37.69	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.702	37.599	1.465	4254.3	3212.1	22.087	4.130	2.81		Clay	41.1			35.54	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.768	36.176	1.178	4262.2	3215.8	21.173	3.460	2.77		Clay	39.7			34.19	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.834	41.104	1.034	4270.0	3219.6	24.207	2.653	2.66		Clay	35.5			38.85	0.90	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.899	35.971	1.165	4277.9	3223.4	20.992	3.443	2.78		Clay	39.8			34.00	0.89	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
34.965	37.208	1.015	4285.8	3227.2	21.731	2.895	2.72		Clay	37.6			35.17	0.89	n.a.	n.a.	0.92	0.376	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.030	35.562	0.838	4293.6	3231.0	20.684	2.508	2.70		Clay	36.9			33.61	0.89	n.a.	n.a.	0.92	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.096	32.986	0.751	4301.5	3234.7	19.065	2.436	2.72		Clay	37.6			31.18	0.89	n.a.	n.a.	0.92	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.162	31.944	0.650	4309.4	3238.5	18.397	2.182	2.70		Clay	37.1			30.19	0.89	n.a.	n.a.	0.92	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.227	34.362	0.757	4317.3	3242.3	19.865	2.351	2.69		Clay	36.8			32.48	0.89	n.a.	n.a.	0.92	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.293	52.432	0.874	4325.1	3246.1	38.362	1.739	2.39		Sand	26.8	53	1.8	95.40	0.83	79.29	133.18	0.92	0.377	0.941	0.212	0.179	0.48	0.02	0.02
35.358	55.854	0.971	4333.0	3249.8	40.946	1.809	2.37		Sand	26.5		1.8	95.03	0.83	78.90	132.43	0.92	0.377	0.941	0.209	0.177	0.47	0.02	0.02
35.424	58.160	0.893	4340.9	3253.6	42.677	1.595	2.33		Sand	25.1		1.8	98.95	0.83	82.33	135.94	0.92	0.377	0.939	0.220	0.185	0.49	0.02	0.02
35.490	59.313	0.800	4348.8	3257.4	43.528	1.400	2.28		Sand	24.0		1.8	100.91	0.83	84.00	137.08	0.91	0.377	0.938	0.223	0.188	0.50	0.02	0.02
35.555	63.219	0.560	4356.6	3261.2	46.473	0.917	2.16		Sand	20.6		1.8	107.56	0.83	89.69	140.09	0.91	0.377	0.936	0.233	0.196	0.52	0.02	0.02
35.621	64.502	0.944	4364.5	3265.0	47.420	1.515	2.28		Sand	23.8		1.8	109.74	0.84	91.95	147.25	0.91	0.377	0.932	0.259	0.218	0.58	0.02	0.02
35.686	64.270	0.948	4372.4	3268.7	47.213	1.527	2.28		Sand	23.9		1.8	109.34	0.84	91.55	146.83	0.91	0.377	0.932	0.258	0.216	0.57	0.02	0.02
35.752	59.453	0.909	4380.2	3272.5	43.522	1.587	2.32		Sand	24.9		1.8	101.15	0.83	84.09	138.06	0.91	0.377	0.937	0.226	0.191	0.51	0.02	0.02
35.818	54.784	1.191	4388.1	3276.3	39.947	2.265	2.44		Sand	28.6		1.8	93.21	0.83	77.04	131.18	0.91	0.377	0.940	0.206	0.174	0.46	0.02	0.02
35.883	44.108	1.278	4396.0	3280.1	25.554	3.049	2.68		Clay	36.2			41.69	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.949	40.174	1.130	4403.9	3283.9	23.127	2.976	2.70		Clay	37.1			37.97	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.014	36.185	1.210	4411.7	3287.6	20.671	3.561	2.79		Clay	40.3			34.20	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.080	34.707	1.064	4419.6	3291.4	19.747	3.274	2.78		Clay	40.0			32.80	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.146	33.591	1.076	4427.5	3295.2	19.044	3.429	2.81		Clay	41.0			31.75	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.211	30.828	1.073	4435.3	3299.0	17.345	3.750	2.86		Clay	43.1			29.14	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.277	27.425	0.884	4443.2	3302.7	15.262	3.507	2.89		Clay	44.1			25.92	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.342	24.114	0.528	4451.1	3306.5	13.240	2.412	2.84		Clay	42.4			22.79	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.408	22.887	0.473	4459.0	3310.3	12.481	2.290	2.85		Clay	42.7			21.63	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.474	22.728	0.435	4466.8	3314.1	12.368	2.123	2.84		Clay	42.1			21.48	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.539	24.291	0.388	4474.7	3317.9	13.294	1.759	2.77		Clay	39.5			22.96	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.605	26.457	0.405	4482.6	3321.6	14.581	1.672	2.72		Clay	37.8			25.01	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.670	26.076	0.500	4490.4	3325.4	14.333	2.098	2.78		Clay	40.0			24.65	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.736	24.616	0.457	4498.3	3329.2	13.437	2.043	2.80		Clay	40.6			23.27	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.802	20.459	0.348	4506.2	3333.0	10.925	1.911	2.86		Clay	42.9			19.34	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.867	12.647	0.236	4514.1	3336.8	6.228	2.271	3.11		Clay	53.3			11.95	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.933	12.647	0.205	4521.9	3340.5	6.218	1.974	3.08		Clay	52.0			11.95	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.998	12.471	0.163	4529.8	3344.3	6.104	1.597	3.04		Clay	50.4			11.79	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.064	12.201	0.175	4537.7	3348.1	5.933	1.762	3.07		Clay	51.7			11.53	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.130	11.364	0.186	4545.6	3351.9	5.425	2.046	3.13		Clay	54.6			10.74	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.195	11.095	0.189	4553.4	3355.6	5.256	2.143	3.16		Clay	55.6			10.49	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.261	11.661	0.165	4561.3	3359.4	5.585	1.759	3.09		Clay	52.7			11.02	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.326	11.932	0.128	4569.2	3363.2	5.737	1.327	3.03		Clay	49.8			11.28	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.392	12.480	0.141	4577.0	3367.0	6.054	1.384	3.01		Clay	49.3			11.80	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.458	12.425	0.146	4584.9	3370.8	6.012	1.441	3.02		Clay	49.7			11.74	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.523	12.182	0.152	4592.8	3374.5	5.859	1.538	3.05		Clay	50.7			11.51	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.589	13.056	0.164	4600.7	3378.3	6.367	1.525	3.01		Clay	49.3			12.34	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.654	12.182	0.171	4608.5	3382.1	5.841	1.731	3.07		Clay	51.8			11.51	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.720	12.368	0.169	4616.4	3385.9	5.942	1.680	3.06		Clay	51.2			11.69	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.786	12.108	0.160	4624.3	3389.7	5.780	1.633	3.06		Clay	51.5			11.44	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.851	12.118	0.141	4632.1	3393.4	5.777	1.438	3.04		Clay	50.4			11.45	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.917	12.592	0.161	4640.0	3397.2	6.047	1.567	3.04		Clay	50.3			11.90	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.982	12.732	0.193	4647.9	3401.0	6.121	1.854	3.07		Clay	51.7			12.03	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.048	12.936	0.224	4655.8	3404.8	6.231	2.112	3.09		Clay	52.6			12.23	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.114	12.843	0.239	4663.6	3408.5	6.168	2.274	3.11		Clay	53.5			12.14	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
38.179	12.889	0.213	4671.5	3412.3	6.185	2.018	3.08		Clay	52.3			12.18	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.245	12.852	0.227	4679.4	3416.1	6.155	2.159	3.10		Clay	53.0			12.15	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.310	12.499	0.223	4687.2	3419.9	5.939	2.196	3.12		Clay	53.8			11.81	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.376	12.578	0.236	4695.1	3423.7	5.976	2.307	3.12		Clay	54.1			11.89	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.442	12.647	0.262	4703.0	3427.4	6.008	2.545	3.14		Clay	55.0			11.95	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.507	12.332	0.254	4710.9	3431.2	5.815	2.546	3.16		Clay	55.6			11.66	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.573	12.247	0.235	4718.7	3435.0	5.757	2.377	3.14		Clay	55.1			11.58	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.638	12.173	0.235	4726.6	3438.8	5.705	2.396	3.15		Clay	55.3			11.51	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.704	13.289	0.264	4734.5	3442.6	6.345	2.417	3.11		Clay	53.6			12.56	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.770	13.345	0.271	4742.4	3446.3	6.368	2.470	3.12		Clay	53.8			12.61	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.835	13.689	0.296	4750.2	3450.1	6.559	2.616	3.12		Clay	53.9			12.94	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.901	14.331	0.319	4758.1	3453.9	6.921	2.669	3.10		Clay	53.2			13.55	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.966	13.838	0.329	4766.0	3457.7	6.626	2.872	3.14		Clay	54.7			13.08	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.032	14.191	0.332	4773.8	3461.4	6.820	2.813	3.12		Clay	54.0			13.41	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.098	14.852	0.360	4781.7	3465.2	7.192	2.889	3.11		Clay	53.4			14.04	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.163	14.814	0.375	4789.6	3469.0	7.160	3.020	3.12		Clay	53.9			14.00	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.229	14.684	0.405	4797.5	3472.8	7.075	3.297	3.14		Clay	55.0			13.88	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.294	14.824	0.422	4805.3	3476.6	7.146	3.397	3.15		Clay	55.2			14.01	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.360	15.167	0.417	4813.2	3480.3	7.333	3.268	3.13		Clay	54.4			14.34	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.426	15.261	0.447	4821.1	3484.1	7.377	3.478	3.14		Clay	55.0			14.42	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.491	14.693	0.466	4828.9	3487.9	7.041	3.795	3.18		Clay	56.7			13.89	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.557	14.647	0.484	4836.8	3491.7	7.004	3.958	3.19		Clay	57.3			13.84	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.622	14.479	0.494	4844.7	3495.5	6.898	4.097	3.21		Clay	57.9			13.69	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.688	14.284	0.525	4852.6	3499.2	6.777	4.427	3.23		Clay	59.1			13.50	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.754	13.968	0.556	4860.4	3503.0	6.587	4.819	3.26		Clay	60.6			13.20	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.819	12.861	0.547	4868.3	3506.8	5.947	5.246	3.32		Clay	63.5			12.16	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.885	12.592	0.531	4876.2	3510.6	5.785	5.230	3.33		Clay	63.9			11.90	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.950	12.266	0.505	4884.0	3514.3	5.591	5.140	3.34		Clay	64.3			11.59	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.016	11.978	0.451	4891.9	3518.1	5.419	4.731	3.33		Clay	63.8			11.32	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.082	11.661	0.416	4899.8	3521.9	5.231	4.516	3.33		Clay	63.9			11.02	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.147	11.383	0.365	4907.7	3525.7	5.065	4.088	3.32		Clay	63.2			10.76	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.213	11.345	0.322	4915.5	3529.5	5.036	3.623	3.29		Clay	61.9			10.72	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.278	11.476	0.286	4923.4	3533.2	5.103	3.173	3.25		Clay	60.2			10.85	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.344	11.783	0.243	4931.3	3537.0	5.268	2.608	3.20		Clay	57.5			11.14	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.410	11.997	0.224	4939.2	3540.8	5.382	2.351	3.17		Clay	56.1			11.34	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.475	12.257	0.213	4947.0	3544.6	5.520	2.177	3.14		Clay	54.9			11.59	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.541	12.108	0.214	4954.9	3548.4	5.428	2.222	3.15		Clay	55.4			11.44	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.606	12.015	0.215	4962.8	3552.1	5.368	2.255	3.16		Clay	55.7			11.36	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.672	12.099	0.209	4970.6	3555.9	5.407	2.174	3.15		Clay	55.3			11.44	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.738	12.061	0.192	4978.5	3559.7	5.378	2.006	3.13		Clay	54.6			11.40	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.803	11.708	0.186	4986.4	3563.5	5.172	2.018	3.15		Clay	55.3			11.07	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.869	11.430	0.196	4994.3	3567.2	5.008	2.194	3.18		Clay	56.7			10.80	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.934	11.485	0.196	5002.1	3571.0	5.032	2.182	3.18		Clay	56.5			10.86	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.000	11.485	0.191	5010.0	3574.8	5.024	2.127	3.17		Clay	56.3			10.86	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.066	11.625	0.191	5017.9	3578.6	5.095	2.095	3.16		Clay	55.9			10.99	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.131	12.787	0.187	5025.7	3582.4	5.736	1.820	3.09		Clay	52.6			12.09	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.197	13.280	0.208	5033.6	3586.1	6.003	1.933	3.08		Clay	52.4			12.55	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.262	12.936	0.224	5041.5	3589.9	5.803	2.151	3.12		Clay	54.0			12.23	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.328	12.685	0.224	5049.4	3593.7	5.655	2.205	3.14		Clay	54.6			11.99	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.394	12.201	0.232	5057.2	3597.5	5.377	2.399	3.17		Clay	56.3			11.53	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.459	12.434	0.251	5065.1	3601.2	5.499	2.535	3.18		Clay	56.5			11.75	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.525	12.573	0.256	5073.0	3605.0	5.568	2.551	3.17		Clay	56.4			11.88	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.590	13.122	0.256	5080.8	3608.8	5.864	2.419	3.14		Clay	54.9			12.40	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.656	13.727	0.261	5088.7	3612.6	6.191	2.334	3.11		Clay	53.7			12.97	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.722	15.093	0.270	5096.6	3616.4	6.938	2.152	3.05		Clay	51.0			14.27	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.787	18.051	0.284	5104.5	3620.1	8.563	1.832	2.94		Clay	46.2			17.06	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.853	18.497	0.308	5112.3	3623.9	8.798	1.932	2.94		Clay	46.2			17.48	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.918	18.608	0.351	5120.2	3627.7	8.847	2.187	2.97		Clay	47.3			17.59	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.984	18.776	0.373	5128.1	3631.5	8.929	2.301	2.97		Clay	47.7			17.75	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.050	19.110	0.379	5136.0	3635.3	9.101	2.291	2.97		Clay	47.3			18.06	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.115	21.835	0.361	5143.8	3639.0	10.587	1.874	2.86		Clay	43.2			20.64	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.181	23.072	0.374	5151.7	3642.8	11.253	1.825	2.84		Clay	42.1			21.81	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.246	23.062	0.492	5159.6	3646.6	11.234	2.402	2.90		Clay	44.6			21.80	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.312	25.397	0.519	5167.4	3650.4	12.499	2.275	2.85		Clay	42.6			24.00	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.378	24.524	0.622	5175.3	3654.1	12.006	2.835	2.92		Clay	45.3			23.18	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.443	24.431	0.697	5183.2	3657.9	11.941	3.191	2.95		Clay	46.6			23.09	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.509	23.807	0.715	5191.1	3661.7	11.586	3.371	2.97		Clay	47.6			22.50	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00

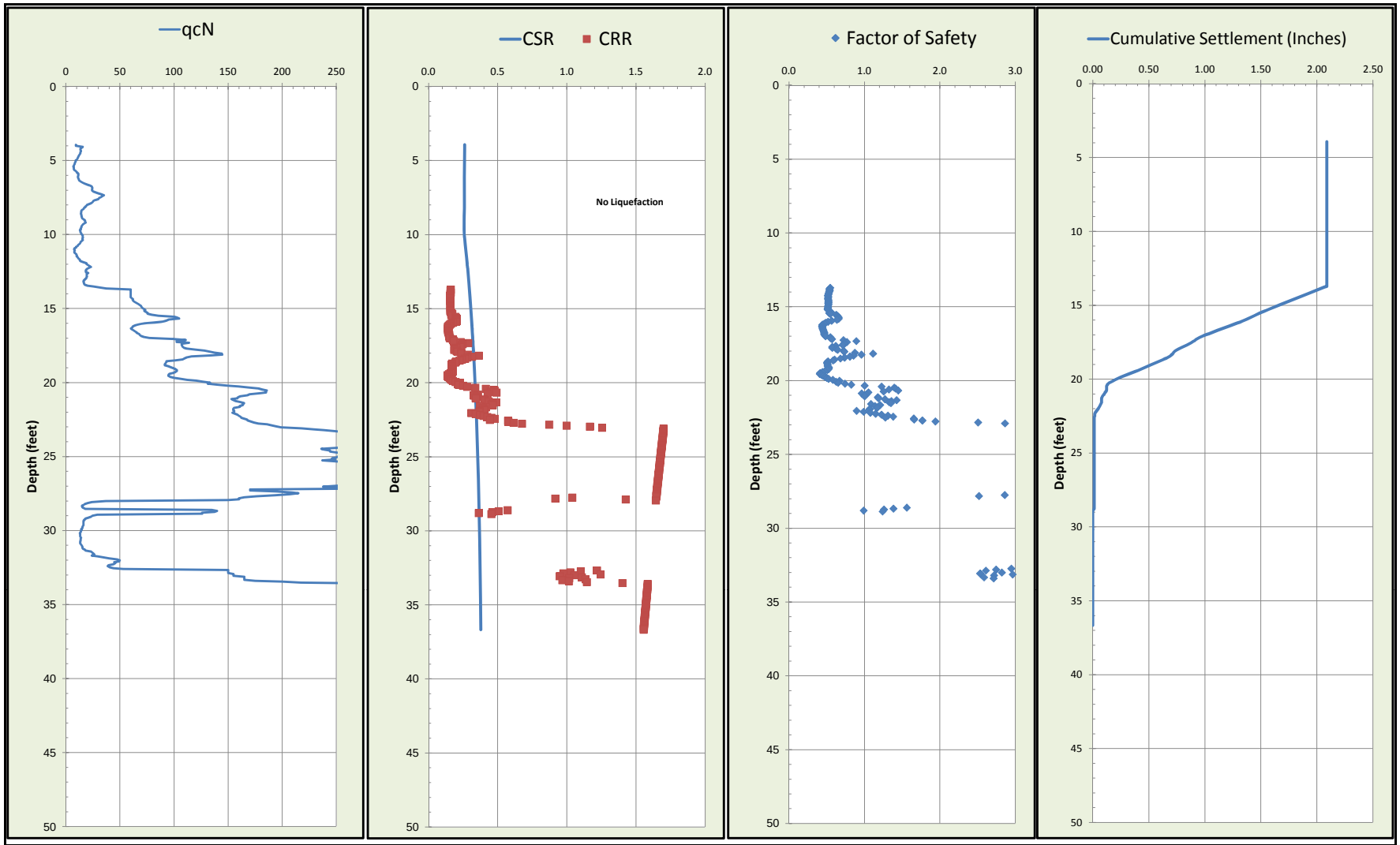
CORNERSTONE EARTH GROUP

CPT No.	1

PGA (A_{max})	0.40

Total Settlement:	1.04	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
42.574	24.170	0.721	5198.9	3665.5	11.770	3.343	2.97		Clay	47.3			22.84	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.640	25.072	0.757	5206.8	3669.3	12.247	3.369	2.95		Clay	46.8			23.70	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.706	26.299	0.784	5214.7	3673.0	12.900	3.309	2.93		Clay	45.9			24.86	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.771	25.295	0.769	5222.5	3676.8	12.339	3.390	2.95		Clay	46.8			23.91	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.837	25.128	0.731	5230.4	3680.6	12.233	3.247	2.95		Clay	46.4			23.75	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.902	25.016	0.704	5238.3	3684.4	12.158	3.143	2.94		Clay	46.2			23.64	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.968	25.100	0.716	5246.2	3688.2	12.189	3.185	2.94		Clay	46.3			23.72	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.034	25.443	0.748	5254.0	3691.9	12.360	3.278	2.94		Clay	46.4			24.05	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.099	25.193	0.844	5261.9	3695.7	12.210	3.741	2.98		Clay	48.0			23.81	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.165	24.467	0.892	5269.8	3699.5	11.803	4.086	3.02		Clay	49.4			23.13	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.230	23.984	0.877	5277.6	3703.3	11.528	4.109	3.03		Clay	49.9			22.67	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.296	23.667	0.870	5285.5	3707.0	11.343	4.138	3.03		Clay	50.2			22.37	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.362	22.794	0.865	5293.4	3710.8	10.859	4.293	3.06		Clay	51.3			21.54	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.427	22.301	0.756	5301.3	3714.6	10.580	3.847	3.04		Clay	50.4			21.08	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.493	21.696	0.679	5309.1	3718.4	10.242	3.566	3.03		Clay	50.1			20.51	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.558	22.189	0.640	5317.0	3722.2	10.494	3.277	3.00		Clay	48.8			20.97	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.624	22.477	0.654	5324.9	3725.9	10.636	3.301	3.00		Clay	48.7			21.24	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.690	23.063	0.670	5332.8	3729.7	10.937	3.285	2.99		Clay	48.2			21.80	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.755	23.593	0.634	5340.6	3733.5	11.208	3.030	2.96		Clay	47.0			22.30	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.821	25.081	0.590	5348.5	3737.3	11.991	2.633	2.90		Clay	44.6			23.71	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.886	28.382	0.595	5356.4	3741.1	13.741	2.315	2.82		Clay	41.5			26.83	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.952	29.582	0.619	5364.2	3744.8	14.366	2.301	2.80		Clay	40.8			27.96	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.018	28.708	0.624	5372.1	3748.6	13.884	2.398	2.82		Clay	41.6			27.13	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.083	26.839	0.709	5380.0	3752.4	12.871	2.936	2.90		Clay	44.7			25.37	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.149	25.007	0.790	5387.9	3756.2	11.881	3.541	2.98		Clay	47.8			23.64	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.214	23.044	0.831	5395.7	3759.9	10.823	4.084	3.05		Clay	50.7			21.78	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.280	23.268	0.835	5403.6	3763.7	10.929	4.060	3.04		Clay	50.5			21.99	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.346	24.263	0.834	5411.5	3767.5	11.444	3.869	3.01		Clay	49.3			22.93	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.411	24.738	0.811	5419.3	3771.3	11.682	3.682	2.99		Clay	48.4			23.38	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.477	24.355	0.791	5427.2	3775.1	11.465	3.655	3.00		Clay	48.6			23.02	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.542	21.901	0.692	5435.1	3778.8	10.153	3.607	3.04		Clay	50.3			20.70	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.608	20.478	0.648	5443.0	3782.6	9.388	3.649	3.07		Clay	51.6			19.36	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.674	20.376	0.622	5450.8	3786.4	9.323	3.524	3.06		Clay	51.4			19.26	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.739	21.147	0.619	5458.7	3790.2	9.719	3.361	3.04		Clay	50.2			19.99	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.805	22.170	0.619	5466.6	3794.0	10.246	3.185	3.00		Clay	48.8			20.95	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.870	22.170	0.591	5474.4	3797.7	10.234	3.041	2.99		Clay	48.4			20.95	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.936	20.924	0.575	5482.3	3801.5	9.566	3.162	3.03		Clay	49.8			19.78	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.002	20.887	0.548	5490.2	3805.3	9.535	3.021	3.02		Clay	49.4			19.74	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

River Corp. III

San Jose, California

Project Number	102-7-2
Figure Number	Figure C-2
4/18/2012	CPT No. 2

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.936	9.867	0.875	492.0	492.0	39.110	9.095	2.88		Unsaturated	43.7			9.33	1.70	15.85	51.65	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	9.867	0.875	500.2	500.2	38.452	9.099	2.88		Unsaturated	43.9			9.33	1.70	15.85	51.65	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	16.488	1.110	508.4	508.4	63.862	6.838	2.64		Unsaturated	35.1			15.58	1.70	26.49	65.36	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	15.866	1.352	516.6	516.6	60.425	8.662	2.74		Unsaturated	38.5			15.00	1.70	25.49	64.38	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	14.396	1.331	524.8	524.8	53.863	9.417	2.80		Unsaturated	40.7			13.61	1.70	23.13	61.34	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	14.219	1.290	533.0	533.0	52.355	9.246	2.80		Unsaturated	40.7			13.44	1.70	22.85	60.96	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	14.731	1.178	541.2	541.2	53.438	8.146	2.75		Unsaturated	38.9			13.92	1.70	23.67	61.96	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	14.796	1.073	549.4	549.4	52.862	7.389	2.72		Unsaturated	37.9			13.98	1.70	23.77	62.01	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	14.386	1.066	557.6	557.6	50.600	7.556	2.74		Unsaturated	38.6			13.60	1.70	23.12	61.18	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.526	13.958	1.075	565.8	565.8	48.339	7.861	2.77		Unsaturated	39.5			13.19	1.70	22.43	60.32	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.592	13.475	1.110	574.0	574.0	45.951	8.417	2.81		Unsaturated	40.9			12.74	1.70	21.65	59.36	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.658	13.150	1.135	582.2	582.2	44.173	8.827	2.83		Unsaturated	41.9			12.43	1.70	21.13	58.70	1.00	0.260	1.099	n.a.	n.a.	n.a.	0.00	0.00
4.723	12.563	1.135	590.4	590.4	41.558	9.252	2.86		Unsaturated	43.2			11.87	1.70	20.19	57.48	1.00	0.259	1.097	n.a.	n.a.	n.a.	0.00	0.00
4.789	12.137	1.131	598.6	598.6	39.551	9.554	2.89		Unsaturated	44.2			11.47	1.70	19.50	56.59	1.00	0.259	1.095	n.a.	n.a.	n.a.	0.00	0.00
4.854	11.457	1.097	606.8	606.8	36.762	9.835	2.92		Unsaturated	45.4			10.83	1.70	18.41	55.14	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
4.920	10.806	1.053	615.0	615.0	34.141	10.030	2.95		Unsaturated	46.5			10.21	1.70	17.36	53.75	1.00	0.259	1.091	n.a.	n.a.	n.a.	0.00	0.00
4.986	9.932	0.992	623.2	623.2	30.874	10.311	2.98		Unsaturated	48.1			9.39	1.70	15.96	51.87	1.00	0.259	1.088	n.a.	n.a.	n.a.	0.00	0.00
5.051	9.588	0.813	631.4	631.4	29.371	8.768	2.95		Unsaturated	46.5			9.06	1.70	15.41	51.10	1.00	0.259	1.087	n.a.	n.a.	n.a.	0.00	0.00
5.117	9.262	0.679	639.6	639.6	27.962	7.593	2.92		Unsaturated	45.3			8.75	1.70	14.88	50.37	1.00	0.259	1.085	n.a.	n.a.	n.a.	0.00	0.00
5.182	8.834	0.630	647.8	647.8	26.274	7.403	2.93		Unsaturated	45.7			8.35	1.70	14.19	49.45	1.00	0.259	1.084	n.a.	n.a.	n.a.	0.00	0.00
5.248	8.584	0.630	656.0	656.0	25.171	7.631	2.95		Unsaturated	46.6			8.11	1.70	13.79	48.93	1.00	0.259	1.082	n.a.	n.a.	n.a.	0.00	0.00
5.314	8.118	0.623	664.2	664.2	23.444	8.002	2.99		Unsaturated	48.1			7.67	1.70	13.04	47.93	1.00	0.259	1.081	n.a.	n.a.	n.a.	0.00	0.00
5.379	7.487	0.606	672.4	672.4	21.269	8.475	3.03		Unsaturated	50.2			7.08	1.70	12.03	46.57	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
5.445	7.598	0.565	680.6	680.6	21.327	7.785	3.01		Unsaturated	49.0			7.18	1.70	12.21	46.81	1.00	0.259	1.078	n.a.	n.a.	n.a.	0.00	0.00
5.510	7.765	0.507	688.8	688.8	21.546	6.832	2.96		Unsaturated	47.2			7.34	1.70	12.48	47.16	1.00	0.259	1.078	n.a.	n.a.	n.a.	0.00	0.00
5.576	7.970	0.490	697.0	697.0	21.869	6.429	2.94		Unsaturated	46.3			7.53	1.70	12.81	47.59	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
5.642	8.342	0.474	705.2	705.2	22.659	5.933	2.91		Unsaturated	44.8			7.88	1.70	13.40	48.37	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
5.707	9.848	0.483	713.4	713.4	26.609	5.089	2.81		Unsaturated	41.1			9.31	1.70	15.82	51.51	1.00	0.259	1.078	n.a.	n.a.	n.a.	0.00	0.00
5.773	10.657	0.504	721.6	721.6	28.537	4.895	2.78		Unsaturated	39.8			10.07	1.70	17.12	53.19	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
5.838	11.280	0.472	729.8	729.8	29.913	4.324	2.72		Unsaturated	37.9			10.66	1.70	18.12	54.40	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
5.904	12.275	0.578	738.0	738.0	32.266	4.855	2.73		Unsaturated	38.3			11.60	1.70	19.72	56.59	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
5.970	12.294	0.661	746.2	746.2	31.951	5.545	2.78		Unsaturated	39.9			11.62	1.70	19.75	56.74	1.00	0.259	1.078	n.a.	n.a.	n.a.	0.00	0.00
6.035	12.061	0.694	754.4	754.4	30.975	5.940	2.81		Unsaturated	41.1			11.40	1.70	19.38	56.30	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
6.101	11.745	0.740	762.6	762.6	29.803	6.512	2.85		Unsaturated	42.6			11.10	1.70	18.87	55.68	1.00	0.259	1.076	n.a.	n.a.	n.a.	0.00	0.00
6.166	12.080	0.762	770.8	770.8	30.344	6.516	2.84		Unsaturated	42.4			11.42	1.70	19.41	56.40	1.00	0.259	1.076	n.a.	n.a.	n.a.	0.00	0.00
6.232	12.461	0.788	779.0	779.0	30.992	6.528	2.84		Unsaturated	42.2			11.78	1.70	20.02	57.22	1.00	0.259	1.076	n.a.	n.a.	n.a.	0.00	0.00
6.298	12.675	0.847	787.2	787.2	31.203	6.897	2.85		Unsaturated	42.8			11.98	1.70	20.37	57.71	1.00	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.363	13.196	0.837	795.4	795.4	32.181	6.540	2.83		Unsaturated	41.8			12.47	1.70	21.20	58.80	1.00	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.429	14.796	0.816	803.6	803.6	35.824	5.669	2.75		Unsaturated	38.9			13.98	1.70	23.77	62.09	0.99	0.259	1.076	n.a.	n.a.	n.a.	0.00	0.00
6.494	16.442	0.817	811.8	811.8	39.508	5.095	2.69		Unsaturated	36.6			15.54	1.70	26.42	65.45	0.99	0.259	1.078	n.a.	n.a.	n.a.	0.00	0.00
6.560	18.497	0.822	820.0	820.0	44.115	4.545	2.62		Unsaturated	34.2			17.48	1.70	29.72	69.57	0.99	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
6.626	21.250	0.720	828.2	828.2	37.975	3.456	2.58		Unsaturated	33.0			20.09	1.69	33.95	75.02	0.99	0.259	1.082	n.a.	n.a.	n.a.	0.00	0.00
6.691	23.491	0.619	836.4	836.4	34.687	2.683	2.54		Unsaturated	31.5			22.20	1.67	36.97	78.76	0.99	0.259	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.757	25.407	0.562	844.6	844.6	37.378	2.249	2.46		Unsaturated	29.2			24.01	1.65	39.52	81.46	0.99	0.259	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.822	25.862	0.527	852.8	852.8	37.870	2.072	2.44		Unsaturated	28.4			24.44	1.64	39.99	81.78	0.99	0.258	1.084	n.a.	n.a.	n.a.	0.00	0.00
6.888	25.974	0.450	861.0	861.0	37.849	1.762	2.39		Unsaturated	27.1			24.55	1.63	40.00	81.23	0.99	0.258	1.083	n.a.	n.a.	n.a.	0.00	0.00
6.954	25.667	0.410	869.2	869.2	37.211	1.625	2.38		Unsaturated	26.6			24.26	1.62	39.42	80.23	0.99	0.258	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.019	25.602	0.375	877.4	877.4	36.935	1.490	2.36		Unsaturated	26.1			24.20	1.62	39.17	79.61	0.99	0.258	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.085	26.839	0.387	885.6	885.6	38.565	1.466	2.34		Unsaturated	25.5			25.37	1.60	40.70	81.31	0.99	0.258	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.150	28.745	0.420	893.8	893.8	41.154	1.484	2.32		Unsaturated	25.0			27.17	1.59	43.11	84.13	0.99	0.258	1.081	n.a.	n.a.	n.a.	0.00	0.00
7.216	31.489	0.449	902.0	902.0	44.933	1.447	2.28		Unsaturated	23.9			29.76	1.57	46.61	87.99	0.99	0.258	1.083	n.a.	n.a.	n.a.	0.00	0.00
7.282	34.734	0.470	910.2	910.2	49.400	1.371	2.24		Unsaturated	22.7			32.83	1.55	50.73	92.27	0.99	0.258	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.347	37.254	0.518	918.4	918.4	52.789	1.408	2.22		Unsaturated	22.3			35.21	1.53	53.78	95.83	0.99	0.258	1.086	n.a.	n.a.	n.a.	0.00	0.00
7.413	35.459	0.607	926.6	926.6	49.985	1.734	2.29		Unsaturated	24.3			33.52	1.53	51.12	94.18	0.99	0.258	1.084	n.a.	n.a.	n.a.	0.00	0.00
7.478	33.953	0.714	934.8	934.8	47.618	2.132	2.37		Unsaturated	26.4			32.09	1.52	48.88	92.61	0.99	0.258	1.082	n.a.	n.a.	n.a.	0.00	0.00
7.544	32.679	0.992	943.0	943.0	45.601	3.080	2.49		Unsaturated	30.0			30.89	1.52	46.92	91.61	0.99	0.258	1.080	n.a.	n.a.	n.a.	0.00	0.00
7.610	31.749	1.088	951.2	951.2	44.087	3.479	2.54		Unsaturated	31.5			30.01	1.52	45.51	90.17	0.99	0.258	1.079	n.a.	n.a.	n.a.	0.00	0.00
7.675	28.791	1.204	959.4	959.4	46.552	4.253	2.58		Unsaturated	33.0			27.21	1.52	41.49	85.13	0.99	0.258	1.075	n.a.	n.a.	n.a.	0.00	0.00
7.741	26.849	1.328	967.6	967.6	43.094	5.037	2.66		Unsaturated	35.6			25.38	1.53	38.76	81.92	0.99	0.258	1.072	n.a.	n.a.	n.a.	0.00	0.00
7.806	26.150	1.448	975.8	975.8	52.597	5.643	2.64		Unsaturated	34.8			24.72	1.53	37.69	80.37	0.99	0.258	1.071	n.a.	n.a.	n.a.	0.00	0.00
7.872	24.812	1.621	984.0	984.0	49.431	6.665	2.71		Unsaturated	37.3			23.45	1.53	35.77	78.11	0.99	0.258	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.938	23.101	1.663	992.2	992.2	45.565	7.357	2.76		Unsaturated	39.3			21.83	1.53	33.36	75.04	0.99	0.258	1.066	n.a.	n.a.	n.a.	0.00	0.00
8.003	20.747	1.655	1000.4	1000.4	40.477	8.174	2.83		Unsaturated	41.9			19.61	1.53	30.09	70.79	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
8.069	19.874	1.643	1008.6	1008.6	38.409	8.482	2.86		Unsaturated	43.0			18.78	1.53	28.79	69.09	0.99	0.258	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.134	18.972	1.608	1016.8	1016.8	36.317	8.709	2.88		Unsaturated	43.9			17.93	1.53	27.46	67.32	0.99	0.258	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.200	18.097	1.389	1025.0	1025.0	34.311	7.899	2.87		Unsaturated	43.3			17.10	1.53	26.17	65.56	0.99	0.258	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.266	17.418	1.279	1033.2	1033.2	32.717	7.567	2.87		Unsaturated	43.4			16.46	1.53	25.15	64.18	0.99	0.258	1.057	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
8.331	15.716	1.179	1041.4	1041.4	29.182	7.759	2.91		Unsaturated	45.0			14.85	1.53	22.74	60.99	0.99	0.258	1.055	n.a.	n.a.	n.a.	0.00	0.00
8.397	15.307	1.101	1049.6	1049.6	28.167	7.448	2.91		Unsaturated	44.9			14.47	1.53	22.09	60.10	0.99	0.258	1.054	n.a.	n.a.	n.a.	0.00	0.00
8.462	14.981	0.946	1057.8	1057.8	27.325	6.546	2.88		Unsaturated	43.7			14.16	1.52	21.56	59.35	0.99	0.258	1.053	n.a.	n.a.	n.a.	0.00	0.00
8.528	15.047	0.896	1066.0	1066.0	27.231	6.173	2.86		Unsaturated	43.0			14.22	1.52	21.55	59.32	0.99	0.258	1.053	n.a.	n.a.	n.a.	0.00	0.00
8.594	14.888	0.871	1074.2	1074.2	26.719	6.069	2.86		Unsaturated	43.1			14.07	1.51	21.25	58.91	0.99	0.258	1.052	n.a.	n.a.	n.a.	0.00	0.00
8.659	15.252	0.824	1082.4	1082.4	27.182	5.601	2.83		Unsaturated	41.9			14.42	1.50	21.64	59.39	0.99	0.258	1.052	n.a.	n.a.	n.a.	0.00	0.00
8.725	15.372	0.813	1090.6	1090.6	27.190	5.483	2.83		Unsaturated	41.7			14.53	1.49	21.71	59.47	0.99	0.257	1.051	n.a.	n.a.	n.a.	0.00	0.00
8.790	15.447	0.789	1098.8	1098.8	27.116	5.296	2.82		Unsaturated	41.3			14.60	1.49	21.72	59.47	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.856	15.698	0.783	1107.0	1107.0	27.361	5.170	2.81		Unsaturated	40.9			14.84	1.48	21.96	59.77	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.922	16.154	0.775	1115.2	1115.2	27.971	4.969	2.79		Unsaturated	40.2			15.27	1.47	22.46	60.41	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.987	17.790	0.781	1123.4	1123.4	30.672	4.533	2.73		Unsaturated	38.1			16.81	1.46	24.50	63.01	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.053	18.618	0.797	1131.6	1131.6	31.906	4.415	2.71		Unsaturated	37.4			17.60	1.45	25.47	64.25	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.118	18.972	0.872	1139.8	1139.8	32.290	4.739	2.73		Unsaturated	38.0			17.93	1.44	25.82	64.78	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.184	19.493	0.972	1148.0	1148.0	32.960	5.138	2.75		Unsaturated	38.7			18.42	1.43	26.38	65.58	0.99	0.257	1.050	n.a.	n.a.	n.a.	0.00	0.00
9.250	18.134	1.030	1156.2	1156.2	30.368	5.867	2.81		Unsaturated	41.2			17.14	1.43	24.54	63.27	0.99	0.257	1.048	n.a.	n.a.	n.a.	0.00	0.00
9.315	16.749	1.059	1164.4	1164.4	27.768	6.550	2.87		Unsaturated	43.5			15.83	1.43	22.67	60.85	0.99	0.257	1.047	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.902	1.071	1172.6	1172.6	26.123	6.993	2.91		Unsaturated	45.1			15.03	1.43	21.50	59.31	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.391	1.101	1180.8	1180.8	25.069	7.439	2.94		Unsaturated	46.4			14.55	1.43	20.76	58.33	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.512	15.214	1.138	1189.0	1189.0	24.591	7.784	2.96		Unsaturated	47.2			14.38	1.42	20.45	57.93	0.99	0.257	1.044	n.a.	n.a.	n.a.	0.00	0.00
9.578	14.545	1.160	1197.2	1197.2	23.298	8.318	3.00		Unsaturated	48.7			13.75	1.42	19.51	56.68	0.99	0.257	1.043	n.a.	n.a.	n.a.	0.00	0.00
9.643	14.750	1.125	1205.4	1205.4	23.473	7.952	2.98		Unsaturated	48.0			13.94	1.41	19.70	56.92	0.99	0.257	1.042	n.a.	n.a.	n.a.	0.00	0.00
9.709	13.894	1.087	1213.6	1213.6	21.897	8.181	3.01		Unsaturated	49.3			13.13	1.41	18.53	55.35	0.99	0.257	1.041	n.a.	n.a.	n.a.	0.00	0.00
9.774	14.293	0.998	1221.8	1221.8	22.397	7.294	2.97		Unsaturated	47.5			13.51	1.40	18.96	55.92	0.99	0.257	1.041	n.a.	n.a.	n.a.	0.00	0.00
9.840	14.172	0.967	1230.0	1230.0	22.044	7.133	2.97		Unsaturated	47.5			13.40	1.40	18.74	55.62	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
9.906	15.113	0.925	1238.2	1238.2	23.411	6.382	2.92		Unsaturated	45.3			14.28	1.39	19.85	57.08	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
9.971	15.326	0.917	1246.4	1246.4	23.592	6.237	2.91		Unsaturated	44.9			14.49	1.38	20.04	57.33	0.99	0.257	1.040	n.a.	n.a.	n.a.	0.00	0.00
10.037	16.581	0.843	1254.6	1254.6	25.432	5.284	2.84		Clay	42.1			15.67	1.15	n.a.	n.a.	0.99	0.257	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	16.414	0.863	1262.8	1262.8	24.996	5.468	2.85		Clay	42.7			15.51	1.15	n.a.	n.a.	0.99	0.258	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	16.600	0.904	1271.0	1271.0	25.121	5.663	2.86		Clay	43.0			15.69	1.14	n.a.	n.a.	0.99	0.259	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	16.711	0.922	1279.2	1279.2	25.127	5.737	2.86		Clay	43.2			15.79	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	16.340	1.041	1287.4	1287.4	24.384	6.632	2.92		Clay	45.3			15.44	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	16.647	1.068	1295.6	1295.6	24.698	6.675	2.91		Clay	45.2			15.73	1.14	n.a.	n.a.	0.99	0.261	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.586	1.112	1303.8	1303.8	22.909	7.446	2.97		Clay	47.5			14.73	1.14	n.a.	n.a.	0.99	0.262	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	14.861	1.195	1312.0	1312.0	21.654	8.413	3.03		Clay	49.8			14.05	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	14.293	1.266	1320.2	1320.2	20.653	9.286	3.07		Clay	51.8			13.51	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	13.577	1.271	1328.4	1328.4	19.441	9.843	3.11		Clay	53.4			12.83	1.13	n.a.	n.a.	0.99	0.264	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	12.425	1.229	1336.6	1336.6	17.592	10.454	3.16		Clay	55.6			11.74	1.13	n.a.	n.a.	0.99	0.265	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	11.932	1.352	1344.8	1344.8	16.745	12.008	3.21		Clay	58.3			11.28	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	10.062	1.257	1353.0	1353.0	13.874	13.393	3.31		Clay	62.7			9.51	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	9.914	1.156	1361.2	1361.2	13.567	12.520	3.29		Clay	62.0			9.37	1.12	n.a.	n.a.	0.99	0.267	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	8.239	1.079	1369.4	1369.4	11.033	14.283	3.40		Clay	67.2			7.79	1.12	n.a.	n.a.	0.99	0.268	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	8.175	1.011	1377.6	1377.6	10.868	13.505	3.38		Clay	66.6			7.73	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	8.909	0.923	1385.8	1385.8	11.858	11.234	3.30		Clay	62.5			8.42	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	8.379	0.784	1394.0	1394.0	11.022	10.206	3.30		Clay	62.2			7.92	1.12	n.a.	n.a.	0.99	0.270	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	8.407	0.650	1402.2	1402.2	10.991	8.435	3.24		Clay	59.6			7.95	1.11	n.a.	n.a.	0.98	0.271	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	9.690	0.548	1410.4	1410.4	12.741	6.099	3.10		Clay	53.1			9.16	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	10.350	0.513	1418.6	1418.6	13.592	5.321	3.04		Clay	50.5			9.78	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.414	10.759	0.462	1426.8	1426.8	14.081	4.599	2.99		Clay	48.2			10.17	1.11	n.a.	n.a.	0.98	0.273	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	10.695	0.460	1435.0	1435.0	13.906	4.610	2.99		Clay	48.5			10.11	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	11.745	0.466	1443.2	1443.2	15.276	4.227	2.94		Clay	46.2			11.10	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	12.294	0.475	1451.4	1451.4	15.941	4.106	2.92		Clay	45.2			11.62	1.10	n.a.	n.a.	0.98	0.275	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	13.503	0.518	1459.6	1459.6	17.502	4.055	2.88		Clay	43.9			12.76	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	13.819	0.518	1467.8	1467.8	17.830	3.959	2.87		Clay	43.3			13.06	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.808	14.619	0.537	1476.0	1476.0	18.809	3.869	2.84		Clay	42.4			13.82	1.10	n.a.	n.a.	0.98	0.277	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	17.139	0.582	1484.2	1484.2	22.095	3.549	2.77		Clay	39.5			16.20	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	20.152	0.627	1492.4	1492.4	26.006	3.231	2.69		Clay	36.5			19.05	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	20.571	0.699	1500.6	1500.6	26.417	3.527	2.71		Clay	37.2			19.44	1.09	n.a.	n.a.	0.98	0.279	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	22.030	0.725	1508.8	1508.8	28.202	3.408	2.67		Clay	36.1			20.82	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	23.714	0.829	1517.0	1517.0	30.264	3.611	2.67		Clay	35.9			22.41	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	24.635	0.892	1525.2	1525.2	31.304	3.737	2.67		Clay	35.9			23.28	1.09	n.a.	n.a.	0.98	0.281	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	22.737	1.039	1533.4	1533.4	28.656	4.729	2.76		Clay	39.4			21.49	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.333	20.719	1.141	1541.6	1541.6	25.880	5.720	2.85		Clay	42.8			19.58	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	19.631	1.217	1549.8	1549.8	24.334	6.454	2.91		Clay	45.0			18.55	1.09	n.a.	n.a.	0.98	0.283	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	19.446	1.271	1558.0	1558.0	23.963	6.809	2.93		Clay	45.8			18.38	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	19.641	1.354	1566.2	1566.2	24.081	7.180	2.94		Clay	46.4			18.56	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	21.854	1.429	1574.4	1574.4	26.762	6.783	2.89		Clay	44.4			20.66	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	20.404	1.513	1582.6	1582.6	24.785	7.714	2.96		Clay	47.0			19.29	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
12.726	20.571	1.537	1590.8	1590.8	24.862	7.772	2.96		Clay	47.0			19.44	1.08	n.a.	n.a.	0.98	0.286	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	20.440	1.527	1599.0	1599.0	24.566	7.775	2.96		Clay	47.2			19.32	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	20.636	1.539	1607.2	1607.2	24.679	7.760	2.96		Clay	47.1			19.50	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	20.292	1.553	1615.4	1615.4	24.123	7.971	2.98		Clay	47.7			19.18	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	19.343	1.562	1623.6	1623.6	22.827	8.429	3.01		Clay	49.2			18.28	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	18.562	1.631	1631.8	1631.8	21.750	9.191	3.05		Clay	50.9			17.54	1.07	n.a.	n.a.	0.98	0.289	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	17.456	1.605	1640.0	1640.0	20.288	9.648	3.09		Clay	52.5			16.50	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	17.270	1.581	1648.2	1648.2	19.956	9.613	3.09		Clay	52.7			16.32	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	17.670	1.547	1656.4	1656.4	20.335	9.185	3.07		Clay	51.8			16.70	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	17.632	1.537	1664.6	1664.6	20.185	9.149	3.07		Clay	51.9			16.67	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	18.358	1.537	1672.8	1672.8	20.949	8.772	3.05		Clay	50.8			17.35	1.06	n.a.	n.a.	0.98	0.292	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	21.204	1.439	1681.0	1681.0	24.228	7.067	2.94		Clay	46.1			20.04	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	26.997	1.415	1689.2	1689.2	30.964	5.411	2.78		Clay	40.0			25.52	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	33.098	1.400	1697.4	1697.4	37.998	4.341	2.65		Clay	35.3			31.28	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	39.588	1.661	1705.6	1705.6	42.576	4.288	2.61	plastic	Clay	34.0			37.42	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	46.387	1.515	1713.8	1713.8	47.818	3.327	2.50		Sand	30.3	60		60.00	1.10	66.14	117.36	0.98	0.295	1.026	0.174	0.161	0.54	0.03	0.02
13.776	55.203	1.626	1722.0	1722.0	56.937	2.992	2.41		Sand	27.6	60		60.00	1.10	66.03	116.04	0.98	0.295	1.025	0.171	0.158	0.53	0.03	0.02
13.842	50.655	1.642	1730.2	1730.2	52.043	3.298	2.47		Sand	29.4	60		60.00	1.10	65.86	116.65	0.98	0.296	1.024	0.173	0.159	0.54	0.03	0.02
13.907	49.037	1.719	1738.4	1738.4	50.229	3.569	2.50		Sand	30.5	60		60.00	1.10	65.71	116.87	0.98	0.297	1.024	0.173	0.159	0.54	0.03	0.02
13.973	52.311	1.591	1746.6	1746.6	53.513	3.093	2.44		Sand	28.5	60		60.00	1.09	65.60	115.91	0.98	0.297	1.023	0.171	0.157	0.53	0.03	0.02
14.038	52.739	1.691	1754.8	1754.8	53.828	3.261	2.46		Sand	28.9	60		60.00	1.09	65.45	115.92	0.98	0.298	1.023	0.171	0.157	0.53	0.03	0.02
14.104	58.123	1.734	1763.0	1763.0	59.273	3.029	2.40		Sand	27.4	60		60.00	1.09	65.33	114.98	0.98	0.298	1.022	0.169	0.156	0.52	0.03	0.02
14.170	56.421	1.672	1771.2	1771.2	57.373	3.011	2.41		Sand	27.6	60		60.00	1.09	65.19	114.93	0.98	0.299	1.021	0.169	0.155	0.52	0.03	0.02
14.235	63.144	1.794	1779.4	1779.4	64.166	2.882	2.36		Sand	26.2	60		60.00	1.08	65.08	113.95	0.98	0.299	1.021	0.167	0.154	0.51	0.03	0.02
14.301	64.605	1.854	1787.6	1787.6	65.517	2.910	2.36		Sand	26.1			61.06	1.08	66.06	115.18	0.98	0.300	1.020	0.170	0.156	0.52	0.03	0.02
14.366	65.572	1.622	1795.8	1795.8	66.355	2.508	2.31		Sand	24.7			61.98	1.08	66.90	115.27	0.98	0.300	1.020	0.170	0.156	0.52	0.03	0.02
14.432	65.433	1.603	1804.0	1804.0	66.058	2.484	2.31		Sand	24.7			61.85	1.08	66.63	114.87	0.98	0.301	1.019	0.169	0.155	0.52	0.03	0.02
14.498	66.139	1.583	1812.2	1812.2	66.625	2.427	2.30		Sand	24.4			62.51	1.07	67.19	115.39	0.98	0.301	1.019	0.170	0.156	0.52	0.03	0.02
14.563	67.711	1.469	1820.4	1820.4	68.072	2.199	2.26		Sand	23.4			64.00	1.07	68.63	116.36	0.98	0.302	1.018	0.172	0.158	0.52	0.03	0.02
14.629	69.469	1.213	1828.6	1828.6	69.703	1.769	2.19		Sand	21.5			65.66	1.07	70.26	116.34	0.98	0.302	1.018	0.172	0.157	0.52	0.03	0.02
14.694	71.059	1.104	1836.8	1836.8	71.156	1.574	2.15		Sand	20.5			67.16	1.07	71.71	116.76	0.98	0.303	1.017	0.173	0.158	0.52	0.03	0.02
14.760	72.073	0.994	1845.0	1845.0	72.020	1.397	2.11		Sand	19.6			68.12	1.07	72.59	116.37	0.98	0.303	1.017	0.172	0.157	0.52	0.03	0.02
14.826	73.496	0.971	1853.2	1853.2	73.293	1.338	2.09		Sand	19.2			69.47	1.06	73.86	117.20	0.98	0.304	1.016	0.174	0.159	0.52	0.03	0.02
14.891	74.109	0.922	1861.4	1861.4	73.745	1.260	2.08		Sand	18.7			70.05	1.06	74.33	116.93	0.98	0.304	1.016	0.173	0.158	0.52	0.03	0.02
14.957	74.853	0.856	1869.6	1869.6	74.327	1.158	2.05		Sand	18.1			70.75	1.06	74.93	116.42	0.98	0.305	1.015	0.172	0.157	0.52	0.03	0.02
15.022	76.340	0.813	1877.8	1877.8	75.653	1.078	2.03		Sand	17.5			72.16	1.06	76.26	116.76	0.98	0.305	1.014	0.173	0.158	0.52	0.03	0.02
15.088	77.763	0.749	1886.0	1886.0	76.909	0.975	1.99		Sand	16.8			73.50	1.05	77.53	116.49	0.98	0.306	1.014	0.172	0.157	0.51	0.03	0.02
15.154	76.713	0.781	1894.2	1894.2	75.689	1.031	2.01		Sand	17.3			72.51	1.05	76.33	116.17	0.98	0.306	1.013	0.172	0.156	0.51	0.03	0.02
15.219	77.801	0.820	1902.4	1902.4	76.606	1.067	2.02		Sand	17.4			73.54	1.05	77.24	117.59	0.98	0.307	1.013	0.175	0.159	0.52	0.03	0.02
15.285	79.660	0.925	1910.6	1910.6	78.287	1.175	2.04		Sand	17.8			75.29	1.05	78.88	120.67	0.98	0.307	1.013	0.181	0.165	0.54	0.03	0.02
15.350	79.912	1.138	1918.8	1918.8	78.365	1.441	2.09		Sand	19.1			75.53	1.04	78.93	123.59	0.98	0.308	1.013	0.187	0.171	0.55	0.03	0.02
15.416	83.846	0.751	1927.0	1927.0	82.091	0.906	1.95		Sand	15.9			79.25	1.04	82.71	120.23	0.97	0.308	1.012	0.180	0.164	0.53	0.03	0.02
15.482	90.597	0.675	1935.2	1935.2	88.585	0.753	1.88		Sand	14.4			85.63	1.04	89.16	122.59	0.97	0.309	1.011	0.185	0.168	0.55	0.03	0.02
15.547	106.090	0.729	1943.4	1943.4	103.674	0.694	1.80		Sand	12.9			100.27	1.04	104.03	133.44	0.97	0.309	1.012	0.212	0.193	0.62	0.02	0.02
15.613	108.732	0.751	1951.6	1951.6	106.052	0.697	1.79		Sand	12.8			102.77	1.04	106.39	135.53	0.97	0.310	1.011	0.218	0.199	0.64	0.02	0.02
15.678	110.880	0.765	1959.8	1959.8	107.936	0.696	1.79		Sand	12.7			104.80	1.03	108.28	137.08	0.97	0.310	1.011	0.223	0.203	0.65	0.02	0.02
15.744	100.641	1.048	1968.0	1968.0	97.671	1.052	1.93		Sand	15.5			95.12	1.03	98.10	137.65	0.97	0.311	1.010	0.225	0.204	0.66	0.02	0.02
15.810	98.399	1.143	1976.2	1976.2	95.272	1.173	1.97		Sand	16.3			93.00	1.03	95.74	137.59	0.97	0.311	1.010	0.225	0.204	0.66	0.02	0.02
15.875	95.405	1.146	1984.4	1984.4	92.149	1.214	1.99		Sand	16.8			90.17	1.03	92.69	135.20	0.97	0.312	1.009	0.217	0.197	0.63	0.02	0.02
15.941	85.343	1.105	1992.6	1992.6	82.154	1.310	2.05		Sand	18.1			80.66	1.03	82.85	126.42	0.97	0.312	1.008	0.194	0.176	0.56	0.03	0.02
16.006	77.011	1.139	2000.8	2000.8	73.883	1.498	2.12		Sand	19.9			72.79	1.03	74.68	119.51	0.97	0.313	1.007	0.179	0.162	0.52	0.03	0.02
16.072	71.459	1.142	2009.0	2009.0	68.343	1.621	2.17		Sand	21.0			67.54	1.02	69.20	114.32	0.97	0.313	1.006	0.168	0.152	0.49	0.03	0.02
16.138	67.953	1.119	2017.2	2017.2	64.806	1.672	2.20		Sand	21.7			64.23	1.02	65.70	110.68	0.97	0.313	1.006	0.161	0.146	0.46	0.03	0.02
16.203	65.609	0.902	2025.4	2025.4	62.406	1.396	2.16		Sand	20.8			62.01	1.02	63.34	106.36	0.97	0.314	1.005	0.153	0.139	0.44	0.03	0.02
16.269	65.126	0.965	2033.6	2033.6	61.810	1.505	2.18		Sand	21.4			61.56	1.02	62.75	106.41	0.97	0.314	1.004	0.153	0.139	0.44	0.03	0.02
16.334	63.786	1.063	2041.8	2041.8	60.393	1.694	2.23		Sand	22.4			60.29	1.02	61.34	105.82	0.97	0.315	1.004	0.152	0.138	0.44	0.03	0.02
16.400	64.558	1.147	2050.0	2050.0	61.009	1.805	2.24		Sand	22.8			61.02	1.02	61.96	107.04	0.97	0.315	1.004	0.155	0.139	0.44	0.03	0.02
16.466	65.804	1.050	2058.2	2058.2	62.078	1.621	2.20		Sand	21.8			62.20	1.01	63.03	107.38	0.97	0.316	1.003	0.155	0.140	0.44	0.03	0.02
16.531	67.358	1.020	2066.4	2066.4	63.437	1.538	2.18		Sand	21.3			63.67	1.01	64.39	108.44	0.97	0.316	1.003	0.157	0.142	0.45	0.03	0.02
16.597	68.836	1.043	2074.6	2074.6	64.718	1.538	2.18		Sand	21.1			65.06	1.01	65.68	109.88	0.97	0.317	1.002	0.160	0.144	0.45	0.03	0.02
16.662	69.962	1.050	2082.8	2082.8	65.659	1.523	2.17		Sand	20.9			66.13	1.01	66.63	110.84	0.97	0.317	1.002	0.161	0.145	0.46	0.03	0.02
16.728	71.877	1.025	2091.0	2091.0	67.348	1.447	2.14		Sand	20.4			67.94	1.01	68.32	112.19	0.97	0.317	1.001	0.164	0.148	0.47	0.03	0.02
16.794	72.649	1.021	2099.2	2099.2	67.945	1.426	2.14		Sand	20.2			68.67	1.00	68.92	112.70	0.97	0.318	1.001	0.165	0.148	0.47	0.03	0.02
16.859	73.551	0.941	2107.4	2107.4	68.663	1.298	2.11		Sand	19.5			69.52	1.00	69.65	112.43	0.97	0.318	1.000	0.164	0.148	0.46	0.03	0.02
16.925	76.369	0.893	2115.6	2115.6	71.189	1.186	2.07		Sand	18.6			72.18	1.00	72.19	114.00	0.97	0.319	1.000	0.167	0.151	0.47	0.03	0.02
16.990	81.809	0.780	2123.8	2123.8	76.180	0.966	1.99		Sand	16.8			77.32	1.00	77.19	116.13	0.97	0.319	1.000	0.172	0.154	0.48	0.03	0.02
17.056	104.881	0.641	2132.0	2132.0	97.755	0.617	1.79		Sand	12.8			99.13	1.00	98.80	126.65	0.97	0.320	0.999	0.195	0.175	0.55	0.03	0.02

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
17.122	117.175	0.491	2140.2	2140.2	109.118	0.423	1.66		Sand	10.5			110.75	0.99	110.19	127.22	0.97	0.320	0.998	0.196	0.176	0.55	0.02	0.02
17.187	108.500	0.690	2148.4	2148.4	100.768	0.642	1.79		Sand	12.7			102.55	0.99	101.87	130.08	0.97	0.320	0.998	0.203	0.182	0.57	0.02	0.02
17.253	108.500	1.474	2156.6	2156.6	100.573	1.372	2.00		Sand	17.0			102.55	0.99	101.76	146.91	0.97	0.321	0.997	0.258	0.231	0.72	0.02	0.02
17.318	120.524	1.686	2164.8	2164.8	111.614	1.412	1.97		Sand	16.4			113.92	0.99	112.91	158.96	0.97	0.321	0.996	0.319	0.286	0.89	0.01	0.01
17.384	113.316	1.512	2173.0	2173.0	104.677	1.347	1.98		Sand	16.6			107.10	0.99	105.97	150.86	0.97	0.322	0.996	0.275	0.247	0.77	0.02	0.01
17.450	113.298	1.349	2181.2	2181.2	104.459	1.202	1.95		Sand	15.9			107.09	0.99	105.77	148.21	0.97	0.322	0.995	0.263	0.236	0.73	0.02	0.01
17.515	113.791	1.338	2189.4	2189.4	104.717	1.187	1.94		Sand	15.8			107.55	0.99	106.07	148.24	0.97	0.322	0.995	0.264	0.236	0.73	0.02	0.01
17.581	114.329	1.225	2197.6	2197.6	105.017	1.082	1.92		Sand	15.2			108.06	0.98	106.40	146.45	0.97	0.323	0.994	0.256	0.229	0.71	0.02	0.02
17.646	115.455	0.820	2205.8	2205.8	105.860	0.717	1.80		Sand	12.9			109.13	0.98	107.22	137.24	0.97	0.323	0.994	0.224	0.200	0.62	0.02	0.02
17.712	117.920	0.615	2214.0	2214.0	107.938	0.526	1.72		Sand	11.4			111.46	0.98	109.28	131.44	0.97	0.324	0.994	0.207	0.185	0.57	0.02	0.02
17.778	126.290	0.509	2222.2	2222.2	115.455	0.407	1.63		Sand	10.0			119.37	0.98	116.85	131.63	0.97	0.324	0.993	0.207	0.185	0.57	0.02	0.02
17.843	135.588	0.545	2230.4	2230.4	123.798	0.405	1.61		Sand	9.6			128.16	0.98	125.33	138.24	0.97	0.324	0.992	0.227	0.202	0.62	0.02	0.02
17.909	140.536	0.526	2238.6	2238.6	128.115	0.377	1.58		Sand	9.2			132.83	0.98	129.73	140.38	0.97	0.325	0.992	0.234	0.208	0.64	0.02	0.02
17.974	145.242	0.672	2246.8	2246.8	132.193	0.466	1.62		Sand	9.7			137.28	0.98	133.98	148.20	0.97	0.325	0.991	0.263	0.235	0.72	0.02	0.01
18.040	152.570	0.564	2254.8	2252.3	138.742	0.372	1.55		Sand	8.7			144.21	0.98	140.61	149.09	0.97	0.325	0.990	0.267	0.238	0.73	0.02	0.01
18.106	153.184	0.861	2262.7	2256.1	139.184	0.566	1.65		Sand	10.2			144.79	0.98	141.22	158.96	0.97	0.326	0.989	0.319	0.284	0.87	0.01	0.01
18.171	142.527	1.527	2270.5	2259.9	129.317	1.080	1.85		Sand	13.8			134.71	0.98	131.46	170.13	0.97	0.326	0.987	0.409	0.363	1.11	0.01	0.00
18.237	122.941	2.099	2278.4	2263.6	111.307	1.723	2.04		Sand	17.8			116.20	0.97	113.25	163.71	0.97	0.327	0.988	0.352	0.313	0.96	0.01	0.01
18.302	118.227	1.948	2286.3	2267.4	106.906	1.664	2.04		Sand	17.8			111.75	0.97	108.77	158.19	0.97	0.327	0.988	0.315	0.280	0.86	0.01	0.01
18.368	116.088	1.829	2294.2	2271.2	104.862	1.591	2.03		Sand	17.7			109.72	0.97	106.70	155.11	0.97	0.327	0.988	0.297	0.264	0.81	0.01	0.01
18.434	114.265	1.529	2302.0	2275.0	103.110	1.352	1.99		Sand	16.7			108.00	0.97	104.89	149.94	0.97	0.328	0.988	0.271	0.241	0.74	0.02	0.01
18.499	106.742	1.637	2309.9	2278.8	96.169	1.550	2.05		Sand	18.1			100.89	0.97	97.86	145.20	0.97	0.328	0.989	0.251	0.223	0.68	0.02	0.02
18.565	98.595	1.494	2317.8	2282.5	88.671	1.533	2.07		Sand	18.6			93.19	0.97	90.23	136.83	0.97	0.328	0.989	0.222	0.198	0.60	0.02	0.02
18.630	98.325	1.323	2325.6	2286.3	88.349	1.362	2.04		Sand	17.8			92.93	0.97	89.89	134.56	0.97	0.329	0.989	0.216	0.192	0.58	0.02	0.02
18.696	97.618	0.809	2333.5	2290.1	87.630	0.839	1.91		Sand	15.0			92.27	0.97	89.06	124.90	0.97	0.329	0.990	0.190	0.170	0.52	0.03	0.02
18.762	96.707	0.758	2341.4	2293.9	86.727	0.793	1.90		Sand	14.8			91.41	0.96	88.14	122.98	0.97	0.330	0.990	0.186	0.166	0.50	0.03	0.02
18.827	96.716	0.777	2349.3	2297.6	86.661	0.813	1.90		Sand	14.9			91.41	0.96	88.09	123.42	0.97	0.330	0.989	0.187	0.167	0.50	0.03	0.02
18.893	100.259	0.738	2357.1	2301.4	89.797	0.745	1.87		Sand	14.2			94.76	0.96	91.26	124.49	0.97	0.330	0.989	0.190	0.169	0.51	0.03	0.02
18.958	102.706	0.690	2365.0	2305.2	91.936	0.680	1.84		Sand	13.6			97.08	0.96	93.42	124.43	0.97	0.331	0.989	0.189	0.168	0.51	0.03	0.02
19.024	104.574	0.672	2372.9	2309.0	93.547	0.650	1.82		Sand	13.3			98.84	0.96	95.06	124.86	0.97	0.331	0.989	0.190	0.169	0.51	0.03	0.02
19.090	107.253	0.694	2380.8	2312.8	95.889	0.654	1.81		Sand	13.2			101.37	0.96	97.45	127.01	0.97	0.331	0.988	0.196	0.174	0.52	0.02	0.02
19.155	108.713	0.685	2388.6	2316.5	97.126	0.637	1.80		Sand	12.9			102.75	0.96	98.72	127.47	0.97	0.332	0.988	0.197	0.175	0.53	0.02	0.02
19.221	108.648	0.668	2396.5	2320.3	96.985	0.622	1.80		Sand	12.8			102.69	0.96	98.58	126.80	0.97	0.332	0.988	0.195	0.173	0.52	0.03	0.02
19.286	107.066	0.622	2404.4	2324.1	95.476	0.588	1.79		Sand	12.7			101.20	0.96	97.03	124.29	0.96	0.332	0.988	0.189	0.168	0.51	0.03	0.02
19.352	104.593	0.516	2412.2	2327.9	93.166	0.499	1.76		Sand	12.2			98.86	0.96	94.62	118.90	0.96	0.333	0.988	0.177	0.158	0.47	0.03	0.02
19.418	101.478	0.421	2420.1	2331.7	90.282	0.420	1.73		Sand	11.7			95.91	0.96	91.64	113.19	0.96	0.333	0.989	0.166	0.147	0.44	0.03	0.02
19.483	100.529	0.303	2428.0	2335.4	89.352	0.305	1.67		Sand	10.7			95.02	0.95	90.59	106.85	0.96	0.333	0.989	0.154	0.137	0.41	0.03	0.02
19.549	100.185	0.292	2435.9	2339.2	88.967	0.295	1.67		Sand	10.6			94.69	0.95	90.20	106.04	0.96	0.334	0.989	0.153	0.136	0.41	0.03	0.02
19.614	101.925	0.383	2443.7	2343.0	90.454	0.380	1.71		Sand	11.3			96.34	0.95	91.80	111.47	0.96	0.334	0.988	0.163	0.144	0.43	0.03	0.02
19.680	105.830	0.431	2451.6	2346.8	93.883	0.412	1.71		Sand	11.4			100.03	0.95	95.32	115.61	0.96	0.334	0.988	0.171	0.151	0.45	0.03	0.02
19.746	112.461	0.455	2459.5	2350.5	99.750	0.409	1.69		Sand	11.0			106.30	0.95	101.31	119.98	0.96	0.335	0.987	0.180	0.159	0.48	0.03	0.02
19.811	118.841	0.473	2467.3	2354.3	105.384	0.402	1.67		Sand	10.5			112.33	0.95	107.07	124.02	0.96	0.335	0.986	0.188	0.167	0.50	0.03	0.02
19.877	127.730	0.455	2475.2	2358.1	113.254	0.360	1.61		Sand	9.7			120.73	0.95	115.09	128.04	0.96	0.335	0.986	0.198	0.176	0.52	0.02	0.02
19.942	133.934	0.568	2483.1	2361.9	118.711	0.428	1.63		Sand	10.0			126.59	0.95	120.78	135.96	0.96	0.336	0.984	0.220	0.194	0.58	0.02	0.02
20.008	140.909	0.735	2491.0	2365.7	124.847	0.526	1.67		Sand	10.5			133.18	0.96	127.23	145.91	0.96	0.336	0.983	0.254	0.224	0.67	0.02	0.02
20.074	138.751	0.645	2498.8	2369.4	122.817	0.469	1.64		Sand	10.2			131.14	0.95	125.09	141.42	0.96	0.336	0.983	0.237	0.210	0.62	0.02	0.02
20.139	147.827	0.577	2506.7	2373.2	130.816	0.394	1.58		Sand	9.2			139.72	0.95	133.26	144.22	0.96	0.337	0.983	0.247	0.219	0.65	0.02	0.02
20.205	158.615	0.621	2514.6	2377.0	140.329	0.395	1.55		Sand	8.8			149.92	0.95	143.12	152.39	0.96	0.337	0.981	0.283	0.249	0.74	0.02	0.01
20.270	168.937	0.582	2522.4	2380.8	149.411	0.347	1.50		Sand	8.1			159.68	0.96	152.50	158.29	0.96	0.337	0.980	0.315	0.278	0.82	0.01	0.01
20.336	178.284	0.691	2530.3	2384.6	157.612	0.390	1.51		Sand	8.2			168.51	0.96	161.12	167.58	0.96	0.338	0.978	0.384	0.338	1.00	0.01	0.01
20.402	188.318	0.726	2538.2	2388.3	166.410	0.388	1.49		Sand	7.9			177.99	0.96	170.33	175.62	0.96	0.338	0.975	0.472	0.414	1.23	0.00	0.00
20.467	191.926	0.817	2546.1	2392.1	169.483	0.429	1.51		Sand	8.1			181.40	0.96	173.63	180.14	0.96	0.338	0.974	0.538	0.471	1.39	0.00	0.00
20.533	196.659	0.649	2553.9	2395.9	173.550	0.332	1.44		Sand	7.2			185.88	0.96	177.83	180.60	0.96	0.338	0.974	0.546	0.478	1.41	0.00	0.00
20.598	195.916	0.535	2561.8	2399.7	172.750	0.275	1.40		Sand	6.7			185.18	0.96	176.99	178.46	0.96	0.339	0.974	0.512	0.448	1.32	0.00	0.00
20.664	195.916	0.748	2569.7	2403.4	172.611	0.384	1.47		Sand	7.7			185.18	0.96	176.99	181.47	0.96	0.339	0.973	0.561	0.490	1.45	0.00	0.00
20.730	189.527	0.753	2577.6	2407.2	166.810	0.400	1.49		Sand	8.0			179.14	0.95	170.97	176.67	0.96	0.339	0.974	0.486	0.425	1.25	0.00	0.00
20.795	179.790	0.768	2585.4	2411.0	158.054	0.430	1.53		Sand	8.5			169.93	0.95	161.88	170.00	0.96	0.340	0.975	0.407	0.357	1.05	0.01	0.01
20.861	177.437	0.688	2593.3	2414.8	155.845	0.391	1.51		Sand	8.2			167.71	0.95	159.55	166.27	0.96	0.340	0.976	0.373	0.327	0.96	0.01	0.01
20.926	170.714	0.939	2601.2	2418.6	149.776	0.554	1.61		Sand	9.7			161.36	0.95	153.50	168.84	0.96	0.340	0.975	0.396	0.347	1.02	0.01	0.01
20.992	168.501	0.955	2609.0	2422.3	147.700	0.571	1.63		Sand	9.9			159.26	0.95	151.39	167.92	0.96	0.341	0.975	0.388	0.340	1.00	0.01	0.01
21.058	167.998	0.973	2616.9	2426.1	147.138	0.584	1.63		Sand	10.0			158.79	0.95	150.86	168.10	0.96	0.341	0.974	0.389	0.341	1.00	0.01	0.01
21.123	162.018	1.328	2624.8	2429.9	141.746	0.826	1.74		Sand	11.8			153.14	0.95	145.60	174.59	0.96	0.341	0.972	0.459	0.401	1.18	0.01	0.00
21.189	163.608	1.307	2632.7	2433.7	143.033	0.805	1.73		Sand	11.7			154.64	0.95	146.95	174.91	0.96	0.341	0.972	0.463	0.405	1.18	0.01	0.00
21.254	166.240	1.349	2640.5	2437.5	145.237	0.818	1.73		Sand	11.6			157.13	0.95	149.31	177.48	0.96	0.342	0.971	0.497	0.434	1.27	0.00	0.00
21.320	170.760	1.400	2648.4	2441.2	149.098	0.826	1.72		Sand	11.5			161.40	0.95	153.41	181.38	0.96	0.342	0.969	0.559	0.487	1.42	0.00	0.00
21.386	174.331	1.262	2656.3	2445.0	152.120	0.729	1.68		Sand	10.8			164.77	0.95	156.48	179.77	0.96	0.342	0.969	0.532	0.464	1.35	0.00	0.00
21.451	173.429	1.258	2664.1	2448.8	151.206	0.731	1.69		Sand	10.9			163.92	0.95	155.56	179.07	0.96	0.343	0.969	0.521	0.454	1.33	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
21.517	173.075	1.292	2672.0	2452.6	150.775	0.752	1.69		Sand	11.0			163.59	0.95	155.18	179.72	0.96	0.343	0.969	0.531	0.463	1.35	0.00	0.00
21.582	170.398	1.068	2679.9	2456.3	148.308	0.632	1.65		Sand	10.3			161.06	0.95	152.43	171.80	0.96	0.343	0.971	0.426	0.372	1.08	0.01	0.01
21.648	170.221	1.217	2687.8	2460.1	148.035	0.721	1.69		Sand	10.9			160.89	0.95	152.32	175.88	0.96	0.343	0.969	0.475	0.414	1.21	0.01	0.00
21.714	164.529	1.262	2695.6	2463.9	142.932	0.773	1.72		Sand	11.5			155.51	0.95	147.08	173.75	0.96	0.344	0.970	0.448	0.391	1.14	0.01	0.00
21.779	163.786	1.328	2703.5	2467.7	142.169	0.818	1.74		Sand	11.8			154.81	0.95	146.37	175.00	0.96	0.344	0.969	0.464	0.404	1.18	0.01	0.00
21.845	163.813	1.319	2711.4	2471.5	142.081	0.812	1.74		Sand	11.7			154.83	0.94	146.30	174.72	0.96	0.344	0.969	0.460	0.401	1.16	0.01	0.00
21.910	164.709	1.180	2719.2	2475.2	142.752	0.722	1.70		Sand	11.1			155.68	0.94	146.91	171.41	0.96	0.345	0.970	0.422	0.368	1.07	0.01	0.01
21.976	164.709	1.180	2727.1	2479.0	142.639	0.722	1.70		Sand	11.2			155.68	0.94	146.82	171.35	0.96	0.345	0.969	0.421	0.367	1.07	0.01	0.01
22.042	162.874	0.963	2735.0	2482.8	140.926	0.596	1.65		Sand	10.4			153.95	0.94	144.84	163.84	0.96	0.345	0.971	0.353	0.309	0.89	0.01	0.01
22.107	165.385	1.065	2742.9	2486.6	143.005	0.649	1.67		Sand	10.6			156.32	0.94	147.15	168.30	0.96	0.345	0.970	0.391	0.341	0.99	0.01	0.01
22.173	167.868	1.142	2750.7	2490.4	145.056	0.686	1.68		Sand	10.8			158.67	0.94	149.41	171.90	0.96	0.346	0.968	0.427	0.372	1.08	0.01	0.01
22.238	169.226	1.204	2758.6	2494.1	146.125	0.717	1.69		Sand	11.0			159.95	0.94	150.62	174.37	0.96	0.346	0.967	0.456	0.397	1.15	0.01	0.00
22.304	170.844	1.261	2766.5	2497.9	147.419	0.744	1.70		Sand	11.1			161.48	0.94	152.07	176.81	0.96	0.346	0.966	0.488	0.424	1.22	0.00	0.00
22.370	171.616	1.336	2774.4	2501.7	147.975	0.785	1.71		Sand	11.3			162.21	0.94	152.76	179.21	0.96	0.346	0.965	0.523	0.454	1.31	0.00	0.00
22.435	173.931	1.354	2782.2	2505.5	149.871	0.785	1.71		Sand	11.3			164.40	0.94	154.81	180.97	0.96	0.347	0.964	0.552	0.478	1.38	0.00	0.00
22.501	177.037	1.193	2790.1	2509.2	152.450	0.679	1.66		Sand	10.5			167.33	0.94	157.38	178.35	0.96	0.347	0.965	0.510	0.442	1.28	0.00	0.00
22.566	178.051	1.484	2798.0	2513.0	153.212	0.840	1.72		Sand	11.5			168.29	0.94	158.52	186.59	0.96	0.347	0.961	0.664	0.574	1.65	0.00	0.00
22.632	180.869	1.425	2805.8	2516.8	155.536	0.794	1.70		Sand	11.1			170.95	0.94	160.95	186.70	0.96	0.347	0.961	0.666	0.576	1.66	0.00	0.00
22.698	183.938	1.429	2813.7	2520.6	158.073	0.783	1.69		Sand	11.0			173.85	0.94	163.67	188.55	0.96	0.348	0.960	0.712	0.614	1.77	0.00	0.00
22.763	188.337	1.430	2821.6	2524.4	161.758	0.765	1.68		Sand	10.7			178.01	0.94	167.60	191.12	0.96	0.348	0.958	0.783	0.675	1.94	0.00	0.00
22.829	197.161	1.474	2829.5	2528.1	169.264	0.753	1.66		Sand	10.4			186.35	0.94	175.63	197.47	0.95	0.348	0.955	1.016	0.872	2.50	0.00	0.00
22.894	201.319	1.496	2837.3	2531.9	172.727	0.748	1.65		Sand	10.3			190.28	0.94	179.38	200.48	0.95	0.348	0.953	1.164	0.997	2.86	0.00	0.00
22.960	205.578	1.527	2845.2	2535.7	176.272	0.748	1.64		Sand	10.2			194.31	0.94	183.23	203.79	0.95	0.349	0.950	1.365	1.167	3.35	0.00	0.00
23.026	210.395	1.468	2853.1	2539.5	180.294	0.702	1.62		Sand	9.8			198.86	0.94	187.50	205.27	0.95	0.349	0.949	1.470	1.255	3.60	0.00	0.00
23.091	230.733	1.509	2860.9	2543.3	197.691	0.658	1.57		Sand	9.0			218.08	0.95	206.20	219.40	0.95	0.349	0.945	2.000	1.700	4.87	0.00	0.00
23.157	242.461	1.489	2868.8	2547.0	207.644	0.618	1.53		Sand	8.5			229.17	0.95	216.97	227.06	0.95	0.349	0.944	2.000	1.699	4.86	0.00	0.00
23.222	252.449	1.387	2876.7	2550.8	216.085	0.553	1.49		Sand	7.9			238.61	0.95	226.08	232.55	0.95	0.350	0.944	2.000	1.698	4.86	0.00	0.00
23.288	263.087	1.506	2884.6	2554.6	225.073	0.576	1.49		Sand	7.8			248.66	0.95	236.03	242.56	0.95	0.350	0.943	2.000	1.697	4.85	0.00	0.00
23.354	272.489	1.630	2892.4	2558.4	232.985	0.601	1.49		Sand	7.9			257.55	0.95	244.85	251.68	0.95	0.350	0.943	2.000	1.696	4.84	0.00	0.00
23.419	280.812	1.848	2900.3	2562.1	239.959	0.662	1.51		Sand	8.1			265.42	0.95	252.35	260.98	0.95	0.350	0.943	2.000	1.696	4.84	0.00	0.00
23.485	282.923	2.097	2908.2	2565.9	241.591	0.745	1.54		Sand	8.6			267.41	0.95	254.15	266.34	0.95	0.351	0.942	2.000	1.695	4.83	0.00	0.00
23.550	288.373	1.736	2916.0	2569.7	246.084	0.605	1.47		Sand	7.7			272.56	0.95	258.95	264.83	0.95	0.351	0.942	2.000	1.694	4.83	0.00	0.00
23.616	302.657	1.569	2923.9	2573.5	258.142	0.521	1.41		Sand	6.9			286.07	0.95	271.67	274.27	0.95	0.351	0.941	2.000	1.693	4.82	0.00	0.00
23.682	326.725	1.394	2931.8	2577.3	278.562	0.429	1.33		Sand	5.9			308.81	0.95	293.16	293.71	0.95	0.351	0.941	2.000	1.692	4.82	0.00	0.00
23.747	303.410	1.968	2939.7	2581.0	258.402	0.652	1.48		Sand	7.7			286.78	0.95	272.13	278.79	0.95	0.352	0.940	2.000	1.692	4.81	0.00	0.00
23.813	286.968	1.821	2947.5	2584.8	244.149	0.638	1.49		Sand	7.9			271.24	0.95	257.29	264.58	0.95	0.352	0.940	2.000	1.691	4.81	0.00	0.00
23.878	276.878	1.828	2955.4	2588.6	235.345	0.664	1.51		Sand	8.2			261.70	0.95	248.14	257.33	0.95	0.352	0.940	2.000	1.690	4.80	0.00	0.00
23.944	271.066	1.918	2963.3	2592.4	230.207	0.711	1.54		Sand	8.6			256.21	0.95	242.84	254.72	0.95	0.352	0.939	2.000	1.689	4.79	0.00	0.00
24.010	276.069	2.055	2971.2	2596.2	234.305	0.748	1.55		Sand	8.8			260.93	0.95	247.23	260.39	0.95	0.353	0.939	2.000	1.689	4.79	0.00	0.00
24.075	272.256	1.955	2979.0	2599.9	230.880	0.722	1.55		Sand	8.7			257.33	0.95	243.72	256.02	0.95	0.353	0.938	2.000	1.688	4.78	0.00	0.00
24.141	277.130	1.945	2986.9	2603.7	234.862	0.706	1.53		Sand	8.5			261.94	0.95	247.99	259.10	0.95	0.353	0.938	2.000	1.687	4.78	0.00	0.00
24.206	275.688	1.774	2994.8	2607.5	233.461	0.647	1.51		Sand	8.2			260.57	0.95	246.60	255.27	0.95	0.353	0.937	2.000	1.686	4.77	0.00	0.00
24.272	277.539	1.505	3002.6	2611.3	234.863	0.545	1.46		Sand	7.5			262.32	0.95	248.09	252.77	0.95	0.353	0.937	2.000	1.685	4.77	0.00	0.00
24.338	269.793	1.535	3010.5	2615.0	228.104	0.572	1.48		Sand	7.8			255.00	0.94	240.74	246.90	0.95	0.354	0.936	2.000	1.685	4.76	0.00	0.00
24.403	265.784	1.290	3018.4	2618.8	224.530	0.488	1.44		Sand	7.2			251.21	0.94	236.68	240.30	0.95	0.354	0.936	2.000	1.684	4.76	0.00	0.00
24.469	249.956	1.099	3026.3	2622.6	210.927	0.442	1.44		Sand	7.2			236.25	0.94	221.62	224.82	0.95	0.354	0.936	2.000	1.683	4.75	0.00	0.00
24.534	252.616	0.989	3034.1	2626.4	213.029	0.394	1.40		Sand	6.8			238.77	0.94	223.94	225.84	0.95	0.354	0.935	2.000	1.682	4.75	0.00	0.00
24.600	258.372	1.138	3042.0	2630.2	217.752	0.443	1.43		Sand	7.0			244.21	0.94	229.33	232.12	0.95	0.355	0.935	2.000	1.682	4.74	0.00	0.00
24.666	258.437	0.697	3049.9	2633.9	217.648	0.271	1.31		Sand	5.6			244.27	0.94	229.12	229.36	0.95	0.355	0.934	2.000	1.681	4.74	0.00	0.00
24.731	265.207	0.703	3057.7	2637.7	223.220	0.267	1.29		Sand	5.5			250.67	0.94	235.41	235.57	0.95	0.355	0.934	2.000	1.680	4.73	0.00	0.00
24.797	270.992	1.433	3065.6	2641.5	227.950	0.532	1.46		Sand	7.5			256.14	0.94	241.08	245.84	0.95	0.355	0.933	2.000	1.679	4.73	0.00	0.00
24.862	269.978	1.713	3073.5	2645.3	226.927	0.638	1.51		Sand	8.2			255.18	0.94	240.30	249.26	0.95	0.355	0.933	2.000	1.678	4.72	0.00	0.00
24.928	279.277	1.584	3081.4	2649.1	234.617	0.570	1.47		Sand	7.6			263.97	0.94	248.78	254.35	0.95	0.356	0.933	2.000	1.678	4.72	0.00	0.00
24.994	266.965	1.396	3089.2	2652.8	224.053	0.526	1.46		Sand	7.5			252.33	0.94	236.98	241.84	0.95	0.356	0.932	2.000	1.677	4.71	0.00	0.00
25.059	265.012	1.047	3097.1	2656.6	222.243	0.397	1.39		Sand	6.6			250.48	0.94	234.81	236.37	0.95	0.356	0.932	2.000	1.676	4.71	0.00	0.00
25.125	260.195	1.948	3105.0	2660.4	218.022	0.753	1.58		Sand	9.1			245.93	0.94	231.06	246.42	0.95	0.356	0.931	2.000	1.675	4.70	0.00	0.00
25.190	263.441	1.859	3112.8	2664.2	220.598	0.710	1.55		Sand	8.8			249.00	0.94	233.88	246.83	0.95	0.356	0.931	2.000	1.675	4.70	0.00	0.00
25.256	250.960	2.078	3120.7	2667.9	209.932	0.833	1.62		Sand	9.8			237.20	0.94	222.48	242.83	0.95	0.357	0.930	2.000	1.674	4.69	0.00	0.00
25.322	264.631	1.704	3128.6	2671.7	221.280	0.648	1.53		Sand	8.4			250.12	0.94	234.62	244.61	0.95	0.357	0.930	2.000	1.673	4.69	0.00	0.00
25.387	274.758	1.207	3136.5	2675.5	229.633	0.442	1.41		Sand	6.8			259.70	0.94	243.57	245.72	0.95	0.357	0.930	2.000	1.672	4.68	0.00	0.00
25.453	285.695	1.826	3144.3	2679.3	238.654	0.643	1.50		Sand	8.0			270.03	0.94	253.73	261.76	0.95	0.357	0.929	2.000	1.672	4.68	0.00	0.00
25.518	311.882	1.593	3152.2	2683.1	260.464	0.513	1.41		Sand	6.8			294.78	0.94	276.89	279.23	0.95	0.357	0.929	2.000	1.671	4.67	0.00	0.00
25.584	317.732	2.213	3160.1	2686.8	265.184	0.700	1.49		Sand	7.9			300.31	0.94	281.97	290.03	0.95	0.358	0.928	2.000	1.670	4.67	0.00	0.00
25.650	345.240	1.790	3168.0	2690.6	288.052	0.521	1.38		Sand	6.4			326.31	0.94	306.27	307.79	0.95	0.358	0.928	2.000	1.669	4.66	0.00	0.00
25.715	388.734	1.683	3175.8	2694.4	324.277	0.435	1.29		Sand	5.4			367.42	0.94	344.73	344.91	0.95	0.358	0.928	2.000	1.668	4.66	0.00	0.00
25.781	377.804	2.758	3183.7	2698.2	314.898	0.733	1.46		Sand	7.4			357.09	0.94	334.91	340.77	0.95	0.358	0.927	2.000	1.668	4.66	0.00	0.00
25.846	377.804	1.376	3191.6	2702.0	314.675	0.366	1.25		Sand	5.0			357.09	0.94	334.79	334.84	0.95	0.358	0.927	2.000	1.667	4.65	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
25.912	412.458	2.075	3199.4	2705.7	343.417	0.505	1.31		Sand	5.7			389.85	0.94	365.36	365.76	0.95	0.359	0.926	2.000	1.666	4.65	0.00	0.00
25.978	412.597	3.121	3207.3	2709.5	343.290	0.759	1.44		Sand	7.3			389.98	0.94	365.35	370.59	0.95	0.359	0.926	2.000	1.665	4.64	0.00	0.00
26.043	390.064	2.874	3215.2	2713.3	324.240	0.740	1.45		Sand	7.4			368.68	0.94	345.27	350.85	0.95	0.359	0.925	2.000	1.665	4.64	0.00	0.00
26.109	409.027	5.041	3223.1	2717.1	339.828	1.237	1.61		Sand	9.7			386.60	0.94	361.93	390.55	0.95	0.359	0.925	2.000	1.664	4.63	0.00	0.00
26.174	430.778	3.723	3230.9	2720.8	357.719	0.868	1.48		Sand	7.7			407.16	0.94	381.03	389.47	0.95	0.359	0.925	2.000	1.663	4.63	0.00	0.00
26.240	442.189	3.829	3238.8	2724.6	366.972	0.869	1.47		Sand	7.6			417.95	0.94	390.98	398.96	0.94	0.360	0.924	2.000	1.662	4.62	0.00	0.00
26.306	449.796	3.795	3246.7	2728.4	373.047	0.847	1.46		Sand	7.5			425.14	0.94	397.56	404.36	0.94	0.360	0.924	2.000	1.662	4.62	0.00	0.00
26.371	432.704	4.818	3254.5	2732.2	358.568	1.118	1.56		Sand	9.0			408.98	0.93	382.32	402.91	0.94	0.360	0.923	2.000	1.661	4.61	0.00	0.00
26.437	437.660	5.861	3262.4	2736.0	362.437	1.344	1.63		Sand	9.9			413.67	0.93	386.55	419.58	0.94	0.360	0.923	2.000	1.660	4.61	0.00	0.00
26.502	383.248	5.625	3270.3	2739.7	316.986	1.474	1.69		Sand	11.0			362.24	0.93	338.37	381.29	0.94	0.360	0.922	2.000	1.659	4.61	0.00	0.00
26.568	384.448	4.182	3278.2	2743.5	317.761	1.092	1.59		Sand	9.3			363.37	0.93	339.31	361.85	0.94	0.360	0.922	2.000	1.659	4.60	0.00	0.00
26.634	379.082	5.219	3286.0	2747.3	313.088	1.383	1.67		Sand	10.7			358.30	0.93	334.45	372.95	0.94	0.361	0.922	2.000	1.658	4.60	0.00	0.00
26.699	325.571	5.079	3293.9	2751.1	268.512	1.568	1.76		Sand	12.1			307.72	0.93	287.14	336.79	0.94	0.361	0.921	2.000	1.657	4.59	0.00	0.00
26.765	321.395	4.143	3301.8	2754.9	264.866	1.296	1.69		Sand	11.0			303.78	0.93	283.35	320.98	0.94	0.361	0.921	2.000	1.657	4.59	0.00	0.00
26.830	297.737	4.972	3309.6	2758.6	245.097	1.679	1.80		Sand	13.0			281.41	0.93	262.40	316.99	0.94	0.361	0.920	2.000	1.656	4.58	0.00	0.00
26.896	272.331	4.451	3317.5	2762.4	223.909	1.644	1.82		Sand	13.3			257.40	0.93	239.92	293.63	0.94	0.361	0.920	2.000	1.655	4.58	0.00	0.00
26.962	266.091	3.576	3325.4	2766.2	218.595	1.352	1.76		Sand	12.2			251.50	0.93	234.34	277.72	0.94	0.362	0.920	2.000	1.654	4.58	0.00	0.00
27.027	251.630	3.280	3333.3	2770.0	206.496	1.312	1.77		Sand	12.3			237.84	0.93	221.52	264.10	0.94	0.362	0.919	2.000	1.654	4.57	0.00	0.00
27.093	269.299	4.453	3341.1	2773.7	220.938	1.664	1.83		Sand	13.4			254.54	0.93	236.99	291.39	0.94	0.362	0.919	2.000	1.653	4.57	0.00	0.00
27.158	309.827	3.850	3349.0	2777.5	254.220	1.249	1.69		Sand	11.0			292.84	0.93	272.56	308.87	0.94	0.362	0.918	2.000	1.652	4.56	0.00	0.00
27.224	180.321	8.068	3356.9	2781.3	147.276	4.516	2.28		Sand	23.9			170.44	0.92	157.55	233.46	0.94	0.362	0.918	2.000	1.651	4.56	0.00	0.00
27.290	180.321	8.068	3364.8	2785.1	147.173	4.516	2.28		Sand	23.9			170.44	0.92	157.49	233.39	0.94	0.362	0.918	2.000	1.651	4.55	0.00	0.00
27.355	206.247	5.749	3372.6	2788.9	168.415	2.810	2.08		Sand	18.8			194.94	0.93	181.16	252.47	0.94	0.363	0.917	2.000	1.650	4.55	0.00	0.00
27.421	221.359	4.021	3380.5	2792.6	180.731	1.830	1.92		Sand	15.2			209.22	0.93	194.37	252.62	0.94	0.363	0.917	2.000	1.649	4.55	0.00	0.00
27.486	227.442	3.689	3388.4	2796.4	185.607	1.634	1.87		Sand	14.3			214.97	0.93	199.69	253.36	0.94	0.363	0.916	2.000	1.648	4.54	0.00	0.00
27.552	218.932	3.662	3396.2	2800.2	178.487	1.686	1.89		Sand	14.7			206.93	0.93	191.73	246.55	0.94	0.363	0.916	2.000	1.648	4.54	0.00	0.00
27.618	204.750	3.257	3404.1	2804.0	166.718	1.604	1.89		Sand	14.7			193.53	0.92	178.32	230.84	0.94	0.363	0.916	2.000	1.647	4.53	0.00	0.00
27.683	186.588	2.967	3412.0	2807.8	151.701	1.605	1.92		Sand	15.3			176.36	0.92	161.47	213.54	0.94	0.363	0.915	2.000	1.646	4.53	0.00	0.00
27.749	154.848	2.186	3419.9	2811.5	125.569	1.427	1.94		Sand	15.7	165		165.00	0.91	150.36	202.01	0.94	0.364	0.924	1.251	1.039	2.86	0.00	0.00
27.814	91.844	0.778	3427.7	2815.3	73.855	0.863	1.98		Sand	16.4	160		160.00	0.91	145.59	199.25	0.94	0.364	0.926	1.100	0.915	2.52	0.00	0.00
27.880	79.605	0.849	3435.6	2819.1	63.780	1.090	2.09		Sand	19.0	160		160.00	0.91	146.03	208.34	0.94	0.364	0.917	1.730	1.426	3.92	0.00	0.00
27.946	54.570	1.604	3443.5	2822.9	43.247	3.035	2.50		Sand	30.4	150		150.00	0.91	137.03	212.14	0.94	0.364	0.914	2.000	1.643	4.51	0.00	0.00
28.011	38.984	1.563	3451.3	2826.6	26.362	4.195	2.76		Clay	39.1			36.85	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	25.537	1.855	3459.2	2830.4	16.822	7.792	3.08		Clay	52.2			24.14	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	21.417	2.088	3467.1	2834.2	13.890	10.608	3.23		Clay	59.2			20.24	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.208	18.572	2.144	3475.0	2838.0	11.864	12.736	3.34		Clay	64.3			17.55	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	17.158	2.112	3482.8	2841.8	10.850	13.700	3.39		Clay	66.9			16.22	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	15.828	2.126	3490.7	2845.5	9.898	15.097	3.45		Clay	69.9			14.96	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	16.033	1.654	3498.6	2849.3	10.026	11.580	3.36		Clay	65.6			15.15	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	16.878	1.190	3506.4	2853.1	10.602	7.868	3.23		Clay	59.2			15.95	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	18.990	1.042	3514.3	2856.9	12.064	6.047	3.12		Clay	53.8			17.95	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	59.081	0.978	3522.2	2860.7	46.596	1.706	2.31		Sand	24.8	75	1.8	135.00	0.90	121.60	187.32	0.94	0.366	0.931	0.681	0.570	1.56	0.00	0.00
28.667	82.218	0.971	3530.1	2864.4	65.357	1.207	2.11		Sand	19.4		1.8	139.88	0.90	125.74	183.72	0.94	0.366	0.933	0.602	0.506	1.38	0.00	0.00
28.733	80.619	0.949	3537.9	2868.2	64.013	1.204	2.11		Sand	19.6		1.8	137.16	0.90	123.08	180.69	0.94	0.366	0.935	0.547	0.460	1.26	0.00	0.00
28.798	65.823	0.856	3545.8	2872.0	51.964	1.336	2.21		Sand	22.0	70	1.8	126.00	0.89	112.57	171.92	0.94	0.366	0.940	0.428	0.362	0.99	0.01	0.01
28.864	39.272	0.811	3553.7	2875.8	30.400	2.163	2.52		Sand	31.1	70	1.8	126.00	0.90	112.93	180.24	0.94	0.366	0.935	0.540	0.454	1.24	0.00	0.00
28.930	30.866	0.824	3561.6	2879.5	20.201	2.833	2.74		Clay	38.3			29.17	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	26.235	0.981	3569.4	2883.3	16.960	4.012	2.89		Clay	44.2			24.80	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	24.662	0.984	3577.3	2887.1	15.845	4.302	2.93		Clay	45.8			23.31	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.126	21.845	1.077	3585.2	2890.9	13.873	5.371	3.04		Clay	50.3			20.65	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	19.501	0.972	3593.0	2894.7	12.233	5.490	3.08		Clay	52.4			18.43	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	18.413	0.982	3600.9	2898.4	11.463	5.911	3.13		Clay	54.3			17.40	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	17.483	0.923	3608.8	2902.2	10.805	5.887	3.15		Clay	55.1			16.52	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.389	17.335	0.885	3616.7	2906.0	10.686	5.700	3.14		Clay	54.9			16.38	0.92	n.a.	n.a.	0.93	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	17.316	0.806	3624.5	2909.8	10.656	5.199	3.12		Clay	53.8			16.37	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	17.223	0.669	3632.4	2913.6	10.576	4.342	3.07		Clay	51.8			16.28	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	17.185	0.589	3640.3	2917.3	10.534	3.833	3.04		Clay	50.4			16.24	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	17.297	0.577	3648.1	2921.1	10.594	3.729	3.03		Clay	50.0			16.35	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	16.488	0.570	3656.0	2924.9	10.024	3.888	3.06		Clay	51.3			15.58	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	16.219	0.570	3663.9	2928.7	9.825	3.962	3.07		Clay	51.9			15.33	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	15.968	0.639	3671.8	2932.4	9.638	4.522	3.11		Clay	53.7			15.09	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	14.898	0.643	3679.6	2936.2	8.895	4.924	3.16		Clay	56.0			14.08	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	15.307	0.717	3687.5	2940.0	9.159	5.326	3.17		Clay	56.4			14.47	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	14.814	0.731	3695.4	2943.8	8.809	5.638	3.20		Clay	57.8			14.00	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	14.582	0.725	3703.2	2947.6	8.638	5.695	3.21		Clay	58.2			13.78	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	13.865	0.737	3711.1	2951.3	8.138	6.137	3.25		Clay	60.1			13.10	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	13.958	0.719	3719.0	2955.1	8.188	5.943	3.24		Clay	59.6			13.19	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
30.307	14.043	0.726	3726.9	2958.9	8.233	5.961	3.24		Clay	59.6			13.27	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	13.977	0.695	3734.7	2962.7	8.175	5.739	3.23		Clay	59.2			13.21	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	14.591	0.716	3742.6	2966.5	8.576	5.629	3.21		Clay	58.2			13.79	0.91	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	15.047	0.737	3750.5	2970.2	8.869	5.595	3.20		Clay	57.6			14.22	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	14.582	0.748	3758.4	2974.0	8.543	5.888	3.23		Clay	58.8			13.78	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	14.629	0.752	3766.2	2977.8	8.561	5.900	3.23		Clay	58.8			13.83	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	14.359	0.748	3774.1	2981.6	8.366	5.997	3.24		Clay	59.4			13.57	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	14.117	0.743	3782.0	2985.3	8.191	6.077	3.25		Clay	59.9			13.34	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	14.024	0.726	3789.8	2989.1	8.115	5.986	3.25		Clay	59.9			13.26	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	14.368	0.729	3797.7	2992.9	8.332	5.846	3.23		Clay	59.1			13.58	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	15.047	0.680	3805.6	2996.7	8.773	5.173	3.18		Clay	56.8			14.22	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	15.828	0.648	3813.5	3000.5	9.279	4.655	3.13		Clay	54.6			14.96	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	16.237	0.670	3821.3	3004.2	9.537	4.677	3.13		Clay	54.2			15.35	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	16.181	0.683	3829.2	3008.0	9.486	4.787	3.13		Clay	54.6			15.29	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	16.851	0.701	3837.1	3011.8	9.916	4.694	3.11		Clay	53.7			15.93	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	18.488	0.689	3844.9	3015.6	10.987	4.159	3.05		Clay	50.7			17.47	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	19.250	0.714	3852.8	3019.4	11.475	4.122	3.03		Clay	50.0			18.19	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	24.644	0.770	3860.7	3023.1	15.027	3.390	2.88		Clay	44.0			23.29	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	25.853	0.841	3868.6	3026.9	15.804	3.516	2.88		Clay	43.7			24.44	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	26.978	0.931	3876.4	3030.7	16.524	3.718	2.88		Clay	43.7			25.50	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	27.946	1.085	3884.3	3034.5	17.139	4.172	2.90		Clay	44.4			26.41	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	25.453	1.220	3892.2	3038.2	15.474	5.190	2.99		Clay	48.3			24.06	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	31.126	1.299	3900.0	3042.0	19.182	4.452	2.88		Clay	43.7			29.42	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	36.771	1.383	3907.9	3045.8	22.862	3.972	2.79		Clay	40.2			34.76	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	42.397	1.574	3915.8	3049.6	26.521	3.892	2.73		Clay	38.2			40.07	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	50.097	1.927	3923.7	3053.4	31.529	4.003	2.68		Clay	36.5			47.35	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	52.711	2.115	3931.5	3057.1	33.198	4.168	2.68		Clay	36.3			49.82	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	52.254	2.178	3939.4	3060.9	32.856	4.331	2.69		Clay	36.9			49.39	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	47.373	2.230	3947.3	3064.7	29.627	4.912	2.77		Clay	39.4			44.78	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	48.349	2.537	3955.2	3068.5	30.224	5.471	2.79		Clay	40.4			45.70	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	46.945	2.837	3963.0	3072.3	29.271	6.310	2.85		Clay	42.4			44.37	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	41.895	2.822	3970.9	3076.0	25.949	7.071	2.92		Clay	45.3			39.60	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.406	41.049	2.708	3978.8	3079.8	25.365	6.933	2.92		Clay	45.3			38.80	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	42.751	2.577	3986.6	3083.6	26.435	6.323	2.88		Clay	43.7			40.41	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	46.609	2.609	3994.5	3087.4	28.900	5.848	2.83		Clay	41.7			44.05	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	56.123	2.315	4002.4	3091.1	35.017	4.277	2.67		Clay	36.0			53.05	0.90	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	69.589	2.280	4010.3	3094.9	52.819	3.374	2.47		Sand	29.4	150		150.00	0.88	132.72	205.85	0.92	0.373	0.893	1.515	1.217	3.26	0.00	0.00
32.734	72.063	1.861	4018.1	3098.7	54.716	2.657	2.39		Sand	26.9	150		150.00	0.88	132.54	203.81	0.92	0.373	0.895	1.366	1.100	2.95	0.00	0.00
32.800	76.647	1.807	4026.0	3102.5	58.258	2.421	2.34		Sand	25.6	150		150.00	0.88	132.39	202.33	0.92	0.374	0.897	1.271	1.025	2.74	0.00	0.00
32.866	81.428	1.857	4033.9	3106.3	61.949	2.338	2.31		Sand	24.7	150		150.00	0.88	132.26	201.26	0.92	0.374	0.898	1.207	0.974	2.61	0.00	0.00
32.931	83.027	1.732	4041.7	3110.0	63.155	2.138	2.28		Sand	23.8	155		155.00	0.88	136.97	206.31	0.92	0.374	0.891	1.552	1.244	3.33	0.00	0.00
32.997	91.954	1.680	4049.6	3113.8	70.069	1.868	2.21		Sand	21.9	155		155.00	0.88	136.68	202.95	0.92	0.374	0.895	1.309	1.054	2.82	0.00	0.00
33.062	95.907	1.594	4057.5	3117.6	73.102	1.698	2.16		Sand	20.8	155		155.00	0.88	136.46	200.66	0.92	0.374	0.897	1.173	0.947	2.53	0.00	0.00
33.128	108.201	1.326	4065.4	3121.4	82.622	1.249	2.04		Sand	17.8	165		165.00	0.88	145.46	204.01	0.92	0.374	0.893	1.380	1.108	2.96	0.00	0.00
33.194	109.020	1.253	4073.2	3125.2	83.206	1.171	2.02		Sand	17.3	165		165.00	0.88	145.27	202.20	0.92	0.374	0.895	1.262	1.016	2.72	0.00	0.00
33.259	110.369	1.422	4081.1	3128.9	84.201	1.313	2.04		Sand	18.0	165		165.00	0.88	145.38	204.50	0.92	0.374	0.892	1.414	1.134	3.03	0.00	0.00
33.325	125.871	1.654	4089.0	3132.7	96.189	1.336	2.01		Sand	17.1	165		165.00	0.88	145.08	201.14	0.92	0.374	0.895	1.200	0.967	2.58	0.00	0.00
33.390	158.717	1.890	4096.8	3136.5	121.628	1.206	1.90		Sand	14.9	175		175.00	0.88	153.89	202.20	0.92	0.374	0.894	1.262	1.015	2.71	0.00	0.00
33.456	190.048	1.437	4104.7	3140.3	145.860	0.764	1.71		Sand	11.3	200		200.00	0.88	176.04	204.71	0.92	0.374	0.890	1.429	1.144	3.06	0.00	0.00
33.522	229.906	1.521	4112.6	3144.0	176.675	0.668	1.61		Sand	9.6			217.30	0.88	191.58	208.68	0.92	0.375	0.884	1.762	1.401	3.74	0.00	0.00
33.587	313.194	2.189	4120.5	3147.8	241.109	0.704	1.52		Sand	8.4			296.02	0.90	266.58	277.31	0.92	0.375	0.881	2.000	1.585	4.23	0.00	0.00
33.653	320.726	2.189	4128.3	3151.6	246.795	0.687	1.51		Sand	8.2			303.14	0.90	272.90	282.31	0.92	0.375	0.880	2.000	1.584	4.23	0.00	0.00
33.718	350.131	3.169	4136.2	3155.4	269.404	0.910	1.57		Sand	9.1			330.94	0.90	297.83	315.85	0.92	0.375	0.880	2.000	1.583	4.22	0.00	0.00
33.784	382.392	3.180	4144.1	3159.2	294.195	0.836	1.52		Sand	8.3			361.43	0.90	325.16	337.08	0.92	0.375	0.880	2.000	1.583	4.22	0.00	0.00
33.850	381.350	3.416	4152.0	3162.9	293.211	0.901	1.54		Sand	8.7			360.44	0.90	324.18	339.36	0.92	0.375	0.879	2.000	1.582	4.22	0.00	0.00
33.915	395.844	3.416	4159.8	3166.7	304.231	0.868	1.52		Sand	8.3			374.14	0.90	336.39	348.95	0.92	0.375	0.879	2.000	1.581	4.22	0.00	0.00
33.981	417.601	4.053	4167.7	3170.5	320.847	0.975	1.55		Sand	8.7			394.71	0.90	354.77	371.35	0.92	0.375	0.879	2.000	1.581	4.21	0.00	0.00
34.046	409.231	3.960	4175.6	3174.3	314.194	0.973	1.55		Sand	8.8			386.80	0.90	347.55	364.57	0.92	0.375	0.878	2.000	1.580	4.21	0.00	0.00
34.112	434.358	3.945	4183.4	3178.1	333.383	0.913	1.51		Sand	8.2			410.55	0.90	368.77	381.18	0.92	0.375	0.878	2.000	1.579	4.21	0.00	0.00
34.178	480.122	3.950	4191.3	3181.8	368.456	0.826	1.45		Sand	7.4			453.80	0.90	407.50	413.98	0.92	0.375	0.878	2.000	1.579	4.20	0.00	0.00
34.243	522.687	3.786	4199.2	3185.6	401.023	0.727	1.39		Sand	6.5			494.03	0.90	443.49	445.88	0.92	0.376	0.877	2.000	1.578	4.20	0.00	0.00
34.309	512.811	4.019	4207.1	3189.4	393.179	0.787	1.42		Sand	6.9			484.70	0.90	434.97	439.09	0.92	0.376	0.877	2.000	1.577	4.20	0.00	0.00
34.374	536.823	4.226	4214.9	3193.2	411.419	0.790	1.41		Sand	6.8			507.39	0.90	455.20	458.79	0.92	0.376	0.877	2.000	1.577	4.20	0.00	0.00
34.440	556.788	4.400	4222.8	3196.9	426.525	0.793	1.40		Sand	6.7			526.26	0.90	471.98	475.19	0.92	0.376	0.876	2.000	1.576	4.19	0.00	0.00
34.506	584.092	4.026	4230.7	3200.7	447.253	0.692	1.34		Sand	6.0			552.07	0.90	494.97	495.96	0.92	0.376	0.876	2.000	1.576	4.19	0.00	0.00
34.571	608.662	4.666	4238.5	3204.5	465.858	0.769	1.37		Sand	6.3			575.29	0.90	515.63	517.46	0.92	0.376	0.875	2.000	1.575	4.19	0.00	0.00
34.637	574.160	5.193	4246.4	3208.3	439.097	0.908	1.44		Sand	7.2			542.68	0.90	486.25	492.51	0.92	0.376	0.875	2.000	1.574	4.19	0.00	0.00

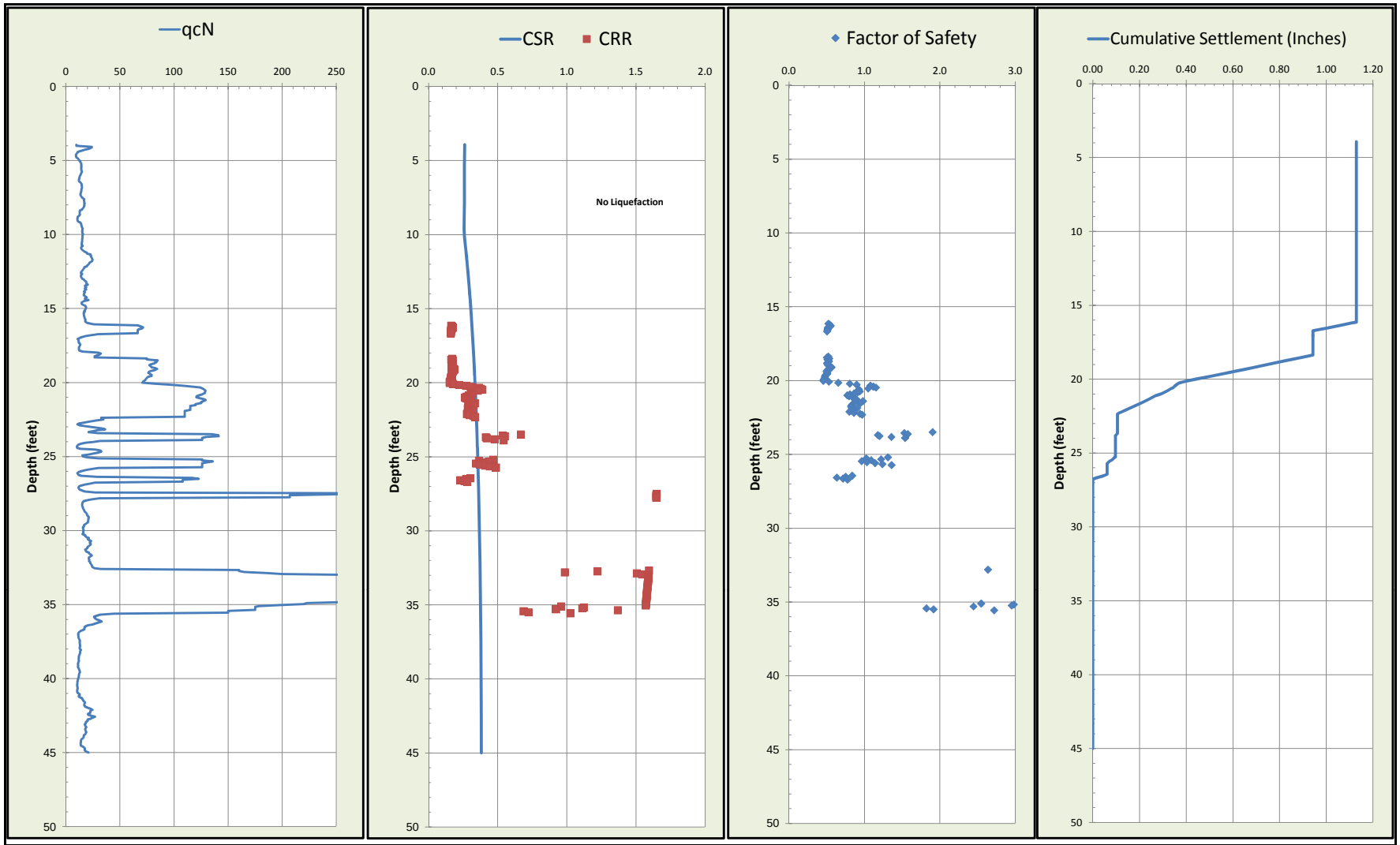
CORNERSTONE EARTH GROUP

CPT No.	2

PGA (A_{max})	0.40

Total Settlement:	2.09	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
34.702	548.689	5.179	4254.3	3212.1	419.295	0.948	1.47		Sand	7.6			518.61	0.90	464.53	473.23	0.92	0.376	0.875	2.000	1.574	4.18	0.00	0.00
34.768	517.721	4.936	4262.2	3215.8	395.303	0.957	1.48		Sand	7.8			489.34	0.90	438.18	448.60	0.92	0.376	0.874	2.000	1.573	4.18	0.00	0.00
34.834	516.409	6.204	4270.0	3219.6	394.062	1.206	1.57		Sand	9.0			488.10	0.90	436.93	460.67	0.92	0.376	0.874	2.000	1.572	4.18	0.00	0.00
34.899	517.061	5.416	4277.9	3223.4	394.327	1.052	1.52		Sand	8.3			488.72	0.89	437.35	452.46	0.92	0.376	0.874	2.000	1.572	4.18	0.00	0.00
34.965	522.826	5.983	4285.8	3227.2	398.506	1.149	1.55		Sand	8.7			494.16	0.89	442.09	462.22	0.92	0.376	0.873	2.000	1.571	4.17	0.00	0.00
35.030	522.780	6.179	4293.6	3231.0	398.234	1.187	1.56		Sand	8.9			494.12	0.89	441.91	464.24	0.92	0.377	0.873	2.000	1.570	4.17	0.00	0.00
35.096	581.981	6.013	4301.5	3234.7	443.255	1.037	1.48		Sand	7.8			550.08	0.89	491.81	503.30	0.92	0.377	0.873	2.000	1.570	4.17	0.00	0.00
35.162	541.045	6.498	4309.4	3238.5	411.718	1.206	1.56		Sand	8.9			511.38	0.89	457.07	479.59	0.92	0.377	0.872	2.000	1.569	4.17	0.00	0.00
35.227	559.291	4.928	4317.3	3242.3	425.407	0.885	1.44		Sand	7.2			528.63	0.89	472.34	478.34	0.92	0.377	0.872	2.000	1.569	4.16	0.00	0.00
35.293	607.816	4.349	4325.1	3246.1	462.187	0.718	1.34		Sand	6.0			574.50	0.89	513.16	514.30	0.92	0.377	0.872	2.000	1.568	4.16	0.00	0.00
35.358	577.740	5.399	4333.0	3249.8	438.977	0.938	1.45		Sand	7.4			546.07	0.89	487.62	495.03	0.92	0.377	0.871	2.000	1.567	4.16	0.00	0.00
35.424	550.716	5.444	4340.9	3253.6	418.120	0.992	1.48		Sand	7.8			520.53	0.89	464.67	475.44	0.92	0.377	0.871	2.000	1.567	4.16	0.00	0.00
35.490	536.181	5.072	4348.8	3257.4	406.802	0.950	1.47		Sand	7.7			506.79	0.89	452.27	461.73	0.91	0.377	0.871	2.000	1.566	4.15	0.00	0.00
35.555	524.510	6.171	4356.6	3261.2	397.678	1.181	1.56		Sand	8.9			495.76	0.89	442.29	464.38	0.91	0.377	0.870	2.000	1.565	4.15	0.00	0.00
35.621	521.821	5.679	4364.5	3265.0	395.398	1.093	1.53		Sand	8.5			493.21	0.89	439.89	457.15	0.91	0.377	0.870	2.000	1.565	4.15	0.00	0.00
35.686	537.678	4.871	4372.4	3268.7	407.226	0.910	1.46		Sand	7.5			508.20	0.89	453.12	460.89	0.91	0.377	0.870	2.000	1.564	4.15	0.00	0.00
35.752	421.126	6.547	4380.2	3272.5	318.404	1.563	1.71		Sand	11.3			398.04	0.89	354.79	403.70	0.91	0.377	0.869	2.000	1.564	4.14	0.00	0.00
35.818	405.679	6.042	4388.1	3276.3	306.484	1.497	1.71		Sand	11.2			383.44	0.89	341.67	387.90	0.91	0.377	0.869	2.000	1.563	4.14	0.00	0.00
35.883	395.421	6.266	4396.0	3280.1	298.517	1.593	1.74		Sand	11.7			373.74	0.89	332.93	384.23	0.91	0.377	0.868	2.000	1.562	4.14	0.00	0.00
35.949	395.895	5.360	4403.9	3283.9	298.702	1.361	1.68		Sand	10.8			374.19	0.89	333.23	372.95	0.91	0.378	0.868	2.000	1.562	4.14	0.00	0.00
36.014	388.865	5.688	4411.7	3287.6	293.197	1.471	1.71		Sand	11.3			367.55	0.89	327.21	372.88	0.91	0.378	0.868	2.000	1.561	4.13	0.00	0.00
36.080	393.329	5.314	4419.6	3291.4	296.408	1.359	1.68		Sand	10.8			371.77	0.89	330.87	370.62	0.91	0.378	0.867	2.000	1.560	4.13	0.00	0.00
36.146	405.037	5.055	4427.5	3295.2	305.103	1.255	1.65		Sand	10.2			382.83	0.89	340.61	374.13	0.91	0.378	0.867	2.000	1.560	4.13	0.00	0.00
36.211	401.261	3.739	4435.3	3299.0	302.067	0.937	1.55		Sand	8.7			379.26	0.89	337.33	353.70	0.91	0.378	0.867	2.000	1.559	4.13	0.00	0.00
36.277	408.348	3.929	4443.2	3302.7	307.253	0.967	1.56		Sand	8.8			385.96	0.89	343.19	360.68	0.91	0.378	0.866	2.000	1.559	4.12	0.00	0.00
36.342	402.898	3.603	4451.1	3306.5	302.953	0.899	1.53		Sand	8.5			380.81	0.89	338.51	352.86	0.91	0.378	0.866	2.000	1.558	4.12	0.00	0.00
36.408	422.790	4.002	4459.0	3310.3	317.810	0.952	1.54		Sand	8.6			399.61	0.89	355.11	370.85	0.91	0.378	0.866	2.000	1.557	4.12	0.00	0.00
36.474	431.569	3.129	4466.8	3314.1	324.256	0.729	1.45		Sand	7.3			407.91	0.89	362.38	367.78	0.91	0.378	0.865	2.000	1.557	4.12	0.00	0.00
36.539	429.393	3.797	4474.7	3317.9	322.426	0.889	1.51		Sand	8.2			405.85	0.89	360.44	372.66	0.91	0.378	0.865	2.000	1.556	4.12	0.00	0.00
36.605	455.776	4.192	4482.6	3321.6	342.142	0.924	1.51		Sand	8.2			430.79	0.89	382.47	394.90	0.91	0.378	0.865	2.000	1.556	4.11	0.00	0.00
36.670	468.889	4.192	4490.4	3325.4	351.831	0.898	1.49		Sand	7.9			443.18	0.89	393.36	403.88	0.91	0.378	0.864	2.000	1.555	4.11	0.00	0.00



CORNERSTONE EARTH GROUP

Liquefaction Analysis Summary

River Corp. III

San Jose, California

Project Number

102-7-2

Figure Number

Figure C-3

4/18/2012

CPT No. 3

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
3.936	10.388	0.265	492.0	492.0	26.615	2.613	2.62		Unsaturated	34.2			9.82	1.70	16.69	52.07	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.002	10.388	0.265	500.2	500.2	26.298	2.614	2.62		Unsaturated	34.4			9.82	1.70	16.69	52.09	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.067	25.276	0.450	508.4	508.4	48.249	1.798	2.32		Unsaturated	24.9			23.89	1.70	40.61	80.80	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.133	25.369	0.502	516.6	516.6	48.035	1.999	2.35		Unsaturated	25.8			23.98	1.70	40.76	81.54	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.198	23.408	0.554	524.8	524.8	43.928	2.394	2.43		Unsaturated	28.1			22.12	1.70	37.61	78.51	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.264	19.074	0.694	533.0	533.0	46.666	3.690	2.54		Unsaturated	31.5			18.03	1.70	30.65	70.28	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.330	15.754	0.775	541.2	541.2	38.009	5.005	2.69		Unsaturated	36.8			14.89	1.70	25.31	63.98	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.395	12.313	0.803	549.4	549.4	43.823	6.670	2.74		Unsaturated	38.6			11.64	1.70	19.78	56.69	1.00	0.260	1.100	n.a.	n.a.	n.a.	0.00	0.00
4.461	11.383	0.838	557.6	557.6	39.829	7.547	2.81		Unsaturated	41.1			10.76	1.70	18.29	54.83	1.00	0.260	1.099	n.a.	n.a.	n.a.	0.00	0.00
4.526	10.500	0.903	565.8	565.8	36.116	8.838	2.89		Unsaturated	44.2			9.92	1.70	16.87	53.04	1.00	0.260	1.096	n.a.	n.a.	n.a.	0.00	0.00
4.592	9.997	0.947	574.0	574.0	33.833	9.753	2.94		Unsaturated	46.2			9.45	1.70	16.06	51.99	1.00	0.260	1.094	n.a.	n.a.	n.a.	0.00	0.00
4.658	9.895	0.838	582.2	582.2	32.992	8.726	2.91		Unsaturated	45.1			9.35	1.70	15.90	51.74	1.00	0.260	1.093	n.a.	n.a.	n.a.	0.00	0.00
4.723	10.118	0.838	590.4	590.4	33.275	8.531	2.90		Unsaturated	44.7			9.56	1.70	16.26	52.22	1.00	0.259	1.092	n.a.	n.a.	n.a.	0.00	0.00
4.789	10.397	0.809	598.6	598.6	33.738	8.012	2.88		Unsaturated	43.7			9.83	1.70	16.71	52.80	1.00	0.259	1.092	n.a.	n.a.	n.a.	0.00	0.00
4.854	11.727	0.765	606.8	606.8	37.652	6.697	2.79		Unsaturated	40.3			11.08	1.70	18.84	55.54	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
4.920	12.666	0.709	615.0	615.0	40.190	5.737	2.72		Unsaturated	37.7			11.97	1.70	20.35	57.39	1.00	0.259	1.094	n.a.	n.a.	n.a.	0.00	0.00
4.986	13.122	0.682	623.2	623.2	41.112	5.324	2.69		Unsaturated	36.7			12.40	1.70	21.08	58.27	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.051	13.986	0.646	631.4	631.4	43.302	4.726	2.64		Unsaturated	34.8			13.22	1.70	22.47	59.92	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.117	14.368	0.661	639.6	639.6	43.928	4.705	2.63		Unsaturated	34.6			13.58	1.70	23.09	60.72	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.182	15.084	0.693	647.8	647.8	45.570	4.695	2.62		Unsaturated	34.2			14.26	1.70	24.24	62.20	1.00	0.259	1.093	n.a.	n.a.	n.a.	0.00	0.00
5.248	15.047	0.773	656.0	656.0	44.875	5.252	2.66		Unsaturated	35.6			14.22	1.70	24.18	62.31	1.00	0.259	1.092	n.a.	n.a.	n.a.	0.00	0.00
5.314	15.186	0.797	664.2	664.2	44.727	5.366	2.67		Unsaturated	35.9			14.35	1.70	24.40	62.65	1.00	0.259	1.092	n.a.	n.a.	n.a.	0.00	0.00
5.379	15.028	0.900	672.4	672.4	43.700	6.126	2.72		Unsaturated	37.6			14.20	1.70	24.15	62.49	1.00	0.259	1.091	n.a.	n.a.	n.a.	0.00	0.00
5.445	15.233	0.951	680.6	680.6	43.763	6.386	2.73		Unsaturated	38.1			14.40	1.70	24.48	62.97	1.00	0.259	1.090	n.a.	n.a.	n.a.	0.00	0.00
5.510	15.028	1.007	688.8	688.8	42.635	6.858	2.76		Unsaturated	39.2			14.20	1.70	24.15	62.62	1.00	0.259	1.089	n.a.	n.a.	n.a.	0.00	0.00
5.576	14.964	1.036	697.0	697.0	41.938	7.088	2.77		Unsaturated	39.8			14.14	1.70	24.04	62.52	1.00	0.259	1.088	n.a.	n.a.	n.a.	0.00	0.00
5.642	15.177	1.045	705.2	705.2	42.043	7.049	2.77		Unsaturated	39.7			14.34	1.70	24.39	62.97	1.00	0.259	1.087	n.a.	n.a.	n.a.	0.00	0.00
5.707	15.456	1.049	713.4	713.4	42.331	6.947	2.77		Unsaturated	39.4			14.61	1.70	24.83	63.56	1.00	0.259	1.087	n.a.	n.a.	n.a.	0.00	0.00
5.773	15.809	1.049	721.6	721.6	42.817	6.790	2.75		Unsaturated	39.0			14.94	1.70	25.40	64.30	1.00	0.259	1.086	n.a.	n.a.	n.a.	0.00	0.00
5.838	15.233	1.066	729.8	729.8	40.746	7.170	2.79		Unsaturated	40.2			14.40	1.70	24.48	63.13	1.00	0.259	1.085	n.a.	n.a.	n.a.	0.00	0.00
5.904	14.712	1.079	738.0	738.0	38.870	7.523	2.82		Unsaturated	41.3			13.91	1.70	23.64	62.06	1.00	0.259	1.083	n.a.	n.a.	n.a.	0.00	0.00
5.970	14.582	1.093	746.2	746.2	38.083	7.692	2.83		Unsaturated	41.8			13.78	1.70	23.43	61.80	1.00	0.259	1.082	n.a.	n.a.	n.a.	0.00	0.00
6.035	14.043	1.097	754.4	754.4	36.230	8.027	2.86		Unsaturated	42.9			13.27	1.70	22.56	60.68	1.00	0.259	1.080	n.a.	n.a.	n.a.	0.00	0.00
6.101	13.512	1.116	762.6	762.6	34.437	8.499	2.89		Unsaturated	44.2			12.77	1.70	21.71	59.57	1.00	0.259	1.079	n.a.	n.a.	n.a.	0.00	0.00
6.166	13.224	1.108	770.8	770.8	33.312	8.630	2.91		Unsaturated	44.8			12.50	1.70	21.25	58.96	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
6.232	13.141	1.105	779.0	779.0	32.738	8.666	2.91		Unsaturated	45.1			12.42	1.70	21.12	58.79	1.00	0.259	1.077	n.a.	n.a.	n.a.	0.00	0.00
6.298	12.880	1.094	787.2	787.2	31.724	8.762	2.92		Unsaturated	45.6			12.17	1.70	20.70	58.23	1.00	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.363	12.815	1.042	795.4	795.4	31.223	8.392	2.92		Unsaturated	45.2			12.11	1.70	20.59	58.08	1.00	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.429	13.336	1.042	803.6	803.6	32.191	8.056	2.89		Unsaturated	44.3			12.60	1.70	21.43	59.19	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.494	14.600	1.042	811.8	811.8	34.969	7.341	2.84		Unsaturated	42.2			13.80	1.70	23.46	61.86	0.99	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.560	15.364	0.997	820.0	820.0	36.473	6.667	2.80		Unsaturated	40.6			14.52	1.70	24.69	63.43	0.99	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.626	15.512	0.986	828.2	828.2	36.460	6.531	2.79		Unsaturated	40.3			14.66	1.70	24.92	63.74	0.99	0.259	1.075	n.a.	n.a.	n.a.	0.00	0.00
6.691	15.456	1.028	836.4	836.4	35.958	6.836	2.81		Unsaturated	41.0			14.61	1.70	24.83	63.66	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.757	15.652	1.097	844.6	844.6	36.064	7.203	2.82		Unsaturated	41.6			14.79	1.70	25.15	64.12	0.99	0.259	1.074	n.a.	n.a.	n.a.	0.00	0.00
6.822	15.754	1.101	852.8	852.8	35.947	7.183	2.82		Unsaturated	41.6			14.89	1.70	25.31	64.34	0.99	0.258	1.073	n.a.	n.a.	n.a.	0.00	0.00
6.888	15.707	1.140	861.0	861.0	35.485	7.462	2.84		Unsaturated	42.3			14.85	1.70	25.24	64.26	0.99	0.258	1.072	n.a.	n.a.	n.a.	0.00	0.00
6.954	15.354	1.159	869.2	869.2	34.329	7.768	2.86		Unsaturated	43.1			14.51	1.70	24.60	63.44	0.99	0.258	1.071	n.a.	n.a.	n.a.	0.00	0.00
7.019	15.195	1.182	877.4	877.4	33.636	8.010	2.88		Unsaturated	43.8			14.36	1.69	24.24	62.97	0.99	0.258	1.070	n.a.	n.a.	n.a.	0.00	0.00
7.085	15.047	1.270	885.6	885.6	32.981	8.696	2.91		Unsaturated	45.0			14.22	1.68	23.90	62.55	0.99	0.258	1.069	n.a.	n.a.	n.a.	0.00	0.00
7.150	14.721	1.300	893.8	893.8	31.940	9.107	2.93		Unsaturated	46.0			13.91	1.67	23.30	61.76	0.99	0.258	1.068	n.a.	n.a.	n.a.	0.00	0.00
7.216	14.489	1.301	902.0	902.0	31.126	9.268	2.95		Unsaturated	46.6			13.69	1.67	22.85	61.16	0.99	0.258	1.067	n.a.	n.a.	n.a.	0.00	0.00
7.282	14.229	1.286	910.2	910.2	30.266	9.336	2.96		Unsaturated	47.0			13.45	1.66	22.36	60.50	0.99	0.258	1.066	n.a.	n.a.	n.a.	0.00	0.00
7.347	14.554	1.281	918.4	918.4	30.694	9.088	2.95		Unsaturated	46.5			13.76	1.65	22.72	60.98	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.413	15.047	1.220	926.6	926.6	31.478	8.366	2.91		Unsaturated	45.1			14.22	1.64	23.31	61.76	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.478	15.642	1.169	934.8	934.8	32.466	7.704	2.88		Unsaturated	43.7			14.78	1.63	24.05	62.71	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.544	16.572	1.142	943.0	943.0	34.147	7.093	2.84		Unsaturated	42.1			15.66	1.61	25.25	64.27	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.610	17.967	1.137	951.2	951.2	36.778	6.500	2.79		Unsaturated	40.2			16.98	1.59	27.08	66.64	0.99	0.258	1.065	n.a.	n.a.	n.a.	0.00	0.00
7.675	17.670	1.168	959.4	959.4	35.836	6.795	2.81		Unsaturated	41.0			16.70	1.59	26.54	65.96	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.741	17.874	1.193	967.6	967.6	35.945	6.860	2.81		Unsaturated	41.1			16.89	1.58	26.70	66.18	0.99	0.258	1.064	n.a.	n.a.	n.a.	0.00	0.00
7.806	18.106	1.260	975.8	975.8	36.110	7.152	2.82		Unsaturated	41.5			17.11	1.57	26.89	66.46	0.99	0.258	1.063	n.a.	n.a.	n.a.	0.00	0.00
7.872	18.172	1.318	984.0	984.0	35.935	7.455	2.84		Unsaturated	42.1			17.18	1.56	26.86	66.45	0.99	0.258	1.062	n.a.	n.a.	n.a.	0.00	0.00
7.938	18.553	1.361	992.2	992.2	36.398	7.537	2.84		Unsaturated	42.1			17.54	1.55	27.26	66.98	0.99	0.258	1.062	n.a.	n.a.	n.a.	0.00	0.00
8.003	17.994	1.410	1000.4	1000.4	34.974	8.060	2.87		Unsaturated	43.4			17.01	1.55	26.38	65.85	0.99	0.258	1.061	n.a.	n.a.	n.a.	0.00	0.00
8.069	18.265	1.451	1008.6	1008.6	35.219	8.170	2.87		Unsaturated	43.5			17.26	1.54	26.63	66.19	0.99	0.258	1.060	n.a.	n.a.	n.a.	0.00	0.00
8.134	17.837	1.478	1016.8	1016.8	34.085	8.529	2.89		Unsaturated	44.4			16.86	1.54	25.93	65.28	0.99	0.258	1.059	n.a.	n.a.	n.a.	0.00	0.00
8.200	16.878	1.439	1025.0	1025.0	31.933	8.793	2.92		Unsaturated	45.6			15.95	1.54	24.53	63.40	0.99	0.258	1.058	n.a.	n.a.	n.a.	0.00	0.00
8.266	16.163	1.433	1033.2	1033.2	30.287	9.159	2.95		Unsaturated	46.7			15.28	1.54	23.45	61.97	0.99	0.258	1.056	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	I_c	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
8.331	15.317	1.440	1041.4	1041.4	28.416	9.732	2.99		Unsaturated	48.3			14.48	1.53	22.20	60.30	0.99	0.258	1.055	n.a.	n.a.	n.a.	0.00	0.00
8.397	13.680	1.441	1049.6	1049.6	25.067	10.954	3.07		Unsaturated	51.5			12.93	1.54	19.88	57.17	0.99	0.258	1.053	n.a.	n.a.	n.a.	0.00	0.00
8.462	13.605	1.396	1057.8	1057.8	24.723	10.676	3.06		Unsaturated	51.3			12.86	1.53	19.69	56.92	0.99	0.258	1.052	n.a.	n.a.	n.a.	0.00	0.00
8.528	13.643	1.336	1066.0	1066.0	24.597	10.191	3.05		Unsaturated	50.7			12.90	1.52	19.65	56.87	0.99	0.258	1.052	n.a.	n.a.	n.a.	0.00	0.00
8.594	13.661	1.194	1074.2	1074.2	24.435	9.098	3.01		Unsaturated	49.3			12.91	1.52	19.59	56.78	0.99	0.258	1.051	n.a.	n.a.	n.a.	0.00	0.00
8.659	13.717	1.137	1082.4	1082.4	24.346	8.629	3.00		Unsaturated	48.6			12.97	1.51	19.58	56.76	0.99	0.258	1.050	n.a.	n.a.	n.a.	0.00	0.00
8.725	13.122	1.085	1090.6	1090.6	23.064	8.627	3.01		Unsaturated	49.3			12.40	1.51	18.69	55.57	0.99	0.257	1.049	n.a.	n.a.	n.a.	0.00	0.00
8.790	11.932	1.048	1098.8	1098.8	20.718	9.207	3.07		Unsaturated	51.6			11.28	1.51	17.01	53.29	0.99	0.257	1.048	n.a.	n.a.	n.a.	0.00	0.00
8.856	11.559	1.037	1107.0	1107.0	19.883	9.423	3.09		Unsaturated	52.5			10.93	1.50	16.43	52.51	0.99	0.257	1.047	n.a.	n.a.	n.a.	0.00	0.00
8.922	11.225	1.057	1115.2	1115.2	19.131	9.909	3.11		Unsaturated	53.7			10.61	1.50	15.90	51.80	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
8.987	11.262	1.101	1123.4	1123.4	19.050	10.289	3.13		Unsaturated	54.3			10.64	1.49	15.88	51.77	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
9.053	11.606	1.083	1131.6	1131.6	19.513	9.810	3.11		Unsaturated	53.3			10.97	1.48	16.27	52.30	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.118	12.127	1.024	1139.8	1139.8	20.279	8.860	3.06		Unsaturated	51.4			11.46	1.47	16.90	53.15	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.184	14.210	0.949	1148.0	1148.0	23.756	6.960	2.94		Unsaturated	46.2			13.43	1.46	19.56	56.71	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
9.250	14.814	0.873	1156.2	1156.2	24.625	6.132	2.89		Unsaturated	44.2			14.00	1.45	20.27	57.62	0.99	0.257	1.046	n.a.	n.a.	n.a.	0.00	0.00
9.315	15.131	0.825	1164.4	1164.4	24.989	5.671	2.86		Unsaturated	43.1			14.30	1.44	20.60	58.03	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.381	15.288	0.860	1172.6	1172.6	25.075	5.850	2.87		Unsaturated	43.4			14.45	1.43	20.71	58.20	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.446	15.493	0.908	1180.8	1180.8	25.242	6.093	2.88		Unsaturated	43.8			14.64	1.43	20.89	58.45	0.99	0.257	1.045	n.a.	n.a.	n.a.	0.00	0.00
9.512	15.716	0.980	1189.0	1189.0	25.436	6.481	2.90		Unsaturated	44.5			14.85	1.42	21.09	58.74	0.99	0.257	1.044	n.a.	n.a.	n.a.	0.00	0.00
9.578	16.395	1.059	1197.2	1197.2	26.389	6.704	2.90		Unsaturated	44.4			15.50	1.41	21.87	59.79	0.99	0.257	1.044	n.a.	n.a.	n.a.	0.00	0.00
9.643	16.266	1.123	1205.4	1205.4	25.989	7.170	2.92		Unsaturated	45.4			15.37	1.41	21.62	59.48	0.99	0.257	1.043	n.a.	n.a.	n.a.	0.00	0.00
9.709	16.023	1.159	1213.6	1213.6	25.406	7.518	2.94		Unsaturated	46.3			15.14	1.40	21.23	58.97	0.99	0.257	1.043	n.a.	n.a.	n.a.	0.00	0.00
9.774	16.228	1.136	1221.8	1221.8	25.564	7.274	2.93		Unsaturated	45.8			15.34	1.40	21.40	59.19	0.99	0.257	1.042	n.a.	n.a.	n.a.	0.00	0.00
9.840	15.986	1.086	1230.0	1230.0	24.993	7.065	2.93		Unsaturated	45.7			15.11	1.39	21.02	58.67	0.99	0.257	1.042	n.a.	n.a.	n.a.	0.00	0.00
9.906	16.173	1.034	1238.2	1238.2	25.123	6.648	2.91		Unsaturated	44.9			15.29	1.39	21.17	58.86	0.99	0.257	1.041	n.a.	n.a.	n.a.	0.00	0.00
9.971	16.981	0.967	1246.4	1246.4	26.248	5.912	2.86		Unsaturated	43.0			16.05	1.38	22.10	60.05	0.99	0.257	1.041	n.a.	n.a.	n.a.	0.00	0.00
10.037	16.590	0.929	1254.6	1254.6	25.447	5.820	2.86		Clay	43.2			15.68	1.15	n.a.	n.a.	0.99	0.257	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.102	16.228	0.885	1262.8	1262.8	24.702	5.674	2.87		Clay	43.2			15.34	1.15	n.a.	n.a.	0.99	0.258	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.168	16.368	0.861	1271.0	1271.0	24.756	5.473	2.85		Clay	42.8			15.47	1.14	n.a.	n.a.	0.99	0.259	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.234	16.237	0.844	1279.2	1279.2	24.386	5.411	2.86		Clay	42.8			15.35	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.299	15.968	0.854	1287.4	1287.4	23.807	5.573	2.87		Clay	43.5			15.09	1.14	n.a.	n.a.	0.99	0.260	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.365	15.968	0.825	1295.6	1295.6	23.650	5.385	2.86		Clay	43.2			15.09	1.14	n.a.	n.a.	0.99	0.261	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.430	15.968	0.805	1303.8	1303.8	23.495	5.256	2.86		Clay	43.0			15.09	1.14	n.a.	n.a.	0.99	0.262	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.496	15.856	0.806	1312.0	1312.0	23.171	5.303	2.87		Clay	43.2			14.99	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.562	15.652	0.780	1320.2	1320.2	22.712	5.203	2.87		Clay	43.3			14.79	1.13	n.a.	n.a.	0.99	0.263	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.627	15.466	0.760	1328.4	1328.4	22.285	5.135	2.87		Clay	43.4			14.62	1.13	n.a.	n.a.	0.99	0.264	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.693	15.502	0.738	1336.6	1336.6	22.196	4.975	2.86		Clay	43.1			14.65	1.13	n.a.	n.a.	0.99	0.265	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.758	16.516	0.746	1344.8	1344.8	23.563	4.709	2.83		Clay	41.7			15.61	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.824	15.512	0.806	1353.0	1353.0	21.930	5.433	2.89		Clay	44.2			14.66	1.13	n.a.	n.a.	0.99	0.266	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.890	15.140	0.834	1361.2	1361.2	21.245	5.768	2.92		Clay	45.3			14.31	1.12	n.a.	n.a.	0.99	0.267	n.a.	n.a.	n.a.	n.a.	0.00	0.00
10.955	15.121	0.858	1369.4	1369.4	21.084	5.943	2.93		Clay	45.8			14.29	1.12	n.a.	n.a.	0.99	0.268	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.021	15.847	0.870	1377.6	1377.6	22.007	5.739	2.91		Clay	44.8			14.98	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.086	16.935	0.884	1385.8	1385.8	23.441	5.443	2.87		Clay	43.4			16.01	1.12	n.a.	n.a.	0.99	0.269	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.152	18.172	0.885	1394.0	1394.0	25.072	5.064	2.83		Clay	41.7			17.18	1.12	n.a.	n.a.	0.99	0.270	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.218	20.348	0.845	1402.2	1402.2	28.023	4.301	2.74		Clay	38.6			19.23	1.11	n.a.	n.a.	0.98	0.271	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.283	21.054	0.822	1410.4	1410.4	28.855	4.040	2.72		Clay	37.6			19.90	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.349	24.039	0.834	1418.6	1418.6	32.891	3.575	2.64		Clay	34.9			22.72	1.11	n.a.	n.a.	0.98	0.272	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.414	24.541	0.884	1426.8	1426.8	33.400	3.710	2.64		Clay	35.1			23.20	1.11	n.a.	n.a.	0.98	0.273	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.480	24.477	0.945	1435.0	1435.0	33.114	3.977	2.67		Clay	35.9			23.14	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.546	25.193	1.108	1443.2	1443.2	33.913	4.528	2.70		Clay	37.0			23.81	1.11	n.a.	n.a.	0.98	0.274	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.611	25.611	1.177	1451.4	1451.4	34.291	4.730	2.71		Clay	37.3			24.21	1.10	n.a.	n.a.	0.98	0.275	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.677	26.021	1.248	1459.6	1459.6	34.655	4.935	2.72		Clay	37.7			24.59	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.742	25.778	1.333	1467.8	1467.8	34.125	5.323	2.75		Clay	38.7			24.36	1.10	n.a.	n.a.	0.98	0.276	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.808	25.723	1.498	1476.0	1476.0	33.855	5.996	2.79		Clay	40.2			24.31	1.10	n.a.	n.a.	0.98	0.277	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.874	24.003	1.565	1484.2	1484.2	31.345	6.728	2.84		Clay	42.4			22.69	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
11.939	23.017	1.573	1492.4	1492.4	29.846	7.063	2.87		Clay	43.6			21.76	1.10	n.a.	n.a.	0.98	0.278	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.005	22.551	1.553	1500.6	1500.6	29.056	7.124	2.88		Clay	44.0			21.31	1.09	n.a.	n.a.	0.98	0.279	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.070	21.194	1.521	1508.8	1508.8	27.094	7.441	2.92		Clay	45.4			20.03	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.136	20.580	1.487	1517.0	1517.0	26.132	7.502	2.93		Clay	45.9			19.45	1.09	n.a.	n.a.	0.98	0.280	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.202	18.572	1.406	1525.2	1525.2	23.354	7.895	2.98		Clay	48.0			17.55	1.09	n.a.	n.a.	0.98	0.281	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.267	18.087	1.337	1533.4	1533.4	22.591	7.719	2.99		Clay	48.2			17.10	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.333	17.363	1.295	1541.6	1541.6	21.526	7.805	3.00		Clay	48.9			16.41	1.09	n.a.	n.a.	0.98	0.282	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.398	16.516	1.206	1549.8	1549.8	20.314	7.661	3.02		Clay	49.4			15.61	1.09	n.a.	n.a.	0.98	0.283	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.464	15.716	1.191	1558.0	1558.0	19.175	7.973	3.05		Clay	50.7			14.85	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.530	15.103	1.128	1566.2	1566.2	18.286	7.877	3.06		Clay	51.2			14.28	1.08	n.a.	n.a.	0.98	0.284	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.595	14.861	1.041	1574.4	1574.4	17.878	7.397	3.05		Clay	50.7			14.05	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.661	16.107	1.003	1582.6	1582.6	19.355	6.549	2.99		Clay	48.1			15.22	1.08	n.a.	n.a.	0.98	0.285	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
12.726	14.954	0.958	1590.8	1590.8	17.801	6.766	3.02		Clay	49.6			14.13	1.08	n.a.	n.a.	0.98	0.286	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.792	14.861	0.982	1599.0	1599.0	17.588	6.984	3.03		Clay	50.2			14.05	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.858	15.084	0.956	1607.2	1607.2	17.771	6.694	3.02		Clay	49.5			14.26	1.08	n.a.	n.a.	0.98	0.287	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.923	15.568	0.934	1615.4	1615.4	18.274	6.328	2.99		Clay	48.4			14.71	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
12.989	16.274	0.920	1623.6	1623.6	19.047	5.950	2.96		Clay	47.1			15.38	1.07	n.a.	n.a.	0.98	0.288	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.054	17.706	0.931	1631.8	1631.8	20.701	5.512	2.91		Clay	45.1			16.74	1.07	n.a.	n.a.	0.98	0.289	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.120	18.599	0.912	1640.0	1640.0	21.682	5.130	2.88		Clay	43.7			17.58	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.186	19.948	0.904	1648.2	1648.2	23.206	4.727	2.83		Clay	41.9			18.85	1.07	n.a.	n.a.	0.98	0.290	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.251	19.948	0.903	1656.4	1656.4	23.086	4.723	2.83		Clay	42.0			18.85	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.317	20.366	0.932	1664.6	1664.6	23.470	4.771	2.83		Clay	41.9			19.25	1.07	n.a.	n.a.	0.98	0.291	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.382	21.361	1.007	1672.8	1672.8	24.539	4.906	2.82		Clay	41.7			20.19	1.06	n.a.	n.a.	0.98	0.292	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.448	18.665	1.091	1681.0	1681.0	21.207	6.121	2.94		Clay	46.1			17.64	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.514	18.850	1.132	1689.2	1689.2	21.318	6.287	2.94		Clay	46.3			17.82	1.06	n.a.	n.a.	0.98	0.293	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.579	19.920	1.150	1697.4	1697.4	22.471	6.030	2.91		Clay	45.1			18.83	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.645	18.515	1.205	1705.6	1705.6	20.711	6.822	2.98		Clay	47.7			17.50	1.06	n.a.	n.a.	0.98	0.294	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.710	19.902	1.134	1713.8	1713.8	22.226	5.954	2.91		Clay	45.1			18.81	1.06	n.a.	n.a.	0.98	0.295	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.776	18.367	1.232	1722.0	1722.0	20.332	7.038	2.99		Clay	48.3			17.36	1.06	n.a.	n.a.	0.98	0.295	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.842	17.753	1.179	1730.2	1730.2	19.521	6.981	3.00		Clay	48.8			16.78	1.05	n.a.	n.a.	0.98	0.296	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.907	18.803	1.101	1738.4	1738.4	20.633	6.139	2.95		Clay	46.5			17.77	1.05	n.a.	n.a.	0.98	0.297	n.a.	n.a.	n.a.	n.a.	0.00	0.00
13.973	18.106	1.066	1746.6	1746.6	19.733	6.186	2.96		Clay	47.1			17.11	1.05	n.a.	n.a.	0.98	0.297	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.038	17.772	1.059	1754.8	1754.8	19.255	6.268	2.97		Clay	47.6			16.80	1.05	n.a.	n.a.	0.98	0.298	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.104	17.577	1.028	1763.0	1763.0	18.940	6.157	2.97		Clay	47.6			16.61	1.05	n.a.	n.a.	0.98	0.298	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.170	18.943	1.004	1771.2	1771.2	20.390	5.560	2.92		Clay	45.4			17.90	1.05	n.a.	n.a.	0.98	0.299	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.235	20.357	1.002	1779.4	1779.4	21.881	5.147	2.88		Clay	43.6			19.24	1.05	n.a.	n.a.	0.98	0.299	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.301	18.807	0.952	1787.6	1787.6	20.042	5.315	2.91		Clay	45.1			17.78	1.05	n.a.	n.a.	0.98	0.300	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.366	18.807	0.968	1795.8	1795.8	19.946	5.405	2.92		Clay	45.4			17.78	1.04	n.a.	n.a.	0.98	0.300	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.432	22.096	1.001	1804.0	1804.0	23.497	4.723	2.83		Clay	41.8			20.88	1.04	n.a.	n.a.	0.98	0.301	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.498	17.753	1.071	1812.2	1812.2	18.593	6.357	2.99		Clay	48.3			16.78	1.04	n.a.	n.a.	0.98	0.301	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.563	16.116	1.060	1820.4	1820.4	16.706	6.971	3.05		Clay	50.9			15.23	1.04	n.a.	n.a.	0.98	0.302	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.629	15.447	1.047	1828.6	1828.6	15.895	7.204	3.08		Clay	52.0			14.60	1.04	n.a.	n.a.	0.98	0.302	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.694	15.772	1.022	1836.8	1836.8	16.173	6.880	3.06		Clay	51.2			14.91	1.04	n.a.	n.a.	0.98	0.303	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.760	17.075	0.981	1845.0	1845.0	17.509	6.073	3.00		Clay	48.5			16.14	1.04	n.a.	n.a.	0.98	0.303	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.826	19.120	0.933	1853.2	1853.2	19.635	5.128	2.91		Clay	45.0			18.07	1.04	n.a.	n.a.	0.98	0.304	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.891	19.771	0.916	1861.4	1861.4	20.243	4.862	2.88		Clay	44.0			18.69	1.03	n.a.	n.a.	0.98	0.304	n.a.	n.a.	n.a.	n.a.	0.00	0.00
14.957	19.697	0.874	1869.6	1869.6	20.071	4.658	2.87		Clay	43.6			18.62	1.03	n.a.	n.a.	0.98	0.305	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.022	19.464	0.881	1877.8	1877.8	19.731	4.756	2.89		Clay	44.1			18.40	1.03	n.a.	n.a.	0.98	0.305	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.088	19.055	0.950	1886.0	1886.0	19.207	5.245	2.92		Clay	45.5			18.01	1.03	n.a.	n.a.	0.98	0.306	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.154	17.892	0.980	1894.2	1894.2	17.891	5.783	2.97		Clay	47.6			16.91	1.03	n.a.	n.a.	0.98	0.306	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.219	18.460	1.011	1902.4	1902.4	18.407	5.774	2.96		Clay	47.2			17.45	1.03	n.a.	n.a.	0.98	0.307	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.285	17.585	1.050	1910.6	1910.6	17.408	6.314	3.01		Clay	49.1			16.62	1.03	n.a.	n.a.	0.98	0.307	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.350	17.483	1.072	1918.8	1918.8	17.223	6.488	3.02		Clay	49.6			16.52	1.03	n.a.	n.a.	0.98	0.308	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.416	17.697	1.042	1927.0	1927.0	17.367	6.227	3.01		Clay	48.9			16.73	1.02	n.a.	n.a.	0.97	0.308	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.482	17.763	1.009	1935.2	1935.2	17.358	6.008	2.99		Clay	48.5			16.79	1.02	n.a.	n.a.	0.97	0.309	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.547	18.218	0.962	1943.4	1943.4	17.749	5.578	2.97		Clay	47.3			17.22	1.02	n.a.	n.a.	0.97	0.309	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.613	18.284	0.941	1951.6	1951.6	17.737	5.437	2.96		Clay	47.0			17.28	1.02	n.a.	n.a.	0.97	0.310	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.678	18.794	0.916	1959.8	1959.8	18.180	5.142	2.94		Clay	46.0			17.76	1.02	n.a.	n.a.	0.97	0.310	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.744	19.195	0.928	1968.0	1968.0	18.507	5.096	2.93		Clay	45.7			18.14	1.02	n.a.	n.a.	0.97	0.311	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.810	19.036	0.929	1976.2	1976.2	18.265	5.147	2.93		Clay	46.0			17.99	1.02	n.a.	n.a.	0.97	0.311	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.875	18.990	0.990	1984.4	1984.4	18.139	5.501	2.96		Clay	46.8			17.95	1.02	n.a.	n.a.	0.97	0.312	n.a.	n.a.	n.a.	n.a.	0.00	0.00
15.941	20.124	1.017	1992.6	1992.6	19.199	5.317	2.93		Clay	45.7			19.02	1.02	n.a.	n.a.	0.97	0.312	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.006	22.747	1.018	2000.8	2000.8	21.738	4.681	2.85		Clay	42.6			21.50	1.01	n.a.	n.a.	0.97	0.313	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.072	27.341	1.015	2009.0	2009.0	26.219	3.854	2.73		Clay	38.2			25.84	1.01	n.a.	n.a.	0.97	0.313	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.138	37.775	0.997	2017.2	2017.2	35.592	2.712	2.53		Sand	31.4	37	1.8	66.60	1.02	68.07	120.33	0.97	0.313	1.006	0.180	0.163	0.52	0.03	0.02
16.203	40.640	0.973	2025.4	2025.4	38.283	2.455	2.48		Sand	29.7		1.8	69.14	1.02	70.52	123.00	0.97	0.314	1.006	0.186	0.168	0.54	0.03	0.02
16.269	41.988	0.955	2033.6	2033.6	39.502	2.331	2.46		Sand	28.9		1.8	71.44	1.02	72.71	125.59	0.97	0.314	1.005	0.192	0.174	0.55	0.03	0.02
16.334	41.476	0.957	2041.8	2041.8	38.926	2.366	2.46		Sand	29.2		1.8	70.56	1.02	71.70	124.37	0.97	0.315	1.005	0.189	0.171	0.54	0.03	0.02
16.400	39.505	0.972	2050.0	2050.0	36.951	2.526	2.50		Sand	30.3		1.8	67.21	1.01	68.19	120.13	0.97	0.315	1.004	0.180	0.162	0.52	0.03	0.02
16.466	36.854	0.979	2058.2	2058.2	34.333	2.733	2.55		Sand	31.8	37	1.8	66.60	1.01	67.45	119.64	0.97	0.316	1.003	0.179	0.161	0.51	0.03	0.02
16.531	34.539	1.022	2066.4	2066.4	32.199	3.050	2.60		Mixed	33.5	37	1.8	66.60	1.01	67.33	119.93	0.97	0.316	1.003	0.179	0.162	0.51	0.03	0.02
16.597	37.422	0.972	2074.6	2074.6	34.732	2.671	2.54		Sand	31.5	37	1.8	66.60	1.01	67.21	119.21	0.97	0.317	1.002	0.178	0.160	0.51	0.03	0.02
16.662	37.524	0.881	2082.8	2082.8	34.756	2.415	2.51		Sand	30.6	37	1.8	66.60	1.01	67.09	118.75	0.97	0.317	1.002	0.177	0.159	0.50	0.03	0.02
16.728	31.544	0.930	2091.0	2091.0	29.171	3.049	2.63		Clay	34.6			29.81	1.00	n.a.	n.a.	0.97	0.317	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.794	24.700	1.025	2099.2	2099.2	22.533	4.334	2.82		Clay	41.3			23.35	1.00	n.a.	n.a.	0.97	0.318	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.859	20.050	1.178	2107.4	2107.4	18.028	6.201	2.99		Clay	48.4			18.95	1.00	n.a.	n.a.	0.97	0.318	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.925	16.181	1.336	2115.6	2115.6	14.297	8.834	3.17		Clay	56.2			15.29	1.00	n.a.	n.a.	0.97	0.319	n.a.	n.a.	n.a.	n.a.	0.00	0.00
16.990	13.308	1.420	2123.8	2123.8	11.532	11.596	3.32		Clay	63.4			12.58	1.00	n.a.	n.a.	0.97	0.319	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.056	11.857	1.316	2132.0	2132.0	10.123	12.195	3.38		Clay	66.2			11.21	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
17.122	12.368	1.128	2140.2	2140.2	10.558	9.984	3.30		Clay	62.6			11.69	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.187	12.563	0.928	2148.4	2148.4	10.695	8.077	3.24		Clay	59.4			11.87	1.00	n.a.	n.a.	0.97	0.320	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.253	12.518	0.763	2156.6	2156.6	10.609	6.670	3.19		Clay	57.0			11.83	0.99	n.a.	n.a.	0.97	0.321	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.318	12.917	0.773	2164.8	2164.8	10.934	6.532	3.17		Clay	56.2			12.21	0.99	n.a.	n.a.	0.97	0.321	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.384	13.708	0.784	2173.0	2173.0	11.617	6.212	3.14		Clay	54.7			12.96	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.450	14.322	0.782	2181.2	2181.2	12.132	5.910	3.11		Clay	53.4			13.54	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.515	13.810	0.784	2189.4	2189.4	11.615	6.166	3.13		Clay	54.6			13.05	0.99	n.a.	n.a.	0.97	0.322	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.581	13.122	0.812	2197.6	2197.6	10.942	6.754	3.18		Clay	56.7			12.40	0.99	n.a.	n.a.	0.97	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.646	12.787	0.743	2205.8	2205.8	10.594	6.359	3.17		Clay	56.4			12.09	0.99	n.a.	n.a.	0.97	0.323	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.712	12.852	0.575	2214.0	2214.0	10.610	4.896	3.10		Clay	53.1			12.15	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.778	12.768	0.589	2222.2	2222.2	10.491	5.053	3.11		Clay	53.7			12.07	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.843	13.224	0.596	2230.4	2230.4	10.858	4.922	3.10		Clay	52.8			12.50	0.99	n.a.	n.a.	0.97	0.324	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.909	16.609	0.649	2238.6	2238.6	13.839	4.190	2.97		Clay	47.4			15.70	0.99	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
17.974	31.266	0.785	2246.8	2246.8	26.832	2.604	2.62		Clay	34.1			29.55	0.98	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.040	34.205	0.806	2254.8	2252.3	30.303	2.437	2.56	plastic	Clay	32.1			32.33	0.98	n.a.	n.a.	0.97	0.325	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.106	33.070	0.864	2262.7	2256.1	28.313	2.705	2.61		Clay	33.9			31.26	0.98	n.a.	n.a.	0.97	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.171	30.419	0.875	2270.5	2259.9	25.916	2.988	2.67		Clay	35.8			28.75	0.98	n.a.	n.a.	0.97	0.326	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.237	28.225	0.920	2278.4	2263.6	23.931	3.397	2.73		Clay	38.0			26.68	0.98	n.a.	n.a.	0.97	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.302	28.066	0.939	2286.3	2267.4	23.748	3.488	2.74		Clay	38.4			26.53	0.98	n.a.	n.a.	0.97	0.327	n.a.	n.a.	n.a.	n.a.	0.00	0.00
18.368	44.545	0.939	2294.2	2271.2	39.593	2.164	2.43		Sand	28.3	75		75.00	0.97	72.67	125.21	0.97	0.327	0.991	0.191	0.170	0.52	0.03	0.02
18.434	57.128	0.947	2302.0	2275.0	51.026	1.692	2.28		Sand	23.9	75		75.00	0.97	72.58	122.01	0.97	0.328	0.991	0.184	0.164	0.50	0.03	0.02
18.499	81.614	1.024	2309.9	2278.8	73.282	1.273	2.08		Sand	18.8	85		85.00	0.97	82.25	127.20	0.97	0.328	0.990	0.196	0.175	0.53	0.02	0.02
18.565	87.287	1.133	2317.8	2282.5	78.381	1.315	2.07		Sand	18.5			82.50	0.97	79.73	123.36	0.97	0.328	0.990	0.187	0.167	0.51	0.03	0.02
18.630	88.607	1.235	2325.6	2286.3	79.512	1.412	2.08		Sand	18.9			83.75	0.97	80.91	125.60	0.97	0.329	0.990	0.192	0.171	0.52	0.03	0.02
18.696	86.906	1.516	2333.5	2290.1	77.898	1.768	2.16		Sand	20.6			82.14	0.97	79.31	126.71	0.97	0.329	0.990	0.195	0.173	0.53	0.03	0.02
18.762	83.753	1.634	2341.4	2293.9	74.968	1.979	2.20		Sand	21.8			79.16	0.96	76.35	124.55	0.97	0.330	0.990	0.190	0.169	0.51	0.03	0.02
18.827	81.735	1.707	2349.3	2297.6	73.072	2.119	2.23		Sand	22.5			77.25	0.96	74.44	122.99	0.97	0.330	0.989	0.186	0.166	0.50	0.03	0.02
18.893	82.887	1.748	2357.1	2301.4	74.053	2.139	2.23		Sand	22.5			78.34	0.96	75.45	124.26	0.97	0.330	0.989	0.189	0.168	0.51	0.03	0.02
18.958	83.957	1.798	2365.0	2305.2	74.957	2.172	2.23		Sand	22.5			79.35	0.96	76.38	125.50	0.97	0.331	0.989	0.192	0.171	0.52	0.03	0.02
19.024	87.082	1.907	2372.9	2309.0	77.720	2.220	2.22		Sand	22.4			82.31	0.96	79.21	129.04	0.97	0.331	0.988	0.201	0.178	0.54	0.02	0.02
19.090	89.434	2.176	2380.8	2312.8	79.779	2.466	2.25		Sand	23.0			84.53	0.96	81.34	132.57	0.97	0.331	0.988	0.210	0.186	0.56	0.02	0.02
19.155	87.342	2.305	2388.6	2316.5	77.821	2.676	2.28		Sand	23.9			82.55	0.96	79.36	130.92	0.97	0.332	0.988	0.205	0.182	0.55	0.02	0.02
19.221	83.279	2.356	2396.5	2320.3	74.087	2.870	2.32		Sand	24.9			78.71	0.96	75.56	126.85	0.97	0.332	0.988	0.195	0.173	0.52	0.03	0.02
19.286	81.297	2.258	2404.4	2324.1	72.235	2.819	2.32		Sand	25.0			76.84	0.96	73.68	124.41	0.96	0.332	0.988	0.189	0.168	0.51	0.03	0.02
19.352	80.712	2.026	2412.2	2327.9	71.646	2.548	2.29		Sand	24.2			76.29	0.96	73.07	122.93	0.96	0.333	0.988	0.186	0.165	0.50	0.03	0.02
19.418	82.116	1.879	2420.1	2331.7	72.848	2.322	2.26		Sand	23.3			77.61	0.96	74.30	123.65	0.96	0.333	0.988	0.188	0.167	0.50	0.03	0.02
19.483	83.855	1.715	2428.0	2335.4	74.351	2.075	2.22		Sand	22.2			79.26	0.96	75.83	124.43	0.96	0.333	0.987	0.189	0.168	0.50	0.03	0.02
19.549	84.041	1.683	2435.9	2339.2	74.454	2.032	2.21		Sand	22.0			79.43	0.96	75.94	124.36	0.96	0.334	0.987	0.189	0.168	0.50	0.03	0.02
19.614	80.591	1.716	2443.7	2343.0	71.292	2.162	2.24		Sand	22.9			76.17	0.95	72.73	121.17	0.96	0.334	0.987	0.182	0.162	0.48	0.03	0.02
19.680	79.140	1.784	2451.6	2346.8	69.928	2.290	2.27		Sand	23.5			74.80	0.95	71.35	120.02	0.96	0.334	0.987	0.180	0.159	0.48	0.03	0.02
19.746	78.591	1.850	2459.5	2350.5	69.376	2.391	2.28		Sand	23.9			74.28	0.95	70.80	119.70	0.96	0.335	0.987	0.179	0.159	0.47	0.03	0.02
19.811	77.977	2.000	2467.3	2354.3	68.767	2.606	2.31		Sand	24.7			73.70	0.95	70.19	119.61	0.96	0.335	0.987	0.179	0.159	0.47	0.03	0.02
19.877	76.825	1.930	2475.2	2358.1	67.677	2.553	2.31		Sand	24.7			72.61	0.95	69.08	118.12	0.96	0.335	0.987	0.176	0.156	0.46	0.03	0.02
19.942	75.476	1.876	2483.1	2361.9	66.412	2.527	2.31		Sand	24.8			71.34	0.95	67.79	116.49	0.96	0.336	0.987	0.172	0.153	0.46	0.03	0.02
20.008	74.760	2.008	2491.0	2365.7	65.716	2.731	2.34		Sand	25.5			70.66	0.95	67.10	116.15	0.96	0.336	0.987	0.172	0.152	0.45	0.03	0.02
20.074	86.347	2.272	2498.8	2369.4	76.009	2.670	2.29		Sand	24.1			81.61	0.95	77.65	128.85	0.96	0.336	0.985	0.200	0.177	0.53	0.02	0.02
20.139	101.497	2.416	2506.7	2373.2	89.466	2.410	2.21		Sand	21.9			95.93	0.95	91.50	144.42	0.96	0.337	0.983	0.248	0.219	0.65	0.02	0.02
20.205	114.162	2.522	2514.6	2377.0	100.686	2.234	2.15		Sand	20.4			107.90	0.96	103.09	156.97	0.96	0.337	0.980	0.307	0.271	0.80	0.01	0.01
20.270	121.593	2.342	2522.4	2380.8	107.224	1.946	2.09		Sand	18.9			114.93	0.96	109.85	162.41	0.96	0.337	0.979	0.343	0.302	0.89	0.01	0.01
20.336	131.442	2.324	2530.3	2384.6	115.905	1.785	2.04		Sand	17.8			124.24	0.96	118.85	170.64	0.96	0.338	0.977	0.414	0.364	1.08	0.01	0.01
20.402	133.580	2.300	2538.2	2388.3	117.712	1.738	2.02		Sand	17.5			126.26	0.96	120.75	172.12	0.96	0.338	0.976	0.430	0.377	1.12	0.01	0.00
20.467	135.412	2.277	2546.1	2392.1	119.244	1.697	2.01		Sand	17.2			127.99	0.96	122.36	173.32	0.96	0.338	0.976	0.443	0.389	1.15	0.01	0.00
20.533	136.528	1.900	2553.9	2395.9	120.138	1.405	1.95		Sand	15.9			129.04	0.95	123.21	169.67	0.96	0.338	0.976	0.404	0.355	1.05	0.01	0.01
20.598	136.407	1.563	2561.8	2399.7	119.932	1.157	1.89		Sand	14.7			128.93	0.95	122.90	164.25	0.96	0.339	0.977	0.357	0.313	0.92	0.01	0.01
20.664	135.924	1.548	2569.7	2403.4	119.406	1.150	1.89		Sand	14.7			128.47	0.95	122.38	163.59	0.96	0.339	0.977	0.351	0.309	0.91	0.01	0.01
20.730	135.878	1.627	2577.6	2407.2	119.268	1.209	1.91		Sand	15.0			128.43	0.95	122.29	164.86	0.96	0.339	0.976	0.361	0.317	0.94	0.01	0.01
20.795	133.794	1.642	2585.4	2411.0	117.326	1.239	1.92		Sand	15.3			126.46	0.95	120.31	163.58	0.96	0.340	0.976	0.351	0.309	0.91	0.01	0.01
20.861	130.455	1.637	2593.3	2414.8	114.276	1.267	1.93		Sand	15.6			123.30	0.95	117.18	161.05	0.96	0.340	0.977	0.333	0.293	0.86	0.01	0.01
20.926	128.001	1.544	2601.2	2418.6	112.014	1.219	1.93		Sand	15.5			120.98	0.95	114.83	157.76	0.96	0.340	0.977	0.312	0.274	0.81	0.01	0.01
20.992	127.573	1.430	2609.0	2422.3	111.545	1.133	1.91		Sand	15.1			120.58	0.95	114.32	155.46	0.96	0.341	0.977	0.299	0.263	0.77	0.01	0.01
21.058	131.292	1.390	2616.9	2426.1	114.737	1.069	1.88		Sand	14.5			124.09	0.95	117.62	157.15	0.96	0.341	0.977	0.308	0.271	0.79	0.01	0.01
21.123	134.752	1.424	2624.8	2429.9	117.696	1.067	1.88		Sand	14.4			127.36	0.95	120.72	160.03	0.96	0.341	0.976	0.326	0.286	0.84	0.01	0.01
21.189	136.770	1.463	2632.7	2433.7	119.380	1.080	1.87		Sand	14.3			129.27	0.95	122.51	162.06	0.96	0.341	0.975	0.340	0.298	0.87	0.01	0.01
21.254	134.510	1.568	2640.5	2437.5	117.294	1.177	1.90		Sand	15.0			127.14	0.95	120.42	162.39	0.96	0.342	0.975	0.343	0.300	0.88	0.01	0.01
21.320	128.605	1.653	2648.4	2441.2	112.003	1.299	1.95		Sand	15.9	125		125.00	0.95	118.36	163.61	0.96	0.342	0.974	0.352	0.308	0.90	0.01	0.01
21.386	121.761	1.736	2656.3	2445.0	105.895	1.441	2.00		Sand	16.9	125		125.00	0.95	118.39	167.41	0.96	0.342	0.973	0.383	0.335	0.98	0.01	0.01
21.451	113.251	1.784	2664.1	2448.8	98.333	1.594	2.05		Sand	18.1	120		120.00	0.95	113.53	164.98	0.96	0.343	0.973	0.362	0.317	0.93	0.01	0.01

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5, \sigma'vc = 1 atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
21.517	110.387	1.782	2672.0	2452.6	95.740	1.634	2.07		Sand	18.5	120		120.00	0.95	113.49	165.90	0.96	0.343	0.973	0.370	0.324	0.94	0.01	0.01
21.582	107.662	1.789	2679.9	2456.3	93.272	1.683	2.08		Sand	18.9	115		115.00	0.94	108.56	160.66	0.96	0.343	0.974	0.330	0.289	0.84	0.01	0.01
21.648	105.253	1.659	2687.8	2460.1	91.085	1.597	2.08		Sand	18.7	115		115.00	0.94	108.48	160.09	0.96	0.343	0.974	0.327	0.286	0.83	0.01	0.01
21.714	102.380	1.522	2695.6	2463.9	88.495	1.506	2.07		Sand	18.5	115		115.00	0.94	108.41	159.53	0.96	0.344	0.974	0.323	0.283	0.82	0.01	0.01
21.779	98.501	1.409	2703.5	2467.7	85.029	1.450	2.07		Sand	18.5	115		115.00	0.94	108.34	159.55	0.96	0.344	0.973	0.323	0.283	0.82	0.01	0.01
21.845	84.590	1.365	2711.4	2471.5	72.794	1.640	2.16		Sand	20.6	115		115.00	0.94	108.40	164.11	0.96	0.344	0.972	0.355	0.311	0.90	0.01	0.01
21.910	76.499	1.348	2719.2	2475.2	65.665	1.794	2.21		Sand	22.1	110		110.00	0.94	103.53	160.30	0.96	0.345	0.973	0.328	0.287	0.83	0.01	0.01
21.976	71.970	1.304	2727.1	2479.0	61.656	1.847	2.24		Sand	22.9	110		110.00	0.94	103.49	161.30	0.96	0.345	0.972	0.335	0.293	0.85	0.01	0.01
22.042	71.923	1.104	2735.0	2482.8	61.565	1.565	2.20		Sand	21.7	110		110.00	0.94	103.38	159.43	0.96	0.345	0.972	0.322	0.282	0.82	0.01	0.01
22.107	75.438	1.126	2742.9	2486.6	64.579	1.520	2.17		Sand	21.1	110		110.00	0.94	103.29	158.32	0.96	0.345	0.972	0.315	0.276	0.80	0.01	0.01
22.173	69.264	1.323	2750.7	2490.4	59.148	1.949	2.27		Sand	23.7	110		110.00	0.94	103.33	162.05	0.96	0.346	0.971	0.340	0.297	0.86	0.01	0.01
22.238	50.683	1.199	2758.6	2494.1	42.923	2.432	2.44		Sand	28.5	110		110.00	0.94	103.38	166.18	0.96	0.346	0.970	0.372	0.325	0.94	0.01	0.01
22.304	43.894	1.196	2766.5	2497.9	36.981	2.813	2.53		Sand	31.3	110		110.00	0.94	103.35	167.52	0.96	0.346	0.969	0.384	0.335	0.97	0.01	0.01
22.370	34.465	1.146	2774.4	2501.7	26.444	3.465	2.70		Clay	37.0			32.58	0.96	n.a.	n.a.	0.96	0.346	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.435	36.468	1.192	2782.2	2505.5	28.000	3.398	2.68		Clay	36.2			34.47	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.501	36.697	1.191	2790.1	2509.2	28.137	3.374	2.67		Clay	36.0			34.69	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.566	29.619	1.323	2798.0	2513.0	22.459	4.688	2.84		Clay	42.2			28.00	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.632	23.453	1.271	2805.8	2516.8	17.522	5.764	2.98		Clay	47.9			22.17	0.96	n.a.	n.a.	0.96	0.347	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.698	18.320	1.201	2813.7	2520.6	13.420	7.101	3.13		Clay	54.2			17.32	0.95	n.a.	n.a.	0.96	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.763	12.471	1.190	2821.6	2524.4	8.763	10.759	3.38		Clay	66.7			11.79	0.95	n.a.	n.a.	0.96	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.829	11.262	1.150	2829.5	2528.1	7.790	11.678	3.45		Clay	69.9			10.64	0.95	n.a.	n.a.	0.95	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.894	13.466	0.977	2837.3	2531.9	9.516	8.110	3.28		Clay	61.3			12.73	0.95	n.a.	n.a.	0.95	0.348	n.a.	n.a.	n.a.	n.a.	0.00	0.00
22.960	20.310	0.830	2845.2	2535.7	14.897	4.394	2.96		Clay	46.9			19.20	0.95	n.a.	n.a.	0.95	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.026	27.582	0.807	2853.1	2539.5	20.599	3.085	2.75		Clay	38.9			26.07	0.95	n.a.	n.a.	0.95	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.091	34.939	0.856	2860.9	2543.3	26.351	2.555	2.62		Clay	34.1			33.02	0.95	n.a.	n.a.	0.95	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.157	38.491	0.899	2868.8	2547.0	31.924	2.426	2.54	plastic	Clay	31.5			36.38	0.95	n.a.	n.a.	0.95	0.349	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.222	31.302	0.818	2876.7	2550.8	23.415	2.739	2.68		Clay	36.2			29.59	0.95	n.a.	n.a.	0.95	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.288	26.569	0.759	2884.6	2554.6	19.672	3.021	2.76		Clay	39.3			25.11	0.95	n.a.	n.a.	0.95	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.354	22.254	0.737	2892.4	2558.4	16.266	3.542	2.87		Clay	43.4			21.03	0.95	n.a.	n.a.	0.95	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.419	31.414	0.888	2900.3	2562.1	23.390	2.964	2.70		Clay	37.0			29.69	0.95	n.a.	n.a.	0.95	0.350	n.a.	n.a.	n.a.	n.a.	0.00	0.00
23.485	60.783	0.850	2908.2	2565.9	50.923	1.433	2.24		Sand	22.7	75	1.8	135.00	0.94	126.39	190.91	0.95	0.351	0.954	0.777	0.667	1.90	0.00	0.00
23.550	82.785	0.743	2916.0	2569.7	69.753	0.914	2.01		Sand	17.2		1.8	140.84	0.93	131.57	184.71	0.95	0.351	0.957	0.622	0.536	1.53	0.00	0.00
23.616	83.074	0.764	2923.9	2573.5	69.946	0.936	2.02		Sand	17.3		1.8	141.34	0.93	132.00	185.63	0.95	0.351	0.956	0.642	0.552	1.57	0.00	0.00
23.682	76.285	0.807	2931.8	2577.3	64.077	1.079	2.08		Sand	18.9		1.8	129.79	0.93	120.82	176.12	0.95	0.351	0.960	0.478	0.413	1.18	0.01	0.00
23.747	66.195	0.846	2939.7	2581.0	55.392	1.307	2.18		Sand	21.3	70	1.8	126.00	0.93	117.26	176.82	0.95	0.352	0.959	0.488	0.421	1.20	0.01	0.00
23.813	53.817	0.788	2947.5	2584.8	44.763	1.505	2.29		Sand	24.2	70	1.8	126.00	0.93	117.35	181.12	0.95	0.352	0.957	0.554	0.477	1.36	0.00	0.00
23.878	42.285	0.805	2955.4	2588.6	34.872	1.973	2.45		Sand	28.8	70	1.8	126.00	0.93	117.42	185.08	0.95	0.352	0.955	0.630	0.541	1.54	0.00	0.00
23.944	33.265	0.809	2963.3	2592.4	24.521	2.545	2.64		Clay	35.0			31.44	0.95	n.a.	n.a.	0.95	0.352	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.010	26.830	0.820	2971.2	2596.2	19.525	3.235	2.78		Clay	40.1			25.36	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.075	19.148	0.949	2979.0	2599.9	13.584	5.374	3.04		Clay	50.6			18.10	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.141	14.814	1.142	2986.9	2603.7	10.232	8.573	3.27		Clay	60.9			14.00	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.206	12.061	1.276	2994.8	2607.5	8.103	12.079	3.44		Clay	69.7			11.40	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.272	11.225	1.132	3002.6	2611.3	7.447	11.642	3.46		Clay	70.6			10.61	0.95	n.a.	n.a.	0.95	0.353	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.338	10.918	1.066	3010.5	2615.0	7.199	11.325	3.46		Clay	70.8			10.32	0.95	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.403	11.159	0.972	3018.4	2618.8	7.370	10.073	3.42		Clay	68.6			10.55	0.95	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.469	14.155	0.827	3026.3	2622.6	9.641	6.542	3.21		Clay	58.2			13.38	0.94	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.534	28.857	0.751	3034.1	2626.4	20.819	2.747	2.72		Clay	37.6			27.28	0.94	n.a.	n.a.	0.95	0.354	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.600	34.139	0.670	3042.0	2630.2	27.653	2.054	2.54	plastic	Clay	31.7			32.27	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.666	34.902	0.691	3049.9	2633.9	28.276	2.070	2.54	plastic	Clay	31.5			32.99	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.731	31.851	0.699	3057.7	2637.7	22.991	2.305	2.64		Clay	34.8			30.10	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.797	26.551	0.714	3065.6	2641.5	18.942	2.854	2.76		Clay	39.2			25.10	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.862	21.956	0.706	3073.5	2645.3	15.438	3.458	2.88		Clay	43.8			20.75	0.94	n.a.	n.a.	0.95	0.355	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.928	16.293	0.661	3081.4	2649.1	11.138	4.481	3.06		Clay	51.4			15.40	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
24.994	16.749	0.717	3089.2	2652.8	11.463	4.716	3.07		Clay	51.5			15.83	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.059	21.138	0.718	3097.1	2656.6	14.748	3.665	2.91		Clay	45.1			19.98	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.125	32.382	0.711	3105.0	2660.4	23.177	2.306	2.63		Clay	34.7			30.61	0.94	n.a.	n.a.	0.95	0.356	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.190	50.571	0.774	3112.8	2664.2	41.287	1.579	2.33		Sand	25.4	70	1.8	126.00	0.92	116.07	180.64	0.95	0.356	0.951	0.546	0.467	1.31	0.00	0.00
25.256	70.008	0.738	3120.7	2667.9	57.616	1.078	2.12		Sand	19.7	70	1.8	126.00	0.92	115.66	171.64	0.95	0.357	0.955	0.425	0.365	1.02	0.01	0.01
25.322	79.847	0.731	3128.6	2671.7	65.848	0.934	2.04		Sand	17.8		1.8	135.85	0.92	124.92	178.27	0.95	0.357	0.951	0.509	0.435	1.22	0.00	0.00
25.387	77.373	0.718	3136.5	2675.5	63.719	0.947	2.05		Sand	18.1		1.8	131.64	0.92	120.81	174.14	0.95	0.357	0.953	0.453	0.388	1.09	0.01	0.01
25.453	72.882	0.701	3144.3	2679.3	59.898	0.983	2.08		Sand	18.8	70	1.8	126.00	0.92	115.38	169.21	0.95	0.357	0.955	0.400	0.343	0.96	0.01	0.01
25.518	67.460	0.711	3152.2	2683.1	55.301	1.079	2.13		Sand	20.1	70	1.8	126.00	0.92	115.44	172.12	0.95	0.357	0.954	0.430	0.369	1.03	0.01	0.01
25.584	61.126	0.769	3160.1	2686.8	49.946	1.291	2.22		Sand	22.2	70	1.8	126.00	0.92	115.54	175.96	0.95	0.358	0.951	0.476	0.408	1.14	0.01	0.00
25.650	54.170	0.783	3168.0	2690.6	44.077	1.489	2.30		Sand	24.3	70	1.8	126.00	0.92	115.59	178.89	0.95	0.358	0.950	0.518	0.443	1.24	0.00	0.00
25.715	47.001	0.872	3175.8	2694.4	38.038	1.920	2.41		Sand	27.7	70	1.8	126.00	0.92	115.66	182.03	0.95	0.358	0.948	0.570	0.486	1.36	0.00	0.00
25.781	31.702	0.912	3183.7	2698.2	22.319	3.029	2.72		Clay	37.7			29.96	0.94	n.a.	n.a.	0.95	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.846	25.443	0.801	3191.6	2702.0	17.652	3.359	2.83		Clay	41.7			24.05	0.94	n.a.	n.a.	0.95	0.358	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
25.912	19.827	0.731	3199.4	2705.7	13.473	4.010	2.97		Clay	47.3			18.74	0.94	n.a.	n.a.	0.95	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
25.978	15.661	0.687	3207.3	2709.5	10.376	4.887	3.11		Clay	53.5			14.80	0.94	n.a.	n.a.	0.95	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.043	12.666	0.627	3215.2	2713.3	8.151	5.670	3.23		Clay	59.1			11.97	0.94	n.a.	n.a.	0.95	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.109	11.430	0.613	3223.1	2717.1	7.227	6.243	3.30		Clay	62.3			10.80	0.94	n.a.	n.a.	0.95	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.174	11.922	0.602	3230.9	2720.8	7.576	5.841	3.26		Clay	60.7			11.27	0.94	n.a.	n.a.	0.95	0.359	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.240	12.304	0.577	3238.8	2724.6	7.843	5.400	3.23		Clay	59.1			11.63	0.94	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.306	14.954	0.542	3246.7	2728.4	9.772	4.066	3.08		Clay	52.2			14.13	0.94	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.371	30.243	0.614	3254.5	2732.2	20.947	2.146	2.65		Clay	35.3			28.59	0.93	n.a.	n.a.	0.94	0.360	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.437	54.263	0.557	3262.4	2736.0	43.749	1.058	2.21		Sand	22.1	65	1.8	117.00	0.91	106.07	163.53	0.94	0.360	0.954	0.351	0.301	0.84	0.01	0.01
26.502	72.091	0.470	3270.3	2739.7	58.524	0.667	2.00		Sand	16.9		1.8	122.65	0.90	110.89	158.11	0.94	0.360	0.956	0.314	0.270	0.75	0.02	0.01
26.568	59.900	0.502	3278.2	2743.5	48.361	0.862	2.13		Sand	19.9	60	1.8	108.00	0.90	97.19	148.41	0.94	0.360	0.959	0.264	0.228	0.63	0.02	0.02
26.634	47.316	0.606	3286.0	2747.3	37.886	1.327	2.32		Sand	25.0	60	1.8	108.00	0.90	97.44	155.69	0.94	0.361	0.956	0.300	0.258	0.72	0.02	0.01
26.699	36.911	0.793	3293.9	2751.1	29.232	2.249	2.55		Sand	31.8	60	1.8	108.00	0.90	97.56	159.97	0.94	0.361	0.954	0.326	0.280	0.78	0.01	0.01
26.765	28.317	0.875	3301.8	2754.9	19.359	3.281	2.79		Clay	40.3			26.76	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.830	23.565	1.017	3309.6	2758.6	15.885	4.642	2.95		Clay	46.7			22.27	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.896	18.218	1.220	3317.5	2762.4	11.989	7.367	3.17		Clay	56.4			17.22	0.93	n.a.	n.a.	0.94	0.361	n.a.	n.a.	n.a.	n.a.	0.00	0.00
26.962	14.833	1.301	3325.4	2766.2	9.522	9.878	3.33		Clay	64.1			14.02	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.027	12.703	1.352	3333.3	2770.0	7.969	12.250	3.45		Clay	70.2			12.01	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.093	12.304	1.192	3341.1	2773.7	7.667	11.210	3.44		Clay	69.5			11.63	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.158	12.741	1.048	3349.0	2777.5	7.969	9.470	3.38		Clay	66.4			12.04	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.224	13.280	0.934	3356.9	2781.3	8.343	8.051	3.32		Clay	63.3			12.55	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.290	15.754	0.830	3364.8	2785.1	10.105	5.898	3.17		Clay	56.2			14.89	0.93	n.a.	n.a.	0.94	0.362	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.355	18.599	0.708	3372.6	2788.9	12.129	4.186	3.01		Clay	49.3			17.58	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.421	28.950	0.630	3380.5	2792.6	19.523	2.311	2.69		Clay	36.8			27.36	0.93	n.a.	n.a.	0.94	0.363	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.486	159.470	0.729	3388.4	2796.4	129.721	0.462	1.62		Sand	9.8		1.8	271.31	0.93	252.07	274.60	0.94	0.363	0.916	2.000	1.648	4.54	0.00	0.00
27.552	117.854	0.696	3396.2	2800.2	95.438	0.599	1.79		Sand	12.8	140	1.8	252.00	0.93	234.05	282.45	0.94	0.363	0.916	2.000	1.648	4.54	0.00	0.00
27.618	76.927	0.824	3404.1	2804.0	61.766	1.095	2.10		Sand	19.3	115	1.8	207.00	0.93	192.18	267.85	0.94	0.363	0.916	2.000	1.647	4.53	0.00	0.00
27.683	56.477	0.803	3412.0	2807.8	44.941	1.466	2.29		Sand	24.0	115	1.8	207.00	0.93	192.12	278.92	0.94	0.363	0.915	2.000	1.646	4.53	0.00	0.00
27.749	43.764	1.144	3419.9	2811.5	34.483	2.720	2.54		Sand	31.7	115	1.8	207.00	0.93	192.05	286.45	0.94	0.364	0.915	2.000	1.646	4.53	0.00	0.00
27.814	33.042	1.828	3427.7	2815.3	22.256	5.835	2.91		Clay	44.9			31.23	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.880	25.611	2.103	3435.6	2819.1	16.951	8.802	3.12		Clay	53.7			24.21	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
27.946	21.761	2.230	3443.5	2822.9	14.198	11.128	3.24		Clay	59.6			20.57	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.011	17.660	2.143	3451.3	2826.6	11.274	13.449	3.37		Clay	66.0			16.69	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.077	16.675	2.066	3459.2	2830.4	10.561	13.824	3.40		Clay	67.4			15.76	0.93	n.a.	n.a.	0.94	0.364	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.142	16.209	1.765	3467.1	2834.2	10.215	12.193	3.37		Clay	66.0			15.32	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.208	16.079	1.288	3475.0	2838.0	10.107	8.981	3.29		Clay	61.8			15.20	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.274	15.995	0.852	3482.8	2841.8	10.032	5.977	3.17		Clay	56.5			15.12	0.93	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.339	16.061	0.573	3490.7	2845.5	10.062	4.003	3.07		Clay	51.6			15.18	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.405	16.414	0.468	3498.6	2849.3	10.293	3.191	3.00		Clay	48.8			15.51	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.470	16.730	0.455	3506.4	2853.1	10.499	3.038	2.98		Clay	48.0			15.81	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.536	17.353	0.413	3514.3	2856.9	10.918	2.648	2.93		Clay	46.0			16.40	0.92	n.a.	n.a.	0.94	0.365	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.602	17.744	0.390	3522.2	2860.7	11.174	2.440	2.91		Clay	44.9			16.77	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.667	18.162	0.357	3530.1	2864.4	11.449	2.177	2.87		Clay	43.4			17.17	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.733	18.739	0.403	3537.9	2868.2	11.833	2.375	2.88		Clay	43.8			17.71	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.798	19.688	0.444	3545.8	2872.0	12.476	2.478	2.87		Clay	43.4			18.61	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.864	20.543	0.472	3553.7	2875.8	13.051	2.515	2.86		Clay	43.0			19.42	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.930	20.822	0.531	3561.6	2879.5	13.225	2.789	2.88		Clay	43.8			19.68	0.92	n.a.	n.a.	0.94	0.366	n.a.	n.a.	n.a.	n.a.	0.00	0.00
28.995	21.259	0.547	3569.4	2883.3	13.508	2.809	2.87		Clay	43.6			20.09	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.061	22.235	0.547	3577.3	2887.1	14.164	2.675	2.84		Clay	42.4			21.02	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.126	22.394	0.555	3585.2	2890.9	14.253	2.694	2.84		Clay	42.4			21.17	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.192	22.096	0.548	3593.0	2894.7	14.025	2.700	2.85		Clay	42.6			20.88	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.258	21.919	0.559	3600.9	2898.4	13.882	2.779	2.86		Clay	43.1			20.72	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.323	21.845	0.643	3608.8	2902.2	13.811	3.208	2.90		Clay	44.6			20.65	0.92	n.a.	n.a.	0.94	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.389	21.742	0.690	3616.7	2906.0	13.719	3.461	2.92		Clay	45.5			20.55	0.92	n.a.	n.a.	0.93	0.367	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.454	21.501	0.698	3624.5	2909.8	13.533	3.545	2.93		Clay	45.9			20.32	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.520	19.929	0.701	3632.4	2913.6	12.433	3.870	2.99		Clay	48.1			18.84	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.586	18.441	0.732	3640.3	2917.3	11.395	4.404	3.05		Clay	50.8			17.43	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.651	17.772	0.746	3648.1	2921.1	10.919	4.678	3.08		Clay	52.2			16.80	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.717	17.697	0.767	3656.0	2924.9	10.851	4.833	3.09		Clay	52.6			16.73	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.782	16.814	0.756	3663.9	2928.7	10.231	5.046	3.12		Clay	54.1			15.89	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.848	16.870	0.745	3671.8	2932.4	10.254	4.955	3.12		Clay	53.8			15.95	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.914	17.251	0.704	3679.6	2936.2	10.497	4.568	3.09		Clay	52.5			16.31	0.92	n.a.	n.a.	0.93	0.368	n.a.	n.a.	n.a.	n.a.	0.00	0.00
29.979	17.363	0.673	3687.5	2940.0	10.557	4.337	3.07		Clay	51.8			16.41	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.045	16.888	0.636	3695.4	2943.8	10.218	4.229	3.08		Clay	52.0			15.96	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.110	17.279	0.616	3703.2	2947.6	10.468	3.993	3.05		Clay	51.0			16.33	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.176	17.111	0.572	3711.1	2951.3	10.338	3.749	3.04		Clay	50.5			16.17	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.242	16.302	0.542	3719.0	2955.1	9.775	3.753	3.06		Clay	51.3			15.41	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
30.307	19.036	0.567	3726.9	2958.9	11.607	3.302	2.97		Clay	47.4			17.99	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.373	19.036	0.567	3734.7	2962.7	11.590	3.303	2.97		Clay	47.4			17.99	0.92	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.438	20.103	0.532	3742.6	2966.5	12.292	2.918	2.92		Clay	45.3			19.00	0.91	n.a.	n.a.	0.93	0.369	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.504	22.375	0.462	3750.5	2970.2	13.803	2.254	2.81		Clay	41.1			21.15	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.570	21.324	0.474	3758.4	2974.0	13.077	2.438	2.85		Clay	42.6			20.16	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.635	22.542	0.577	3766.2	2977.8	13.875	2.793	2.86		Clay	43.1			21.31	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.701	24.569	0.597	3774.1	2981.6	15.215	2.632	2.82		Clay	41.3			23.22	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.766	23.630	0.701	3782.0	2985.3	14.564	3.225	2.88		Clay	43.9			22.33	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.832	23.453	0.754	3789.8	2989.1	14.424	3.498	2.91		Clay	44.9			22.17	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.898	24.310	0.952	3797.7	2992.9	14.976	4.248	2.95		Clay	46.5			22.98	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
30.963	24.067	1.046	3805.6	2996.7	14.793	4.719	2.98		Clay	47.8			22.75	0.91	n.a.	n.a.	0.93	0.370	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.029	22.858	1.158	3813.5	3000.5	13.965	5.527	3.04		Clay	50.5			21.60	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.094	21.482	1.136	3821.3	3004.2	13.029	5.804	3.08		Clay	52.1			20.30	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.160	21.204	1.116	3829.2	3008.0	12.825	5.786	3.08		Clay	52.3			20.04	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.226	20.292	1.213	3837.1	3011.8	12.201	6.602	3.14		Clay	54.7			19.18	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.291	18.953	1.126	3844.9	3015.6	11.295	6.612	3.16		Clay	55.9			17.91	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.357	19.529	1.126	3852.8	3019.4	11.660	6.397	3.14		Clay	55.0			18.46	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.422	19.957	1.104	3860.7	3023.1	11.926	6.124	3.12		Clay	54.1			18.86	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.488	22.421	0.901	3868.6	3026.9	13.536	4.398	2.99		Clay	48.3			21.19	0.91	n.a.	n.a.	0.93	0.371	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.554	22.979	0.886	3876.4	3030.7	13.885	4.211	2.97		Clay	47.4			21.72	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.619	24.691	0.933	3884.3	3034.5	14.994	4.101	2.94		Clay	46.1			23.34	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.685	25.490	0.966	3892.2	3038.2	15.498	4.103	2.93		Clay	45.6			24.09	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.750	24.114	1.095	3900.0	3042.0	14.572	4.940	3.00		Clay	48.6			22.79	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.816	22.682	1.160	3907.9	3045.8	13.611	5.596	3.05		Clay	51.1			21.44	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.882	22.421	1.263	3915.8	3049.6	13.420	6.172	3.09		Clay	52.5			21.19	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
31.947	22.933	1.301	3923.7	3053.4	13.736	6.204	3.08		Clay	52.2			21.68	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.013	22.784	1.312	3931.5	3057.1	13.619	6.302	3.09		Clay	52.5			21.53	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.078	22.858	1.294	3939.4	3060.9	13.648	6.195	3.08		Clay	52.3			21.60	0.91	n.a.	n.a.	0.93	0.372	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.144	23.900	1.226	3947.3	3064.7	14.309	5.591	3.04		Clay	50.3			22.59	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.210	23.956	1.176	3955.2	3068.5	14.325	5.351	3.02		Clay	49.8			22.64	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.275	24.700	1.066	3963.0	3072.3	14.789	4.692	2.98		Clay	47.8			23.35	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.341	25.453	1.029	3970.9	3076.0	15.258	4.385	2.95		Clay	46.6			24.06	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.406	25.537	1.049	3978.8	3079.8	15.292	4.455	2.95		Clay	46.7			24.14	0.91	n.a.	n.a.	0.93	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.472	26.085	1.109	3986.6	3083.6	15.626	4.603	2.95		Clay	46.8			24.66	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.538	28.048	1.270	3994.5	3087.4	16.876	4.875	2.94		Clay	46.4			26.51	0.91	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.603	33.953	1.415	4002.4	3091.1	20.673	4.429	2.85		Clay	42.7			32.09	0.90	n.a.	n.a.	0.92	0.373	n.a.	n.a.	n.a.	n.a.	0.00	0.00
32.669	66.762	1.305	4010.3	3094.9	50.610	2.015	2.33		Sand	25.3	160		160.00	0.89	142.21	215.05	0.92	0.373	0.886	2.000	1.594	4.27	0.00	0.00
32.734	87.463	1.206	4018.1	3098.7	66.744	1.411	2.14		Sand	20.3	160		160.00	0.88	141.52	205.93	0.92	0.373	0.892	1.521	1.221	3.27	0.00	0.00
32.800	112.861	1.296	4026.0	3102.5	86.526	1.169	2.00		Sand	17.0	165		165.00	0.88	145.56	201.47	0.92	0.374	0.898	1.219	0.984	2.64	0.00	0.00
32.866	138.751	1.245	4033.9	3106.3	106.667	0.911	1.86		Sand	14.1	185		185.00	0.89	163.83	209.93	0.92	0.374	0.886	1.888	1.505	4.03	0.00	0.00
32.931	171.235	1.297	4041.7	3110.0	131.925	0.766	1.74		Sand	11.9	200		200.00	0.89	177.09	210.40	0.92	0.374	0.885	1.940	1.544	4.13	0.00	0.00
32.997	269.569	1.229	4049.6	3113.8	208.459	0.459	1.45		Sand	7.4			254.79	0.89	227.84	231.83	0.92	0.374	0.884	2.000	1.590	4.25	0.00	0.00
33.062	309.129	1.298	4057.5	3117.6	239.135	0.423	1.38		Sand	6.5			292.18	0.90	263.79	265.22	0.92	0.374	0.884	2.000	1.590	4.25	0.00	0.00
33.128	361.310	1.422	4065.4	3121.4	279.595	0.396	1.31		Sand	5.6			341.50	0.90	308.21	308.53	0.92	0.374	0.883	2.000	1.589	4.25	0.00	0.00
33.194	397.997	1.394	4073.2	3125.2	307.956	0.352	1.25		Sand	5.0			376.18	0.90	339.40	339.45	0.92	0.374	0.883	2.000	1.588	4.25	0.00	0.00
33.259	435.372	1.252	4081.1	3128.9	336.817	0.289	1.16		Sand	4.1			411.50	0.90	371.16	371.16	0.92	0.374	0.883	2.000	1.588	4.24	0.00	0.00
33.325	465.791	1.275	4089.0	3132.7	360.241	0.275	1.13		Sand	3.8			440.26	0.90	396.96	396.96	0.92	0.374	0.882	2.000	1.587	4.24	0.00	0.00
33.390	505.836	2.091	4096.8	3136.5	391.109	0.415	1.21		Sand	4.6			478.11	0.90	430.95	430.97	0.92	0.374	0.882	2.000	1.587	4.24	0.00	0.00
33.456	524.342	2.843	4104.7	3140.3	405.229	0.544	1.29		Sand	5.4			495.60	0.90	446.58	446.80	0.92	0.374	0.882	2.000	1.586	4.23	0.00	0.00
33.522	523.227	3.020	4112.6	3144.0	404.118	0.579	1.31		Sand	5.6			494.54	0.90	445.49	445.90	0.92	0.375	0.881	2.000	1.585	4.23	0.00	0.00
33.587	530.526	3.064	4120.5	3147.8	409.528	0.580	1.30		Sand	5.6			501.44	0.90	451.56	451.93	0.92	0.375	0.881	2.000	1.585	4.23	0.00	0.00
33.653	532.414	4.100	4128.3	3151.6	410.742	0.773	1.40		Sand	6.7			503.23	0.90	453.02	456.18	0.92	0.375	0.880	2.000	1.584	4.23	0.00	0.00
33.718	532.461	3.731	4136.2	3155.4	410.529	0.703	1.37		Sand	6.3			503.27	0.90	452.92	454.64	0.92	0.375	0.880	2.000	1.583	4.22	0.00	0.00
33.784	524.212	3.688	4144.1	3159.2	403.900	0.706	1.37		Sand	6.4			495.47	0.90	445.76	447.67	0.92	0.375	0.880	2.000	1.583	4.22	0.00	0.00
33.850	509.434	4.072	4152.0	3162.9	392.231	0.803	1.43		Sand	7.0			481.51	0.90	433.06	437.67	0.92	0.375	0.879	2.000	1.582	4.22	0.00	0.00
33.915	504.265	3.585	4159.8	3166.7	388.000	0.714	1.39		Sand	6.6			476.62	0.90	428.53	430.98	0.92	0.375	0.879	2.000	1.581	4.22	0.00	0.00
33.981	488.939	3.764	4167.7	3170.5	375.931	0.773	1.42		Sand	7.0			462.14	0.90	415.37	419.74	0.92	0.375	0.879	2.000	1.581	4.21	0.00	0.00
34.046	485.088	3.502	4175.6	3174.3	372.733	0.725	1.41		Sand	6.8			458.50	0.90	411.97	415.14	0.92	0.375	0.878	2.000	1.580	4.21	0.00	0.00
34.112	475.547	4.602	4183.4	3178.1	365.149	0.972	1.51		Sand	8.2			449.48	0.90	403.74	416.74	0.92	0.375	0.878	2.000	1.579	4.21	0.00	0.00
34.178	450.066	4.086	4191.3	3181.8	345.289	0.912	1.50		Sand	8.1			425.39	0.90	381.99	393.50	0.92	0.375	0.878	2.000	1.579	4.20	0.00	0.00
34.243	445.174	3.418	4199.2	3185.6	341.313	0.771	1.45		Sand	7.4			420.77	0.90	377.72	383.64	0.92	0.376	0.877	2.000	1.578	4.20	0.00	0.00
34.309	431.578	4.033	4207.1	3189.4	330.640	0.939	1.53		Sand	8.4			407.92	0.90	366.07	380.00	0.92	0.376	0.877	2.000	1.577	4.20	0.00	0.00
34.374	427.226	3.753	4214.9	3193.2	327.093	0.883	1.51		Sand	8.1			403.81	0.90	362.26	373.74	0.92	0.376	0.877	2.000	1.577	4.20	0.00	0.00
34.440	403.846	3.607	4222.8	3196.9	308.918	0.898	1.53		Sand	8.4			381.71	0.90	342.33	356.00	0.92	0.376	0.876	2.000	1.576	4.19	0.00	0.00
34.506	398.667	4.014	4230.7	3200.7	304.753	1.012	1.57		Sand	9.1			376.81	0.90	337.84	357.85	0.92	0.376	0.876	2.000	1.576	4.19	0.00	0.00
34.571	367.234	4.515	4238.5	3204.5	280.428	1.237	1.66		Sand	10.5			347.10	0.90	311.10	345.52	0.92	0.376	0.875	2.000	1.575	4.19	0.00	0.00
34.637	349.001	3.626	4246.4	3208.3	266.264	1.045	1.62		Sand	9.8			329.87	0.90	295.57	321.15	0.92	0.376	0.875	2.000	1.574	4.19	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
34.702	332.838	3.630	4254.3	3212.1	253.705	1.098	1.65		Sand	10.3			314.59	0.90	281.79	311.44	0.92	0.376	0.875	2.000	1.574	4.18	0.00	0.00
34.768	318.524	3.723	4262.2	3215.8	242.578	1.177	1.69		Sand	10.9			301.06	0.90	269.59	304.34	0.92	0.376	0.874	2.000	1.573	4.18	0.00	0.00
34.834	272.898	3.622	4270.0	3219.6	207.472	1.338	1.77		Sand	12.4			257.94	0.90	230.90	275.56	0.92	0.376	0.874	2.000	1.572	4.18	0.00	0.00
34.899	235.857	3.474	4277.9	3223.4	178.981	1.486	1.85		Sand	13.8			222.93	0.89	199.11	249.91	0.92	0.376	0.874	2.000	1.572	4.18	0.00	0.00
34.965	232.640	3.470	4285.8	3227.2	176.411	1.505	1.86		Sand	14.0			219.89	0.89	196.10	247.46	0.92	0.376	0.873	2.000	1.571	4.17	0.00	0.00
35.030	209.763	3.017	4293.6	3231.0	158.806	1.453	1.88		Sand	14.4			198.26	0.88	174.75	224.49	0.92	0.377	0.873	2.000	1.570	4.17	0.00	0.00
35.096	189.257	2.421	4301.5	3234.7	143.035	1.294	1.87		Sand	14.3			178.88	0.87	155.64	201.17	0.92	0.377	0.887	1.202	0.959	2.55	0.00	0.00
35.162	158.261	2.108	4309.4	3238.5	119.267	1.350	1.94		Sand	15.7	175		175.00	0.87	152.49	204.50	0.92	0.377	0.882	1.414	1.122	2.98	0.00	0.00
35.227	151.723	1.923	4317.3	3242.3	114.202	1.286	1.94		Sand	15.7	175		175.00	0.87	152.41	204.31	0.92	0.377	0.882	1.400	1.111	2.95	0.00	0.00
35.293	140.918	1.452	4325.1	3246.1	105.887	1.046	1.90		Sand	14.9	175		175.00	0.87	152.01	200.30	0.92	0.377	0.887	1.154	0.921	2.44	0.00	0.00
35.358	130.446	1.604	4333.0	3249.8	97.836	1.250	1.98		Sand	16.6	175		175.00	0.87	152.65	208.43	0.92	0.377	0.875	1.738	1.368	3.63	0.00	0.00
35.424	80.647	1.168	4340.9	3253.6	59.818	1.488	2.19		Sand	21.6	150		150.00	0.86	129.67	193.27	0.92	0.377	0.895	0.852	0.686	1.82	0.00	0.00
35.490	77.113	1.165	4348.8	3257.4	57.088	1.555	2.22		Sand	22.3	150		150.00	0.86	129.71	194.56	0.91	0.377	0.893	0.898	0.722	1.91	0.00	0.00
35.555	62.875	1.809	4356.6	3261.2	46.211	2.980	2.48		Sand	29.6	150		150.00	0.87	130.27	202.66	0.91	0.377	0.883	1.290	1.025	2.72	0.00	0.00
35.621	47.410	1.969	4364.5	3265.0	27.705	4.354	2.75		Clay	38.9			44.81	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.686	33.432	2.451	4372.4	3268.7	19.118	7.844	3.04		Clay	50.6			31.60	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.752	30.373	2.626	4380.2	3272.5	17.224	9.318	3.13		Clay	54.3			28.71	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.818	27.658	2.655	4388.1	3276.3	15.544	10.427	3.19		Clay	57.3			26.14	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.883	28.187	2.491	4396.0	3280.1	15.847	9.585	3.16		Clay	55.9			26.64	0.89	n.a.	n.a.	0.91	0.377	n.a.	n.a.	n.a.	n.a.	0.00	0.00
35.949	29.210	2.191	4403.9	3283.9	16.449	8.112	3.10		Clay	53.1			27.61	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.014	30.428	2.168	4411.7	3287.6	17.169	7.682	3.07		Clay	51.8			28.76	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.080	33.106	1.313	4419.6	3291.4	18.774	4.250	2.87		Clay	43.4			31.29	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.146	35.143	1.359	4427.5	3295.2	19.986	4.127	2.84		Clay	42.3			33.22	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.211	32.047	1.353	4435.3	3299.0	18.084	4.536	2.90		Clay	44.7			30.29	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.277	28.745	1.335	4443.2	3302.7	16.061	5.033	2.97		Clay	47.5			27.17	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.342	26.235	1.437	4451.1	3306.5	14.522	5.985	3.05		Clay	50.9			24.80	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.408	21.808	1.574	4459.0	3310.3	11.829	8.039	3.20		Clay	57.8			20.61	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.474	19.203	1.598	4466.8	3314.1	10.241	9.417	3.30		Clay	62.2			18.15	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.539	18.265	1.434	4474.7	3317.9	9.661	8.947	3.30		Clay	62.4			17.26	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.605	18.227	1.157	4482.6	3321.6	9.625	7.238	3.24		Clay	59.6			17.23	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.670	18.208	1.077	4490.4	3325.4	9.600	6.747	3.22		Clay	58.7			17.21	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.736	15.930	0.963	4498.3	3329.2	8.219	7.039	3.29		Clay	61.8			15.06	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.802	13.941	0.828	4506.2	3333.0	7.014	7.084	3.34		Clay	64.5			13.18	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.867	13.020	0.691	4514.1	3336.8	6.451	6.420	3.34		Clay	64.6			12.31	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.933	12.425	0.621	4521.9	3340.5	6.085	6.110	3.35		Clay	65.0			11.74	0.89	n.a.	n.a.	0.91	0.378	n.a.	n.a.	n.a.	n.a.	0.00	0.00
36.998	12.154	0.533	4529.8	3344.3	5.914	5.390	3.33		Clay	63.9			11.49	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.064	12.229	0.471	4537.7	3348.1	5.950	4.729	3.29		Clay	62.2			11.56	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.130	12.182	0.401	4545.6	3351.9	5.913	4.047	3.26		Clay	60.4			11.51	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.195	12.201	0.375	4553.4	3355.6	5.915	3.779	3.24		Clay	59.6			11.53	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.261	12.499	0.333	4561.3	3359.4	6.083	3.259	3.20		Clay	57.5			11.81	0.89	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.326	12.992	0.322	4569.2	3363.2	6.367	3.007	3.16		Clay	55.8			12.28	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.392	13.466	0.339	4577.0	3367.0	6.639	3.033	3.15		Clay	55.2			12.73	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.458	13.680	0.357	4584.9	3370.8	6.757	3.135	3.15		Clay	55.3			12.93	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.523	13.550	0.372	4592.8	3374.5	6.670	3.306	3.17		Clay	56.1			12.81	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.589	13.634	0.381	4600.7	3378.3	6.710	3.362	3.17		Clay	56.1			12.89	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.654	13.829	0.398	4608.5	3382.1	6.815	3.453	3.17		Clay	56.2			13.07	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.720	13.782	0.409	4616.4	3385.9	6.777	3.565	3.18		Clay	56.6			13.03	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.786	13.958	0.403	4624.3	3389.7	6.871	3.460	3.17		Clay	56.1			13.19	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.851	13.894	0.403	4632.1	3393.4	6.824	3.481	3.17		Clay	56.2			13.13	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.917	13.652	0.423	4640.0	3397.2	6.671	3.733	3.20		Clay	57.4			12.90	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
37.982	13.558	0.417	4647.9	3401.0	6.606	3.712	3.20		Clay	57.5			12.81	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.048	14.796	0.424	4655.8	3404.8	7.324	3.401	3.14		Clay	54.8			13.98	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.114	14.591	0.498	4663.6	3408.5	7.193	4.062	3.19		Clay	57.1			13.79	0.88	n.a.	n.a.	0.91	0.379	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.179	14.126	0.505	4671.5	3412.3	6.910	4.283	3.22		Clay	58.4			13.35	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.245	13.986	0.506	4679.4	3416.1	6.818	4.345	3.23		Clay	58.8			13.22	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.310	13.708	0.538	4687.2	3419.9	6.646	4.734	3.26		Clay	60.3			12.96	0.88	n.a.	n.a.	0.91	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.376	13.448	0.544	4695.1	3423.7	6.485	4.901	3.27		Clay	61.1			12.71	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.442	13.141	0.540	4703.0	3427.4	6.296	5.005	3.29		Clay	61.9			12.42	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.507	12.870	0.514	4710.9	3431.2	6.129	4.888	3.29		Clay	62.1			12.16	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.573	12.787	0.477	4718.7	3435.0	6.071	4.574	3.28		Clay	61.4			12.09	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.638	12.620	0.448	4726.6	3438.8	5.965	4.368	3.27		Clay	61.2			11.93	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.704	12.620	0.413	4734.5	3442.6	5.956	4.028	3.25		Clay	60.2			11.93	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.770	12.768	0.340	4742.4	3446.3	6.034	3.270	3.20		Clay	57.6			12.07	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.835	12.861	0.324	4750.2	3450.1	6.079	3.090	3.18		Clay	56.9			12.16	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.901	12.322	0.328	4758.1	3453.9	5.758	3.299	3.22		Clay	58.5			11.65	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
38.966	11.940	0.319	4766.0	3457.7	5.528	3.338	3.24		Clay	59.4			11.29	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.032	11.876	0.321	4773.8	3461.4	5.483	3.383	3.24		Clay	59.7			11.22	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc = 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
39.098	11.950	0.314	4781.7	3465.2	5.517	3.285	3.23		Clay	59.2			11.29	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.163	12.034	0.329	4789.6	3469.0	5.557	3.413	3.24		Clay	59.5			11.37	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.229	11.913	0.338	4797.5	3472.8	5.479	3.553	3.25		Clay	60.2			11.26	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.294	12.480	0.307	4805.3	3476.6	5.797	3.046	3.20		Clay	57.5			11.80	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.360	12.852	0.306	4813.2	3480.3	6.003	2.930	3.18		Clay	56.5			12.15	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.426	13.196	0.317	4821.1	3484.1	6.191	2.939	3.17		Clay	56.0			12.47	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.491	13.484	0.340	4828.9	3487.9	6.347	3.071	3.17		Clay	56.1			12.74	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.557	13.736	0.355	4836.8	3491.7	6.483	3.137	3.16		Clay	56.0			12.98	0.88	n.a.	n.a.	0.90	0.380	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.622	13.661	0.388	4844.7	3495.5	6.430	3.452	3.19		Clay	57.1			12.91	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.688	12.982	0.423	4852.6	3499.2	6.033	4.007	3.25		Clay	59.9			12.27	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.754	12.870	0.452	4860.4	3503.0	5.960	4.330	3.27		Clay	61.1			12.16	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.819	12.713	0.476	4868.3	3506.8	5.862	4.631	3.29		Clay	62.2			12.02	0.88	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.885	12.471	0.466	4876.2	3510.6	5.716	4.645	3.30		Clay	62.6			11.79	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
39.950	12.601	0.455	4884.0	3514.3	5.781	4.479	3.29		Clay	62.0			11.91	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.016	11.940	0.460	4891.9	3518.1	5.397	4.845	3.34		Clay	64.2			11.29	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.082	11.727	0.431	4899.8	3521.9	5.268	4.646	3.33		Clay	64.1			11.08	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.147	11.597	0.403	4907.7	3525.7	5.187	4.408	3.33		Clay	63.7			10.96	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.213	11.373	0.372	4915.5	3529.5	5.052	4.173	3.32		Clay	63.5			10.75	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.278	11.206	0.352	4923.4	3533.2	4.950	4.025	3.32		Clay	63.5			10.59	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.344	11.225	0.335	4931.3	3537.0	4.953	3.824	3.31		Clay	62.9			10.61	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.410	11.057	0.323	4939.2	3540.8	4.851	3.761	3.31		Clay	63.1			10.45	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.475	11.076	0.304	4947.0	3544.6	4.854	3.534	3.30		Clay	62.3			10.47	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.541	11.392	0.267	4954.9	3548.4	5.025	2.995	3.25		Clay	59.9			10.77	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.606	11.494	0.261	4962.8	3552.1	5.074	2.896	3.24		Clay	59.3			10.86	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.672	11.447	0.250	4970.6	3555.9	5.040	2.790	3.23		Clay	59.0			10.82	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.738	11.355	0.258	4978.5	3559.7	4.981	2.910	3.24		Clay	59.7			10.73	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.803	11.076	0.275	4986.4	3563.5	4.817	3.204	3.28		Clay	61.3			10.47	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.869	11.104	0.270	4994.3	3567.2	4.826	3.137	3.27		Clay	61.1			10.50	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
40.934	11.364	0.255	5002.1	3571.0	4.964	2.877	3.24		Clay	59.6			10.74	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.000	12.396	0.243	5010.0	3574.8	5.534	2.457	3.17		Clay	56.1			11.72	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.066	13.634	0.212	5017.9	3578.6	6.218	1.906	3.07		Clay	51.6			12.89	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.131	13.494	0.199	5025.7	3582.4	6.131	1.812	3.06		Clay	51.4			12.75	0.87	n.a.	n.a.	0.90	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.197	12.573	0.184	5033.6	3586.1	5.608	1.830	3.10		Clay	53.0			11.88	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.262	13.550	0.192	5041.5	3589.9	6.145	1.741	3.05		Clay	51.0			12.81	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.328	15.949	0.191	5049.4	3593.7	7.471	1.423	2.94		Clay	46.1			15.07	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.394	15.995	0.211	5057.2	3597.5	7.487	1.567	2.96		Clay	46.9			15.12	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.459	17.344	0.221	5065.1	3601.2	8.226	1.492	2.91		Clay	45.0			16.39	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.525	17.213	0.213	5073.0	3605.0	8.142	1.451	2.91		Clay	44.9			16.27	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.590	18.376	0.264	5080.8	3608.8	8.776	1.667	2.91		Clay	45.0			17.37	0.87	n.a.	n.a.	0.89	0.381	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.656	18.748	0.328	5088.7	3612.6	8.971	2.024	2.94		Clay	46.4			17.72	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.722	18.330	0.395	5096.6	3616.4	8.728	2.503	3.00		Clay	48.8			17.33	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.787	17.920	0.417	5104.5	3620.1	8.490	2.713	3.03		Clay	50.1			16.94	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.853	18.413	0.431	5112.3	3623.9	8.751	2.718	3.02		Clay	49.6			17.40	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.918	19.343	0.453	5120.2	3627.7	9.253	2.699	3.00		Clay	48.7			18.28	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
41.984	21.613	0.532	5128.1	3631.5	10.491	2.793	2.96		Clay	47.1			20.43	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.050	24.346	0.607	5136.0	3635.3	11.982	2.787	2.91		Clay	45.2			23.01	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.115	26.039	0.685	5143.8	3639.0	12.897	2.919	2.90		Clay	44.6			24.61	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.181	24.263	0.791	5151.7	3642.8	11.907	3.647	2.98		Clay	48.1			22.93	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.246	23.844	0.860	5159.6	3646.6	11.663	4.044	3.02		Clay	49.5			22.54	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.312	23.853	0.897	5167.4	3650.4	11.653	4.217	3.03		Clay	50.0			22.55	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.378	21.956	0.988	5175.3	3654.1	10.601	5.101	3.11		Clay	53.6			20.75	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.443	21.696	0.991	5183.2	3657.9	10.445	5.187	3.12		Clay	54.1			20.51	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.509	24.474	1.000	5191.1	3661.7	11.950	4.571	3.04		Clay	50.5			23.13	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.574	28.560	1.087	5198.9	3665.5	14.165	4.187	2.96		Clay	47.1			26.99	0.87	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.640	26.290	1.112	5206.8	3669.3	12.911	4.695	3.02		Clay	49.7			24.85	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.706	24.486	1.057	5214.7	3673.0	11.913	4.831	3.06		Clay	51.2			23.14	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.771	21.417	1.057	5222.5	3676.8	10.229	5.621	3.15		Clay	55.4			20.24	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.837	21.482	1.057	5230.4	3680.6	10.252	5.602	3.15		Clay	55.3			20.30	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.902	20.515	1.046	5238.3	3684.4	9.714	5.845	3.18		Clay	56.7			19.39	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
42.968	19.520	1.022	5246.2	3688.2	9.163	6.048	3.21		Clay	58.0			18.45	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.034	19.548	1.002	5254.0	3691.9	9.166	5.922	3.20		Clay	57.8			18.48	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.099	18.534	1.024	5261.9	3695.7	8.606	6.439	3.25		Clay	59.8			17.52	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.165	18.888	1.034	5269.8	3699.5	8.787	6.362	3.24		Clay	59.4			17.85	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.230	19.576	1.036	5277.6	3703.3	9.147	6.117	3.21		Clay	58.2			18.50	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.296	19.864	0.911	5285.5	3707.0	9.291	5.290	3.17		Clay	56.1			18.78	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.362	19.567	0.854	5293.4	3710.8	9.119	5.047	3.16		Clay	55.9			18.49	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.427	18.906	0.736	5301.3	3714.6	8.752	4.528	3.15		Clay	55.2			17.87	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

CPT No.	3

PGA (A_{max})	0.40

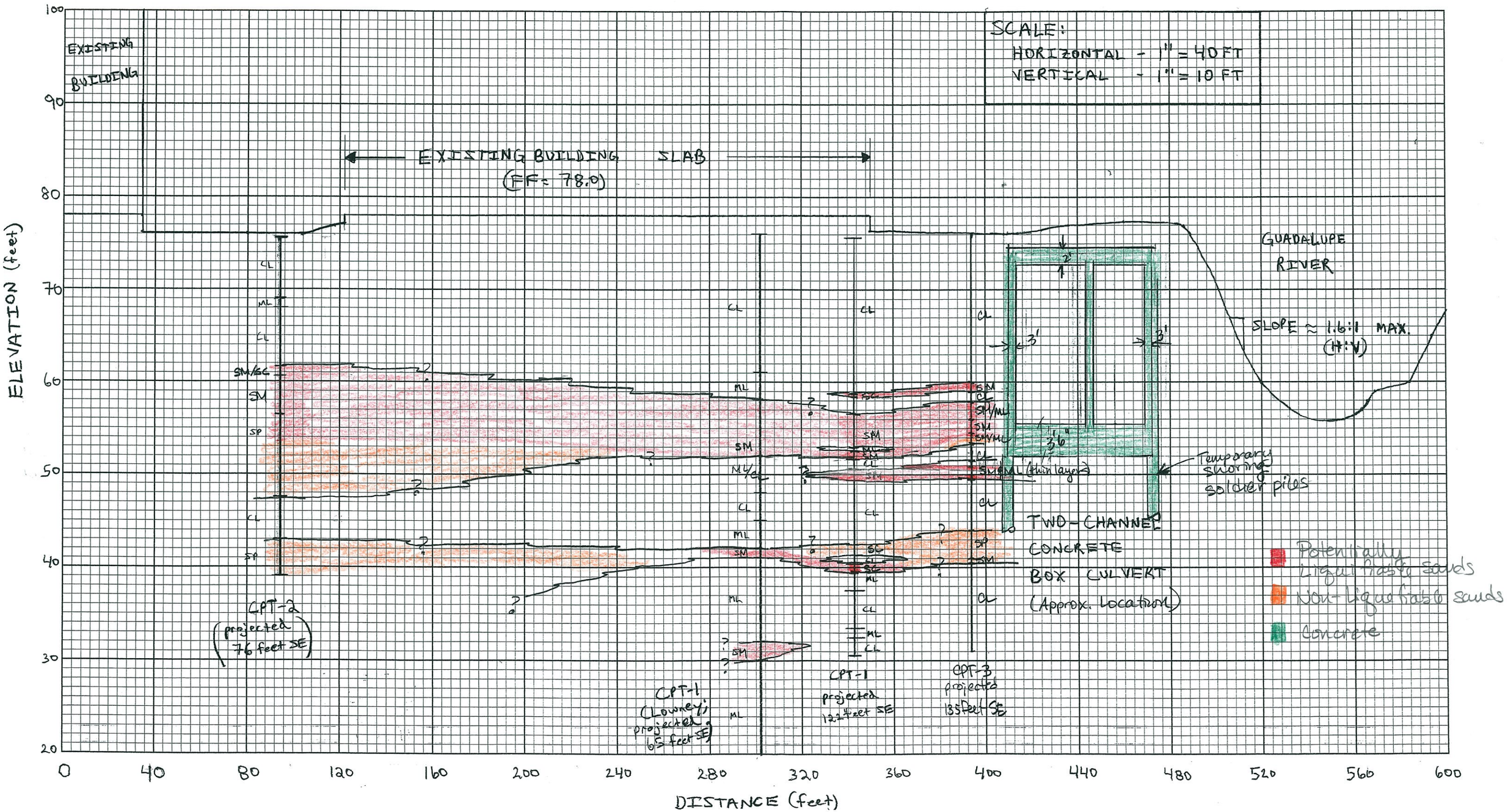
Total Settlement:	1.13	(Inches)

Depth (ft)	q_c (tsf)	f_s (tsf)	σ_{vc} (psf)	Insitu σ'_{vc} (psf)	Q	F (%)	Ic	Layer "Plastic" PI > 7	Flag Soil Type	Fines (%)	q_{cN} near interfaces (soft layer)	Thin Layer Factor (K_H)	Interpreted q_{cN}	C_N	q_{c1N}	$q_{c1N\text{-}CS}$	Stress Reduction Coeff, r_d	CSR	K_σ for Sand	$CRR_{M=7.5,\ \sigma'vc\ =\ 1\ atm}$	CRR	Factor of Safety (CRR/CSR)	Vertical Strain ε_v	Settlement (Inches)
43.493	19.213	0.609	5309.1	3718.4	8.906	3.678	3.09		Clay	52.6			18.16	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.558	19.771	0.606	5317.0	3722.2	9.195	3.541	3.07		Clay	51.6			18.69	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.624	20.003	0.601	5324.9	3725.9	9.308	3.466	3.06		Clay	51.2			18.91	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.690	19.771	0.620	5332.8	3729.7	9.172	3.625	3.07		Clay	51.9			18.69	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.755	19.288	0.608	5340.6	3733.5	8.902	3.659	3.09		Clay	52.5			18.23	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.821	17.827	0.561	5348.5	3737.3	8.109	3.702	3.12		Clay	54.1			16.85	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.886	17.409	0.529	5356.4	3741.1	7.875	3.591	3.13		Clay	54.2			16.45	0.86	n.a.	n.a.	0.89	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
43.952	17.418	0.556	5364.2	3744.8	7.870	3.773	3.14		Clay	54.8			16.46	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.018	16.758	0.491	5372.1	3748.6	7.508	3.489	3.14		Clay	54.7			15.84	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.083	15.874	0.437	5380.0	3752.4	7.027	3.315	3.15		Clay	55.2			15.00	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.149	15.298	0.410	5387.9	3756.2	6.711	3.253	3.16		Clay	55.8			14.46	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.214	14.870	0.428	5395.7	3759.9	6.475	3.516	3.19		Clay	57.2			14.05	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.280	14.759	0.457	5403.6	3763.7	6.407	3.790	3.21		Clay	58.3			13.95	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.346	14.572	0.454	5411.5	3767.5	6.299	3.826	3.22		Clay	58.7			13.77	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.411	14.443	0.458	5419.3	3771.3	6.222	3.903	3.23		Clay	59.1			13.65	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.477	14.479	0.467	5427.2	3775.1	6.233	3.969	3.23		Clay	59.3			13.69	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.542	14.712	0.452	5435.1	3778.8	6.348	3.768	3.22		Clay	58.4			13.91	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.608	16.777	0.476	5443.0	3782.6	7.432	3.387	3.13		Clay	54.5			15.86	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.674	18.255	0.478	5450.8	3786.4	8.203	3.078	3.07		Clay	51.9			17.25	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.739	18.636	0.441	5458.7	3790.2	8.394	2.772	3.04		Clay	50.5			17.61	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.805	18.599	0.430	5466.6	3794.0	8.364	2.710	3.04		Clay	50.3			17.58	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.870	18.627	0.474	5474.4	3797.7	8.368	2.983	3.06		Clay	51.3			17.61	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
44.936	19.724	0.555	5482.3	3801.5	8.935	3.268	3.06		Clay	51.2			18.64	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00
45.002	22.199	0.584	5490.2	3805.3	10.225	3.002	2.99		Clay	48.3			20.98	0.86	n.a.	n.a.	0.88	0.382	n.a.	n.a.	n.a.	n.a.	0.00	0.00

CORNERSTONE EARTH GROUP

Project Name: RIVER CORP. - BUILDING 3
Project Number: 102-7-1
Subject: SECTION A-A'

Date: 7/18/08
Drawn By: MdH
Checked By: UCK



PRIMARY DIVISIONS			SOIL TYPE	LEGEND	SECONDARY DIVISIONS
COARSE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE)	GRAVELS (MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE)	CLEAN GRAVELS (Less than 5% Fines)	GW		Well graded gravels, gravel–sand mixtures, little or no fines
			GP		Poorly graded gravels or gravel–sand mixtures, little or no fines
		GRAVEL WITH FINES	GM		Silty gravels, gravel–sand–silt mixtures, plastic fines
			GC		Clayey gravels, gravel–sand–clay mixtures, plastic fines
	SANDS (MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE)	CLEAN SANDS (Less than 5% Fines)	SW		Well graded sands, gravelly sands, little or no fines
			SP		Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	SM		Silty sands, sand–silt–mixtures, non–plastic fines
			SC		Clayey sands, sand–clay mixtures, plastic fines
FINE GRAINED SOILS (MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT IS LESS THAN 50 %)		ML		Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (LIQUID LIMIT IS GREATER THAN 50 %)		MH		Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH		Inorganic clays of high plasticity, fat clays
			OH		Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT		Peat and other highly organic soils

DEFINITION OF TERMS

U.S. STANDARD SIEVE SIZE: 200, 40, 10, 4

CLEAR SQUARE SIEVE OPENINGS: 3/4", 3", 12"

SILTS AND CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

TERZAGHI SPLIT SPOON STANDARD PENETRATION

MODIFIED CALIFORNIA

D & M UNDERWATER SAMPLER

PISTON SAMPLER

SAMPLERS

AT TIME OF DRILLING

MEASURED FOLLOWING DRILLING

GROUND WATER

SAND AND GRAVEL	BLOWS/FOOT*
VERY LOOSE	0–4
LOOSE	4–10
MEDIUM DENSE	10–30
DENSE	30–50
VERY DENSE	OVER 50

RELATIVE DENSITY

SILTS AND CLAYS	STRENGTH+	BLOWS/FOOT*
VERY SOFT	0–1/4	0–2
SOFT	1/4–1/2	2–4
MEDIUM STIFF	1/2–1	4–8
STIFF	1–2	8–16
VERY STIFF	2–4	16–32
HARD	OVER 4	OVER 32

CONSISTENCY

*Number of blows of 140 pound hammer falling 30 inches to drive a 2–inch O.D. (1–3/8 inch I.D.) split spoon (ASTM D–1586).
+Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D–1586), pocket penetrometer, torvane, or visual observation.

KEY TO EXPLORATORY BORING LOGS

Unified Soil Classification System (ASTM D–2487)

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

FIGURE A–1

DRILL RIG: Failing 1500 | SURFACE ELEVATION: -- | LOGGED BY: DGB

BORING TYPE: Rotary wash | DEPTH TO GROUND WATER: ND | DATE DRILLED: 7/1/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
								CL	4 inches asphaltic concrete over 2 inches soil over 6 inches asphaltic concrete over 3 inches aggregate base
4.2		94	17		19				SILTY CLAY (CL) very stiff, moist, brown/yellowish brown, fine to coarse sand, trace gravel, low plasticity
						5			
6.5		79	21		26				Plasticity Index = 11, Liquid Limit = 28
									very stiff
									increasing gravels
4.0	2.0	113	14		3				
			11		11	10			
						15		SC SP	SAND (SC-SP) medium dense, wet, trace gravel and clay, fine to coarse sand
			13		21				Percent passing #200 sieve = 7 %
									increasing gravel
			37		40	20			Percent passing #200 sieve = 12 %
								CL	SILTY CLAY (CL) medium stiff, wet, dark gray, trace fine sand, moderate plasticity
					12	25			
					18	30			stiff
								CL	SILTY CLAY (CL) stiff, wet, red and yellowish brown mottled, trace fine sand, moderate plasticity
								CL	SANDY CLAY (CL) stiff, wet, red and yellowish brown mottled, fine sand, low to moderate plasticity
2.5	1.3	107	22		16	35			
						40			

EXPLORATORY BORING - EB-6

WEST JULIAN STREET DEVELOPMENT
San Jose, California

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

EB-6
699-10A

DRILL RIG: Failing 1500 | SURFACE ELEVATION: -- | LOGGED BY: DGB

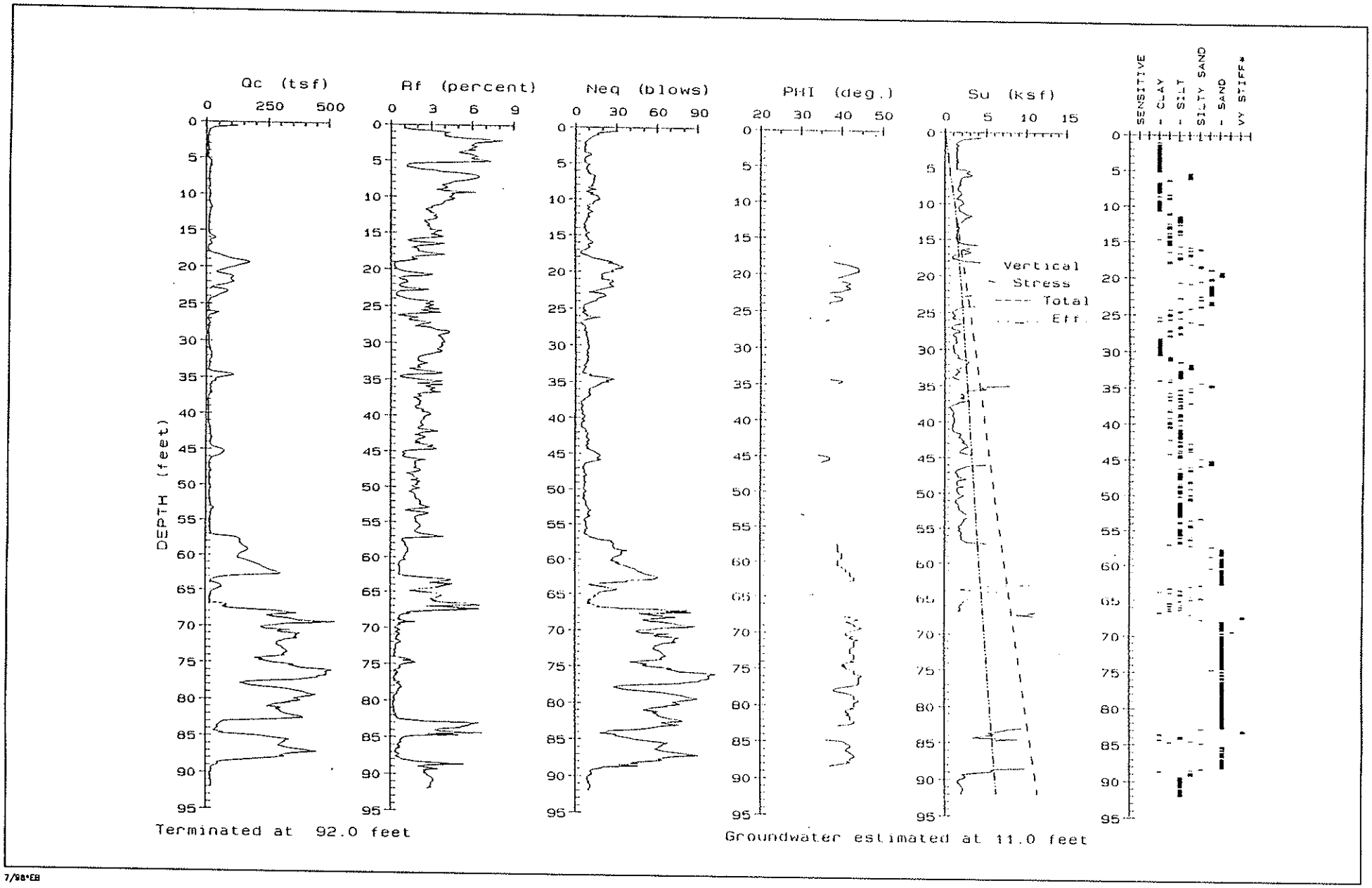
BORING TYPE: Rotary wash | DEPTH TO GROUND WATER: ND | DATE DRILLED: 7/1/98

UNCONFINED COMPRESSIVE STRENGTH * (KSF)	SHEAR STRENGTH BY TORVANE (KSF)	DRY DENSITY (PCF)	WATER CONTENT (%)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT.)	DEPTH (FEET)	LEGEND	SOIL TYPE	MATERIAL DESCRIPTION AND REMARKS
2.0	1.0	96	26		34			CL	SANDY CLAY (CL) [continued] color grades to gray
9.0+	4.5+	109	21		14	45		CL	SILTY CLAY (CL) hard, moist, gray, trace claystone inclusions, fine sand, trace rootlets, moderate plasticity Triaxial UU = 1.0 ksf
					17	50			gray with reddish brown mottling increasing silt, no inclusions
2.0	1.0	100	24		24	55			stiff
5.0	2.5	93	31		29	60			very stiff, Triaxial UU = 1.4 ksf
5.0	2.5	102	23		37	65			
3.0	1.5	104	22		27	70			stiff
						75			Bottom of Boring = 71 1/2 feet Note: The stratification lines represent the approximate boundary between the soil types. The transition may be gradual. *Pocket Penetrometer Strength
						80			

EXPLORATORY BORING - EB-6

WEST JULIAN STREET DEVELOPMENT
San Jose, California

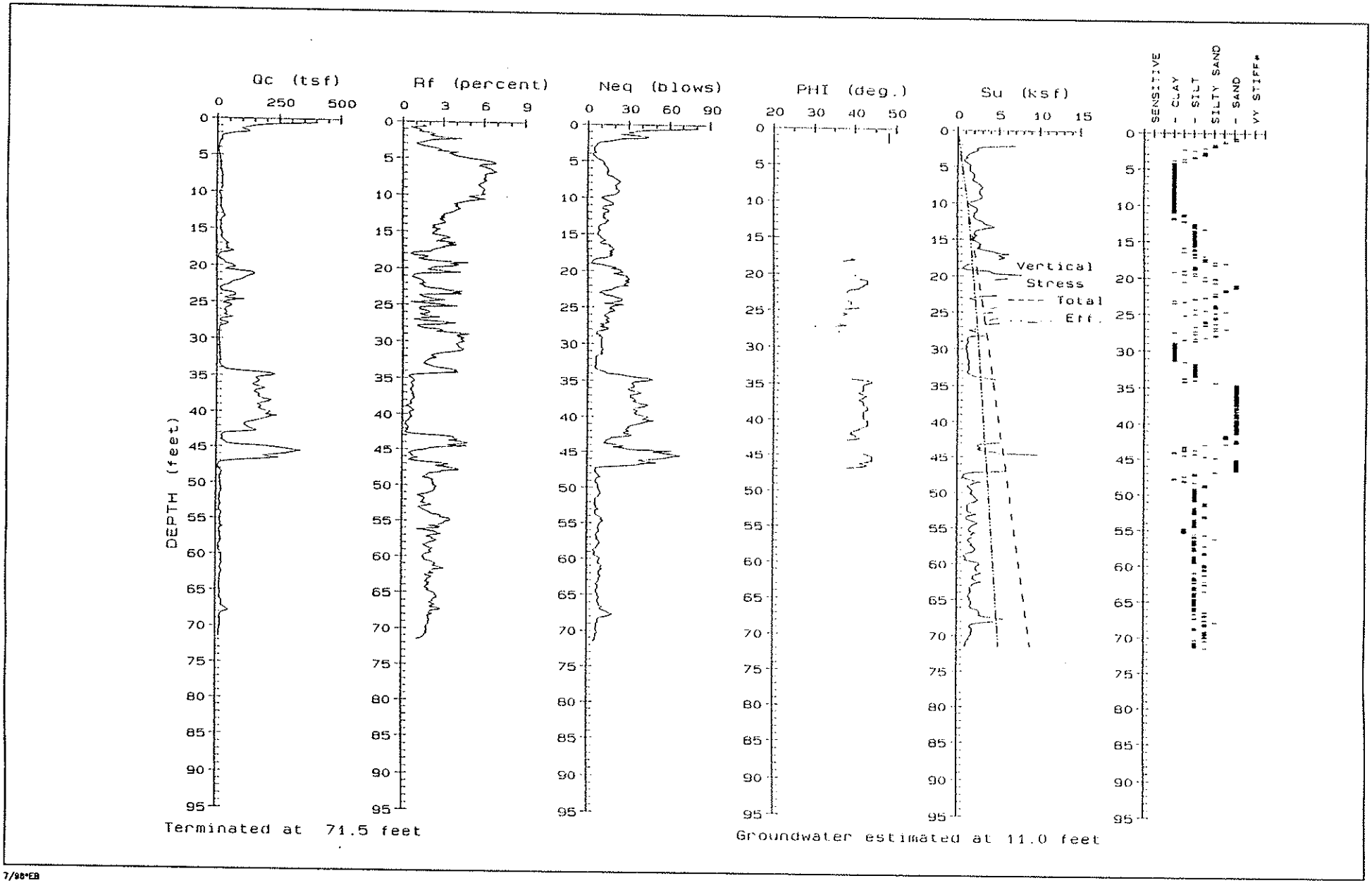
LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services



7/98-EB

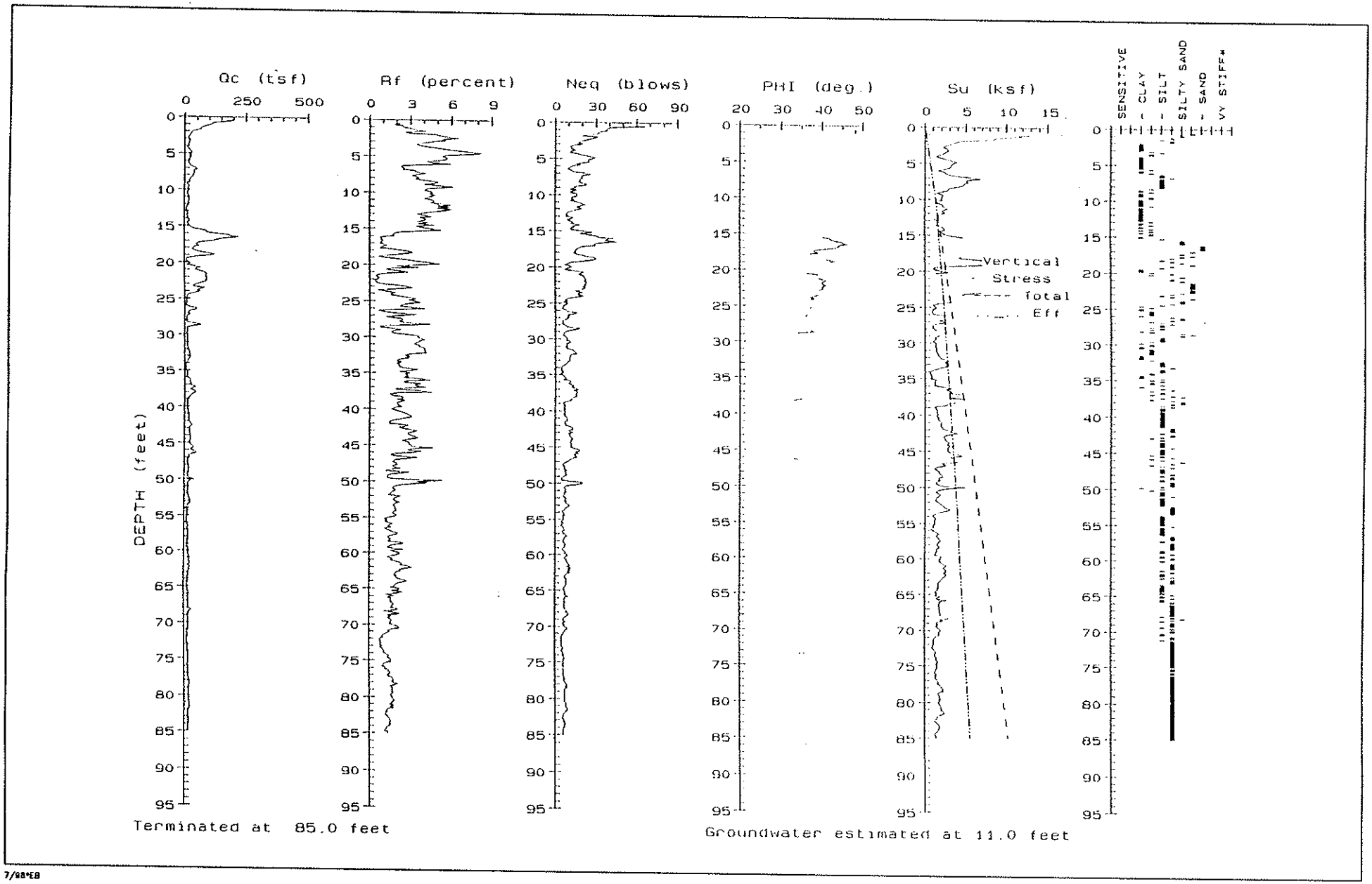
CONE PENETRATION TEST LOG - CPT-1

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services



CONE PENETRATION TEST LOG – CPT-2

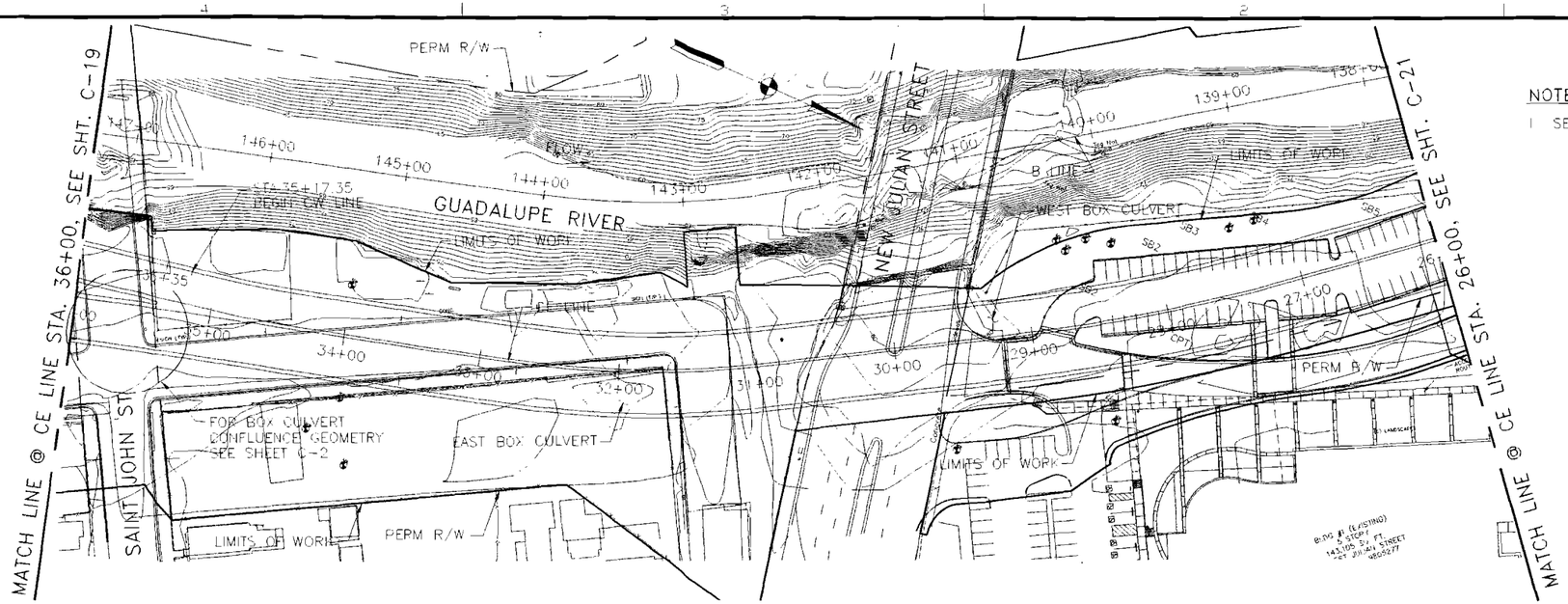
LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services



7/98*EB

CONE PENETRATION TEST LOG – CPT-4

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

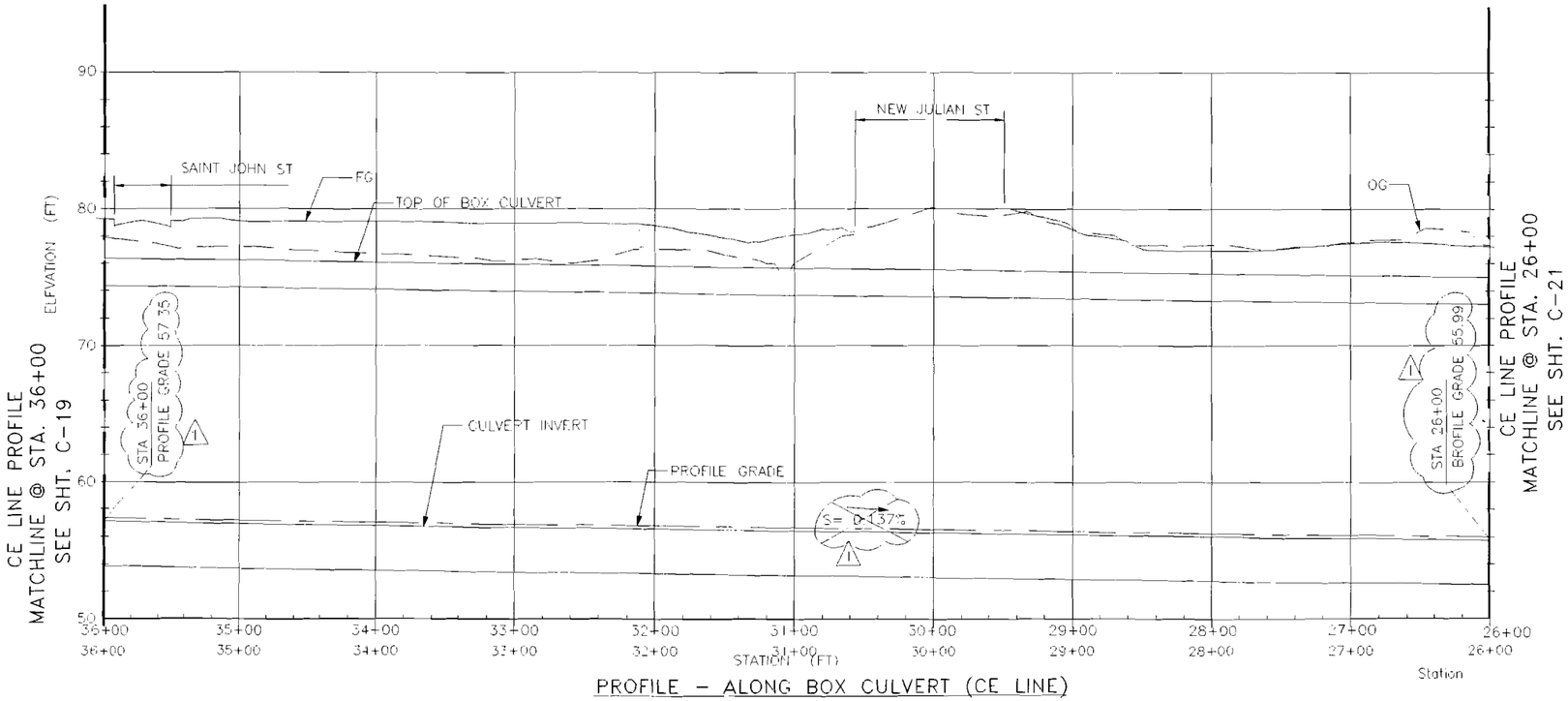


PLAN

SCALE: 1"=50'

NOTES:

1. SEE SHEET C-19 FOR NOTES.



PROFILE – ALONG BOX CULVERT (CE LINE)

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE 1"=5'

VERT. 5' 0 5' 10' SCALE: 1"= 5'

HORIZ. 50' 0 50' 100' SCALE: 1"= 50'

AS-BUILT

CONTR NO. DACW05-02-C-0015

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved
1	REVISED CULVERT GRADE ELEVATIONS	4/27/05					

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

Designed by: J. TPIGNO
Drawn by: R.K.
Submitted by: H. TOPKEST
Date: 6/26/02
Design File no: 980-04-016
SPEC No.: 11182
File name: 0320C20.DWG
Plot date: 05/06/02
Plot scale: 1=50
Chief, Civil Design Section A

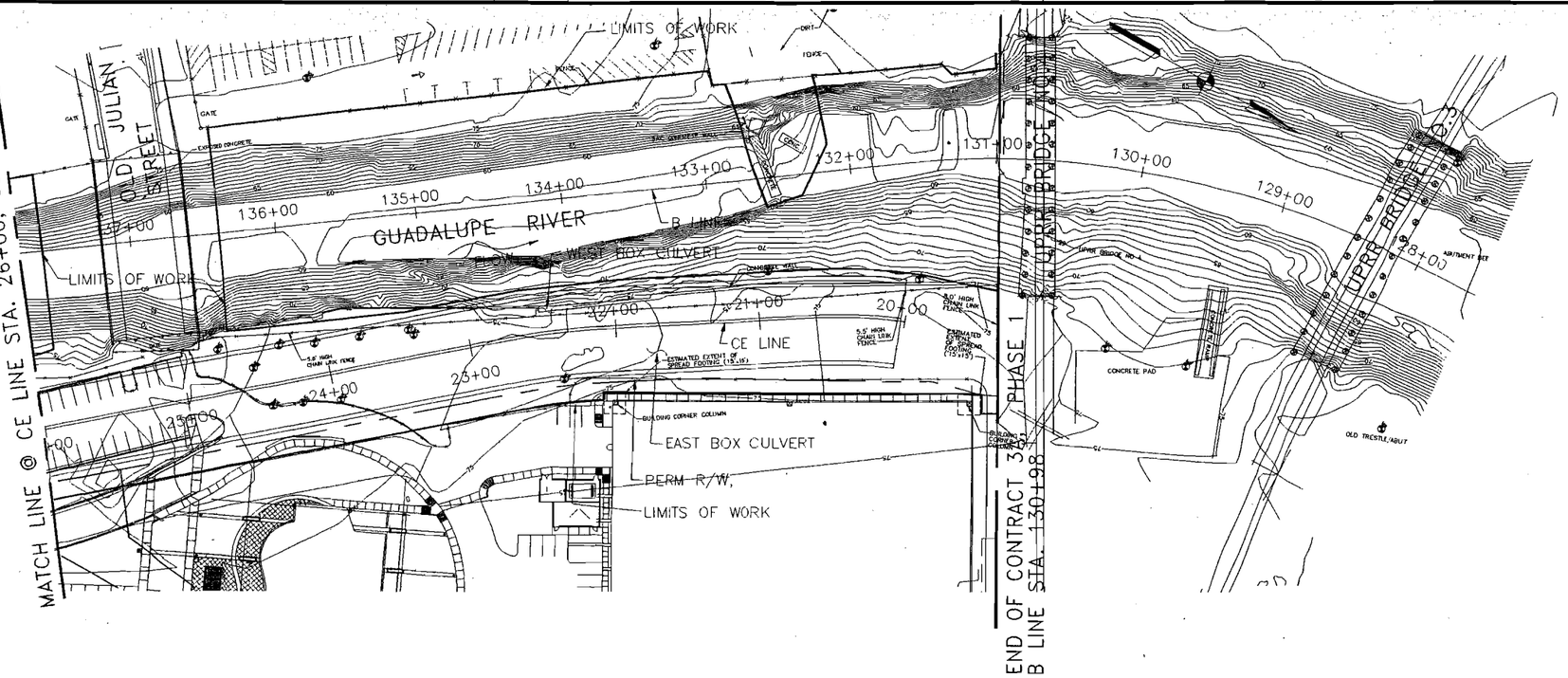
Rev.

SAN JOSE CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

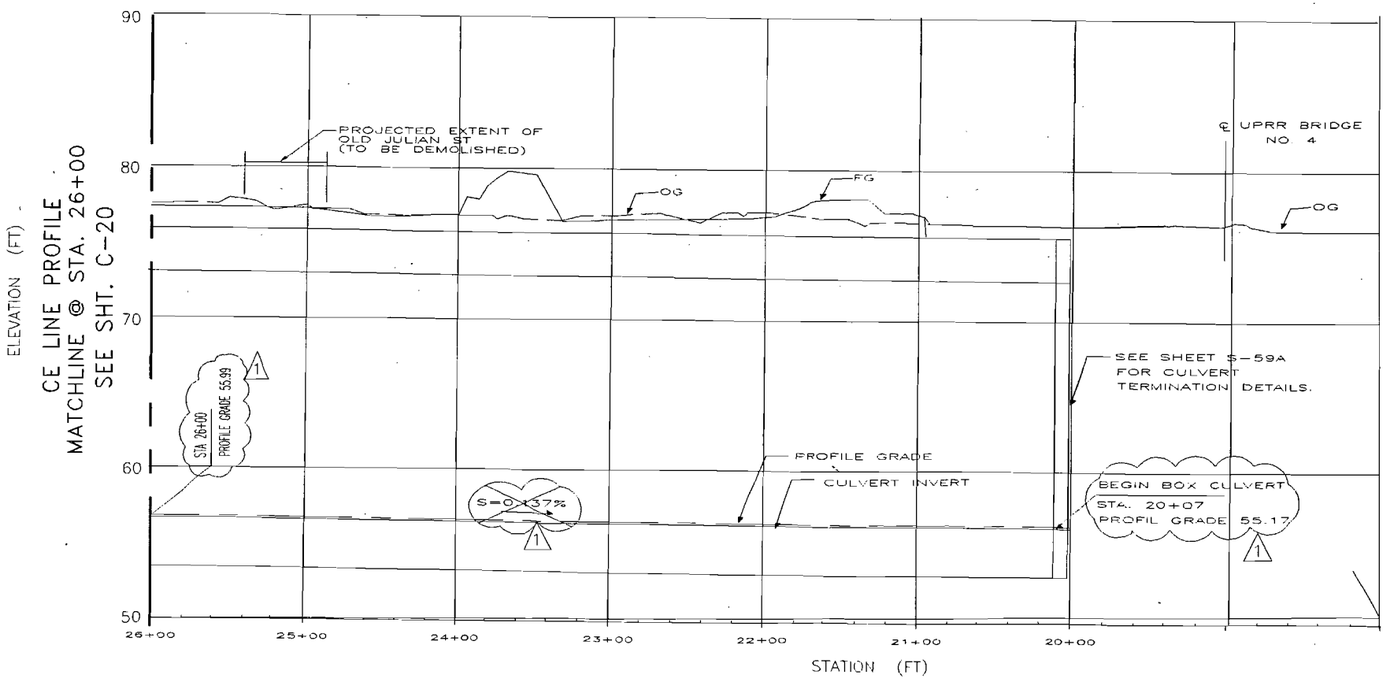
CULVERT PROFILE
SHEET 2 OF 3

Sheet reference number:
C-20
Sheet 47 of 249



PLAN

SCALE: 1"=50'



PROFILE – ALONG BOX CULVERT (CE LINE)

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=5'

NOTES:

1. SEE SHEET C-19 FOR NOTES.

5' 0 5' 10'
VERT. SCALE: 1"= 5'

50' 0 50' 100'
HORIZ. SCALE: 1"= 50'

AS-BUILT

CONTR. NO. DACW05-02-C-0015

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved
1	REVISED INVERT GRADE ELEVATIONS	4/27/06					

Designed by: J. FIELDING
Drawn by: TBK
Cad by: SP
Reviewed by: K. FORREST
Submitted by:
Chief, Civil Design Section A
Date: 6/26/02
Rev.
Design file no: GR-04-016
SPEC No.: 1182
File name: 03200C21.DWG
Plot date: 05/06/02
Plot scale: 1:50

DEPARTMENT OF THE ARMY
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SAN JOSE CALIFORNIA

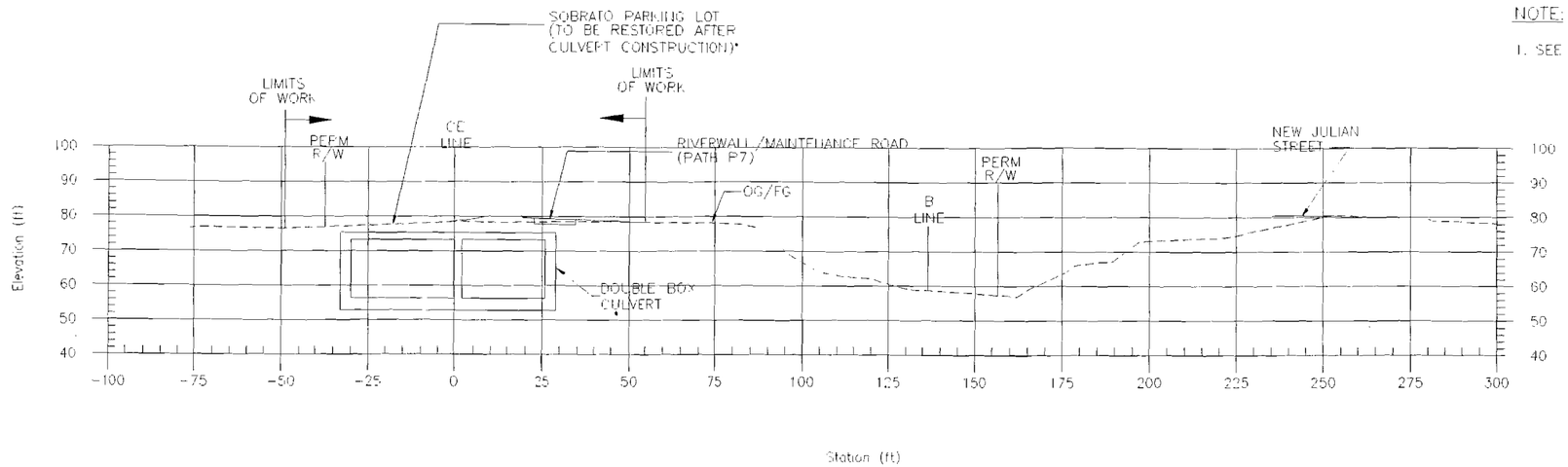
GUADALUPE RIVER
CONTRACT 3A, PHASE 1

CULVERT PROFILE
SHEET 3 OF 3

Sheet reference number:
C-21
Sheet 48 of 249

NOTE:

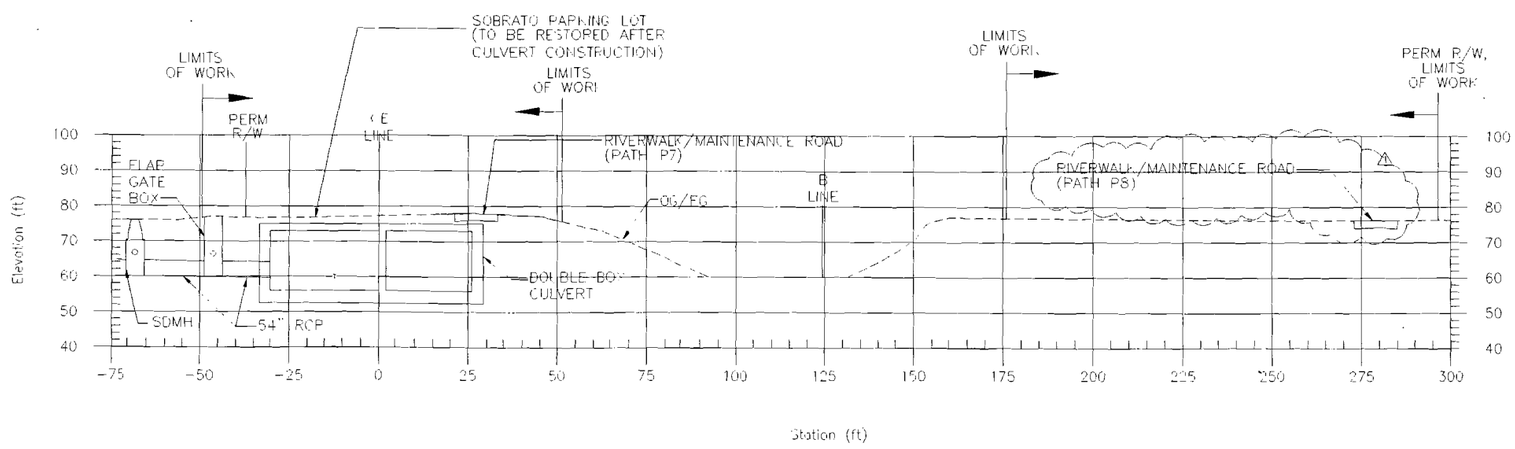
1. SEE SHEET C-45 FOR NOTES.



SECTION CE LINE STA. 29+00 (S11)

SCALE: 1"=20'

C-13 | C-50
C-35



SECTION CE LINE STA. 26+00 (S12)

SCALE: 1"=20'

C-14 | C-50
C-36

20 0 20 40
SCALE: 1" = 20'-0"

AS-BUILT

CONTR NO DACW05-02-C-0015

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved
1	ADD NEW JULIAN, BOTH SIDES OF BOX CULVERT	5/17/02					

Designed by: N. MEIER | Drawn by: RA | Checked by: SP | Date: 5/26/02 | Design File no: GR-98-016 | Rev.
Reviewed by: M. FORNESS | Submitted by: | SPEC. No. 1182 | File name: 0280C50.DWG | Plot date: 05/06/02 | Plot scale: 1:20
Chief Civil Design Section A

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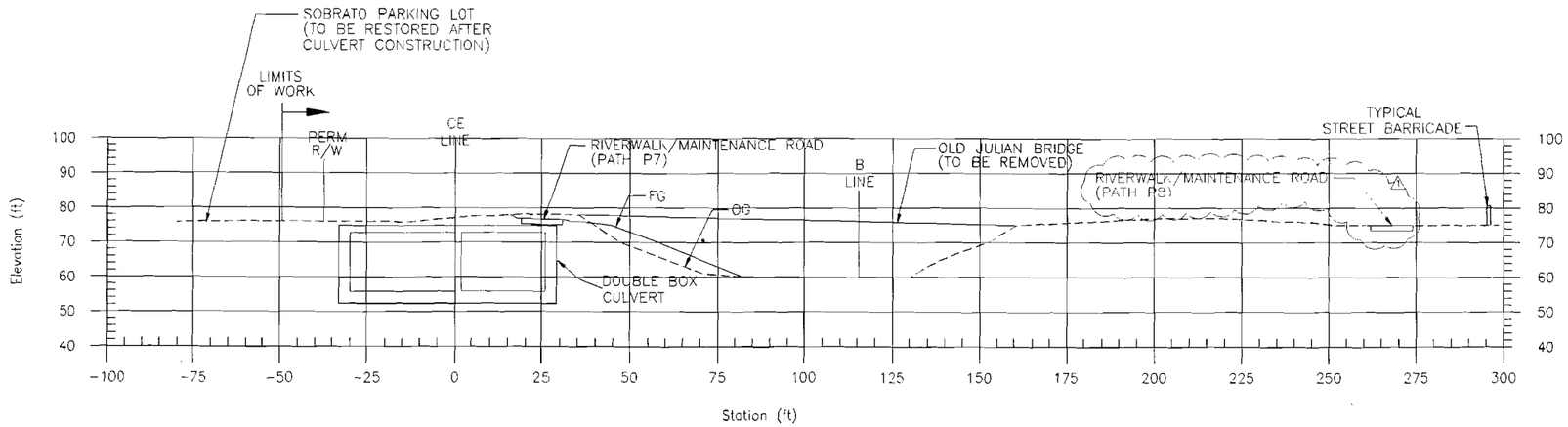
GUADALUPE RIVER
CONTRACT 3A, PHASE 1

CROSS SECTIONS
SHEET 6 OF 8

Sheet reference number:
C-50
Sheet 75 of 249

NOTE:

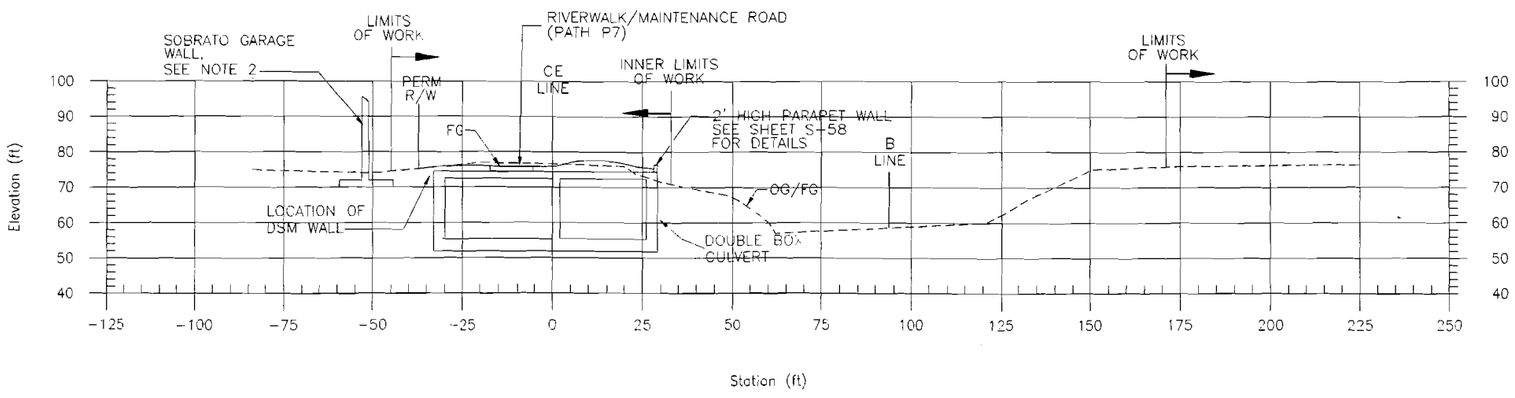
1. SEE SHEET C-45 FOR NOTES.
2. SOBRATO GARAGE AS-BUILT DRAWINGS ARE AVAILABLE WITH SOBRATO DEVELOPMENT COMPANY. CONTACT SOBRATO CONSTRUCTION REPRESENTATIVE TIM STEELE (408) 446-0700



SECTION CE LINE STA. 25+00 (S13)

SCALE: 1"=20'

C-14 | C-51
C-36



SECTION CE LINE STA. 22+00 (S14)

SCALE: 1"=20'

C-15 | C-51
C-37

20 0 20 40
SCALE: 1"= 20'-0"

AS-BUILT

CONTR. NO. DACW05-02-C-0015

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved
1	ADDED NOW JULIAN HEAT BANK PATCH (PR)	6/17/03	

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

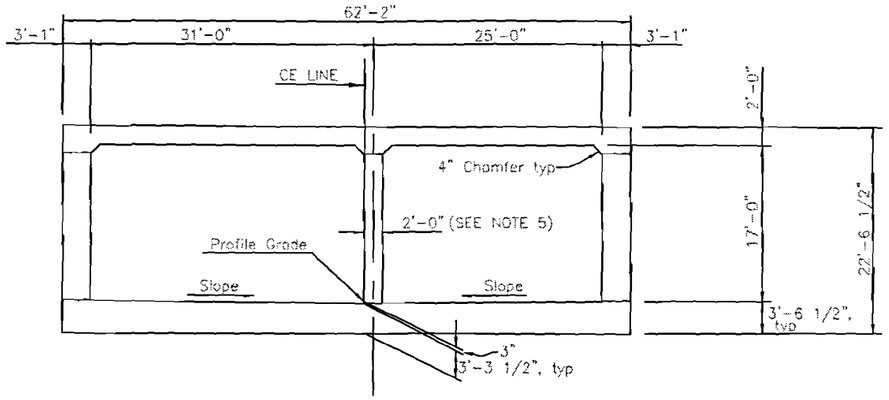
Designed by: N. MEYER
Drawn by: RA
Checked by: SD
Reviewed by: M. FORREST
Submitted by:
Date: 6/26/02
Designation: DACW05-02-B-0016
SPEC. No. 1182
File name: 02200C51.DWG
Plot date: 09/06/02
Plot scale: 1:20
Draft Civil Design Section

SAN JOSE CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

CROSS SECTIONS
SHEET 7 OF 8

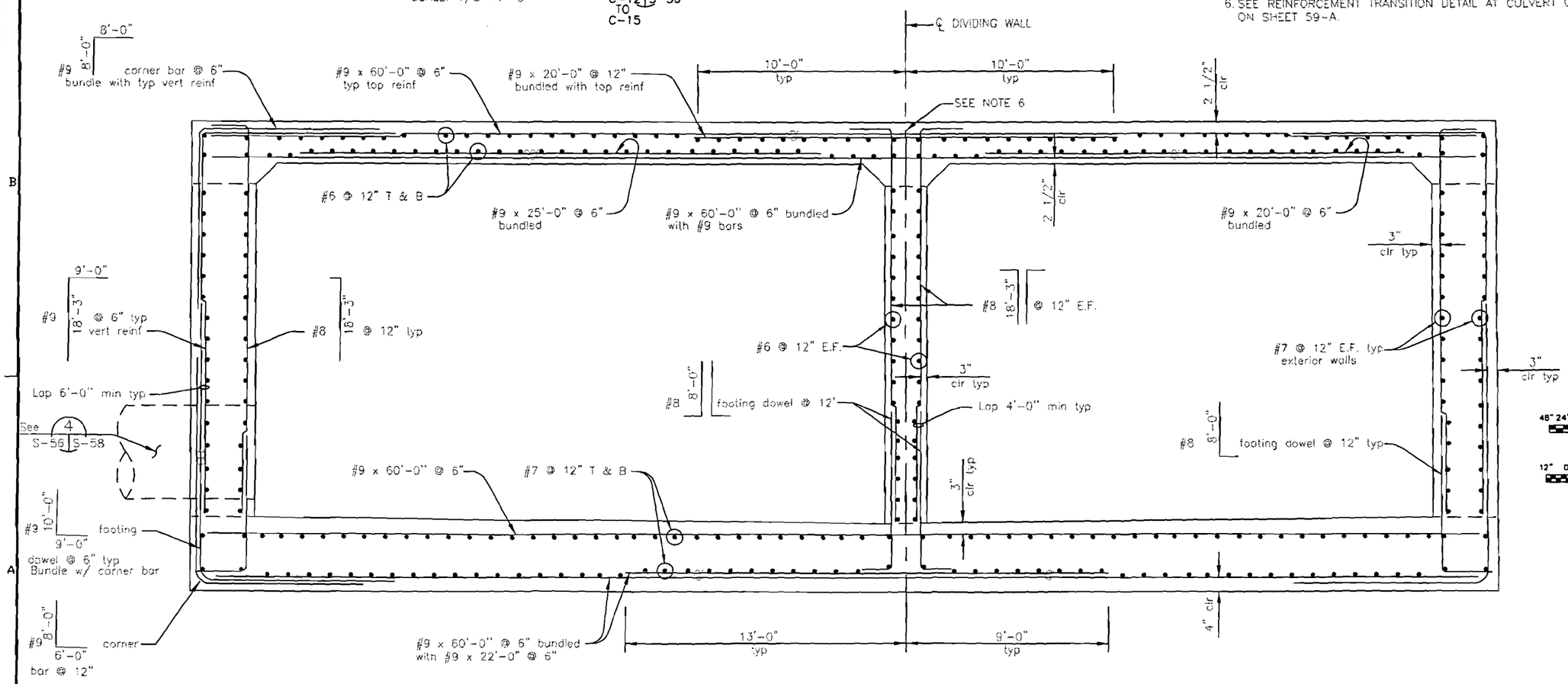
Sheet reference number:
C-51
Sheet 76 of 249



DOUBLE BOX CULVERT (A)
SCALE: 1/8"=1'-0"
C-12 S-56 TO C-15

NOTES:

1. REINFORCEMENT PLACEMENT:
   MAIN REINFORCEMENT IS TO BE PLACED TRANSVERSE OR, FOR CURVED CULVERTS, RADIAL. WHEN RADIAL, REINFORCING SPACING OF THE TRANSVERSE BARS IS MEASURED ALONG THE CENTERLINE OF THE BOX CULVERT. STAGGERED SPLICES NOT SHOWN. HOOKS MAY BE ROTATED OR TILTED, AS NECESSARY, FOR CLEARANCE.
2. STRUCTURAL CONCRETE
   CLASS B f'_c = 4500 psi
3. FOR BOX CULVERT CE LINE AND CW LINE, SEE SHEETS C-1 THROUGH C-3 FOR GEOMETRIC PLANS AND SEE SHEETS C-10 THROUGH C-15 FOR LAYOUT PLANS.
4. FORMED SURFACES EXPOSED TO VIEW SHALL HAVE A TEXTURED FINISH. BURIED SURFACES SHALL HAVE A CLASS D FINISH- REFER TO SPECIFICATION SECTION 03100.
5. SEE CULVERT CONFLUENCE GEOMETRY ON SHEET C-2.
6. SEE REINFORCEMENT TRANSITION DETAIL AT CULVERT CONFLUENCE ON SHEET 59-A.



CE LINE STA. 20+00 TO 35+35

TYPICAL SECTION
SCALE: 3/8"=1'-0"

AS-BUILT
CONTR. NO. DACW05-02-C-0015

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved

Designed by G.Bickett	Date 6/26/02		Rev.
Drawn by M.Torentino	Chd by JT	Design file no 01-01-016	
Reviewed by M. FORREST		SPEC. No. 1182	
Submitted by Chief,Civil Design Section A		File name 03200T5A.DWG Plot date 03/06/02 Plot scale AS NOTED	

DEPARTMENT OF THE ARMY
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SACRAMENTO, CALIFORNIA

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GUADALUPE RIVER
CONTRACT 3A, PHASE 1
BOX CULVERT
DOUBLE CELL BOX

Sheet reference number:
S-56
Sheet 148 of 249

LEGEND:

- WATER SURFACE PROFILE
- ELASTIC SILT (LL> 50%)
- SAND, SAND WITH SILT OR SAND WITH CLAY (0–12% FINES)
- SILT OR SILT WITH SAND (>70% FINES)
- SILTY SAND OR SANDY SILT (13% – 70% FINES)
- LEAN CLAY OR LEAN CLAY WITH SAND (>70% FINES)
- CLAYEY SAND OR SANDY LEAN CLAY (13 – 70% FINES)
- SANDY SILTY CLAY, CL–ML (50–70% FINES)
- CLAY WITH HIGH PLASTICITY
- MATERIAL NOT SAMPLED OR NO RECOVERY OF MATERIAL
- CLAYEY GRAVEL OR GRAVELLY LEAN CLAY (13 – 70% FINES)
- SILTY GRAVEL OR GRAVELLY SILT (13 –70% FINES)
- GRAVEL, GRAVEL WITH SILT OR GRAVEL WITH CLAY (0–12% FINES)
- SILT TO ELASTIC SILT (ML/MH)
- LEAN TO FAT CLAY (CL/CH)

A	ATTEMPT WITH THE SPT SAMPLER (SEE NOTE 11)
B.O.H.	BOTTOM OF HOLE
DD	DRY DENSITY (PCF)
EL.	ELEVATION
FI	FINES, PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE
GR	GRAVEL, PERCENT BY WEIGHT PASSING THE 76 MM (3–INCH) SIEVE AND RETAINED ON THE NO. 4 SIEVE
LL	LIQUID LIMIT
MC	LABORATORY DETERMINED MOISTURE CONTENT IN PERCENT OF DRY WEIGHT
N	NUMBER OF BLOWS WITH THE SPT SAMPLER
N_{60}	BLOW COUNT CORRECTED FOR HAMMER ENERGY RATIO
NP	NONPLASTIC
PC	PAVEMENT, ASPHALT CONCRETE
PI	PLASTICITY INDEX (LIQUID LIMIT MINUS PLASTIC LIMIT)
PP	POCKET PENETRATION RESISTANCE (TSF)
Qc	CONE TIP RESISTANCE
Rf	RATIO OF CONE SLEEVE FRICTION TO TIP RESISTANCE EXPRESSED AS PERCENT
SA	SAND, PERCENT BY WEIGHT PASSING THE NO. 4 SIEVE AND RETAINED ON THE NO. 200 SIEVE
▽	WATER LEVEL (SEE NOTE 12)
UC	UNCONFINED COMPRESSIVE STRENGTH (TSF)

STANDARD PENETRATION TEST (SPT) – DESCRIPTIVE DATA

COHESIONLESS SOIL		COHESIVE SOIL	
BLOWS *	RELATIVE DENSITY	BLOWS*	CONSISTENCY
0–4	VERY LOOSE	0–1	VERY SOFT
5–10	LOOSE	2–4	SOFT
11–20	FIRM	5–8	FIRM
21–30	VERY FIRM	9–15	STIFF
31–50	DENSE	16–30	VERY STIFF
51+	VERY DENSE	31+	HARD

*BLOWS PER 1 FOOT OF PENETRATION OF A 2 INCH O.D. AND 1.5 INCH I.D. SAMPLER DRIVEN BY A 140 LB HAMMER, WITH A 30 INCH FREEFALL.

NOTES:

1. SHEETS (B–1 THROUGH B–17) PRESENT ONLY APPROXIMATE DESCRIPTIONS OF SUBSURFACE CONDITIONS. SOIL BORINGS SHOWN IN THESE SHEETS INCLUDE ONLY THOSE IN THE PROPOSED AREA OF CONSTRUCTION. ADDITIONAL BORING LOGS AND GEOTECHNICAL INFORMATION AVAILABLE FOR CONTRACTOR REVIEW ARE PRESENTED IN THE DRAFT GENERAL REEVALUATION & ENVIRONMENTAL REPORT FOR PROPOSED PROJECT MODIFICATIONS, VOL 3 DATED JUNE 2000 BY USACE AND GEOTECHNICAL REPORT DATED DEC 9, 1996 BY ANWEST INC.
2. SOIL CLASSIFICATIONS AND DESCRIPTIONS ARE BASED ON FIELD LOG DESCRIPTIONS IN ACCORDANCE WITH ASTM 2488 (DESCRIPTION AND IDENTIFICATION OF SOILS, VISUAL–MANUAL PROCEDURE) AND/OR LABORATORY TEST RESULTS IN ACCORDANCE WITH ASTM D2487 (CLASSIFICATION OF SOILS FOR ENGINEERING PURPOSES).
3. ALL SIEVE SIZES SHOWN ARE U.S. STANDARD.
4. BORINGS 2F–73–21 AND 2F–73–22 WERE DRILLED WITH A 4–INCH ROTARY DRILL USING A SLIP–JAR HAMMER ON JULY 12 AND 13, 1973. THE EXPLORATIONS WERE CONDUCTED BY WOODWARD–LUNGREN & ASSOCIATES FOR THE JULIAN STREET IMPROVEMENTS.
5. BORING 2F–87–8 WAS DRILLED WITH A CME 55 DRILL RIG USING AN 8–INCH OD HOLLOW STEM AUGER FROM JUNE 4 TO JULY 27, 1987. THE EXPLORATIONS WERE CONDUCTED BY THE USACE FOR RIVER STREET AND UNION PACIFIC RIGHT OF WAY.
6. BORINGS 2F–95–4 AND 2F–95–5 WERE DRILLED WITH A CME 45 DRILL RIG USING A 6–INCH OD HOLLOW STEM FLIGHT AUGER FROM DECEMBER 8 TO 13, 1995. THE EXPLORATIONS WERE CONDUCTED BY USACE FOR THE UNION PACIFIC RAILROAD BRIDGE RECONSTRUCTION PROJECT.
7. BORINGS EB–2 AND EB–5 WERE DRILLED WITH A 1500 DRILL RIG USING A 6–INCH HOLLOW STEM FLIGHT AUGER IN DECEMBER 1997. THE EXPLORATIONS WERE CONDUCTED BY LOWNEY ASSOCIATES FOR THE SOBRATO PROPERTY'S WEST JULIAN STREET DEVELOPMENT.
8. BORINGS 2F–99–1 AND 2F–99–2 WERE DRILLED WITH A 1500 ROTARY WASH DRILL RIG USING A 4–7/8–INCH OD HOLLOW STEM AUGER DURING APRIL 14 THROUGH 16, 1999. THE EXPLORATIONS WERE CONDUCTED BY USACE FOR THE WEST JULIAN STREET DEVELOPMENT.
9. BORINGS 2F–00–1 THROUGH 2F–00–2 WERE DRILLED WITH MOBILE B–61 DRILL RIG USING A 6–INCH DIAMETER HOLLOW STEM AUGER DURING OCTOBER 18 THROUGH 21, 1999. THE EXPLORATIONS WERE CONDUCTED BY USACE FOR THE RIVER STREET AND UNION PACIFIC RIGHT OF WAY.
10. STANDARD PENETRATION DATA WERE OBTAINED IN ACCORDANCE WITH ASTM D1586 UTILIZING AN 18–INCH LONG SPLIT SAMPLER UTILIZING ROPE AND CAT HEAD AND AUTOMATIC HAMMER METHODS.
11. GROUNDWATER LEVELS NOTED WERE AS ENCOUNTERED AT THE TIME OF EXPLORATIONS ONLY. GROUNDWATER LEVELS WILL FLUCTUATE OVER TIME.
12. CONE PENETROMETER TESTS CPT–99–1 THROUGH 4 WERE PERFORMED AS PART OF THE SUBSURFACE EXPLORATION PROGRAM FOR WEST JULIAN STREET DEVELOPMENT BY USACE. CONE PENETROMETER TESTS CPT–00–1 THROUGH 6 WERE CONDUCTED AS PART OF THE SUBSURFACE EXPLORATION PROGRAM FOR THE RIVER STREET AND UNION PACIFIC RIGHT OF WAY BY USACE.
13. LOCATIONS OF THE CPT'S ARE SHOWN IN PLAN SHEETS B–2 THROUGH B–4. THE CPT PROFILE IS AVAILABLE UPON REQUEST FROM USACE.
14. BORINGS URS–00–1 THROUGH URS–00–11 WERE DRILLED WITH A FAILING 750 ROTARY WASH DRILL RIG WITH A 4 7/8 INCH O.D. HOLLOW STEM FROM SEPTEMBER 5 TO 12, 2000. THE EXPLORATIONS WERE CONDUCTED BY URS FOR GUADALUPE RIVER PROJECT CONTRACT 3A.
15. CONE PENETROMETER TESTS UCPT–00–1 THROUGH UCPT–00–10 AND UCPT–00–16 THROUGH UCPT–00–20 WERE PERFORMED AS PART OF THE SUBSURFACE EXPLORATION PROGRAM FOR GUADALUPE RIVER PROJECT CONTRACT 3A BY URS. LOCATIONS OF THE CPT'S ARE SHOWN ON PLAN SHEETS B–2 THROUGH B–4. THE CPT PROFILES ARE SHOWN ON PLAN SHEETS B–18 THROUGH B–20.

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by R. ARULANTHAN | Date 04/05/02 | Rev.
Drawn by R.A. | Ckd by S.P. | Design File no GR-04-016
Reviewed by M. FORREST | SPEC. No. 1182
Submitted by Chief,Civil Design Section A | File name D280091.DWG Plot date 04/05/02 Plot scale AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND,CALIFORNIA

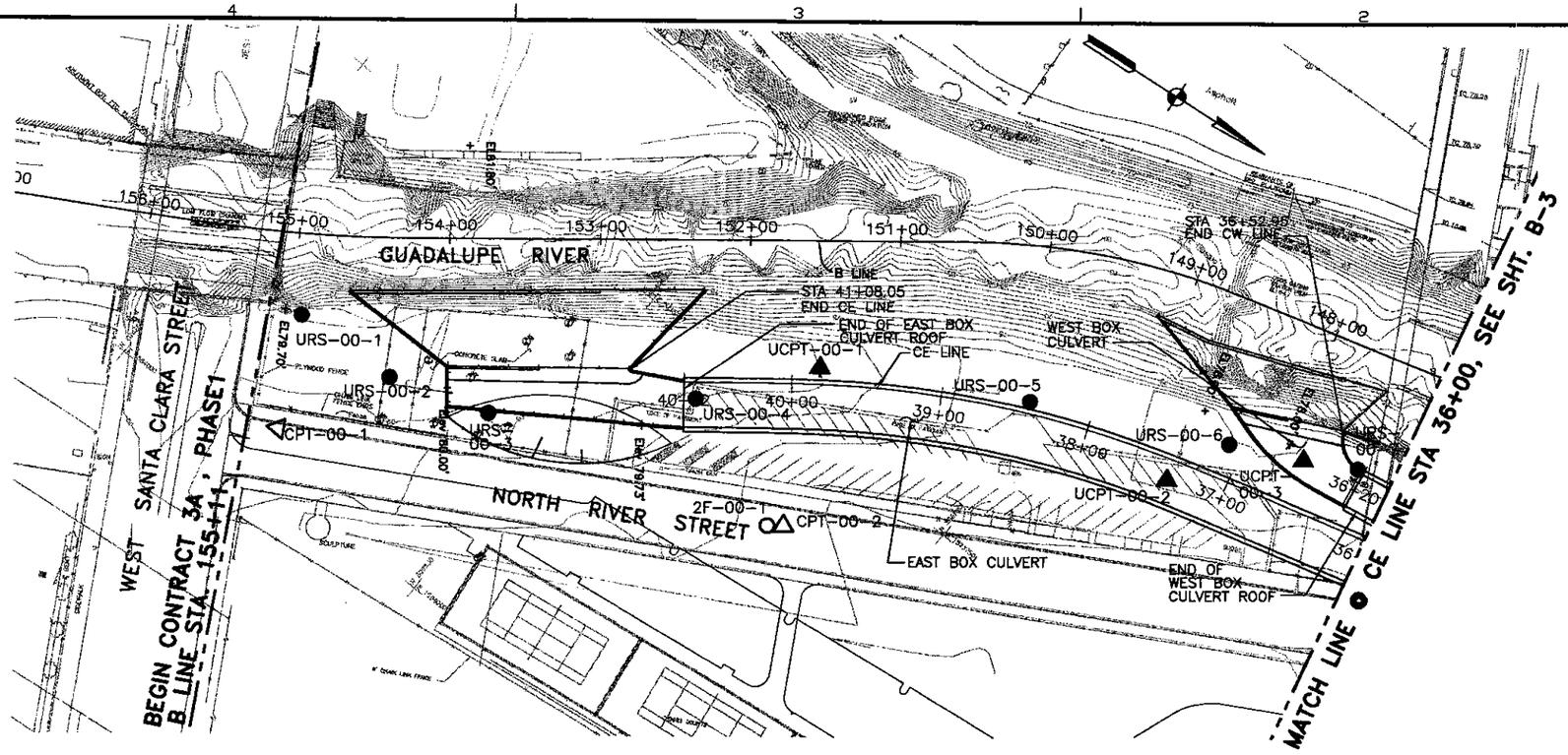
SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

BORING LOG LEGEND AND NOTES

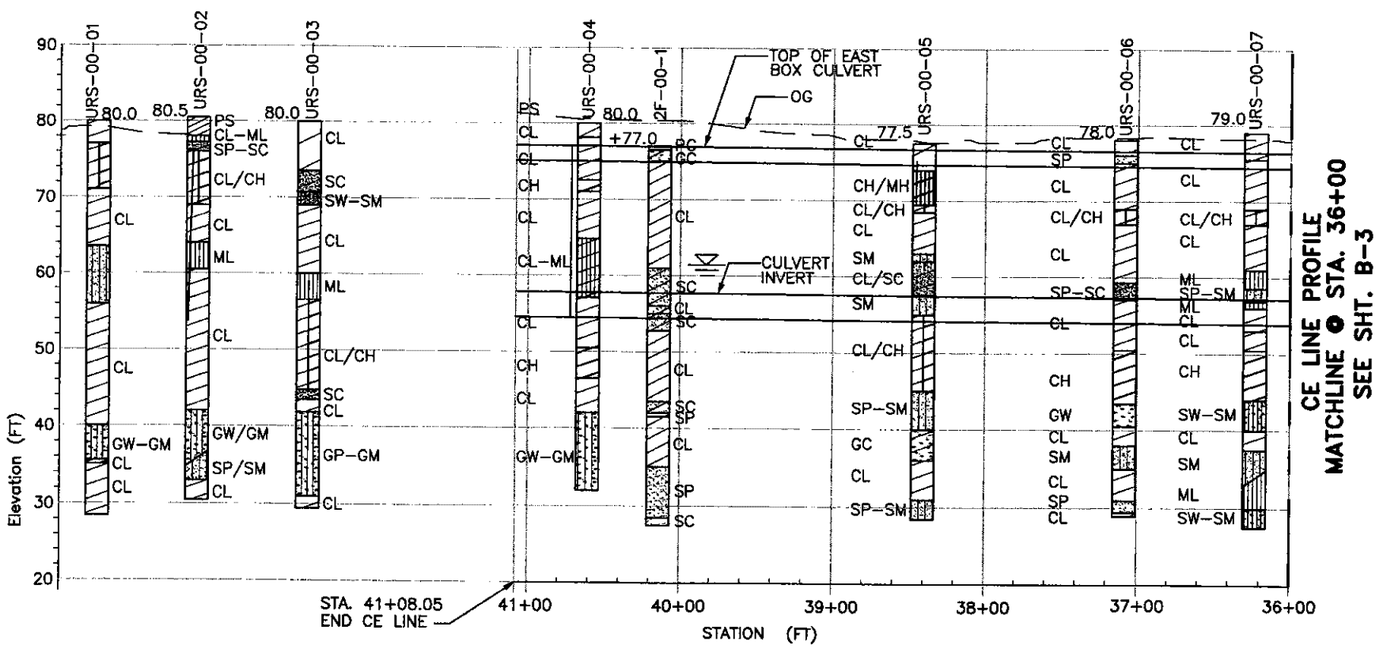
Sheet reference number: B-1

Sheet242of 261



PLAN

SCALE: 1"=50'



PROFILE – ALONG EAST CULVERT BYPASS (CE LINE)

HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'

NOTES:

1. SEE SHEET B-1 FOR ADDITIONAL LEGENDS AND NOTES.
2. LOCATIONS OF BORING LOGS SHOWN IN PROFILE ARE BASED ON PERPENDICULAR PROJECTION TO CE LINE.
3. GROUNDWATER LEVELS NOTED WERE ENCOUNTERED AT THE TIME OF EXPLORATIONS. GROUNDWATER LEVELS CAN BE EXPECTED TO FLUCTUATE IN RESPONSE TO THE RIVER STAGE AND/OR RAINFALL VARIATIONS.

LEGEND:

- ○ BORINGS PRIOR TO SEPT. 2000
- △ CPT PRIOR TO SEPT. 2000
- ● BORINGS AFTER SEPT. 2000 URS-00-1 THROUGH URS-00-11
- ▲ CPT AFTER SEPT. 2000 UCPT-00-1 THROUGH UCPT-00-10 AND UCPT-00-16 THROUGH UCPT-00-20

VERT. SCALE: 1"= 10'

HORIZ. SCALE: 1"= 50'

REGISTERED PROFESSIONAL ENGINEER I.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by R. ABULMIRAN | Date 04/05/02 | Rev.
Drawn by R.A. | Ckd by S.P. | Design File no GR-04-016
Reviewed by U. LUSNER | SPEC. No. 1182
Submitted by Chief,Civil Design Section A | File name 02GQ0182.DWG Plot date 04/05/02 Plot scale=AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

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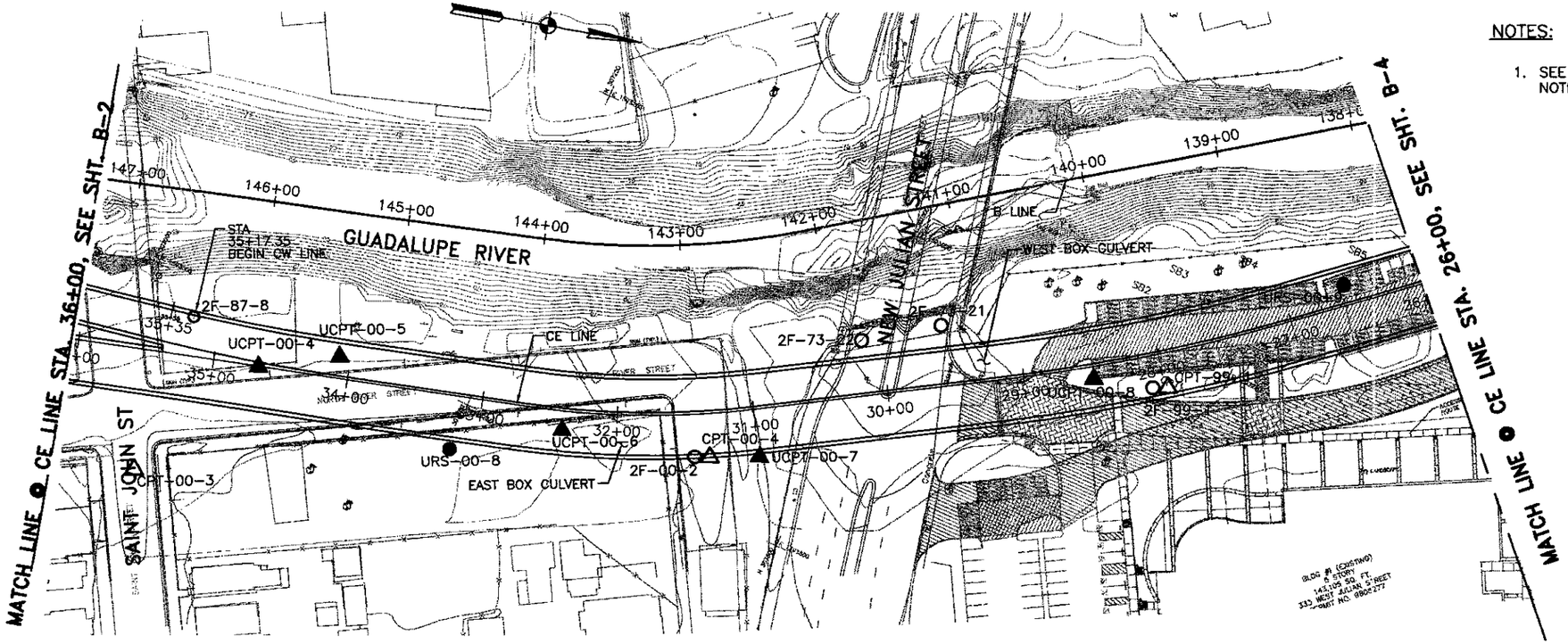
GUADALUPE RIVER CONTRACT 3A, PHASE 1

BORING LOCATION PLAN AND PROFILE, SHEET 1 OF 3

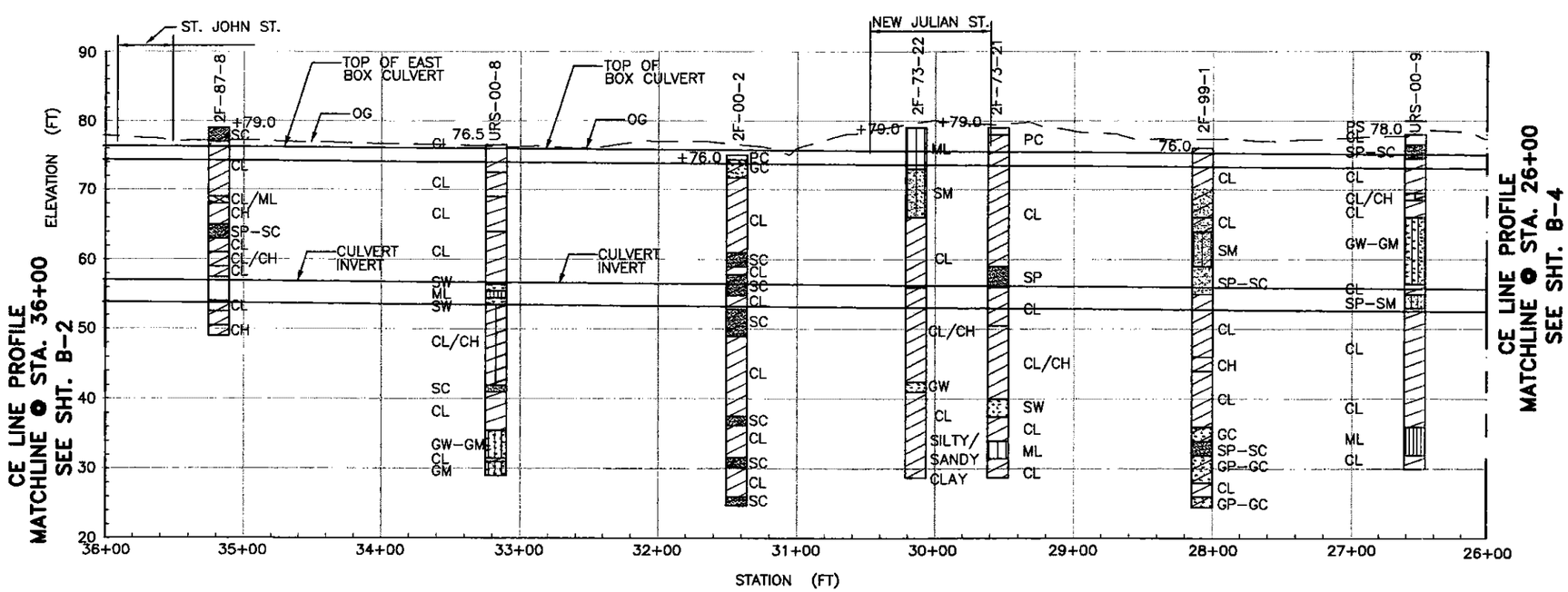
Sheet reference number: B-2

NOTES:

1. SEE SHEETS B-1 AND B-2 FOR ADDITIONAL LEGENDS AND NOTES.



PLAN
SCALE: 1"=50'



PROFILE – ALONG CULVERT BYPASS (CE LINE)
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'

LEGEND:

- ○ BORINGS PRIOR TO SEPT. 2000
- △ CPT PRIOR TO SEPT. 2000
- ● BORINGS AFTER SEPT. 2000 URS-00-1 THROUGH URS-00-11
- ▲ CPT AFTER SEPT. 2000 UCPT-00-1 THROUGH UCPT-00-10 AND UCPT-00-16 THROUGH UCPT-00-20

10' 0 10' 20'
VERT. SCALE: 1"= 10'

50' 0 50' 100'
HORIZ. SCALE: 1"= 50'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

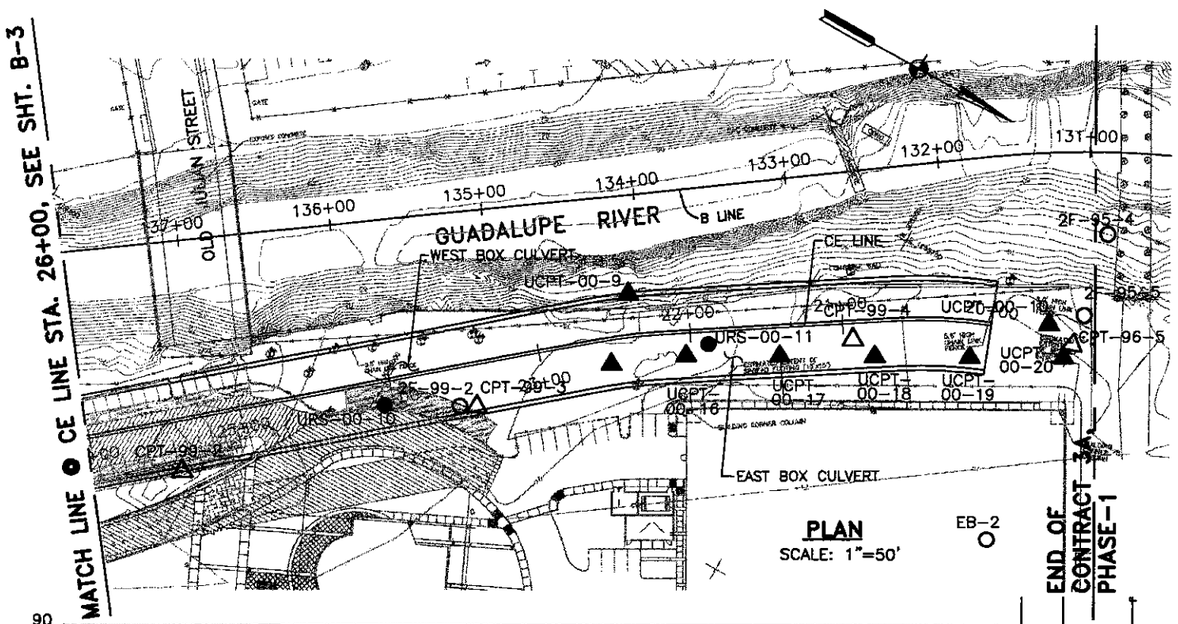
Symbol	Description	Date	Approved	Description	Date	Approved

Designed by: R. ABULWATHAN
Drawn by: R.A.
Reviewed by: U. LUSHER
Submitted by:
Chief, Civil Design Section A
Date: 04/05/02
Rev.
Design file no: GR-04-016
SPEC. No.: 1182
File name: B2B2WB3.DWG
Plot date: 04/05/02
Plot scale: 1:50

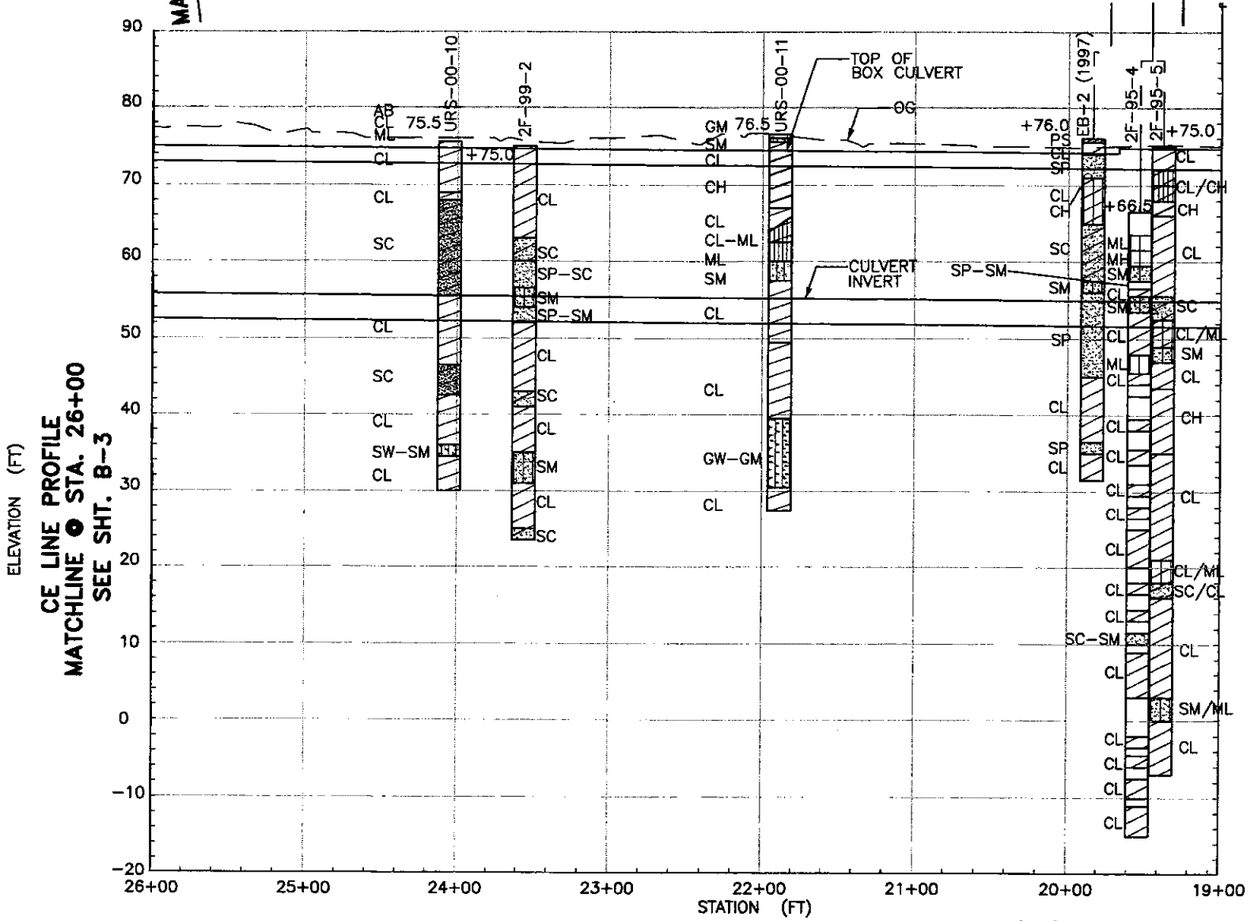
DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA
URS
OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA
GUADALUPE RIVER CONTRACT 3A, PHASE 1
BORING LOCATION PLAN AND PROFILE, SHEET 2 OF 3

Sheet reference number:
B-3
Sheet 244 of 261



PLAN
SCALE: 1"=50'



PROFILE – ALONG CULVERT BYPASS (CE)
HORIZONTAL SCALE: 1"=50'
VERTICAL SCALE: 1"=10'

NOTES:

1. SEE SHEETS B-1 AND B-2 FOR ADDITIONAL LEGENDS AND NOTES.

LEGEND:

- ○ BORINGS PRIOR TO SEPT. 2000
- △ CPT PRIOR TO SEPT. 2000
- ● BORINGS AFTER SEPT. 2000 URS-00-1 THROUGH URS-00-11
- ▲ CPT AFTER SEPT. 2000 UCPT-00-1 THROUGH UCPT-00-10 AND UCPT-00-16 THROUGH UCPT-00-20

10' 0 10' 20'
VERT. SCALE: 1"= 10'

50' 0 50' 100'
HORIZ. SCALE: 1"= 50'

REGISTERED PROFESSIONAL ENGINEER
T.C. MacDONALD
No. C 27139
Exp. 03/31/05
CIVIL
STATE OF CALIFORNIA

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by R. ARULNATHAN
Drawn by RA
Checked by SP
Reviewed by LL LUSKER
Submitted by
Chief, Civil Design Section A
Date 04/05/02
Design File no GR-04-016
SPEC. No. 1182
Rev.
File name D282D3A.DWG
Plot date 04/05/02
Plot scale AS NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

BORING LOCATION
PLAN AND PROFILE,
SHEET 3 OF 3

Sheet reference number:
B-4
Sheet 245 of 261

2 F – 7 3 – 21 (WLA)

N. 307,542±; E. 1,593,302±

DEPTH EL. 79'±=0		N*	
			4–inch Asphalt
	CL	7	GRAVELLY CLAY, (CL): Poorly compacted; moist; brown; with some brick; FILL
			From 4.5' to 5.0' depth, Sandy
5.0'		9	SILTY CLAY, (CL): Medium; moist; brown
			From 9.0' to 10.0' depth, Stiff; red–brown
		18	From 11.0' to 12.0' depth, Brown
			From 12.0' to 13.5' depth, Very stiff; black
13.5'			SANDY CLAY, (CL): Medium; moist; gray–brown and rust–gray–brown mottled
		6	
			From 18.0' to 20.0' depth, sandier
20.0'	SP	23	FINE SAND, (SP): Medium dense; gray and brown
23.0'	CL	14	SANDY CLAY, (CL): Medium; brown
			From 26.0' to 26.5' depth, Sand lens
			From 28.0' to 28.5' depth, Very Silty
28.5'			SILTY CLAY, (CL–CH): Medium; gray; with trace of organic material

(CONTINUED NEXT COLUMN)

2 F – 7 3 – 2 1 (WLA)

(CONTINUED FROM PREVIOUS COLUMN)

	CL–CH	9	From 38.0' to 39.0' depth, Rust brown mottled
			From 34.0' to 36.0' depth, Brown
		11	From 36.0' to 39.0' depth, Blue–gray
39.0'			
	SW	30	GRAVELLY SAND, (SW): Medium dense; gray
41.5'			
	CL		SANDY CLAY, (CL): Medium; brown
45.0'			
	ML	17	SANDY SILT, (ML): Medium; brown; with organic material
47.5'			
			SANDY CLAY, (CL): Stiff; gray and light gray mottled; with trace of gravel and sandstone nodules

2F–73–21 (WLA) CONTINUES TO 92.0' DEPTH

2 F – 7 3 – 2 2 (WLA)

N. 307,494±; E. 1,593,336±

DEPTH EL. 79'±=0		N*	
	ML	10	CLAYEY SILT, (ML): Poorly compacted; damp; brown; with trace of metal, brick and glass; FILL
			From 5.5' to 6.0' depth, Brick, concrete and some large gravel
6.0'			
	SM	11	SILTY SAND, (SM): Medium dense; moist; brown
13.0'			
			SILTY CLAY, (CL): Stiff; moist; light brown and gray mottled; with lenses of silty sand
	CL	10	
			From 19.0' to 22.5' depth, Medium
			From 19.5' to 20.5' depth, Silty Sand lense
		7	
			From 22.5' to 23.0' depth, Trace of fine gravel
23.0'			SILTY CLAY, (CL–CH): Stiff; gray; with trace of organic material
		12	
	CL–CH		

(CONTINUED NEXT COLUMN)

2 F – 7 3 – 2 2 (WLA)

(CONTINUED FROM PREVIOUS COLUMN)

		12	From 33.0' to 37.5' depth, Medium; light gray and olive gray mottled
36.5'		16	
	GW		SANDY GRAVEL, (GW): Dense; gray
37.5'			SILTY CLAY, (CL): Stiff; gray and brown mottled
		12	
			From 43.0' to 44.0' depth, Coarse Sand lense
44.0'			SANDY CLAY, (CL): Stiff; gray; with occasional fine gravel
46.0'		9	
			SILTY CLAY, (CL): Stiff; and light gray mottled
48.5'			SANDY CLAY, (CL): Stiff; light brown orange–brown mottled

2F–73–22 (WLA) CONTINUES TO 103.0' DEPTH

NOTES:

1. SEE SHEET B–1 FOR LEGENDS AND NOTES.

2' 0 2' 4'
SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by J. CHAMBERS | Cad by | Date: 04/05/02 | Rev.
Drawn by S BOLAND | Design File no GK-04-016 | SPEC. No. 1182
Reviewed by J. SCHIRONE | File name DSGNDWG.DWG
Submitted by | Plot date 04/05/02
Chief, Civil Design Section A | Plot scale AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973–2000 BORING LOGS, SHEET 1 OF 7

Sheet reference number: B-5

Sheet 246 of 261

2 F – 8 7 – 8

N 307,040.0±; E 1,593,525.0±

EL. ±79.0' = 0

DEPTH		N	GR	SA	FI	LL	PI	MC	
	SC	14	–	–	–	–	–	–	CLAYEY SAND/CLAYEY SAND WITH GRAVEL, SC: Firm; dry; dark yellowish-brown; 50% to 60% fine to coarse, subrounded sand; 20% medium plasticity fines; 10% to 20% angular to subrounded gravel to 1 inch
2.0'									
	CL	4	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Soft; moist; dark yellowish-brown; 20% fine to coarse, angular to subrounded sand; trace of gravel to 1/2 inch; carbonaceous material; organic material (roots)
4.0'									
	CL	3	10	38	52	42	19	11	SANDY LEAN CLAY, CL: Soft; moist; dark yellowish-brown; medium plasticity fines; fine to coarse, angular to subrounded sand; gravel to 1/2 inch; petroleum odor; carbonaceous material
6.0'									
	CL	2	20	30	50	44	21	11	SANDY LEAN CLAY WITH GRAVEL, CL: Soft; moist; dark yellowish-brown; medium plasticity fines; fine to coarse, subrounded sand; gravel to 1 inch; petroleum odor; organic material (roots)
8.0'									
	CL	11	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; dark yellowish-brown with some moderate reddish-brown material; 80% low plasticity fines; 20% fine sand; petroleum odor; carbonaceous; organic material (roots)
10.0'									
	CL/ML	19	–	–	–	–	–	–	SILTY CLAY, CL/ML: Very stiff; moist; dark yellowish-brown with some moderate reddish-brown material; medium plasticity fines; petroleum odor; organic material (roots)
11.2'	CH		–	–	–	–	–	–	FAT CLAY, CH: Very stiff; moist; black; 95% high plasticity fines; 5% fine to coarse sand; organic material (roots)
12.0'									
	CH	15	–	–	–	–	–	–	FAT CLAY, CH: Stiff; moist; white to light gray; 90% high plasticity fines; 10% fine sand
14.0'									
	SP-SC	12	–	–	–	–	–	–	POORLY GRADED SAND WITH CLAY, SP-SC: Firm; moist; greenish-gray to moderate reddish-orange; 90% to 95% fine sand; 5% to 10% medium plasticity fines; trace of carbonaceous material
16.0'									
	CL	7	0	50	50	27	9	14	SANDY LEAN CLAY, CL: Firm; moist; grayish-orange; low plasticity fines; fine to medium (mostly fine) sand
18.0'									
	CL/CH	8	–	–	–	–	–	–	LEAN TO FAT CLAY, CL/CH: Firm; moist; medium gray with moderate reddish-orange material; medium to high plasticity fines
20.0'									
	CL	7	0	15	85	35	14	26	LEAN CLAY WITH SAND, CL: Firm; moist; dark yellowish-brown; medium plasticity fines; fine (with scattered medium) sand
21.5'									
			–	–	–	–	–	–	NO SAMPLE TAKEN: Material as above; drilled to 25.0 feet
25.0'									
	CL	14	–	–	–	–	–	–	LEAN CLAY/LEAN CLAY WITH SAND, CL: Stiff; moist; dark yellowish-brown; 85% to 90% medium plasticity fines; 10% to 15% fine sand; carbonaceous
26.5'									
			–	–	–	–	–	–	NO SAMPLE TAKEN: Material as above; drilled to 28.5 feet
28.5'									
	CH	7	–	–	–	–	–	–	FAT CLAY, CH: Firm; moist; dark yellowish-brown with some black material; high plasticity fines
30.0'	B.O.H.								

4 Jun 87

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MACDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by J. CHAMBERS | Date 04/20/02 | Rev.
Drawn by S BOLAND | Chkd by | Design File no GR-04-016
Reviewed by J. SCHMOKONE | SPEC. No. 1182
Submitted by Chief, Civil Design Section A | File name 02200186.DWG Plot date 04/25/02 Plot scale AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973-2000 BORING LOGS, SHEET 2 OF 7

Sheet reference number: B-6

Sheet 247 of 261

2 F – 9 5 – 4

N 308,362.0±; E 1,592,681.0±

EL. ±66.5' = 0

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Overburden from leveling pad for CPT and drill rig
3.0'	ML	8	–	–	–	–	–	–	–	–	SANDY SILT, ML: Firm; dry; dark brown; 60% nonplastic fines; 40% fine to coarse, subangular to subrounded sand; weak reaction to HCl; trace of organic material (roots, wood particles)
5.0'	MH	0	0	8	92	88	26	–	–	–	ELASTIC SILT, MH: Very soft; moist; white; high plasticity fines; fine to medium sand; no odor; strong reaction to HCl; plaster-like material
7.0'	SM	4	31	43	26	40	13	25	–	–	SILTY SAND WITH GRAVEL, SM: Very loose; moist; dark brown; fine to coarse, subangular to subrounded sand; gravel to 1-1/2 inches; medium plasticity fines; weak reaction to HCl
9.0'	SP-SM		–	–	–	–	–	–	–	–	POORLY GRADED SAND WITH SILT, SP-SM: Loose; moist; very dark gray; 90% fine to medium (mostly fine), subangular to subrounded sand; 10% nonplastic fines; no reaction to HCl
9.7'	CL	6	–	–	–	–	–	–	–	–	
11.0'	SM	17	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Firm; moist; mottled dark gray and dark brown; 85% low plasticity fines; 15% fine to medium (mostly fine), subangular to subrounded sand; weak reaction to HCl
12.5' ▽											
13.0'	CL	10	0	15	85	36	15	28	–	–	SILTY SAND, SM: Firm; moist; dark brown; 60% fine to medium (mostly fine), subangular to subrounded sand; 40% nonplastic fines; no reaction to HCl At 12.5 feet water level
17.0'	CL	9	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; dark gray; medium plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand; no reaction to HCl At 15.0 feet wet
18.5'	CL	3	0	13	87	33	14	40	–	–	LEAN CLAY WITH SAND, CL: Soft; moist; dark gray; medium plasticity fines; fine to medium (mostly fine), subangular to subrounded sand; no reaction to HCl
21.0'	ML	SHELBY TUBE (ATTEMPT)	–	–	–	–	–	–	–	–	NO RECOVERY: Cuttings showed SANDY SILT, ML: Wet; dark gray; 60% nonplastic fines; 40% fine to coarse (mostly fine), subangular to subrounded sand
22.0'	CL	6	2	43	55	36	19	31	–	–	SANDY LEAN CLAY, CL: Firm; wet; dark gray; medium plasticity fines; fine to coarse (mostly fine to medium), subangular to subrounded sand; gravel to 3/8 inch; no reaction to HCl
22.5'			0	16	84	47	29	33	–	–	
24.0'			–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Firm; moist; very dark gray to black; medium plasticity fines; fine to medium (mostly fine, with scattered coarse), subangular to subrounded sand; no reaction to HCl
	SHELBY TUBE (ATTEMPT)		–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 24.0 feet NO RECOVERY: Drilled to 27.0 feet
27.0'	CL	2	0	15	85	27	10	29	–	–	LEAN CLAY WITH SAND, CL: Soft; moist; very dark gray; low plasticity fines; fine, subangular to subrounded sand
28.5'	SHELBY TUBE (ATTEMPT)		–	–	–	–	–	–	–	–	NO RECOVERY: Drilled to 31.0 feet
31.0'	CL	11	0	18	82	32	14	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; wet; dark gray; medium plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand
33.0'	SHELBY TUBE		–	–	–	–	–	–	–	–	NO DESCRIPTION: Drilled to 31.0 feet
35.5'											

(CONTINUED NEXT COLUMN)

2 F – 9 5 – 4

(CONTINUED FROM PREVIOUS COLUMN)

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
35.5'	CL	3	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Soft; moist; dark gray; 60% medium plasticity fines; 40% fine to medium (mostly fine), subangular to subrounded sand; weak reaction to HCl
37.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 38.5 feet
38.5'	CL	9	0	13	87	42	23	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; gray; medium plasticity fines; fine (with scattered medium to coarse) sand; strong reaction to HCl
40.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 41.5 feet
41.5'	CL	11	0	26	74	27	12	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; dark gray; low plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand; weak reaction to HCl
43.0'		14	–	–	–	–	–	–	–	–	At 45.0 feet no reaction to HCl
46.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 48.5 feet
48.5'	CL	13	0	32	68	28	13	–	–	–	SANDY LEAN CLAY, CL: Stiff; moist; dark gray; low plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand; no reaction to HCl
50.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 52.0 feet
52.0'	CL	16	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Very stiff; moist; gray to grayish-brown; 90% medium plasticity fines; 10% fine to medium (mostly fine), subangular to subrounded sand; strong reaction to HCl
53.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 55.0 feet
55.0'	SC-SM	13	0	57	43	25	7	22	–	–	SILTY, CLAYEY SAND, SC-SM: Firm; moist to wet; fine (with scattered medium to coarse), subangular to subrounded sand; low plasticity fines; no reaction to HCl
56.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 57.5 feet
57.5'	CL	SHELBY TUBE	0	22	78	35	19	26	98.7	2.7	LEAN CLAY WITH SAND, CL: Stiff; moist to wet; grayish-brown; medium plasticity fines; fine, subangular to subrounded sand; no reaction to HCl
								24	102.2		
								23	104.1		
60.0'		9	1	31	68	32	17	25	–	–	SANDY LEAN CLAY, CL: Stiff; moist; gray; medium plasticity fines; fine to medium (mostly fine, with scattered coarse), subangular to subrounded sand; gravel to 3/8 inch; strong reaction to HCl
62.0'	CL	41	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Hard; moist; gray; 80% medium plasticity fines; 20% fine to coarse (mostly fine), subangular to subrounded sand; trace of gravel to 3/8 inch; no reaction to HCl; trace of iron oxide staining
63.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 68.5 feet
68.5'	CL	12	0	30	70	28	10	24	–	–	SANDY LEAN CLAY, CL: Stiff; moist; gray; low plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand; strong reaction to HCl
70.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 71.0 feet
71.0'											

(CONTINUED NEXT COLUMN)

2 F – 9 5 – 4

(CONTINUED FROM PREVIOUS COLUMN)

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
71.0'	CL	22	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Very stiff; moist; grayish-brown; 80% medium plasticity fines; 20% fine to medium (mostly fine), subangular to subrounded sand; no reaction to HCl
72.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 75.0 feet
75.0'	CL	14	0	22	78	34	18	29	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; light gray; medium plasticity fines; fine (with scattered medium), subangular sand; weak reaction to HCl
76.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 77.5 feet
77.5'	CL	SHELBY TUBE	3	17	80	38	23	–	–	–	LEAN CLAY WITH SAND, CL: Soft; wet; light gray; medium plasticity fines; fine to medium (mostly fine), subangular to subrounded sand; gravel to 3/4 inch; weak reaction to HCl
								30	90.21	2.7	
80.0'		26	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Very stiff; moist; gray to yellowish-brown; 60% medium plasticity fines; 40% fine to coarse, subangular to subrounded sand; weak reaction to HCl
81.5'	B.O.H.										8 DEC 95

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Approved	Date	Description	Approved	Date

Designed by J. CHAMBERS	Date 04/05/02	Rev.	
Drawn by S. BOLAND	Cad by	Design File no GR-04-016	
Reviewed by J. SEMKOWNE		SPEC. No. 11182	
Submitted by Chief,Civil Design Section A		File name D020097.DWG Plot date 04/05/02 Plot scale AS NOTED	

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973-2000 BORING LOGS, SHEET 3 OF 7

Sheet reference number: B-7

2 F – 9 5 – 5

N 308,378.0±; E 1,592,742.0±

EL. ±75.0'

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
0	CL	4	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, (CL): Soft; moist; dark brown; 70% medium plasticity fines; 30% fine to coarse, subangular to subrounded sand; trace of gravel to 3/8 inch; no reaction to HCl
1.5'	CL	11	0	19	81	38	19	21	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; dark grayish-brown; medium plasticity fines; fine to coarse (mostly fine), subangular to subrounded sand; no reaction to HCl
3.0'	CL/CH	7	–	–	–	–	–	–	–	–	LEAN TO FAT CLAY, CL/CH: Firm; moist; dark brown; medium to high plasticity fines; trace of fine sand; no reaction to HCl
4.5'	CL	1	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Very soft; moist; dark brown; 90% medium plasticity fines; 10% fine to medium (mostly fine), subangular to subrounded sand; no reaction to HCl
6.0'		21	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Very stiff; moist; dark brown; medium plasticity fines; trace of fine sand; no reaction to HCl
7.5'	CH	22	0	2	98	60	32	32	–	–	FAT CLAY, CH: Very stiff; moist; dark brown; high plasticity fines; fine sand; no reaction to HCl
9.0'	CL	18	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Very stiff; moist; grayish-brown; medium plasticity fines; trace of fine sand; no reaction to HCl
10.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 12.0 feet
12.0'	CL	25	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Very stiff; moist; brownish-gray; 60% low to medium plasticity fines; 40% fine to coarse, subangular to subrounded sand; trace of subangular gravel to 1/2 inch; strong reaction to HCl
13.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 15.0 feet
15.0' ▽	CL	8	–	–	–	–	–	–	–	–	At 15.0 feet water level LEAN CLAY WITH SAND, CL: Firm; moist; dark grayish-brown; 75% medium plasticity fines; 25% fine to coarse (mostly fine), subangular to subrounded sand; no reaction to HCl
17.0'	CL	SHELBY TUBE	0	30	70	40	23	–	–		SANDY LEAN CLAY, CL: Firm; wet; dark grayish-brown; medium plasticity fines; fine to medium (mostly fine, with scattered coarse), subangular to subrounded sand; no reaction to HCl
								21	106.0	2.7	
								22	105.0		
								23	102.4		
19.5'	SC	7	0	59	41	27	10	23	–	–	CLAYEY SAND, SC: Loose; moist; mottled yellowish-brown to gray; fine (with scattered medium), subangular to subrounded sand; low plasticity fines; weak reaction to HCl
21.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 22.5 feet
22.5'	CL or ML	23	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL or SANDY SILT, ML: Very stiff; moist to wet; grayish-brown; 70% low plasticity fines; 30% fine to medium (mostly fine), subangular to subrounded sand; no reaction to HCl
24.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 25.5 feet
25.5'	CL or ML		–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL or SANDY SILT, ML: Moist to wet; grayish-brown; 70% low plasticity fines; 30% fine to medium fine), subangular to subrounded sand; no reaction to HCl
26.0'	SM	10	–	–	–	–	–	–	–	–	
27.0'			–	–	–	–	–	–	–	–	SILTY SAND, SM: Loose; moist; dark gray; 60% fine to coarse (mostly fine), subangular to subrounded sand; 40% nonplastic fines; no reaction to HCl
28.5'	CL	10	7	38	55	31	12	22	–	–	NO SAMPLE TAKEN: Drilled to 28.5 feet
30.0'			–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Stiff; moist; very dark gray to black; medium plasticity fines; fine to coarse (mostly fine) sand; gravel to 3/4 inch; no odor; no reaction to HCl
31.5'	CL/CH	12	–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 31.5 feet
33.0'			–	–	–	–	–	–	–	–	LEAN TO FAT CLAY, CL/CH: Stiff; moist; very dark gray to black; medium to high plasticity fines; trace of fine sand; no odor; no reaction to HCl
35.0'											NO SAMPLE TAKEN: Drilled to 35.0 feet

(CONTINUED NEXT COLUMN)

2 F – 9 5 – 5

(CONTINUED FROM PREVIOUS COLUMN)

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
35.0'	CH	9	0	3	97	63	38	38	–	–	FAT CLAY, CH: Stiff; moist; dark gray; high plasticity fines; fine, subangular to subrounded sand; no reaction to HCl
36.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 38.0 feet
38.0'		SHELBY TUBE	–	–	–	–	–	–	–	–	SAMPLE NOT TESTED: No description given
40.5'	CL	11	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Stiff; moist; mottled gray to yellowish-brown; 95% medium plasticity fines; 5% fine sand; trace of gravel to 3/8 inch; no reaction to HCl; iron oxide staining
42.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 43.5 feet
43.5'	CL	17	0	30	70	31	13	26	–	–	SANDY LEAN CLAY, CL: Very stiff; moist; dark gray; medium plasticity fines; fine, subangular to subrounded sand; no reaction to HCl
45.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 46.5 feet
46.5'	CL	12	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Stiff; moist; gray; 85% low to medium plasticity fines; 15% fine to medium (mostly fine), subangular to subrounded sand; weak reaction to HCl
48.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 49.5 feet
49.5'	CL	21	0	19	81	29	9	27	–	–	LEAN CLAY WITH SAND, CL: Very stiff; moist; gray; low plasticity fines; fine, subangular to subrounded sand; trace of gravel to 1 inch; strong reaction to HCl
51.5'			–	–	–	–	–	–	–	–	
54.0'	CL	SHELBY TUBE	0	23	77	36	18	–	–	–	LEAN CLAY WITH SAND, CL: Medium plasticity fines; fine to coarse (mostly fine) sand
								25	99.4	2.7	At 53.9 feet mottled gray to yellowish-brown; no reaction to HCl
								22	105.4		
55.5'	CL or ML	23	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL or SANDY SILT, ML: Very stiff; moist; mottled gray to yellowish-brown; 60% low plasticity fines; 40% fine to medium (mostly fine), subangular sand; no reaction to HCl
57.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 57.0 feet
58.5'	SC or CL	18	0 0	61 41	39 59	32 23	14 8	20 –	– –	– –	CLAYEY SAND, SC: Firm; moist; dark gray; fine, subangular to subrounded sand; medium plasticity fines; no reaction to HCl or SANDY LEAN CLAY, CL: Very stiff; moist; dark gray; low plasticity fines; fine, subangular to subrounded sand; no reaction to HCl
60.0'			–	–	–	–	–	–	–	–	
61.5'	CL	18	0	19	81	35	17	27	–	–	NO SAMPLE TAKEN: Drilled to 60.0 feet LEAN CLAY WITH SAND, CL: Very stiff; moist; gray; medium plasticity fines; fine to coarse (mostly fine), subangular to subrounded sand; trace of gravel to 1/2 inch; weak reaction to HCl
63.0'			–	–	–	–	–	–	–	–	
64.5'	CL	18	–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 63.0 feet LEAN CLAY, CL: Very stiff; moist; grayish-brown; 90% medium plasticity fines; 5% fine sand; 5% gravel to 3/8 inch; weak reaction to HCl
66.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 66.0 feet
67.5'	CL–ML	31	0	48	52	25	5	24	–	–	SANDY, SILTY CLAY, CL–ML: Hard; moist; gray; low plasticity fines; fine (with scattered medium to coarse), subangular to subrounded sand; no reaction to HCl
69.0'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 69.0 feet

(CONTINUED NEXT COLUMN)

2 F – 9 5 – 5

(CONTINUED FROM PREVIOUS COLUMN)

DEPTH		N	GR	SA	FI	LL	PI	MC	γ_d	G_s	
69.0'	CL	23	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: Very stiff; moist; gray; 70% medium plasticity fines; 25% fine to medium (mostly fine), subangular to subrounded sand; 5% gravel to 3/8 inch; weak reaction to HCl
70.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 72.0 feet
72.0'	SM/ML	41	–	–	–	–	–	–	–	–	SILTY SAND WITH GRAVEL/SILT WITH SAND AND GRAVEL, SM/ML: Dense/hard; moist; 50% low plasticity fines; 25% fine to coarse, subangular to subrounded sand; 25% subangular to subrounded gravel to 1 inch
73.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 75.0 feet
75.0'	CL	16	3	21	76	29	10	22	–	–	LEAN CLAY WITH SAND, CL: Very stiff; moist; dark gray; low plasticity fines; fine (with scattered medium to coarse) sand; gravel to 3/4 inch; no reaction to HCl
76.5'			–	–	–	–	–	–	–	–	NO SAMPLE TAKEN: Drilled to 78.0 feet
78.0'	CL	SHELBY TUBE	0	23	77	29	12	–	–	–	LEAN CLAY WITH SAND, CL: Firm; low plasticity fines; fine (with scattered medium to coarse) sand
								22	100.3	2.7	
80.5'		31	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Hard; moist; dark gray; 95% medium plasticity fines; 5% fine sand; no reaction to HCl
82.0'	B.O.H.										13 DEC 95

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by J. CHAMBERS	Date 04/05/02	Rev.	
Drawn by S. BOLAND	Cad by	Design File no GR-06-016	File name C2B2DOBE.DWG Plot date 04/05/02 Plot scale AS NOTED
Reviewed by J. SCANDRONE		SPEC. No. 1	1182
Submitted by		Design Section A	
Chief, Civil			

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973-2000 BORING LOGS SHEET 4 OF 7

Sheet reference number: B-8

Sheet 249 of 261

E B – 2

N 308,394.0±; E 1,592,895.0±

DEPTH		N	MC	γ_d	
EL. ±76.0' = 0	PS				PAVEMENT SECTION, PS: Asphaltic concrete (2 inches) over concrete (4 inches)
0.5'	CL	8	15	102	SILTY CLAY, CL: Stiff; moist; yellowish–brown; moderate plasticity; trace of fine sand
2.0'	SP	3	24	–	SAND, SP: Loose; moist; brown; fine to medium sand; trace of clay At 4.0 feet increasing clayey fines
4.8'	CL	11	29	–	SILTY CLAY, CL: Stiff; moist; brown; trace of very fine sand; moderate plasticity
		35	29	91	At 8.5 feet becomes hard
12.5'		37	23	106	SANDY CLAY, CL: Hard; moist; gray with brown streaks; low to moderate plasticity; very fine sand
18.5' ▽	SM	7	19	–	SILTY SAND, SM: Loose; wet; mottled brown and gray; fine to medium sand; trace of clayey fines; percent passing #200 sieve = 34%
20.0'	SP				SAND, SP: Dense; wet; mottled brown and dark gray; fine to medium sand
		31	18	–	From 24.0 feet to 24.3 feet lens of SILTY CLAY, CL
		7	27	–	At 28.0 feet loose; color grading to gray At 30.0 feet percent passing #200 sieve = 16%
31.0'	CL	11	23	–	SILTY CLAY, CL: Stiff; moist; dark bluish–gray; moderate plasticity; trace of very fine sand At 37.0 feet trace of red staining; increasing fine sand
38.0'					

(CONTINUED NEXT COLUMN)

E B – 2
(CONTINUED)

DEPTH		N	MC	γ_d	
38.0'					
		8	22	–	
39.6'	SP				SAND, SP: Medium dense; wet; fine sand; trace of clay
41.0'	CL				CLAYEY SILT, CL: Stiff; moist; gray with white specks; low plasticity; trace of very fine sand
		14	23	–	
44.5'					

B.O.H. 24 DEC 97

E B – 5

N 307,832.0±; E 1,593,272.0±

DEPTH		N	MC	γ_d	
EL. ±76.0' = 0	PS				PAVEMENT SECTION, PS: Asphaltic concrete (4 inches) over aggregate base (6 inches)
0.83'	CL	16	13	111	SANDY CLAY, CL (Fill): Very stiff; moist; brown; low plasticity; fine sand; fragments of brick
2.0'		12	20	–	SANDY CLAY, CL: Stiff; moist; brown; low plasticity; fine sand; increasing sand
4.3'	SP				SAND, SP: Loose to medium dense; moist; brown; fine sand; trace of silt
5.5'	CL	9	24	–	SILTY CLAY, CL: Very stiff; moist; brown; low to moderate plasticity; trace to some very fine sand
8.5'		23	17	111	SANDY CLAY, CL: Very stiff; moist; black; high plasticity; sand to 1/4 inch; color grading to black
12.5'	SP	13	14	–	SAND, SP: Loose; moist; light brown; medium to coarse sand
15.5'	SW	14	10	–	GRAVELLY SAND, SW: Dense; moist; light brown; medium to coarse sand; medium gravel
16.5'					

B.O.H. 24 DEC 97

NOTES:

1. SEE SHEET B–1 FOR LEGENDS AND NOTES.

2' 0 2' 4'
SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Description	Date	Approved

Designed by J. CHAMBERS | Date 04/05/02 | Rev.
Drawn by S. BOLAND | Cad by: | Design File no GR-04-016
Reviewed by J. SCANDRONE | SPEC. No. 1182
Submitted by: | File name 0202093.DWG Plot date 04/05/02
Chief, Civil Design Section A | Plot scale NONE

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA
GUADALUPE RIVER CONTRACT 3A, PHASE 1
1973–2000 BORING LOGS, SHEET 5 OF 7

Sheet reference number: B-9
Sheet 250 of 261

2F-99-1

N. 307,690, E. 1,593,260

DEPTH EL.	Symbol	N	N60	GR	SA	FI	LL	PI	MC	Description
76'=0				–	–	–	–	–	–	0 to 2.0' depth, excavated for fluid drain and trap
2.0'										
	CL	9	9							
		7	7	–	–	–	–	–	–	LEAN CLAY, CL: Stiff to very stiff; moist; dark brown; 90 % medium plasticity fines; 10% fine to coarse sand to 1/8-inch maximum size
		22	22							
		13	13							At 9.0' depth, as above except black
10.0'										
		11	11	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Stiff; moist; dark gray; 60 % medium plasticity fines; 40% fine to coarse sand to 3/16-inch maximum size
12.0'										
		15	15							
	SM	7	8	–	–	–	–	–	–	SILTY SAND, SM: Firm to very firm; moist; dark gray; 60 % fine to coarse; angular to subangular; poorly graded sand to 3/16 inch maximum size; 40% low plasticity fines
		24	22	0	58	42	–	NP	22	At 9.0' depth, as above except black
8.0' ▽										
		13	15	–	–	–	–	–	–	POORLY GRADED SAND WITH CLAY, SP-SC: very firm to dense; wet; light brown; 90% fine to medium sand; 10 % medium plasticity fines
	SP-SC	42	42							At 21.0' depth, as above except trace of medium gravel
22.0'										
		5	6	–	–	–	–	–	–	At 23.0' depth, firm material; lost sample
										At 24.0' to 26.5' depth, Shelby tube
	CL			0	24	76	39	18	31	LEAN CL:AY WITH SAND, CL: Stiff to very stiff; moist; dark brown; 90% medium plasticity fines; 10% fine to coarse sand to 1/8-inch maximum size
27.5'										
		5	6	–	–	–	–	–	–	LEAN CLAY, CL: Firm; wet; dark gray; 95% medium plasticity fines; 5% fine to medium sand
30.0'										

(CONTINUED NEXT COLUMN)

2F-99-1 (CONTINUED FROM PREVIOUS COLUMN)

DEPTH	Symbol	N	N60	GR	SA	FI	LL	PI	MC	Description
									36	At 30.0' to 32.5' depth, Shelby tube
	CH			0	2	98	64	38	32 34	FAT CLAY, CH: wet; dark gray; high plasticity fines; fine sand
32.0'										
		7	9	–	–	–	–	–	–	LEAN CLAY, CL: Stiff; wet; dark gray; 90% medium plasticity fines; 10% fine to medium sand
	CL									
		6	8							At 36.5' depth, as above except 80% medium plasticity fines; 20% fine to medium sand
		7	9							At 38.0' depth, as above except 90% medium plasticity fines; 10% fine to medium sand
40.0'										
	GC	43	57	–	–	–	–	–	–	CLAYEY GRAVEL WITH SAND, GC: Very dense; wet; light brown; 40% fine Gravel to 3/4 inch maximum size; 35% fine to coarse, subrounded, poorly graded sand; 25% medium plasticity fines
42.0'										
	SP-SC	47	63	–	–	–	–	–	–	POORLY GRADED SAND WITH CLAY AND GRAVEL, SP-SC: Very dense; wet; light brown; 60 % fine to coarse, poorly graded, subrounded sand, 30% fine to coarse, poorly graded, subrounded gravel to 1-1/4-inch maximum size; 10% medium plasticity fines
44.0'										
		74	98	–	–	–	–	–	–	POORLY GRADED GRAVEL WITH CLAY AND SAND, GP-GC: Very dense; wet; light brown; 50 % fine to coarse, poorly graded, subrounded to angular, gravel to 1-3/8 inch maximum size; 40 % fine to coarse, subrounded poorly graded sand; 10% medium plasticity fines
	GP-GC	27	36							
48.0'										
	CL	7	9	–	–	–	–	–	–	LEAN CLAY, CL: Firm; wet; light brown; 90% medium plasticity fines; 10% fine to medium sand
50.0'										
	GP-GC	60	80	–	–	–	–	–	–	POORLY GRADED SAND WITH CLAY AND SAND, GP-GC: Very dense; wet; light brown; 50 % fine to coarse, poorly graded, gravel; to 1-inch maximum size; 40% fine to coarse, poorly graded sand; 10% medium plasticity fines
51.5'										
	BOH									

2F-99-2

N. 308,040, E. 1,592,970

DEPTH EL.	Symbol	N	N60	GR	SA	FI	LL	PI	MC	Description
75'=0				–	–	–	–	–	–	0 to 2.0' depth, excavated for drilling fluid drain and trap
										LEAN CLAY, CL: Stiff to very stiff; moist; dark brown; 90% medium plasticity fines; 10% fine to coarse sand to 1/8-inch maximum size
4.0'										
		10	10							
	CL									
		14	14	–	–	–	–	–	–	LEAN CLAY, CL: Firm to stiff; moist; dark gray-brown; 95 % medium plasticity fines; 5% fine sand
										At 8.0' depth, as above except dark gray
		15	15							
										At 10.0' depth, gray-brown; 90% medium plasticity fines; 10% fine to medium sand; strong reaction to HCl
		12	12							
12.0'										
		11	11	–	–	–	–	–	–	CLAYEY SAND, SC: Firm; moist; dark brown; 80% fine to course, subrounded, poorly graded sand; 5% fine, subrounded gravel to 1/2-inch maximum size; 15% medium plasticity fines
	SC									
15.0' ▽										
		7	6							At 15.5' depth, gravel fell out of tube
	SP-SC			–	–	–	–	–	–	POORLY GRADED SAND WITH CLAY, SP-SC: very firm to dense; wet; light brown; 90% fine to medium sand; 10% medium plasticity fines
		12	11							
18.5'										
		13	15	–	–	–	–	–	–	SILTY SAND, SM: Firm; wet; light brown; 85% fine to medium sand; 15% low plasticity fines
	SM									
21.0'										
	SP-SM	22	22	0	92	8	–	NP	21	POORLY GRADED SAND WITH SILT, SP-SM:
23.0'										
		12	15	–	–	–	–	–	–	LEAN CLAY, CL: STIFF; WET; DARK GRAY; 95% MEDIUM PLASTICITY FINES; 5% FINE SAND
									42	
		0	51	49	–	NP	21			At 25.0' to 27.5' depth, SHELBY TUBE
	CL	0	0	100	45	24	30			
							36			
				–	–	–	–	–	–	At 28.0' depth, as above, except 90% medium plasticty fines; 10% fine to medium sand
		11	14							
30.0'										

(CONTINUED NEXT COLUMN)

2F-99-2 (CONTINUED FROM PREVIOUS COLUMN)

DEPTH	Symbol	N	N60	GR	SA	FI	LL	PI	MC	Description
		4	5	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Firm; wet; light gray; 65% medium plasticity fines; 35% fine to medium sand
32.0'										
	SC	8	10	–	–	–	–	–	–	CLAYEY SAND, SC: stiff; wet; Light gray; 50% fine to coarse, subrounded, poorly graded sand to 1/4 inch maximum size; 50% medium plasticity fines
34.0'										
		12	16	–	–	–	–	–	–	SANDY LEAN CLAY, CL: very stiff; wet; dark gray; 70% medium plasticity fines; 30% fine to medium sand
36.0'	CL									
				–	–	–	–	–	–	From 36.0' to 38.5' depth, Shelby tube
38.5'										
		12	16	–	–	–	–	–	–	LEAN CLAY, CL: Very stiff; wet; light gray; 85% medium plasticity fines; 15% fine to medium sand
40.0'										
		16	21							
	SM			–	–	–	–	–	–	SILTY SAND, SM: Very firm; wet; light gray; 85% fine to medium sand; 15% plasticity fines
		7	9							
44.0'										
		7	9	–	–	–	–	–	–	SANDY LEAN CLAY, CL: Firm; wet; dark gray; 65% medium plasticity fines; 35% fine to coarse, poorly graded sand, to 1/8-inch maximum size
46.0'										
	CL	8	11							LEAN CLAY WITH SAND, CL: Stiff; wet; light gray; 85% medium plasticity fines; 15% fine to medium sand
				–	–	–	–	–	–	
		6	8							At 49.0' depth, as above, except 90% medium plasticity fines; 10% fine to medium sand
50.0'										
	SC	7	9	–	–	–	–	–	–	CLAYEY SAND, SC: Loose; wet; dark gray; 55% fine to medium sand; 45% medium plasticity fines
51.5'										
	BOH									

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Description	Date	Approved

Designed by J. CHAMBERS	Date 04/05/02	Rev.
Drawn by S. ROLAND	Chd by	Design File no 2F-04-016
Reviewed by J. SCHNORBRE	Submitted by	SPEC. No. 1182
Chief, Civil Design Section A		File name D2E0081D.DWG File date 04/05/02 Plot scale AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973-2000 BORING LOGS, SHEET 6 OF 7

Sheet reference number: B-10

Sheet 251 of 261

2F-00-1

N. 306,700, E. 1,593,780

EL. 77'=0

Depth	USCS	N	N60	GR	SA	FI	LL	PI	MC	Description
0.5'	PS			-	-	-	-	-	-	PAVEMENT SECTION: 2-inchAsphalt Concrete over 4-inch Aggregate Base
2.0'	GC	9	8	-	-	-	-	-	-	CLAYEY GRAVEL WITH SAND, GC: Loose; moist; dark brown; 60% subrounded gravel to 1-3/8-inch maximum size; 25% fine to coarse subangular to sub- rounded sand; 15% medium plasticity fines; no odor; no reaction with HCl
	CL	8	7							LEAN CLAY, CL: Firm to very stiff; moist; dark brown; 90% medium plasticity fines; 10% fine to course; subangular to subrounded sand; no reaction with HCl; no odor
		11	10	-	-	-	-	-	-	At 4.0'; as above, except fine to medium sand with trace of course subangular sand
		19	17							At 6.0', As above except mottled brown; fine sand, and trace of iron oxide staining
10.0'		21	18	-	-	-	-	-	-	At 8.0', as above except 95% fines and 5% fine sand; trace of HCl reaction on white inclusions
		20	18	-	-	-	-	-	-	LEAN CLAY WITH SAND, CL: Very stiff, moist; gray-brown; 85% medium plasticity fines; 15% fine sand; iron oxide staining throughout; weak reaction with HCl; no odor. At 11.5', as above except with 80% fines and 20% sand
13.0'–15.5'	CL			0	26	74	33	14	25	13.0' to 15.5', pushed shelby tube LEAN CLAY WITH SAND, CL: Green-brown
16.0' (water) – 16.1'		6	6	-	-	-	-	-	-	LEAN SAND WITH SAND, CL Moist; light brown; 85% medium plasticity fines; 15% fine sand; no reaction with HCl; no odor; trace of iron oxide staining
	SC	21	21	-	-	-	-	-	-	CLAYEY SAND, SC: Loose, wet; light brown; 85% fine to medium sand; 15% medium plasticity fines; abundant iron oxide staining; no reaction with HCl, no odor
		24	24							At 18.1' to 18.2' and 18.8' to 19.1', CLAY LENSES, LEAN CLAY, CL: Moist; gray-brown; 95% medium plasticity fines; 5% fine sand
21.1'		31	34							
22.0'	CL			-	-	-	-	-	-	LEAN CLAY WITH SAND, CL: Hard; moist; dark yellowish-brown; 80% medium plasticity fines; 20 % fine sand
	SC	19	21	-	-	-	-	-	-	CLAYEY SAND, SC: Very firm; wet; olive-gray; 80% fine to medium sand; 20% medium plasticity fines. At 22.7' TO 23.5', as above except with 85% fine to medium sand; 15% medium plasticity fines
24.3'		13	14	-	-	-	-	-	-	AT 23.5' TO 24.3', as above except with 80% fine to medium sand; 20% medium plasticity fines
25.0'–27.5'				0	5	95	42	20	31	LEAN CLAY, CL Stiff; moist; dark gray; 95% medium plasticity fines; 5% fine sand. 25' TO 27.5', pushed shelby tube LEAN CLAY, CL: dark gray
27.5'	CL	11	12							LEAN CLAY, CL: Firm to stiff; moist; dark gray; 90% medium plasticity fines; 10% fine sand
		10	11							

(CONTINUED NEXT COLUMN)

2F-00-1

(CONTINUED FROM PREVIOUS COLUMN)

Depth	USCS	N	N60	GR	SA	FI	LL	PI	MC	Description
		10	11	-	-	-	-	-	-	At 32.0', as above except blue-green; 95% medium plasticity fines; 5% fine sand; reaction with HCl on white inclusions
		7	8							At 33.0', trace of iron oxide staining
34.3' – 36.0'	SC	28	33	-	-	-	-	-	-	CLAYEY SAND, SC: Dense; wet; dark gray; 70% to 85% fine to medium sand; 15% to 30% medium plasticity fines
36.0' – 36.3'	SP			-	-	-	-	-	-	POORLY GRADED SAND, SP: Wet; dark gray; 95% fine to medium sand; 5% fines
36.3' – 38.0'		9	11	-	-	-	-	-	-	LEAN CLAY, CL: Stiff; moist; blue-green; 95% medium plasticity fines; 5% fine sand
38.0' – 42.0'	CL	12	14							LEAN CLAY WITH SAND, CL: Stiff to very stiff; moist; dark gray; 85% medium plasticity fines; 15% fine sand; iron oxide staining throughout; no reaction with HCl; no odor
		18	21	-	-	-	-	-	-	
42.0'	SP	33	39							POORLY GRADED SAND, SP: Very loose to dense; wet; dark gray; 90% to 95% fine to coarse subangular to subrounded sand; 5% to 10 % fines. At 44.0', as above except with trace of gravel to 3/4-inch maximum size
		8	9	-	-	-	-	-	-	At 48.0', as above except gray-brown with abundant iron oxide staining
		3	4							
48.4' – 49.5'	SC	41	48	-	-	-	-	-	-	CLAYEY SAND, SC: 65% fine to coarse, subrounded sand; 20% medium plasticity fines; 15% fine, subrounded gravel to 3/8-inch. 48.6' TO 49.5', As above except dark yellow-brown; 85 % fine sand; 15% medium plasticity fines; iron oxide staining throughout
49.5'	BOH									

2F-00-2

N. 307,400, E. 1,593,450

EL. 76'=0

Depth	USCS	N	N60	GR	SA	FI	LL	PI	MC	Description
0.5'	PS			-	-	-	-	-	-	PAVEMENT SECTION: 2-inch Asphalt Concrete over 4-inch Aggregate Base
2.9'	GC	13	11	-	-	-	-	-	-	CLAYEY GRAVEL WITH SAND, GC: Firm; moist; dark gray-brown; 60% subrounded gravel to 3/4-inch; 25% medium plasticity fines; 15% fine to coarse subangular to subrounded sand
		12	11							LEAN CLAY, CL: Firm to very stiff; moist; dark brown; 90% medium plasticity fines; 10% fine to coarse; subangular to subrounded sand; no reaction with HCl; no odor
6.0'		9	8	-	-	-	-	-	-	AT 4.0', as above except 80% fine to medium sand; 20% medium plasticity fines
	CL	17	15							LEAN CLAY, CL: Stiff; moist; dark brown; 95% medium plasticity fines; 5% fine sand; no reaction with HCl; no odor; abundant iron oxide staining from 6.7'-6.8'
		15	13							As above except yellow-brown; 90% medium plasticity fines; 10% fine sand; trace of organic matter; trace of white inclusions that react with HCl
		15	13	-	-	-	-	-	-	
14.0'		13	13							
15.0' (water) – 16.0'	SC	5	5	-	-	-	-	-	-	CLAYEY SAND, SC: Loose; wet; gray-brown; 60% fine to medium sand; 40% medium plasticity fines; no reaction with hcl; no odor; abundant iron oxide staining
16.0' – 16.8'	CL			-	-	-	-	-	-	LEAN CLAY WITH SAND, CL Moist; gray; 85% medium plasticity fines; 15% fine sand
	SC	14	14	-	-	-	-	-	-	CLAYEY SAND, SC: Firm, wet; dark yellow-brown; 85% fine to medium sand; 15% medium plasticity fines; no reaction with HCl; abundant iron oxide staining
20.0'		13	13							At 18.0', as above except 65% fine sand; 35% medium plasticity fines
22.0'	CL	6	7	-	-	-	-	-	-	LEAN CLAY, CL: Firm; moist; brown; 90% medium plasticity fines; 10% fine sand; has a Clayey Sand (SC), lense with 70% fine to coarse sand and 30% medium plasticity fines
	SC	11	12	-	-	-	-	-	-	CLAYEY SAND, SC: Loose to firm; wet; brown; 85% fine to coarse; subrounded sand; 15% medium plasticity fines; no reaction to HCl; no odor; trace of iron oxide staining. At 22.4', as above except 80% fine sand; 20% medium plasticity fines
26.0'		9	10							23.2' TO 23.5', LEAN CLAY (LENSE), CL: 95% medium plasticity fines; 5% fine sand
26.0' – 28.5'				0	4	96	38	17	31	26.0' TO 28.5' pushed shelby tube LEAN CLAY, CL: Dark gray
28.5'		9	10							LEAN CLAY, CL Stiff; moist; dark gray; 90% medium plasticity fines; 10% fine sand; no reaction with HCl, no odor; trace of iron oxide staining

(CONTINUED NEXT COLUMN)

2F-00-2

(CONTINUED FROM PREVIOUS COLUMN)

Depth	USCS	N	N60	GR	SA	FI	LL	PI	MC	Description
	CL	10	11	-	-	-	-	-	-	At 30.0' As above, except with slight odor
		10	12							At 32.5', a 6" Lense of LEAN CLAY WITH SAND, CL: 85% medium plasticity fines; 15% fine sand
34.5' – 36.0'		12	14	-	-	-	-	-	-	LEAN CLAY WITH SAND, CL: Stiff; moist; dark gray-brown; 85% medium plasticity fines; 15% fine sand
36.0' – 36.7'				-	-	-	-	-	-	LEAN CLAY, CL: Moist; dark gray; 90% medium plasticity fines; 10% fine sand; iron oxide staining throughout
36.7' – 38.0'	SC	20	23	-	-	-	-	-	-	CLAYEY SAND WITH GRAVEL, SC: Very firm; wet; dark gray-brown; 60% fine to coarse subangular to subrounded sand; 25% medium plasticity fines; 15% fine gravel to 3/4-inch
38.0' – 38.7'				-	-	-	-	-	-	LEAN CLAY WITH SAND, CL: Wet; dark gray-brown; 80% medium plasticity fines; 20% fine to medium sand
38.7' – 42.4'	CL	9	11	-	-	-	-	-	-	LEAN CLAY, CL: Stiff; moist; blue-green; 95 % medium plasticity fines; 5% fine sand; no reaction with HCl; no odor
		9	11							
42.4' – 44.0'	SC	21	25	-	-	-	-	-	-	CLAYEY SAND WITH GRAVEL, SC: Very firm; light brown; 60% fine to coarse, subrounded sand; 25% medium plasticity fines; 15% fine gravel to 3/4-inch; no reaction with HCl; no odor; trace of iron oxide staining
44.0' – 44.7'				-	-	-	-	-	-	LEAN CLAY WITH SAND, CL: Wet; dark gray; 80% medium plasticity fines; 20% fine sand; no reaction with HCl; no odor
44.7' – 45.5'		8	9	-	-	-	-	-	-	LEAN CLAY, CL Stiff; moist; blue-green; 95% medium plasticity fines; 5% fine sand
45.5' – 48.5'	CL	15	18	-	-	-	-	-	-	SANDY LEAN CLAY WITH GRAVEL, CL: Stiff; moist; light brown; 50% medium plasticity fines; 30 % fine to coarse, sub-rounded sand; 20 % fine to coarse, sub-rounded gravel; 1-3/8 inch
48.5' – 50.0'	SC	49	57	-	-	-	-	-	-	CLAYEY SAND WITH GRAVEL, SC: Very dense; wet; light brown; 60% fine to coarse, subrounded sand; 25% fine to coarse, subrounded gravel to 1-3/8 inch; 15% medium plasticity fines; no reaction with HCl; no odor
50.0'	BOH									

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

SCALE: 1"= 2'

US Army Corps of Engineers Sacramento District

Designed by: J. CHAMBERS; Drawn by: S. BOUND; Reviewed by: J. SCANDRONE; Date: 04/05/02; Design file no. GR-01-016; SPEC. No. 1182

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

1973-2000 BORING LOGS, SHEET 7 OF 7

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

Sheet reference number: B-11

URS-00-1

DEPTH — N. 306,326±; E. 1,593,906±

EL.80'=0

Depth	Symbol	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
	CL	23	–	–	–	–	–	10	–	97	>4.5	LEAN CLAY, CL: Very stiff, dry, light brown, about 5% angular gravel and 5% sand
3.0'												
	CL CH	10	–	–	–	–	–	33	0.8	84	1.75	LEAN TO FAT CLAY, CL/CH: Firm, moist, brown
		27	–	–	–	–	–	27	2.9	73	3.5	Very stiff, light yellowish white, about 10% fine sand, rootlets
9.0'												
	CL	30	–	–	–	–	–	18	3.4	110	4.5 –	LEAN CLAY, CL: Very stiff, moist, olive gray
		13	–	–	–	–	–	24	0.8	100	1.5 –	Firm
16.5'												Becoming Sandy lean Clay CL:
	SM	28	0	52	48	–	–	21	0.9	105	–	SILTY SAND, SM: Medium dense, moist, olive gray
		17	0	60	40	–	–	21	–	107	–	Dark greenish gray
		17	–	–	–	–	–	–	–	–	–	
24.0'												Olive gray to black
	CL SHELBY	7	–	–	–	36	15	–	–	–	0.75	LEAN CLAY, CL: Firm, moist, dark gray
								28	0.6	95		
			–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	0.75	Few fine sand
	SHELBY		–	–	–	–	–	–	–	–	–	LEAN CLAY WITH SAND, CL: reddish brown with orange mottling, little fine to medium grained angular sand

(CONTINUED NEXT COLUMN)

URS-00-1

DEPTH — N. 306,326±; E. 1,593,906± (CONTINUED FROM PREVIOUS COLUMN)

Depth	Symbol	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
			–	–	–	–	–	–	–	–	0.75	
40.0'												
	GW GM											WELL-GRADED GRAVEL WITH SILT AND SAND GW-GM: reddish brown to dark greenish gray, angular gravel
		56	47	44	9	–	–	7	–	133	–	
	CL	15	–	–	–	–	–	–	–	–	1.75	LEAN CLAY, CL: Stiff, moist, brown with red brown mottling
	CL											LEAN CLAY, CL: Firm, moist, dark greenish gray, about 5% 5% subangular 1/2-inch gravel
		20	–	–	–	–	–	–	–	–	–	
		17	–	–	–	–	–	23	0.3	104	0.5	Trace fine sand and subangular gravel

B.O.H. — 5 SEP 00

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'
SCALE: 1"= 2'

URS-00-2

DEPTH — N. 306,398±; E. 1,593,901± (CONTINUED FROM COLUMN TO THE RIGHT)

Depth	Symbol	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
39.0'												
	GW GM	60	–	–	–	–	–	–	–	–	–	WELL-GRADED GRAVEL WITH SILT AND SAND, GW-GM: dense, moist, reddish brown
	SHELBY	51	39	–	6	–	–	8	–	129	–	GRADED TO POORLY GRADED SAND WITH SILT AND GRAVEL, SP-SM: dense
48.0'												
	CL											LEAN CLAY, CL: Dark greenish gray
		12	–	–	–	–	–	–	–	–	1.0	

B.O.H. — 5 SEP 00

URS-00-2

DEPTH — N. 306,398±; E. 1,593,901±

EL. 81'=0

Depth	Symbol	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
												7 inches Broken Portland Cement Concrete over 29 inches Aggregate Base
3.0'	CL ML		–	–	–	–	–	17	4.2	106		SILTY CLAY, CL-ML: Hard, dry, brown to dark brownish gray to white to black, laminated Lean Clay and Silt
	SP SC	17	–	–	–	–	–	–	–	–	>4.5	POORLY GRADED SAND, SP-SC: with clay Medium dense, dry, 10% fines
	CL CH	19	–	–	–	–	–	24	3.6	97	>4.5	LEAN TO FAT CLAY, CL/CH: Very stiff, damp, brown
		17	–	–	–	52	34	–	–	–	2.5	
			–	–	–	–	–	23	3.0	100	–	Moist, about 5% 3/8 inch rounded gravel
12.0'												
	CL	15	–	–	–	–	–	–	–	–	2.0	SANDY LEAN CLAY, CL: Stiff, moist, dark brown with orange mottling
			–	–	–	–	–	22	1.1	102	–	
		7	–	–	–	–	–	24	0.6	100	2.25	Firm
17.0'												
	ML	14	–	0	59	–	–	–	–	–	2.25	SANDY SILT, ML: Medium dense, moist to wet, brown
			–	–	–	–	–	28	0.6	94	–	
21.5'												
	SHELBY		–	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Firm, moist, dark greenish gray, about 5% fine sand
			–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	0.75	About 15% fine sand
		8	–	–	–	–	–	–	–	–	1.0	
			–	–	–	–	–	28	0.5	96		No apparent sand
	CL											
	SHELBY		–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	0.75	
		15	–	–	–	–	–	–	–	–	0.75	About 5 to 10% sand, 5% rounded gravel to 1/4 inch
			–	–	–	–	–	18	0.8	111	–	

(CONTINUED COLUMN ON THE BOTTOM LEFT)

REGISTERED PROFESSIONAL ENGINEER — T.C. MacDONALD — No. C 27139 — Exp. 03/31/05 — CIVIL — STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved

Designed by: P. POMERSON | Date: 04/05/02 | Rev.
Drawn by: SOC | Cad by: RA | Design File no: GR-04-016 | SPEC. No.: 11882
Reviewed by: M FORREST | File name: G2C00812.DWG
Submitted by: | Plot date: 04/05/02
Chief, Civil Design Section A | Plot scale: AS NOTED

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

2000 URS BORING LOGS, SHEET 1 OF 6

Sheet reference number: B-12
Sheet 253 of 261

URS-00-3

DEPTH N. 306,464±; E. 1,593,878±

EL.81'=0

Depth	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
	62	62	–	–	–	–	–	3	–	121	>4.5	GRAVELLY LEAN CLAY FILL, CL: Hard, dry, gray-brown, about 30% gravel
	62	24	–	–	–	–	–	–	–	–	–	Very stiff
7.5'	62	7	35	52	13	–	–	10	–	117	–	CLAYEY SAND WITH GRAVEL FILL, SC: Loose, damp, gray brown FILL
10.25'	62	8	5	86	9	–	–	5		94	–	WEL GRADED SAND WITH SILT, SW-SM: Loose, moist, tan, about 5% gravel
12.0'	62	21	–	–	–	–	–	18	2.6	107	3.75	LEAN CLAY, CL: Very stiff, moist, gray-brown red-brown and black mottled
	62	100	–	–	–	–	–	–	–	–	–	
		170 psi	–	–	–	–	–	–	–	–	–	Firm, olive gray
			–	–	–	–	–	–	–	–	0.75	
		9	–	–	–	–	–	26	0.5	99	1.5	
21.0'	62	14	0	29	71	–	–	23	0.7	98	1.5	SANDY SILT, ML: Medium, moist, dark gray
24.40'		SHELBY	–	–	–	–	–	–	–	–	–	LEAN CLAY, CL: Firm to stiff, moist, gray
			–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	0.75	
	62	11	–	–	–	–	–	29	1.1	90	1.5	Dark gray
		SHELBY	–	–	–	–	–	–	–	–	–	
36.30'	62		–	–	–	–	–	–	–	–	–	CLAYEY SAND, SC: Medium dense, moist, gray and brown mottled
27.30'	62		–	–	–	–	–	–	–	–	3.5	LEAN CLAY, CL: Stiff to very stiff, moist, gray brown
			–	–	–	–	–	–	–	–	–	

(CONTINUED NEXT COLUMN)

URS-00-3

DEPTH N. 306,464±; E. 1,593,878±
(CONTINUED FROM PREVIOUS COLUMN)

Depth	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
39.15'	62	31	–	–	–	–	–	–	–	–	–	POORLY GRADED GRAVEL WITH SILT AND SAND, GP-GM: Dense, wet, gray and brown mottled
		B1	54	40	6	–	–	6	–	135	–	Less fines
50.0'	62	12	–	–	–	–	–	–	–	–	–	LEAN CLAY WITH GRAVEL, CL: Stiff, moist, gray brown

B.O.H. 6 SEP 00

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'
SCALE: 1"= 2'

URS-00-4

DEPTH N. 306,565±; E.1,593,784±
(CONTINUED FROM COLUMN TO THE RIGHT)

Depth	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
40.0'	GW GM	54	45	44	11	–	–	9	–	–	–	WELL GRADED GRAVEL WITH SILT AND SAND, GW-GM: Very dense, wet, gray and brown mottled
		28	–	–	–	–	–	–	–	–	–	Dense
		37	–	–	–	–	–	–	–	–	–	

B.O.H. 6 SEP 00

URS-00-4

DEPTH N. 306,565±; E. 1,593,784±

EL.82'=0

Depth	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
												4 inches Asphalt Concrete over 8 inches Aggregate Base
1.0'	CL	21	–	–	–	–	–	21	3.6	102	3.75	LEAN CLAY FILL, CL: Very stiff, moist, brown, with brick fragments FILL
4.0'	CL	16	–	–	–	–	–	19	5.6	100	>4.5	LEAN CLAY, CL: Hard, moist, brown
		28	–	–	–	–	–	24	4.8	94	>4.5	
9.5'	CH	20	–	–	–	–	–	–	–	–	4.5	FAT CLAY, CH: Hard, moist, black
11.0'	CL		–	–	–	–	–	22	4.0	104		LEAN CLAY, CL: Very stiff to hard, moist, gray-brown and orange brown mottling
		16	–	–	–	35	15	23	1.7	101	1.75	Stiff
		SHELBY	–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	1.75	With about 5% sand
19.0'		17	–	–	–	–	–	24	1.0	103	0.75	SILTY CLAY, CL-ML: Firm to stiff, moist brown with Silty SAND (SM) lenses
		22	0	28	72	–	–	26	0.9	99	3.0	
	CL ML	8	–	–	–	46	22	36	0.7	85	1.0	More plastic (CL)
		SHELBY	–	–	–	–	–	–	–	–	–	
			–	–	–	–	–	–	–	–	–	
31.5'			–	–	–	–	–	–	–	–	1.5	LEAN CLAY, CL: Stiff, moist, light gray
35.5'	CL	26	–	–	–	–	–	18	1.4	114	>4.5	SANDY LEAN CLAY, CL: Stiff, moist, gray, about 5% fine gravel

(CONTINUED COLUMN ON THE BOTTOM LEFT)

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by: P. POMERSON
Drawn by: SDC
Reviewed by: M FORREST
Submitted by:
Chief, Civil Design Section A
Date: 04/05/02
Design File no: GR-4-015
Cad by: RR
SPEC. No.: 1182
File name: C0200313.DWG
File date: 04/05/02
Plot scale: AS NOTED
Rev.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

2000 URS BORING LOGS, SHEET 2 OF 6

Sheet reference number:
B-13
Sheet 254 of 261

URS-00-5

DEPTH N. 306,738±; E. 1,593,645±

EL.80'=0

Depth	Unified	Shelby	N	GR	SA	Fi	LL	PI	MC	UC	DD	PP	Description
	CL												**LEAN CLAY WITH SAND, CL:** Very stiff, dry, about 10 to 15% coarse sand, 5% gravel to 1/4 inch
	CL		22	–	–	–	–	–	–	–	–	>4.5	
	CL			–	–	–	–	–	13	2.6	92	–	Damp
	CL		21	–	–	–	–	–	26	1.2	88	3.25	Stiff, moist, no apparent sand or gravel
	CL		28	–	–	–	–	–	33	1.2	85	2.75	Brown with light gray and orange mottling
10.5'	CH		24	–	–	–	–	–	–	–	–	4.5	**FAT CLAY, CH:** Very stiff, moist to wet, black
11.5'													**LEAN CLAY, CL:** Firm, moist, light gray wth orange mottling
	CL	SHELBY		–	–	–	–	–	–	–	–	–	
	CL	SHELBY		–	–	–	–	–	–	–	–	–	
	CL	SHELBY		–	–	–	–	–	–	–	–	1.0	Firm
17.0'	SM		20	–	–	–	–	–	29	0.5	95	1.75	**SILTY SAND, SM:** Medium dense, moist, light gray with orange mottling
18.0'													**LEAN CLAY WITH SAND, CL:** Stiff, reddish brown, 20% fine sand
	CL	SHELBY		–	–	–	–	–	–	–	–	–	
	CL	SHELBY		–	–	–	–	–	–	–	–	1.5	
22.5'	SM		15	0	67	33	–	–	22	–	–	1.5	**SILTY SAND, SM:** Medium dense, moist, dark olive gray, with Clayey SILT (ML) lenses
25.0'	CL CH		11	–	–	–	–	–	–	–	–	1.25	**LEAN TO FAT CLAY, CL/CH:** Firm, moist, dark olive gray
	CL CH			–	–	–	–	–	27	0.7	96	–	
	CL CH	SHELBY		–	–	–	–	–	–	–	–	–	
	CL CH	SHELBY		–	–	–	–	–	–	–	–	–	
	CL CH	SHELBY		–	–	–	–	–	–	–	–	1.0	
	CL CH	SHELBY	48	39	51	10	–	–	10	–	–	–	**POORLY GRADED SAND WITH SILT, SP-SM:** Dense, moist, reddish brown to light gray

(CONTINUED NEXT COLUMN)

URS-00-5

DEPTH N. 306,738±, E. 1,593,645±

(CONTINUED FROM PREVIOUS COLUMN)

Depth	Unified	Shelby	N	GR	SA	Fi	LL	PI	MC	UC	DD	PP	Description
40.0'	GC		30	63	21	16	–	–	12	–	–	–	**CLAYEY GRAVEL, GC:** Dense, wet, subangular gravel to 1-1/2 inch
45.0'	CL		13	–	–	–	–	–	–	–	–	–	**LEAN CLAY, CL:** Stiff, moist, light gray, about 10% fine sand, 5% subangular gravel to 3/8 inch
50.0'	SP SM		48	15	78	7	–	–	13	–	114	–	**POORLY GRADED SAND WITH SILT, SP-SM:** Dense, wet, dark reddish brown

B.O.H. 7 SEP 00

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

URS-00-6

DEPTH N. 306,859±; E. 1,593,583±

EL.79'=0

Depth	Unified	Shelby	N	GR	SA	Fi	LL	PI	MC	UC	DD	PP	Description
	CL												**SANDY LEAN CLAY, CL:** Firm, damp, reddish brown, about 30% fine sand
3.0'	SP												
4.0'	SP		14	–	–	–	–	–	–	–	–	–	**POORLY GRADED SAND, SP:** Medium dense, damp, reddish brown
	CL			–	–	–	–	–	21	2.9	89	>4.5	**LEAN CLAY, CL:** Very stiff, damp, brown
	CL		16	–	–	–	–	–	31	1.4	89	2.25	Stiff, moist
	CL			–	–	–	–	–	32	1.5	88	2.75	Olive gray with orange mottling
10.0'	CL CH		20	–	–	–	–	–	29	1.4	86	–	**LEAN TO FAT CLAY, CL/CH:** Stiff, moist, black
12.0'	CL		25	–	–	–	–	–	22	2.8	104	4.0	**LEAN CLAY, CL:** Very stiff, moist, light gray with orange mottling
	CL		12	–	–	–	–	–	27	0.7	96	1.25	Firm
	CL	SHELBY		–	–	–	–	–	–	–	–	4.5	Very stiff
19.60'	SP SC			–	–	–	–	–	–	–	–	–	**POORLY GRADED SAND WITH CLAY, SP-SC:** Medium dense, moist, reddish brown, fine sand
22.0'	CL	SHELBY		–	–	–	–	–	–	–	–	–	**LEAN CLAY, CL:** Stiff, moist, dark olive gray, 5% fine sand
	CL		6	–	–	–	–	–	24	0.5	101	1.25	Firm
28.5'	CL			–	–	–	–	–	–	–	–	1.75	**LEAN CLAY, CL:** Stiff, moist, olive gray with orange mottling
	CL		13	–	–	–	–	–	35	1.1	86	1.5	
35.5'	GW		32	–	–	–	–	–	–	–	–	–	**WELL-GRADED GRAVEL WITH SAND, GW:** Dense, moist, dark greenish gray, about 20% sand

(CONTINUED COLUMN ON THE BOTTOM LEFT)

URS-00-6

DEPTH N. 306,859±; E. 1,593,583±

(CONTINUED FROM COLUMN TO THE RIGHT)

Depth	Unified	Shelby	N	GR	SA	Fi	LL	PI	MC	UC	DD	PP	Description
38.5'	CL	SHELBY		–	–	–	–	–	–	–	–	–	**LEAN CLAY, CL:** Firm, moist, dark greenish gray
41.0'	SM	SHELBY		–	–	–	–	–	–	–	–	–	**SILTY SAND, SM:** Dark greenish gray, about 10% rounded gravel to 1/4 inch
	SM	SHELBY		5	52	43	–	–	20	–	–	–	
44.0'	CL		9	–	–	–	–	–	22	0.6	104	1.0	**LEAN CLAY, CL:** Firm, moist, dark greenish gray, about 5% fine sand
48.0'	SP SM		14	1	92	7	–	–	–	–	–	–	**POORLY GRADED SAND WITH SILT, SP-SM:** Medium dense, moist, reddish brown, about 5% fines
49.5'	CL			–	–	–	–	–	25	1.0	100	1.0	**LEAN CLAY, CL:** Firm to stiff, moist, dark greenish gray

B.O.H. 7 SEP 00

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by: P. FORRESTER | Drawn by: SDC | Reviewed by: M. FORREST | Submitted by: Chief, Civil Design Section A | Date: 04/05/02 | Checked by: RA | Design File no GR-04-016 | SPEC. No. 1182 | File name: 02200314.DWG | Plot date: 04/05/02 | Plot scale: AS NOTED | Rev.

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

GUADALUPE RIVER CONTRACT 3A, PHASE 1

2000 URS BORING LOGS, SHEET 3 OF 6

Sheet reference number: B-14

Sheet 255 of 261

URS-00-7

DEPTH EL. 79.0 — N. 306,936±; E. 1,593,542±

Depth	Unified	Shelby	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
	CL		25	–	–	–	–	–	13	3.1	105	4.0	SANDY LEAN CLAY FILL, CL: Very stiff, damp, reddish brown, about 5% gravel to 3/8 inch, with some small debris – broken glass, nails, ashes
4.5'	CL		20	–	–	–	–	–	26	1.7	86	4.25	LEAN CLAY, CL: Stiff, damp, brown
	CL		31	–	–	–	–	–	32	1.4	87	3.75	Some faint orange staining, some rootlets
10.0'	CL CH		22	–	–	–	–	–	28	1.6	88	3.0	LEAN TO FAT CLAY, CL/CH: Stiff, moist, black
12.0'	CL		23	–	–	–	–	–	18	2.4	105	2.5	LEAN CLAY, CL: Very stiff, moist, light gray with orange mottling, about 5% fine sand
	CL	SHELBY	0	28		33	14	–	–	–	–	–	Stiff
18.0'	ML											1.75	SILT, ML: Firm, moist, light gray with orange mottling
	ML		15	–	–	–	–	–	27	0.4	102	3.5	Soft, dark olive gray with orange mottling
20.5'	SP SM												POORLY GRADED SAND WITH SILT, SP-SM: Loose to medium dense, moist, dark olive gray with orange mottling, decreasing sand content with depth
23.0'	SP SM		10	0	27	73	–	–	–	–	–	2.25	
	CL												LEAN CLAY CL: Stiff, moist, dark olive gray
26.0'	CL	SHELBY	–	–	–	–	–	–	29	–	93	–	LEAN CLAY, CL: Firm, moist, reddish brown with trace orange mottling
	CL											1.0	
28.5'	CH		18	–	–	–	–	–	34	1.6	88	–	FAT CLAY, CH: Stiff, moist, light gray with orange mottling
35.0'	SW SM		56	41	52	7	–	–	8	–	133	–	WELL-GRADED SAND WITH SILT AND GRAVEL, SW-SM: Dense, wet, rounded gravel to 1 inch
39.0'													

(CONTINUED NEXT COLUMN)

URS-00-7

DEPTH — N. 306,936±; E. 1,593,542± (CONTINUED FROM PREVIOUS COLUMN)

Depth	Unified	Shelby	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
39.0'	CL												LEAN CLAY, CL: Firm, moist, dark gray
41.5'	SM	SHELBY	0	61	39	–	–	–	–	–	–	–	SILTY SAND, SM: Stiff, moist, dark brown
	ML		34	–	–	–	–	–	–	–	–	–	Grades to sandy silt ML – Dark gray Dark gray, about 5% fine sand
49.0'	SW SM		62	40	53	7	–	–	8	–	133	–	WELL-GRADED SAND WITH SILT AND GRAVEL, SW-SM: Very dense, wet, dark gray, rounded gravel to 1-1/2 inch

B.O.H. 8 SEPT 00

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'
SCALE: 1"= 2'

URS-00-8

DEPTH — N. 307,252±; E. 1,593,535± (CONTINUED FROM COLUMN TO THE RIGHT)

Depth	Unified	Shelby	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
38.0'									21				LEAN CLAY WITH SAND, CL: Stiff, moist, green-gray with orange mottling, about 20% fine sand
			23	–	–	–	–	–	21	1.9	106	1.0	
43.5'	GW GM		52	–	–	–	–	–	–	–	–	–	WELL-GRADED GRAVEL WITH SILT AND SAND, GW-GM: Very dense, moist, dark gray, rounded gravel to 3/8 inch, about 30% sand, about 5 to 10% fines
	CL		28	38	33	29	–	–	11	–	125	–	Clay layer SILTY GRAVEL WITH SAND, GM: Medium dense, gravel to 1/2 inch

B.O.H. 8 SEPT 00

URS-00-8

DEPTH EL. 79'=0 — N. 307,252±; E. 1,593,535±

Depth	Unified	Shelby	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
	CL												LEAN CLAY FILL, CL: Firm, dry, reddish brown Damp
	CL		15	–	–	–	–	–	–	–	–	–	About 10% sand and 5% rounded to subangular gravel to 3/8 inch, with shell fragments, broken glass, ashes
6.5'	CL		53	–	–	–	–	–	19	8.3	107	>4.5	LEAN CLAY FILL, CL: Hard, moist, brown, with shell fragments
	CL												FILL
10.0'	CL		36									>4.5	
	CL			–	–	–	–	–	18	5.9	105	–	LEAN CLAY, CL: Hard, moist, light gray with orange mottling, black below 11-1/2 feet
	CL		34	–	–	–	33	17	18	3.6	110	4.0	Very stiff, dark gray with orange mottling and calcareous nodules
15.0'	CL	SHELBY	0	42		31	12	–	–	–	–	–	LEAN CLAY, CL: Firm, wet, brown and gray mottled
	CL											1.5	
	CL		6	–	–	–	–	–	36	0.5	89	1.0	About 10% fine sand, rootlets
22.5'	SW	SHELBY	3	93	4	–	–	–	19 –	–	–	–	WELL-GRADED SAND, SW: Medium dense, wet, reddish brown, gravel to 3/8 inch SILT (ML) – Moist to wet, olive gray
25.5'	CL CH		9	–	–	–	–	–	30	0.4	88	1.25	LEAN TO FAT CLAY, CL/CH: Soft, moist, dark olive gray
	CL CH		14	–	–	–	56	30	33	1.0	87	1.0	Stiff
37.0'		SHELBY	–	–	–	–	–	–	–	–	–	–	
			1	69	30	–	–	–	–	–	–	–	CLAYEY SAND, SC: Medium dense, wet, dark olive gray

(CONTINUED COLUMN ON THE BOTTOM LEFT)

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Date 04/05/02 — Rev.
Designed by: P. POMERSON — Design file no GR-04-016
Drawn by SDC — Chd by R.A. — SPEC. No. 1182
Reviewed by M. FORREST — File name C02GB115.DWG
Submitted by — File date 04/05/02
Chief, Civil Design Section A — Plot scale=AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA
GUADALUPE RIVER CONTRACT 3A, PHASE 1
2000 URS BORING LOGS, SHEET 4 OF 6

Sheet reference number: B-15
Sheet 256 of 261

URS-00-9

DEPTH — N. 307,798±; E. 1,593,152±

EL.80'=0

Depth	Symbol	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
0.7"													3 inches ASPHALT CONCRETE over 6 inches AGGREGATE BASE
	CL												LEAN CLAY FILL, CL: Stiff, damp to moist, reddish brown, about 5% sand and 5% rounded gravel to 1/4 inch
			29	–	–	–	–	–	18	–	120	3.75	Fill
3.5'													
	SP SC												POORLY GRADED SAND WITH CLAY, SP-SC: Medium dense, damp, reddish brown, about 10% fines, rootlets
5.5'													
	CL		27	–	–	–	–	–	23	2.3	92	4.0	LEAN CLAY, CL: Very stiff, moist, reddish brown
			36	–	–	–	–	–	33	1.7	87	4.0	Stiff
10.5'													
	CL												LEAN TO FAT CLAY, CL/CH: Stiff, moist, black, about 5% sand and 5% fine rounded gravel to 1/4 inch
	CL		28	–	–	–	38	20	18	1.7	110	4.5	LEAN CLAY, CL: Stiff, moist, light gray, about 10% fine sand and 5% ounded gravel to 1/4 inch
14.0'													
	GW GM		21	–	–	–	–	–	–	–	–	–	WELL-GRADED GRAVEL WITH SILT AND SAND, GW-GM: Loose, moist, reddish brown, rounded to subrounded gravel
			31	51	40	9	–	–	8	–	132	–	Gravel to 3/4 inch
			14	–	–	–	–	–	–	–	–	–	
23.5'													
	CL												LEAN CLAY, CL: Firm to stiff, moist, dark greenish gray, about 10% fine sand
25.0'			14	–	–	–	–	–	–	–	–	–	
	SP SM												POORLY GRADED SAND WITH SILT, SP-SM: Medium dense, moist, dark greenish gray
27.0'													
		SHELBY		–	–	–	30	14	24	–	104	–	LEAN CLAY, CL: Firm, moist, dark greenish gray
			14	–	–	–	–	–	34	1.0	88	–	Stiff
		SHELBY		–	–	–	–	–	–	–	–	–	
	CL			–	–	–	–	–	–	–	–	–	SANDY LEAN CLAY, CL: sand lenses, about 30% fine sand

(CONTINUED NEXT COLUMN)

URS-00-9

DEPTH — N. 307,798±; E. 1,593,152±

(CONTINUED FROM PREVIOUS COLUMN)

Depth	Symbol	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
			15	–	19	78	–	–	23	1.0	103	1.75	LEAN CLAY WITH SAND, CL: Scattered calcareous nodules
44.0'													
	ML		19	0	41	59	–	–	27	–	–	–	SANDY SILT, ML: Very stiff, moist, dark greenish gray, 8-in reddish brown layer at 45 feet; Gravelly
49.0'													
	CL			–	–	–	–	–	22	0.6	104	–	LEAN CLAY, CL: Firm, moist, dark olive gray, becomes ligh gray with orange mottling with depth
			19	–	–	–	–	–	21	0.8	102	2.0	

B.O.H. — 9 SEP 00

NOTES:

1. SEE SHEET B-1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

URS-00-10

DEPTH — N. 308,007±; E. 1,593,013±

(CONTINUED FROM COLUMN TO THE RIGHT)

Depth	Symbol	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
	CL		20	–	–	–	–	–	25	0.7	101	1.5	
44.0'													
	CL												WELL-GRADED SAND WITH SILT, SW-SM: Medium dense, moist, dark greenish gray, about 10% fines
45.5'													
	CL		14	–	–	–	–	–	24	0.9	102	1.0	LEAN CLAY, CL: Firm to stiff, moist, gray
		SHELBY		–	–	–	–	–	–	–	–	–	
												1.25	

B.O.H. — 9 SEP 00

URS-00-10

DEPTH — N. 308,007±; E. 1,593,013±

EL. 79'=0

Depth	Symbol	Sample	N	GR	SA	FI	LL	PI	MC	UC	DD	PP	Description
.5"													6 inches AGGREGATE BASE
	CL												LEAN CLAY WITH GRAVEL FILL, CL: Stiff, damp, reddish brown, about 15% subangular gravel FILL
1.5'													
	ML		19	–	–	–	–	–	24	1.0	93	4.5	SILT, ML: Stiff, moist, reddish brown
4.5'													
	CL												LEAN CLAY, CL: Stiff, moist, reddish brown
			27	–	–	–	–	–	30	1.2	90	2.5	Some orange and black staining
		SHELBY		–	–	–	–	–	24	–	97	–	
11.0'													
	CL												LEAN CLAY WITH SAND CL: Firm, moist, light gray, about 20% medium to fine sand
12.0'													
			15	4	61	35	–	–	15	0.8	115	3.5	CLAYEY SAND, SC: Medium dense, moist, light gray, rounded gravel to 1/2 inch
			10	9	55	36	–	–	17	–	111	–	Dense, moist, reddish brown
	SC												
			17	–	–	–	–	–	–	–	–	–	2-inch coarse sand lens; Dark greenish gray
			15	4	76	20	–	–	21	–	105	–	
24.5'													
	CL												LEAN CLAY, CL: Soft to firm, moist, dark greenish gray
		SHELBY		–	–	–	–	–	27	–	97	–	
				–	–	–	42	20	–	–	–	–	
		SHELBY		–	–	–	–	–	24	–	101	–	LEAN CLAY WITH SAND, CL: with sand, light gray and rust mottled, about 20% sand
33.5'													
	SC												CLAYEY SAND, SC: Loose, moist, dark gray, about 10% fine well rounded gravel to 3/8 inch
			10	0	50	50	–	–	25	–	–	–	Reddish brown
37.5'													
													LEAN CLAY, CL: Firm, moist, dark greenish gray

(CONTINUED COLUMN ON THE BOTTOM LEFT)

REGISTERED PROFESSIONAL ENGINEER — Y.C. MacDONALD — No. C 27139 — Exp. 03/31/05 — CIVIL — STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by: P. POMERSON — Date: 04/05/02 — Rev.
Drawn by: SDC — Cad by: RA — Design File no: GR-04-016
Reviewed by: M. FORREST — SPEC. No.: 11182
Submitted by: — File name: C02003116.DWG
Chief, Civil Design Section A — File date: 04/05/02
File section AS BUILT

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

SAN JOSE — CALIFORNIA

GUADALUPE RIVER
CONTRACT 3A, PHASE 1

2000 URS BORING LOGS,
SHEET 5 OF 6

Sheet reference number:
B-16
Sheet 257of 261

URS–00–11

N. 308,171±; E. 1,592,872±

DEPTH		N	GR	SA	FI	LL	PI	MC	UC	DD	PP	
EL.79'=0	GM											SILTY GRAVEL FILL, GM: Dense, dry to moist, light brown, about 60% gravel to 2 inches diameter. Fill
3.0'	CM											
3.5'	CL	11	–	–	–	36	15	23	0.4	86	3.0	SILTY SAND, SM: Loose, moist, brown, about 20% fines. LEAN CLAY, CL: Firm, moist, brown
4.5'	CH	17	–	–	–	60	33	32	0.6	85	4.0	FAT CLAY, CH: Firm, moist, brown
		19	–	–	–	–	–	35	0.7	88	–	
12.0'	CL	24	–	–	–	34	13	22	1.2	105	2.5	LEAN CLAY, CL: Stiff, moist, light olive gray with orange mottling, decreasing plasticity with depth (CL–ML)
	SHELBY		–	–	–	26	7	–	–	–	–	
16.5'	ML		0	29	71	–	–	–	–	–	–	SILT WITH SAND, ML: Stiff, moist to wet, olive gray and light brown mottled, fine sand
		18										
19.0'	SM		0	58	42	–	–	19	0.6	110	–	SILTY SAND, SM: Medium dense, wet, brown, fine to medium sand
21.5'	CL	7	–	–	–	–	–	–	–	–	1.5	LEAN CLAY, CL: Stiff, wet, brown
	SHELBY										1.25	Dark gray
29.5'	CL	15		–	–	–	–	23	1.3	104	1.75	SANDY LEAN CLAY, CL: Stiff, moist, olive gray, about 30% fine to medium sand
		10										Moist, about 10% fine sand
		21		–	–	–	–	22	1.1	102	1.75	

(CONTINUED NEXT COLUMN)

URS–00–11

N. 308,171±; E. 1,592,872±

(CONTINUED FROM PREVIOUS COLUMN)

DEPTH		N	GR	SA	FI	LL	PI	MC	UC	DD	PP	
39.5'	GW GM	53										WELL–GRADED GRAVEL WITH SILT AND SAND, GW–GM: Very dense, wet, olive gray, gravel to 3/4 inch
		43	49	46	5	–	–	7	–	135	–	Dense
47.5'	CL	15		–	–	–	–	22	0.9	105	2.75	LEAN CLAY, CL: Firm to stiff, moist, dark gray

B.O.H. 10 SEPT 00

NOTES:

1. SEE SHEET B–1 FOR LEGENDS AND NOTES.

2' 0 2' 4'

SCALE: 1"= 2'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by: P. POMERSON | Drawn by: SDC | Checked by: RA | Reviewed by: M. FORREST | Submitted by: | Chief, Civil Design Section A: | Date: 04/05/02 | Rev.

Design File no: GR-04-016 | SPEC. No. 1182 | File name: C0200817.DNG | File date: 04/05/02 | File size: 1x1 AS NOTED

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA

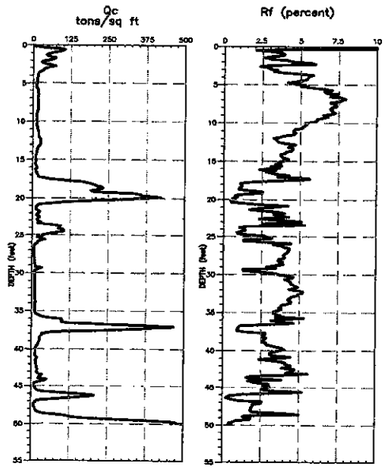
GUADALUPE RIVER CONTRACT 3A, PHASE 1

2000 URS BORING LOGS, SHEET 6 OF 6

Sheet reference number: B-17

Sheet 258 of 261

UCPT-00-01
C LINE STATION 38+81



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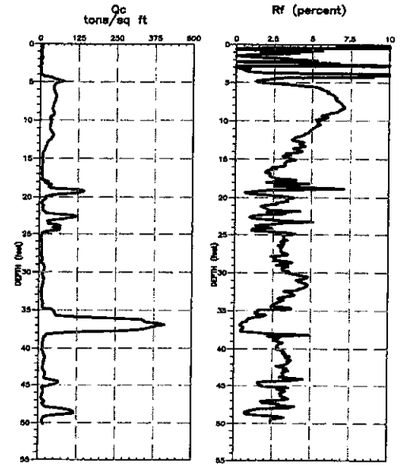

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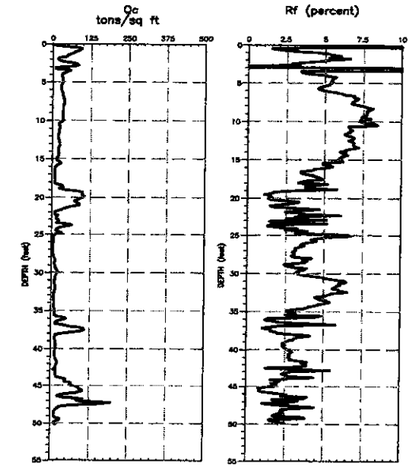

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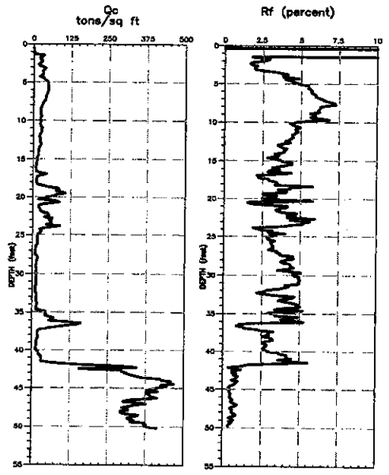

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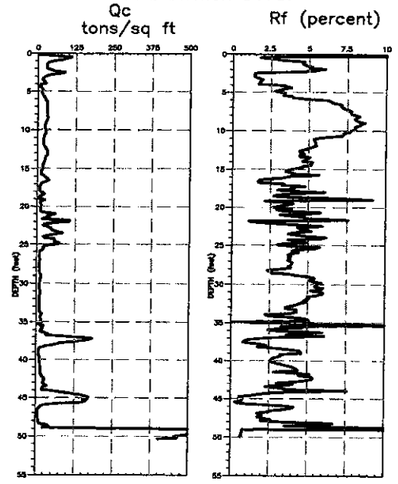


NOTES:

1. LEGEND AND ADDITIONAL NOTES ARE SHOWN ON SHEET B-1.
2. SEE SHEET B-2 THRU B-5 FOR LOCATION OF CPT'S IN PLAN.
3. Qc IS THE CONE TIP RESISTANCE IN TONS/SQ FT.
4. Rf IS THE RATIO OF SLEEVE FRICTION TO TIP RESISTANCE EXPRESSED AS A PERCENT.

5' 0 5' 10'
SCALE: 1"= 10'

REGISTERED PROFESSIONAL ENGINEER T.C. MacDONALD No. C 27139 Exp. 03/31/05 CIVIL STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by P. POMERSON | Date 04/05/02 | Rev.
Drawn by | Chd by SP | Design file no GR-04-016
Reviewed by M. FORREST | SPEC. No. 1182
Submitted by | File name 0200031B.DWG Plot date 04/05/02 Plot scale AS NOTED
Chief,Civil Design Section A

DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO, CALIFORNIA

URS OAKLAND,CALIFORNIA

SAN JOSE CALIFORNIA

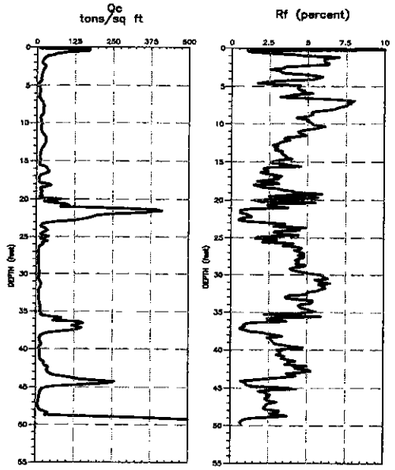
GUADALUPE RIVER CONTRACT 3A, PHASE 1

2000 CPT LOGS, SHEET 1 OF 3

Sheet reference number: B-18

Sheet 259 of 261

UCPT-00-06
C LINE STATION 32+39



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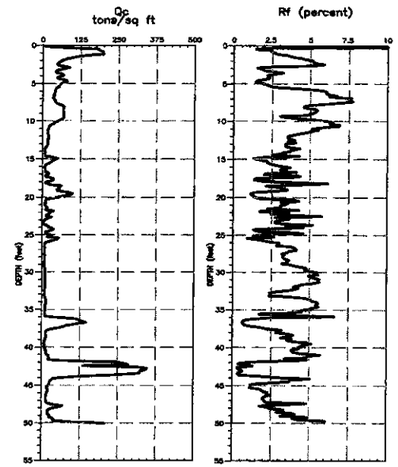

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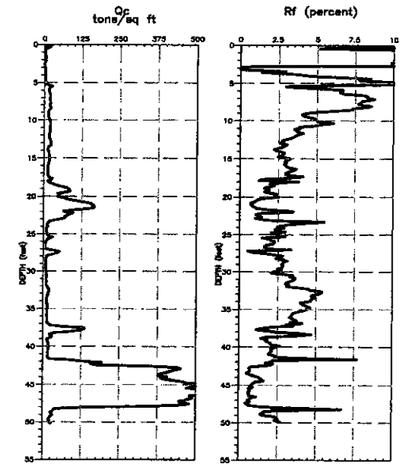

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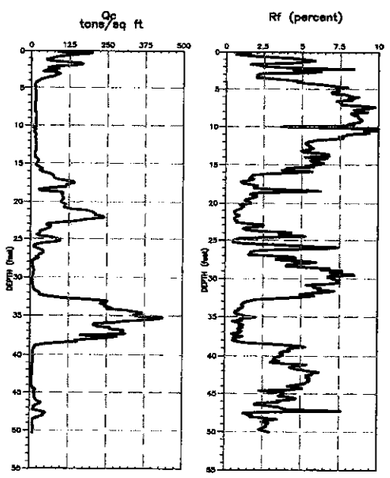

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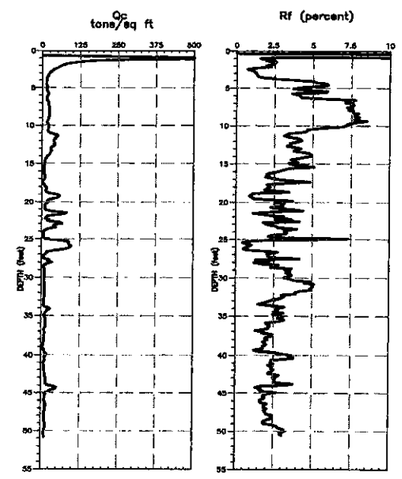
C LINE STATION 19+66



NOTES:

1. LEGEND AND ADDITIONAL NOTES ARE SHOWN ON SHEET B-1.
2. SEE SHEET B-2 THRU B-4 FOR LOCATION OF CPT'S IN PLAN.
3. Qc IS THE CONE TIP RESISTANCE IN TONS/SQ FT.
4. Rf IS THE RATIO OF SLEEVE FRICTION TO TIP RESISTANCE EXPRESSED AS A PERCENT.

5' 0 5' 10'
SCALE: 1"= 10'

REGISTERED PROFESSIONAL ENGINEER
I.C. MacDONALD
No. C 27139
Exp. 03/31/05
CIVIL
STATE OF CALIFORNIA

US Army Corps of Engineers Sacramento District

Symbol	Description	Date	Approved	Description	Date	Approved

Designed by P. POMERSON | Date 04/05/02 | Rev.
Drawn by | Chd by SP | Design file no GR-04-016
Reviewed by M. FORREST | SPEC. No. 1182
Submitted by | File name 02B03B19.DWG
Chief,Civil Design Section A | Plot date 04/05/02 | Plot scale AS NOTED

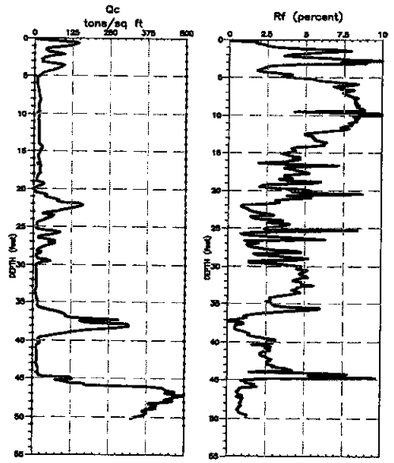
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

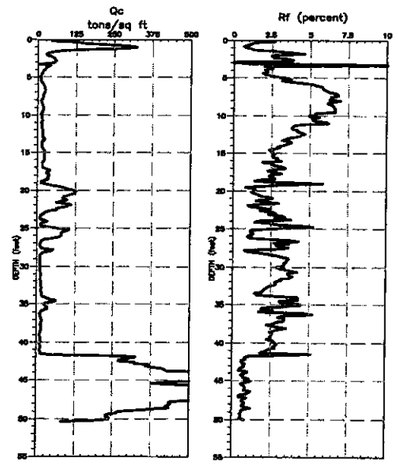
SAN JOSE CALIFORNIA
GUADALUPE RIVER
CONTRACT 3A, PHASE 1
2000 CPT LOGS,
SHEET 2 OF 3

Sheet reference number:
B-19
Sheet 26 of 261

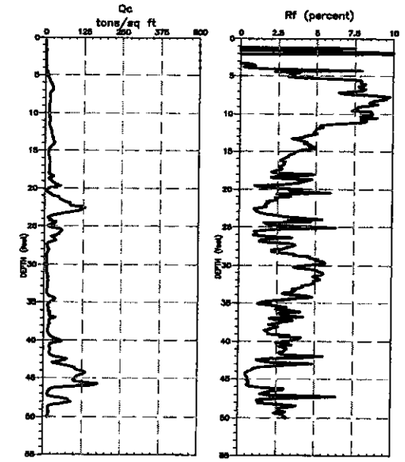
UCPT-00-16
C LINE STATION 22+02



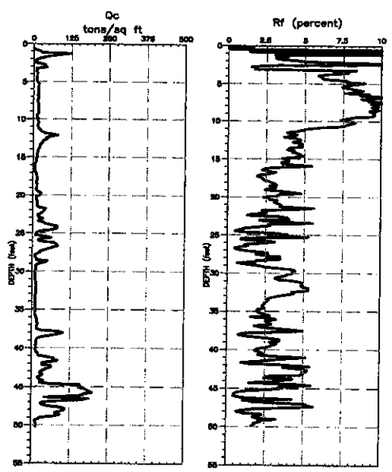
UCPT-00-17
C LINE STATION 21+41



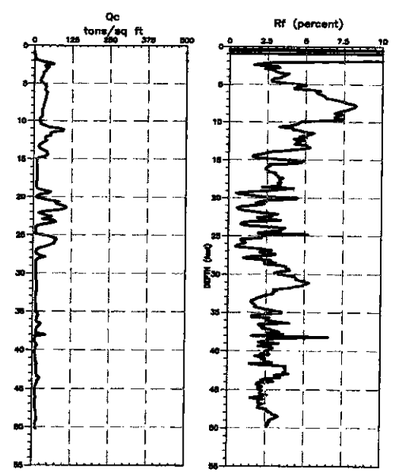
UCPT-00-18
C LINE STATION 20+80



UCPT-00-19
C LINE STATION 20+14



UCPT-00-20
C LINE STATION 19+12



NOTES:

1. LEGEND AND ADDITIONAL NOTES ARE SHOWN ON SHEET B-1.
2. SEE SHEET B-2 THRU B-4 FOR LOCATION OF CPT'S IN PLAN.
3. Qc IS THE CONE TIP RESISTANCE IN TONS/SQ FT.
4. Rf IS THE RATIO OF SLEEVE FRICTION TO TIP RESISTANCE EXPRESSED AS A PERCENT.

5' 0 5' 10'
SCALE: 1" = 10'

REGISTERED PROFESSIONAL ENGINEER
T.C. MAC DONALD
No. C 27139
Exp. 03/31/05
CIVIL
STATE OF CALIFORNIA

US Army Corps of Engineers
Sacramento District

Symbol	Description	Date	Approved	Symbol	Description	Date	Approved

Designed by P. POMERSON | Date 04/05/02 | Rev.
Drawn by | Chd by SP | Design File no GR-04-016
Reviewed by M. FORREST | SPEC. No. 11182
Submitted by | File name C02B0B20.DWG File date 04/05/02
Chief, Civil Design Section A | Plot scale NO SCALE

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

URS
OAKLAND, CALIFORNIA

SAN JOSE CALIFORNIA
GUADALUPE RIVER
CONTRACT 3A, PHASE 1
2000 CPT LOGS, SHEET 3 OF 3

Sheet reference number:
B-20
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