DOCKETED	
Docket Number:	24-OPT-02
Project Title:	Compass Energy Storage Project
TN #:	267928
Document Title:	Part 2 Supplemental Submittal_Attachment C_Geological Hazards and Resources
Description:	N/A
Filer:	Erin Phillips
Organization:	Dudek
Submitter Role:	Applicant Consultant
Submission Date:	12/15/2025 1:52:59 PM
Docketed Date:	12/15/2025

4.4 Geological Hazards and Resources

This section provides an evaluation of the proposed project in terms of potential exposure to geological hazards and potential to affect geologic resources of commercial, recreational, or scientific value. The information presented in the following sections is based on readily available and preliminary geotechnical testing that has been performed within the Project boundary. Construction of the proposed project involves site grading, earthwork, and trenching to prepare the site for installation of BESS-related infrastructure, access roads, walls, and stormwater management areas.

Site-specific geotechnical exploration has been performed within the Project boundary to characterize the site-specific surface and subsurface conditions and a report was prepared to document results (see Appendix 4.4A, Geotechnical Evaluation Report) as well as a response to comments from California Energy Commission staff regarding that report (Appendix 4.4B). The project's subsurface exploration included 26 test borings to approximate depths ranging between 63 and 100 feet below existing ground surface (bgs) within and adjacent to the proposed BESS facility footprint.

4.4.1 Affected Environment

4.4.1.1 Regional Geology

The site is located on the southwestern border of the Peninsular Ranges at the southeasternmost portion of the Los Angeles Basin. Specifically, the site lies on the central portion of the sedimentary basin known as the Capistrano Embayment, an early Cenozoic seaway, which trended northerly between the Peninsular Ranges and a hypothetical Catalina uplift off the Southern California coast. Locally, the Capistrano Embayment refers to the flat-bottomed structural trough formed by the downward displacement along the west side of the Cristianitos Fault and down-warping along the east side of the San Joaquin Hills. The embayment was subsequently in-filled with marine siltstone and clayey siltstone of the late Miocene to early Pliocene (approximately 5 to 15 million years old) Capistrano Formation. This sedimentary unit, in excess of 3,000 feet thick near the center of the embayment, was uplifted, folded, and eroded in Pliocene and post-Pliocene times (approximately 2 to 3 million years ago) producing the low, rolling ridges observed today. More recently, the local geology has also been influenced by a drop in sea level resulting in a series of abandoned terrace deposits, both marine and non-marine.

4.4.1.1.1 Faulting and Seismicity

The site is in southern California, which is a seismically active area, however, earthquake faults are not mapped within or projecting toward the site. The nearest Alquist-Priolo fault zone is the Elsinore fault zone located approximately 18 miles northeast of the site. Figure 4.4-1 shows the faults identified in the vicinity of the Project Site.

The CGS Data Viewer application was also used to determine the epicenter locations of historic earthquakes around the Project Site (CGS 2023). The CGS Data Viewer program shows known magnitude 5.0 or greater earthquakes occurring from 1769 through 2015. The closest identified earthquake to the site had a magnitude of 5.3 to 6.4 and occurred approximately 17 miles to the northwest. The closest earthquake with a magnitude 7.0 or higher occurred approximately 57 miles north of the site associated with the San Andreas fault zone.

4.4.1.2 Local Geology and Stratigraphy

The site is situated on a stream terrace west of and adjacent to Oso Creek in Orange County, California. Oso Creek forms a canyon that dissects a portion of the San Joaquin Hills - a coastal range of southern California. The hills are formed in layered sedimentary formations that include the Capistrano Formation. The Capistrano Formation consists of poorly-consolidated, fossiliferous, marine sandy-siltstone and mudstone. Capistrano beds are susceptible to landsliding as evidenced by landslide deposits mapped west of the site. The geologic materials identified in the site geotechnical evaluation include artificial fill, topsoil/colluvium, Quaternary alluvial deposits, Quaternary river terrace deposits, Quaternary older alluvial deposits, Quaternary landslide deposits, and Tertiary Capistrano Formation.

4.4.1.3 Seismic Setting

The subject site is not located within an Alquist-Priolo Earthquake Fault Zone and no faults were identified on the site during the site evaluation. The possibility of damage due to ground rupture is considered low since no active faults are known to cross the site.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching, shallow ground rupture, soil liquefaction and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. The major active nearby faults that could produce these secondary effects include the onshore and offshore segments of the Newport-Inglewood Fault Zone, located approximately 6 miles southwest of the site. The presence of a blind thrust fault has been interpolated from limited data, to exist at a depth of approximately eight miles below the uplifted local hills; however, the San Joaquin Hills Blind Thrust Fault does not have a known location of surface rupture.

4.4.1.4 Potential Geologic Hazards

The following subsections present the potential geological hazards that may occur within the Project area.

4.4.1.4.1 Ground Rupture

Soil lurching refers to the rolling motion on the ground surface by the passage of seismic surface waves. Effects of this nature are not likely to be significant where the thickness of soft sediments do not vary appreciably under structures. Ground rupture due to active faulting is not likely to occur on site due to the absence of known active fault traces. Ground cracking due to shaking from distant seismic events is not considered a significant hazard, although it is a possibility at any site.

4.4.1.4.2 Seismic Shaking

Due to the site's proximity to surrounding fault zones, the site may experience strong ground motions in the event of an earthquake. The CGS Earthquake Shaking Potential Map web application categorizes areas based on their expected intermediate period ground motions with a 2 percent exceedance probability in 50 years (CGS 2023). This application incorporates anticipated amplification of ground motions by local soil conditions and places the earthquake shaking potentials in a qualitative ranking system from highest to lowest potential. The project site is ranked by the web application as having medium shaking potential.

Section 1803.5.12 of the 2022 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.563g (SEAOC, 2024). The design PGA may be taken as 0.375g (2/3 of PGA_M). A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.68 at a distance of 12.48 km from the site would contribute the most to this ground motion.

4.4.1.4.3 Liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content (Bray & Sancio, 2006). Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

The site is located within a State of California Seismic Hazard Zone (CDMG, 2002a) for liquefaction potential. The vast majority of the alluvial soils tested are cohesive and not considered to be susceptible to liquefaction based on their Plasticity Index (Bray & Sancio, 2006). However, the data obtained from the field evaluation indicates that the site contains isolated typically relatively thin sandy layers susceptible to liquefaction in the upper 50 feet. Liquefaction potential was evaluated using the procedures outlined by Special Publication 117A (SCEC, 1999 & CGS, 2008). Liquefaction analysis was performed based on the seismic criteria (PGA_M) of the 2022 California Building Code (CBC) and an estimated high groundwater depth of 5 feet below existing grade. Estimated total and differential seismic settlement due to liquefaction potential are estimated at 1-inch and ½ inch over 50 feet, respectively.

4.4.1.4.4 Landslides

The potential for landslides to occur depends on a variety of factors including, but not limited to, the steepness of the slope, geology, and soil moisture. Rock Strength and slope are combined according to the methodology of Wilson and Keefer (1985) as implemented by Ponti et al (2008) to create classes of landslide susceptibility. These classes express the generalization that on very low slopes, landslide susceptibility is low even in weak materials, and that landslide susceptibility increases with slope and in weaker rocks. Very high landslide susceptibility, classes VIII, IX, and X, includes very steep slopes in hard rocks and moderate to very steep slopes in weak rocks. Based on a review of a CGS mapping, the southwest portion of the Project site is partially located within landslide class VII designated area which is not considered a very high landslide susceptibility area; the remainder of the site is designated in landslide class 0.

The underlying bedrock formation within this geologically complex area is the Capistrano Formation, a generally massive siltstone with few very thin clay beds within the stratigraphy of the formation, which are locally sub horizonal to slightly westward-dipping. Bedding angles within the bedrock as observed in in the site geotechnical evaluation has a general range between 2 degrees and 7 degrees to the southwest. Uplift and weathering of the bedrock formation commonly produces block-type landslide failures that fail along the very thin clay bedding, creating block-glide type landslides with steep backscarps and gently dipping basal rupture surfaces. The hillside to the west of the proposed development area has previously been identified to have numerous landslides as depicted on the regional geologic map. The presence of landslide on-site has been confirmed with the recent investigation.

As observed in the recent large-diameter borings, landslides have both failed along clay bed(s) as a block-glide and accumulated over time as a series of slopewash pulses and organic-rich debris-flows (up to 65 feet deep in LGC Geotechnical boring B-3 and up to 80 feet deep in LGC Geotechnical boring B-2). Geologic structure of the on-site portion of landslides ranges from lacking structure entirely as gently downslope-dipping slopewash to highly sheared displaced bedrock material. The basal rupture clays of the on-site portions of the landslides were observed to be approximately ¼-inch thick or less, and typically oriented parallel to bedding as observed in numerous borings.

Rotational failures along the west Oso Creek channel walls were mapped and observed to be heavily vegetated, well-defined slumps that likely were saturated and undercut at the toe, by the flowing water of Oso Creek. Over the last 50 years, the areas surrounding the Project site have experienced substantive development and growth which results in large increases in impervious surfaces and redirection of stormwater runoff into existing drainages like Oso Creek. These increases cause higher flow velocities and as a result, higher rates of erosion and scour within the Creek Channel. According to a hydraulic study performed at the creek near the Project site, the creek channel profile has degraded (i.e., cut lower in elevation) by between 20 and 30 feet over the past 76 years (Tory Walker 2025). The erosional effects within the Creek in the vicinity of the Project site have been observed downstream of the rock lining at the existing box culvert, located upstream of the Project site, where the erosion is occurring both vertically and horizontally with deep cracks observed in the soil near the edge of the creek top of bank (Tory Walker 2025). These surface cracks are evidence of anticipated further bank failures. These areas of potential bank failures are addressed and mitigated in the creek restoration designed provided in Attachment C and D of Response to Post Scoping Set 2 Data Request and Updated Application Materials (TN 267219).

4.4.1.4.5 Subsidence

Subsidence occurs as the gradual settling of the ground surface over time due to underground material movement. Subsidence is most often caused by the removal of groundwater through pumping activities, fracking activities for oil extraction, or the mining of other mineral resources. Soil compaction, sinkhole formation, and earthquakes can also cause subsidence to occur. As discussed above, seismically induced settlement of saturated and unsaturated sands was found to occur in one of the four borings (B-2). Estimated total and differential seismic settlement due to liquefaction potential are estimated at 1-inch and ½ inch over 50 feet, respectively No groundwater or petroleum extraction is known to have occurred on or in the vicinity of the site.

4.4.1.4.6 Expansive Soils

Expansive soils have the potential to shrink and swell with variations in saturation, which could cause ground instability in the form of differential ground heave. Based on lab testing results and experience with the Capistrano Formation, site materials should be anticipated to have “Medium” to “Very High” potential for expansion.

4.4.1.4.7 Tsunamis and Seiches

Tsunamis are large ocean waves that are seismically induced and often the result of offshore earthquakes or landslides. The proposed site is approximately 4.5 miles from the coastline. Per a review of the CGS Tsunami Hazard Area Map, the Project Site is not located within a tsunami hazard area (CGS 2023).

Seiches are waves and oscillations within confined bodies of water that are seismically induced by ground shaking. There are no large, confined bodies of water immediately adjacent to or uphill of the site, and therefore the potential for an off-site seiche to impact the Project Site is negligible.

4.4.1.5 Geologic Resources of Recreational, Commercial, or Scientific Value

The California Department of Conservation (CDOC) Division of Mines and Geology published a map showing the generalized mineral land classification of Orange County, California in 1994 (CDOC 1994). The mineral land classification maps evaluate areas based on the presence of aggregate resources. The project site contains lands classified as MRZ-1 and MRZ-3. MRZ-1 are areas where adequate information indicates that no significant construction aggregate deposits are present, or where it is judged that little likelihood exists for their presence. MRZ-3 are areas containing construction aggregate deposits the significance of which cannot be evaluated from available data. The Project site will be entirely located on lands classified as MRZ-3. A Mineral Land Classification map is included as Figure 4.4-5.

In addition, a review of the CDOC Mines Online mapping was performed, which contains a webmap showing the commodities produced by California's mines and their status. No mines are located within the Project Site or a 2-mile radius from the project site (CDOC 2023). The nearest mine is a specialty sand mine located approximately 5.5 miles southeast of the Project site.

4.4.2 Environmental Analysis

The following sections present the potential effects from the construction and operation of the proposed Project on geologic resources and risks to life and property from geologic hazards.

4.4.2.1 Significance Criteria

According to Appendix G of the California Environmental Quality Act statutes, a project would have a significant environmental impact in terms of geological hazards and resources if it would do the following:

- Directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving the following:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
  - Strong seismic ground shaking
  - Seismic-related ground failure, including liquefaction
  - Landslides
- Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, subsidence, liquefaction, or collapse.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- Result in the loss of availability of a locally important mineral resource recovery site delineated on a local plan, specific plan, or other land use plan.

4.4.2.2 Geological Hazards

As described in Section 4.4.1.4, the following potential geological hazards, with corresponding impact assessment, have been identified. Mitigation measures to reduce the impact(s) to less than significant are described in Section 4.4.4.

- The likelihood for a fault ground rupture to occur at the proposed Project Site is considered low. Ground rupture related impacts are considered less than significant.
- The Project Site considered as having medium shaking potential. Seismic shaking related impacts can be mitigated to less than significant.
- The site is located within a State-designated Seismic Hazard Zone for liquefaction potential. A preliminary liquefaction analysis conducted as part of the site-specific geotechnical exploration, in accordance with Special Publication 117A Guidelines (Appendix 4.4B), showed the potential for a minor amount of seismically induced settlement. While the vast majority of soils were found to be cohesive and not susceptible to liquefaction, there are isolated thin sandy layers that are susceptible. Regardless, the amount of settlement that could occur was estimated at 1-inch and differential settlement of 1/2- inch over 50 feet which was found to be relatively minor (Appendix 4.4B). Liquefaction related impacts can be mitigated to less than significant with adherence to geotechnical recommendations and building code requirements.
- The site is bounded from the east and west by steep slopes and contains mapped landslide potential areas. The existing condition of the nearby Oso Creek banks are considered unstable due to vertical and horizontal erosional effects. However, this area of "landslide" material was determined not to include any deep seated or basal rupture surface/slip plane. Therefore, it is not considered a slope stability concern for large block-type landslide failures that fail along a clay bed rupture surface (Appendix 4.4B). While a setback requirement was initially recommended by the geotechnical engineer, this recommendation is no longer considered applicable due to recent embankment landslides as well as incorporation of creek stabilization measures that would provide additional slope stability (Appendix 4.4A and 4.4B). Landsliding related impacts can be mitigated to less than significant.
- Seismically induced settlement was found onsite. The Project will not pump groundwater or petroleum. Subsidence related impacts can be mitigated to less than significant.
- Soils onsite have medium to very high expansion potential. Expansive soils related impacts can be mitigated to less than significant.
- The Project Site is not located within a tsunami hazard area and there are no large, confined bodies of water immediately adjacent to or uphill of the site, and therefore the potential for an off-site seiche to impact the Project Site is negligible. Tsunamis and seiches related impacts are less than significant.

Overall, the Project's site-specific geotechnical investigation determined the site is suitable for the proposed use based upon geotechnical conditions encountered in the test borings, provided that the findings and recommendations presented in the geotechnical engineering report are incorporated into project design and construction (see Appendix 4.4A). The Project will be required to be designed and constructed to meet the applicable seismic requirements of the California Building Code (CBC).

In addition, the Project includes creek channel restoration and stabilization measures that would improve channel flow conditions currently causing bank instability. The placement of instream stabilization structures consisting of natural rock, establishment of native vegetation, and construction of stilling basins and pools would act to attenuate flow velocities and minimize erosional conditions. The creek stabilization measures ultimately would also raise the elevation of this portion of the eroded creekbed and provide stabilization to the creek banks. The western bank will be graded at a 3:1 (horizontal to vertical) side slope to a height of 10 feet. The slope would then be graded at a 2:1 slope until it meets the existing top of bank elevation. Native vegetation including woody vegetation would be planted along the 2:1 side slope areas. These stabilization measures would all be an improvement over existing conditions and would reduce the potential for instability including slope failure to less than significant levels (see

Attachment C and D of Response to Post Scoping Set 2 Data Request and Updated Application Materials (TN 267219).

4.4.2.3 Geological Resources

The Project will not result in a loss of availability of any known valuable mineral resources because no mineral land classification zones exist onsite or in the vicinity of the Project. Additionally, the Project will not result in the loss of availability of a locally important mineral resource recovery site delineated on a local plan, specific plan, or other land use plan because no mines are located within the Project Site or a 2-mile radius from the Project Site.

4.4.3 Cumulative Effects

A cumulative impact refers to a proposed project's incremental effect together with other closely related past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the GESC (Public Resources Code Section 21083; CCR, Title 14, Sections 15064[h], 15065[c], 15130, and 15355).

Risks related to geological hazards and resources are typically localized in nature because they tend to be related to on-site conditions or conditions caused by a project's construction. Cumulative projects that would have the potential to be considered in a cumulative context with the proposed project's incremental contribution, and that are included in the analysis of cumulative impacts relative to geological hazards and resources, are identified in Table 4-1 and Exhibit 4-1. Cumulative projects were chosen based on proximity to the proposed project. Other projects include residential, commercial, and industrial development. The majority of the cumulative projects are similar to the proposed project regarding construction and operational activities. These selection factors are appropriate in the context of geological hazards and resources cumulative impacts because generally there needs to be a direct nexus and similar geologic conditions for a synergistic impact to occur, such as site modifications at nearby projects combining to destabilize soils. Currently, there is not a known existing significant cumulative impact related to geological hazards and resources within this geographic scope.

As discussed above, like much of Southern California, the project site is a seismically active area. All areas of San Bernardino County are considered seismically active, to a less or greater extent depending on their proximity to active regional faults. Impacts of the proposed project would be cumulatively considerable if the project, in combination with related projects, would result in significant cumulative impacts. However, the effects of the cumulative projects are not of a nature to cause cumulatively significant effects from geological hazards and resources impacts, because such impacts are site-specific and would only have the potential to combine with impacts of the proposed project if they occurred in the same location.

Additionally, on-site soils are located on fairly level slopes, which generally limits erosion potential because runoff across flat surfaces does not have a substantially high velocity. Although construction activities have the potential to result in erosion on the project site, adherence to the recommendations in the geotechnical report, implementation of the creek stabilization measures and other grading and building requirements will mitigate erosion impacts to less-than-significant levels. Other cumulative scenario projects would be required to adhere to similar requirements, thereby minimizing cumulative scenario erosion impacts. Specifically, all planned projects in the vicinity of the proposed project are subject to environmental review and would be required to conform to Building Code requirements. With implementation of mitigation measures and other grading and building requirements, the proposed project would not contribute to cumulative impacts for geological hazards and resources or related events

because the proposed project and other cumulative projects in the area would be required to demonstrate compliance with local, state, and federal building and safety standards. As a result, with implementation of mitigation, cumulative impacts related to geological hazards and resources would be less than significant.

4.4.4 Mitigation Measures

The following mitigation measures will reduce potential impacts related to geological hazards to less than significant during construction and operation of the proposed Project:

- Adhere to the recommendations provided in the geotechnical evaluation report during the construction and operation of the proposed Project. The recommendations are provided in Section 5 of Attachment 4.4A.

4.4.5 Laws, Ordinances, Regulations, and Standards

Federal, state, and local Laws, Ordinances, Regulations, and Standards (LORS) applicable to geological hazards and resources are discussed below and summarized in Table 4.4-1. There are no federal LORS that apply to geological hazards and resources.

Table 4.4-1. Laws, Ordinances, Regulations, and Standards for Geological Hazards and Resources

LORS	Requirement/Applicability	Administering Agency	Application Section Explaining Conformance
State			
California Building Code, 2022	Acceptable design criteria for structures with respect to seismic design and load-bearing capacity	California Building Standards Commission, State of California	Section 4.4.2.2
Alquist-Priolo Earthquake Fault Zone Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 3, CCR)	Identifies areas subject to surface rupture from active faults	California Building Standards Commission, State of California	Section 4.4.2.2
The Seismic Hazards Mapping Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 10, CCR)	Identifies secondary seismic hazards (liquefaction and seismically induced landslides)	California Building Standards Commission, State of California	Section 4.4.2.2
Local			
City of San Juan Capistrano General Plan	Identifies geological hazards and resource areas in the City and provides related goals and policies for development	City of San Juan Capistrano Planning Division	Section 4.4.2.2
City of San Juan Capistrano Municipal Code	Standards for grading, including permit requirements	City of San Juan Capistrano Building Division	Section 4.4.2.2

4.4.5.1 State LORS

4.4.5.1.1 California Building Code

The State of California establishes minimum standards for building design and construction through the California Building Code (CBC) (California Code of Regulations, Title 24). The CBC is based on the Uniform Building Code, which is used widely throughout the United States (generally adopted on a state-by-state or district-by-district basis) and has been modified for conditions in California. State regulations and engineering standards related to geology, soils, and seismic activity in the Uniform Building Code are reflected in the CBC requirements.

The CBC contains specific requirements for seismic safety, excavation, foundations, retaining walls, and site demolition. It also regulates grading activities, including drainage and erosion control.

4.4.5.1.2 Alquist-Priolo Earthquake Fault Zone Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 3, CCR)

The Alquist–Priolo Earthquake Fault Zoning Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the State Geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults, and published maps showing these zones. Earthquake fault zones are designated by the CGS and are delineated along traces of faults where mapping demonstrates surface fault rupture has occurred within the past 11,700 years. Construction within these zones cannot be permitted until a geologic investigation has been conducted to prove that a building planned for human occupancy would not be constructed across an active fault. These types of site evaluations address the precise location and recency of rupture along traces of the faults, and are typically based on observations made in trenches excavated across fault traces.

4.4.5.1.3 The Seismic Hazards Mapping Act (Title 14, Division 2, Chapter 8, Subchapter 1, Article 10, CCR)

The Seismic Hazards Mapping Act of 1990 (California Public Resources Code, Chapter 7.8, Section 2690 et seq.) directs the CGS to protect the public from earthquake-induced liquefaction and landslide hazards (these hazards are distinct from fault surface rupture hazard regulated by the Alquist–Priolo Act). This act requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones (i.e., zones of required investigation). Before a development permit may be granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into project design. Evaluation and mitigation of potential risks from seismic hazards within zones of required investigation must be conducted in accordance with the CGS Special Publication 117A, adopted March 13, 1997, updated in 2008, by the State Mining and Geology Board (CGS 2008).

4.4.5.2 Local LORS

4.4.5.2.1 City of San Juan Capistrano General Plan

The City's General Plan includes policies and programs that are intended to address geology and soils and guide future development in a way that lessens impacts. For instance, the Safety Element addresses issues related to protecting the community from any unreasonable risks associated with seismically induced surface rupture, ground shaking,

ground failure, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified on seismic hazard maps; other known geologic hazards; flooding; and wildland and urban fires. Goals and policies from the City's General Plan relevant to the project are summarized below:

Safety Goal 1: Reduce the risk to the community from hazards related to geologic conditions, seismic activity, wildfires, flooding, and climate change.

Seismicity

Policy 1.1: Reduce the risk of impacts geologic and seismic hazards by applying proper development engineering, building construction, and retrofitting requirements.

Policy 1.2: Explore funding sources to create an inventory of hazardous or substandard structures in the City that may collapse in the event of an earthquake and prepare a program to work with the property owners to seismically retrofit, rehabilitate, or if necessary, removal or replacement of unsafe structures.

Policy 1.3: Explore the possibility of creating a Geologic Hazard Abatement District (GHAD) to finance the prevention, mitigation, abatement, or control of a geologic hazard.

Policy 1.4: Continue the Soils subsidence remediation program that establishes specific measures to provide financial resources and programs to assist in the correction of damages arising from slope displacement.

4.4.5.2.2 City of San Juan Capistrano Municipal Code

The City adopted, with amendments, and enforces the 2016 edition of the CBC as published by the International Code Council. Chapter 2, Building Code, of Title 8, of the City's Municipal Code is the City's Building Code. The purpose of a building code is to provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures within the City. Building Code provisions apply to the construction, alteration, moving, demolition, repair, and use of any building or structure within the City.

4.4.6 Agencies and Agency Contacts

Applicable permits and agency contacts for geological hazards and resources are shown in Table 4.11-2. Building and grading permits from the City of San Juan Capistrano Building Division would be superseded by CEC approval of the Project under the opt-in program.

Table 4.4-2. Permits and Agency Contacts

Permit or Approval	Agency Contact	Applicability
City of San Juan Capistrano Grading and Building Permit*	City of San Juan Capistrano Public Works and Engineering Department 30448 Rancho Viejo Road San Juan Capistrano, CA 92675 (949) 443-6337	~~Building and Grading Permits~~N/A*

* Building and grading permits from the City of San Juan Capistrano Building Division would be superseded by CEC approval of the Project under the opt-in program.

4.4.7 Permits and Permit Schedule

There are no applicable permits or permit schedule for geological hazards and resources. Pending Project approval from the CEC, construction of the project would commence.

4.4.8 References

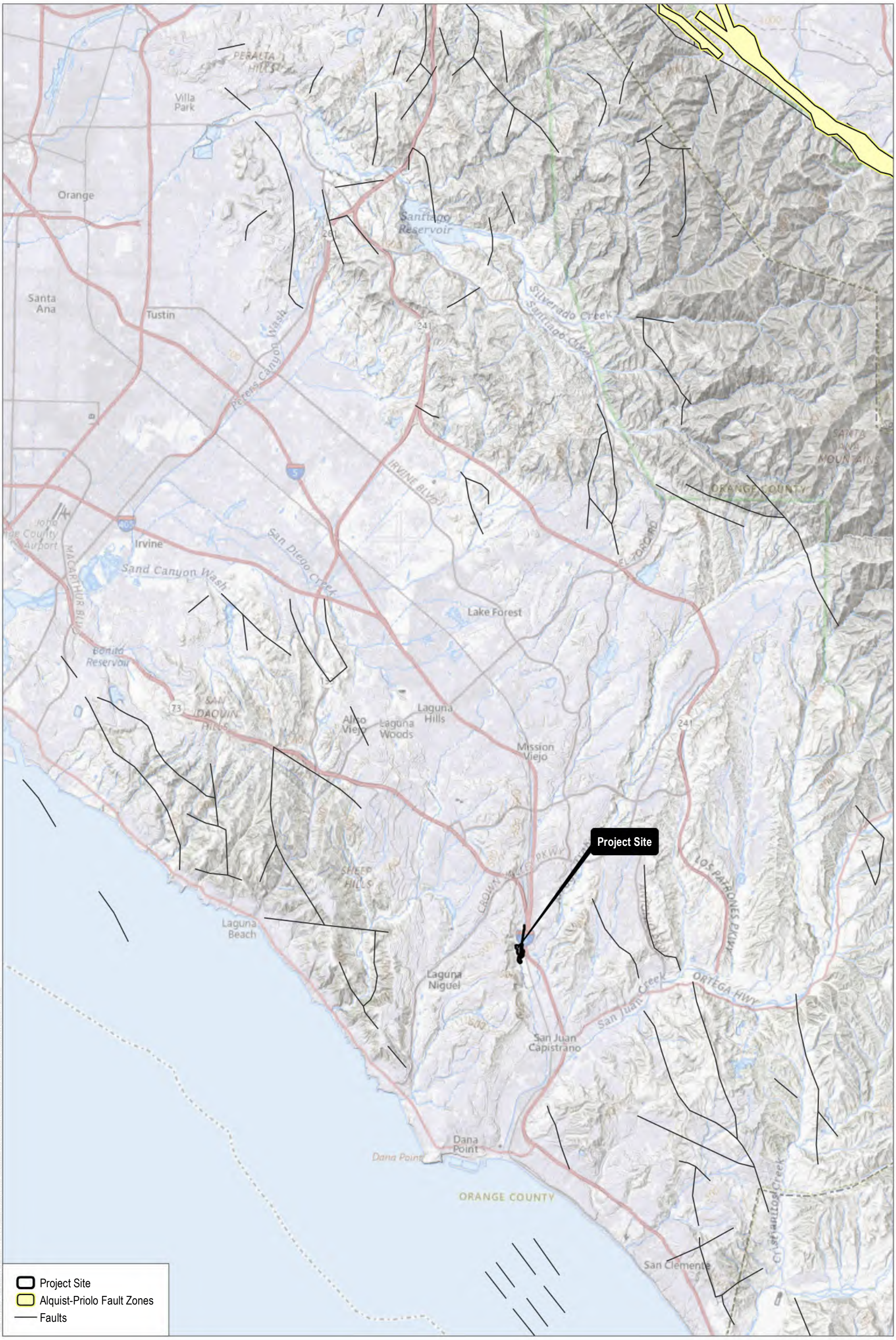
California Department of Conservation (CDOC). 1994. Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part III - Orange County. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc

CDOC. 2023. Division of Mine Reclamation. Mines Online webmap. https://maps.conservation.ca.gov/mol/index.html

California Geological Survey (CGS). 2002. California Geomorphic Provinces, Note 36. California Department of Conservation. December. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf

CGS. 2023. DOC Maps Data Viewer. https://maps.conservation.ca.gov/cgs/DataViewer/index.html

Tory R. Walker Engineering (Tory Walker). 2025. Preliminary Hydraulic Report for Oso Creek Stabilization. September 2025.



SOURCE: Esri; USGS 2000; California Department of Conservation 2005

DUDEK 0 1 2 Miles

FIGURE 4.4-1

Faults

Compass Energy Storage Project

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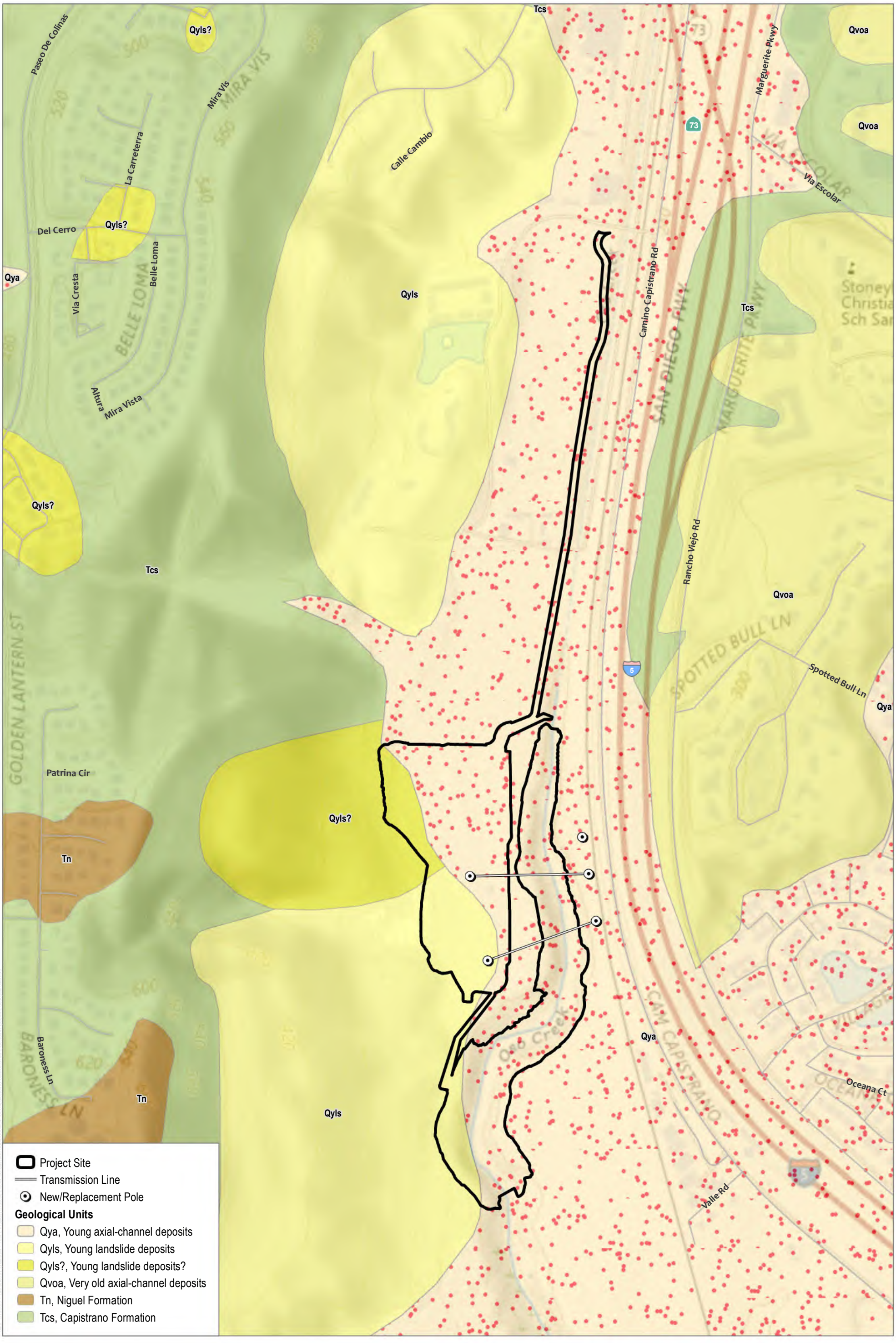

SOURCE: USGS 2006

DUDEK

0 350 700 Feet

FIGURE 4.4-2

Geological Units

Compass Energy Storage Project

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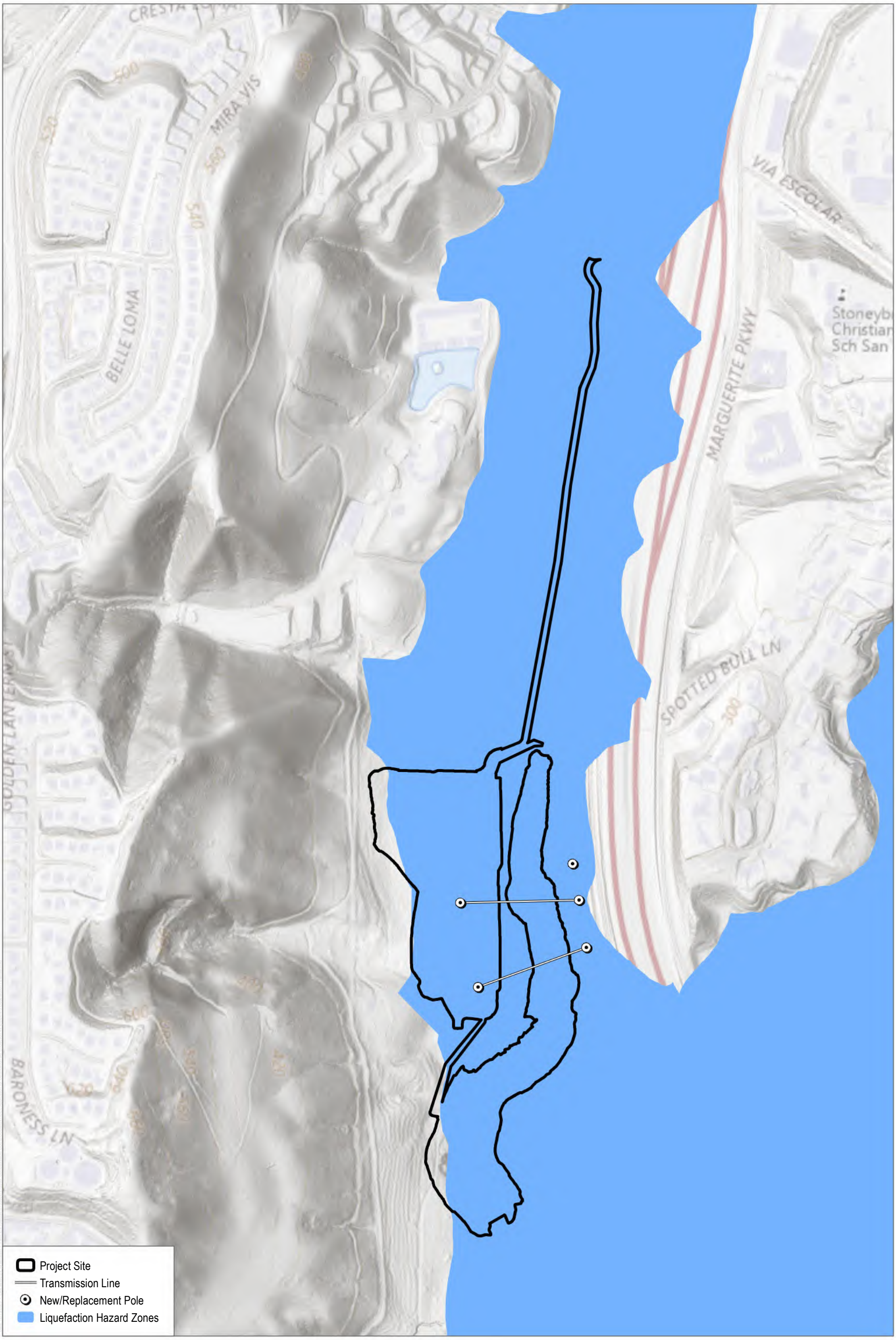

SOURCE: Esri; USGS 2000; California Department of Conservation 2005

DUDEK

0 250 500 Feet

FIGURE 4.4-3

Liquefaction Potential

Compass Energy Storage Project

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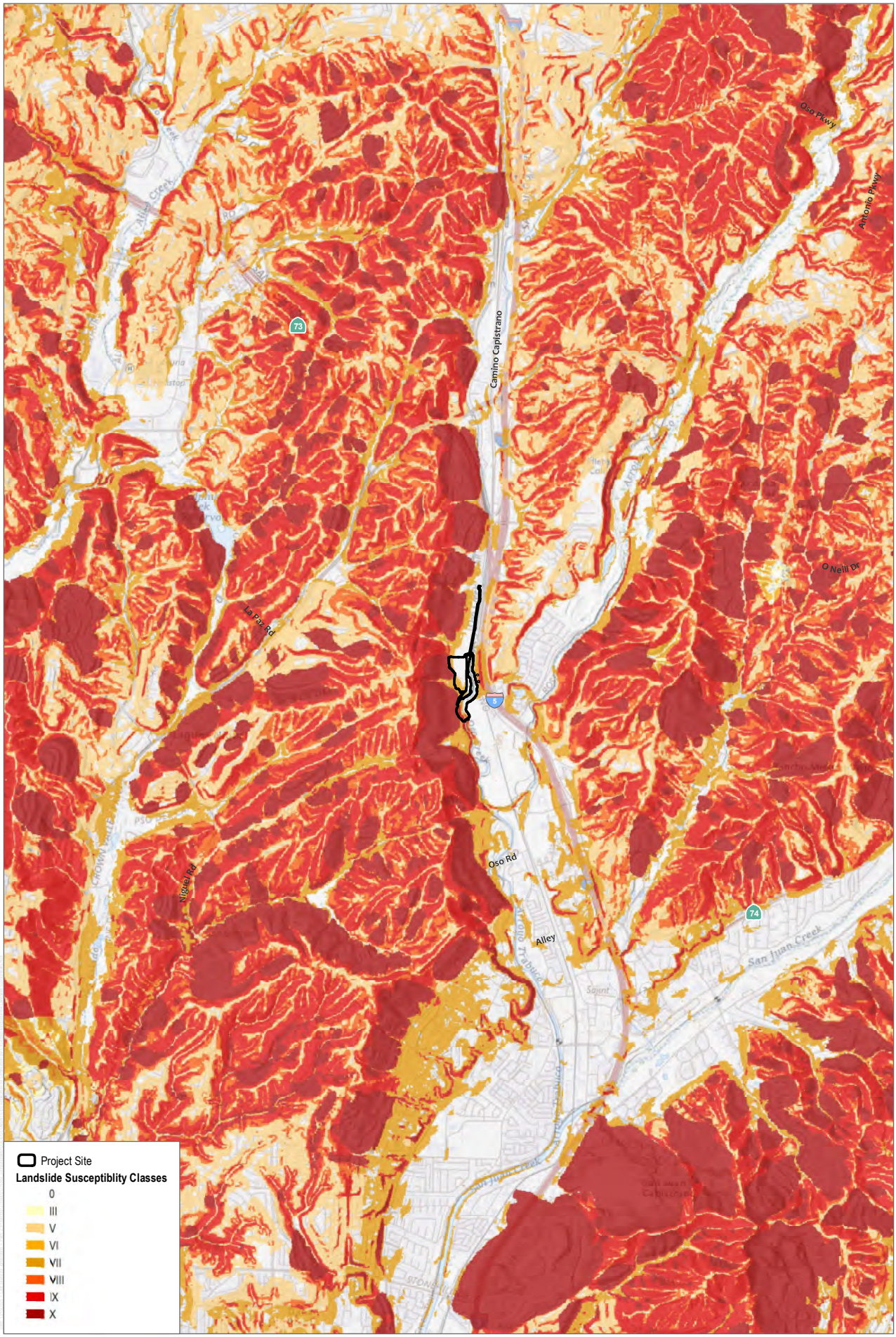

SOURCE: Esri; USGS 2000; California Department of Conservation 2008

DUDEK

0 1,000 2,000 Feet

FIGURE 4.4-4

Landslide Susceptibility

Compass Energy Storage Project

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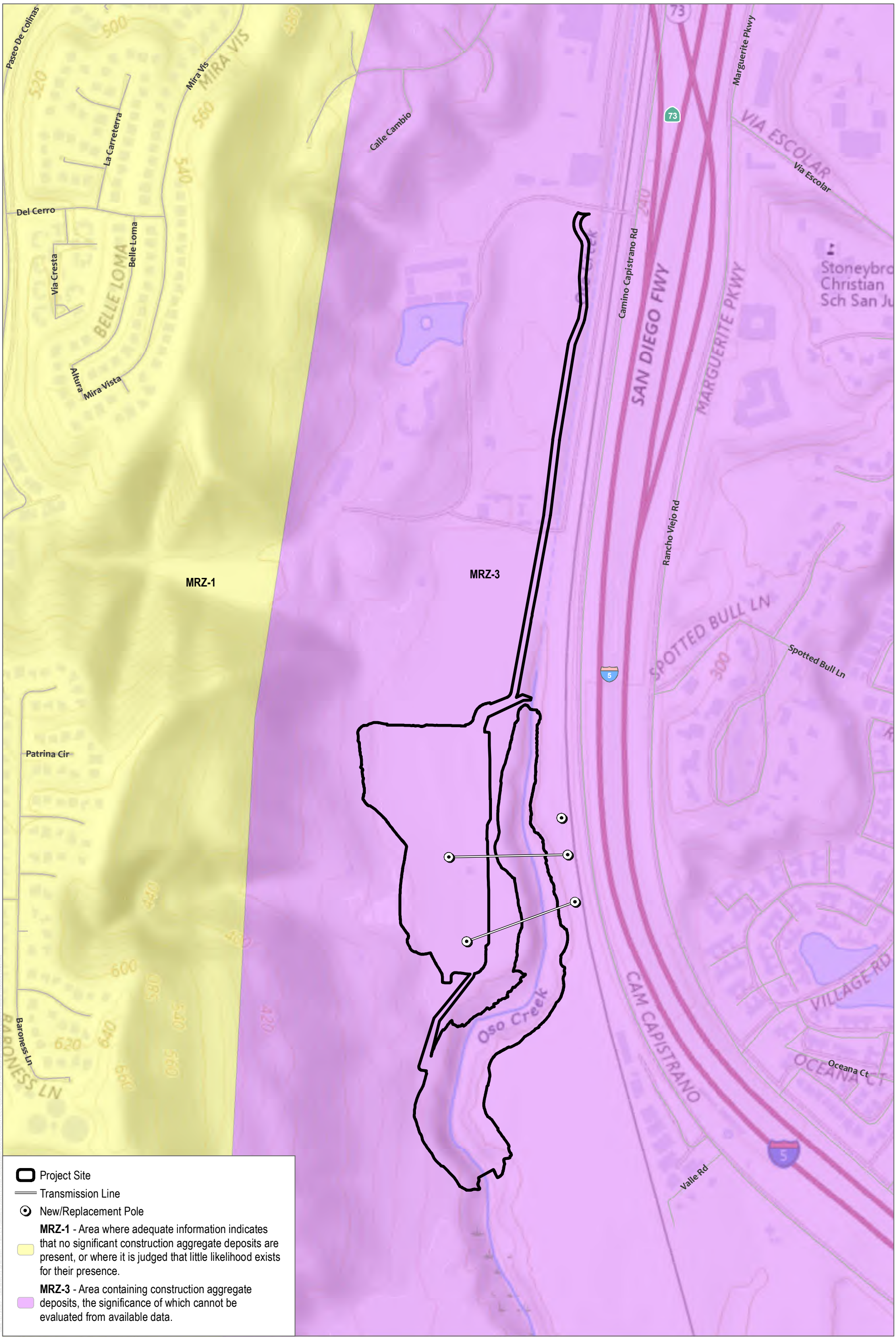

SOURCE: USGS National Map 2023; Miller et al. 1981

DUDEK

0 350 700 Feet

FIGURE 4.4-5

Mineral Resource Zones

Compass Energy Storage Project

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Appendix 4.4A
Geotechnical Evaluation Report

April 4, 2024 Project No. 22011-01

Mr. Paul McMillan
Engie North America
1360 Post Oak Boulevard
Houston, Texas 77056

Subject: ***Geotechnical Evaluation Report, Compass Battery Energy Storage System, San Juan Capistrano, California***

In accordance with your request, LGC Geotechnical, Inc. has performed a geotechnical evaluation for the proposed development of the Compass Battery Energy Storage site in San Juan Capistrano, California. The purpose of our study was to evaluate the site geotechnical conditions in the context of the proposed grading and development to provide appropriate geotechnical design parameters and recommendations for the proposed project.

Should you have any questions regarding this report, please do not hesitate to contact our office. We appreciate this opportunity to be of service.

Sincerely,

LGC Geotechnical, Inc.

Brad Zellmer, GE 2618
Project Engineer

Kevin B. Colson, CEG 2210
Vice President

KBC/BTZ/amm

Distribution: (1) Addressee (1 electronic copy)

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1.0 INTRODUCTION

LGC Geotechnical has performed a geotechnical evaluation for the proposed Compass Battery Energy Storage site in San Juan Capistrano, California (Figure 1). Our study included evaluation and analysis of the proposed grading plan (Sargent & Lundy, 2024) based on data gathered in previous geotechnical evaluations for the site (Appendix A) and data gathered from our recent field evaluation. This report summarizes our findings, conclusions, and preliminary geotechnical design recommendations relative to the proposed grading and development.

1.1 Site and Project Description

The area of proposed development includes approximately 15.5 acres of land. The project will include grading for and construction of an SDG&E switching station, a battery storage yard, associated access roads and improvements. We understand that the battery storage yard will consist of an array of 8 foot by 20-foot storage containers with a total load of 36 kips for each container. Site grading is anticipated to include up to approximately 9 feet of cut on the west side of the site and minor fill placement on the east side to create a relatively flat site, sloping from west to east from elevations of approximately 215 feet above mean sea level to elevations of approximately 210 feet above mean sea level. The maximum 9-foot-cut in the western portion of the site will include grading of a maximum 3:1 (horizontal to vertical) inclination cut slope.

The proposed development area is located on a portion of the relatively flat Oso Creek abandoned alluvial floodplain and the gently sloping lower portion of a west ascending hillside (Figure 1). The hillside continues to ascend and steepen to the west side of the site, with total height on the order of approximately 420 feet. The incised Oso Creek channel is located east of the development area with channel wall heights of up to approximately 40 feet. The site is located south of Saddleback Church Rancho Capistrano. The area of proposed development has previously been used for agricultural use and is essentially undeveloped. A community garden and associated structures is in the central portion of the site.

The preliminary recommendations given in this report are based upon the provided preliminary layout and grading information. We understand that the project plans are currently being developed at this time; LGC Geotechnical should be provided with updated project plans and any changes to grades and building layout when they become available, in order to either confirm or modify the recommendations provided herein.

1.2 Background

Several geotechnical evaluations have been performed on or in the immediate vicinity of the subject site. As part of our study, we have reviewed the pertinent and available reports (Appendix A) and considered the findings, conclusions and recommendations provided. Where appropriate, the subsurface logs and laboratory test results from these previous geotechnical reports are included in Appendix B and C of this report. The approximate locations of the excavations from these studies are included on our Geotechnical Map (Sheet 1).

NMG Geotechnical (2001) performed a geotechnical evaluation of the site in 2001, consisting of excavation, sampling and logging of five small diameter borings, three large diameter borings, and eleven CPT Soundings.

Lowney and Associates performed an evaluation in 2003 consisting of excavation, sampling and logging of one small diameter hollow stem boring and six large diameter borings.

Leighton and Associates, Inc. (2009) performed a geotechnical evaluation in 2009 consisting excavation of four large diameter borings.

Terracon performed a geotechnical evaluation of the site in 2021 consisting of 30 small-diameter borings (Terracon, 2021). The borings (B-1 through 17, B-19 through B-21, B-24 and B-25, and P-1 through P-8) ranged in depth from approximately 5 to 101.5 feet, with borings P-1 through P-8 utilized for field percolation testing.

Geosyntec Consultants, Inc. performed a geomorphic evaluation for the proposed development in 2021 (Geosyntec, 2021). The evaluation included a geomorphic study and review of reports by others. No subsurface evaluation was performed.

A hydrology study was performed for the proposed BESS development, for the portion of the Oso Creek channel adjacent to the site by Chang Consultants (Chang Consultants, 2024).

A soil corrosivity study was performed for the proposed BESS development by HDR (HDR, 2023).

A thermal resistivity analysis was performed for the proposed BESS development by Geotherm USA (Geotherm, 2023).

1.3 Supplemental Geotechnical Evaluation

A supplemental geotechnical evaluation was recently performed by LGC Geotechnical. The evaluation consisted of the geologic mapping of the site, excavation of five large-diameter bucket auger borings, four small-diameter borings and seventeen Cone Penetration Test (CPT) soundings to further evaluate onsite geotechnical conditions. The results of our geologic mapping and the locations of our excavations are depicted on the Geotechnical Map (Sheet 1). The Grading Plan by Sargent and Lundy (2024) was utilized as a base map for the Geotechnical Map (Sheet 1), and for use in constructing Geotechnical Cross-Sections (Sheets 2 - 4). It should be noted that Geotechnical Cross-Sections A-A' through D-D,' G-G' and H-H' are presented herein. Geotechnical Cross-Sections E-E' & F-F' were constructed for a previous, different version of the proposed development plan are no longer relevant and therefore not included herein.

Five large-diameter, bucket-auger borings (B-1 through B-5) were excavated on the site by Roy Brother's Drilling under subcontract to LGC Geotechnical (Sheet 1). The maximum depth of the bucket-auger borings was approximately 98 feet below existing grade. The bucket-auger borings were excavated to evaluate the geologic structure of the landslides on the west side of the site and underlying bedrock materials, and to obtain samples for laboratory testing. The borings were placed at strategic locations in order to supplement the previous field evaluations. Samples were

obtained at select and representative depths for laboratory testing. The large-diameter boreholes were surface logged during excavation and downhole logged by an engineering geologist in order to obtain structural geologic information. The borings were subsequently backfilled with a mixture of bentonite chips and drill cuttings (per permit requirements) and tamped for densification to the original ground surface. Some settlement of the borings should be expected. The borings may need to be topped off accordingly.

The four small-diameter (6 & 8-inch), hollow-stem-auger borings (HS-1 through HS-4) were excavated to depths ranging from approximately 90 to 100 feet below existing grade. The borings were excavated with a truck-mounted drill rig. An LGC Geotechnical representative observed the drilling operations, logged the borings, and collected soil samples for laboratory testing. Driven soil samples were collected by means of the Modified California Drive (MCD) sampler generally obtained at 5-foot vertical increments. The MCD is a split-barrel sampler with a tapered cutting tip and lined with a series of 1-inch-tall brass rings. The MCD sampler (2.4-inch ID, 3.0-inch OD) were driven using a 140-pound automatic hammer falling 30 inches to advance the sampler a total depth of 18 inches or until refusal. The raw (no correction factors applied) blow counts for each 6-inch increment of penetration were recorded on the boring logs. In select borings, after removal of the augers the depth of the boring due to caving was measured and is noted on the boring logs. Some settlement of the backfilled borings should be expected.

The CPT soundings (CPT-1 through CPT-17) were pushed to depths ranging from approximately 63 to 100 feet below existing grade. The CPT Soundings were pushed to 100 feet or to practical refusal. The CPT soundings were pushed using an electronic cone penetrometer in general accordance with the current ASTM standards (ASTM D5778 and ASTM D3441) using a 30-ton rig. The CPT equipment consisted of a cone penetrometer assembly mounted at the end of a series of hollow sounding rods. The interior of the cone penetrometer is instrumented with strain gauges that allow the simultaneous measurement of cone tip and friction sleeve resistance during penetration. The cone penetration assembly is continuously pushed into the soil by a set of hydraulic rams at a standard rate of 0.8 inches per second while the cone tip resistance and sleeve friction resistance are recorded at approximately every 2 inches and stored in digital form. Seismic cone (shear wave velocity) readings were performed in select soundings. Shear wave velocity readings indicated an average shear wave velocity of approximately 700 feet per second (ft/sec), generally corresponding to Site Class D per Chapter 20 of ASCE 7-16.

The boring and CPT Logs are presented in Appendix B and approximate locations are depicted on the Geotechnical Map, Sheet 1.

1.4 Laboratory Testing

Representative samples were obtained for laboratory testing during our recent field evaluation. Laboratory testing from included in-situ unit weight and moisture content, fines content, Atterberg Limits, fines content, torsional ring shear, direct shear, consolidation, expansion index, laboratory compaction and corrosion (sulfate, chloride, pH and minimum resistivity).

The following is a summary of the laboratory test results.

- Dry density of the samples collected ranged from approximately 81 pounds per cubic foot (pcf) to 119 pcf, with an average of 98 pcf. Field moisture contents ranged from

approximately 7 percent to 42 percent, with an average of approximately 24 percent.

- Atterberg Limit (liquid limit and plastic limit) tests were performed on site soils. Results indicated Plasticity Index values ranging from approximately 8 to 36.
- Atterberg Limit tests were performed on grab samples of site clay beds. Results indicated Liquid Limit values ranging from approximately 59 to 72.
- Ten fines content tests indicated fines content (percent passing No. 200 sieve) ranging from approximately 44 to 94 percent. Based on the Unified Soils Classification System (USCS), eight of the tested samples are classified as "fine-grained."
- Two torsional residual ring shear tests were performed on grab samples of site clay landslide rupture materials. The plots are provided in Appendix C.
- Direct shear tests were performed on select samples. The plots are provided in Appendix C.
- Consolidation tests were performed. The deformation versus vertical stress plots are provided in Appendix C.
- Expansion Index (EI) tests indicated EI values ranging from 42 to 73, corresponding to "Low" to "Medium" expansion potential.
- Laboratory compaction tests resulted in maximum dry density values ranging from 112.0 pcf to 118.0 pcf with optimum moisture contents ranging from 11.5 to 13.0 percent.
- Corrosion testing indicated soluble sulfate contents of approximately 0.02 percent or less, chloride contents ranging from 64 to 176 parts per million (ppm), pH values ranging from 7.7 to 8.2 and 7.7, and minimum resistivity values ranging from 1,250 to 1,250 ohm-centimeter.

Dry unit weight and moisture content are provided on the boring logs. Laboratory test results are provided in Appendix C.

2.0 GEOTECHNICAL CONDITIONS

2.1 Regional Geology

The site is located on the southwestern border of the Peninsular Ranges at the southeastern-most portion of the Los Angeles Basin. Specifically, the site lies on the central portion of the sedimentary basin known as the Capistrano Embayment, an early Cenozoic seaway, which trended northerly between the Peninsular Ranges and a hypothetical Catalina uplift off the Southern California coast. Locally, the Capistrano Embayment refers to the flat-bottomed structural trough formed by the downward displacement along the west side of the Cristianitos Fault and down-warping along the east side of the San Joaquin Hills. The embayment was subsequently in-filled with marine siltstone and clayey siltstone of the late Miocene to early Pliocene (approximately 5 to 15 million years old) Capistrano Formation. This sedimentary unit, in excess of 3,000 feet thick near the center of the embayment, was uplifted, folded, and eroded in Pliocene and post-Pliocene times (approximately 2 to 3 million years ago) producing the low, rolling ridges observed today. More recently, the local geology has also been influenced by a drop in sea level resulting in a series of abandoned terrace deposits, both marine and non-marine.

2.2 Site-Specific Geology

The geologic materials identified in our study include artificial fill, topsoil/colluvium, Quaternary alluvial deposits, Quaternary river terrace deposits, Quaternary older alluvial deposits, Quaternary landslide deposits, and Tertiary Capistrano Formation. The typical onsite characteristics of the materials are described in the following subsections (from youngest to oldest). The approximate lateral extent of the geologic units encountered is presented on the Geotechnical Map (Sheet 1). The topographic base utilized for the Geotechnical Map and Geotechnical Cross-Sections was provided by Sargent & Lundy (2024).

The site is not located within a mapped State of California Earthquake Fault-Rupture Hazard Zone per compiled maps released by the CGS (2018), and there are no known active or potentially active faults on-site.

Based on our review of the State of California Seismic Hazard Zone Map for the San Juan Capistrano 7.5 Minute Quadrangle (CGS, 2001b), most of the site is located within a potential liquefaction zone and the western border of the site is located within a zone of potential earthquake induced landslides. These maps were prepared by the State to raise awareness of the potential for such hazards and to prompt appropriate investigation to evaluate these potentials on a site-by-site basis.

2.2.1 Artificial Fill by Others (Map Symbol - afo)

Older fill material was observed within localized areas for support of the railroad embankment on the east side of Oso Creek, and in the form of rip-rap armoring along the east bank of Oso Creek. Rip-rap armor on steep creek channel walls consists of variable materials (cobbles to boulders) and thickness is unknown. These materials are not

anticipated to be encountered for the proposed site development.

2.2.2 Topsoil/Colluvium (Not Mapped)

A relatively thin veneer of topsoil/colluvium mantles the surface of the majority of the site. The material typically consists of brown to dark brown, dry to slightly moist, medium stiff, sandy silt and clay. These soils are typically porous and contain scattered roots and organics. Topsoil/colluvium is considered potentially compressible and will need to be removed to competent material in areas of proposed development. Topsoil and colluvium were not mapped on the site due to their relatively thin nature and variable lateral extent.

2.2.3 Quaternary Alluvial Deposits (Map Symbol – Qal)

The alluvial deposits encountered during our investigation included both recent alluvial deposits within a portion of the Oso Creek stream channel (not sampled, unknown thickness), and older alluvial deposit that mantles the majority of the site development area. The alluvium that mantles the majority of the site was encountered during the our site evaluation and can be directly observed to form the near-vertical upper portion of the exposed cliff that forms the west channel wall of Oso Creek within the subject area.

As mapped along the upper bank of the stream channel and observed in borings, the material is medium thick bedded, sub horizontal, light gray and dark brown layers of silty sand to sandy silt, and clayey sand to sandy clay. In general, the material was found to be loose to medium dense/stiff, dry to moist, and slightly to moderately indurated, with scattered organics and rootlets.

2.2.4 Quaternary Landslide (Map Symbol – Qls)

The landslide material encountered during our site evaluation consisted of highly variable materials that showed different characteristics between the western hillside portion of the site and the eastern Oso Creek portion of the site.

Landslide material on the west side of the site included thick sections of layered slopewash and organic-rich debris flows from the hillside located west of the site over sheared bedrock block material (similar to the Capistrano Formation parent material). In general, the landslide material consisted of variable colors of sandy silt, silt, clayey silt, siltstone, clayey siltstone, and sandy siltstone, stiff to very stiff, slightly moist to very moist. Landslides along the western side of the site where downhole-logged borings were performed were observed to have a basal rupture surface of very thin, soft, clay over Capistrano Formation siltstone bedrock.

Along the east side of the site, landslide materials were observed to have run out as far as the current alignment of Oso Creek and are interfingered with alluvial deposits in some areas. The landslide material encountered in small-diameter borings and exposed by the more recent Oso Creek channel erosion is highly weathered, variable silty clay to

clayey silt, and clay with trace of fine sand. The material is olive brown, gray, or brown with orange oxidation staining, medium stiff to stiff, and moist to wet. Where exposed along the Oso Creek channel, some of the material was observed to have recently moved toward the stream bed as localized rotational failure, labeled as "active." Thick vegetation obscures the exposure of landslide material along the creek channel wall at the southern portion of the site.

2.2.5 Quaternary Older Alluvial Deposits (Map Symbol – Qalo)

The older alluvial deposits encountered on site during our investigation were deeply buried by run-out landslide deposits that were in turn capped by relatively young alluvium. The older alluvial deposits were observed to deepen to the south and are interpreted to be syn-depositional with the alluvial deposits of the relatively broad Trabuco Creek that Oso Creek joins at the southern portion of the subject site. The older alluvium was encountered below about 45 feet in depth, within the western half of the development pad (refer to LGC Geotechnical Boring HS-2). In general, the material consisted of sandy clay, sand, and clayey to silty sand, medium stiff/medium dense to very dense, wet, with color ranging from light brown to gray.

2.2.6 Quaternary River Terrace Deposits of Arroyo Trabuco (Map Symbol – Qtr)

Described as river terrace deposits of San Juan and Trabuco Creeks on the regional geologic map for San Juan Capistrano (Morton, 1974), this material is mapped just outside the eastern border of the site, below the Interstate 5 Freeway. This unit was encountered during the field mapping portion of our investigation. The river terrace deposit was observed to consist of dense, fine to coarse sand, with an oxidized orange color.

2.2.7 Tertiary Capistrano Formation (Map Symbol – Tc)

Tertiary Capistrano Formation bedrock underlies the entire site at depth. This material generally consists of massive to thickly bedded siltstone, very fine sandy siltstone, clayey siltstone, and few thin sand and clay beds and concretionary nodules. Within the upper oxidized (weathered) portion, the material is typically light gray to brown in color and is commonly has gypsum and is iron-stained along joints and fractures. The unoxidized (fresh) portion of the Capistrano Formation is dark gray, very stiff to hard, bedrock.

2.3 Geologic Structure and Landslides

The underlying bedrock formation within this geologically complex area is the Capistrano Formation, a generally massive siltstone with few very thin clay beds within the stratigraphy of the formation, which are locally sub horizonal to slightly westward-dipping. Bedding angles within the bedrock as observed in our recent large-diameter borings and recorded by others has a general range between 2 degrees and 7 degrees to the southwest. Uplift and weathering of the

bedrock formation commonly produces block-type landslide failures that fail along the very thin clay bedding, creating block-glide type landslides with steep backscarps and gently dipping basal rupture surfaces (Terres, 1992). The hillside to the west of the proposed development area has previously been identified to have numerous landslides as depicted on the regional geologic map and reported in the referenced reports (NMG, 2003 & Leighton, 2009). The presence of landslide on-site has been confirmed with the recent investigation.

As observed in the recent large-diameter borings, landslides have both failed along clay bed(s) as a block-glide and accumulated over time as a series of slopewash pulses and organic-rich debris-flows (up to 65 feet deep in LGC Geotechnical boring B-3 and up to 80 feet deep in LGC Geotechnical boring B-2). Geologic structure of the on-site portion of landslides ranges from lacking structure entirely as gently downslope-dipping slopewash to highly sheared displaced bedrock material. The basal rupture clays of the on-site portions of the landslides were observed to be approximately ¼-inch thick or less, and typically oriented parallel to bedding as observed in numerous borings. A continuous clay bed as observed in LGC Geotechnical's Boring B-3 at 67.5 feet, B-4 at 55 feet, and in borings by others including Leighton's LAB-2 at 58.5 feet and Lowney's LB-15 at 51 feet in depth. The clay bed has been identified at elevations between approximately 180 and 190 feet above sea level along the western property boundary in the toe of slope area.

Based on downhole-logged borings by others excavated on the ascending offsite hillside west of the site, an upper-elevation clay bed observed in NMG Boring B-2 at 21 feet in depth, forms a landslide rupture surface for an offsite landslide. The material below the landslide surface, to a total depth of 203 feet below existing grades, generally lacked landslide features and was interpreted to be bedrock. It is our understanding that the depth was achieved in order to determine whether the western hillside slope could be one very large landslide that may have failed below the elevation of Oso Creek. Instead, the landslide has been modeled as stepped failures. A landslide that occurred on the upper clay is perched in the hillside above the subject site, while a series of landslides failed on the lower-elevation clay bed within the subject site, as discussed in the above paragraph. The lower landslides appear to crosscut the toe of landslides that failed along the upper clay bed. Refer to Cross Sections A-A' and B-B.'

Three different geologic units are modeled within the area underlying the eastern half of the development pad near Oso Creek including older alluvium at depth that was subsequently covered by a chaotic layer of landslide deposits, and both units capped by sub horizontal layers of younger alluvium. Significant downcutting to the current location of Oso Creek bed has occurred in the last 50 years (Geosynetec, 2021) Rotational failures along the west Oso Creek channel walls were mapped and observed to be heavily vegetated, well-defined slumps that likely were saturated and undercut at the toe, by the flowing water of Oso Creek.

No faults are known to transect the site. The closest significant fault to the site is the active offshore portion of the Newport-Inglewood Fault Zone, located approximately 6 miles southwest of the site.

2.4 Groundwater

Perched groundwater seepage was encountered in two of the large-diameter borings drilled by LGC Geotechnical at the northern (B-2) and southern (B-4) portions of the subject site. The

seepage was encountered in borings B-2 and B-4 at depths of 63 and 36 feet, respectively. Also, minor amounts of groundwater seepage were observed at a depth of 63 feet in B-1.

Groundwater was encountered in LGC Geotechnical borings HS-1 through HS-4 at depths ranging from approximately 31 feet to 41 feet below existing grade (approximate elevations ranging from 167 feet to 179 feet). Previously, groundwater was encountered in four of the thirty borings ranging in depth from approximately 47 feet to 70 feet below existing grade (approximate elevations ranging from 139 feet to 170 feet) (Terracon, 2021). Historic high groundwater is estimated at 5 feet below grade within the development area (CGS, 2001a).

Groundwater and/or groundwater seepage conditions may occur in the future due to changes in land use and/or following periods of heavy rain. Seasonal fluctuations of groundwater elevations should be expected over time. In general, groundwater levels fluctuate with the seasons and local zones of perched groundwater may be present within the near-surface deposits due to local landscape irrigation or precipitation especially during rainy seasons.

2.5 Oso Creek Migration

Oso Creek is located on the eastern and a portion of the southern sides of the development area. The Oso Creek channel is deeply incised, with channel wall heights of approximately 40 feet. The channel is migrating and widening towards the proposed development area through both creek erosion and bank collapses, in the form of rotational landslides in the alluvial terrace and older landslide material. Creek migration and incision has been controlled north of the site by construction of a concrete culvert, which flows into a riprap-lined portion of the channel. A riprap embankment has been constructed along much of the eastern bank of the channel across from the development area to mitigate channel migration toward the railroad tracks to the east. According to our review of the geomorphic study for the development, performed by Geosyntec (2021) and a hydrology study by Chang Consultants (2024), the western bank of the creek adjacent to the site is unprotected and is prone to additional erosion, landslides, and migration towards the east side of the subject site. Modeling of the creek for flood events over a projected 100-year period was performed as part of the hydrologic study for the site (Chang Consultants, 2024). Modeling of profiles of the channel adjacent to the site over the 100 years, suggest on the order of 6 to 27 vertical feet of scour may occur (Chang Consultants, 2024). Mitigation against and/or setback from creek erosion and channel migration into the development will be needed for construction of the development as currently proposed.

2.6 Seismicity and Faulting

California is located on the boundary between the Pacific and North American Lithospheric Plates. The average motion along this boundary is on the order of 50-mm/yr. in a right-lateral sense. Most of the motion is expressed at the surface along the northwest trending San Andreas Fault Zone with lesser amounts of motion accommodated by sub-parallel faults located predominantly west of the San Andreas including the Elsinore, Newport-Inglewood, Rose Canyon, and Coronado Bank Faults. Within Southern California, a large bend in the San Andreas Fault north of the San Gabriel Mountains has resulted in a transfer of a portion of the right-lateral motion between the plates into left-lateral displacement and vertical uplift. Compression south and west of the bend has resulted in folding, left-lateral, reverse thrust

faulting, and regional uplift creating the east-west trending Transverse Ranges and several east-west trending faults. Further south within the Los Angeles Basin, "blind thrust" faults are believed to have developed below the surface also as a result of this compression, which have resulted in earthquakes such as the 1994 Northridge event along faults with little to no surface expression.

Prompted by damaging earthquakes in Northern and Southern California, State legislation and policies concerning the classification and land-use criteria associated with faults have been developed. The Alquist-Priolo Earthquake Fault Zoning Act was implemented in 1972 to prevent the construction of urban developments across the trace of active faults. California Geologic Survey Special Publication 42 was created to provide guidance for following and implementing the law requirements. Special Publication 42 was most recently revised in 2018 (CGS, 2018). According to the State Geologist, an "active" fault is defined as one which has had surface displacement within Holocene time (roughly the last 11,700 years). Regulatory Earthquake Fault Zones have been delineated to encompass traces of known, Holocene-active faults to address hazards associated with surface fault rupture within California. Where developments for human occupation are proposed within these zones, the state requires detailed fault evaluations be performed so that engineering-geologists can identify the locations of active faults and recommend setbacks from locations of possible surface fault rupture.

The subject site is not located within an Alquist-Priolo Earthquake Fault Zone and no faults were identified on the site during our site evaluation. The possibility of damage due to ground rupture is considered low since no active faults are known to cross the site.

Secondary effects of seismic shaking resulting from large earthquakes on the major faults in the Southern California region, which may affect the site, include ground lurching, shallow ground rupture, soil liquefaction and dynamic settlement. These secondary effects of seismic shaking are a possibility throughout the Southern California region and are dependent on the distance between the site and causative fault and the onsite geology. The major active nearby faults that could produce these secondary effects include the onshore and offshore segments of the Newport-Inglewood Fault Zone, located approximately 6 miles southwest of the site. The presence of a blind thrust fault has been interpolated from limited data, to exist at a depth of approximately eight miles below the uplifted local hills; however, the San Joaquin Hills Blind Thrust Fault does not have a known location of surface rupture. A discussion of these secondary effects and their potential impact on the site is provided in the following sections.

2.6.1 Lurching and Shallow Ground Rupture

Soil lurching refers to the rolling motion on the ground surface by the passage of seismic surface waves. Effects of this nature are not likely to be significant where the thickness of soft sediments do not vary appreciably under structures. Ground rupture due to active faulting is not likely to occur on site due to the absence of known active fault traces. Ground cracking due to shaking from distant seismic events is not considered a significant hazard, although it is a possibility at any site.

2.6.2 Liquefaction and Dynamic Settlement

Liquefaction is a seismic phenomenon in which loose, saturated, granular soils behave similarly to a fluid when subject to high-intensity ground shaking. Liquefaction occurs when three general conditions coexist: 1) shallow groundwater; 2) low density non-cohesive (granular) soils; and 3) high-intensity ground motion. Studies indicate that saturated, loose near surface cohesionless soils exhibit the highest liquefaction potential, while dry, dense, cohesionless soils and cohesive soils exhibit low to negligible liquefaction potential. In general, cohesive soils are not considered susceptible to liquefaction, depending on their plasticity and moisture content (Bray & Sancio, 2006). Effects of liquefaction on level ground include settlement, sand boils, and bearing capacity failures below structures. Dynamic settlement of dry loose sands can occur as the sand particles tend to settle and densify as a result of a seismic event.

The site is located within a State of California Seismic Hazard Zone (CDMG, 2002a) for liquefaction potential. The vast majority of the alluvial soils tested are cohesive and not considered to be susceptible to liquefaction based on their Plasticity Index (Bray & Sancio, 2006). However, the data obtained from our field evaluation indicates that the site contains isolated typically relatively thin sandy layers susceptible to liquefaction in the upper 50 feet. Liquefaction potential was evaluated using the procedures outlined by Special Publication 117A (SCEC, 1999 & CGS, 2008). Liquefaction analysis was performed based on the seismic criteria (PGA_M) of the 2022 California Building Code (CBC) and an estimated high groundwater depth of 5 feet below existing grade. Estimated total and differential seismic settlement due to liquefaction potential is provided in Table 1 below. Liquefaction calculations are provided in Appendix D.

TABLE 1

Estimated Settlement Due to Liquefaction Potential

Approximate Total Seismic Settlement	Differential Seismic Settlement
1-inch	1/2 inch over 50 feet

2.6.3 Lateral Spreading

Lateral spreading is a type of liquefaction induced ground failure associated with the lateral displacement of surficial blocks of sediment resulting from liquefaction in a subsurface layer. Once liquefaction transforms the subsurface layer into a fluid mass, gravity plus the earthquake inertial forces may cause the mass to move down-slope towards a free face (such as a river channel or an embankment). Lateral spreading may cause large horizontal displacements and such movement typically damages pipelines, utilities, bridges, and structures.

As discussed above, site alluvial soils are primarily fine-grained and not considered susceptible to liquefaction. Site sandy soils susceptible to liquefaction are generally relatively thin and non-continuous. The potential for lateral spreading is considered low.

2.6.4 Tsunamis and Seiches

Based on the elevation of the site, with respect to sea level, there is a low possibility of damage to the site during a large tsunami event. The site is not located within the Tsunami Inundation Area delineated on the Tsunami Inundation Map for Emergency Planning Dana Point/San Juan Capistrano Quadrangle (CEMA, 2009).

2.7 Seismic Design Parameters for Site Development

The site contains isolated soils that are susceptible to liquefaction (refer to above Section "Liquefaction and Dynamic Settlement"). The 2022 CBC requires Site Class F designation for sites underlain by potentially liquefiable soils; however, we conclude that Site Class D designation is more appropriate in consideration that potentially liquefiable layers are relatively thin and isolated and negligible seismic settlement is anticipated. It should be noted that the seismic parameters provided herein are not applicable for any structure having a fundamental period of vibration greater than 0.5 second.

The site seismic characteristics were evaluated per the guidelines set forth in Chapter 16, Section 1613 of the 2022 California Building Code (CBC) and applicable portions of ASCE 7-16 which has been adopted by the CBC. Please note that the following seismic parameters are only applicable for code-based acceleration response spectra and are not applicable for where site-specific ground motion procedures are required by ASCE 7-16. Representative site coordinates of latitude 33.534456 degrees north and longitude -117.678844 degrees west were utilized in our analyses. Please note that these coordinates are considered representative of the site for preliminary planning purposes only, however their applicability must be verified with respect to a desired specific location within the site. The maximum considered earthquake (MCE) spectral response accelerations (S_{MS} and S_{M1}) and adjusted design spectral response acceleration parameters (S_{DS} and S_{D1}) for Site Class D are provided in Table 2 on the following page. Since site soils are Site Class D, additional adjustments are required to code acceleration response spectrums as outlined below and provided in ASCE 7-16. The structural designer should contact the geotechnical consultant if structural conditions (e.g., number of stories, seismically isolated structures, etc.) require site-specific ground motions.

TABLE 2

Seismic Design Parameters

Selected Parameters from 2022 CBC, Section 1613 - Earthquake Loads	Seismic Design Values	Notes/Exceptions
Distance to applicable faults classifies the site as a "Near-Fault" site.		Section 11.4.1 of ASCE 7
Site Class	D*	Chapter 20 of ASCE 7
Ss (Risk-Targeted Spectral Acceleration for Short Periods)	1.202g	From SEAOC, 2024
S_1 (Risk-Targeted Spectral Accelerations for 1-Second Periods)	0.431g	From SEAOC, 2024
F_a (per Table 1613.2.3(1))	1.019	For Simplified Design Procedure of Section 12.14 of ASCE 7, F_a shall be taken as 1.4 (Section 12.14.8.1)
F_v (per Table 1613.2.3(2))	1.869	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{MS} for Site Class D [Note: $S_{MS} = F_aS_S$]	1.225g	-
S_{M1} for Site Class D [Note: $S_{M1} = F_vS_1$]	0.806g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
S_{DS} for Site Class D [Note: $S_{DS} = (^2/_3)S_{MS}$]	0.817g	-
S_{D1} for Site Class D [Note: $S_{D1} = (^2/_3)S_{M1}$]	0.537g	Value is only applicable per requirements/exceptions per Section 11.4.8 of ASCE 7
C_{RS} (Mapped Risk Coefficient at 0.2 sec)	0.930	ASCE 7 Chapter 22
C_{R1} (Mapped Risk Coefficient at 1 sec)	0.933	ASCE 7 Chapter 22
*Since site soils are Site Class D and S_1 is greater than or equal to 0.2, the seismic response coefficient Cs is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken equal to 1.5 times the value calculated in accordance with either Eq. 12.8-3 for $T_L \geq T > T_s$, or Eq. 12.8-4 for $T > T_L$. Refer to ASCE 7-16. Site Class F modified to Site Class D, seismic parameters only applicable for structure period ≤ 0.5 second, refer to discussion above.		

Section 1803.5.12 of the 2022 CBC (per Section 11.8.3 of ASCE 7) states that the maximum considered earthquake geometric mean (MCE_G) Peak Ground Acceleration (PGA) should be used for liquefaction potential. The PGA_M for the site is equal to 0.563g (SEAOC, 2024). The design PGA may be taken as 0.375g (2/3 of PGA_M). A deaggregation of the PGA based on a 2,475-year average return period (MCE) indicates that an earthquake magnitude of 6.68 at a distance of 12.48 km from the site would contribute the most to this ground motion.

2.8 Soil Shear Strength Parameters

The soil shear strength parameters utilized in our slope stability analysis are based on laboratory testing, published shear strength data (CGS, 2002) and engineering judgment. The soil shear strength for the landslide rupture plane is based on the results of torsional ring shear testing of clay rupture surface materials obtained during downhole logging from our recent field evaluation. In addition, numerous Atterberg Limits tests were performed on clay rupture samples to verify similar Liquid Limit characteristics. Previously a ring shear test was performed on a clay rupture surface (NMG, 2001). Where applicable, soil shear strengths were increased for seismic loading conditions. Table 3 below summarizes the static shear strength parameters utilized in our analysis. Laboratory test results are provided in Appendix C.

TABLE 3

Summary of Static Shear Strength Parameters

Description	Soil Unit Weight (pcf)	Friction Angle ϕ (degrees)	Cohesion (psf)
Capistrano Formation (Tc)	120	26	300
Landslide Material/Backscarp (Western Slope)	120	22	250
Basal Rupture Clay Surface	120	14	0
Clay Bed	120	18	0
Compacted Fill	120	26	300
Alluvium	120	24	200
Landslide Material/Alluvium (Oso Creek Channel Wall)	120	24	300

2.10 Slope Stability Analysis

Slope stability analyses were performed based on the proposed design profile. Slope stability analysis was performed using the computer program GEOSTASE, version 4.30.31 (Gregory Geotechnical Software, 2019). Slope stability analysis was performed for static and seismic loading conditions. For seismic loading conditions a horizontal seismic coefficient (Kh) of 0.15 was used. For seismic loading, it is our understanding that 12 inches of seismic displacement is acceptable for the proposed development.

In order to determine an appropriate setback distance from the channel, we have performed slope stability analysis on a hypothetical model of what the western bank of the Oso Creek channel may look like 100 years from now (see Geotechnical Cross-Section C-C'). The model assumes 30-vertical-feet of scour of the Oso Creek channel based on the most extreme scour estimated in the project hydrology report (Chang Consultants, 2024). Similarly, 50-horizontal feet of migration has been assumed for the west bank of the channel eroding into the site. The inclination of the west bank of the Oso Creek channel has been modeled at a 1.5:1 (horizontal

to vertical) inclination based on the approximate average inclination of the bank today and anticipated in the modeling performed in the project hydrology report (Chang Consultants, 2024). Based on this cross-sectional model (see Geotechnical Cross-Section C-C'), slope stability analysis was performed for potential rotational surfaces of the hypothetical model of the channel bank.

Provided the development is appropriately setback from the hillside on the west and creek to the east, as recommended herein our analysis indicates slope stability should not be a concern for the proposed development area. Slope stability analysis and a table summarizing the results are provided in Appendix E.

Surficial slope stability analysis was performed for the proposed 3:1 fill slopes assuming a zone of saturation of 4-feet-deep parallel to the slope surface. Analysis indicated a surficial factor of safety greater than 1.5. Refer to Appendix E.

2.11 Rippability

In general, excavation for foundations and underground improvements should be achievable with the typical grading equipment (scrapers, dozers, backhoes, etc.).

2.12 Oversized Material

Generation of a surplus of oversized material (material greater than 8 inches in maximum dimension) is generally not anticipated during site grading. However, some oversized material may be encountered, which may result in excavation difficulty for narrow excavations. Recommendations are provided for appropriate handling of oversized materials in Appendix F.

2.13 Expansive Soil Characteristics

Previous Expansion Index (EI) testing indicated EI values of 39 and 64, corresponding to "Low" and "Medium" expansion potential (Terracon, 2021). Expansion Index (EI) testing from the current evaluation indicated EI values of 42 and 73, corresponding to "Low" and "Medium" expansion potential. Based on lab testing results and our experience with the Capistrano Formation site materials should be anticipated to have "Medium" to "Very High" potential for expansion. Conformational expansion potential testing should be performed at the completion of site grading based on the finish graded conditions.

2.14 Corrosion Potential

Corrosion testing indicated soluble sulfate contents of approximately 0.02 percent or less, chloride contents ranging from 64 to 176 ppm, pH values ranging from 7.7 to 8.2 and 7.7, and minimum resistivity values ranging from 1,250 to 1,250 ohm-centimeter. Previous corrosion testing indicated soluble sulfate contents ranging from approximately less than 0.01 percent to 0.19 percent, chloride contents ranging from not detected to 248 ppm, pH values ranging from 7.0 to 8.1, and minimum resistivity values ranging from 365 ohm-cm to 2,215 ohm-cm (Leighton,

2009 & Terracon, 2021). Site soils are considered corrosive based on Caltrans guidelines (Caltrans, 2021).

A soil corrosivity study was performed by HDR (HDR, 2023). The purpose was to determine the electrical resistivity of the soil for grounding design, and to determine whether the soils are likely to have deleterious impacts on underground piping and concrete structures.

2.15 Field Percolation Testing

Previously eight field percolation tests were performed (Terracon, 2021). Calculated infiltration rates for the three tests in the upper 5 feet ranged from 0.41 to 0.97 inches per hour. Calculated infiltration rates for the 5 tests performed from 5 to 10 feet below existing grade ranged from 0.03 (essentially zero infiltration) to 0.18 inches per hour.

3.0 FINDINGS AND CONCLUSIONS

Based on the results of our geotechnical evaluation, it is our opinion that the proposed development is feasible from a geotechnical standpoint, provided the geotechnical recommendations and parameters provided herein are incorporated into the site design, grading, and construction.

The following is a summary of the primary geotechnical factors which may affect development of the site.

- Based on the findings of our evaluation the site is underlain by topsoil/colluvium, Quaternary alluvial deposits, Quaternary older alluvial deposits, Quaternary landslide deposits, and Tertiary Capistrano Formation bedrock material.
- The near surface soils on the site are considered potentially compressible and are not considered suitable for the planned improvements in their present condition. Remedial grading of the near surface soils will be required in the proposed development area.
- A large ancient landslide complex underlies the western portion of the site and the ascending hillside to the west of the site.
- The landslide complex consists of failed material derived from the Tertiary-age Capistrano Formation.
- The landslide rupture surface(s) were found to primarily consist of plastic clay, up to approximately ¼-inch-thick.
- Modeling of the landslides indicates that the landslide complex on the west side of the site is a series of block-type failures.
- Slope stability analysis indicates that the large landslide complex is relatively stable with respect to the proposed development. The proposed development should be planned so that it does not cut into the landslide complex, potentially reducing its stability. Slope stability analyses of the generated geotechnical cross-sections through the landslide complex, were performed to determine a sufficient setback distance for the proposed development, which would not detrimentally impact the stability of the landslide complex. The setback line is depicted on the project on the west side of the development area on Geotechnical Map. It should be noted that the preparation of the proposed grading plan and the determination of the setback line, was an iterative process between LGC Geotechnical and the project civil engineer. The slope stability analysis presented herein and setback line determined are specific to and consideration with the currently proposed grading plan. Should changes to the grading plan be proposed, LGC Geotechnical must review the revisions, to confirm the site stability will be maintained.
- The western bank of Oso Creek adjacent to the site is unprotected and is prone to erosion, landslides and migration towards the east side of the development area. Mitigation against creek erosion and channel migration into the development can be achieved by setting back from the creek per the recommendations provided herein. In order to determine an appropriate setback distance from the channel, we have performed slope stability analysis on a hypothetical model of the western bank of the Oso Creek channel after 100 years of projected additional erosion. Based on this model, a setback line has been established west of the Oso Creek channel where the site will have at least a 1.5 static factor of safety for potential rotational surfaces of the hypothetical model of the bluff. Structural improvements should not be planned east of the setback line.

- Groundwater is not expected to significantly impact the proposed grading and development of the subject site. Deeper excavation should anticipate encountering groundwater at depth. Groundwater has been encountered at the subject site during the previous and subject evaluation as shallow as 36 feet below the ground surface. Historic high groundwater is estimated at 5 feet below grade within the development area (CGS, 2001a). Shallower localized perched groundwater may also be encountered.
- Based on our review of the State of California Seismic Hazard Zone Map for the San Juan Capistrano 7.5 Minute Quadrangle (CGS, 2001b), most of the site is located within a potential liquefaction zone. Based on lab testing, the majority of site alluvial soils are cohesive and not considered susceptible to liquefaction. Subsurface data indicates that isolated sandy layers are susceptible to liquefaction and liquefaction-induced settlement. Our analysis indicates approximately 1-inch of seismically-induced settlement may occur at the site during a significant earthquake. Differential dynamic settlement may be taken as 1/2 inch over a horizontal span of 50 feet.
- Based on our review of the State of California Seismic Hazard Zone Map for the San Juan Capistrano 7.5 Minute Quadrangle (CGS, 2001b), the western border of the site is located within a zone of potential earthquake induced landslides. The proposed development is adequately set back from the hillside on the west and creek to the east with respect to slope stability.
- The subject site is not located within a Fault Rupture Hazard Zone and there are no known active or potentially active faults onsite (CGS, 2018). The proposed development will likely be subjected to strong seismic ground shaking during its design life from one of the regional faults.
- In general, excavation for grading and removals should be achievable with heavy duty construction equipment in good working order. Lighter equipment for use in foundation and utility excavation and equipment for drilling borings may encounter difficult excavation where cobble or oversize material is encountered.
- From a geotechnical perspective, the existing onsite soils are considered suitable material for use as general fill (not retaining wall backfill), provided that they are relatively free from oversized material (larger than 8 inches in maximum dimension), construction debris, and significant organic material. Moisture conditioning will be required to obtain the required compaction.
- Based on our evaluation and experience in the area, site soils are anticipated to have high expansion potential. Mitigation measures are recommended for foundations and site improvements such as concrete flatwork to minimize the impacts of expansive soils.
- Pre-soaking of the subgrade for at-grade foundation slabs and site flatwork is recommended due to site expansive soils. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. Time duration for presoaking should be accounted for in the construction schedule. (Typically, approximately three weeks for high expansion). Additional time at the completion of presoaking may be necessary for the surface soils of the pad to dry back sufficiently to be capable of supporting trenching equipment.
- Based on experience in the area and laboratory test results, site soils are considered to be corrosive based on Caltrans guidelines (Caltrans, 2021).
- Generation of significant quantities of oversized material (material greater than 8 inches in maximum dimension) is generally not anticipated during site grading.
- Previous field testing resulted in infiltration rates ranging from 0.03 inches per hour (essentially zero infiltration) to 0.97 inches per hour (Terracon, 2021). The development site will consist of compacted fill over fine-grained soils, these soils have very low permeability and therefore have very low infiltration rates.

- The site contains soils that are not suitable for any required retaining wall backfill due to their fines content and expansion potential, therefore import of sandy soils will be required by the contractor for obtaining suitable backfill soil for planned site retaining walls.
- Based on the findings of our evaluation and analysis provided herein, and provided our recommendations are properly implemented during grading and construction, the proposed development of the site is not anticipated to significantly impact adjacent properties.

Please note that the conclusions and recommendations contained herein are based on preliminary subsurface conditions, which have been interpreted from a limited number of subsurface excavations. These conclusions and recommendations should be verified during site grading and adjusted according to the actual exposed field conditions.

4.0 RECOMMENDATIONS

The following recommendations are to be considered preliminary and should be confirmed during and upon completion of earthwork operations. In addition, they should be considered minimal from a geotechnical viewpoint, as there may be more restrictive requirements from the architect, structural engineer, building codes, governing agencies, or the City. It is the responsibility of the builder to ensure these recommendations are provided to the appropriate parties.

It should be noted that the following geotechnical recommendations are intended to provide sufficient information to develop the site in general accordance with the 2022 CBC requirements. With regard to the potential occurrence of potentially catastrophic geotechnical hazards such as fault rupture, earthquake-induced landslides, liquefaction, etc. The following geotechnical recommendations should provide adequate protection for the proposed development to the extent required to reduce seismic risk to an "acceptable level." The "acceptable level" of risk is defined by the California Code of Regulations as "that level that provides reasonable protection of the public safety, though it does not necessarily ensure continued structural integrity and functionality of the project" [Section 3721(a)]. Therefore, repair and remedial work of the proposed improvement may be required after a significant seismic event. With regards to the potential for less significant geologic hazards to the proposed development, the recommendations contained herein are intended as a reasonable protection against the potential damaging effects of geotechnical phenomena such as expansive soils, fill settlement, groundwater seepage, etc. It should be understood, however, that although our recommendations are intended to maintain the structural integrity of the proposed development and structures given the site geotechnical conditions, they cannot preclude the potential for some cosmetic distress or nuisance issues to develop as a result of the site geotechnical conditions.

4.1 Site Earthwork

We anticipate that earthwork at the site will consist of site preparation, remedial grading, removals of potentially compressible soil, excavation of cut material, fill placement, and slab-on-grade foundation construction. We recommend that earthwork onsite be performed in accordance with the following recommendations, the City of San Juan Capistrano grading requirements, and the General Earthwork and Grading Specifications for Rough Grading included in Appendix F. In case of conflict, the following recommendations shall supersede those included as part of Appendix F.

4.1.1 Site Preparation

Prior to grading of areas to receive compacted fill or engineered improvements, the areas should be cleared of existing surface obstructions and demolition debris. Vegetation and debris should be removed and properly disposed of off-site. Holes resulting from the removal of buried obstructions, which extend below proposed finish grades, should be replaced with suitable compacted fill material. Any abandoned sewer or storm drain lines should be completely removed and replaced with properly placed compacted fill. Deeper demolition may be required in order to remove existing foundations.

If cesspools or septic systems are encountered, they should be removed in their entirety.

The resulting excavation should be backfilled with properly compacted fill soils. As an alternative, cesspools can be backfilled with lean sand-cement slurry (minimum ultimate compressive strength of 100 psi at 28 days). Any encountered wells should be properly abandoned in accordance with regulatory requirements. At the conclusion of the clearing operations, a representative of LGC Geotechnical should observe and accept the site prior to further grading.

4.1.2 Removal Depths and Limits

In the proposed development area, potentially compressible/collapsible materials not removed by the planned design cuts should be excavated to competent material and replaced with compacted fill soils.

In general, remedial grading should be performed so that the near-surface soils are removed to at least 2 feet below existing grade prior to fill placement. Similarity, where not achieved by proposed cuts, the near-surface soils in proposed cut areas should be removed and recompacted within 2 feet of ensuring grade, specific recommendations for the proposed improvement areas are provided below.

Structural Improvements: In order to provide a relatively uniform bearing condition for the planned structural improvements, removals should extend a minimum depth of 5 feet below existing grade or 2 feet below the proposed footings, whichever is greater. In general, the envelope for removals should extend laterally a minimum horizontal distance of 5 feet beyond the edges of the proposed foundation footprints

Retaining/Free-Standing Wall Structures: Removals should extend a minimum of 3 feet below existing grade, or 1-foot below proposed footings, whichever is greater.

Drive Aisles, Pavement and Hardscape Areas: Removals should extend to a depth of at least 2 feet below the existing grade. Removals in any design cut areas of the pavement may be reduced by the depth of the design cut but should not be less than 1-foot below the finished subgrade (i.e., below planned aggregate base/asphalt concrete). In general, the envelope for removals should extend laterally a minimum lateral distance of 2 feet beyond the edges of the proposed improvements.

Local conditions may be encountered during excavation that could require additional over-excavation beyond the above-noted minimum in order to obtain an acceptable subgrade including localized areas of undocumented fill. The actual depths and lateral extents of grading will be determined by the geotechnical consultant, based on subsurface conditions encountered during grading. Removal areas should be accurately staked in the field by the Project Surveyor.

4.1.3 Temporary Excavations

Temporary excavations should be performed in accordance with project plans, specifications, and all Occupational Safety and Health Administration (OSHA) requirements. Excavations should be laid back or shored in accordance with OSHA

requirements before personnel or equipment are allowed to enter. Soil conditions should be mapped and frequently checked by a representative of LGC Geotechnical to verify conditions are as anticipated. The contractor shall be responsible for providing the "competent person" required by OSHA standards to evaluate soil conditions. Close coordination with the geotechnical consultant should be maintained during construction. Excavation safety and protection of adjacent offsite improvements is the responsibility of the contractor.

Surcharge loads (e.g., soil stockpiles, construction equipment, etc.) placed on top of the excavation/temporary slope should not be permitted within a horizontal distance equal to the height of the excavation/temporary slope from the top of the excavation or 5 feet from the top of the slope, whichever is greater, unless the cut is properly shored and designed for the applicable surcharge load. In general, any excavation that extends below a 1:1 (horizontal to vertical) projection of an existing foundation will remove existing support of the structure foundation.

Once an excavation has been initiated, it should be backfilled as soon as practical. Prolonged exposure of temporary excavations may result in some localized instability. Excavations should be planned so that they are not initiated without sufficient time to shore/fill them prior to weekends, holidays, or forecasted rain.

4.1.4 Removal Bottoms and Subgrade Preparation

In general, removal bottom areas and areas to receive compacted fill should be scarified to a minimum depth of 6 inches, brought to a near-optimum moisture condition, and re-compacted per project recommendations. Removal bottoms and areas to receive fill should be observed and accepted by the geotechnical consultant prior to subsequent fill placement.

4.1.5 Material for Fill

From a geotechnical perspective, the onsite soils are generally considered suitable for use as general compacted fill, provided they are screened of organic materials, construction debris and any oversized material (8 inches in greatest dimension).

From a geotechnical viewpoint, any required import soils for general fill (not retaining wall backfill) should consist of clean, soils of Medium expansion potential (expansion index 90 or less based on ASTM D4829) or less and no particles larger than 6 inches in greatest dimension. Source samples of planned importation should be provided to the geotechnical consultant for laboratory testing a minimum of 3 working days prior to any planned importation for required laboratory testing.

Any required retaining wall backfill should consist of sandy soils with a maximum of 35 percent fines (passing the No. 200 sieve) per American Society for Testing and Materials (ASTM) Test Method D422 (or ASTM D1140) and a Very Low expansion potential (EI of 20 or less per ASTM D4829). Soils should also be screened of organic materials, construction debris, and any material greater than 3 inches. The site contains soils that

are not suitable for retaining wall backfill due to their clay content and oversize material; therefore, import will be required by the contractor for obtaining suitable retaining wall backfill soil.

Aggregate base (crushed aggregate base or crushed miscellaneous base) should conform to the latest requirements of Section 200-2 of the Standard Specifications for Public Works Construction ("Greenbook") for untreated base materials (except processed miscellaneous base) or Caltrans Class 2 aggregate base.

4.1.6 Fill Placement and Compaction

Material to be placed as fill should be brought to near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content) and recompacted to at least 90 percent relative compaction (per ASTM Test Method D1557). Moisture-conditioning of site soils will be required in order to achieve adequate compaction. The optimum lift thickness to produce a uniformly compacted fill will depend on the type and size of compaction equipment used. In general, fill should be placed in uniform lifts not exceeding 8 inches in compacted thickness. Each lift should be thoroughly compacted and accepted prior to subsequent lifts. Generally, placement and compaction of fill should be performed in accordance with local grading ordinances and with observation and testing by the geotechnical consultant. Oversized material, as previously defined, should be removed from site fills or be appropriately handled (Appendix F).

Fill placed on any slopes greater than 5:1 (horizontal to vertical) should be properly keyed and benched into firm and competent soils as it is placed in lifts.

During backfill of excavations, the fill should be properly benched into firm and competent soils of temporary backcut slopes as it is placed in lifts.

Fill slope faces should also be compacted to project requirements. This may require overbuilding of the slope face and trimming back to design grades. To improve surficial stability, vegetation specified by the landscape architect should be established on the slope face as soon as it is practical.

Aggregate base material should be compacted to a minimum of 95 percent relative compaction at or slightly above optimum moisture content per ASTM D1557. Subgrade below aggregate base should be compacted to a minimum of 90 percent relative compaction per ASTM D1557 at near-optimum moisture content (generally within optimum and 2 percent above optimum moisture content).

If gap-graded ¾-inch rock is used for backfill (around storm drain storage chambers, retaining wall backfill, etc.) it will require compaction. Rock shall be placed in thin lifts (typically not exceeding 6 inches) and mechanically compacted with observation by geotechnical consultant. Backfill rock shall meet the requirements of ASTM D2321. Gap-graded rock is required to be wrapped in filter fabric to prevent the migration of fines into the rock backfill.

4.1.7 Trench and Retaining Wall Backfill and Compaction

Bedding material used within the pipe zone should conform to the requirements of the current Greenbook and the pipe manufacturer. Where applicable, sand having a sand equivalent (SE) of 20 or greater (per Caltrans Test Method [CTM] 217) may be used to bed and shade the pipes within the bedding zone. Sand backfill should be densified by jetting or flooding and then tamped to ensure adequate compaction. Bedding sand should be from a natural source, manufactured sand from recycled material is not suitable for jetting. The onsite soils may generally be considered suitable as trench backfill (zone defined as 12 inches above the pipe to subgrade), provided the soils are screened of rocks greater than 6 inches in maximum dimension, construction debris and organic material. Trench backfill should be compacted in uniform lifts (as outlined above in Section "Material for Fill") by mechanical means to at least 90 percent relative compaction (per ASTM D1557). If gap-graded rock is used for trench backfill, refer to above Section 4.1.6.

In backfill areas where mechanical compaction of soil backfill is impractical due to space constraints, flowable fill such as sand-cement slurry may be substituted for compacted backfill. The slurry should contain about one sack of cement per cubic yard. When set, such a mix typically has the consistency of compacted soil. Sand cement slurry placed near the surface within landscape areas should be evaluated for potential impacts on planned improvements.

Retaining wall backfill should consist of predominately granular, sandy soils as outlined in Section 4.1.5. The limits of select sandy backfill should extend at minimum ½ the height of the retaining wall or the width of the heel (if applicable), whichever is greater, refer to Figure 2. If the limits of select backfill depicted cannot be achieved due to property line constraints, increased lateral earth pressures should be used as provided in Section 4.8. Retaining wall backfill soils should be compacted in relatively uniform thin lifts to a minimum of 90 percent relative compaction (per ASTM D1557). Jetting or flooding of retaining wall backfill materials should not be permitted. If gap-graded rock is used for retaining wall backfill, refer to above Section 5.1.9.

A representative from LGC Geotechnical should observe, probe, and test the backfill to verify compliance with the project recommendations.

4.1.8 Preliminary Shrinkage and Bulking

Volumetric changes in earth quantities will occur when excavated onsite earth materials are replaced as properly compacted fill. The following is a preliminary estimate of shrinkage and bulking factors for the various geologic units found onsite. Allowance in the earthwork volumes budget should be made for an estimated 0 to 10 percent reduction in volume of in-place landslide material (Qls), topsoil and alluvium.

It should be stressed that these values are only estimates and that an actual shrinkage factor is extremely difficult to predetermine. The effective shrinkage of onsite soils will depend primarily on the type of compaction equipment and method of compaction used onsite by the contractor. Additionally, the onsite geology is very complex, the above estimates are generalized groupings of similar lithologies and should be expected to vary

across the site and with depth. The above shrinkage and bulking estimates are intended as an aid for project engineers in determining preliminary earthwork quantities. However, these estimates should be used with some caution since they are not absolute values. Contingencies such as a balance pad should be made for balancing earthwork quantities based on actual shrinkage and subsidence that occurs during grading. Shrinkage and bulking are also expected to vary with variations in survey accuracy during rough grading.

4.1.9 Fill Slopes

Design fill slopes at the site are anticipated to be both grossly and surficially stable as designed, as long as they are constructed in accordance with the Standard Earthwork and Grading Specifications included in Appendix F. Fill slopes should be constructed with a maximum slope ratio of 2:1 (horizontal to vertical). Slope faces should also be compacted to minimum project specifications. This may require overbuilding of the slope face and trimming back to design grades. To improve surficial stability, vegetation specified by the landscape architect should be established on the slope face as soon as it is practical.

Fill slopes should be constructed at least equipment width wide (approximately 10 horizontal feet). Where design grades will result in "sliver" fills, thinner than 10 feet, the slopes should be constructed as stability fill slopes as described herein.

4.1.10 Existing Native Slopes

Natural slopes will be left in their existing condition above and below portions of the site. These slopes will be subject to "natural" phenomena such as erosion, sloughing and surficial instabilities. It is impossible to predict where or when this may happen. Should erosion or slippage occur, it should be promptly repaired. Paramount in reducing the potential for either erosion or slippage is to properly maintain these slopes (refer to Section 4.7).

4.2 Lateral Earth Pressures for Retaining Wall Design

The following lateral earth pressures are for minor site retaining walls up to 6 feet in height. Lateral earth pressures are provided as equivalent fluid unit weights, in pound per square foot (psf) per foot of depth or pcf. These values do not contain an appreciable factor of safety, so the retaining wall designer should apply the applicable factors of safety and/or load factors during design.

The following lateral earth pressures presented on Table 4 are for approved select granular soils with a maximum of 35 percent fines (passing the No. 200 sieve per ASTM D-421/422) and Very Low expansion potential (EI of 20 or less per ASTM D4829). The wall designer should clearly indicate on the retaining wall plans the required import sandy soil backfill criteria. Refer to Figure 2.

TABLE 4

Lateral Earth Pressures – Approved Sandy Soils

Conditions	Equivalent Fluid Unit Weight (pcf)	Equivalent Fluid Unit Weight (pcf)
	Level Backfill	2:1 Sloped Backfill
	Approved Sandy Soils	Approved Sandy Soils
Active	35	55
At-Rest	55	80

If the wall can yield enough to mobilize the full shear strength of the soil, it can be designed for "active" pressure. If the wall cannot yield under the applied load, the earth pressure will be higher. This would include 90-degree corners of retaining walls. Such walls should be designed for "at-rest." The equivalent fluid pressure values assume free-draining conditions. Retaining wall structures should be provided with appropriate drainage and appropriately waterproofed, refer to Figures 3. Please note that waterproofing and outlet systems are not the purview of the geotechnical consultant. If conditions other than those assumed above are anticipated, the equivalent fluid pressure values should be provided on an individual-case basis by the geotechnical consultant.

Surcharge loading effects from any adjacent structures should be evaluated by the retaining wall designer. In general, structural loads within a 1:1 (horizontal to vertical) upward projection from the bottom of the proposed retaining wall will surcharge the proposed retaining structure. In addition to the recommended earth pressure if applicable retaining walls adjacent to streets should be designed to resist vehicular traffic if applicable. Uniform surcharges may be estimated using the applicable coefficient of lateral earth pressure using a rectangular distribution. For a level backfill, a factor of 0.5 and 0.33 may be used for at-rest and active conditions, respectively. The vertical traffic surcharge may be determined by the structural designer. The structural designer should contact the geotechnical consultant for any required geotechnical input in estimating any applicable surcharge loads.

Per Section 1803.5.12 of the 2022 CBC, the seismic lateral earth pressure is applicable to structures assigned to Seismic Design Category D through F for retaining wall structures supporting more than 6 feet of backfill height. Conventional retaining walls greater than 6 feet in height are not anticipated. If required, a seismic lateral earth pressure increment will be provided.

Soil bearing and lateral resistance (friction coefficient and passive resistance) are provided in Sections 4.3.2 and 4.3.3. Earthwork considerations (temporary backcuts, backfill, compaction, etc.) for retaining walls are provided in Section 4.1 (Site Earthwork) and the subsequent earthwork related sub-sections.

4.3 Preliminary Foundation Recommendations

The proposed battery storage containers and electrical equipment may be supported on reinforced mat foundations, provided earthwork is performed in accordance with the recommendations presented in this report. Foundations should be supported on properly compacted fill. Please note that the following foundation recommendations are preliminary and must be confirmed by the geotechnical consultant during and at the completion of grading.

Preliminary foundation recommendations are provided in the following sections. The foundation design must be performed by the structural engineer based on the following geotechnical parameters and minimum values provided. If alternative foundation types are requested, LGC Geotechnical can provide geotechnical parameters and recommendations.

4.3.1 Mat Foundation Pad Design and Construction

A mat foundation can be used for support of the proposed battery storage and equipment pads. Mat foundations can be useful in helping distribute structural loads, to span local irregularities in the supporting capacity of the foundation soils, and to reduce the impact of expansive soils.

Provided our earthwork recommendations are implemented, for elastic design of a mat foundation supporting sustained concentrated loads, a modulus of vertical subgrade reaction (k) of 50 pounds per cubic inch (pounds per square inch per inch of deflection) may be used, provided our earthwork recommendations are implemented. This value is for a 1-foot by 1-foot square loaded area and should be adjusted by the structural designer for the area of the proposed foundation using the following formula:

$k = 50[(B+1)/2B]^2$
k = modulus of vertical subgrade reaction, pounds per cubic inch (pci)
B = mat foundation width (feet)

A minimum mat slab (pad) thickness of 8 inches is recommended for the equipment pads. Actual mat slab thickness should be determined by the structural engineer based on the parameters provided herein. The mat slab should have a thickened perimeter edge with a minimum embedment of 18-inches below lowest adjacent grade. Mat slabs are to be supported on compacted fill soils properly prepared in accordance with the recommendations provided in this report. Minimum slab reinforcement should be determined by the structural engineer based on the imposed loading, crack control, etc.

It is recommended that subgrade soils below slabs be moisture conditioned in order to maintain the recommended moisture content up to the time of concrete placement. The mat slab subgrade soils should be presoaked/moisture conditioned to 140% of optimum moisture content to a depth of 30 inches prior to trenching the mat foundation systems. The moisture content of the slab subgrade should be verified by the geotechnical engineer within 1 to 2 days prior to concrete placement. In addition, this moisture content should be maintained around the immediate perimeter of the slab during construction and installation of the battery storage equipment and electrical equipment.

4.3.2 Foundation Design Parameters

Provided our earthwork recommendations are appropriately implemented, the mat foundation may be designed using an allowable soil bearing pressure of 1,500 pounds per square foot (psf). Spread and continuous footings may be designed with an allowable soil bearing pressure of 2,500 pounds per square foot (psf) provided the minimum footing width is 12 inches and minimum embedment is 18 inches below the adjacent grade. These allowable bearing pressures are applicable for level (ground slope equal to or flatter than 5H:1V) conditions only. Bearing values indicated are for total dead loads and frequently applied live loads and may be increased by ⅓ for short duration loading (i.e., wind or seismic loads). This increase is based on a reduced factor of safety for short duration loading.

In utilizing the above-mentioned allowable bearing capacity based on the estimated structural loading and provided our earthwork recommendations are implemented, foundation settlement due to estimated structural loads is anticipated to be on the order of 1-inch or less. Differential static settlement may be taken as half of the static settlement (i.e. ½-inch over a horizontal span of 40 feet).

4.3.3 Lateral Load Resistance

Resistance to lateral loads can be provided by friction acting at the base of foundations and by passive earth pressure. For concrete/soil frictional resistance, an allowable coefficient of friction of 0.25 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 220 psf per foot of depth (or pcf) to a maximum of 2,200 psf may be used for the sides of footings poured against properly compacted fill. Allowable passive pressure may be increased to 300 pcf (maximum of 3,000 psf) for short duration seismic loading. This passive pressure is applicable for level (ground slope equal to or flatter than 5H:1V) conditions. Frictional resistance and passive pressure may be used in combination without reduction. We recommend that the upper foot of passive resistance be neglected if finished grade will not be covered with concrete or asphalt. The provided allowable passive pressures are based on a factor of safety of 1.5 and 1.1 for static and seismic loading conditions, respectively.

4.3.4 Foundation Subgrade Preparation and Maintenance

Moisture conditioning of the subgrade for equipment pad slabs will be required due to site expansive soils. The duration of this process varies greatly based on the chosen method and is also dependent on factors such as soil type and weather conditions. Time duration for presoaking from completion of rough grading to trenching of foundations should be accounted for in the construction schedule (typically 1 to 2 weeks). The subgrade moisture condition of the equipment pad soils should be maintained at the recommended moisture content (refer to Section 4.3.1) up to the time of concrete placement. This moisture content should be maintained around the immediate perimeter of the slab during construction and up to completion of the equipment pad construction.

4.3.5 Slab Underlayment Guidelines

Some post-construction moisture migration should be expected below the foundation. The following is for informational purposes only since slab underlayment (e.g., moisture retarder, sand or gravel layers for concrete curing and/or capillary break) is unrelated to the geotechnical performance of the foundation and thereby not the purview of the geotechnical consultant. Post-construction moisture migration should be expected below the foundation. The foundation engineer/architect should determine whether the use of a capillary break (sand or gravel layer), in conjunction with the vapor retarder, is necessary or required by code. Sand layer thickness and location (above and/or below vapor retarder) should also be determined by the foundation engineer.

4.3.6 Foundation Setback from Top-of-Slope & Bottom- of-Slope

Foundations should have adequate setback from top and bottom of slopes. Per the 2022 CBC, the minimum top-of-slope setback is H/3, with a maximum required setback of 40 feet, where H is the total height of the slope. This distance is measured horizontally from the outside bottom edge of the footing to the slope face. Deepened footings or drilled piers may be used to obtain the required top-of-slope setback. The minimum bottom-of-slope setback is H/2, with a maximum required setback of 15 feet. Refer to Chapter 18 of the 2022 CBC.

Foundation setback criteria should be reviewed based on the finalized grading plans and foundation design.

4.4 Soil Corrosivity

Although not corrosion engineers (LGC Geotechnical is not a corrosion consultant), several governing agencies in Southern California require the geotechnical consultant to determine the corrosion potential of soils to buried concrete and metal facilities. We therefore present the results of our testing with regard to corrosion for the use of the client and other consultants, as they determine necessary.

Corrosion testing indicated soluble sulfate contents of approximately 0.02 percent or less, chloride contents of 118 parts per million (ppm), pH values of 8.2 and 7.7, and minimum resistivity values of 1,345 ohm-centimeter and 1,250 ohm-centimeter. Previous corrosion testing indicated soluble sulfate contents ranging from approximately less than 0.01 percent to 0.19 percent, chloride contents ranging from not detected to 248 ppm, pH values ranging from 7.0 to 8.1, and minimum resistivity values ranging from 365 ohm-cm to 2,215 ohm-cm (Leighton, 2009 & Terracon, 2021). Site soils are considered corrosive based on Caltrans guidelines (Caltrans, 2021).

Based on laboratory test results and our experience in the area, onsite soils should be designated sulfate exposure class of “S2” per ACI 318, Table 19.3.1.1. This must be verified based on as-graded conditions.

4.5 Non-structural Concrete Flatwork

Nonstructural concrete flatwork (such as walk-ways, etc.) has a potential for cracking due to changes in soil volume related to soil-moisture fluctuations. To reduce the potential for excessive cracking and lifting, concrete may be designed in accordance with the minimum guidelines outlined in Table 5. These guidelines will reduce the potential for irregular cracking and promote cracking along control joints but will not eliminate all cracking or lifting. Thickening the concrete and/or adding additional reinforcement will further reduce cosmetic distress.

TABLE 5

Nonstructural Concrete Flatwork for High Expansion Potential

	Flatwork	**City Sidewalk Curb and Gutters**
Minimum Thickness (in.)	5 (full)	City/Agency Standard
Presoaking	Presoak to 12 inches	City/Agency Standard
Reinforcement	No. 3 at 24 inches on centers	City/Agency Standard
Thickened Edge (in.)	8 x 8	City/Agency Standard
Crack Control Joints	Saw cut or deep open tool joint to a minimum of $^1/_3$ the concrete thickness	City/Agency Standard
Maximum Joint Spacing	6 feet	City/Agency Standard
Aggregate Base Thickness (in.)	___	City/Agency Standard

4.6 Freestanding Walls

To reduce the potential for unsightly cracks, due to differential settlement or expansive soils, we recommend the inclusion of control joints at a maximum of 15-foot on center for any proposed freestanding walls. This spacing may be altered by the wall designer based upon the wall reinforcement. If the soil-moisture content below the wall foundation varies significantly, some wall movement should be expected; however, this movement is unlikely to cause more than cosmetic distress.

4.7 Slope Maintenance Guidelines

We recommend that graded slopes be properly landscaped with deep-rooted drought-tolerant, slope stabilizing vegetation as soon as possible to minimize the potential for erosion and/or other instabilities. Slopes should not be allowed to be bare of vegetation. Landscape vegetation should not be "trimmed" to root structures leaving no protection of the slopes.

Irrigation at the site should be kept at the minimum level to support plant growth, overwatering must be avoided. Future landowners/property managers should be made aware that even though the site has been developed in accordance with the local standard of practice that includes a subdrain system, improper maintenance and particularly significant overwatering or poor surface drainage could possibly lead to a buildup in localized groundwater levels. This may result in nuisance type water-related issues to foundations, flatwork, walls, landscaping improvements, etc., and in extreme cases a decrease in the stability of slopes. To help reduce the potential for excessive erosion of graded slopes we recommend that protective measures be implemented in accordance with the latest City of San Juan Capistrano grading ordinances and other governing codes. Design of surface drainage provisions are within the purview of the project civil engineer.

Subdrains and v-ditches must be properly maintained, and their outlets kept free draining and clear of any potential obstructions. Routine maintenance should be performed, especially prior to and during the rainy season. Failure to properly maintain these elements may result in slope failures, slumps, excessive erosion, localized saturated zones, nuisance type water issues, etc.

Any future trenches excavated on a slope face for utility or irrigation lines and/or for any purpose should be properly backfilled and compacted to the slope face. Observation/testing and acceptance by the geotechnical consultant during trench backfill are recommended.

A program for the elimination of burrowing animals in both native and graded slope areas must be established and properly maintained to protect slope stability by reducing the potential for surface water to penetrate into the soil. Continuous erosion control, rodent control, and maintenance are essential to the long-term stability of all slopes.

4.8 Surface Drainage and Landscaping

4.8.1 Precise Grading

From a geotechnical perspective, we recommend that compacted finished grade soils adjacent to proposed foundations be sloped away from the proposed foundations and towards an approved drainage device or unobstructed swale. Drainage swales, wherever feasible, should not be constructed within 5 feet of foundations. Where the proposed development geometry necessitates that the drainage swales be routed closer than 5 feet to structural foundations, we recommend the use of area drains together with drainage swales. Drainage swales used in conjunction with area drains should be designed by the project civil engineer so that a properly constructed and maintained system will prevent ponding within 5 feet of the foundation. Code compliance of grades is not the purview of the geotechnical consultant.

4.9 Subsurface Water Infiltration

Recent regulatory changes have occurred that mandate that storm water be infiltrated below grade rather than collected in a conventional storm drain system. Typically, a combination of methods are implemented to reduce surface water runoff and increase infiltration including; permeable pavements/pavers for roadways and walkways, directing surface water runoff to grass-lined swales, retention areas, and/or drywells, etc.

It should be noted that collecting and concentrating surface water for the purpose of intentionally infiltrating it below grade, conflicts with the geotechnical engineering objective of directing surface water away from slopes, structures and other improvements. The geotechnical stability and integrity of a site is reliant upon appropriately handling surface water. In general, the vast majority of geotechnical distress issues are directly related to improper drainage. In general, distress in the form of movement of improvements could occur as a result of soil saturation and loss of soil support, expansion, internal soil erosion, collapse and/or settlement.

Previous field testing resulted in infiltration rates ranging from 0.03 inches per hour (essentially zero infiltration) to 0.97 inches per hour. The site consists of primarily fine-grained clayey soils, which have very low to negligible rates of infiltration. In general, we do not recommend the intentional infiltration of storm water. If desired, additional evaluation should be performed, specific to the proposed location of infiltration. Any infiltration system would have to prevent the lateral migration of the infiltrated water which could decrease the existing stability of the proposed development.

4.10 Geotechnical Plan Review

Project plans (e.g., grading, foundation, retaining wall, etc.) and final project drawings should be reviewed by this office prior to grading to verify that our geotechnical recommendations, provided herein, have been appropriately incorporated. Additional or modified geotechnical recommendations may be required based on the proposed design.

4.11 Geotechnical Observation and Testing During Construction

The recommendations provided in this report are based on limited subsurface observations and geotechnical analysis. The interpolated subsurface conditions should be checked in the field during construction by a representative of LGC Geotechnical. Geotechnical observation and testing is required per Section 1705 of the 2022 California Building Code (CBC).

Geotechnical observation and/or testing should be performed by LGC Geotechnical at the following stages:

- During grading (removal bottoms, remedial grading, fill placement, etc.);
- After presoaking foundation pads and other concrete-flatwork subgrades, and prior to placement of aggregate base or concrete;
- After mat foundation/footing excavation and prior to placing reinforcement and/or concrete;
- During utility trench and retaining wall backfill and compaction;

- Preparation of pavement subgrade and placement of aggregate base; and
- When any unusual soil conditions are encountered during any grading or construction operation subsequent to issuance of this report.

5.0 LIMITATIONS

Our services were performed using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable soils engineers and geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the conclusions and professional advice included in this report.

This report is based on data obtained from limited observations of the site, which have been extrapolated to characterize the site. While the scope of services performed is considered suitable to adequately characterize the site geotechnical conditions relative to the proposed development, no practical evaluation can completely eliminate uncertainty regarding the anticipated geotechnical conditions in connection with a subject site. Variations may exist and conditions not observed or described in this report may be encountered during grading and construction.

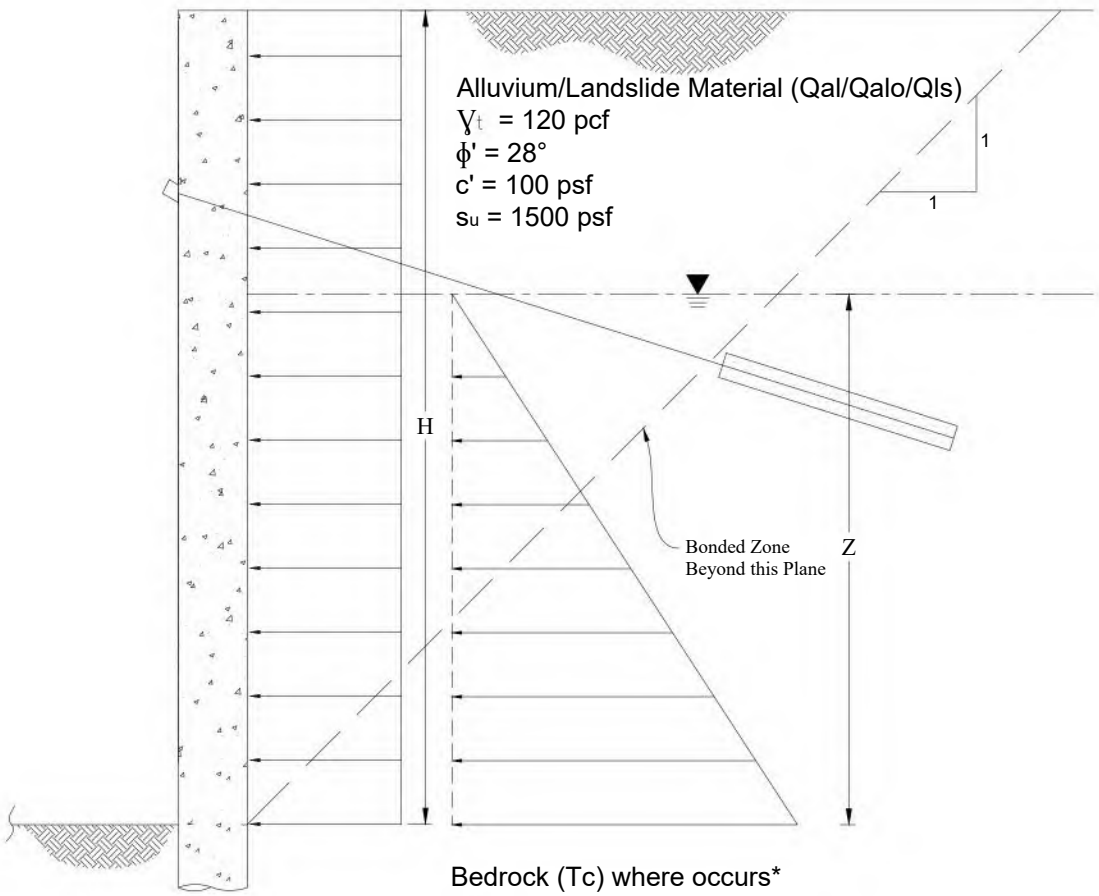
The findings of this report are valid as of the present date. However, changes in the conditions of a site can and do occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. The findings and conclusions presented in this report can be relied upon only if LGC Geotechnical has the opportunity to observe the subsurface conditions during grading and construction of the project, in order to confirm that our preliminary findings are representative for the site. This report is intended exclusively for use by the client, any use of or reliance on this report by a third party shall be at such party's sole risk.

In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and modification.

PROJECT NAME	Compass Bess - SJC
PROJECT NO.	22011-01
ENG. / GEOL.	BTZ / KBC
SCALE	NTS
DATE	April 2024

LGC Geotechnical, Inc.

FIGURE 1
Site Location Map



$$\text{STATIC HORIZONTAL STRESS (psf)} = 30H\left(1-0.52\frac{Z}{H}\right)+62.4Z$$

WHERE:

H = Total Retained Height (ft)

Z = Height of Water Measured From Bottom of Retaining Structure (ft)

NOTES:

1. The earth pressures shown are based on level retained conditions
2. Applicable seismic and surcharge loading to be added, refer to text discussion

**Refer to Cross Section F-F' for Geologic Stratigraphy*

LGC Geotechnical, Inc.	***FIGURE 2*** ***Lateral Earth Pressures for Braced Eastern Retaining Wall Structure***	*PROJECT NAME* | *Compass BESS - SJC*
		PROJECT NO. | *22011-01*
		ENG. / GEOL. | *BTZ / KBC*
		SCALE | *NTS*
		DATE | *April 2024*

Appendix A
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APPENDIX A

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Appendix B
Boring Logs

Geotechnical Bucket Auger Log B-1

Date : 7/27/2022 Page 1 of 3 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 233 ' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
230	0								**@ 0 to 44' - <u>Quaternary Landslide (Qls)</u>** @ 0' - Dried grass and dry light brown, SILT @ 0' to 1' - Concrete debris @ 1 to 4' - Mixed Sandy SILT, some trace clay, soil is mottled gray with tan, some white mineralization, @3' - Artificial Fill, topsoil and SILTSTONE clasts, light gray and brown, trace orange.	
	5								@ 4' - Grades to highly fractured siltstone, gray with orange, moist, medium dense, abundant white gypsum crystals. Some inclusions of clay, and fine sand lenses	
225			SH/RS: N18W 68W						@ 9' - Sub-horizontal sand lenses (undulatory), off set by R.S. Zone: closely spaced gypsum fabric	
	10			R-1	Push				@ 10' - SILT and Lean CLAY: light gray overall, iron oxide, gypsum crystals	
				G-2					@ 11.5' - Rupture Surface Subhorizontal, sample of G-2 of clay with SILT, organics, moist, soft. Surface is clean but anastomosed, overlies material similar to above	
220										
	15									
215									@ 19' - sheared fabric with small offset	
	20		GB: N28W 30S	R-2	Push				@ 20' - CLAY: light gray, slightly moist, some iron oxide and gypsum, medium to low plasticity	
210									@ 22' - Qls material, chaotic, gray mixed with tan, iron oxide, gypsum, pockets of fine sand	
	25		N40E 29NW & N60E 26NW						@ 24' - rupture surface, oxidized high plasticity gray clay with fine white sand pinched along surface, 5" thick zone of 1/2" thick sand lenses, dense with iron oxide. Becomes dark gray below, unoxidized	
205			RS: N50W 7W	G-3					@ 28' - light gray CLAY 1/2" thick planar, some siltstone	

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE
G	GRAB SAMPLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Last Edited: 8/11/2022

Geotechnical Bucket Auger Log B-1

Date : 7/27/2022 Page 3 of 3 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" | **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 233' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
168	60			R-6	7	91.0	29.1	ML	@ 60' - SILTSTONE: dark gray, hard to very hard, wet, vague concreted zones with tight, short, sub planar, faint slicken lines, lacks clay. Decrease moisture to very moist.	
	65								During drilling, buckets are not saturated after 65ft	
163										
	70								@ 68' - Concretion, approximately 1 foot thick, lacks clay above and below. Standing water at bottom may be from seepage above	
158									**Total Depth = 71' (Practical Refusal)** **Groundwater Encountered @41ft and @69ft** **Backfilled & Tamped with native soil and bentonite layers on 7/28/2022**	
	75									
153										
	80									
148										
	85									
143										

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE
G	GRAB SAMPLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-2

Date : 7/28/2022 Page 1 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 275' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
272	0								**@ 0' to 84' - <u>Quaternary Landslide (Qls)</u>** @ 0' - SILT: light gray, dry, loose Shift to SILT with lean CLAY, darker brownish gray, dry to slightly moist @ 0' to 3' - Sandy SILT: mottled light brown, dry to slightly moist, very stiff, some fine sand,(colluvial deposit)	
267	5									
262	10			R-1	1	104.3	7.9	ML	@ 10' - Sandy SILT: light brown, slightly moist, loose to medium stiff, some trace clay, fine sand @ 11' - Change in color to a lighter brown silt, undulatory contact, slightly moist	
257	15									
252	20		C: N40W, 26SW	R-2	Push	109.8	15.4	ML	@ 20' - Sandy SILT: reddish brown, very moist, medium stiff. Contact attitude, lighter brown, clay layer with darker brown clay below, planar	
247	25								@ 24' - 1ft thick layer of clay and silt, dark brown with numerous pods of soil in lighter brown below, some organics present, pulses of slopewash	

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

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CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Last Edited: 10/13/2022

Geotechnical Bucket Auger Log B-2

Date : 7/28/2022 Page 2 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 275' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30			R-3	Push				@ 30' - SILT with CLAY: some gray and black mottled Qls, very light, brownish gray overall	DS
242										
	35								@ 35' - Chaotic silt and clay, tan to gray overall with small patches of oxidation, very light brown, near vertical pond deposit laminations of fine sand	
237			RS: Subhorizontal						@ 38' - Subhorizontal clay bed (1/2" thick) non-continuous, possible internal rupture surface	
	40			R-4	3	103.6	21.6	CL	@ 40' - CLAY: light olive brown, mottled, very stiff, very moist, mixed iron oxide and some magnesium oxide	
232										
	45		CB: N75W, 38S						@ 44' - Clay Bed attitude, strands of gray plastic CLAY, very moist, remnant bedrock structure, very faint	
227			RS: Subhorizontal						@ 47' - Subhorizontal rupture surface, numerous similar features to 56'	
									@ 49' - Iron oxide band around hole	
	50			R-5	Push	96.8	26.0	CL	@ 50' - Sandy CLAY: olive brown with iron oxide, slightly stiff, wet	
222									@ 52' - Band of black CLAY around hole, mottled with gray CLAY, medium plasticity	
	55								@ 56' - Concretion and lens of black organic rich clay (1/4 of hole), below is gray mottled, silt and siltstone, extremely hammered/pulverized, stiff, very moist, abundant pods of iron oxide, calcium carbonate nodules, organic/carbon pods	
217										

LGC Geotechnical, Inc.

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SAMPLE TYPES:

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R	RING SAMPLE
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TEST TYPES:

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MD	MAXIMUM DENSITY
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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-2

Date : 7/28/2022 Page 3 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 275' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60			R-6	3	106.1	20.8	ML	@ 60' - SILT with Sand to Siltstone: olive yellow, wet, stiff, mottled white mineralization	
212										
	65									
207									@ 68' - Minor seepage, small concretion	
	70			R-7	2	97.3	26.2	ML	@ 70' - Clayey SILT to SILTSTONE: olive with mottled iron oxide, wet, stiff	
202										
	75									
197									@ 77' - Pods of organic material aligned to the southwest at 55 degrees	
	80		C: N24E, 24NW	R-8	4	92.7	30.1	ML	@ 80' - Contact attitude, material changes to Clayey SILT: olive brown mottled with iron oxide transitioning to a darker gray, wet, stiff	
192										
	85		RS: N35E, 42SE	G-1 G-2					@ 84' - Rupture Surface, CLAY, 1/2" thick dark gray, soft, moist, polished base, grab sample taken.	AL
187									**@ 84' to T.D. - <u>Tertiary Capistrano Formation (Tc)</u>** Siltstone to fine Sandy SILTSTONE, dark gray, very stiff to hard, very moist to wet	

LGC Geotechnical, Inc.

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SAMPLE TYPES:

B	BULK SAMPLE
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CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-2

Date : 7/28/2022 Page 4 of 4

Drilling Company : Roy Brothers

Project Name : Compass BESS - San Juan Capistrano

Type of Rig : EZ Bore

Project Number : 22011-01

Drop : 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 275' MSL

Drive Weight : 0' - 25' = 4900 lbs. 50' - 75' = 2200 lbs.
25' - 50' = 3400 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90		Sh: 30E, 55SE	R-9	11	90.3	26.0	ML	@ 90' - Sandy SILTSTONE: dark grayish brown, wet, hard, Shear attitude, very faint fabric of tight paper thin Tectonic Shear	
182										
	95									
				R-10	12	87.7	28.8	ML	@ 97' - Sandy SILTSTONE: dark grayish brown, wet, hard	
177										
	100								**Total Depth = 98'** **Very Minor Seepage @68'** **Backfilled & Tamped with native soil and bentonite layers** **7/29/2022**	
172										
	105									
167										
	110									
162										
	115									
157										

LGC Geotechnical, Inc.

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SAMPLE TYPES:

B	BULK SAMPLE
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G	GRAB SAMPLE

TEST TYPES:

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CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-3

Date : 8/03/2022 Page 1 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 255' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0								**@ 0' to 67.5' - <u>Quaternary Landslide (Qls)</u>** @ 0 to 2' - Silt with some CLAY: Dry and loose at surface, light gray to light brown, topsoil and artificial fill @ 2' - Moderately gray brown, Fine Sandy SILT, dry, hard, mottled Silt and Clay, gypsum, iron oxide, very stiff, dry to slightly moist, light yellowish, brown and gray mottled, varied (pulses of material below)	
251	5									
246	10			R-1	1	102.6	20.2	CL	@ 10' - Sandy CLAY: olive yellow, mottled, some gypsum and iron oxide, very moist, medium stiff, light gray silt, some sand lenses, trace clay, iron oxide, some concretions, mottle Clay grades into Silt (Gray to light gray, iron oxide)	
241	15		Sh: N48W, 45W						@ 14' - Clay-lined Shear attitude(about 1/2" thick) and undulating, clay lined shear, light gray Siltstone (Qls) over Colluvium @ 17' - Fracture	
236	20		GB: N10W, 36W	R-2	1	101.7	15.3	ML	@ 20' - Sandy SILT: light olive yellow with mottled oxidation, very moist, medium stiff. Generalized Bedding Attitude, sand lense (few non continuous ext. fractured/offset sand lenses) iron oxide	
231	25		C: N40W, 38W						@ 25' - Contact attitude, organic silt layer	
226										

LGC Geotechnical, Inc.

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SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE
G	GRAB SAMPLE

TEST TYPES:

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MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Last Edited: 10/13/2022

Geotechnical Bucket Auger Log B-3

Date : 8/03/2022 Page 2 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 255' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		C: N38W, 25SW	R-3	2	107.1	19.0	CL	@ 30' - Sandy CLAY: olive gray mottled, some gypsum and iron oxide, very moist, low plasticity. Contact attitude, undulating clay band, possible rupture surface	
221										
	35		RS: N38W, 30SW	G-1					@ 36' - Rupture Surface attitude, undulatory clay band, approximately 2" to 3" thick dark brown, soft, moist, rupture zone. Grab sample taken.	
216										
	40			R-4	1				@ 40' - Lean CLAY: mottled gray, some iron oxide, slightly moist. Concretions and gypsum, overlies light gray, clayey Siltstone, stiff, very moist, iron oxide and gypsum pods (lacks open fractures)	DS
211										
	45								@ 47' - Top of zone of layered slopewash with organic-rich layers alternating light gray and dark gray with greenish brown zones of small sand pods, abundant gypsum pods, jarosite, well indurated	
206										
	50			R-5	4	100.3	24.0	ML	@ 50' - Sandy SILT: olive gray overall with some light gray mottling, wet, stiff, some gypsum	
201										
	55								@ 55' - SILT and CLAY: chaotic, light and dark gray, gypsum, some iron oxide	
196										

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
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CR	CORROSION
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CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-3

Date : 8/03/2022 Page 3 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 255' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60			R-6	1	104.2	20.2	CL	@ 60' - Sandy CLAY: olive gray mottled, very moist, low plasticity, flecks of gypsum in a band	
									@ 62' - Flecks of gypsum in a band, about 4-inches wide	
191										
	65								@ 65' - Base of slopewash layers	
			RS: N25W, 6SW	G-2					@ 67.5' - Rupture surface attitude, planar, continuous, 1/2" clay dark gray, soft, moist, and plastic, grab sample taken	AL
186									**@ 67.5' to T.D. Tertiary Capistrano Formation (Tc)**	
	70			R-7	13	92.8	28.1	CL/ML	@ 70' - Clayey SILTSTONE: dark olive gray, wet, slightly hard to hard	DS
181										
	75									
176										
	80			R-8	20	94.5	23.8	ML	@ 80' - SILTSTONE: grayish brown, very moist, hard to very hard	
171										
	85									
									@ 87' - Trace fossils, fine sand - filled burrows	
166										

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-3

Date : 8/03/2022 Page 4 of 4	**Drilling Company :** Roy Brothers
Project Name : Compass BESS - San Juan Capistrano	**Type of Rig :** EZ Bore
Project Number : 22011-01	**Drop :** 12" **Hole Diameter :** 24"
Elevation of Top of Hole : ~ 255' MSL	**Drive Weight :** 0' - 25' = 4900 lbs. 50' - 75' = 2200 lbs. 25' - 50' = 3400 lbs. 75' - 100' = 1200 lbs.
Hole Location : See Geotechnical Map	

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90			R-9	20	91.5	22.6	ML	@ 90' - Sandy SILTSTONE: dark grayish brown, wet, hard to very hard	
161										
	95								Trace fossils, sand-lined burrows	
				R-10	20	89.9	26.9	ML	@ 97' - SILTSTONE: dark grayish brown, wet, hard to very hard	
156										
	100								**Total Depth = 98'** **No Ground Water Encountered** **Backfilled & Tamped with native soil and bentonite layers on 8/1/2022**	
151										
	105									
146										
	110									
141										
	115									
136										

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE
G	GRAB SAMPLE

TEST TYPES:

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CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-4

Date : 8/02/2022 Page 1 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 256' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0								**@ 0' to 55.5' - <u>Quaternary Landslide (Qls)</u>**	
253									@ 0' to 2' - Silty CLAY topsoil, brown, dry	
									@ 2' to 4' - Dark Brown SILT with trace of fine sand: slightly moist, very stiff, colluvium, pods, rootlets	
	5								@ 4' - Silt and Clay, light gray, mottled, iron oxide, gypsum pods over topsoil layer	
248									@ 7' - Remmant block, pulverized Siltstone, Silty SAND, moist, stiff, fine grained	
	10			R-1	1	95.3	20.9	ML	@ 10' - SILT: light yellowish brown mottled, wet, stiff, some iron oxide	
243									@ 12' - Abundant gypsum crystals and stringers, iron oxide/powder, increase in clay, increase in moisture	
	15		Sh: N45E, 27W to 60E						@ 15' - Internal rupture, shear attitude	
									@ 17' - Shear exits boring	
238										
	20			R-2	Push				@ 20' - SILT: mottled gray with iron oxide, some gypsum, slightly moist, medium stiff	DS
									@ 21' - Zone of medium to high plasticity CLAY, abundant oxidation. Continues to 24'	
233										
			SH: N60E, 30NW	G-1					@ 24' - Shear attitude, gray plastic clay 1-inch thick, oxidation stains, heavy oxidation. Grab sample taken	AL
	25								@ 25' - Grades into clay rich matrix	
228									@ 28' - Oxidized vertical feature, 1-2" wide iron oxide-lined fracture filled with clay and sand	

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE
G	GRAB SAMPLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Last Edited: 10/13/2022

Geotechnical Bucket Auger Log B-4

Date : 8/02/2022 Page 2 of 4 | **Drilling Company :** Roy Brothers

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 256' MSL | **Drive Weight :** 0' - 25' = 4900 lbs. 25' - 50' = 3400 lbs. 50' - 75' = 2200 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30			R-3	Push	93.2	29.0	ML	@ 30' - SILT with Sand: grayish brown with heavy oxidation staining, wet, medium stiff, mixed with dark gray, well indurated, shattered appearance	
223										
	35								@ 36' - Decayed organics, charcoal	
									@ 37' - Minor seep, concretions, fossil bone with oxidation halo	
218										
	40			R-4	Push	91.2	30.3	CL	@ 40' - Silty CLAY: grayish brown, wet, low plasticity	
213			Sh: N35E, 54NW						@ 43' - Shear attitude within slide, highly sheared CLAY and SILTSTONE blocks, slightly stiff to stiff, very moist	
	45									
208										
	50			R-5	4	97.3	25.3	CL	@ 50' - Silty CLAY: dark grayish brown, wet, medium stiff to stiff, charcoal/decayed wood, some tan mottle	
203										
			GB: N20E, 10W						@ 54' - General bedding attitude, thin, light brown concretion lenses. Grab sample taken	
	55		RS: N52E, 7SE	G-2					@ 55.5' - Rupture Surface attitude, 4" zone of anastomosing clay over rupture surface, indulating subhorizontal (clay seem 1/8" thick), polished olive brown, base, planar	AL
198									**@ 55.5' to T.D. - <u>Tertiary Capistrano Formation (Tc)</u>** SILTSTONE: dark gray siltstone, moist, hard, massive	
									@57' - concretion up to 1ft thick, fractured	

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

B	BULK SAMPLE
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G	GRAB SAMPLE

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AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-4

Date : 8/02/2022 Page 3 of 4

Drilling Company : Roy Brothers

Project Name : Compass BESS - San Juan Capistrano

Type of Rig : EZ Bore

Project Number : 22011-01

Drop : 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 256' MSL

Drive Weight : 0' - 25' = 4900 lbs. 50' - 75' = 2200 lbs.
25' - 50' = 3400 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60			R-6	7	94.8	26.4	ML	@ 60' - SILT: grayish brown, wet, very stiff. Scattered small concretions (typical 1-3" in diameter) to 75' depth	
193			GB/CB: N20W, 2W						@ 63' - Generalized Bedding/Clay Bed attitude, ultra thin blue-gray CLAY: some signs of minor shearing, massive below	
	65									
188										
	70			R-7	10				@ 70' - SILTSTONE: gray, slightly moist, slightly hard	
183										
	75									
178										
	80			R-8	18	95.5	24.8	ML	@ 80' - Sandy SILTSTONE: grayish brown, wet, slightly hard to hard	
173									@ 82' - Trace fossils, fine sand burrows, subhorizontal	
	85									
168									@ 87' - Concretions, light gray/buff color fine SAND cemented with diffuse edges and irregular shapes	

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

SAMPLE TYPES:

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CR	CORROSION
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CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-4

Date : 8/02/2022 Page 4 of 4

Drilling Company : Roy Brothers

Project Name : Compass BESS - San Juan Capistrano

Type of Rig : EZ Bore

Project Number : 22011-01

Drop : 12" **Hole Diameter :** 24"

Elevation of Top of Hole : ~ 256' MSL

Drive Weight : 0' - 25' = 4900 lbs. 50' - 75' = 2200 lbs.
25' - 50' = 3400 lbs. 75' - 100' = 1200 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90			R-9	20	91.2	27.7	ML	@ 90' - SILTSTONE: dark gray, wet, very stiff, hard	
163										
	95								@ 94' - End visual log	
				R-10	20	96.2	25.3	ML	@ 97' - SILTSTONE: dark gray, wet, hard	
158										
	100								**Total Depth = 97'** **No Ground Water Encountered** **Backfilled & Tamped with native soil and bentonite layers on 8/3/2022**	
153										
	105									
148										
	110									
143										
	115									
138										

LGC Geotechnical, Inc.

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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-5

Date : 8/17/2023 Page 1 of 4 | **Drilling Company :** Daves Drilling

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 36"

Elevation of Top of Hole : ~ 237' MSL | **Drive Weight :** 0' - 27' = 4500 lbs. 27' - 52' = 3500 lbs. 52' - 74' = 2500 lbs. 74' - 103' = 1000 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0								**@ 0 to 49' - <u>Quaternary Landslide (Qls)</u>**	MD DS
									@ 0' - SILT: light brown, dry, disturbed area from pad creation	
									@ 1.5 to 27.5' - Slope Wash/Colluvium	
234				B-1					@ 1.5' - Clayey SILT: grayish brown, gypsum stringers, slope wash/colluvium	
	5									
229										
	10			R-1	3/12"	108.5	14.2	CL/ML	@ 10' - SILT: dark brown, slightly moist, trace clay	
									@ 12' - Color Shift to lighter brown, some angular clasts, ½" concretion fragments, some slope wash, evidence of debris flows, caliche/weathered in place	
224										
	15								@ 16' - 5" concretion, rodent bones, clay mottling, sand lenses, iron oxide	
219									@ 18' - Banding, debris flow pulses	
									@ 19' - banding	
	20			R-2	1	101.9	22.7	CL	@ 20' - Clayey SILT: light brown to brownish gray overall with some white and tan mottle, slightly moist, some 1" concretions	
214										
	25								@ 25' - gypsum stringers persist, along with 1" concretions	
									@ 27.5' to 70' - disturbed capistrano formation block	
209									@ 27.5' to 29' - highly indurated caliche zone, altered clay	
									@ 29' - Shift to olive gray, moist silt, some sandy ½" fragments, angular & oxidized	

LGC Geotechnical, Inc.

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Last Edited: 8/21/2023

Geotechnical Bucket Auger Log B-5

Date : 8/17/2023 Page 2 of 4 | **Drilling Company :** Daves Drilling

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 36"

Elevation of Top of Hole : ~ 237' MSL | **Drive Weight :** 0' - 27' = 4500 lbs. 27' - 52' = 3500 lbs. 52' - 74' = 2500 lbs. 74' - 103' = 1000 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30			R-3	1	97.1	27.1	CL	@ 30' - Clay: Olive gray, moist, iron oxide	DS
204			Sh: N20W, 66NE						@ 33' - Attitude on steep shear plane, seepage coming out of plane within olive gray moist silt, MnO, Gypsum, minor iron oxide	
	35								@ 36' - Seepage from multiple fractures, area is heavily fractured, active belling	
199									@ 39' - Chaotic, gypsum crystals, increase in iron oxide, fractures and seepage	
	40			R-4	2	96.2	26.8		@ 40' - Silt with some clay: slightly moist, iron oxide, gypsum	
194										
	45		B?: N55W 56S						@ 45' - Manganese oxide band	
189									**@ 49' to 70' - <u>Quaternary Older Landslide (Qols)</u>**	
			RS: N40W 26N	G-1				CH	@ 49' - Rupture surface, very clear slickenlines, $\frac{1}{8}$" thick, dark gray clay, moist, soft, grab sample taken	AL
	50			R-5	1	91.3	31.4	CL	@ 50' - Siltstone: dark gray, slightly moist, some mottle, manganese oxide, iron oxide and gypsum	
184										
	55									
179									@ 58' - Clayey Silt: dark gray, manganese oxide, gypsum crystals, traces of iron oxide, less abundant than above	

LGC Geotechnical, Inc.

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-5

Date : 8/17/2023 Page 3 of 4 | **Drilling Company :** Daves Drilling

Project Name : Compass BESS - San Juan Capistrano | **Type of Rig :** EZ Bore

Project Number : 22011-01 | **Drop :** 12" **Hole Diameter :** 36"

Elevation of Top of Hole : ~ 237' MSL | **Drive Weight :** 0' - 27' = 4500 lbs. 27' - 52' = 3500 lbs. 52' - 74' = 2500 lbs. 74' - 103' = 1000 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60			R-6	4	88.6	31.9	CL	@ 60' - Siltstone: dark gray, very moist, some darker gray mottle @ 61' - Clayey Silt: concretions	
174										
	65								@ 63' to 70' - Silt and disturbed siltstone, with abundant mottled clay, gray overall	
169										
	70		Sh/RS: N20E 46E	R-7	8	94.8	28.3		**@ 70' to T.D. - <u>Tertiary Capistrano Formation (Tc)</u>** @ 70' - Siltstone: dark gray, very stiff to hard, moist @ 70' to 72' - Sharp material change along a possible rupture surface/shear plane, transitions from lighter gray mottled clayey silt to unoxidized dark gray siltstone @ 72' - End visual log due to safety concerns (caving around 36')	DS
164										
	75									
159										
	80			R-8	12/10"	91.9	29.0	ML	@ 80' - Siltstone, dark gray, very moist	
154										
	85									
149										

LGC Geotechnical, Inc.

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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Bucket Auger Log B-5

Date : 8/17/2023 Page 4 of 4

Drilling Company : Daves Drilling

Project Name : Compass BESS - San Juan Capistrano

Type of Rig : EZ Bore

Project Number : 22011-01

Drop : 12" **Hole Diameter :** 36"

Elevation of Top of Hole : ~ 237' MSL

Drive Weight : 0' - 27' = 4500 lbs. 52' - 74' = 2500 lbs.
27' - 52' = 3500 lbs. 74' - 103' = 1000 lbs.

Hole Location : See Geotechnical Map

Logged by MJG/KTM

Sampled by MJG/KTM

Elevation (ft)	Depth (ft)	Graphic Log	Attitudes	Sample Number	Blow Count	Dry Density(pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90			R-9	15/10"	89.2	30.2	ML	@ 90' - Siltstone: dark gray, very moist	
144										
	95									
139										
	100			R-10	20/10"	88.1	31.8		@ 100' - Siltstone: dark gray, very moist, hard	

Total Depth = 101'
Perched Groundwater Encountered @36ft
Backfilled & Tamped with native soil and bentonite layers on 8/17/2023

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

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AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE

Geotechnical Boring Log Borehole HS-1

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By BTZ

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						**Quaternary Alluvium (Qal):** @0'- Top soil with Vegetation	EI CR
205			R-1	10 11 12	99.0	7.2	ML	@2.5' - Sandy SILT: grayish brown, slightly moist, very stiff, scattered organics/rootlets hairs	
	5		SPT-1	3 3 4		12.9	CH	@5' - CLAY: olive brown, moist, stiff	-#200/ AL
200			R-2	13 17 20	117.3	13.4	CL	@7.5' - CLAY: dark olive brown, moist, very stiff, caliche, present	AL CN
	10		SPT-2	4 5 6		18.6		**Quaternary Landslide Deposits (Qls):** @10' - CLAY with Sand: Dark gray, very moist, stiff, caliche stringers	-#200
195									
	15		R-3	6 8 11	103.5	18.3	CL	@15' - CLAY: olive gray, moist, stiff	DS
190									
	20		SPT-3	3 3 4		23.1	ML	@20' - SILT with caliche: olive brown, very moist, very stiff	-#200
185									
	25		R-4	4 6 9	100.5	23.3	CL	@25' - CLAY: olive brown, very moist, stiff, caliche stringers	AL CN
180									
	30								

LGC Geotechnical, Inc.

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SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 10/13/2022

Geotechnical Boring Log Borehole HS-1

Date: 7/29/2022	**Drilling Company:** 2R Drilling
Project Name: Compass BESS - SJC	**Type of Rig:** Truck Mounted
Project Number: 22011-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~208' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 2 of 4

Logged By RNP
Sampled By RNP
Checked By AA

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		SPT-4	2 3 4		27.7	ML	@30' - SILT: light grayish brown, wet, stiff, caliche stringers	
175									
	35		R-5	6 8 9	89.8	30.2		@35' - SILT: olive brown, wet, stiff, caliche stringers	AL
170									
	40	▽	SPT-5	2 2 3		32.2	CL	@40' - CLAY: grayish brown, wet, stiff, caliche stringers @41' - Groundwater encountered	
165									
	45		R-6	6 9 10	98.7	23.6		@45' - CLAY: dark brown, very moist, stiff, caliche stringers	
160									
	50		SPT-6	4 5 6		23.6		@50' - Sandy CLAY: light olive brown with orange hue, very moist, stiff, caliche stringers	
155									
	55		R-7	8 13 15	105.9	20.4		@55' - Sandy CLAY: olive gray with orange hue, very moist, very stiff	
150									
	60								

LGC Geotechnical, Inc.

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RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-1

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By AA

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		SPT-7	4 6 9		24.7	CL	@60' - Sandy CLAY: olive brown with dark orange staining, wet, very stiff, trace of caliche	
145									
	65		R-8	11 20 24	104.8	19.9		@65' - Sandy CLAY with mica: olive gray with light orange hue, very moist, hard	
140									
	70		SPT-8	5 8 10		22.0		@70' - CLAY: dark grayish brown with orange hue, very moist, very stiff, trace of caliche staining	
135								**Tertiary Capistrano Formation (Tc):**	
	75		R-9	35 50/5"	88.4	31.1	CL-ML	@75' - Silty CLAY: dark gray, wet, hard, foliated Bedrock	
130									
	80		SPT-9	13 20 25		29.4	ML	@80' - SILT: dark grayish brown, wet, hard, trace of caliche staining, foliated	
125									
	85		R-10	38 50/4"	89.0	30.4	CL-ML	@85' - Silty CLAY: dark olive brown, wet, hard, foliated, organic/carbon pods, staining of manganese oxide	
120									
	90								

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AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-1

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By AA

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90		SPT-10	15 22 27		28.1	CL	@90' - CLAY: dark grayish brown, wet, hard, organic/carbon pods, staining of manganese oxide	
115									
	95		R-11	37 50/5"	95.2	27.1	ML	@95' - SILT: dark grayish brown, wet, hard	
110									
	100		SPT-11	15 22 25		29.7		@100' - SILT: dark gray, wet, hard	
105								Total Depth = 101.5' Groundwater Encountered @ approximately 41ft Caving: Hole measured approximately 78 ft after removal of augers Backfilled with bentonite and cuttings 7/29/2022	
	105								
100									
	110								
95									
	115								
90									
	120								

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-2

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By BTZ

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0	B-1						**Quaternary Alluvium (Qal):** @0'- Top soil with Vegetation	EI CR
205			R-1	11 16 14	99.4	11.1	ML	@2.5' - Sandy SILT: grayish brown, moist, very stiff, scattered roots, trace of gravel	
	5		SPT-1	4 6 5		10.0	CL	@5.0' - Sandy CLAY: grayish brown, slightly moist, stiff	-#200/ AL
200			R-2	5 7 7	98.6	11.1	CL-ML	@7.5' - Silty CLAY: light olive brown, slightly moist, stiff	AL CN
	10		SPT-2	4 6 6		19.5	CL	**Quaternary Landslide Deposits (Qls):** @10' - Sandy CLAY: brown, very moist, stiff, caliche stringers	
195									
	15		R-3	6 8 8	99.4	19.6		@15' - CLAY: olive brown, very moist, stiff, caliche stringers	CN
190									
	20		SPT-3	3 5 6		24.2		@20' - CLAY with Sand: dark grayish brown, very moist, stiff, trace of caliche	-#200/
185									
	25		R-4	6 8 9	99.7	24.6		@25' - CLAY: olive gray with light orange mottled, very moist, stiff	DS
180									
	30								

LGC Geotechnical, Inc.

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SPT	STANDARD PENETRATION TEST SAMPLE
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MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 10/13/2022

Geotechnical Boring Log Borehole HS-2

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By BTZ

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		SPT-4	4 4 5		35.0	CL-ML	@30' - Silty CLAY: dark grayish brown, wet, stiff, caliche staining	
175									
	35	▽	R-5	6 9 10	83.0	38.0	CL	@35' - CLAY: grayish brown, wet, stiff, with trace sand @36' - Groundwater encountered	
170									
	40		SPT-5	5 8 10		41.5		@40' - CLAY: dark gray, wet, very stiff	
165									
	45		R-6	8 16 22	115.9	14.5	SC	**Quaternary Older Alluvium (Qalo):** @45' - Clayey SAND: olive brown, very moist, medium dense	
160									
	50		SPT-6	9 22 32		20.5	SP	@50' - SAND: grayish brown, wet, very dense	
155									
	55		R-7	33 50/5"	114.7	18.2	SP-SM	@55' - Sand with SILT with trace of fine gravel: yellowish gray, wet, very dense	
150									
	60								

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RV	R-VALUE
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Geotechnical Boring Log Borehole HS-2

Date: 7/29/2022 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - SJC | **Type of Rig:** Truck Mounted

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 8"

Elevation of Top of Hole: ~208' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By RNP
Sampled By RNP
Checked By BTZ

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		SPT-7	4 4 4		21.6	CL	@60' - Sandy CLAY: dark olive, very moist, stiff	
145									
	65		R-8	6 13 13	105.0	18.0	SP-SM	@65' - Fine SAND with Silt: olive gray, wet, medium dense	
140									
	70		SPT-8	6 7 17		23.5	SC	@70' - Clayey SAND: gray, wet, dense	
135									
	75		R-9	10 15 46	117.0	14.0	SP	@75' - SAND: olive brown, wet, dense	
130									
	80		SPT-9	4 8 17		15.3	SP	@80' - SAND: olive gray, wet, dense	
125									
	85		R-10	14 23 35	119.0	12.0	SP	@85' - SAND: light brown, very moist, dense	
120									
	90								

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Geotechnical Boring Log Borehole HS-2

Date: 7/29/2022	**Drilling Company:** 2R Drilling
Project Name: Compass BESS - SJC	**Type of Rig:** Truck Mounted
Project Number: 22011-01	**Drop:** 30" **Hole Diameter:** 8"
Elevation of Top of Hole: ~208' MSL	**Drive Weight:** 140 pounds
Hole Location: See Geotechnical Map	Page 4 of 4

Logged By RNP
Sampled By RNP
Checked By BTZ

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90		SPT-10	6 11 16		24.0	SM	@90' - Silty SAND with trace of gravel: grayish brown, wet, dense,	
115								Total Depth = 91.5' Groundwater Encountered @36ft Caving: Hole measured approximately 56 ft after removal of augers Backfilled with bentonite and cuttings on 7/29/2022	
	95								
110									
	100								
105									
	105								
100									
	110								
95									
	115								
90									
	120								

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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-3

Date: 8/15/23 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~210' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							**Quaternary Alluvium (Qal):**	EI
								@ 0' - Dry grass	CR
			R-1	3 5 4	98.4	7.2	SM	@ 2.5' - Silty SAND: brownish gray, slightly moist, loose	
205	5	B-1	R-2	3 5 11	92.1	13.1	CL	@ 5' - Sandy CLAY: grayish brown, moist, stiff	
			SPT-1	3 4 5		20.6		@ 7.5' - Sandy CLAY: grayish brown, very moist, stiff	
200	10		R-3	4 7 12	94.8	24.3	CH	@ 10' - Sandy FAT CLAY: dark grayish brown, very moist, very stiff	AL CN
195	15		SPT-2	2 4 5		31.5	CL	@ 15' - CLAY: dark brown, wet, stiff	
								Quaternary Landslide (Qls):	
190	20		R-4	2 4 9	96.2	28.4		@ 20' - CLAY: olive gray, wet, stiff	DS
185	25		SPT-3	3 4 5		24.7		@ 25' - CLAY with Sand: dark brown, very moist, stiff	-#200 AL
	30								

LGC Geotechnical, Inc.

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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 8/21/2023

Geotechnical Boring Log Borehole HS-3

Date: 8/15/23 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~210' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		R-5	3 5 6	91.0	30.9	CL	@ 30' - CLAY: olive gray, wet, stiff	DS
175	35		SPT-4	5 9 8		24.8	SC	@ 35' - Clayey SAND: olive brown, wet, medium dense	
170	40		R-6	3 4 7	92.8	30.5	CL	@ 40' - CLAY with Sand: grayish brown, wet, stiff	-#200 AL
165	45		SPT-5	3 3 3		20.2		@ 45' - Sandy CLAY: grayish brown, very moist, stiff	
160	50		R-7	8 12 16	81.0	39.4		@ 50' - CLAY: olive gray, wet, very stiff	DS
155	55								
	60								

LGC Geotechnical, Inc.

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SPT	STANDARD PENETRATION TEST SAMPLE
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CN	CONSOLIDATION
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CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-3

Date: 8/15/23 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~210' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		SPT-6	3 6 5		41.1	CL	@ 60' - CLAY: dark olive brown, wet, very stiff	
145	65								
								Tertiary Capistrano Formation (TC):	
140	70		R-8	14 50/6"	94.1	26.6		@ 70' - CLAY: dark grayish brown, wet, hard	
135	75								
130	80		SPT-7	10 14 22		33.9		@ 80' - CLAY: dark brown, wet, hard	
125	85								
	90								

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SPT	STANDARD PENETRATION TEST SAMPLE
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CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-3

Date: 8/15/23 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~210' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	90		R-9	41 50/4.5"	81.7	36.9	ML	@ 90' - SILT: dark grayish brown, wet, hard	
115	95								
110	100		SPT-8	5 14 20		27.5		@ 100' - CLAY: dark brown, wet, hard	
								Total Depth = 101.5' Groundwater Encountered @ Approximately 31' Backfilled with Bentonite and Cement Grout on 8/15/23	
105	105								
100	110								
95	115								
	120								

LGC Geotechnical, Inc.

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SPT	STANDARD PENETRATION TEST SAMPLE
	GROUNDWATER TABLE

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DS	DIRECT SHEAR
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EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-4

Date: 8/15/2023 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~213' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	0							**Quaternary Alluvium (Qal):**	EI
								@ 0' - Dry grass	CR
210			SPT-1	2 2 2		17.2	SC	@ 2.5' - Clayey SAND: grayish brown, wet, loose	
	5	B-1	R-1	2 5 9	91.2	25.7	CL	@ 5' - CLAY: grayish brown, wet, stiff	
205			SPT-2	2 4 4		16.8		@ 7.5' - Sandy CLAY: grayish brown, moist, stiff	
	10		R-2	4 10 14	101.0	21.4		@ 10' - CLAY: olive gray, very moist, very stiff	DS
200									
	15		SPT-3	3 5 5		28.1		@ 15' - Sandy Clay : dark brown, wet, stiff	
195									
	20		R-3	2 4 8	95.7	25.8		**Quaternary Landslide (Qls):** @ 20' - Sandy CLAY: brown, wet, stiff	AL CN
190									
	25		SPT-4	2 3 4		28.1		@ 25' - CLAY: grayish brown, wet, stiff	
185									
	30								

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SPT	STANDARD PENETRATION TEST SAMPLE
▽	GROUNDWATER TABLE

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CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Last Edited: 8/21/2023

Geotechnical Boring Log Borehole HS-4

Date: 8/15/2023 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~213' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	30		SPT-5	3 3 3		31.0	CL	@ 30' - CLAY: grayish brown, wet, stiff	-#200 AL
180									
	35	▽	R-4	3 6 6	80.7	41.1		@ 35' - CLAY: dark brown, wet, stiff	
175									
	40		SPT-6	3 4 4		27.2	SC	@ 40' - Clayey SAND: grayish brown, wet, medium dense	-#200
170									
	45		R-5	2 4 7	91.6	31.8	CL/SM	@ 45' - CLAY transitioning to Silty SAND: grayish brown, wet, stiff/loose	
165									
	50		SPT-7	2 3 4		23.4	SC	**Quaternary Older Alluvium (Qalo):** @ 50' - Clayey SAND: olive brown, wet, loose	-#200 AL
160									
	55								
155									
	60								

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MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-4

Date: 8/15/2023 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~213' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
	60		R-6	3 6 8	114.2	12.1	SC	@ 60' - Clayey SAND: grayish brown, very moist, medium dense	
150									
	65								
145									
	70		SPT-8	6 9 25		22.7	CL	@ 70' - Sandy CLAY: grayish brown, very moist, hard	
140									
	75								
135									
	80		R-7	12 14 16	109.4	19.6		@ 80' - Sandy CLAY: grayish brown, very moist, very stiff	
130									
	85								
125									
	90								

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
▽	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Geotechnical Boring Log Borehole HS-4

Date: 8/15/2023 | **Drilling Company:** 2R Drilling

Project Name: Compass BESS - San Juan Capistrano | **Type of Rig:** Truck Mounted Rig

Project Number: 22011-01 | **Drop:** 30" | **Hole Diameter:** 6"

Elevation of Top of Hole: ~213' MSL | **Drive Weight:** 140 pounds

Hole Location: See Geotechnical Map

Logged By JMN
Sampled By JMN
Checked By BTZ/KBC

Elevation (ft)	Depth (ft)	Graphic Log	Sample Number	Blow Count	Dry Density (pcf)	Moisture (%)	USCS Symbol	DESCRIPTION	Type of Test
120	90		SPT-9	2 3 5		29.7	CL	@ 90' - Sandy CLAY: olive brown, wet, stiff	
115	95								
110	100		R-8	10 10 11				@ 100' - No Recovery	
105	105							Total Depth = 101.5' Groundwater Encountered @ Approximately 35.5' Backfilled with Bentonite and Cement Grout on 8/15/2023	
100	110								
95	115								
	120								

LGC Geotechnical, Inc.

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED. THE DESCRIPTIONS PROVIDED ARE QUALITATIVE FIELD DESCRIPTIONS AND ARE NOT BASED ON QUANTITATIVE ENGINEERING ANALYSIS.

SAMPLE TYPES:

B	BULK SAMPLE
R	RING SAMPLE (CA Modified Sampler)
G	GRAB SAMPLE
SPT	STANDARD PENETRATION TEST SAMPLE
	GROUNDWATER TABLE

TEST TYPES:

DS	DIRECT SHEAR
MD	MAXIMUM DENSITY
SA	SIEVE ANALYSIS
S&H	SIEVE AND HYDROMETER
EI	EXPANSION INDEX
CN	CONSOLIDATION
CR	CORROSION
AL	ATTERBERG LIMITS
CO	COLLAPSE/SWELL
RV	R-VALUE
-#200	% PASSING # 200 SIEVE

Kehoe Testing and Engineering
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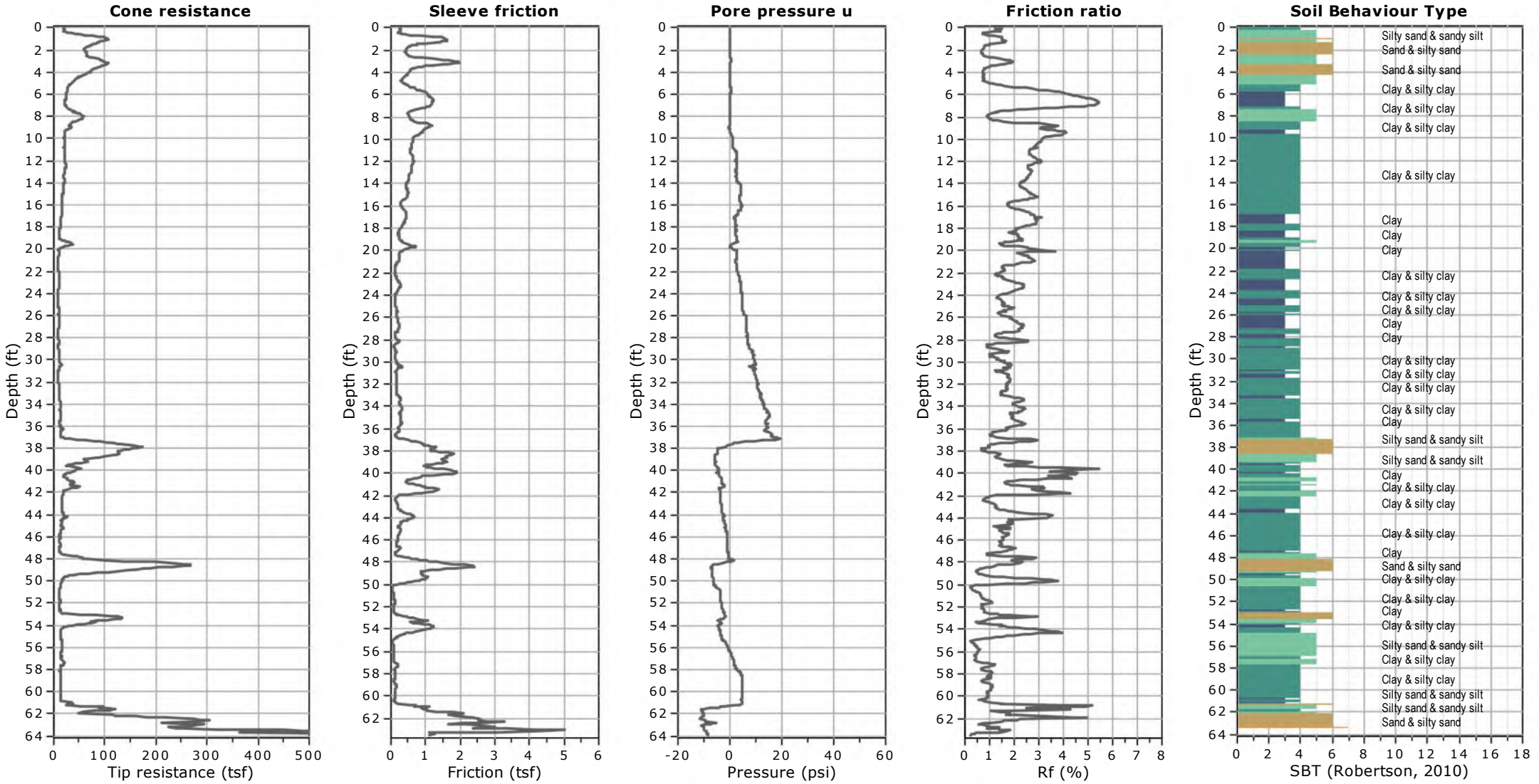
www.kehoetesting.com

Project: **LGC Geotechnical / Compass BESS**

CPT-1

Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

Total depth: 63.92 ft, Date: 7/28/2022



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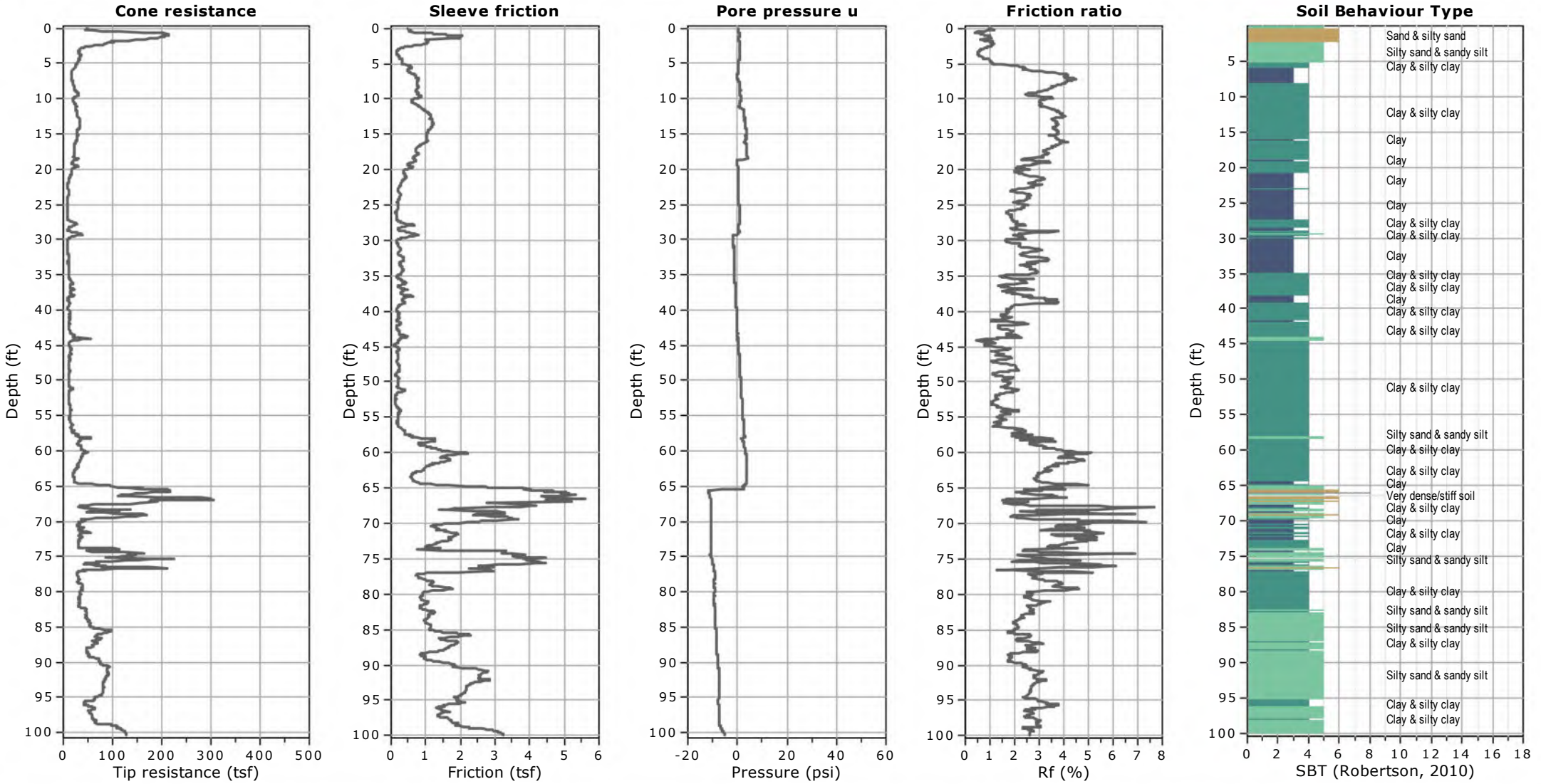
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-2
Total depth: 100.33 ft, Date: 7/28/2022



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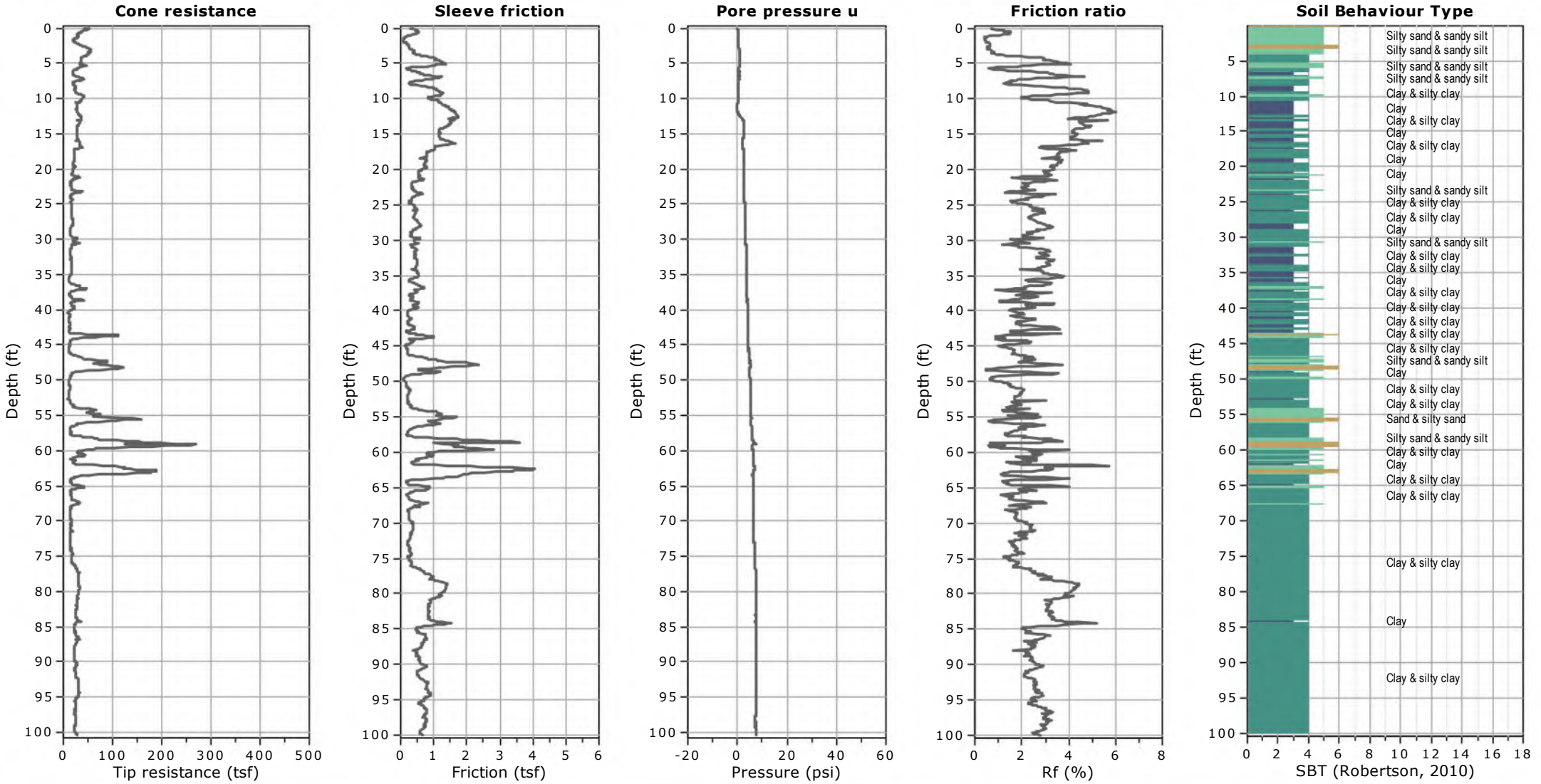
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-3
Total depth: 100.41 ft, Date: 7/28/2022



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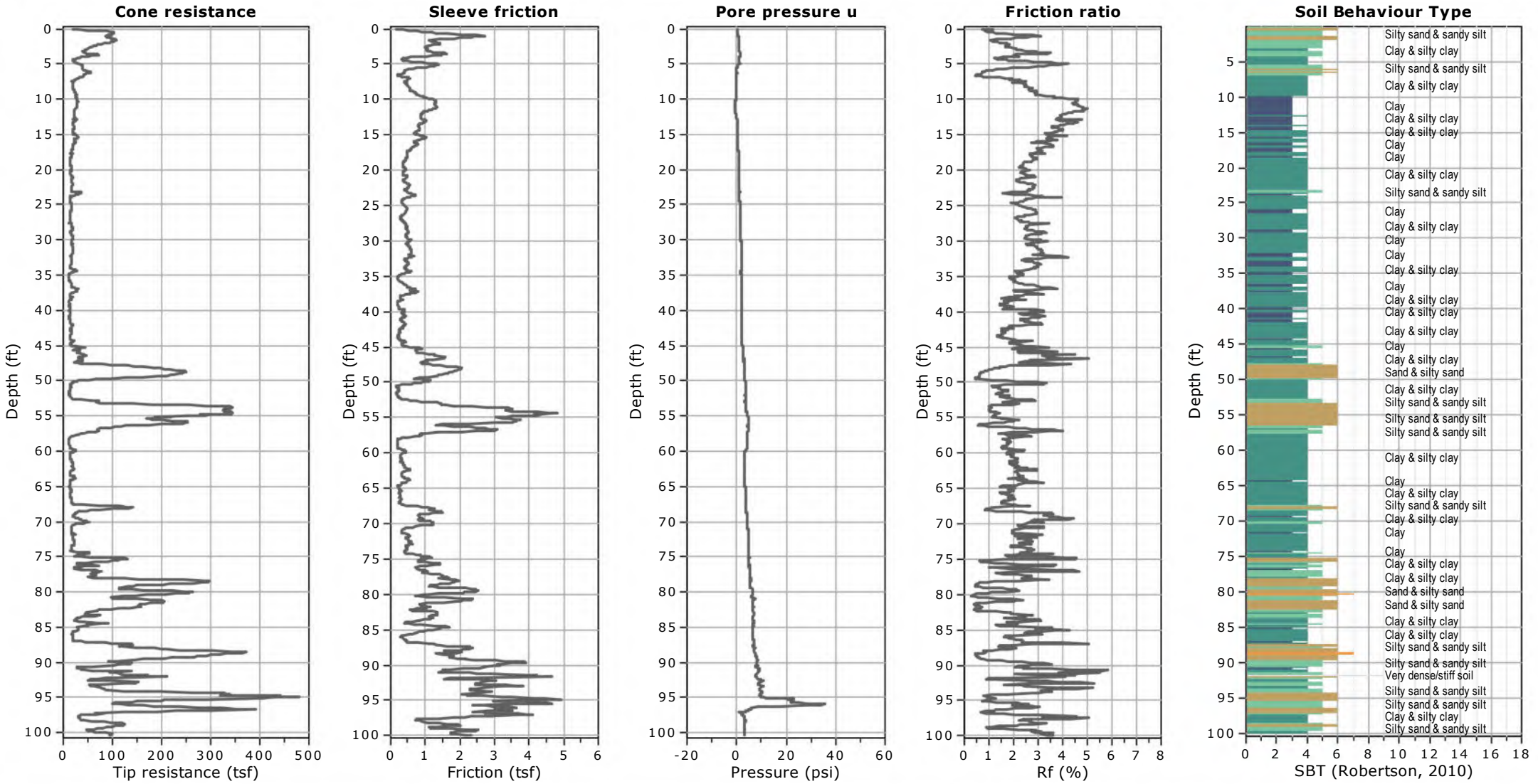
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-4
Total depth: 100.34 ft, Date: 7/28/2022



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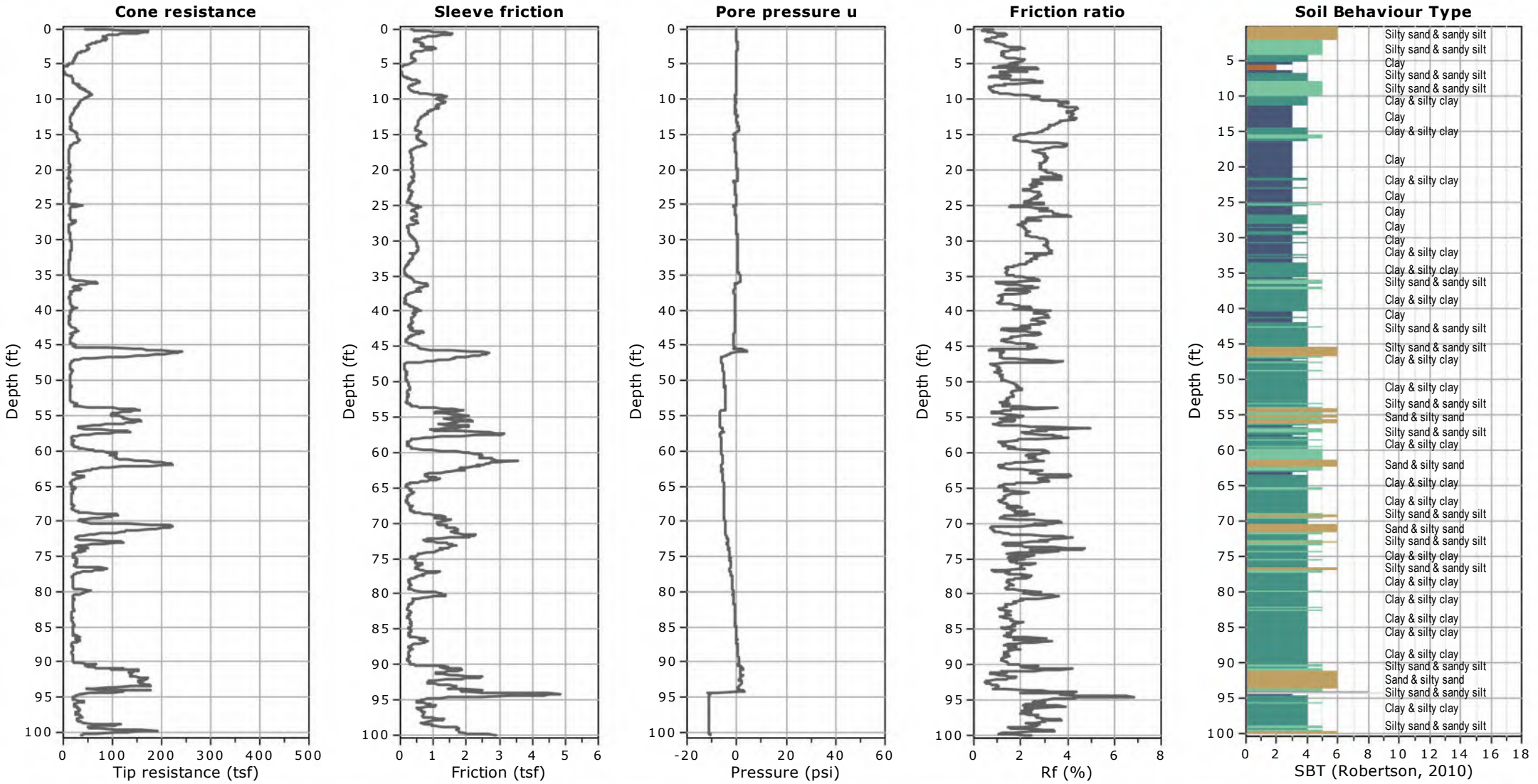
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-5
Total depth: 100.41 ft, Date: 7/28/2022



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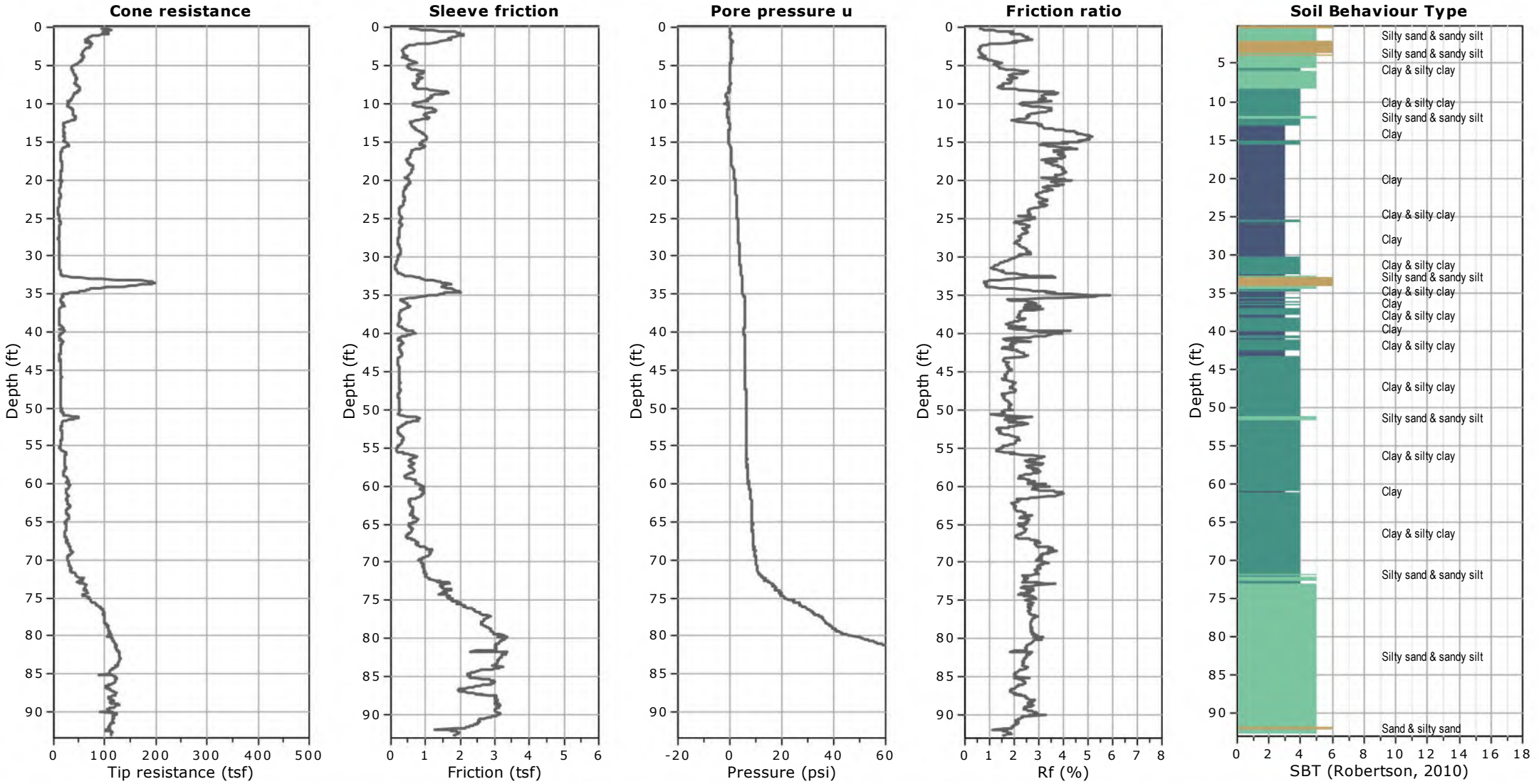
Project: LGC Geotechnical / Compass BESS
Location: 29351 Camino Capistrano, San Juan Capistrano, CA

CPT-6
Total depth: 93.05 ft, Date: 7/28/2022



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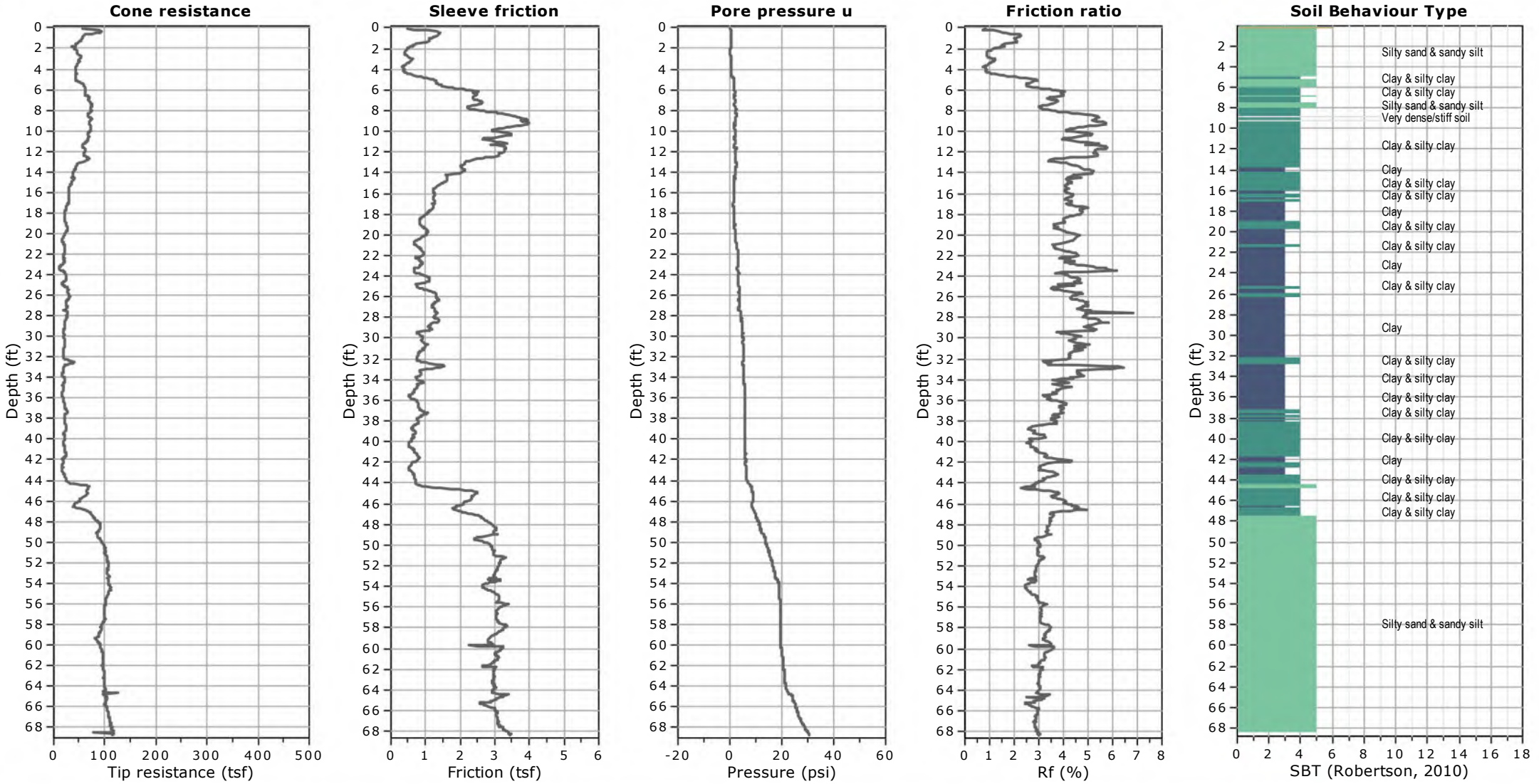
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-7
Total depth: 68.78 ft, Date: 7/28/2022



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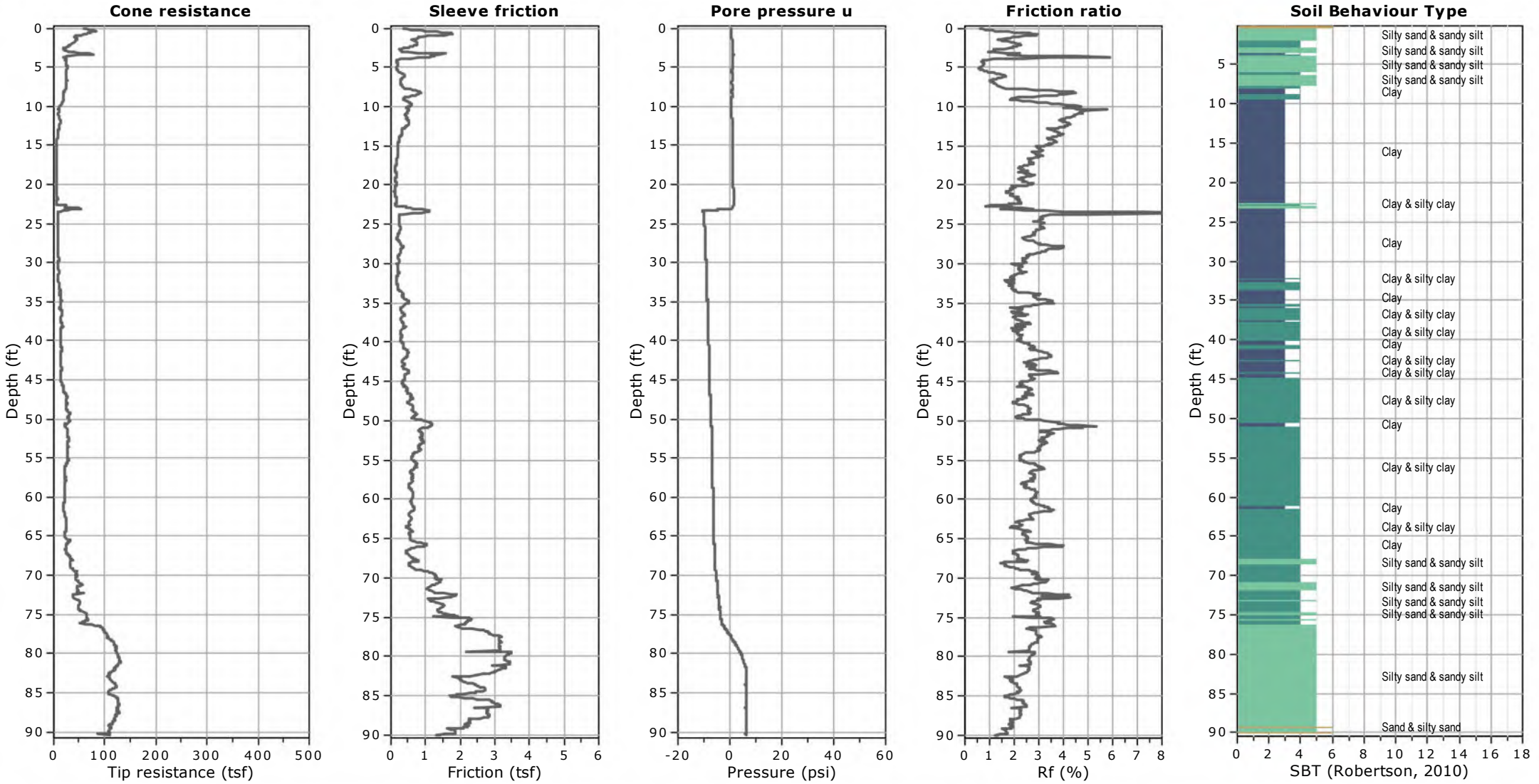
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-8
Total depth: 90.43 ft, Date: 7/28/2022



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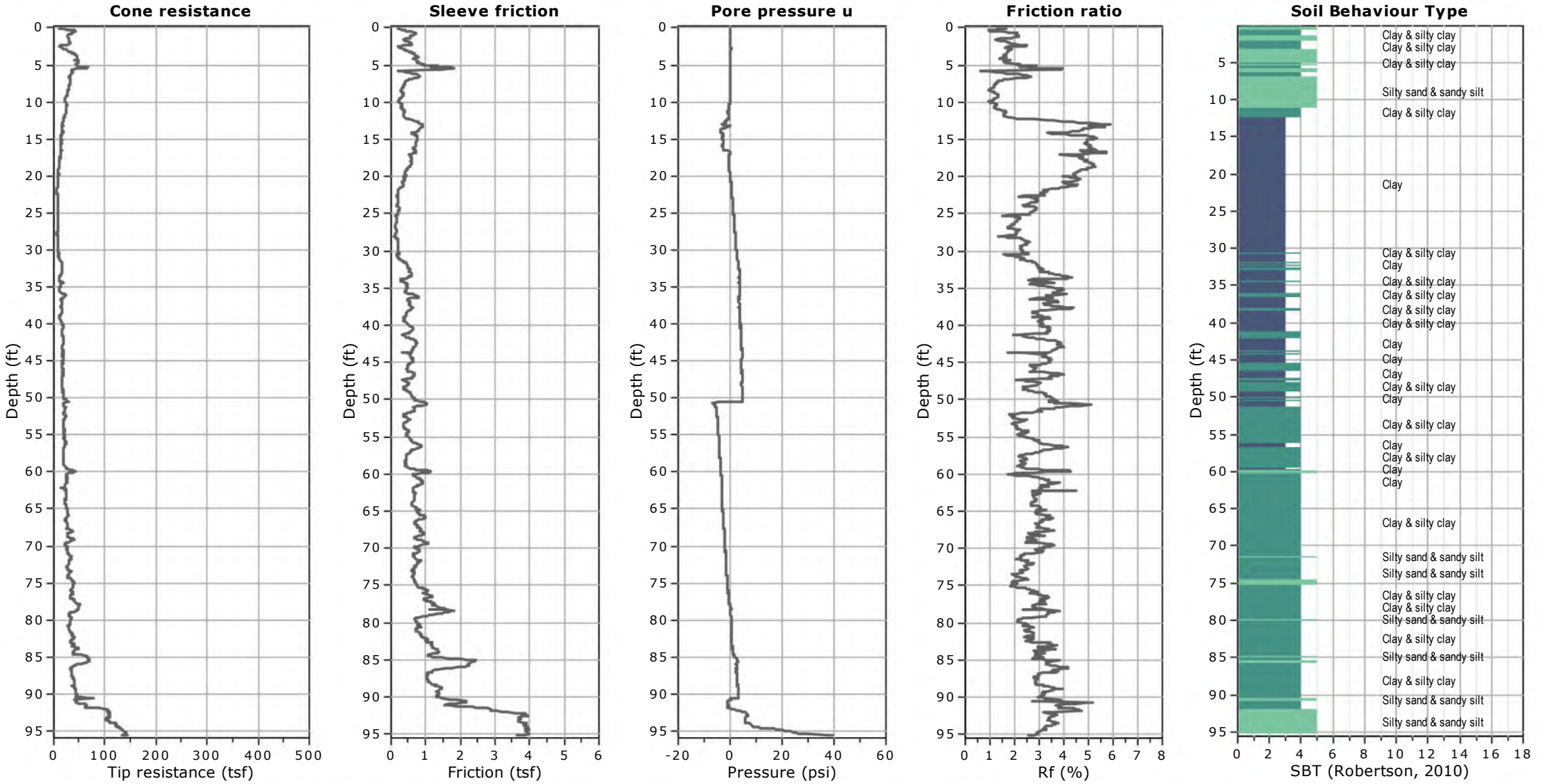
Project: **LGC Geotechnical / Compass BESS**
Location: **29351 Camino Capistrano, San Juan Capistrano, CA**

CPT-9
Total depth: 95.56 ft, Date: 7/28/2022



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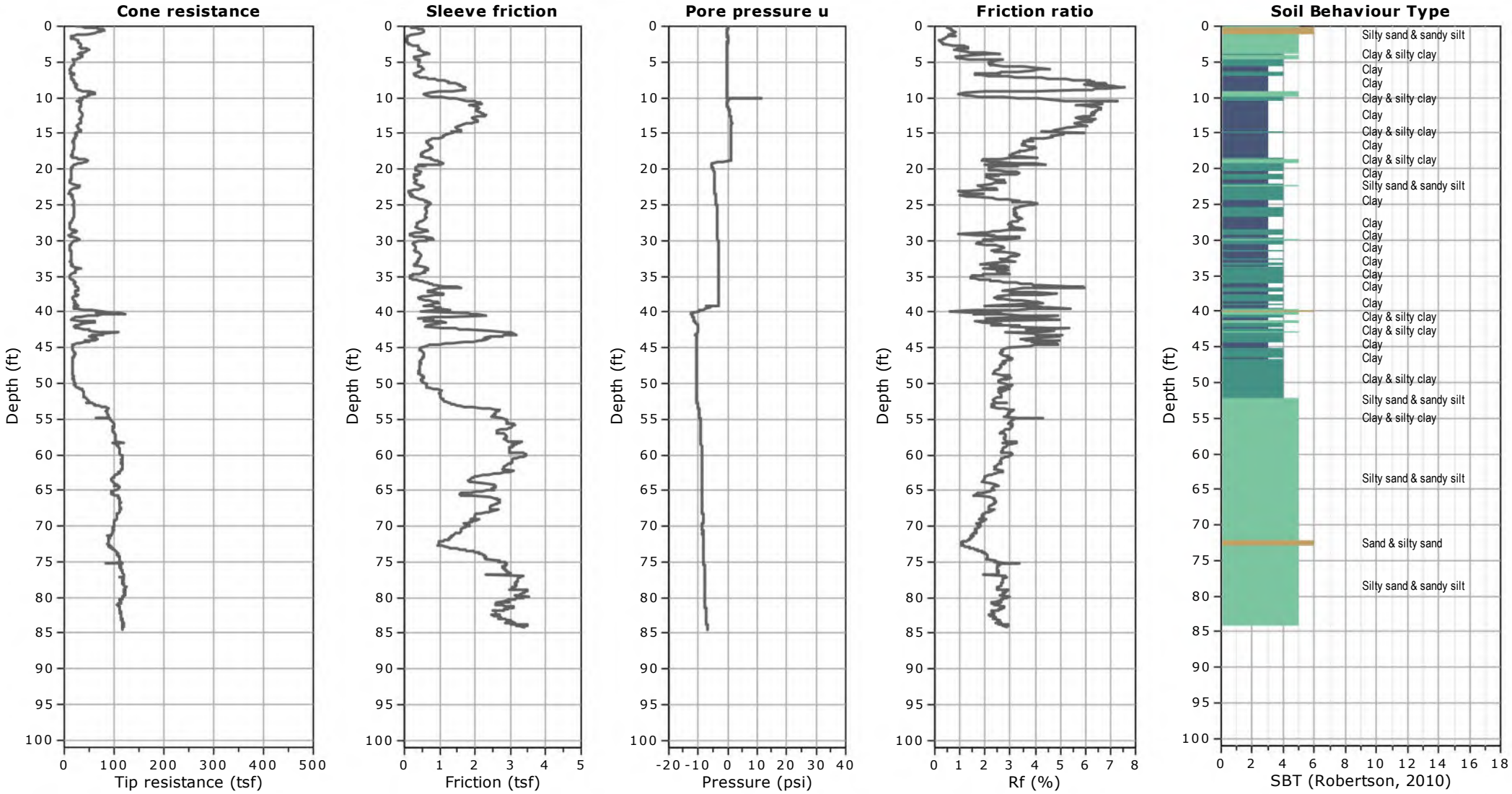
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-10
Total depth: 84.48 ft, Date: 8/17/2023



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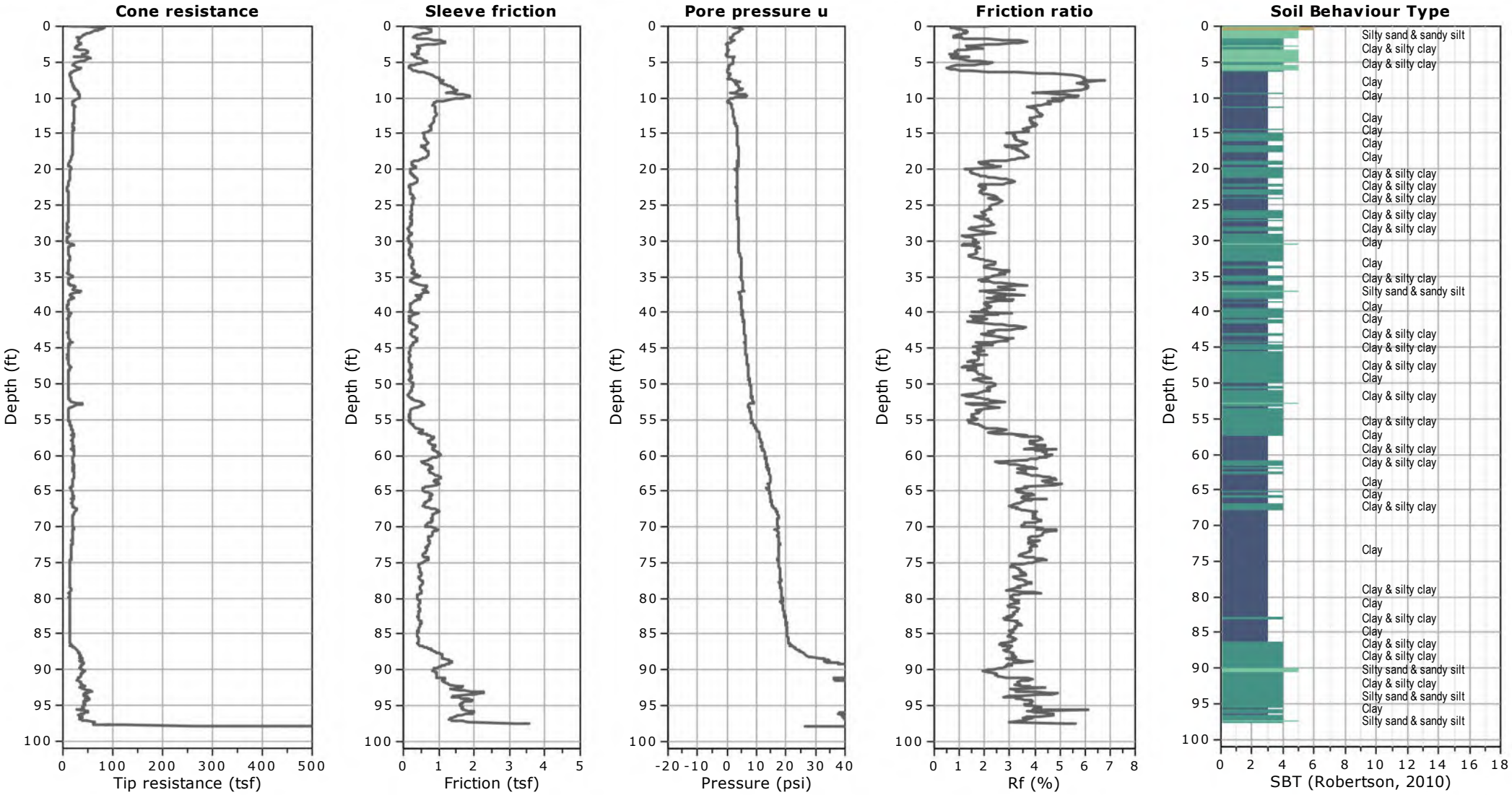
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-11
Total depth: 97.94 ft, Date: 8/17/2023



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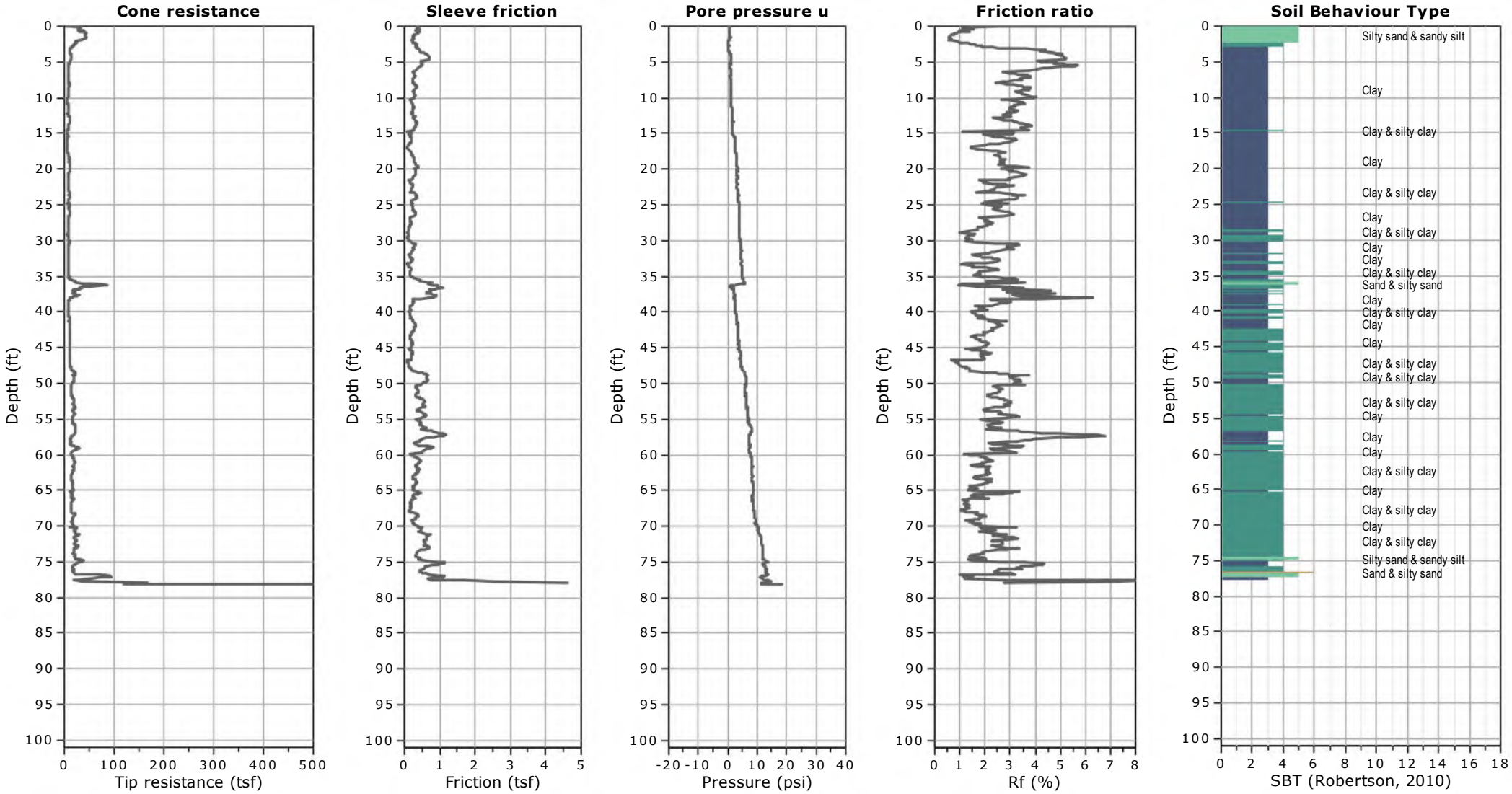
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-12
Total depth: 78.22 ft, Date: 8/17/2023



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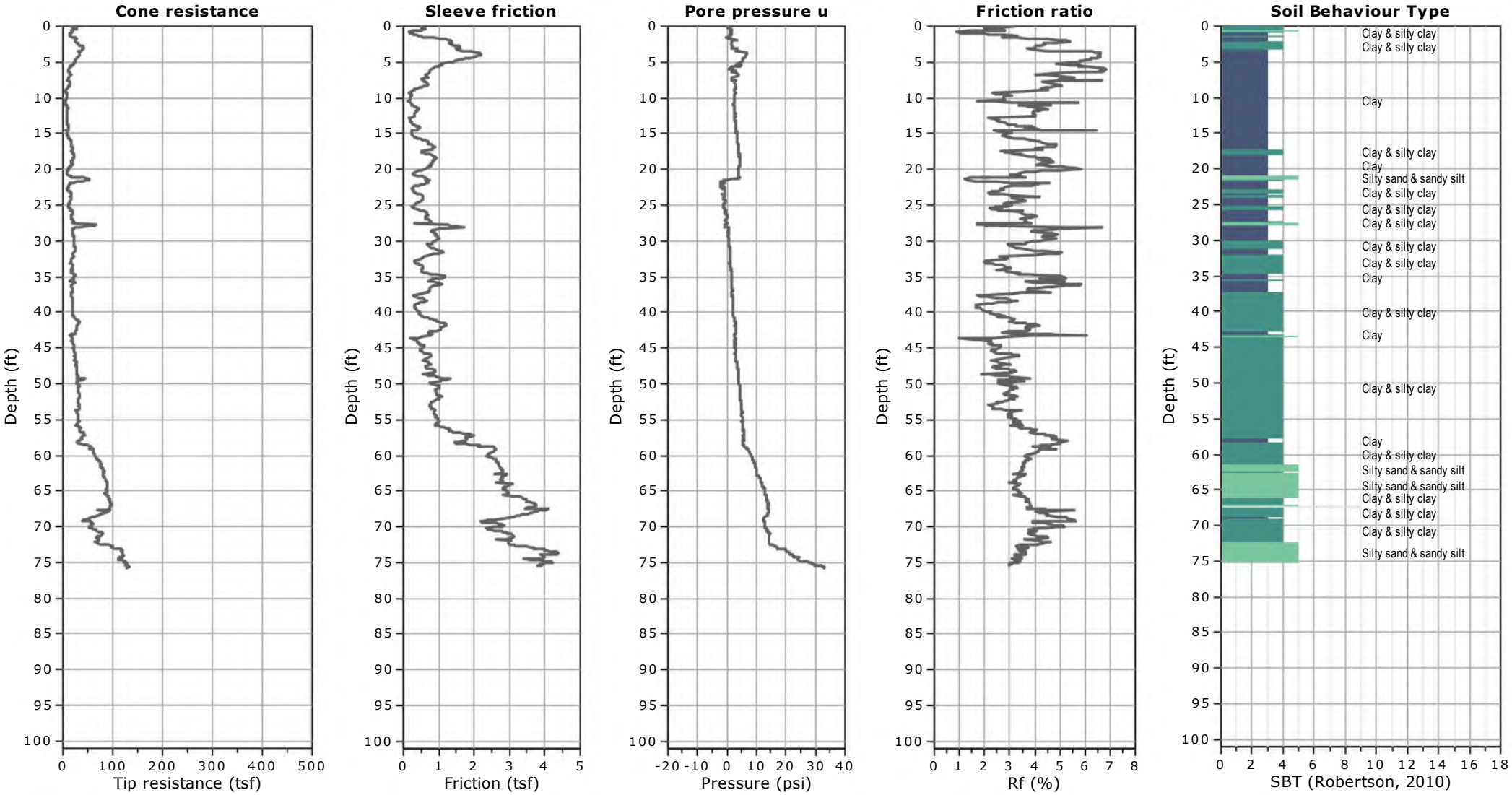
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-13
Total depth: 75.70 ft, Date: 8/17/2023



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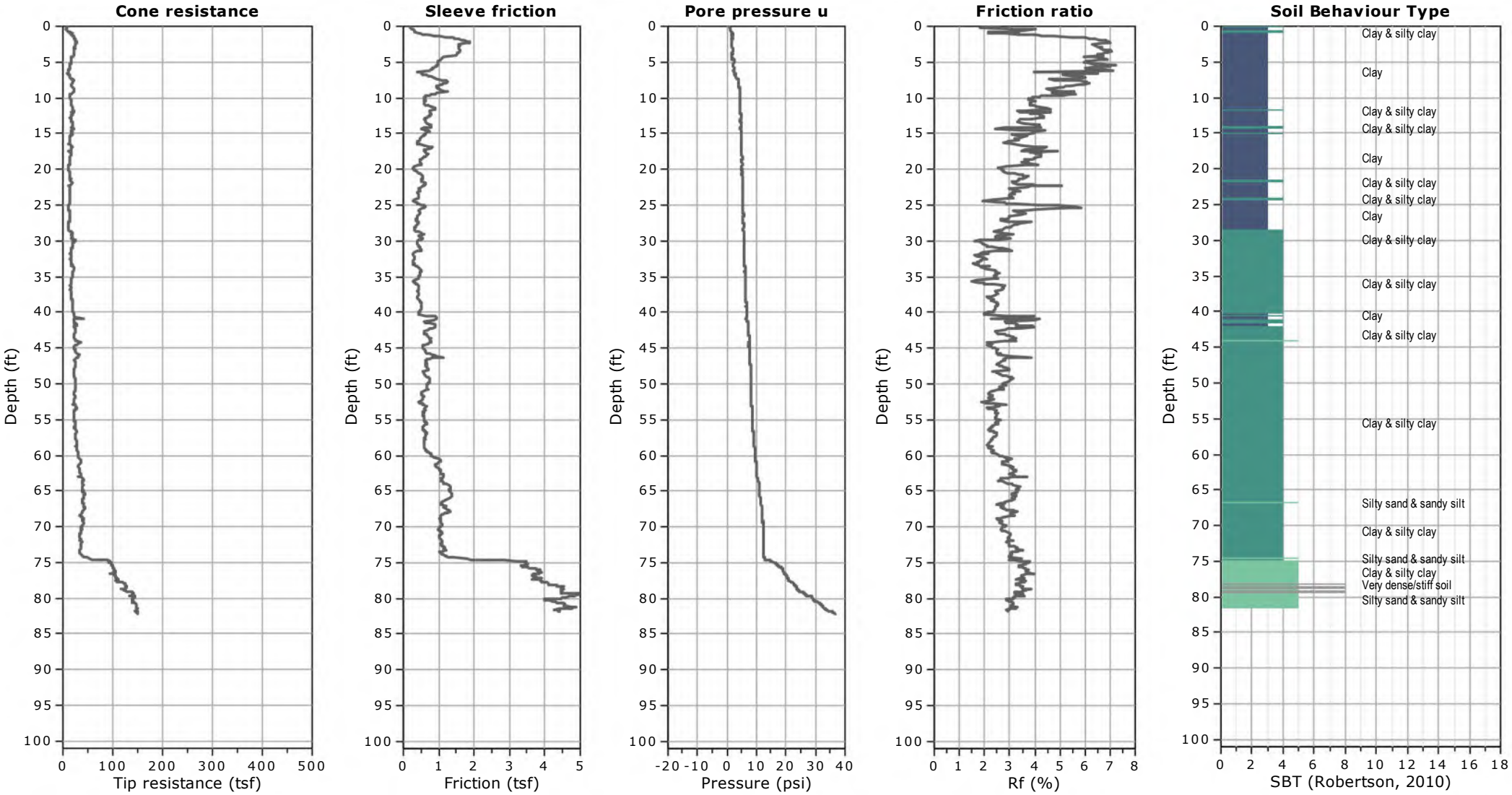
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-14
Total depth: 82.17 ft, Date: 8/17/2023



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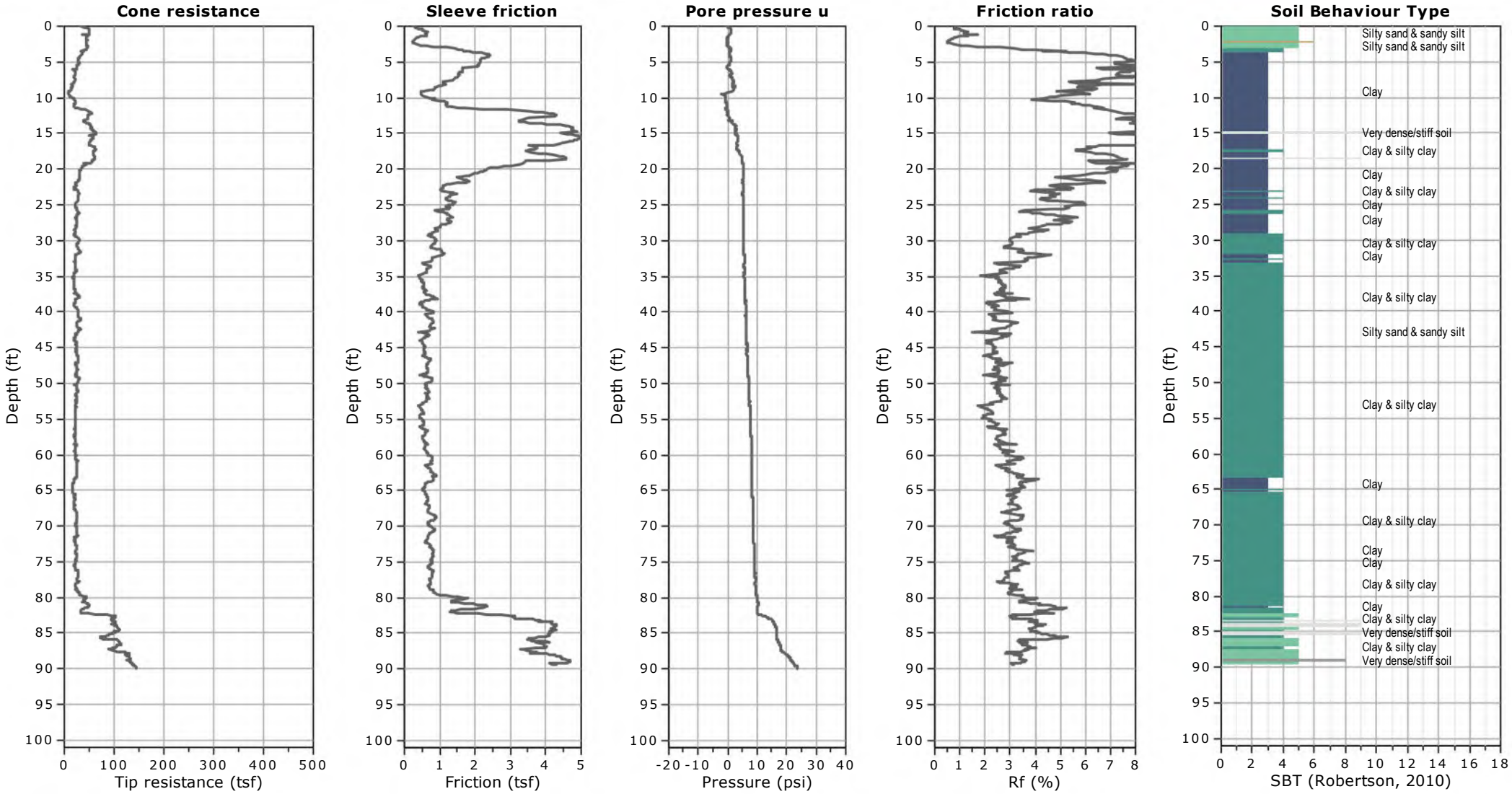
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-15
Total depth: 89.87 ft, Date: 8/17/2023



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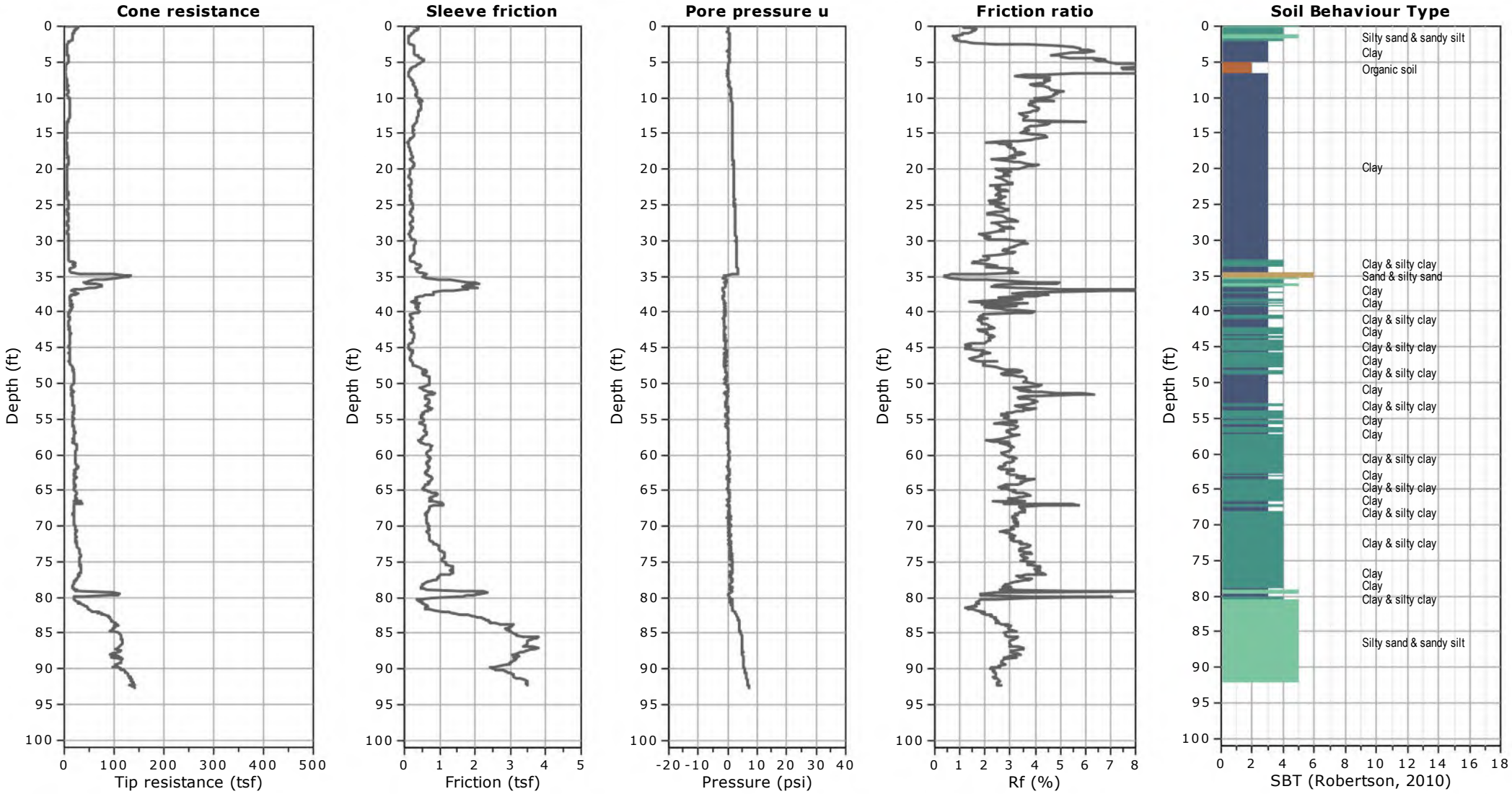
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-16
Total depth: 92.63 ft, Date: 8/17/2023



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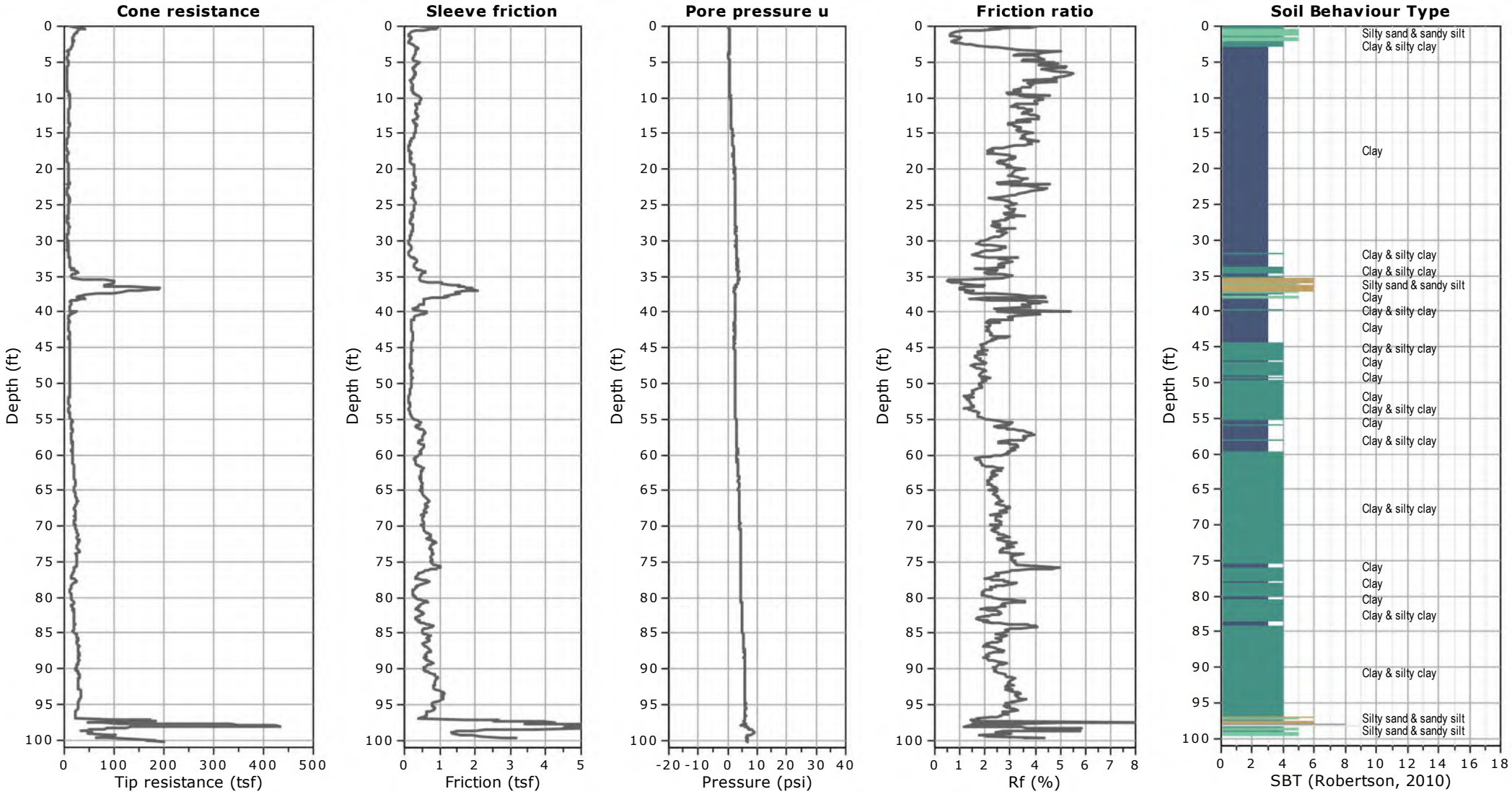
Project: **LGC Geotechnical / Compass**
Location: **29251 Camino Capistrano, San Juan Capistrano, CA**

CPT-17
Total depth: 100.18 ft, Date: 8/17/2023



LGC Geotechnical
Compass BESS
San Juan Capistrano, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-4	5.02	4.02	4.49	5.88	764	
	10.01	9.01	9.23	15.40	599	498
	15.03	14.03	14.17	24.18	586	563
	20.05	19.05	19.15	33.40	573	540
	25.00	24.00	24.08	41.34	583	621
	30.05	29.05	29.12	48.56	600	697
	35.01	34.01	34.07	56.96	598	589
	40.03	39.03	39.08	65.52	596	586
	45.05	44.05	44.10	75.46	584	504
	50.03	49.03	49.07	83.52	588	617
	55.05	54.05	54.09	89.52	604	836
	60.01	59.01	59.04	95.08	621	892
	64.99	63.99	64.02	101.92	628	728
	70.01	69.01	69.04	108.12	639	809
	75.03	74.03	74.06	114.36	648	804
	80.02	79.02	79.05	120.22	658	851
	85.01	84.01	84.03	125.04	672	1035
	90.03	89.03	89.05	129.96	685	1020
	95.05	94.05	94.07	134.48	700	1110
	100.00	99.00	99.02	138.52	715	1225

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

LGC Geotechnical
Compass BESS
San Juan Capistrano, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-6	5.02	4.02	4.49	6.20	724	
	10.01	9.01	9.23	14.14	653	597
	15.03	14.03	14.17	20.76	683	747
	20.01	19.01	19.11	29.20	655	586
	25.00	24.00	24.08	36.58	658	673
	30.05	29.05	29.12	44.96	648	601
	35.01	34.01	34.07	54.80	622	503
	39.99	38.99	39.04	63.28	617	586
	45.01	44.01	44.06	71.72	614	594
	50.00	49.00	49.04	79.88	614	611
	55.02	54.02	54.06	87.80	616	633
	60.04	59.04	59.07	95.72	617	633
	65.03	64.03	64.06	102.86	623	699
	70.05	69.05	69.08	108.46	637	896
	75.00	74.00	74.03	113.96	650	900
	80.02	79.02	79.05	117.96	670	1255
	85.01	84.01	84.03	122.04	689	1223
	89.99	88.99	89.01	125.92	707	1283
	93.11	92.11	92.13	127.80	721	1659

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

LGC Geotechnical
Compass
San Juan Capistrano, CA

CPT Shear Wave Measurements

Location	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
CPT-10	5.05	4.05	4.52	6.42	704	
	10.07	9.07	9.29	15.96	582	500
	15.09	14.09	14.23	24.72	576	564
	20.01	19.01	19.11	33.92	564	531
	25.00	24.00	24.08	43.56	553	515
	30.12	29.12	29.19	54.04	540	487
	35.10	34.10	34.16	63.04	542	552
	40.06	39.06	39.11	69.36	564	784
	45.14	44.14	44.19	74.48	593	991
	50.10	49.10	49.14	80.82	608	782
	55.05	54.05	54.09	85.98	629	959
	60.04	59.04	59.07	90.36	654	1139
	65.12	64.12	64.15	94.84	676	1133
	70.01	69.01	69.04	98.58	700	1307
	75.13	74.13	74.16	103.00	720	1158
	80.02	79.02	79.05	106.84	740	1273
	84.38	83.38	83.40	110.48	755	1197
CPT-12	5.09	4.09	4.55	9.00	506	
	10.17	9.17	9.39	17.32	542	581
	15.49	14.49	14.63	28.04	522	489
	20.18	19.18	19.28	36.92	522	524
	25.10	24.10	24.18	45.92	527	544
	30.28	29.28	29.35	54.80	536	582
	35.10	34.10	34.16	63.60	537	547
	40.19	39.19	39.24	71.52	549	642
	45.24	44.24	44.29	80.62	549	554
	50.16	49.16	49.20	87.36	563	729
	55.18	54.18	54.22	94.00	577	755
	60.14	59.14	59.17	100.74	587	735
	65.12	64.12	64.15	106.64	602	844
	70.08	69.08	69.11	112.20	616	892
	75.13	74.13	74.16	118.64	625	784
	78.12	77.12	77.15	121.84	633	934

Shear Wave Source Offset - 2 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

Appendix B
Boring Logs By Others

GEOTECHNICAL BORING LOG LAB-2

Project No.	012383-001	**Date Drilled**	12-28-08
Project	Continuing Life/Orchards	**Logged By**	MDJ
Drilling Co.	C&L Pacific Drilling	**Hole Diameter**	30"
Drilling Method	- 12" Drop	**Ground Elevation**	245'
Location		**Sampled By**	MDJ

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
245	0							ML	QUATERNARY ALLUVIUM (Qal)	
									@ 4': Fine sandy SILT: Gray-brown, damp to moist Casing in upper 4'	
240	5									
								ML	QUATERNARY LANDSLIDE DEPOSITS (Qls) @ 9': Concretion fragments around hole, very fine sandy SILT: Brown to light brown, damp, loose; mottled disturbed, gypsum, calcium-carbonate blebs	
235	10			B-1 9'-10'					@ 12'-13': Concretion fragments, calcium-carbonate blebs abundant below 13'	
230	15			R-1	2				@ 15': Fine sandy SILT with clay: Brown, damp to moist, medium stiff, moisture change at 15', clay-lined shear, random shears @ 16'-16.8': Broken concretion with random clay-lined shears	
								SM	@ 17': Silty fine SAND: Light brown and gray-brown, damp, medium dense	
								ML	@ 19': Fine sandy SILT with clay: Gray, moist, medium stiff, high plasticity	
225	20			B-1 20'-22'				SM	@ 20': Silty clay with SAND: Medium brown to gray-brown, moist,	
			sh:N50W, 12-16SE					CL	@ 22'-23': High plasticity clay layer, increase iron-oxide staining (orange and yellow)	
			N40W, 6-7°NE					ML	@ 24': Dark gray/black SILT	
220	25								@ 25': Increasing sand content and density, random shear blebs	
									@ 26': Clayey SILT: Gray-brown	
			sh:N60E 30°N						@ 27.5'-28': Highly plasticity clay layer on shear, dark gray below layer (shear)	
215	30									

SAMPLE TYPES:

S	SPLIT SPOON	G	GRAB SAMPLE
R	RING SAMPLE	C	CORE SAMPLE
B	BULK SAMPLE		
T	TUBE SAMPLE		

TYPE OF TESTS:

DS	DIRECT SHEAR	SA	SIEVE ANALYSIS	-200	% FINES PASSING
MD	MAXIMUM DENSITY	SE	SAND EQUIVALENT	AL	ATTERBERG LIMITS
CN	CONSOLIDATION	EI	EXPANSION INDEX	CO	COLLAPSE
CR	CORROSION	RV	R VALUE	PP	POCKET PENETROMETER

*** This log is a part of a report by Leighton and should not be used as a stand-alone document. ***

GEOTECHNICAL BORING LOG LAB-2

Project No.	012383-001	**Date Drilled**	12-28-08
Project	Continuing Life/Orchards	**Logged By**	MDJ
Drilling Co.	C&L Pacific Drilling	**Hole Diameter**	30"
Drilling Method	- 12" Drop	**Ground Elevation**	245'
Location		**Sampled By**	MDJ

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
215	30			R-2	1			ML	QUATERNARY LANDSLIDE DEPOSITS (Qls) continued @ 30': Fine sandy clayey SILT: Dark gray, moist to very moist, soft to medium stiff; micaceous, plastic, organic odor @ 31.5': Plastic layer 2" thick	
210	35			B-3 36'				CL	@ 36.8'-37': Very moist black and gray SM/ML, organics with plastic layer	
205	40		sh:E-W 50°N						@ 39': Sandy silty CLAY: Dark gray (charcoal gray), moist, medium stiff, stiffer drilling conditions below 39' @ 41': Higher plasticity CLAY, some black layers (possibly charcoal), shear dipping 30°	
200	45			R-3	3			ML	@ 44': Changes color from gray and dark gray to gray and orange, becomes damp @ 45': Very fine sandy SILT with clay: Gray to dark gray, moist, medium stiff to stiff @ 47': Stiffer drilling	
								SM	@ 48': Silty fine SAND: Medium gray, moist, dense, abundant calcium carbonate stringers and bleb	
195	50							ML	@ 50.5': Silty very fine sandy SILT: Gray-brown to gray, moist, medium stiff to stiff, iron-oxide staining, calcium-carbonate bleb still common	
190	55			R-4	10			ML/CL	@ 55': Silty CLAY to sandy clayey SILT: Gray to gray, brown, moist, stiff; iron-oxide staining	
185	60		striation: 4° N78E rs:N48W, rs:4-5°SW N34°W, 4SW						@ 58.5': Rupture surface 1" to 1.5" thick plastic soft clay striated N78E	

SAMPLE TYPES:

S	SPLIT SPOON	G	GRAB SAMPLE
R	RING SAMPLE	C	CORE SAMPLE
B	BULK SAMPLE		
T	TUBE SAMPLE		

TYPE OF TESTS:

DS	DIRECT SHEAR	SA	SIEVE ANALYSIS	-200	% FINES PASSING
MD	MAXIMUM DENSITY	SE	SAND EQUIVALENT	AL	ATTERBERG LIMITS
CN	CONSOLIDATION	EI	EXPANSION INDEX	CO	COLLAPSE
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Drilling Method	- 12" Drop	**Ground Elevation**	245'
Location		**Sampled By**	MDJ

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
185	60								TERTIARY CAPISTRANO FORMATION (Tc) @ 60': Very fine sandy SILTSTONE: Dark gray-brown to dark gray, damp, very stiff; micaceous, massive, hydrocarbon odor?? slower driller 59-60°	
180	65			R-5 B-6 65'	18				@ 65': Very fine sandy SILTSTONE: Dark gray, damp, very stiff to hard; massive, very fine white blebs (diatomaceous); unoxidized	
									@ 68': Horizontal at 68.4' on light gray SILTSTONE	
175	70									
									@ 74': Some claystone beds	
170	75			R-6	22				@ 75': Very fine sandy SILTSTONE with clay: Dark gray, damp, hard; very fine blebs (diatomaceous); unoxidized, very fine micaceous	
165	80									
160	85			R-7						
155	90									

SAMPLE TYPES:

S	SPLIT SPOON	G	GRAB SAMPLE
R	RING SAMPLE	C	CORE SAMPLE
B	BULK SAMPLE		
T	TUBE SAMPLE		

TYPE OF TESTS:

DS	DIRECT SHEAR	SA	SIEVE ANALYSIS	-200	% FINES PASSING
MD	MAXIMUM DENSITY	SE	SAND EQUIVALENT	AL	ATTERBERG LIMITS
CN	CONSOLIDATION	EI	EXPANSION INDEX	CO	COLLAPSE
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GEOTECHNICAL BORING LOG LAB-2

Project No.	012383-001	**Date Drilled**	12-28-08
Project	Continuing Life/Orchards	**Logged By**	MDJ
Drilling Co.	C&L Pacific Drilling	**Hole Diameter**	30"
Drilling Method	- 12" Drop	**Ground Elevation**	245'
Location		**Sampled By**	MDJ

Elevation Feet	Depth Feet	Graphic Log (N / S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
155	90							ML	TERTIARY CAPISTRANO FORMATION (Tc) Continued	
150	95			R-8	10				@ 95': Very fine sandy SILTSTONE with clay: Dark gray, damp, hard; unoxidized, hydrocarbon odor, very fine white blebs	
									@ 99': Generally horizontal bed along laminated SILTSTONE layer	
145	100								@ 100': Concretion (well cemented, very dense)	
140	105			R-9	15				@ 105': Very fine sandy SILTSTONE with clay: Dark gray, damp, hard; unoxidized, hydrocarbon odor, very fine white blebs	
135	110			B-7 110'					@ 112': Subround concretion right side of hole, faint generally horizontal bedding	
130	115			R-10	9				@ 115': Very fine sandy SILTSTONE: Dark gray, damp, hard	
									@ 117'-117.5': Black/gray bed over medium gray bed, continuous around hole at approximately same depth	
125	120									

The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

S	SPLIT SPOON	G	GRAB SAMPLE
R	RING SAMPLE	C	CORE SAMPLE
B	BULK SAMPLE		
T	TUBE SAMPLE		

TYPE OF TESTS:

DS	DIRECT SHEAR	SA	SIEVE ANALYSIS	-200	% FINES PASSING
MD	MAXIMUM DENSITY	SE	SAND EQUIVALENT	AL	ATTERBERG LIMITS
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Drilling Method	- 12" Drop	**Ground Elevation**	245'
Location		**Sampled By**	MDJ

Elevation Feet	Depth Feet	Graphic Log (N S)	Attitudes	Sample No.	Blows Per 6 Inches	Dry Density pcf	Moisture Content, %	Soil Class. (U.S.C.S.)	SOIL DESCRIPTION	Type of Tests
125	120							ML	TERTIARY CAPISTRANO FORMATION (Tc) (Continued)	
120	125			R-11	20				@ 125': Very fine sandy SILTSTONE: Dark gray-brown, damp, hard @ 126': Generally horizontal	
115	130									
110	135			R-12	10				@ 133'-134': Hit very dense concretion layer, random orientation, polished surfaces at the top of concretion, concretion appears to be intact, but mechanically broken @ 125': Very fine sandy SILTSTONE: Dark gray-brown, damp, hard	
105	140									
100	145			R-13	10				**Downhole Logged Hole to 141.5 Feet** **No ground water encountered at time of drilling** **Backfilled on 1/5/09** **Drive Weights: 0-29-3,615 lbs, 30-57-2,395 lbs, 58-85-1,310 lbs, 86-110-1,800 lbs, 111-136-2,290 lbs, 137-162-2,780 lbs.**	
95	150									

The Soil Description applies only to a location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change with time. The description is a simplification of the actual conditions encountered. Transitions between soil types may be gradual.

SAMPLE TYPES:

S	SPLIT SPOON	G	GRAB SAMPLE
R	RING SAMPLE	C	CORE SAMPLE
B	BULK SAMPLE		
T	TUBE SAMPLE		

TYPE OF TESTS:

DS	DIRECT SHEAR	SA	SIEVE ANALYSIS	-200	% FINES PASSING
MD	MAXIMUM DENSITY	SE	SAND EQUIVALENT	AL	ATTERBERG LIMITS
CN	CONSOLIDATION	EI	EXPANSION INDEX	CO	COLLAPSE
CR	CORROSION	RV	R VALUE	PP	POCKET PENETROMETER

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
1651-4	RANCHO CAPISTRANO	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO. LB-2

SHEET (1) OF 3

SAMPLING METHOD:

DRILLING

	START	FINISH
WATER LEVEL		
TIME	TIME 9:00 AM	TIME 11:15 A
DATE	DATE 3/21/01	DATE 3/21/0
CASING DEPTH		

DRIVING WT.: _____

DATUM _____ ELEVATION 250'±

DRILLING CONTR. _____

BY _____ CHK'D BY _____ DATE _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH

SURFACE CONDITIONS

0 TOPSOIL
SILTY CLAY
VERY DK. BROWN, SOFT, SLIGHTLY MOIST TO MOIST, POROUS AND NUMEROUS ROOTS TO 1/4" THICK. TO MOTTLED

3 VERY WEATHERED BEDROCK (TC) (LANDSLIDE MATERIAL)
SILTY CLAY
LIGHT OLIVE BROWN TO MOTTLED, SOFT, MOIST, POROUS AND ROOTLETS
4 – SCATTERED WHITE CARBONATE (?) "PELLETS" TO 1/2" D
5 AND SCATTERED KROTOVINA TO 6.5' DEPTH

6

7 CLAYEY SILT(STONE)
LIGHT OLIVE BROWN TO MOTTLED, SOFT, MOIST, SLI. POROU
8 VERY WEATHERED, TRACE VERY FINE SAND - % INCREAS W/DEPTH, GYPSUM XLS; NO VISIBLE STRUCTURE

9 ↙ GRADATIONAL

10 SILTY CLAY(STONE)
OLIVE GREY, SOFT, MOIST ← RELIC BEDDING (?): N30E, 27°-30° N.
11 – ABUNDANT ORANGE OXIDE STAINING
CLAYEY SILT(STONE) W/ VERY FINE SAND
12 MOTTLED, SOFT, SLI. MOIST TO MOIST, SLI. POROUS, W/ NUM. WHITE $CaCO_3$? STREAKS & FE OXIDES, DK. BRN. ORGANIC LAYERS
13 – OLIVE COLOR BANDS, RELIC BEDDING? - N30E, 28-22° NW →
– FRACTURE (FAULT?) N5, 85E, V. THIN, "TIGHT," W/ SCATTERED ROOTLETS TO 1/8" DIAM.
14

15

16 – NESTED COBBLES - GRAVEL, CARBONATE? NODULES? AT NE SIDE OF BOREHOLE IN CLAY MATRIX, PLASTIC, LOCALIZED, DISCONTINUOUS
17 GRADES TO:
SILTY CLAY(STONE) ? CLAY(STONE)

18 CLAY(STONE)
PLASTIC ↙ SHARP CONTACT, WAVY, DISCONTINUOUS
CLAYEY SILT(STONE) W/ VERY FINE SAND
19 MOTTLED, SOFT, MOIST; WITH FE OXIDES AS DISCONTIN. SEAMS AND STREAKS

20

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
1651-4	RANCHO CAPISTRANO	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER — BORING NO. LB-2

SHEET (2) OF 3

SAMPLING METHOD:

DRILLING: START TIME / FINISH TIME

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

DRIVING WT.: _____

DATUM ELEVATION 250'±

DRILLING CONTR. _____ BY _____ CHK'D BY _____ DATE _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						20	
						21	
						22	
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	
						34	
						35	
						36	
						37	
						38	
						39	
						40	

SURFACE CONDITIONS

(CONT'D)

WEATHERED BEDROCK (Tc) (LANDSLIDE MATERIAL)

CLAYEY SILT(STONE)

MOTTLED, SOFT, MOIST, W/ ABUNDANT FE OXIDES

Fe OXIDE COLOR BANDING - N-S 30°W

SILTY CLAY & CLAY(STONE)

MOTTLED, VERY SOFT, MOIST TO WET, PLASTIC W/HEAVY OXIDE AND MINERAL STAINING, SLIGHT SEEP BELOW 23'

SCATTERED ORGANICS, TWIGS(?), ROOTS, TO 1/4" DIAM. AND POCKE OF SOFT CLAY

COLOR BANDING - N80W, 30-32°S

FE OXIDE COATED PLANE

CLAYEY SILTSTONE INTERBED - N60W 15NE

CLAYEY SILT(STONE)

NUMEROUS FRACTURES, FE STAINED

TYPICAL FRACT. - N-S, 65E

MOTTLED, SOFT TO VERY SOFT

CHARCOAL (CARBON) "FLECKS", FRAGMENTS AND NUM. FE OXIDE - STAINS IN FRACTURES

FRACTURE - N20E, 55SE (TYPICAL)

ORANGE OXIDE STAIND, SCATTERED ORGANICS - TWIGS(?) ROOTS, & CaCO3 nodules

BEDDING(?) N30E, 30SE, CONTINUOUS, OXIDE STAINED W/THIN CLAY POCKETS & LENSES PARALLEL W/PLANE

CLAY SEAM, 1/8" THICK, MOIST, PLASTIC, CONTINUOUS N70W, 18NE

SOFT, LESS FRACTURED, LESS CLAY CONTENT

SILICEOUS NODULES, SLIGHT SEEP

COLOR BANDING N54W, 24NE RELIC BED(?)

SUBPARALLEL COLOR BANDS FRACTURES(?) W/ORGANICS ALIGNED W/ PLANES N9W, 50-55W

ORANGE OXIDE STAINED ROOTS 1/4" DIAM.

SLIGHT SEEPAGE FROM FRACTURES

LOCATION OF BORING

JOB NO	CLIENT	LOCATION
1651-4	RANCHO CAPISTRANO	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO. LB-2

SHEET (3) OF 3

SAMPLING METHOD:

DRILLING

	START TIME	FINISH TIME
WATER LEVEL		
TIME		
DATE	START DATE	FINISH DATE
CASING DEPTH		

DRIVING WT.: _____

DATUM ELEVATION 250'±

DRILLING CONTR. _____ BY _____ DATE _____ CHK'D BY _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						40	
						41	
						42	
						43	
						44	
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	
						6	
						7	
						8	
						9	
						90	

SURFACE CONDITIONS

(CONT'D)

"GRADATIONAL" CHANGE TO:

CLAYEY SILT(STONE) [CANOSLIDE MATERIAL]

DARK OLIVE GREY TO OLIVE GREY, SOFT, MOIST, MASSIVE ~~TO THICKLY BEDDED~~

- DISCONTINUOUS, ALIGNED SAND LENSES N8W, 35-40

SOFT TO MODERATELY HARD (GRADUAL INCREASE IN HARDNESS W/DEPTH)

- SUBPARALLEL FE-OXIDE STAINED BANDS 1/8 - 1/2" THICK
- FRACTURES (?) N5W, 33E (TYPICAL)

↓ IRREGULAR CONTACT, WEATHERING

DARK GREY (LESS OXIDIZED)

← 1/8" THK. ROOT AND SCATTERED GYPSUM CRYSTALS

- HIGH ORGANIC CONTENT ALONG PLANAR FEATURE, 3"-6" N40W 47SW, THIS PLANE IS OFFSET ALONG CLAYEY SHEAR-THIN, TIGHT N30W 47E, 1/8 - 1/4" PLANE

← CLAYEY SHEAR, LOW ∠, THIN, LIGHT BRN. SILICEO MATERIAL N83E, 14N

MODERATELY HARD (HARDNESS INCREASES W/DEPTH

← CLAY SEAM, 1/16" THICK, N80W, 40NE

← CLAY SEAM, 1/16" THICK N8W, 40-46E

- SCATTERED CARBONATE FRAGMENTS TO 2" DIAM. SUBROUNDED

← CLAY INTERBED, THIN, BEDDING? N90W, 17NE

↓ GRADATIONAL

DARK GREY BROWN (LESS OXIDIZED), MOD. HARD, MASSIVE

POTENTIAL

- SLIDE PLANE? SHARP, CLAYEY, LOCALLY LT. GREY, STRONG STRIAE, N10-20W, 4W

CLAYEY SILTSTONE TO SILTSTONE (TC)

VERY DARK GREY, MOD. HARD TO HARD, MASSIVE, NO OBVIOUS STRUCTURE

STRUCTURE NOT OBVIOUS

HARD BELOW 58-60', STRUCTURELESS (Massive)

END DOWNHOLE LOG @ 87'±

END BORING @ 91'

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
1651-4	JUNIPERO SERRA HIGH SCHOOL	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO.: LB-5

SHEET: 1 OF 4

SAMPLING METHOD:

DRILLING: START TIME / FINISH TIME

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

DRIVING WT.: _____

DATUM _____ ELEVATION _____

DRILLING CONTR. _____ BY _____ CHK'D BY _____ DATE _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						0	
						1	
						2	
						3	
						4	
R			1 / 5'	1B=6" 1B=6" 1B=6"		5	
						6	
						7	
						8	
						9	
R			2 / 10'	1B=6" 2B=6"		10	
			2			11	
						12	
						13	
						14	
R			3 / 15'	1B=6" 2B=6"		15	
						16	
						17	
						18	
						19	
			4 / 20'	1B=6" 2B=6" 3B=6"		20	

SURFACE CONDITIONS.

SOIL ZONE / WEATHERED BEDROCK (LANDSLIDE AFFECTED)

SILTY CLAY

DARK GREYISH BROWN, SOFT, MOIST TO V. MOIST, ABUNDANT OXIDE MOTTLING, POROUS, W/NUMEROUS ROOTS TO 1/8" DIAM.

CONCRETION W/GYPSUM (4*8"), WITH ABUNDANT GYPSUM X'TALS AND SEAMS

← FRACTURE N40E, 30NW, - OXIDE STAINED, 1/4" THICK W/GYPSUM XTALS, IRREG., DISCONTINUOUS

NUMEROUS WAVY, DISCONT. FRACTURE PLANES AND OXIDES W/ABUNDANT ROOT HAIRS

← SCATTERED GYPSUM XTALS ← GRADATIONAL, SUBTLE CHANGE

CLAYEY SILT

DARK BROWN, SOFT TO FIRM, SLIGHTLY MOIST, GYPSUM XTALS, WAVY, 1/4" INFILLINGS, ABUNDANT Fe OXIDE STAINING

DARK GREY, FIRM, SLIGHTY MOIST

GREY

← 1/2" CLAY SEAM, MOIST, PLASTIC, PLANAR, SHARP, N-S, 15-18E (PROBABLE SLIDE SURFACE)

DARK BRN & DK GREY, FIRM, MOIST, W/ABUNDANT, ANGULAR ROCK FRAGMENTS, SLI. POROUS, ROOT HAIR (SOIL-LIKE TEXTURE)

← GRADATIONAL CONTACT

BROWNISH GREY, FIRM, LESS CLAY % (PALEOSOL(?))

← FRACTURE, PLANAR, N40E, 55 SE, ROOTHAIRS, SLIGHTLY OPEN W/ 1/8" THICK, PLASTIC CLAY INFILLING, ABRUPT CONTACT (UNCONFORMITY - SLIP SURFACE)

LIGHT BROWNISH GREY, FIRM TO STIFF, MOIST, WITH ABUNDANT ROOT HAIRS & SMALL ROCK FRAGMENTS

LOCATION OF BORING

JOB NO	CLIENT	LOCATION
1651-4	JUNIPERO SERRA HIGH SCHOOL	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO. LB-5 (cont.)

SHEET 2 OF 4

SAMPLING METHOD:

DRILLING START TIME / FINISH TIME

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

DRIVING WT.: _____

DATUM ELEVATION

DRILLING CONTR. _____ BY _____ CHK'D BY _____ DATE _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
R			5 / 25'	3B=6" 8B=6"		20–40	
R			6 / 35	3B=6" 5B=6"		20–40	

SURFACE CONDITIONS.

(CONT'D)

CLAYEY SILT & SILTST. (WEATHERED BEDROCK—SLIDE AFFECTED)
LIGHT BROWNISH GREY, FIRM TO STIFF (MOD. HARD), MOIST
WITH ABUNDANT OXIDE STAINS & SCATTERED ROOT
HAIRS TO 1/16" THICK IN OPEN FRACTURES.
← BASE OF EXPOSED FRACTURE, WITH KNOT OF
LIVE ROOTS, 1" THICK
BEDDING INDISTINCT
— FRACTURE, N35E, 55-57SE, TIGHT, PLANAR, NO
— CLAY, SLIGHTLY WAVY —
CLAYEY SILTST. & VERY FINE SANDY SILT (STONE)
GREY, MOD. HARD (STIFF), MOIST, V. FRACTURED
← FRACTURES, SUBPARALLEL: N20W, 70-75NE,
Fe OXIDES, ROOTS
BEDDING INDISTINCT
— FRACTURED ZONE, STEEPLY DIPPING (>70° TYPICALLY), CLOSELY-SPACED, OXIDE STAINED, W/ ROOT HAIRS, DISCONTINUOUS, INTERSECTI
— VERY TO MODERATELY FRACTURED, Fe OXIDE STAINING
FEW SCATTERED ROOT HAIRS IN FRACTURES
← GRADUAL CHANGE
DARKER COLOR & INCREASE IN HARDNESS W/ DEPTH
BEDDING INDISTINCT
GRADATIONAL 37'-39'
CHANGE TO—
DARK OLIVE GREY, MOD. HARD TO HARD, MOIST, LESS OXIDIZED THAN ABOVE, BEDDING INDISTINC
VERY FRACTURED, GYPSUM & OXIDE FILLED FRACTS
← FRACTURE: N10E, 45E, TYPICAL TIGHT FRACTURE

LOCATION OF BORING

JOB NO	CLIENT	LOCATION
1651-4	JUNIPERO SERRA HIGH SCHOOL	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO.: LB-5 (CONT.

SHEET 3 OF 4

SAMPLING METHOD:

DRILLING: START TIME / FINISH TIME

WATER LEVEL					
TIME					
DATE					
CASING DEPTH					

DRIVING WT.: _____

DRILLING CONTR. _____ BY _____ DATE _____ CHK'D BY _____

DATUM _____ ELEVATION _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						40	
						41	
						42	
						43	
						44	
R			7 / 45'	16B=6" 40B=3"		45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
R			8 / 55'	20B=6" 20B=4"		55	
						56	
						57	
						58	
						59	
						60	

SURFACE CONDITIONS

(CONT'D)

CLAYEY SILT(STONE) (LANDSLIDE AFFECTED) BEDROCK
DARK OLIVE GREY, MOD. HARD TO HARD, MOIST TO SLI. MOIST, W/ GYPSUM AND Fe OXIDE STAINING
DARK GREY, HARD, SLI. MOIST, GRADATIONAL
MODERATELY FRACTURED, SLIGHTLY WEATHERED
← CLAY SEAM: N45E, 52SE, 1/4" THICK, TIGHT, INTERSECTS GYPSUM
← FRACTURE: N80W, 75S GYPSUM FILLED, DK. OXIDE STAINED,

CLAYEY SILTSTONE, NUMEROUS, HIGHLY POLISHED, TIGHT SHEARS, SOFT - MOD. HARD,
← SLIDE PLANE, N87W, 15-25N, EW TREND. STRIAT., WAVY, CONT.
BEDROCK (TC) - CLAYEY SILTSTONE
DK. OLIVE GREY, HARD, SLI. MOIST, MOD. FRACT., SLI. WEATHRD., DISC.
WAVY, BEDDING(?) EW, 18N, SEVERAL TIGHT, THIN, NEAR-VERTICAL, VERY DK GREY, FRACTURES(?) IN FILLING(?) W/ SCATTERED, SMALL (<3") SILICEOUS SILTSTONE NODULES
← CLAY SEAM, N55E, 25-35SE, WAVY, VARYING THICKN UP TO 1/4" THICK,
← BEDDING (INDISTINCT) N25W, 10-20SW
LESS FRACTURED

← CLAY SEAM, THIN, V. DARK GREY, NO MINERALIZATION,
B N70W, 19S BEDDING(?)

← CLAY SEAM, N58W, 17S BEDDING(?), THIN, V. DARK GREY
← FRACTURE, N8E, 53E, DISCONTINUOUS, SOFTER ALONG FRACTURE

SLIGHT SEEP AND SOME SILICEOUS SILTSTONE NODULES

SILTSTONE W/ CLAY
DARK OLIVE GREY TO DARK GREY, HARD, SLI. MOIST, THICKLY BEDDED TO MASSIVE, SLIGHTLY FRACT.
CLAY SEAM: N48W 15NE, TIGHT, THIN

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
1651-4	JUNIPERO SERRA HIGH SCHOOL	SAN JUAN CAPISTRANO

DRILLING METHOD: BUCKET AUGER

BORING NO. LB-5

SHEET 4 OF 4

SAMPLING METHOD:

DRILLING

	START	FINISH
WATER LEVEL	TIME	TIME
TIME		
DATE	DATE	DATE
CASING DEPTH		

DRIVING WT.: _____

DRILLING CONTR. _____

DATUM ELEVATION

BY _____ DATE _____ CHK'D BY _____

SAMPLER TYPE	INCHES DRIVEN / BLOWS	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						60	
						61	
						62	
						63	
						64	
						65	
						66	
						67	
						68	
						69	
						70	
						71	
						72	
						73	
						74	
						75	
						76	
						77	
						78	
						79	
						80	

SURFACE CONDITIONS

(CONT'D)

SILTSTONE WITH CLAY
DARK OLIVE GREY TO DARK GREY, HARD, SLI. MOIST,

GRADATIONAL CONTACT

CLAYEY SILTSTONE
DARK OLIVE GREY, HARD, SLI. MOIST, THICKLY BEDDED TO MASSIVE, NO OBSERVABLE FRACTURES
SMALL OXIDE STAINED NODULES, SCATTERED SILIC. SILTSTONE NODULES

CLAY SEAM: N26E 30E, THIN, CONTINUOU
ZONE OF SUBPARALLEL, THIN CLAY SEAMS, BEDDING?

ZONE OF THIN, TIGHT, CONTINUOUS, SUBPARALLEL CLAY SEAMS: N40E 15E (TYPICAL)

NO OBSERVABLE BEDDING, OR OTHER SIGNIF. CHANGE, TO DEPTH.

END OF BORING @ 80'

BORING LOG

Logged By: PD/AOM	Date Drilled: 4-11-01	Drill Rig:	Boring Diameter:	Boring Number: LB-8
Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.			Boring Elevation:	

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
				SOIL ZONE / SLOPEWASH (QSW) SILTY CLAY TO CLAYEY SILT (ML) DARK BROWN, SOFT, MOIST, VERY POROUS WITH NUMEROUS ROOT HAIRS			
5				SILTY CLAY (CL) DARK BROWN, FIRM, MOIST, POROUS W/LIGHT BROWN MOTTLING IN IRREGULAR SHAPED ZONES			
10				GRADATIONAL CONTACT OLD ALLUVIUM (Qa/o) CLAYEY SILT (ML) LIGHT OLIVE BROWN, FIRM, MOIST, W/ NUMEROUS ROOT HAIRS AND ABANDONED ROOT HOLES			
15				MOTTLED, WITH FE OXIDE STAINS AND DARK MINERAL POCKETS, SCATTERED DECOMPOSED ANGULAR ROCK FRAGMENTS, WITH IRREGULAR DARK MOTTLING ZONES, MULTI-COLORED, WITH SILTY CLAY POCKETS AND LENSES			
20				SLIP SURFACE ? DARK BROWN "BAND" OF SILTY CLAY, FINELY LAMINATED, 1/2" TO 3" THICK, CONTINUOUS, N35W, 15SW (DEPOSITIONAL) - UNCONFORMITY(?) W/ V. THIN FILM OF PLASTIC CLAY ON UPPER SURFACE. LESS MOTTLED, WITH SCATTERED GYPSUM CRYSTALS, AND COLOR "BANDS", SLUMP STRUCTURES, (SOFT SEDIMENT DEFORMATION ?)			
25				SILTY CLAY MOTTLED, PLASTIC, MOIST, IN POCKETS AND LENSES, W/ ANGULAR, DECOMPOSED ROCK FRAGMENTS			

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: LB-8-1

BORING LOG

gged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-8(cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
5				OLD ALLUVIUM (Qoly) cont. SILTY CLAY (cont.) CLAYEY SILT(ML) TO SILTY CLAY (CL) DARK GREY - BROWN, FIRM, MOIST, MICACEOUS, (ABRUPT COLOR CHANGE), UPPER CONTACT IS IRREGULAR AND SLOPES 10° TO 15° TO THE WEST GREY-BROWN, FIRM MOIST WITH NUMEROUS SLUMP, DEPOSITIONAL FEATURES SUCH AS RIP-UP CLASTS, BANDING, ANGULAR ROCK FRAGMENTS, FLOW STRUCTURES (RAPID DEPOSITION)?			
10				— WITH SCATTERED GYPSUM CRYSTALS TO 4" LONG SILTY CLAY (CL) (CONTACT) NEAR-HORIZONTAL, PLASTIC CLAY FILM DISCONTINUOUS, DEPOSITIONAL, DARK GREY BROWN, FIRM, MOIST ← SCATTERED CONCRETIONS TO 3" DIAM. NUMEROUS ROCK FRAGMENTS, ANGULAR TO SUBROUNDED, W/ SCHIST FRAGMENTS			
15				WHITE MINERAL MOTTLING ← NEAR HORIZONTAL BEDDING - COLOR BANDS ← STEEPLY-DIPPING COLOR BAND (FLOW-DEFORM. DURING DEPOSITION.?) VERY MOIST			
20				COARSE SAND POCKET, SLIGHT SEEPAGE WITH IRREGULAR POCKETS OF DARK MINERAL CONCENTRATIONS, ORGANICS, ORGANIC-RICH LENSES, SOME DIPPING 20° TO THE EAST SAND LENSES, THIN, LIGHT GREY, DISCONTINUOUS			
25							

HAMMER	WEIGHT: DROP:	PROJECT NO.: 1651-4	FIGURE NO.: LB-8-2

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-8 (Cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
50				OLD ALLUVIUM (Qal0) (cont.)			
				SILTY CLAY (CL) (cont.)			
				← SAND BED 1/3"-1" THICK, DIPS 18-20° TO NORTH, SLIGHT SEEPAGE, LT. BROWN, V. FINE SAND, FOLLOWS JOINTING N40W, 18-20°N			
				← SHEAR (POSSIBLE SLIP SURFACE) N65W, 17-19NE PLANAR, SHINY, CLAY FILM, STRIATIONS,			
				— MODERATELY FRACTURED ZONE			
55				BEDROCK (Tc) CONTACT-N30W, 40°NE, CLAYEY, DISCONTIN			
				CLAYEY SILTSTONE DARK GREY, MOD. HARD TO HARD, SLIGHTLY MOIST, MICACEOUS, THICKLY BEDDED TO MASSIVE, MOD. TO VERY FRACTURED, OXIDE STAINED FRACTURES W/ SLIGHT SEEPAGE, DIPPING 38-42° NE			
60				← CONCRETION, 12" DIAM, INTENS. FRACTURED, SEEPAGE			
				← CLAY SEAM, N40E 26SE, VERY THIN, CONTINUOUS, SLICK SURFACE,			
				SLIGHTLY FRACTURED			
				← CLAY SEAM (BEDDING ?) N-S, 31E, TIGHT, SOMEWHAT IRREGULAR			
65				HARD, MASSIVE, NO FRACTURES (SLOWLY INCREASED HARDNESS W/ DEPTH) MOIST,			
70				VERY HARD			
75							

arc fracts cont. across contact is contact about gradual

Stair?

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: LB-8-3

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-8 (cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
75				BEDROCK (Tc) (cont.)			
				SILTSTONE TO CLAYEY SILTSTONE			
				DARK OLIVE GREY, HARD, MOIST, THICKLY BEDDED TO MASSIVE W/ FINE, WHITE, DISCONTINUOUS LENTICULAR STREAKS (RELICT BEDDING(?)) BEDDING N 9W, 16-25W? INDISTINCT, NO OBSERVABLE FRACTURES			
				MODERATELY FRACTURED, W/SCATTERED MICROFOSSILS			
				FRACTURE, TIGHT, SLIGHTLY CLAYEY, NO STRAIE, NS, 23E W/SUBPARALLEL FRACTURES			
80				FRACTURE, TIGHT, NO MINERALIZATION, SLICKENSIDES, SLIGHTLY CLAYEY, N10W, 55°-60° NE, CONTINUOUS, WITH SUBPARALLEL SURFACES 30°-60°NE, IN A ZONE APPROX. 1' THICK, MOD. HARD, MOIST			
85				FRACTURE ZONE, MOD. HARD, NUM. SLICKS, MOIST TO VERY MOIST, FRACTURES, TIGHT, LOCALLY CLAYEY W/SLICKENSIDES, N23W, 45°NE W/SUBPARALLEL FRACTURES 23°-45°NE, INTERSECTING THE MOST CONTINUOUS FRACTURE, NO MINERALIZATION ALONG FRACTURES			
				SLIGHT SEEP			
90				FRACTURE, TIGHT, CLAYEY, SLICKENSIDES, N50W, 40°NE W/ ZONE OF SUBPARALLEL FRACTS. DIPPING 27°-40°NE, ZONE OF FRACTURES MOD. HARD, MOST FRACTURES DISCONTINUOUS OR INTERSECTING			
95				FRACTURE, TIGHT, SLIGHTLY CLAYEY, NO MINERALIZATION, CONTINUOUS AROUND HOLE, N31W, 32NE SLICKENSIDES			
				FRACTURE, TIGHT, SLIGHT SEEPAGE, N10W, 50NE, W/ DISCONTIN., INTERSECTING FRACTURE DIPPING 24°NE			
100				SLI. TO MOD. FRACT., UPPR. FRACT. N-S, 19E,			

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: LB-8-4

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-8 (cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
100				BEDROCK (Tc) cont.			
				SILTSTONE TO CLAYEY SILTSTONE			
				DARK OLIVE GREY, HARD, MOIST, THICKLY BEDDED TO MASSIVE, MOD. FRACTURED, FRACTURES THIN, DISCONTINUOUS, SLIGHT SEEPAGE ALONG FRACTURES, DIP EASTERLY 19°-25°			
				SLIGHTLY FRACTURED			
				VERY HARD, SLI. MOIST			
105							
				V. DARK GREY, very hard, moist, thickly bedded - MASSIVE, SLI. - "NON" FRACTURED			
				ZONE OF V. HARD, FRACTURED SCATTERED, SILIC. SILTSTONE NODULES TO 3" DIAM., SLIGHT SEEP			
110							
				SLIGHT SEEP			
115							
120				HOLE LOGGED TO 114'. SLIGHT CAVING @ 35-45'. HOLE BACKFILLED.			

HAMMER	WEIGHT:	PROJECT NO.:	FIGURE NO.:
	DROP:		LB-8-5

BORING LOG

Logged By:	Date Drilled:	Drill Rig: BUCKET AUGER	Boring Diameter:	Boring Number: LB-9
Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.			Boring Elevation:	

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION (Z 245)	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS

VERY WEATHERED BEDROCK (Qls) (LANDSLIDE MATERIAL)
SILTY CLAY (STONE)
DARK GREYISH BROWN, SOFT, MOIST, FE OXIDE MOTTLING W/WHITE MINERAL STAINS

GRADES TO SILTY CLAY TO CLAYEY SILT
GREY, SOFT, SL., MOIST W/FE OXIDE AND WHITE MINERAL STAINING

NUMEROUS STEEP FRACTURES W/OXIDE STAIN. AND GYPSUM INFILLING, SCATTERED LENSES OF MOTTLED, DARK BROWN SOIL-LIKE MATERIAL
CLAYEY SLIP SURFACE - N-S, 35°W
CHARCOAL FRAGMENTS < ½" DIAMETER
FRACTURE - N40W, 70NE
CLAY SEAM - N40E, 12SE, CONTINUOUS

SANDSTONE CONCRETION; VERY HARD, ORANGE, 8" DIAM. FE OXIDE STAINING, GYPSUM, LENSES OF V.F SAND

SHEAR - N35W, 55°SW, CLAYEY, VERY MOIST, PLASTIC, TO ½" THICK, W/ GYPSUM AND Fe OXIDE STAINING

CLAYEY SILT TO CLAY (STONE)
DARK GREY TO DARK GREYISH BROWN, SOFT, MOIST-VERY MOIST, MICACEOUS
ABUNDANT ORANGE OXIDE STAINING, NEAR VERTICAL FRACTURES - N30W, NEAR VERT.
CLAY LENSE, ORANGE, PLASTIC, MOIST
COBBLES, FRACTURED 4"-6" DIAM. FRAGMENTS
SHEAR, N50E, 37°NW, CLAYEY, SHARP, PLANAR, ⅛" THICK, SLICKENSIDES

JOINTING, NUMEROUS NEAR-VERTICAL FRACT.S NS TRENDING W/FE OXIDE STAINING, SLIGHT SEEP, SCATTERED ORGANIC + SMALL ROCK FRAGMNTS.
CLAYEY SAND, CONTINUOUS FRACT.S N70W, 77S

HAMMER	WEIGHT:	DROP:	PROJECT NO.: 1651-5	FIGURE NO.: 1

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-9 cont.

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
35				VERY WEATHERED BEDROCK (Qls) / (LANDSLIDE MATERIAL) (cont'd) CLAYEY SILT (STONE) DARK GREYISH BROWN, SOFT, MOIST, SOME FE OXIDE STAINING			
				SOIL-LIKE INFILLING, DARK GREY TO BROWN, IRREGULAR, FLOW STRUCTURES, OLD SOIL(?), SOME ORGANIC MATERIAL, EW, 45°S			
				MOIST TO WET - SEEPAGE, INTENSELY FRACTURED			
				← SLIDE PLANE - N70W 65W W/ STRIATIONS-N55W			
39				BEDROCK (Tc) SILTSTONE VERY DARK GREY, MOD. HARD, SLI. MOIST, UNOXID, SCATTERED MICROFOSSILS			
50				DARK OLIVE GREY, MOD. HARD TO HARD, SLI. MOIST, MICROFOSSILS			
60							

Scale break

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: 2

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-9cont.

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
60				BEDROCK (Tc) cont. SILTSTONE DARK OLIVE GREY, MOD. HARD TO HARD, SLI. MOIST, MICRO FOSSILS			
70							
80				END OF BORING @ 80'. HOLE BACKFILLED.			

HAMMER WEIGHT:
DROP:

PROJECT NO.: 1651-4

FIGURE NO.: 3

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-15

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS

OLDER ALLUVIUM (Qoal) (Landslide Affected)

SILTY CLAY

VERY DARK GREYISH BROWN, FIRM, SLIGHTLY MOIST

SLIGHTLY POROUS, SCATTERED CHARCOAL FLECKS, WITH SCATTERED SMALL ROCK FRAGS.,

IRREGULAR SHAPED, IN-FILLED SEAM OF LT. BROWN SILT (BURROW INFILL/LIQUEFACTION?)

CLAYEY SILT, LIGHT BROWN, IRREG.-SHAPE

SHARP COLOR CHANGE ALONG SLIGHTLY CLAYEY PLANE N-S, 30°E, LT. BROWN ABOVE, LT. OLIVE GREY BELOW W/ FE OXIDE & WHITE MIN. STAINING

SCATTERED CARBON FLECKS, THIN, TIGHT CONTACT MOTTLING, DARK BROWN, THIN BANDING

COLOR BANDING, DEPOSITIONAL CONTACT N-S, 10°E, LESS CLAY BELOW

SANDY SILT W/ CLAYEY SILT, LIGHT BROWN, SOFT TO FRM, MOIST

CONTACT SHARP, WAVY, POSSIBLY EROSIONAL

CLAYEY SILT

BROWN TO DARK BROWN, (PALEOSOL?) FIRM, MOIST, SLIGHTLY POROUS,

GRADATIONAL CONTACT

SILTY CLAY,

OLIVE BROWN, SOFT, MOIST, W/WHITE MIN. STAINING W/SOME FE OXIDES

INDISTINCT BEDDING, SUBHORIZONTAL, DISCONTIN.

ABUNDANT WHITE MIN. STAINING

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: 1

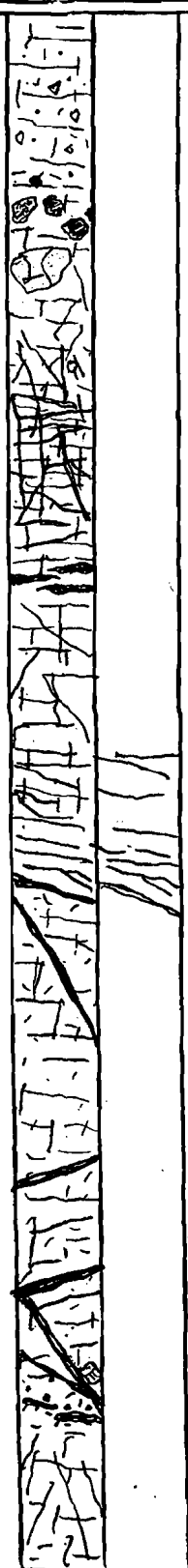
BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-15 (cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS



OLDER ALLUVIUM (Qal0) LANDSLIDE AFFECTED

SILTY CLAY

LIGHT OLIVE BROWN, SOFT, MOIST, SLI. POROUS, WITH FE AND WHITE MINERAL STAINING, ABUNDANT SMALL & ROCK FRAGMENTS, MOTTLED, NO OBSERV. STRUCTURE

← IRREGULAR, DARK GREY-BROWN CLAY POCKETS

← CONCRETION, SUBANGULAR, CARB. CEMENTED 6" DIAM, SLI. MOISTURE ON DISCONTINUOUS FRACTURES

NUMEROUS FRACTURES, SOME CLAY LINED AND STRIATED, DISCONTINUOUS, VERY MOIST TO WET

FRACTURES INTERSECTING, SOME CAVING, SOFT-FIRM

ZONE OF INTERSECTING CLAY SEAMS, WET,

ZONE OF SOIL INFILLING BOUNDED BY SHARP DISCONTINUOUS PLANES, STEEPLY DIPPING, NEAR VERTICAL

← IRREGULAR, ORGANIC-RICH, LENSES, DISCONTIN,

SEVERAL DISCONTINUOUS CLAY SEAMS, VAR. ANGLES

← CLAY SEAM E-W, 10-30°S

CLAY LINED FRACTURE 1/8 - 1/16" THICK, SHEAR? SMOOTH, PLANAR, W/ STRIATIONS ORIENTED DOWN DIP, SOIL-LIKE MATERIAL ABOVE PLANE, ABRUPT COLOR CHANGE, N5W, 60°E

GRADATIONAL CONTACT - OLDER ALLUVIUM TO VERY WEATHERED BEDROCK (Tc) SLIDE AFFECTED

← CLAY SEAM, WELL DEFINED, PLANAR, DEEPLY STRIATED, N15E, 22°NW, STRIATIONS TREND N75E

← CLAY SEAM, WELL DEFINED, PLANAR, N55E 20NW STRIATIONS TRENDING N70W

← CLAYEY PLANE, STRIATED, LESS MOTTLED BELOW PLANE, PLASTIC CLAY, N15W, 55NE

FISH VERTEBRAE, 1" DIAM, 1.5" HIGH, LATE PLIOCENE - EARLY PLEISTOCENE

CLAY SEAM, CUT OFF BY STEEPER SEAM, DISCONT. N-S, 35°E, LOCALLY MOTTLED, ORGANICS, CHARCOAL FLECKS, DARK LENSES ~2" DIAM.

HAMMER WEIGHT: DROP:	PROJECT NO.: 1651-4	FIGURE NO.: 2.

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-1S(cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
50				BEDROCK (Tc) (HIGHLY WEATHERED) (cont.) (SLIDE AFFECTED)			
				SILTY CLAY(STONE)			
				DARK GREY TO GREY MOTTLED, SOFT TO MOD. HRD. MST, SOME FE OXIDE STAINING, MICACEOUS, ORGANIC MATTER, MASSIVE			
				— CLAY SEAM, CONTINUOUS, PLANAR, STRIATIONS POTENTIAL SLIP SURFACE, N10W, 21E., STRIATIONS TREND N65E, PLASTIC CLAY, ½" THICK, MOIST			
				BEDROCK (Tc) (SLIDE AFFECTED)			
55				CLAYEY SILTSTONE			
				DARK OLIVE GREY, MOD. HARD, MOIST, MOD. FRACTURED, DK. MINERAL & OR. OXIDE STAINING, THICKLY BEDDED TO MASSIVE, MICACEOUS			
				— FRACTURES, STEEP, DISCONTINUOUS, SLIGHT SEEPAGE			
				— INTENSELY FRACTURED, STEEP, DISCONTIN. FRACTS WET (SEEPAGE)			
60				← SOFT TO MOD. HARD, VERY FRACTURED			
65				— CLAY SEAMS - N30W, 20°NE, VERY PLANAR SLIDE PLANE			
				BEDROCK (Tc) - CLAYEY SILTSTONE			
				DARK OLIVE GREY, HARD, MOIST, MASSIVE, MICACEOUS,			
				— HARD SILICEOUS SILTSTONE LAYER, SEEPAGE			
70				← SHELL FRAGMENTS			
				— FRACTURES, PARALLEL, N40W, 50°NE			
75							

HAMMER	WEIGHT: / DROP:	PROJECT NO.: 1651-4	FIGURE NO.: 3

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-15(cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
75				BEDROCK (Tc) (cont.)			
				CLAYEY SILTSTONE			
				DARK OLIVE GREY, HARD, MOIST, MASSIVE, MICACEOUS			
				← FRACTURE/JOINT PLANE, FAIRLY CONTIN., CLAY COATING, THIN, SMOOTH, PLANAR, N-S, 60°E			
80							
85				← SOFTER ZONE, POSSIBLE FRACTURE, ½' THICK, DISCONTINUOUS			
				← POSSIBLE BEDDING, SUBHORIZONTAL, SLIGHTLY CLAYEY, (CONTINUOUS?)			
90							
95				← FRACTURE?, DISCONTINUOUS, SLIGHT SEEP, 2-4" THICK SOFTER ZONE			
				← FRACTURE, CONTINUOUS, VERY TIGHT, NO CLAY, SLIGHT SEEP, SUBPARALLEL FRACTURES ABOVE + BELOW, N-S, 57°E			
100							

HAMMER	WEIGHT:	PROJECT NO.:	FIGURE NO.:
	DROP:	1651-4	4

BORING LOG

ged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
				LB-15(cont.)

Descriptions on this boring log apply only at the specific boring location and at the time the boring was made. The descriptions on this log are not warranted to be representative of subsurface conditions at other locations or times.

Boring Elevation:

DEPTH, FT	SAMPLES	BLOWS/FOOT	GROUND WATER	DESCRIPTION	MOISTURE CONTENT, %	DRY DENSITY pcf	OTHER TESTS
0				BEDROCK (Tc) (cont.)			
				CLAYEY SILTSTONE			
				DARK OLIVE GREY, HARD, MOIST, MASSIVE, MICAC., SLIGHTLY FRACTURED,			
				VERY HARD, FEWER MICROFOSSILS			
0				SLIGHTLY MOIST, FEWER SEEPS			
				SANDY SILTSTONE W/ V. FINE SAND.			
				SILTSTONE W/ CLAY TO SILTSTONE			
120				DARK OLIVE GREY, HARD, SLI. MOIST, ABUNDANT MICROFOSSILS,			
				WET FROM SEEP			
				VERY HARD, ABUNDANT MICROFOSSILS, SLI. MOIST			
130				SOFT ZONE AROUND HOLE, HORIZONTAL			
				SLIGHTLY LESS HARD, 6" THICK LAYER, NO CLAY			
140				END OF BORING @ 147!			
				HOLE BACKFILLED AND TAMPED.			
150							

HAMMER	WEIGHT: / DROP:	PROJECT NO.:	FIGURE NO.:
		1651-4	5.

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM	5-25-84	Bucket Auger	24"	B-6

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions.

Boring Elevation: 475'+

SAMPLE: BULK	SAMPLE: TUBE	PEN. RESIST. BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	DEPTH, FEET	SOIL/ROCK TYPE	GEOLOGICAL/ENGINEERING Description and Remarks
							CL	TOPSOIL: Silty CLAY - Stiff, dry to sli. mst., dk. brn., w/roots.
							ML	SLOPEWASH (Qsw): Clayey SILT - Stiff, sli. mst., dk. red-brn., porous. w/trace carbonates along roots.
						5		
								Firm to stiff, mst., dk. red-brn., porous.
						10	ML	TERRACE DEPOSITS : SILT & Clayey SILT - Soft to firm, lt.-med. brn., v. porous, "mottled", w/rootlets. w/scattered to rare gravel, rounded, less than 1" diam.
						15		w/Sandy SILT w/scattered pebbles & clasts of SILTSTONE.
								Slight offset 3" to 4" at contact Irregular Contact.
								SILT w/Silty CLAY lenses - Soft to firm, lt. brn. to brn. to mottled, sli. porous.
						20		

HAMMER WEIGHT:
HAMMER DROP:

Medall, Aragon, Worswick & Associates, Inc.	LOS ANGELES SANTA ANA RIVERSIDE	PROJECT NO.:	FIGURE NO.:
Consulting Engineers and Geologists		S2262 A	A-6a

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM	5-25-84	Bucket Auger	24"	B-6 (Cont.)

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions.

Boring Elevation:

SAMPLE: BULK | TUBE | PEN. RESIST. BLOWS/FT. | FIELD MOISTURE % DRY WEIGHT | DRY DENSITY LB./CU. FT. | SHEAR RESISTANCE KIPS/SQ. FT. | DEPTH, FEET | SOIL/ROCK TYPE

GEOLOGICAL/ENGINEERING

Description and Remarks

ML

SILT w/Silty CLAY lenses (Continued) -

w/scattered pebbles.

w/small soft nodules of dk. brn. SILT & white minerals.

← SILT-filled fract; NS, 76W

25

BEDDING Weak at N40E, 9-15W

30

Alt. Sandy SILT & SILT -
Firm to v. firm, lt. grey to grey-brn., v. thinly bedded to laminated,
BEDS: N45E 14N

Bedding less distinct.

Local "cut-fill" features

35

Irregular CONTACT N45W 9N (+)

BEDROCK:

Clayey SILTSTONE w/SANDSTONE clasts -
Soft to mod. hard, lt. grey w/orange oxides; scattered SANDSTONE beds & lenses, intensely to v. fract.

40

HAMMER | WEIGHT: | DROP:

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM	5-25-84	Bucket Auger	24"	B-6 (Cont.)

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions.

Boring Elevation:

SAMPLE: BULK	SAMPLE: TUBE	PEN. RESIST. BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	DEPTH, FEET	SOIL/ROCK TYPE	GEOLOGICAL/ENGINEERING Description and Remarks
						45		Clayey SILTSTONE w/SAND (Continued) -
								← SAND lenses, N16W, 39S (±) Less fractured.
								← Irregular JOINT: N40E, Vert.
								Mod. hard.
								← SAND lense 1"-2" thick, N45W, 32S
						50		Clayey SILTSTONE -
								Nodules of cemented SILTSTONE, heavy oxide staining.
						55		Sandy SILTSTONE & Clayey SILTSTONE -
								First occurrence of dk. grey unoxidized SILTSTONE.
						60		Hard, mst., med. red-brn. to dk. grey, micaceous w/gypsum filled joints, oxidized zone.

HAMMER WEIGHT: DROP:

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM	5-25-84	Bucket Auger	24"	B-6 (Cont.)

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions.

Boring Elevation:

SAMPLE BULK	SAMPLE TUBE	PEN. RESIST. BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	DEPTH FEET	SOIL/ROCK TYPE	GEOLOGICAL/ENGINEERING Description and Remarks
						65		Sandy SILTSTONE & Clayey SILTSTONE (Continued) - Hard, med. red-brn. to dk. grey to grey-brn., micaceous, sli. sandy w/gypsum filled fract. Clayey SANDSTONE/SANDSTONE CONTACT w/SHEARS: N60E 45-68N ← Slight seepage along joint.
						70		Mod. hard to hard, greenish-grey, micaceous, sli. sandy. w/thin fine SAND laminae Thin dk. grey fracture ¼" thick JOINT: N30E 34S no slicks. FRACTURE: N70E, 45W
						75		← Thin dk. grey fracture 1/8" thick NS 29E Hard. ←SAND lense 1-2" thick w/seepage around hole BEDDING: N20W 40S
						80		

HAMMER WEIGHT: DROP:

Medall, Aragon, Worswick & Associates, Inc.
Consulting Engineers and Geologists

LOS ANGELES
SANTA ANA
RIVERSIDE

PROJECT NO.: S2262 A

FIGURE NO.: A-6d

BORING LOG

Logged By:	Date Drilled:	Drill Rig:	Boring Diameter:	Boring Number:
AOM	5-25-84	Bucket Auger	24"	B-6 (Cont.)

This log is a representation of subsurface conditions at the time and place of drilling. With the passage of time or at any other location there may be consequential changes in conditions.

Boring Elevation:

SAMPLE: BULK	SAMPLE: TUBE	PEN. RESIST. BLOWS/FT.	FIELD MOISTURE % DRY WEIGHT	DRY DENSITY LB./CU. FT.	SHEAR RESISTANCE KIPS/SQ. FT.	DEPTH, FEET	SOIL/ROCK TYPE	GEOLOGICAL/ENGINEERING Description and Remarks
								Clayey SILTSTONE (Continued) - Hard, dk. greenish grey, mst., no obvious bedding, sli. fract.
							Q	← Slight seep.
						85		← Thin dk. SILT joint 1/8" thick N56E 37E
						90		END OF BORING @ 90'. SLIGHT SEEPAGE @ 77' & 84'. NO CAVING. HOLE BACKFILLED AND TAMPED.
						95		
						100		

HAMMER | WEIGHT: | DROP:

Medall, Aragon, Worswick & Associates, Inc.
Consulting Engineers and Geologists

LOS ANGELES
SANTA ANA
RIVERSIDE

PROJECT NO.: S2262A

FIGURE NO.: A-6e

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B-1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION (Logged By: KV/WG; Sampled By: KV)	Dry Density (pcf)	Moisture Content (%)	Remarks
							Colluvium (Qcol) Surface: Brown clayey silty fine to medium SAND, dry, loose to 3", abundant roots.			
							@ 2' Dark brown clayey fine to medium SAND, moist, porous, roots.			
							Landslide Materials (Qls) @ 3' Brown, yellow brown, and gray brown fine sandy SILT, moist, caliche nodules and stringers, FeO stain.			
							@ 3.4'-3.8' Krotovina			
	5						@ 5' Clayey SILT, moist, firm, caliche pods and stringers, roots.			
							@ 7' Scattered gypsum.			
							@ 8' Concretion on west wall, MnO-stained fractures.			
							@ 9' Color changes to light gray, very moist, increase in clay.			
280	10			D-1	Push	Push	@ 10' SAMPLE: Brown, yellow brown, and gray brown slightly clayey SILT, very moist, trace charcoal, caliche stringers, massive, scattered FeO stain, slightly plastic.	98.5	98.5	
							@ 11.5' Concretion			
							@ 12' Light brown gray clayey SILT, caliche stringers.			
							@ 13.5' Concretion			
	15						@ 15' Trace jarosite staining, scattered subangular to subrounded concretionary 1" pebbles.			
				SB-2			@ 16.5' Dark brown colluvial lens			
							@ 17.1' Mottled light gray and white fine sand with carbon fragments at base of colluvial lens, fades by 18 ft.			
270	20			D-2	Push	Push	@ 20' SAMPLE: Gray silty CLAY/clayey SILT, very moist, massive, plastic, FeO and jarosite staining along joints/fractures.	92.3	92.3	
			RS: N80E 8SE				@ 21' Rupture surface. Yellow sand stringers and FeO-stained joints from below 21 ft. terminate at surface. Material above not coherent.			
							Capistrano Formation (Tc)			
							@ 23' Patches of unoxidized material.			
	25						@ 24' Transitions into dark gray to black unoxidized clayey SILTSTONE, moist, stiff, massive, micaceous, weathered			

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B-1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S — N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
							foraminifera.			
			J: N15W 85 NE				@ 25' Near vertical fracture filled with gypsum, light gray clay on surface			
							@ 29' Oval-shaped 5" concretion.			
260	30			D-3	95.2		@ 30' SAMPLE: Green black unoxidized clayey SILTSTONE, massive, micaceous, some partings, weathered foraminifera.	95.2	95.2	
			J: N85W 82 SW							
			SH: N15E 31SE				@ 32' Shear surface. Below is massive, stiff, slightly clayey SILTSTONE.			
	35									
250	40			D-4	95.1		@ 40' SAMPLE: Same as at 30 ft.	95.1	95.1	
	45									
							@ 48.5' Occasional sand stringers.			
240	50									

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-5	13		@ 50' SAMPLE: Dark green black unoxidized SILTSTONE, massive, micaceous, weathered foraminifera, strongly odoriferous.	98.3	26.4	
	55						@ 54.5' Concretion.			
230	60			D-6	41		@ 60' SAMPLE: Same as at 50 ft. @ 60.4' Concretion.	97.5	26.3	
	65						@ 66.5' Slightly sandy.			
							@ 68.5' Phosphatic nodule.			
220	70			D-7	22		@ 70' SAMPLE: Same as at 60 ft.	95.4	27.5	
							@ 73.7' Pocket of sandy siltstone.			
	75									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/6/01

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B-1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S–N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
							@ 78.5' Subrounded cobbles, 3" to 5".			
210	80			D-8	44		@ 80' SAMPLE: Dark green black unoxidized SILTSTONE, moist, hard, micaceous, massive, strongly odoriferous, weathered foraminifera.	97.4	26.4	
							@ 82' Increase in clay content.			
	85									
							@ 89' Slightly sandy.			
200	90			D-9	68/9"		@ 90' SAMPLE: Same as at 80 ft.	94.2	28.0	
			CS: N15W 38NE				@ 92' Planar surface with paper-thin clay, no disturbance above or below, not visible on down-dip side of boring.			
	95									
							@ 96' Slightly sandy.			
							@ 98' Slightly sandy.			
190	100									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B- 1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-10	69/10"		@ 100' SAMPLE: Same as at 90 ft., trace of oxidized fish scales.	90.5	32.0	
	105						@ 105' Black unoxidized SILTSTONE, damp to moist, hard, micaceous, massive, weathered foraminifera.			
180	110									
	115			D-11 SB-1	36/9"		@ 115' SAMPLE: Same as at 105 ft. Upper rings contain gray green SILTSTONE, dry, caliche-lined joints/fractures, high-angle contact in rings. @ 115.3' Phosphatic nodule.	97.0	26.8	
170	120						@ 120.1' Phosphatic nodule and sand stringers.			
	125									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
160	130			D-12	31/9"		@ 130' SAMPLE: Same as at 115 ft.	94.5	29.0	
	135									
150	140						@ 139' Slightly polished surface around concretion, slight seep.			
							@ 142.8' Concretion, 4" to 6", slight seep.			
	145			D-13	40/8"		@ 145' SAMPLE: Black unoxidized SILTSTONE, damp to moist, hard, micaceous, massive, weathered foraminifera.	99.7	25.3	
							Logged to 148 on 8-2-01, resumed drilling. Resumed downhole logging on 8-3-01.			
140	150									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B-1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (S N)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
	155						@ 154' Discontinuous light gray sand lenses.			
			J: N30W 85SW				@ 156.5' Coprolite; 3" long, 1/2" wide. @ 157' Driller began using Crowds.			
							@ 159'-160' Coprolite; 1"-3" diameter.			
130	160			D-14	93.5	93.5	@ 160' SAMPLE: Dark green black unoxidized clayey SILTSTONE, damp to moist, hard, massive, micaceous, weathered foraminifera, trace MnO stain.	93.5	29.7	
	165									
120	170						@ 172.5' Small oval-shaped concretion, slight seepage.			
	175									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B-1

DATE STARTED: 7/31/01 **DATE ENDED:** 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (W E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-15	36/9"	36/9"	@ 175' SAMPLE: Same as at 160 ft.	94.4	28.6	
			J: N25W 42NE				@ 177.2' Polished joint, very planar, continuous, 1" zone above is joint is slightly fractured.			
110	180									
			J: N15E 70SE				@ 181.6' Polished joint, very planar, continuous, 2 subparallel joints joints below, 2' thick zone, slight seepage, siltstone below is generally slightly sandy.			
	185									
100	190			D-16	31	31	@ 190' SAMPLE: Dark green gray to green black SILTSTONE, moist, hard, massive, micaceous, weathered foraminifera.	97.4	27.5	
	195									
90	200									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/5/01

Boring No. B- 1

DATE STARTED: 7/31/01 DATE ENDED: 8/3/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 290 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Elevation (ft.)	Depth (ft.)	Graphic Log (W E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
							Logged By: KV/WG Sampled By: KV			
	205						NOTES Total Depth 202 ft. Downhole Logged to 201 ft. Groundwater Not Encountered Seepage Encountered at 138', 143', 172.5', and 184' Backfilled with Cuttings and Tamped from 110'- surface Drive Weights: 0-28'/5952, 28-55'/3921, 55-84'/2531, 84-110/1407, 110-168'/1600, 168-195'/2200, 195-215'/2500			
80	210									
	215									
70	220									
	225									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B-2

DATE STARTED: 8/6/01 DATE ENDED: 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV/WG

Elevation (ft.)	Depth (ft.)	Graphic Log (E W)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
							Colluvium (Qcol) *Surface: Brown silty fine to medium SAND, dry, loose to 3", scattered small cobbles.* @ 1' Light brown to brown silty fine to medium SAND, moist, *medium dense, abundant caliche.* @ 3' Krotovina			
	5			D-1	Push 1/6"		**Landslide Materials (Qls)** @ 4.5' Transitions into weathered bedrock. @ 5' SAMPLE: Yellow brown to dark yellow brown clayey silty fine to medium SAND, moist, slightly micaceous, abundant caliche stringers, porous, roots to 1/8", abundant FeO mottling.	101.4	15.8	
280							@ 7' Large Krotovina intersected by boring.			
				B-1						
	10		J: N24E 68NW	D-2	Push		@ 10' SAMPLE: Gray to gray brown slightly clayey SILT, moist, medium stiff to stiff, micaceous, FeO-lined joints/fractures, massive, root hairs, jarosite staining. Downhole: Sandstone bedding fragment cut off by near vertical joint.	95.6	25.3	
			RS: N80E 6SE				@ 12.6' Planar rupture surface, highlighted by gypsum; fractures below terminate at rupture surface. **Capistrano Formation (Tc)**			
	15			D-3	Push		@ 15' SAMPLE: Gray to gray brown slightly clayey SILTSTONE, gypsum, near vertical FeO-stained joint/fracture.	99.7	26.1	
270			J: N3W 22SW				@ 16' Color banding above jarosite-stained polished joint surfaces.			
							@ 18' Abundant FeO stain; scattered gypsum; increase in clay, color change to dark. @ 18.5' Gypsum-lined joint.			
	20			D-4	3		@ 20' SAMPLE: Dark green black unoxidized clayey SILTSTONE, damp to moist, very stiff, micaceous, massive.	97.7	25.9	
			J: N9E 40-50SE				@ 22' Odoriferous.			
			J: N7E 35SE				@ 23.7' Very tight, planar joint.			
	25									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/17/01

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/10/01

Boring No. B-2

DATE STARTED: 8/6/01 DATE ENDED: 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (E W)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
				D-5	3	97.1	@ 25' SAMPLE: Same as at 20 ft., weathered foraminifera.	97.1	97.1	
260										
	30			D-6	7	98.0	@ 30' SAMPLE: Same as at 25 ft.	98.0	98.0	
	35						@ 35.3' Thin wispy sand lenses; bedding is subhorizontal.			
250										
	40			D-7	8	99.5	@ 40' SAMPLE: Dark green black clayey unoxidized SILTSTONE, moist, hard, massive, micaceous, weathered foraminifera, strongly odoriferous.	99.5	99.5	
	45						@ 46.3' Cemented material begins on north wall, no cemented material on south wall. Concentric joints on outside of concretion.			
240			J: N20W 80SW				@ 48.7' Joint on west wall.			
	50									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Boring No. B-2

DATE STARTED: 8/6/01 DATE ENDED: 8/8/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) 0-28'/5952, 28-55'/3921, 55-84'/2531

GROUND SURFACE ELEVATION: 287 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV/WG

Elevation (ft.)	Depth (ft.)	Graphic Log (E W)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
			J: N80W 70NE ▼	D-8	9		@ 50' SAMPLE: Same as at 40 ft. Downhole: Joint on east wall. Water entering boring from around concretion. @ 51.2' Groundwater. End of logging. @ 53' Coring to 58.5'.	94.8	28.4	
230	55									
	60									
	65						NOTES Total Depth 58.5 ft. Boring Terminated Due to Concretion Groundwater at 51.2' after 24 hours Downhole Logged to 51 ft. Backfilled and Tamped			
220	70									
	75									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/17/01

Boring No. B-3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (W E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
290							**Colluvium (Qcol)** Surface: Brown silty fine to medium SAND, dry, loose to 2", scattered cobbles. @ 1' Carbonate silt-lined pores; cobble.			
	5			D-1	Push		@ 5' SAMPLE: Dark gray brown silty fine to medium SAND, dry to damp, pinhole porous, caliche stringers, abundant root hairs.	98.4	9.9	
							@ 8' Increase in moisture; color change to light gray brown to brown.			
	10			D-2	1		@ 10' SAMPLE: Yellow brown silty fine SAND, damp, porous, rootlets, minor caliche, 1" subangular siltstone fragments, abundant FeO stain. @ 11' Yellow brown silty fine SAND, moist, mottled with gray silty fine SAND and brown soil-like material, pinhole porous, FeO stain, caliche stringers.	98.4	10.3	
280										
	15			D-3	2		@ 14' Subrounded cobbles. **Landslide/Terrace (?) Deposits (Qls/Qt?)** @ 14.8' Subhorizontal contact between Colluvium and Terrace Deposits. @ 15' SAMPLE: Gray brown silty fine SAND, damp to moist, pinhole porous, caliche stringers, sparse FeO stain, trace charcoal flecks. @ 15.5' Krotovina zone to 16'. @ 17' Increase in silt.	99.6	9.6	
				SB-1			@ 19' Increase in sand.			
	20		B: N28E 10SE	D-4	1		@ 20' SAMPLE: Gray brown to yellow brown silty fine SAND and fine sandy SILT, damp to moist, pinhole porous, trace caliche stringers, charcoal flecks. Downhole: Fine angular fragments of siltstone and organics lined with carbonate silt, mottled. Attitude on 1/2" white sandy layer.	100.4	9.3	
270										
	25						@ 24' Increase in clay, roots, and pores lined with carbonate silt.			

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Valley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
		W E		D-5	3		@ 25' SAMPLE: Mottled dark gray brown, brown, and yellow brown, silty fine SAND, moist, very porous, roots, slightly clayey, sparse FeO stain and caliche.	107.6	15.6	
			C/B: N65W 7NE				@ 26.7' Contact between dark gray brown slightly clayey SILT above and medium gray brown below. Transitions to light gray brown and clayeyer below.			
			RS: N38E 53SE				@ 28.9' Rupture surface.			
	30			D-6	4		@ 30' SAMPLE: Mottled as above, silty to clayey fine SAND, moist, porous, sparse FeO stain and caliche.	107.9	18.0	
			B: N50E 45SE							
260							**Terrace Deposits (Qt)**			
	35		B: N20E 15NW				@ 34.6' Contact with light brown clayey SILT and dark silty CLAY.			
							@ 36.7' Soil horizon: dark brown silty CLAY, moist, plastic, caliche stringers, trace charcoal.			
			SH: N10E 40SE				@ 37.8' Base of soil horizon reverse offset 3.5"-4"; shear surface along offset; lose shear surface at 38.4'.			
	40			D-7	Push		@ 40' SAMPLE: Olive gray silty CLAY, very moist, plastic, abundant charcoal, slightly mottled.	102.1	23.2	
							@ 40.6' Thin organic layer, discontinuous; dip direction N20W			
250							@ 41.5' Abundant carbonate silt to 41.8', fine roots, porous.			
	45						@ 44' Mottled brown gray, FeO stain, brown organic material lining pores.			
							@ 48.6' Organic horizon; dip is approximately 15NW			
	50									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project P:\2001\01012-02\GINTW\D1012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
		W E		D-8	1		@ 50' SAMPLE: Dark gray CLAY, very moist, medium stiff, abundant FeO and MnO stain, plastic, caliche. @ 50.3' Thin organic horizons, dipping northwest, carbon chips; below is medium gray clay.	95.7	28.5	
240							@ 52' Interbedded gray green SILT and dark gray to olive brown CLAYS, abundant caliche stringers and FeO stain, very plastic. @ 52.5' Discontinuous white SAND, 1/4" thick, west wall.			
	55			SB-2			@ 56' Green black to black unoxidized silty CLAY/clayey SILT, very moist, medium stiff, plastic, micaceous, trace organics (roots), light brown siltstone and sandstone fragments, strongly odoriferous, carbon chips.			
	60			D-9	1		@ 60' SAMPLE: Dark green gray to green black unoxidized clayey SILT, moist, slightly plastic, micaceous, trace organics, MnO stain. @ 60.6'-62' Pods and irregularly-shaped light yellow brown concretions.	88.7	33.5	
230										
	65						@ 67' Color changes to dark gray. @ 68.2' White sandy zone, discontinuous.			
	70			D-10	1		@ 70' SAMPLE: Same as at 60 ft.	91.6	31.0	
220			RS: N5E 26SE J: N-S 39E	SB-3			@ 71.5' Rupture surface: planar surface at base of light gray CLAY, very plastic, possible striations down-dip. **Capistrano Formation (Tc)** @ 72' Low angle joint.			
	75									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (W E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
							@ 75' Material changes to hard clayey SILTSTONE.			
	80			D-11	28		@ 80' SAMPLE: Dark green black slightly clayey unoxidized SILTSTONE, damp to moist, hard, massive, micaceous, weathered foraminifera.	96.8	27.1	
210							@ 80.8' Discontinuous sand lenses.			
							@ 83.8' Planar partings.			
	85									
	90			D-12	50		@ 90' SAMPLE: Same as at 80 ft.	92.3	29.7	
200										
	95									
	100						@ 99-101' Concretion, west and south walls, seepage at base.			

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINT\W\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Valley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log (W–E)	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
190				D-13	48		@ 101' SAMPLE: Same as at 90 ft., coprolite.	92.7	29.9	
	105			D-14	43		@ 107.5' SAMPLE: Same as at 101 ft.	91.0	30.9	
	110									
180							@ 112.5' Concretion, slight seepage.			
	115			D-15	66		@ 115' SAMPLE: Same as at 107.5 ft.	97.0	26.4	
	120									
170				D-16	53		@ 123' SAMPLE: Same as at 115 ft.	100.8	24.1	
	125									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

Boring No. B- 3

DATE STARTED: 8/8/01 DATE ENDED: 8/9/01
DRILLING COMPANY: Tri Vallley
EQUIPMENT USED: Bucket Auger
HOLE DIAMETER (in.) 30"
DRIVE DROP (in.) 12"
DRIVE WEIGHT (lbs.) See Notes

GROUND SURFACE ELEVATION: 292 ft
DATUM: MSL
LOCATION:
COORD/STATION:

Logged By: KV/WG
Sampled By: KV

Elevation (ft.)	Depth (ft.)	Graphic Log	Attitudes	Sample Method and Number	Blow Count/ Penetration	Soil Class. (U.S.C.S.)	DESCRIPTION	Dry Density (pcf)	Moisture Content (%)	Remarks
		W E								
	130						NOTES Total Depth 127 ft. Groundwater Not Encountered Seepage Encountered at 101.5 ft. and 112 ft. Downhole Logged to 126 ft. Backfilled and Tamped 0-110 ft. Drive Weights: 0-28'/5952, 28-55'/3921, 55-84'/2531, 84-110/1407, 110-168'/1600			
160	135									
	140									
150	145									
	150									

GEOTECHNICAL LOG OF BORING

01012-02

CUSD/Rancho Capistrano

NMG

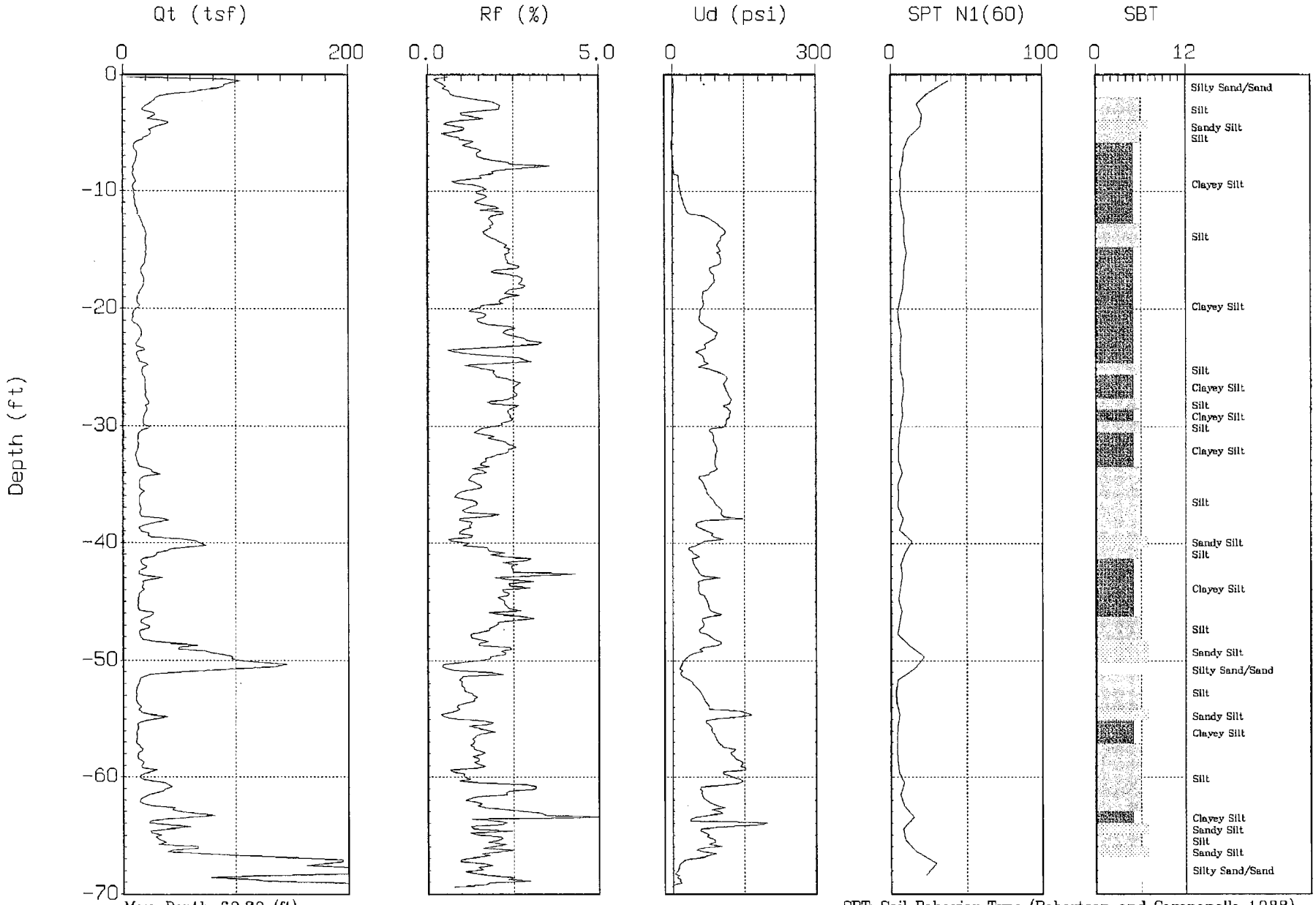
Report: BUCKET AUGER; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 8/20/01

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-2

Engineer : L. GOSSETT
Date : 05:21:01 08:12



Max. Depth: 69.39 (ft)

Depth Inc.: 0.164 (ft)

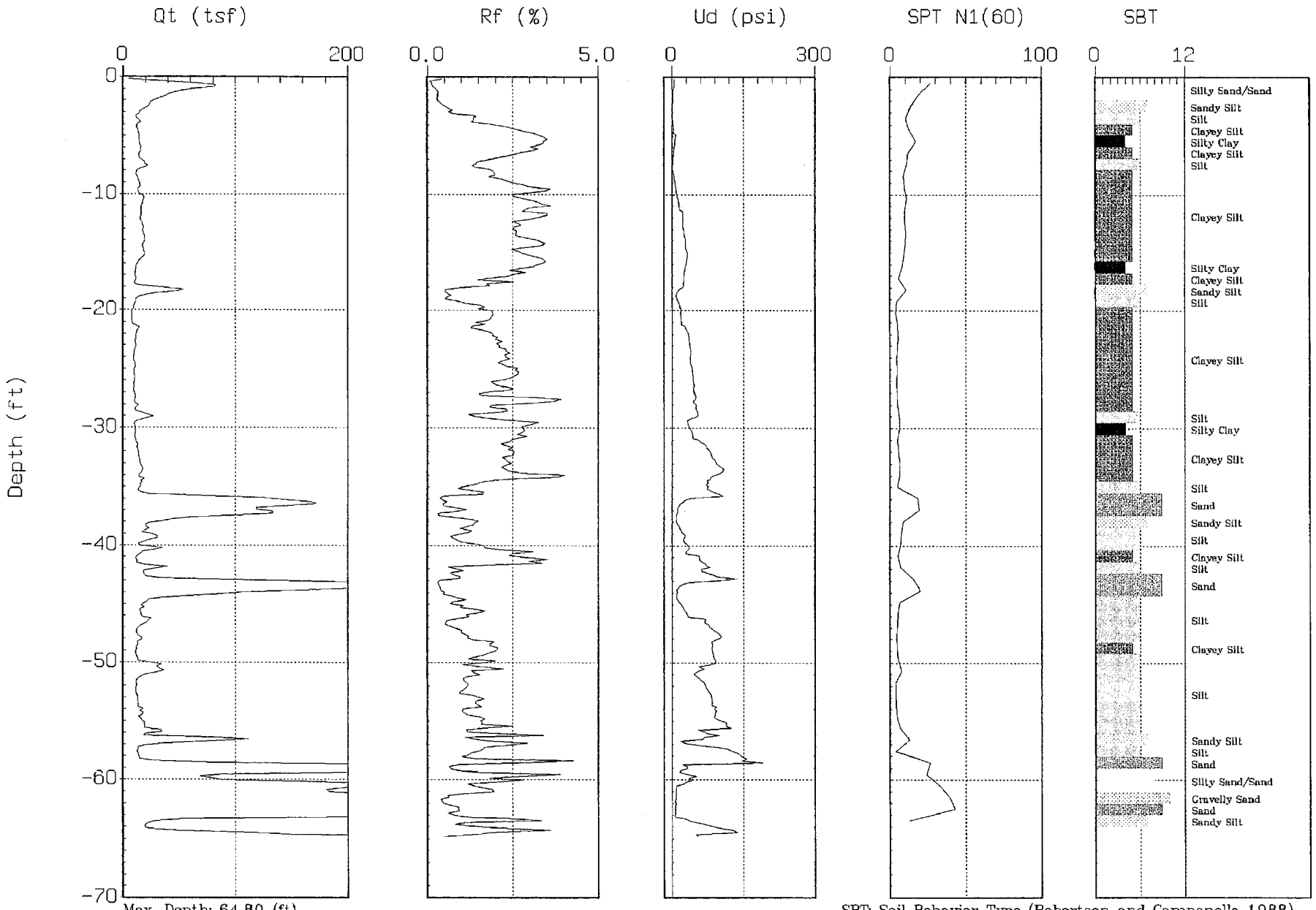
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-3

Engineer : L. GOSSETT
Date : 05:21:01 09:04



Max. Depth: 64.80 (ft)

Depth Inc.: 0.164 (ft)

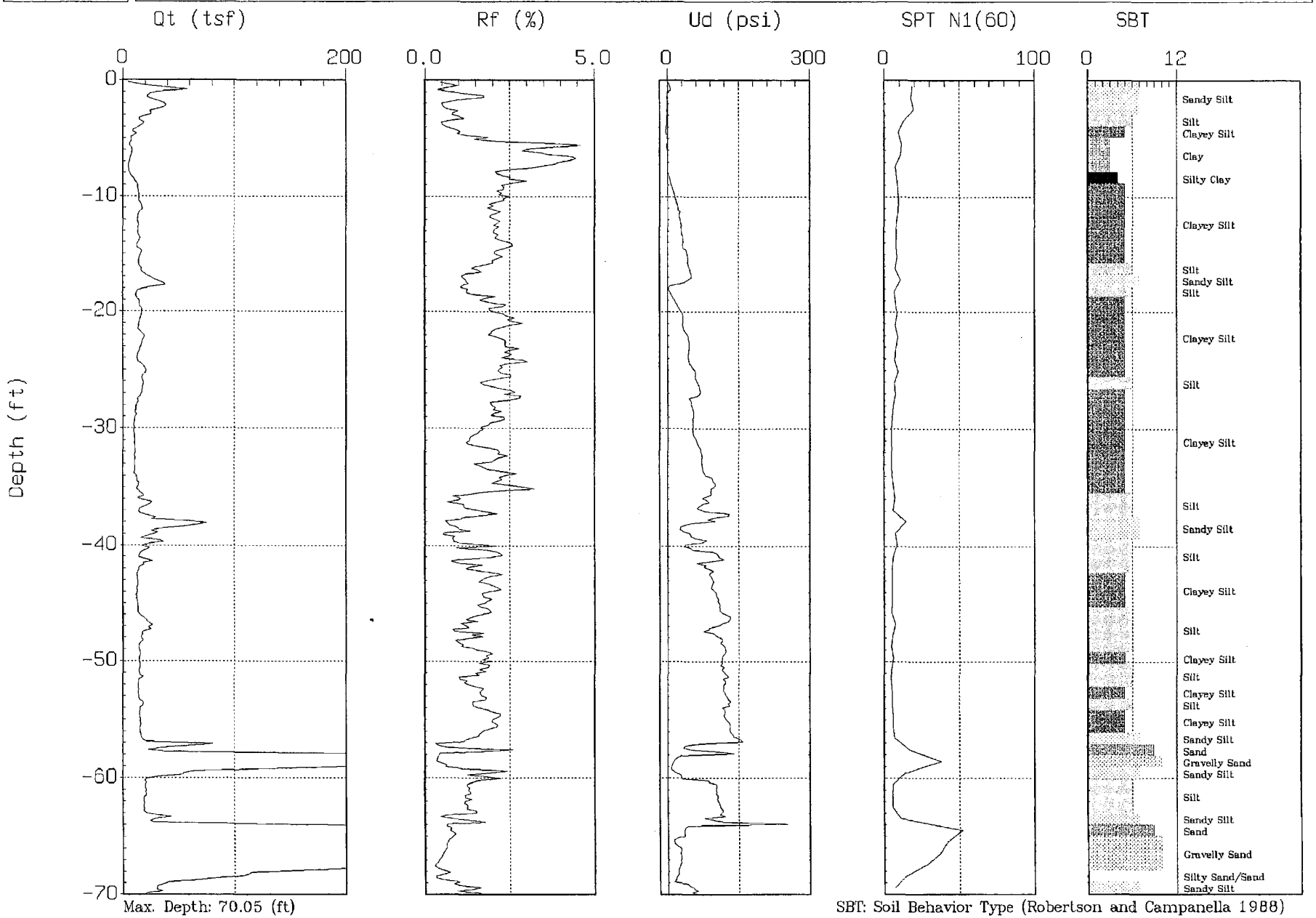
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-4

Engineer : L. GOSSETT
Date : 05:21:01 09:49



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

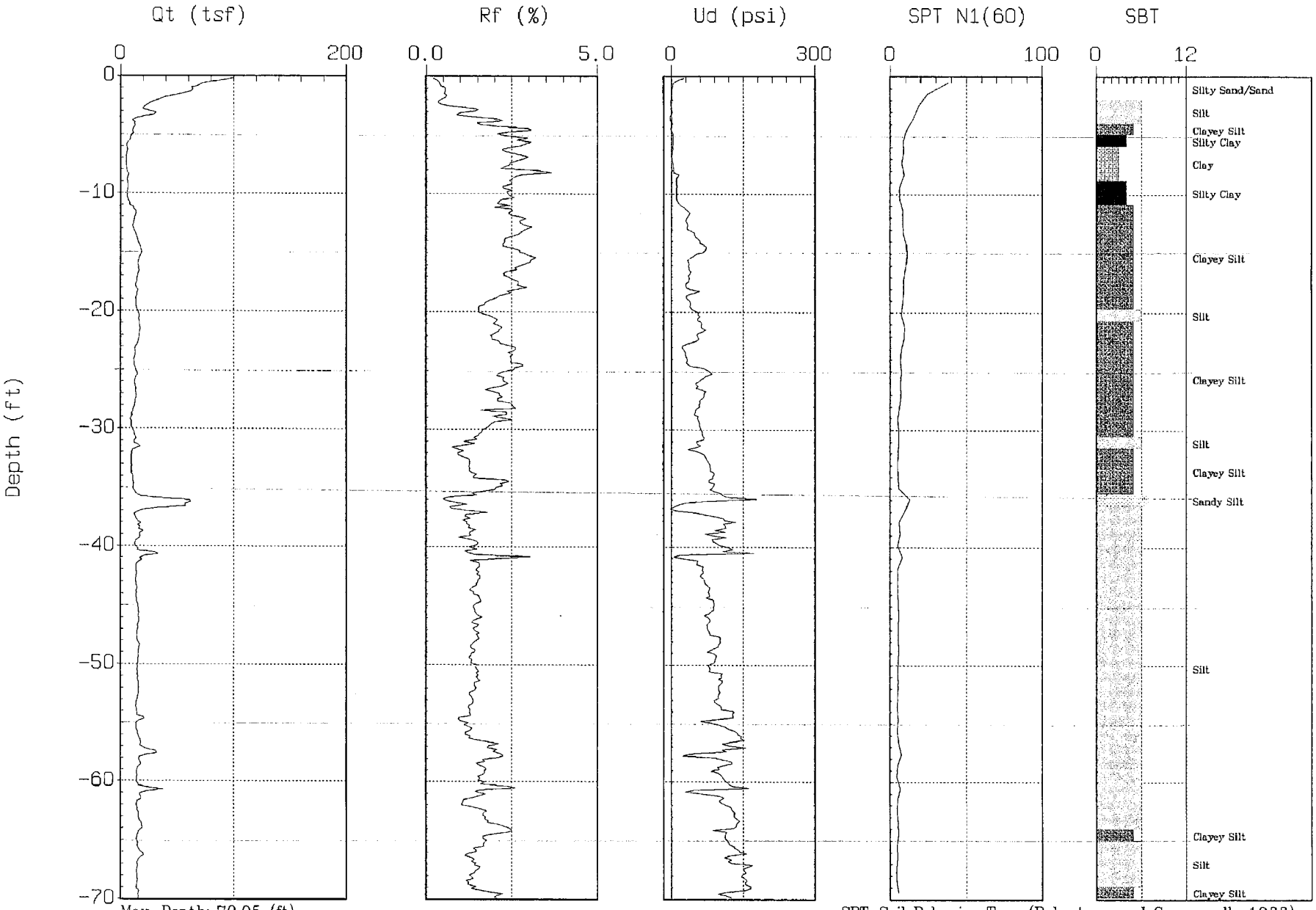
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-5

Engineer : L. GOSSETT
Date : 05:21:01 10:44



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

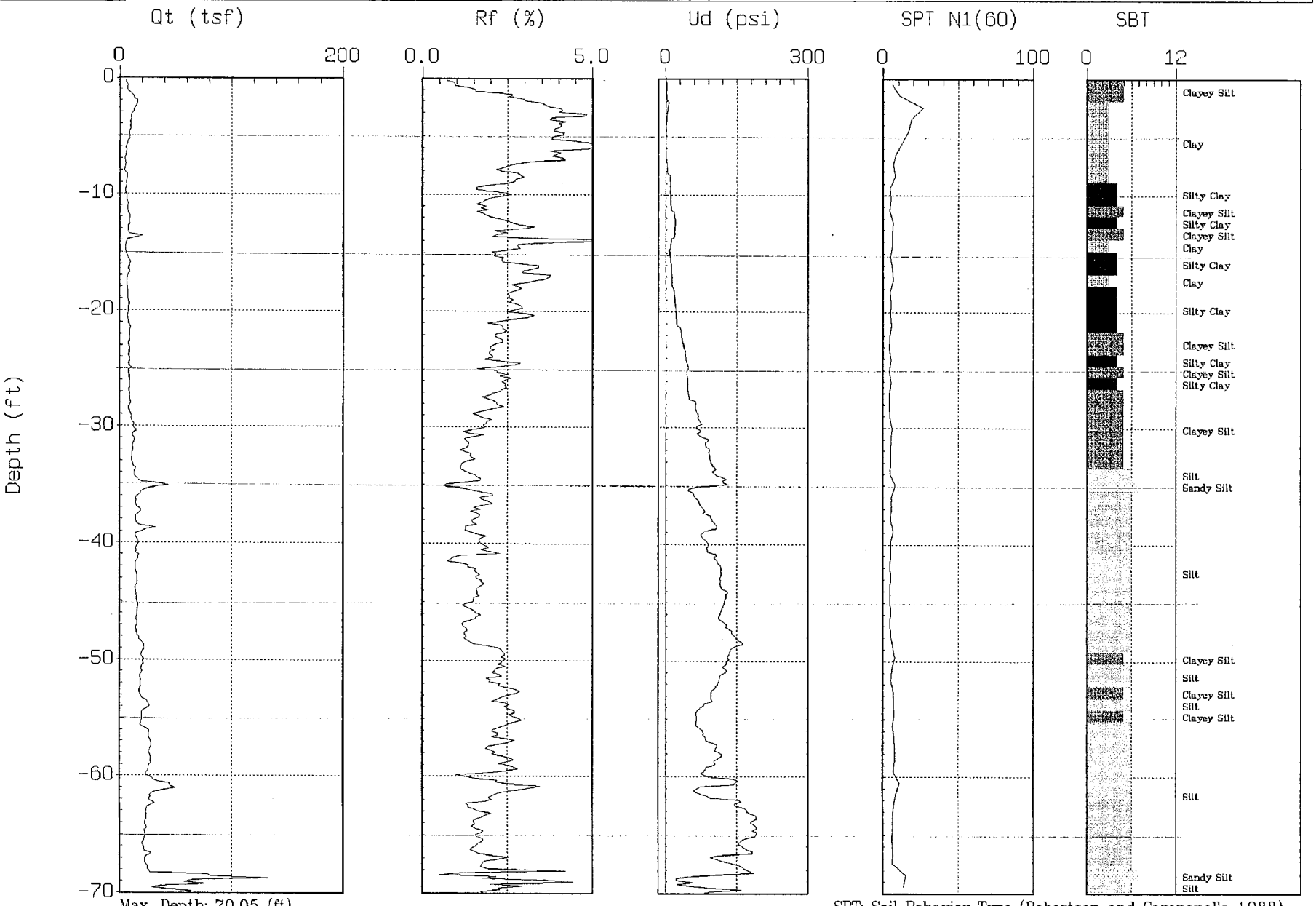
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-6

Engineer : L. GOSSETT
Date : 05:21:01 11:40



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

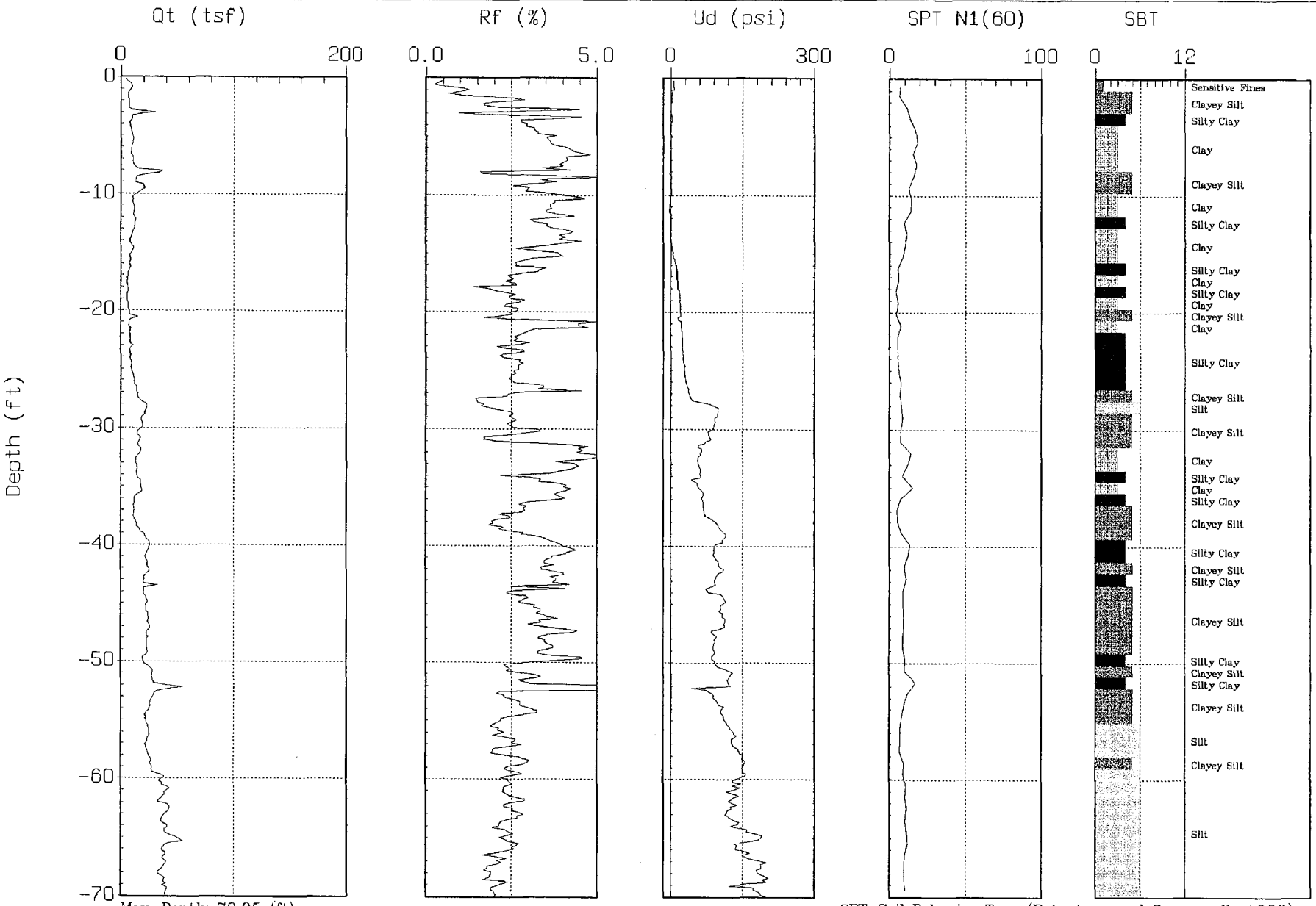
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-7

Engineer : L. GOSSETT
Date : 05:21:01 12:39



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

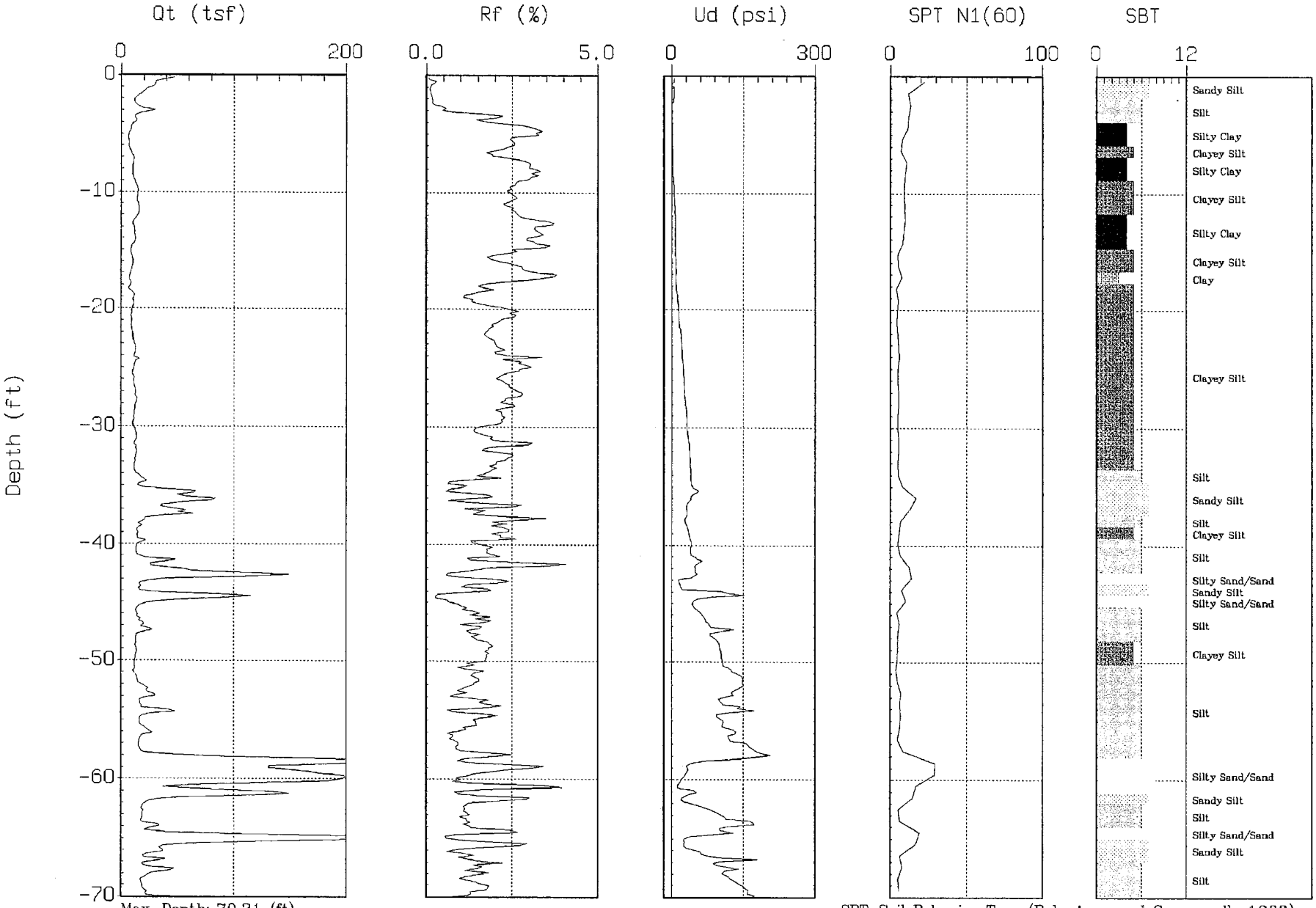
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-8

Engineer : L. GOSSETT
Date : 05:21:01 13:25



Max. Depth: 70.21 (ft)

Depth Inc.: 0.164 (ft)

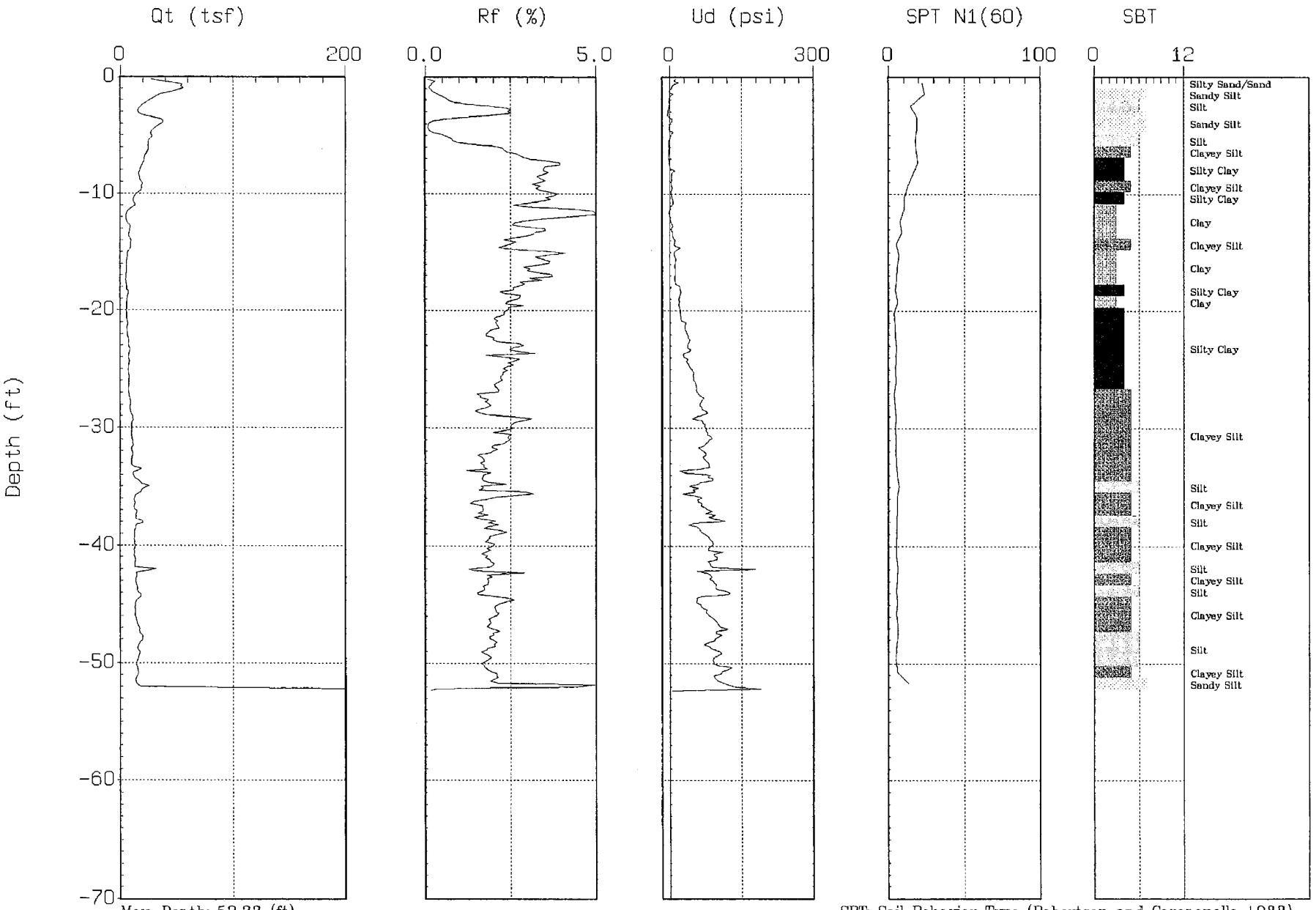
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-9

Engineer : L. GOSSETT
Date : 05:21:01 14:29



Max. Depth: 52.33 (ft)

Depth Inc.: 0.164 (ft)

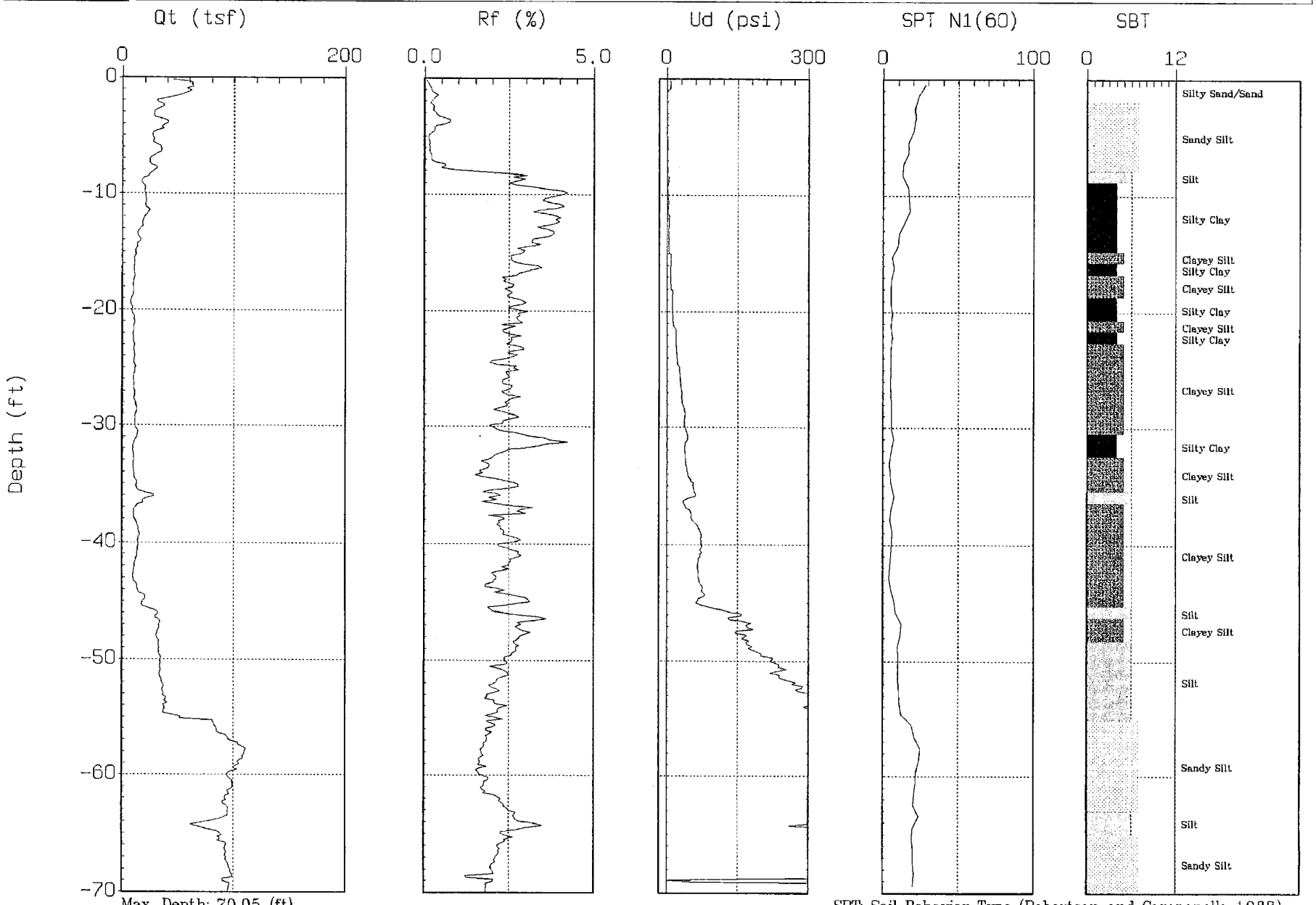
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-10

Engineer : L. GOSSETT
Date : 05:21:01 15:00



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

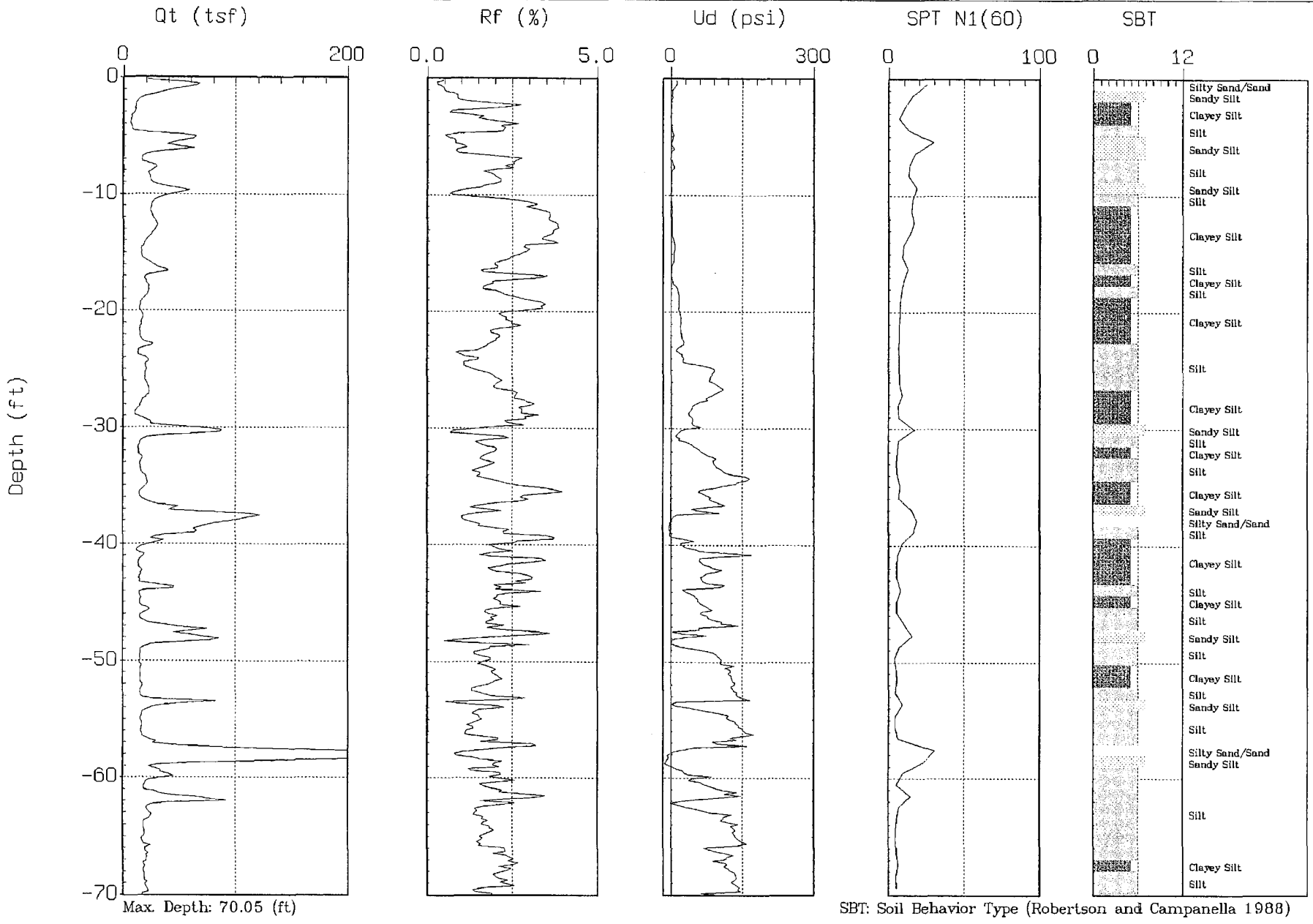
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-11

Engineer : L. GOSSETT
Date : 05:22:01 06:13



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

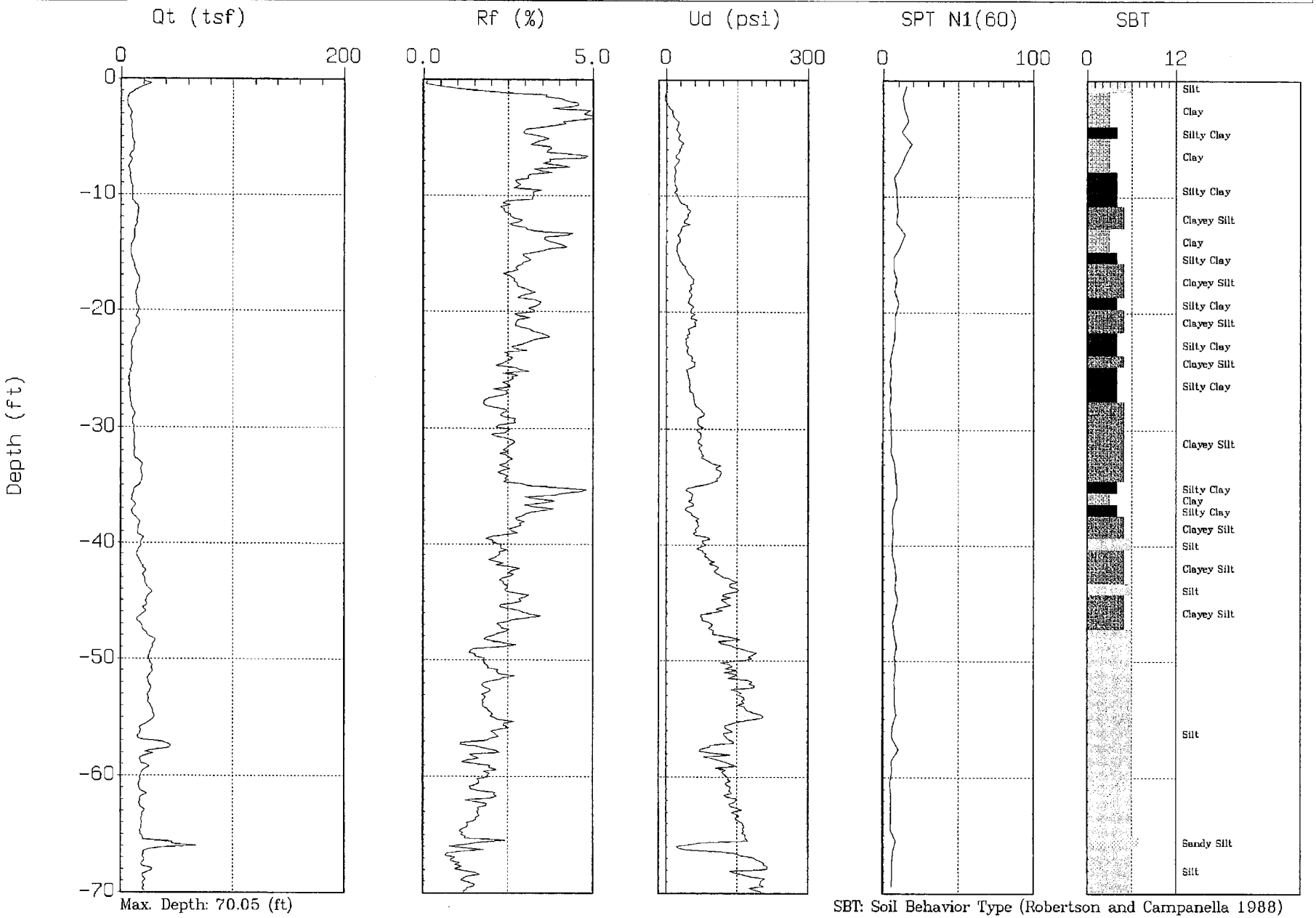
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-12

Engineer : L. GOSSETT
Date : 05:22:01 07:09



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

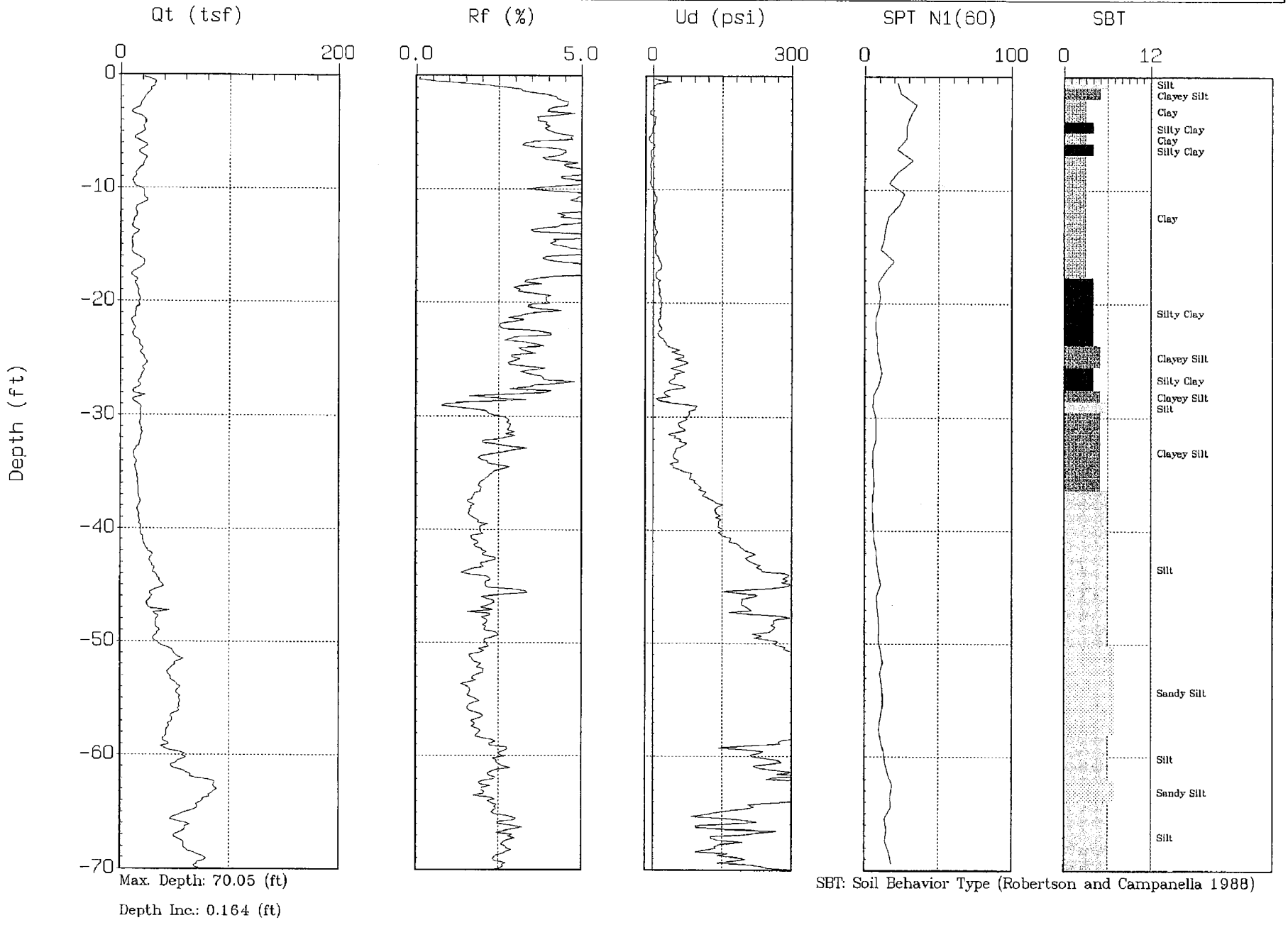
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-13

Engineer : L. GOSSETT
Date : 05:22:01 07:53



Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

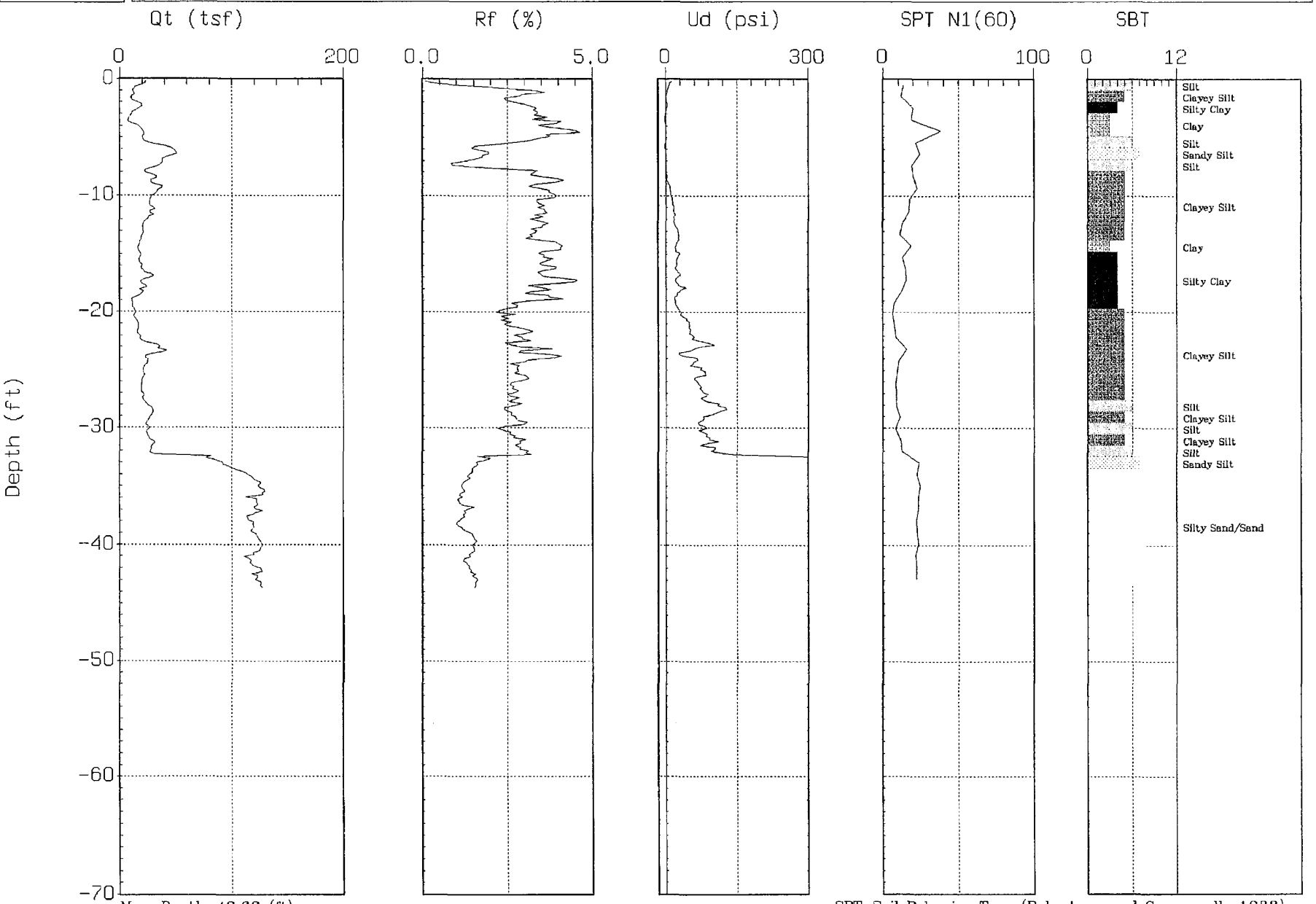
SBT: Soil Behavior Type (Robertson and Campanella 1988)

GREGG

NMG GEOTECHNICAL

Site : CUSD/RANCHO CAPISTRANO
Location : CPT-14

Engineer : L. GOSSETT
Date : 05:22:01 08:44



Max. Depth: 43.63 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	5/30/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	6 feet		
Comments			

H- 1

Sheet 1 of 3

Total Depth Drilled (ft): 95.5

Approximate Ground Surface Elevation (ft): 205.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)** @ 0' Yellowish brown silty fine SAND/fine sandy SILT, damp.			
200	5		D-1	9			@ 5' Mottled grayish brown and dark grayish brown clayey SILT, moist, medium stiff, occasional root hairs, plastic, occasional charcoal, sandy silt in upper rings.	24.5	93.9	
	10		D-2	5			@ 10' Dark grayish brown to brown clayey SILT, wet, soft, abundant caliche stringers, plastic; dark gray and grayish brown clay in tip.	31.3	90.5	
190	15		D-3	12		CL	@ 15' Dark grayish brown silty CLAY, moist, medium stiff to stiff, slightly to moderately porous, abundant caliche, plastic; sandy clay in tip.	29.7	93.0	
	20		D-4	13			@ 20' Dark grayish brown silty CLAY, moist, medium stiff, moderately porous, abundant caliche/gypsum, plastic.	27.2	98.2	
180	25		D-5	13		CL/ML	@ 25' Dark grayish brown silty CLAY/clayey SILT, moist, medium stiff, no visible porosity, abundant caliche veins/stringers, very plastic.	25.0	98.3	
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\IGINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	9		ML/CL	@ 30' Dark grayish brown clayey SILT/silty CLAY, moist, medium stiff, very plastic; very pale brown sandy silt in tip.	29.2	95.8	
170	35		D-7	14		ML	@ 35' Light brownish gray slightly clayey fine sandy SILT, very moist, stiff; dark gray silty clay/clayey silt in upper rings.	25.0	100.3	
	40		SB-1 D-8	12			@ 40' Top: Dark olive gray clayey SILT, very moist, medium stiff, very plastic, scattered organic fragments. Tip: Olive gray fine sandy SILT, very moist, medium stiff.	30.5	96.0	SB-1 @ 40'
160	45		D-9	13		CL	@ 45' Olive gray silty CLAY, moist, medium stiff, plastic, some FeO mottling.	29.3	95.7	GS, AL
	50		D-10	14		CH	@ 50' Dark olive gray silty CLAY, very moist, stiff, plastic, some FeO mottling, occasion gypsum crystals.	29.9	93.3	GS, AL
150	55		D-11	13			@ 55' Olive gray silty CLAY, very moist, stiff; dark gray clay with rock fragments and FeO mottling in tip.	28.1	95.2	
	60		D-12	17		CL	@ 60' Olive gray CLAY, very moist, stiff.	30.9	93.6	GS, AL
140	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
140	65	D-13	16		ML	@ 65' Olive gray clayey SILT, very moist, stiff, scattered pale yellow bedrock fragments, slightly micaceous.	26.5	99.3	
	70	D-14	15			@ 70' Olive gray clayey SILT, very moist, stiff, slightly micaceous, occasional FeO-stained pockets.	30.6	93.1	
130	75	D-15	15		ML/CL	@ 75' Olive gray clayey SILT/silty CLAY, very moist, stiff, abundant siltstone fragments, occasional oxidized root fragment, fine sandy layer (1/8") in tip.	34.5	88.3	
	80	D-16 SB-2	74		CL SP	@ 80' Top: Olive gray coarse sandy CLAY, saturated, soft. Tip: Light brownish gray medium to coarse SAND with clay lenses, wet, dense. Note: Spacer broken in sampler.	22.5	105.4	SB-2 @ 81.5'
120	85	D-17	25		CL SC	@ 85' Top: Grayish brown coarse sandy CLAY, saturated, soft. Tip: Dark gray and brown clayey coarse SAND with pebbles, moist, medium dense.	19.5	109.3	
	90	D-18	38		SLST	**Capistrano Formation (Tc)** @ 90' Dark olive gray to black clayey SILTSTONE, moist, very stiff, weathered foraminifera and fish scales, strong petroliferous odor; clayey coarse sand with pebbles in upper rings.	38.6	84.8	
110	95	D-19	50/6"			@ 95' Same as at 90 ft., very stiff.	29.7	93.4	
	100					NOTES Total Depth 95.5 ft. Groundwater Encountered at 6 ft. Bedrock (Tc) Encountered at Approximately 90.5 ft. Backfilled with Cuttings			

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	5/30/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	12 feet		
Comments			

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Sheet 1 of 3

Total Depth Drilled (ft)	71.5
Approximate Ground Surface Elevation (ft)	208.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					ML	**Alluvium (Qal)**			
	5		D-1	7			@ 5' Dark grayish brown to olive brown slightly clayey SILT, moist, medium stiff, slightly porous, occasional roots, scattered caliche.	25.0	95.1	
200										
	10		D-2	8			@ 10' Dark grayish brown slighty clayey SILT, very moist, medium stiff, trace porosity	26.9	98.4	GS, AL
	15		D-3	8			@ 15' Same as at 10 ft., slightly porous.	26.4	98.0	GS, AL
190										
	20		D-4	13		CL	@ 20' Dark grayish brown silty CLAY, very moist, medium stiff, very plastic, abundant caliche.	28.7	95.1	
	25		D-5	11			@ 25' Same as at 20 ft., olive gray.	30.9	93.5	
180										
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	10		ML	@ 30' Olive gray clayey SILT, very moist, medium stiff, abundant caliche, plastic.	27.8	96.4	
	35		D-7	13		CL CL/ML	@ 35' Top: Olive gray medium to coarse sandy CLAY, very moist, stiff, FeO mottling, gray silt in upper rings. Tip: Grayish brown silty CLAY/clayey SILT, very moist, medium stiff, occasional silt pockets.	26.2	98.0	
170										
	40		D-8	10		ML CH	@ 40' Top: Olive gray clayey SILT, very moist, medium stiff, plastic, FeO mottling. Tip: Very dark gray silty CLAY, very moist, medium stiff, very plastic, scattered caliche.	28.4	96.1	GS, AL
	45		D-9	13		CL/ML CL	@ 45' Top: Dark olive gray silty CLAY/clayey SILT, very moist, medium stiff, scattered caliche, FeO mottling. Tip: Dark olive gray silty CLAY, very moist, medium stiff, very plastic, abundant caliche.	25.5	99.4	GS, AL
160										
	50		D-10	19			@ 50' Very dark gray CLAY, moist, medium stiff to stiff, scattered caliche, sparse rounded pebbles.	21.5	106.4	
	55		D-11	22		ML	@ 55' Dark gray clayey SILT, very moist, medium stiff to stiff, FeO mottling, micaceous, sparse caliche.	25.4	99.8	
150										
	60		D-12	23			@ 60' Dark olive gray clayey SILT, moist, stiff, abundant FeO mottling, micaceous, sub-vertical gypsum/caliche-lined fractures, possible weathered bedrock.	30.3	92.8	
	65									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
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Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65		D-13	20		ML/CL	@ 65' Dark olive gray silty CLAY/clayey SILT, moist, stiff, abundant MnO-stained joints/fractures, micaceous.	37.3	86.9	
140										
	70		SB-1 D-14 SB-2	33		ML SM	@ 70' Top: Olive gray fine sandy SILT, moist, stiff, organic-rich silt layer in upper rings. Tip: Dark gray clayey silty fine to medium SAND, moist, medium dense.	24.1	107.4	SB-1 @ 70' SB-2 @ 71.5'
	75						NOTES Total Depth 71.5 ft. Groundwater Encountered at 12.5 ft. Backfilled with Cuttings			
130										
	80									
	85									
120										
	90									
	95									
110										
	100									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	5/31/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	12 feet		
Comments			

H- 3

Sheet 1 of 4

Total Depth Drilled (ft): 101.5

Approximate Ground Surface Elevation (ft): 205.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0				ML	**Alluvium (Qal)**			
200	5	D-1	6		CL	@ 5' Top: Dark grayish brown clayey SILT, very moist, medium stiff, plastic. Tip: Very dark gray silty CLAY, very moist, medium stiff, very plastic, abundant caliche stringers.	30.2	92.6	
	10	D-2	8			@ 10' Very dark grayish brown silty CLAY, very moist, medium stiff, very plastic, abundant caliche stringers.	27.1	96.6	
190	15	D-3	11			@ 15' Same as at 10 ft.	28.2	95.2	
	20	SB-1 D-4	8		ML CL	@ 20' Dark grayish brown CLAY, very moist, medium stiff, scattered caliche, slightly porous, grades dark gray and stiffer in tip; clayey silt in upper rings.	27.6	95.4	SB-1 @ 20'
180	25	D-5	9			@ 25' Olive gray CLAY, very moist, medium stiff, scattered caliche.	24.5	100.2	
	30								

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
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Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30		D-6	9		CL ML	@ 30' Grayish brown clayey SILT, very moist, medium stiff, plastic, slightly micaceous, clay in upper rings.	28.5	95.3	
170	35		D-7	10			@ 35' Same as at 30 ft., wet, very plastic.	29.4	94.8	
	40		SB-2 D-8	12		CL	@ 40' Very dark gray silty CLAY and CLAY, very moist, medium stiff to stiff, scattered charcoal in upper rings; gray silt in upper rings.	36.2	87.7	SB-2 @ 40'
160	45		D-9	10		CL/ML	@ 45' Very dark gray brown silty CLAY/clayey SILT, very moist, medium stiff.	26.9	98.2	
	50		D-10	13		CL	@ 50' Dark grayish brown CLAY, very moist, stiff.	31.2	94.7	
150	55		D-11	15		ML	@ 55' Dark grayish brown clayey SILT, very moist, stiff, micaceous.	25.6	102.3	
	60		SB-3 D-12	13			@ 60' Top: Grayish brown slightly clayey SILT, very moist, stiff, micaceous; sandy silt with charcoal in upper rings.	28.0	94.8	SB-3 @ 60'
			SB-4			CL ML	Tip: Very dark grayish brown silty CLAY, very moist, stiff, plastic; fine sandy silt in tip of sampler.			SB-4 @ 61.5'
140	65									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
140	65	SB-5 D-13	70		SM	@ 65' Grayish brown silty fine SAND, very moist, dense, micaceous; pale brown fine to medium sand with occasional pebbles in tip.	21.5	108.2	SB-5 @ 65'
	70	SB-6 D-14	30		SC SM	@ 70' Top: Grayish brown slightly clayey medium to very coarse SAND, very moist, medium dense; silty fine to coarse sand in upper rings. Tip: Grayish brown clayey silty fine to medium sand, very moist, medium dense.	14.2	119.1	SB-6 @ 70'
130	75	D-15	43		SC	@ 75' Gray to dark gray clayey medium to very coarse SAND, very moist, dense.	19.0	115.5	
	80	D-16	76		SP	@ 80' Gray to dark gray medium to very coarse SAND with pebbles, wet, very dense; sparse thin clay lenses/pods; clayey sand in upper rings.	10.9	128.6	
120	85	D-17	55/6"		CL	@ 85' Dark gray to dark grayish brown fine to medium sandy CLAY, wet to saturated, medium stiff, abundant pebbles, some cobbles.	19.6	111.6	
	90	D-18	55			@ 90' Dark gray sandy CLAY, wet to saturated, medium stiff, abundant pebbles.	28.1	96.4	
110	95	D-19	33			@ 95' Same as at 90 ft., grayish brown.	34.4	89.0	
	100								

LOG OF BORING
CUSD/Rancho Capistrano
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Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
		D-20	40		SLST	**Capistrano Formation (Tc)** @ 100' Very dark gray to very dark grayish brown SILTSTONE, moist, very stiff, weathered foraminifera, micaceous, petroliferous odor, massive.	34.5	87.2	
100	105					NOTES Total Depth 101.5 ft. Groundwater Encountered at Approximately 12 ft. Bedrock Encountered at 100 ft. Backfilled with Cuttings			
	110								
90	115								
	120								
80	125								
	130								
70	135								

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	5/31/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	24 feet		
Comments			

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Sheet 1 of 3

Total Depth Drilled (ft): 71.5

Approximate Ground Surface Elevation (ft): 203.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0				SM	**Alluvium (Qal)** @ 0' Silty fine SAND with pebbles.			
200		B-1							
	5	SB-1 D-1	6		ML/CL CL	@ 5' Top: Interlayered light gray SILT and grayish brown CLAY, moist, medium stiff, micaceous, abundant organics, siltier in upper rings. Tip: Black CLAY, moist, medium stiff.	34.6	86.9	SB-1 @ 5'
	10	D-2	10			@ 10' Grayish brown silty CLAY, very moist, medium stiff, plastic; tip is dark to very dark gray.	29.1	91.2	
190									
	15	D-3	23			@ 14' Very dark gray CLAY, moist, stiff, occasional pebbles stringers.	22.6	102.9	
	20	SB-2 D-4	10			@ 20' Dark grayish brown CLAY, very moist, medium stiff; silty clay/clayey silt in upper rings.	26.9	97.9	SB-2 @ 20'
180									
	25	D-5	10		SP CL	@ 25' Dark gray to very dark gray CLAY, very moist, medium stiff, scattered caliche; thin sand layer (1") in upper rings.	31.0	93.7	
	30								

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30	D-6	6		ML	@ 30' Dark grayish brown clayey SILT, very moist, soft to medium stiff, occasional gypsum, slightly porous.	29.3	94.8	
170									
	35	SB-3 D-7	10		CL ML CL	@ 35' Top: Dark grayish brown SILT, very moist, medium stiff; dark gray clay in upper rings. Tip: Dark gray silty CLAY, very moist, medium stiff.	30.2	90.3	SB-3 @ 35'
	40	SB-4 D-8	14		CL/ML ML	@ 40' Top: Grayish brown silty CLAY/clayey SILT, very moist, medium stiff, plastic, scattered gypsum. Tip: Gray clayey SILT, very moist, medium stiff, plastic.	29.1	96.4	SB-4 @ 40'
160									
	45	D-9	12		CL SM/ML	@ 45' Top: Dark gray CLAY, very moist, medium stiff to stiff; Tip: Gray to dark gray sandy SILT/silty SAND with clay, very moist, medium stiff to stiff/medium dense.	25.7	98.0	
	50	D-10	9			@ 50' No recovery.			
150									
	55	SB-5 & 6 D-11	11		SM ML CL	@ 55' Top: Olive brown clayey SILT, very moist, medium stiff, organic fragments in upper rings, silty sand in uppermost rings, dark gray sandy clay in tip.	28.7	95.1	SB-5&6 @ 55'-56.5'
	60	D-12	24		SC/CL SM ML	@ 60' Top: Very dark grayish brown silty fine SAND, very moist, medium dense; sandy clay/clayey sand in upper rings; Tip: Dark gray sandy SILT, very moist, stiff.	18.6	138.5	
140									
	65								

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65	D-13 SB-7	20		ML	@ 65' Grayish brown fine sandy SILT, moist, stiff, scattered organics.	22.3	105.0	SB-7 @ 65.5'
	70	D-14	41		SM/ML SC	@ 70' Dark gray clayey coarse to very coarse SAND with occasional pebbles, wet, dense; dark gray clayey silty fine sand/fine sandy silt.			
130									
	75					NOTES Total Depth 71.5 ft. Groundwater Encountered at 24 ft. Backfilled with Cuttings			
	80								
120									
	85								
	90								
110									
	95								
	100								

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	6/1/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	10.3 feet		
Comments			

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Sheet 1 of 2

Total Depth Drilled (ft): 61.5

Approximate Ground Surface Elevation (ft): 208.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0					CL	**Alluvium (Qal)**			
	5		D-1	12			@ 5' Very dark grayish brown silty CLAY, moist, medium stiff to stiff, slightly porous, occasional organics (small charcoals and grass).	24.6	100.5	
200										
	10		D-2	10			@ 10' Dark grayish brown silty CLAY, moist, medium stiff, slightly porous, scattered caliche.	26.5	99.2	
	15		D-3	11			@ 16' Dark grayish brown silty CLAY, very moist, medium stiff, scattered caliche.	26.7	98.4	
190										
	20		D-4	14			@ 20' Dark grayish brown silty CLAY, very moist, stiff, scattered caliche.	25.3	100.3	
	25		D-5	8			@ 25' Brown CLAY, very moist to wet, medium stiff, very plastic.	27.0	96.5	
180										
	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30	D-6	12		CL	@ 30' Olive brown to yellowish brown CLAY, moist, medium stiff to stiff, slightly porous, scattered caliche.	26.0	99.0	
	35	D-7	11			@ 35' Very dark gray CLAY, very moist medium stiff.	26.4	98.5	
170									
	40	SB-1 D-8	19		ML CL	@ 40' Top: Light brownish gray and light gray clayey SILT, moist, stiff, organics in upper rings. Tip: Dark grayish brown CLAY, FeO mottling, organics, laminated.	25.4	99.2	SB-1 @ 40'
	45	SB-2 D-9	24			@ 45' Grayish brown CLAY, moist, stiff to very stiff, FeO mottled, abundant organics in upper rings.	23.1	103.3	SB-2 @ 45'
160									
	50	D-10	16		CL	@ 50' Dark grayish brown CLAY, moist, medium stiff to stiff, FeO and jarosite staining, weathered foraminifera, micaceous, gray in upper rings.	38.9	82.6	
	55	D-11	15			@ 55' Same as at 50 ft.	36.4	83.9	
150									
	60	SB-3 D-12	17		ML	@ 60' Olive brown clayey SILT, very moist, stiff, charcoal fragments.	28.2	98.2	SB-3 @ 60'
	65					NOTES Total Depth 61.5 ft. Groundwater Encountered at 10.3 ft. Backfilled with Cuttings			

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Date(s) Drilled	6/1/01	Logged By	BO
Drilling Company	2R Drilling	Drill Bit Size/Type	8"
Drill Rig Type	CME 55	Hammer Data	140 lbs. @ 30" Drop
Sampling Method(s)	Modified California		
Approximate Groundwater Depth:	17 feet		
Comments			

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Sheet 1 of 3

Total Depth Drilled (ft): 71.5

Approximate Ground Surface Elevation (ft): 209.0 MSL

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	0		B-1			CL	**Alluvium (Qal)** @ 0' Dark brown silty CLAY, dry, scattered small gravel, dead grass and weeds.			Bag Sample from 0'-5'
	5		D-1	9			@ 5' Very dark grayish brown silty CLAY, wet, medium stiff, plastic, slightly porous, sparse charcoal, root hairs.	28.3	93.0	
200	10		D-2	13			@ 10' Mottled dark grayish brown, very dark brown, and dark yellowish brown silty CLAY, moist, stiff, plastic, slightly porous, caliche veins.	21.8	106.6	
	15		D-3	8			@ 15' Mottled yellowish brown, grayish brown, and dark brown silty CLAY, moist to wet, medium stiff, plastic, sparse caliche nodules, trace pinhole porosity, abundant FeO stain, charcoal.	25.6	99.2	
190	20		D-4	11		ML/CL	@ 20' Mottled grayish brown, dark yellowish brown, and dark brown interlayered SILT and silty CLAY, very moist, medium stiff, FeO stained, clay layers are plastic, FeO stained, scattered charcoal.	25.2	98.9	
	25		D-5	17		ML	@ 25' Mottled olive brown, olive gray, yellowish brown, and brown clayey SILT, very moist, stiff, slightly plastic, FeO stained, caliche stringers and sand-sized nodules.	22.3	106.3	
180	30									

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Elevation (ft)	Depth (ft)	SAMPLES Type Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	30	D-6	21		CL	@ 30' Olive brown silty CLAY, very moist, stiff, plastic, caliche, charcoal, rock fragments in upper 2 rings.	24.6	101.5	
	35	SB-1 D-7	25		CL/ML	@ 35' Greenish black silty CLAY/clayey SILT, very moist, very stiff, slightly plastic, sparse caliche, moderate charcoal, sparse organics.	23.6	103.8	SB-1 @ 35'
170									
	40	SB-2 D-8	23		ML	@ 40' Greenish black clayey SILT, moist to very moist, very stiff, slightly plastic, sparse caliche nodules, charcoal, sparse organics.	26.6	98.2	SB-2 @ 40'
	45	SB-3 D-9	19		CL	@ 45' Dark greenish gray to greenish black silty CLAY, very moist, stiff, plastic, sparse charcoal, wood fragment; clayey silty in upper rings.	29.0	94.9	SB-3 @ 45'
160									
	50	SB-4 D-10	31		ML	@ 50' Greenish black, grayish green, and black clayey SILT, moist, very stiff, slightly plastic, abundant charcoal, petroliferous (unoxidized), laminated in tip.	28.4	94.4	SB-4 @ 50'
	55	D-11	31		CL	@ 55' Dark greenish gray silty CLAY, moist, very stiff, plastic, charcoal, sparse organics, petroliferous odor, caliche.	24.6	100.1	
150									
	60	D-12	37			@ 60' Same as at 55 ft., very stiff.	25.2	100.0	
	65								

LOG OF BORING

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Template: HOLLOW STEM; Prj ID: 01012-02.GPJ; Printed: 9/28/01

Report: HOLLOW STEM; Project: P:\2001\01012-02\GINTW\01012-02.GPJ; Data Template: NMGNOV98.GDT; Printed: 9/28/0

Elevation (ft)	Depth (ft)	SAMPLES Type	SAMPLES Number	SAMPLES Blows per foot	Graphic Log	USCS	MATERIAL DESCRIPTION	Moisture Content (%)	Dry Density (pcf)	OTHER TESTS and REMARKS
	65	SB-5	D-13	36		CL	@ 65' Same as at 60 ft.	29.0	97.3	SB-5 @ 65'
140	70		D-14	44		SLST, CLST	**Capistrano Formation (Tc)** @ 70' Dark greenish gray clayey SILTSTONE/silty CLAYSTONE, moist, very stiff to hard, massive, very odoriferous, trace caliche.	26.5	98.6	
	75						NOTES Total Depth 71.5 ft. Groundwater Encountered at 17 ft. Bedrock Encountered at Approximately 70 ft. Backfilled with Cuttings			
130	80									
	85									
120	90									
	95									
110	100									

LOG OF BORING
CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG

BORING LOG NO. B- 1

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5328° Longitude: -117.6781°

Surface Elev.: 217 (Ft.)

DEPTH ELEVATION (Ft.)

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
0		**LEAN CLAY WITH SAND (CL)**, olive-brown to brown								
			64						37-22-15	85
		stiff								
		7-5-5								
		trace silt, olive-brown to gray-brown								
5		3-5-6					18.7	100		
		white mottling								
		4-6-7								
10		6-8-8								
15		4-5-6								
20		soft to medium stiff								
		2-2-2 N=4								
25										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 1

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5328° Longitude: -117.6781° Surface Elev.: 217 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY WITH SAND (CL), olive-brown to brown *(continued)* medium stiff to stiff				2-2-6 N=8								
	wet, stiff	30			2-4-6 N=10								
	medium stiff	35			1-3-4 N=7								
	stiff	40			2-4-5 N=9								
	41.5 / 175.5												
	Boring Terminated at 41.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 2

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5328° Longitude: -117.6776°

Surface Elev.: 210 (Ft.)

DEPTH	ELEVATION (Ft.)
0	210
7.5	202.5

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0						
		15-14-14	13.4	110		
5		5-7-7			27-20-7	
		3-5-7				
10		4-5-8	26.7	98		
15		3-4-4	33.9	88		
20		2-4-4				
25						

SILTY CLAY (CL-ML), trace sand, olive-brown to brown

olive-brown to gray-brown, very stiff

stiff

LEAN CLAY (CL)
trace silt and sand, olive-brown to gray-brown, stiff

medium stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 2

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5328° Longitude: -117.6776° Surface Elev.: 210 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* medium stiff				2-3-4 N=7								
	31.5 / 178.5	30			2-3-3 N=6								
	SILTY SAND (SM), gray-brown loose	35			2-3-4 N=7								25
	40.0 / 170 **LEAN CLAY (CL)**, trace sand, olive-brown to gray-brown, stiff	40			3-4-6 N=10								
	41.5 / 168.5 ***Boring Terminated at 41.5 Feet***												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 3

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5328° Longitude: -117.6769°

Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0	209	**SILT WITH SAND (ML)**, trace clay, olive-brown to light-brown
2.5	206.5	**LEAN CLAY WITH SAND (CL)**, olive-brown to dark-brown, very stiff
7.5	201.5	**LEAN CLAY (CL)**, white mottling trace silt and sand, olive-brown to dark-brown, very stiff

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
5		9-16-16			
		5-8-12	17.4	103	
10		10-13-15			34-22-12
		8-13-20	22.5	101	
15		5-8-10 N=18			
20		9-7-12			
25					

EXPANSION INDEX | STRENGTH TEST: TEST TYPE, COMPRESSIVE STRENGTH (tsf), STRAIN (%) | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 3

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5328° Longitude: -117.6769° Surface Elev.: 209 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL), white mottling *(continued)* stiff				4-5-7 N=12								
		30			4-6-8					33.6	88		
	and gray-brown, medium stiff	35			2-2-3 N=5								
	stiff	40			4-6-6								
	wet, medium stiff	45			2-2-5 N=7								
	50.0 / 159	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 3

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5328° Longitude: -117.6769°

Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	PERCENT FINES
		SANDY LEAN CLAY (CL), gray-brown, stiff			5-8-8	
51.5	157.5	**POORLY GRADED SAND WITH SILT (SP-SM)**, gray-brown				
		medium dense	55		7-7-4 N=11	10
		trace clay	60		9-14-15	
65.0	144	**SANDY LEAN CLAY (CL)**, dark-brown to gray-brown, medium stiff	65		1-2-3 N=5	
		stiff	70		4-7-9	
			75			

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | EXPANSION INDEX | STRENGTH TEST: TEST TYPE, COMPRESSIVE STRENGTH (tsf), STRAIN (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS: LL-PL-PI

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 3

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5328° Longitude: -117.6769° Surface Elev.: 209 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), dark-brown to gray-brown, medium stiff *(continued)* 76.5 / 132.5				2-5-5 N=10								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 4

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5325° Longitude: -117.6789°

Surface Elev.: 247 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0								
				4-5-7	5.3			
5.0	242	5						
				5-15-15			39-26-13	
				11-16-24				90
		10		9-14-21	16.7	99		
15.0	232	15						
				9-15-22				
20.0	227	20						
				2-3-8 N=11				
25.0	222	25						

LANDSLIDE DEPOSITS (Qls), SILTY CLAYEY SAND, trace gravel, light brown, loose

LANDSLIDE DEPOSITS (Qls), SILT, trace sand, olive-brown to gray-brown, very stiff

white mottling and orange rust staining

LANDSLIDE DEPOSITS (Qls), SILTY CLAY (CL-ML), trace sand, olive-brown with white mottling and orange rust staining, very stiff

LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown, stiff

EXPANSION INDEX

STRENGTH TEST: TEST TYPE; COMPRESSIVE STRENGTH (tsf); STRAIN (%)

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 4

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5325° Longitude: -117.6789°

Surface Elev.: 247 (Ft.)

DEPTH	ELEVATION (Ft.)
30.0	217
50.0	197

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)
		8-14-21		
30		4-10-11 N=21		
35		9-16-25		
40		2-6-11 N=17		
45		11-17-23	22.8	104
50				

SILTY CLAY (CL-ML), olive-brown, very stiff

LEAN CLAY (CL), trace sand, light-gray to gray-brown with white mottling, very stiff

WATER LEVEL OBSERVATIONS

EXPANSION INDEX

STRENGTH TEST: TEST TYPE; COMPRESSIVE STRENGTH (tsf); STRAIN (%)

ATTERBERG LIMITS: LL-PL-PI

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 4

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5325° Longitude: -117.6789°

Surface Elev.: 247 (Ft.)

DEPTH	ELEVATION (Ft.)	FIELD TEST RESULTS	SAMPLE TYPE
		CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND, dark-brown to dark-gray very stiff	3-10-20 N=30
55	192	hard	35-50/4"
60	187		9-19-27 N=46
65	182		42-50/3"
70	177		10-20-29 N=49
75	172		

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | EXPANSION INDEX | STRENGTH TEST: TEST TYPE, COMPRESSIVE STRENGTH (tsf), STRAIN (%) | WATER CONTENT (%) | DRY UNIT WEIGHT (pcf) | ATTERBERG LIMITS: LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 4

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5325° Longitude: -117.6789° Surface Elev.: 247 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND, dark-brown to dark-gray *(continued)* hard				27-50/5"								
		80			15-19-29 N=48								
		85			30-50/5"								
		90			17-23-35 N=58								
	91.5 / 155.5 ***Boring Terminated at 91.5 Feet***												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 5

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5324° Longitude: -117.6793°

Surface Elev.: 254 (Ft.)

DEPTH / ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LANDSLIDE DEPOSITS (Qls), LEAN CLAY trace silt and sand, gray-brown to olive-brown												
very stiff				5-8-11								
	5			8-13-16					10.9	103		
				9-12-14								
light-brown to olive-brown with white mottling	10			5-8-12					12.4	97		
medium stiff	15			1-2-4 N=6							42-23-19	
very stiff	20			4-9-12					20.2	97		
	25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 5

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5324° Longitude: -117.6793°

Surface Elev.: 254 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	Sample	Field Test Results
		LANDSLIDE DEPOSITS (Qls), LEAN CLAY *(continued)* olive-brown with white mottling, medium stiff		1-2-4 N=6
30		stiff		4-7-9
35		medium stiff		1-2-3 N=5
40		very stiff		3-8-14
45.0	209			
45		**LANDSLIDE DEPOSITS (Qls), SILTY CLAY**, trace sand, olive-brown to light-gray with white mottling and orange rust stains, stiff		2-3-8 N=11
50.0	204			
50				

GRAPHIC LOG	WATER LEVEL OBSERVATIONS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 5

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5324° Longitude: -117.6793°

Surface Elev.: 254 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
			55			9-14-22								
						2-5-10 N=15								
			60											
						13-27-45		UU						
			65											
						4-9-16 N=25								
			70											
						40-50/4"								
			75											

SILTY CLAY (CL-ML), trace sand, dark-gray to dark-brown with white mottling and orange rust stains, very stiff

stiff to very stiff

gray-brown, hard

62.0 192

CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND, dark-gray to dark-brown with white mottling, very stiff

dark-gray to dark-brown, hard

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 5

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5324° Longitude: -117.6793° Surface Elev.: 254 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	76.5 / 177.5				11-21-43 N=64								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 6

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6786°

Surface Elev.: 234 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
				2-4-6					13.2	97		
	5			8-8-12					15.1	101		
				9-13-16								
	10			7-11-18								
	15			2-4-4 N=8								
	20			6-12-13								
	25											

LANDSLIDE DEPOSITS (Qls), LEAN CLAY, trace silt and sand, olive-brown

orange rust staining, stiff

very stiff

10.0 224

SILTY CLAY (CL-ML)
trace sand, olive-brown, very stiff

medium stiff to stiff

white mottling, very stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 6

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6786°

Surface Elev.: 234 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	Sample Type	Field Test Results
		SILTY CLAY (CL-ML) *(continued)* medium stiff to stiff		1-3-5 N=8
30.0	204	**LEAN CLAY (CL)**, trace silt and sand, olive-brown to gray-brown with white mottling and orange rust staining, very stiff		10-15-20
		stiff		2-3-6 N=9
40.0	194	**CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND**, dark-brown to dark-gray, hard		20-50/5"
				11-13-19 N=32

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
30									
35									
40									
45									
50									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 6

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5323° Longitude: -117.6786° Surface Elev.: 234 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	50.9 / 183				15-50/5"								
	Boring Terminated at 50.9 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 7

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6781°

Surface Elev.: 222 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
SILTY CLAYEY SAND (SC-SM), olive-brown												
2.5 219.5												
LEAN CLAY (CL), trace silt and sand, olive-brown with orange rust staining, stiff				3-4-6					11.8	91		
	5			3-4-6					16.5	99		
				4-8-9					14.7	104		
	10			5-8-9					13.4	104		
white mottling	15			3-6-9								
20.0 202												
SILTY CLAY (CL-ML) trace sand, olive-brown to gray-brown with white mottling and orange rust staining, soft to medium stiff	20			1-2-2 N=4								
	25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 7

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6781°

Surface Elev.: 222 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SILTY CLAY (CL-ML) *(continued)* soft					1-1-2 N=3								
	soft to medium stiff		30			1-2-2 N=4								
35.0	187													
	LEAN CLAY (CL), trace silt and sand, olive-brown with white mottling and orange rust staining, soft to medium stiff		35			1-2-2 N=4								
	medium stiff		40			1-2-3 N=5								
	stiff		45			1-3-5 N=8								
			50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 7

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5323° Longitude: -117.6781° Surface Elev.: 222 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	medium stiff 51.5 / 170.5				1-2-4 N=6								
	Boring Terminated at 51.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-10-2021 | Boring Completed: 09-10-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 8

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6776°

Surface Elev.: 211 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	TEST TYPE	COMPRESSIVE STRENGTH (tsf)	STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILT (ML), with clay, trace sand, light-brown to olive-brown											
2.5	208.5										
LEAN CLAY (CL) trace sand, light-brown to olive-brown, stiff				5-7-8						37-22-15	
trace silt, olive-brown to gray-brown		5		6-6-6				17.8	105		
				4-5-6				19.6	99		
white mottling		10		3-5-5							
medium stiff		15		3-3-3							
soft		20		1-1-2 N=3							
		25									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 8

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5323° Longitude: -117.6776° Surface Elev.: 211 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* medium stiff	30			1-2-3 N=5								
					1-2-3 N=5								
	stiff	35			3-4-5 N=9								
	41.5 / 169.5	40			2-4-6 N=10								
	Boring Terminated at 41.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-17-2021 | Boring Completed: 09-17-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 9

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6770°

Surface Elev.: 208 (Ft.)

DEPTH | ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
				7-8-12					18.0	93		
	5			8-11-11					17.9	104		
				10-13-16								
	10			6-10-12								
	15			3-6-6								
	20			3-3-5 N=8								
	25											

SILT (ML), with clay, olive-brown to brown

very stiff

4.0 204

LEAN CLAY (CL)

trace silt and sand, olive-brown to dark-brown

very stiff

olive-brown to gray-brown

orange rust staining, stiff

medium stiff to stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon

1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B- 9

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5323° Longitude: -117.6770° Surface Elev.: 208 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* white mottling, stiff				2-4-5 N=9								
	medium stiff	30			2-3-4 N=7								
	stiff	35			2-4-6 N=10								
	medium stiff 41.5 / 166.5	40			2-3-4 N=7								
	Boring Terminated at 41.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-10

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5323° Longitude: -117.6766°

Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
			9-11-10			35-21-14
			5-7-7	8.8	97	
			5-5-6			
10.0	199					
			4-8-9	36.3	79	
			5-7-9			
			3-6-8 N=14			

LEAN CLAY WITH SAND (CL), olive-brown

very stiff

olive-brown to gray-brown, stiff

LEAN CLAY (CL)
trace silt and sand, olive-brown to gray-brown to dark-brown, stiff

white mottling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-10

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5323° Longitude: -117.6766°
Surface Elev.: 209 (Ft.)
DEPTH / ELEVATION (Ft.)

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER LEVEL OBSERVATIONS
		LEAN CLAY (CL) *(continued)* very stiff	
		10-10-13	
30		stiff	
		3-3-6 N=9	
35			
		3-6-7	
40		medium stiff	
		3-3-3 N=6	
45		and light-gray, very stiff	
		4-9-11	▽
50			

EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021
Drill Rig: CME-75 | Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-10

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5323° Longitude: -117.6766°
Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	PERCENT FINES
		LEAN CLAY (CL) *(continued)* medium stiff			3-3-4 N=7			
51.5	157.5	**SILTY SAND (SM)**, gray-brown						
		medium dense	55		5-13-33	19.4	105	
			60		9-12-15 N=27			16
		very dense	65		9-32-50/4"			
		medium dense	70		7-8-11 N=19			
			75					

STRENGTH TEST: TEST TYPE | COMPRESSIVE STRENGTH (tsf) | STRAIN (%)

ATTERBERG LIMITS: LL-PL-PI

EXPANSION INDEX

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021
Drill Rig: CME-75 | Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-10

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5323° Longitude: -117.6766° Surface Elev.: 209 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), gray-brown *(continued)* medium dense 76.5 132.5				13-15-23								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-11

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5321° Longitude: -117.6789°

Surface Elev.: 240 (Ft.)

DEPTH	ELEVATION (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			7-16-16				
			6-9-14	12.7	96		
			7-11-14			38-22-16	
10.0	230		7-10-14	13.0	105		
			5-8-9				
			2-3-4 N=7				
25.0	215						

LANDSLIDE DEPOSITS (Qls), LEAN CLAY (CL), trace silt and sand, gray-brown to olive-brown

very stiff

LANDSLIDE DEPOSITS (Qls), SILTY CLAY, trace sand, light-brown to olive-brown with white mottling, very stiff

stiff

olive-brown, medium stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-11

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5321° Longitude: -117.6789°

Surface Elev.: 240 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	Sample Type	Field Test Results
		LANDSLIDE DEPOSITS (Qls), LEAN CLAY, trace silt and sand, olive-brown, very stiff		4-8-11
		soft		1-1-2 N=3
		stiff		4-7-9
		medium stiff		1-2-4 N=6
45.0	195	**SILTY CLAY (CL-ML)** trace sand, olive-brown to gray-brown with white mottling and orange rust staining, very stiff		4-9-15

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
30									
35									
40								45-24-21	
45									
50									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-11

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5321° Longitude: -117.6789°
Surface Elev.: 240 (Ft.)
DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
SILTY CLAY (CL-ML) *(continued)* stiff				2-4-9 N=13								
55.0 185	55			26-50/5"								
CAPISTRANO FORMATION (Tc) recovered as LEAN CLAY with trace SAND, dark-gray to dark-brown, hard	60			11-21-36 N=57								
	65			49-50/3"								
	70			9-18-36 N=54								
	75											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021
Drill Rig: CME-75 | Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-11

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5321° Longitude: -117.6789° Surface Elev.: 240 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	CAPISTRANO FORMATION (Tc) recovered as LEAN CLAY with trace SAND, dark-gray to dark-brown, hard *(continued)*				33-50/5"								
		80			7-22-31 N=53								
		85			17-50/5"								
		90			16-22-36 N=58								
	91.5 148.5 ***Boring Terminated at 91.5 Feet***												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-08-2021 | Boring Completed: 09-08-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-12

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6786°

Surface Elev.: 232 (Ft.)

DEPTH ELEVATION (Ft.)

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI
0		**LEAN CLAY (CL)**, trace silt and sand, olive-brown						
		very stiff						
		9-15-20						
5		orange rust staining, hard						
		15-20-31				13.7	114	
		15-20-25						
10		olive-brown to gray-brown						
		15-22-26				15.9	110	
15		very stiff						
		4-9-12 N=21						
20.0 (212)		**SILT (ML)** trace clay and sand, olive-brown to gray-brown, very stiff						
20		5-11-15						
25								

EXPANSION INDEX

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-12

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6786°

Surface Elev.: 232 (Ft.)

DEPTH / ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
SILT (ML) *(continued)* medium stiff				1-3-4 N=7								
30.0 / 202	30											
LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with orange rust staining, very stiff				8-11-14								
white mottling, stiff	35			3-5-8 N=13								
40.0 / 192	40											
CAPISTRANO FORMATION (Tc) recovered as ELASTIC SILT with trace SAND, dark-brown to dark-gray, hard				25-47-50/4"								
	45			10-15-30 N=45								
	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-12

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6786°

Surface Elev.: 232 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
CAPISTRANO FORMATION (Tc) recovered as ELASTIC SILT with trace SAND, dark-brown to dark-gray, hard *(continued)*				30-50/4"								
	55			12-17-34 N=51								
	60			39-50/4"								
	65			9-17-32 N=49							53-34-19	
	70			30-50/5"								
	75											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-12

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5319° Longitude: -117.6786° Surface Elev.: 232 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	76.5 / 155.5				10-19-32 N=51								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-13

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5318° Longitude: -117.6790°

Surface Elev.: 249 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown							
	white mottling, very stiff			12-14-15				
	hard	5		13-18-24	16.4	112		
				12-18-27				
10.0	239	10						
	SILT (ML), trace sand, olive-brown with white mottling, hard			12-21-26	21.6	105		
	orange rust staining, stiff	15		2-4-6 N=10			43-27-16	
	olive-brown to gray-brown, very stiff	20		12-16-21				
25.0	224	25						

EXPANSION INDEX

STRENGTH TEST: TEST TYPE | COMPRESSIVE STRENGTH (tsf) | STRAIN (%)

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-13

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5318° Longitude: -117.6790°

Surface Elev.: 249 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LEAN CLAY (CL), trace silt, olive-brown to gray-brown with white mottling, very stiff				4-6-12 N=18								
and light-gray, hard	30			10-20-25		UU						
very stiff, thin interbedded layers of silty sand	35			10-11-11 N=22								
40.0 209												
SILTY CLAY (CL-ML), white mottling trace sand, gray-brown to light-gray, hard	40			8-17-26								
very stiff	45			4-7-12 N=19								
	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-13

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5318° Longitude: -117.6790°

Surface Elev.: 249 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
				11-19-25							
		55		3-6-11 N=17							
60.0	189	60		13-26-33							
		65		4-10-19 N=29							
		70		38-50/4"							
		75									

SILTY CLAY (CL-ML), white mottling
(continued)
hard

very stiff

CAPISTRANO FORMATION (Tc) recovered as LEAN CLAY with trace SILT and SAND, dark-brown to dark-gray, hard

very stiff

hard

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-13

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5318° Longitude: -117.6790° Surface Elev.: 249 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	hard 76.4 / 172.5				10-20-50/5"								
	Boring Terminated at 76.4 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-14

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5318° Longitude: -117.6782°
Surface Elev.: 224 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
		LEAN CLAY (CL), trace silt and sand, light-brown to olive-brown					
		light-brown to light-gray with white mottling and orange rust staining, stiff		5-6-8			47-27-20
5		very stiff		7-13-18	27.8	95	
				6-13-18	25.5	95	
10				8-13-16			
		thin interbedded layers of silty sand					
15				5-9-13			
20.0	204						
20		**SILTY CLAY (CL-ML)**, trace sand, gray-brown to olive-brown with white mottling and orange rust staining, stiff, thin silty sand lens present		3-4-10 N=14			
25.0	199						
25							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021
Drill Rig: CME-75 | Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-14

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5318° Longitude: -117.6782°

Surface Elev.: 224 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with white mottling, stiff					2-3-6 N=9								
30.0	194													
	CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND, dark-brown to dark-gray, very stiff		30			4-8-16 N=24								
	hard		35			9-14-21 N=35								
			40			9-16-32 N=48								
			45			10-19-26 N=45								
			50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-14

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5318° Longitude: -117.6782° Surface Elev.: 224 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	hard 51.5 / 172.5				9-18-32 N=50								
	Boring Terminated at 51.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-09-2021 | Boring Completed: 09-09-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-15

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6775°

Surface Elev.: 213 (Ft.)

DEPTH	ELEVATION (Ft.)
5.0	208

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)
		6-8-8	11.6	93
5		4-7-10		
		7-10-12		
10		6-8-12		
15		4-7-8		
20		1-2-3 N=5		
25				

SANDY SILTY CLAY (CL-ML), olive-brown to brown

stiff

LEAN CLAY (CL)
trace silt, olive-brown to gray-brown, stiff

orange rust staining, very stiff

white mottling, stiff

medium stiff

EXPANSION INDEX | STRENGTH TEST: TEST TYPE, COMPRESSIVE STRENGTH (tsf), STRAIN (%) | ATTERBERG LIMITS: LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-16-2021 | Boring Completed: 09-16-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-15

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6775°

Surface Elev.: 213 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LEAN CLAY (CL) *(continued)* medium stiff				1-2-3 N=5								
	30			2-3-3 N=6								
	35			1-3-4 N=7								
medium stiff to stiff	40			3-4-4 N=8								
stiff	45			3-4-5 N=9								
	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-16-2021 | Boring Completed: 09-16-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-15

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5319° Longitude: -117.6775°
Surface Elev.: 213 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	SAMPLE TYPE	FIELD TEST RESULTS
		LEAN CLAY (CL) *(continued)*		
				4-6-8 N=14
55		very stiff, thin interbedded layers of silty sand		5-7-9 N=16
60.0	153	**CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND**, dark-brown to dark-gray with white mottling, very stiff		6-8-13 N=21
65				6-10-13 N=23
70		white mottling no longer apparent		7-13-17 N=30
75				

GRAPHIC LOG	WATER LEVEL OBSERVATIONS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-16-2021 | Boring Completed: 09-16-2021
Drill Rig: CME-75 | Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-15

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6775°

Surface Elev.: 213 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES

CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND, dark-brown to dark-gray with white mottling, very stiff *(continued)*

hard

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
		8-12-18 N=30
80		13-19-23 N=42
85		17-21-30 N=51
90		16-26-28 N=54
95		12-19-31 N=50
100		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-16-2021 | Boring Completed: 09-16-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-15

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5319° Longitude: -117.6775° Surface Elev.: 213 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	101.5 / 111.5				11-17-25 N=42								
	Boring Terminated at 101.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-16-2021 | Boring Completed: 09-16-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-16

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6770°

Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)
7.5	201.5

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)
5		6-8-8	8.2	96
		6-8-9	22.2	94
10		7-12-15	15.8	105
		9-12-15	15.3	108
15		5-7-9		
20		2-3-4 N=7		
25				

SILTY CLAY (CL-ML), olive-brown to brown

stiff

orange rust staining

LEAN CLAY (CL)
trace silt, olive-brown to gray-brown, very stiff

white mottling

stiff

medium stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-16

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan
Latitude: 33.5319° Longitude: -117.6770°
Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* medium stiff to stiff					3-4-4 N=8								
	medium stiff		30			2-3-4 N=7								
	thin lens of silty sand present		35			1-2-3 N=5								
	thin lens of silty sand present		40			2-3-4 N=7								
41.5	167.5													
	Boring Terminated at 41.5 Feet													

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021
Boring Completed: 09-14-2021
Drill Rig: CME-75
Driller: 2R Drilling
Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-17

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6765°

Surface Elev.: 208 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LEAN CLAY WITH SAND (CL), trace gravel, olive-brown to brown												
light brown, very stiff				5-10-10	39				19.2	88	30-20-10	
	5			6-9-11					22.2	95		
olive-brown to gray-brown, stiff				5-5-7					20.4	93		
10.0 198												
LEAN CLAY (CL) trace silt and sand, olive-brown to gray-brown, very stiff	10			5-9-10								
	15			4-8-11 N=19								
orange rust staining	20			9-12-15								
	25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-17

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5319° Longitude: -117.6765° Surface Elev.: 208 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* stiff				3-6-7 N=13								
	very stiff	30			7-10-12					32.1	88		
	stiff	35			2-4-7 N=11								
		40			6-6-8								
	45.0 163 **LEAN CLAY WITH SAND (CL)**, wet, stiff	45	▽		3-7-7 N=14								
	50.0 158	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-17

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5319° Longitude: -117.6765°

Surface Elev.: 208 (Ft.)

DEPTH	ELEVATION (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	DEPTH (Ft.)
			5-12-21	
				55
very dense			10-31-50/5"	
60.0	148			60
CLAYEY SAND (SC), gray-brown, wet, medium dense			10-13-11	
65.0	143			65
POORLY GRADED SAND WITH CLAY (SP-SC) gray-brown, wet, medium dense			4-9-12 N=21	
very dense			14-29-50/2"	70
				75

EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
							9

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-17

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5319° Longitude: -117.6765° Surface Elev.: 208 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH CLAY (SP-SC) *(continued)* 76.5 dense 131.5				8-17-29 N=46								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-15-2021 | Boring Completed: 09-15-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-19

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6779°

Surface Elev.: 217 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	Sample Type	Field Test Results
0	217	**LEAN CLAY (CL)**, trace silt and sand, olive-brown		
		very stiff		5-9-13
5		gray-brown to light-gray with orange rust staining		2-10-10
7.5	209.5			
		SILT (ML), with clay, light olive to light gray-brown with white mottling, hard		12-24-29
10.0	207			
		SILTY CLAY WITH SAND (CL-ML), light olive to light gray-brown, hard, thin interbedded layers of silty sand		14-25-31
15.0	202			
		LEAN CLAY (CL) trace silt and sand, olive-brown with white mottling and orange rust staining, very stiff		12-14-20
20		stiff		5-5-9 N=14
25				

DEPTH (Ft.)	Water Level Observations	Expansion Index	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
0									
5						19.3	108		
10						14.9	109	37-27-10	
15									
20									
25									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-19

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6779°

Surface Elev.: 217 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LEAN CLAY (CL) *(continued)* hard 26.5 190.5				13-22-50/6"								
CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND (CL-ML), dark-gray to dark-brown with white mottling, very stiff	30			9-13-16 N=29								
hard, white mottling no longer apparent	35			23-50/6"								
	40			10-19-25 N=44								
	45			26-40-40		UU						
		▽										
		▽										
	50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-19

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5314° Longitude: -117.6779° Surface Elev.: 217 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	hard 51.5 / 165.5				12-20-30 N=50								
	Boring Terminated at 51.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-20

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6775°

Surface Elev.: 211 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI
0	211	**SANDY SILT (ML)**, with clay, light gray-brown					
		stiff		5-6-9	11.6	92	
5.0	206						
5		**LEAN CLAY (CL)**, trace silt and sand, olive-brown to gray-brown, stiff		4-6-6			37-22-15
		white mottling and orange rust staining, very stiff		7-8-11	17.6	98	
10				6-12-15			
15.0	196						
15		**SILTY CLAY (CL-ML)** trace sand, olive-brown to gray-brown with white mottling, stiff		4-6-9			
20		medium stiff to stiff		3-3-5 N=8			
25							

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | EXPANSION INDEX | STRENGTH TEST: TEST TYPE, COMPRESSIVE STRENGTH (tsf), STRAIN (%) | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-20

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5314° Longitude: -117.6775° Surface Elev.: 211 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SILTY CLAY (CL-ML) *(continued)* medium stiff				2-3-4 N=7								
	30.0 / 181	30											
	LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with white mottling, medium stiff				2-3-4 N=7								
	stiff	35			4-4-5 N=9								
	41.5 / 169.5	40			3-4-5 N=9								
	Boring Terminated at 41.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-21

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6770°

Surface Elev.: 206 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
SILTY CLAY (CL-ML), trace sand, olive-brown to brown												
white mottling, very stiff				8-11-15								
5.0 201												
LEAN CLAY (CL) trace silt and sand, olive-brown to gray-brown, very stiff	5			8-10-11					9.5	105		
				12-16-18								
	10			11-16-16					17.6	105		
white mottling	15			6-9-11								
medium stiff	20			2-3-4 N=7								
	25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-21

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6770°

Surface Elev.: 206 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* medium stiff to stiff			3-4-4 N=8							
30.0	176	30									
	SILTY CLAY (CL-ML), trace sand, olive-brown to gray-brown, wet, medium stiff, thin silty sand lens present			3-3-4 N=7							
		35		2-3-3 N=6							
	medium stiff to stiff	40		3-4-4 N=8							
45.0	161	45									
	LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with white mottling, wet, stiff			2-4-5 N=9							
50.0	156	50									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-21

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5314° Longitude: -117.6770°

Surface Elev.: 206 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	SAMPLE TYPE	FIELD TEST RESULTS
		SANDY LEAN CLAY (CL), gray-brown, wet, very stiff		6-10-16 N=26
		medium stiff		2-3-4 N=7
60.0	146			
		LEAN CLAY (CL) trace silt and sand, olive-brown to gray-brown with white mottling, wet, stiff to very stiff		4-7-8 N=15
		very stiff		5-8-11 N=19
				6-9-11 N=20

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
55									
60									
65									
70									
75									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-21

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5314° Longitude: -117.6770° Surface Elev.: 206 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	LEAN CLAY (CL) *(continued)* dark-gray to dark-brown, very stiff 76.5 / 129.5				4-8-9 N=17								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-24

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5311° Longitude: -117.6779°

Surface Elev.: 216 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown												
hard				13-25-27								
	5			17-28-30					11.1	120		
very stiff				13-17-16								
white mottling and orange rust staining	10			10-13-16					13.2	110		
15.0 201												
SILTY CLAY (CL-ML) olive-brown to light-gray with white mottling and orange rust staining, very stiff	15			6-8-9 N=17								
thin lens of silty sand	20			11-15-20								
	25											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-24

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5311° Longitude: -117.6779° Surface Elev.: 216 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	SILTY CLAY (CL-ML) *(continued)*				5-10-11 N=21								
	wet, stiff	30			6-8-10								
	35.0 181 **CAPISTRANO FORMATION (Tc) recovered as ELASTIC SILT with trace SAND**, dark-gray to dark-brown, stiff	35			5-5-8 N=13								
	hard	40			28-50/5"								
		45			12-18-25 N=43								
		50											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-24

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5311° Longitude: -117.6779°

Surface Elev.: 216 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
CAPISTRANO FORMATION (Tc) recovered as ELASTIC SILT with trace SAND, dark-gray to dark-brown, stiff *(continued)*				33-50/3"								
	55			14-22-27 N=49								
	60			17-50/5"								
	65			12-20-25 N=45							56-36-20	
	70			17-50/6"								
	75											

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-24

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5311° Longitude: -117.6779° Surface Elev.: 216 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	hard 76.5 / 139.5				13-21-28 N=49								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-13-2021 | Boring Completed: 09-13-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-25

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5310° Longitude: -117.6776°

Surface Elev.: 209 (Ft.)

DEPTH | ELEVATION (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
						6-9-9					14.0	96		
	5.0	204												
			5			5-7-11					17.6	109		
						7-12-16								
			10			10-16-17								
			15			8-11-15								
			20			3-4-5 N=9								
	25.0	184	25											

SANDY LEAN CLAY (CL), trace silt, olive-brown

stiff

LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with white mottling, stiff

very stiff

stiff

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-25

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5310° Longitude: -117.6776°

Surface Elev.: 209 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	SAMPLE TYPE	FIELD TEST RESULTS
		SILTY CLAY (CL-ML), trace sand, olive-brown to gray-brown with white mottling and orange rust staining, stiff		3-5-6 N=11
				4-6-8 N=14
		trace gravel		
35.0	174			
		LEAN CLAY (CL), trace silt and sand, olive-brown to gray-brown with white mottling, stiff		4-5-7 N=12
		very stiff		5-10-12 N=22
41.5	167.5			
		CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND dark-brown to dark-gray, very stiff		8-13-16 N=29

DEPTH (Ft.): 30, 35, 40, 45, 50

WATER LEVEL OBSERVATIONS

EXPANSION INDEX

STRENGTH TEST: TEST TYPE; COMPRESSIVE STRENGTH (tsf); STRAIN (%)

WATER CONTENT (%)

DRY UNIT WEIGHT (pcf)

ATTERBERG LIMITS: LL-PL-PI

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

BORING LOG NO. B-25

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

LOCATION See Exploration Plan

Latitude: 33.5310° Longitude: -117.6776°

Surface Elev.: 209 (Ft.)

DEPTH ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES

CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND *(continued)*
hard

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
		13-19-23 N=42
55		9-14-19 N=33
60		13-16-24 N=40
65		14-23-25 N=48
70		13-21-28 N=49
75		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

Project No.: 60215170

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BORING LOG NO. B-25

PROJECT: Broad Reach Power Compass BESS

CLIENT: Sargent & Lundy LLC
Chicago, IL

SITE: San Juan Capistrano, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.5310° Longitude: -117.6776° Surface Elev.: 209 (Ft.) DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	EXPANSION INDEX	STRENGTH TEST: TEST TYPE	STRENGTH TEST: COMPRESSIVE STRENGTH (tsf)	STRENGTH TEST: STRAIN (%)	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS: LL-PL-PI	PERCENT FINES
	CAPISTRANO FORMATION (Tc) recovered as SILTY CLAY with trace SAND *(continued)* 76.5 hard 132.5				14-20-27 N=47								
	Boring Terminated at 76.5 Feet												

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with cement-grout upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

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Groundwater not encountered

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1421 Edinger Ave, Ste C
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Boring Started: 09-14-2021 | Boring Completed: 09-14-2021

Drill Rig: CME-75 | Driller: 2R Drilling

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THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/19/21

Appendix C
Laboratory Test Results

APPENDIX C

Laboratory Test Results

The laboratory testing program was directed towards providing quantitative data relating to the relevant engineering properties of the soils. Samples considered representative of site conditions were tested in general accordance with American Society for Testing and Materials (ASTM) procedure and/or California Test Methods (CTM), where applicable. The following summary is a brief outline of the test type and a table summarizing the test results.

Moisture and Density Determination Tests: Moisture content (ASTM D2216) and dry density determinations (ASTM D2937) were performed on driven samples obtained from the test borings. The results of these tests are presented in the boring logs. Where applicable, only moisture content was determined from undisturbed or disturbed samples.

Grain Size Distribution/Fines Content: Representative samples were dried, weighed, and soaked in water until individual soil particles were separated (per ASTM D421) and then washed on a No. 200 sieve (ASTM D1140). Where applicable, the portion retained on the No. 200 sieve was dried and then sieved on a U.S. Standard brass sieve set in accordance with ASTM D6913 (sieve).

Sample Location	Description	% Passing # 200 Sieve
HS-1 @ 5 ft	High Plasticity Clay	94
HS-1 @ 10 ft	Clay with Sand	71
HS-1 @ 20 ft	Clay	93
HS-2 @ 5 ft	Sandy Clay	55
HS-2 @ 20 ft	Clay with Sand	72
HS-3 @ 25 ft	Clay with Sand	75
HS-3 @ 40 ft	Clay with Sand	84
HS-4 @ 30 ft	Clay	78
HS-4 @ 40 ft	Clayey Sand	44
HS-4 @ 50 ft	Clayey Sand	44

Laboratory Test Results

Atterberg Limits: The liquid and plastic limits ("Atterberg Limits") were determined per ASTM D4318 for engineering classification of fine-grained material and presented in the table below. The USCS soil classification indicated in the table below is based on the portion of sample passing the No. 40 sieve and may not necessarily be representative of the entire sample. The plots are provided in this Appendix.

Sample Location	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	USCS Soil Classification
HS-1 @ 5 ft	51	23	29	CH
HS-1 @ 7.5 ft	46	22	24	CL
HS-1 @ 25 ft	46	19	27	CL
HS-1 @ 35 ft	38	28	10	ML
HS-2 @ 5 ft	28	20	8	CL
HS-2 @ 7.5 ft	36	18	18	CL
HS-2 @ 15 ft	35	20	15	CL
HS-3 @ 10 ft	60	24	36	CH
HS-3 @ 25 ft	47	19	28	CL
HS-3 @ 40 ft	45	18	27	CL
HS-4 @ 20 ft	46	20	26	CL
HS-4 @ 30 ft	39	18	21	CL
HS-4 @ 50 ft	31	19	12	CL
B-1 @ 28 ft (Grab)	68	34	34	MH
B-2 @ 84 ft (Grab)	72	28	44	CH
B-3 @ 67.5 ft (Grab)	63	26	37	CH
B-4 @ 24 ft (Grab)	59	31	28	MH
B-4 @ 55.5 ft (Grab)	60	30	30	CH
B-5 @ 49ft (Grab)	61	27	34	CH

Expansion Index: The expansion potential of selected representative samples was evaluated by the Expansion Index Test per ASTM D4829. The results are presented in the table below.

Sample Location	Expansion Index	Expansion Potential*
HS-1 @ 1-5 ft	73	Medium
HS-2 @ 1-5 ft	42	Low
HS-3 @ 1-5 ft	28	Low
HS-4 @ 1-5 ft	13	Very Low

* Per ASTM D4829

Laboratory Test Results

Direct Shear: Direct shear tests were performed on selected driven samples and remolded samples (remolded to 90 percent relative compaction), which were soaked for a minimum of 24 hours prior to testing. The samples were tested under various normal loads using a motor-driven, strain-controlled, direct-shear testing apparatus (ASTM D3080). The plots are provided in this Appendix.

Torsional Ring Shear for Residual Shear Strength: Drained, residual torsional ring shear tests were performed on site clay grab samples (B-2 @ 84 ft & B-1 @ 28 ft). The samples were tested under various normal loads (2, 4, 8 and 16 ksf) using a torsional ring-shear testing apparatus (ASTM D6467). The plots are presented in this Appendix.

Consolidation: Consolidation tests were performed per ASTM D2435. Samples (2.4 inches in diameter and 1 inch in height) were placed in a consolidometer and increasing loads were applied. The samples were allowed to consolidate under "double drainage" and total deformation for each loading step was recorded. The percent consolidation for each load step was recorded as the ratio of the amount of vertical compression to the original sample height. The consolidation pressure curves are provided in this Appendix.

Laboratory Compaction: The maximum dry density and optimum moisture content of typical materials were determined in accordance with ASTM D1557. Sample Locations B-1 through B-4 were obtained for thermal resistivity testing. The results are presented in the table below.

Sample Location	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-1 (NE) @ 0-8"	Dark Gray Sandy Silt	116.5	12.0
B-2 (SE) @ 0-8"	Brown Silty Sand	118.0	11.5
B-3 (NW) @ 4-12"	Brown Silty Clay	112.5	13.0
B-4 (SW) @ 0-8"	Dark Gray Silty Clay	112.0	12.5
B-5 at 0-5 ft	Grayish Brown Clay	113.5	13.0

Laboratory Test Results

Soluble Sulfates: The soluble sulfate contents of selected samples were determined by standard geochemical methods (CTM 417). The test results are presented in the table below.

Sample Location	Sulfate Content (ppm)	Sulfate Content (%)
HS-1 @ 1-5 ft	155	0.02
HS-2 @ 1-5 ft	118	< 0.02
HS-3 @ 1-5 ft	122	< 0.02
HS-4 @ 1-5 ft	78	< 0.01

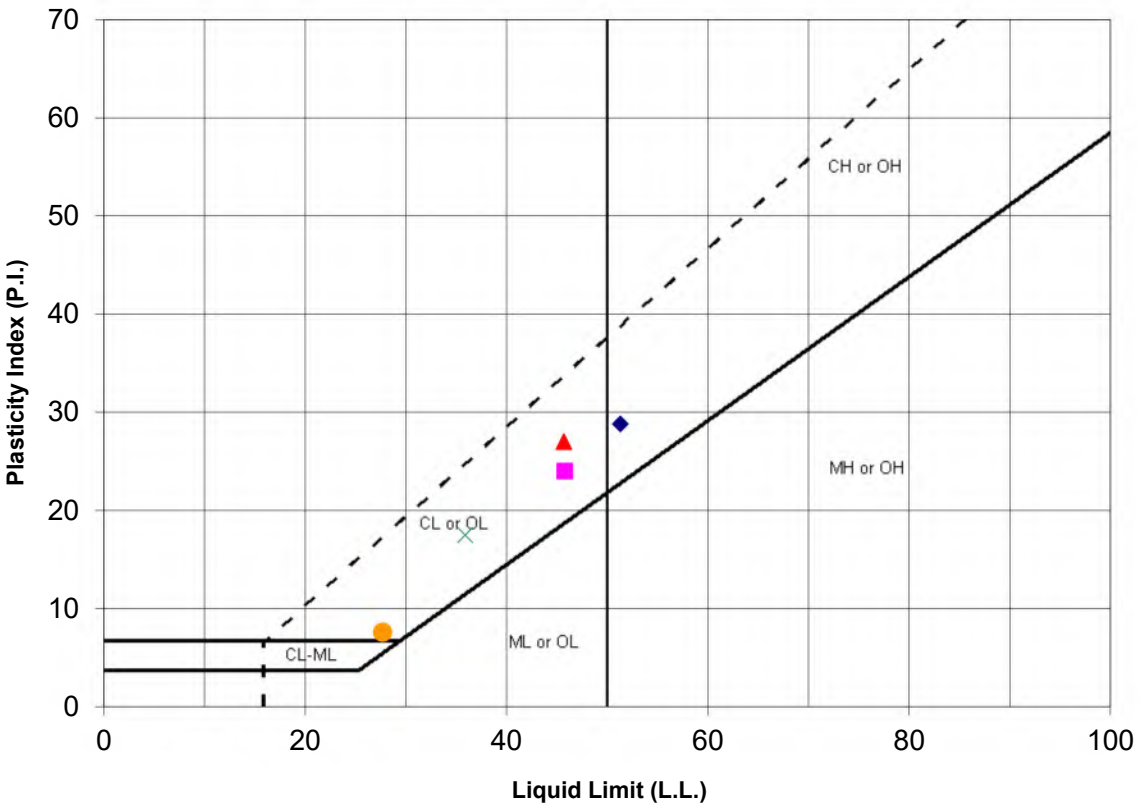
Chloride Content: Chloride content was tested per CTM 422. The results are presented below.

Sample Location	Chloride Content (ppm)
HS-1 @ 1-5 ft	64
HS-2 @ 1-5 ft	64
HS-3 @ 1-5 ft	176
HS-4 @ 1-5 ft	148

Minimum Resistivity and pH Tests: Minimum resistivity and pH tests were performed in general accordance with CTM 643 and standard geochemical methods. The results are presented in the table below.

Sample Location	pH	Minimum Resistivity (ohm-cm)
HS-1 @ 1-5 ft	8.2	1,345
HS-2 @ 1-5 ft	7.7	1,250
HS-3 @ 1-5 ft	8.0	1,800
HS-4 @ 1-5 ft	8.2	2,150

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	HS-1	SPT-1	5'	94	51	23	29	CH
■	HS-1	R-2	7.5'	-	46	22	24	CL
▲	HS-1	R-4	25'	-	46	19	27	CL
●	HS-2	SPT-1	5'	55	28	20	8	CL
×	HS-2	R-2	7.5'	-	36	18	18	CL

LGC Geotechnical, Inc.

ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Aug-22

Compass BESS

ATTERBERG LIMITS

ASTM D 4318

Project Name:	Compass BESS - SJC	Tested By:	L. Parrella	Date:	10/26/22
Project No. :	22011-01	Input By:	J. Ward	Date:	10/28/22
Boring No.:	HS-1	Checked By:	J. Ward		
Sample No.:	R-5	Depth (ft.)	35.0		
Soil Identification:	Olive silt (ML)				

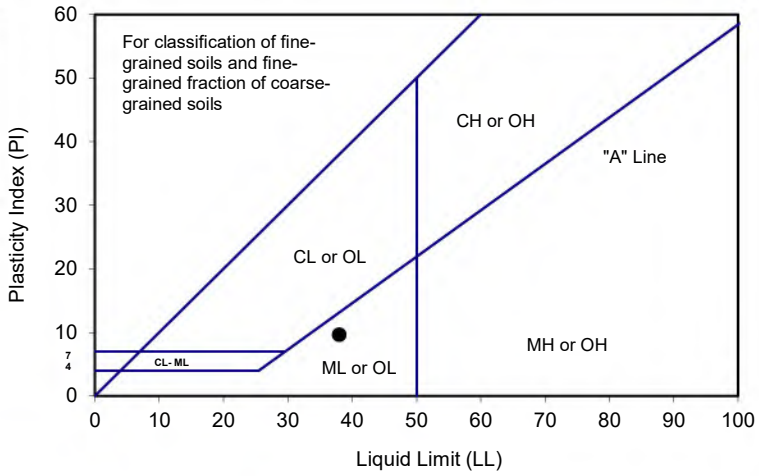
TEST	PLASTIC LIMIT		LIQUID LIMIT			
NO.	1	2	1	2	3	4
Number of Blows [N]			35	25	16	
Wet Wt. of Soil + Cont. (g)	25.89	26.10	22.05	22.14	21.99	
Dry Wt. of Soil + Cont. (g)	23.21	23.37	19.72	19.77	19.59	
Wt. of Container (g)	13.69	13.82	13.50	13.56	13.53	
Moisture Content (%) [Wn]	28.15	28.59	37.46	38.16	39.60	

Liquid Limit	**38**
Plastic Limit	**28**
Plasticity Index	**10**
Classification	**ML**

PI at "A" - Line = 0.73(LL-20) 13.14

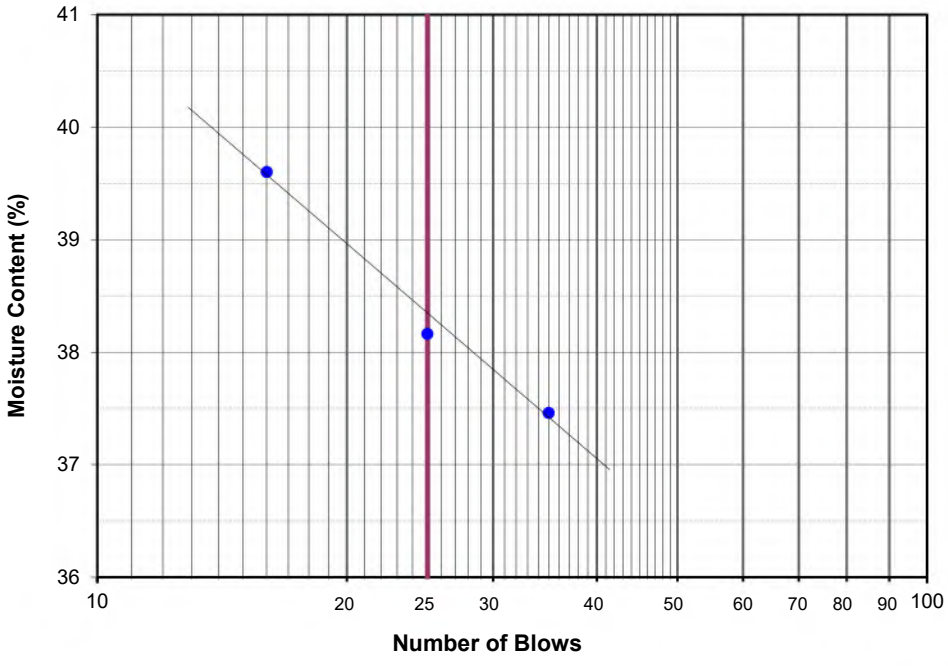
One - Point Liquid Limit Calculation

$LL = Wn(N/25)^{0.121}$

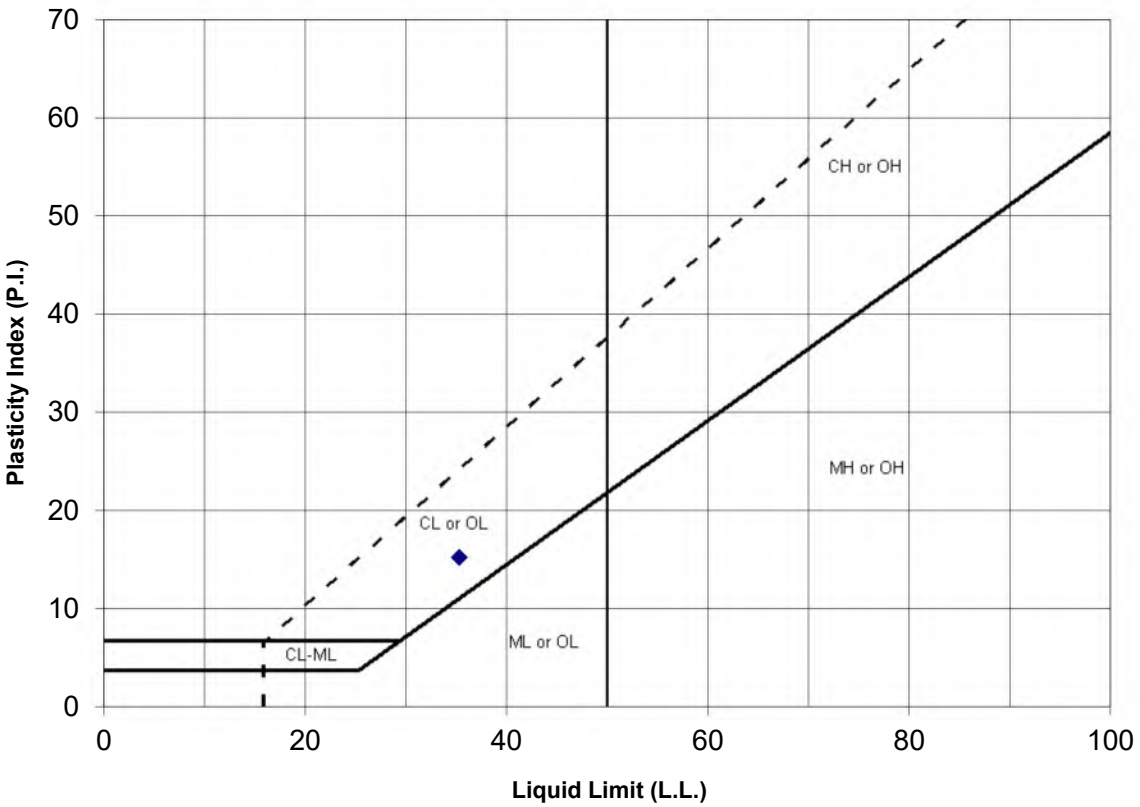


PROCEDURES USED

- [ ] Wet Preparation
  Multipoint - Wet
- [X] Dry Preparation
  Multipoint - Dry
- [X] Procedure A
  Multipoint Test
- [ ] Procedure B
  One-point Test



PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	HS-2	R-3	15'	-	35	20	15	CL

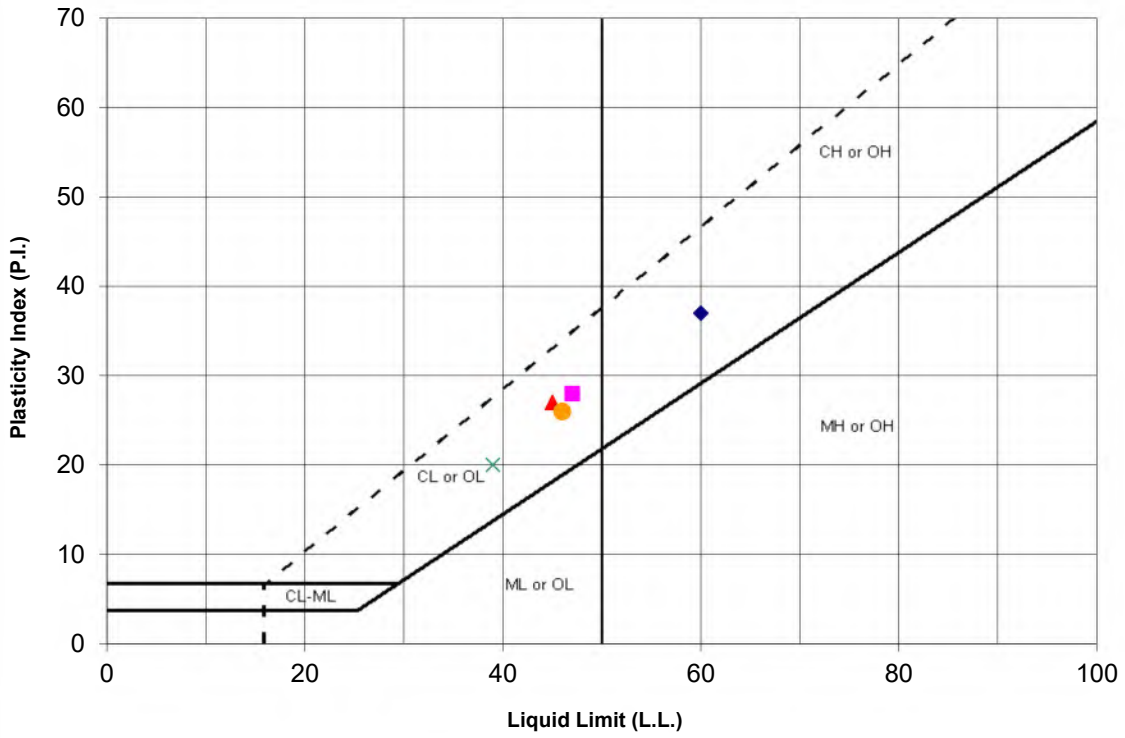
LGC Geotechnical, Inc.

ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Aug-22

Compass BESS

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	HS-3	R-3	10'	-	60	24	36	CH
■	HS-3	SPT-3	25'	75	47	19	28	CL
▲	HS-3	R-6	40'	84	45	18	27	CL
●	HS-4	R-3	20'	-	46	20	26	CL
×	HS-4	SPT-5	30'	78	39	18	21	CL

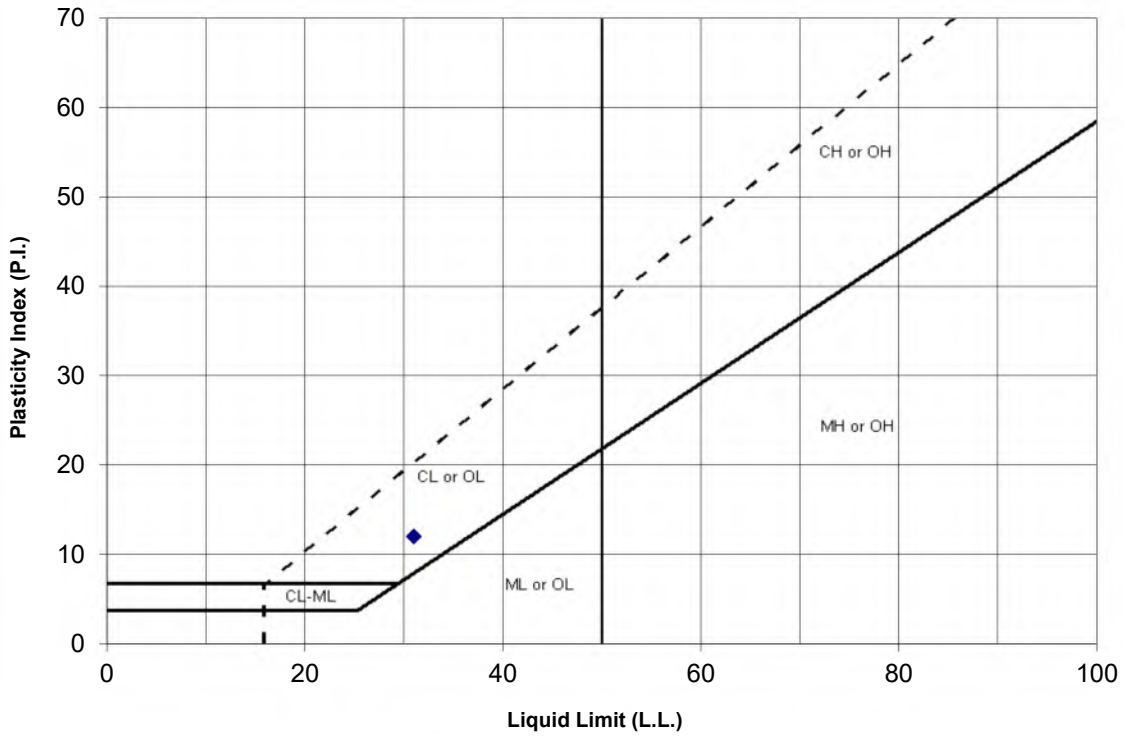
LGC Geotechnical, Inc.

ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Sep-23

Compass BESS

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	HS-4	SPT-7	50'	44	31	19	12	CL

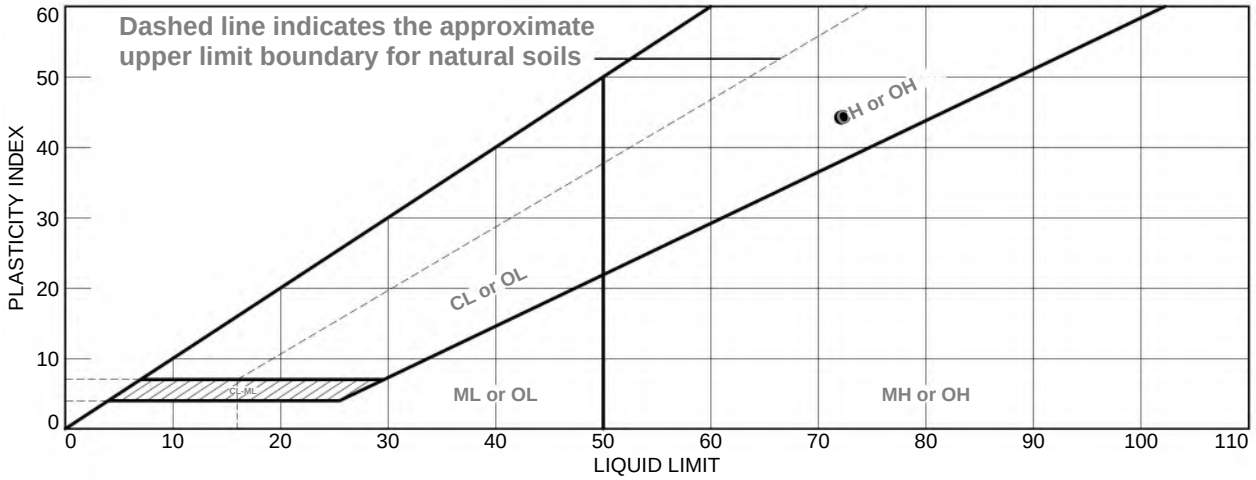
LGC Geotechnical, Inc.

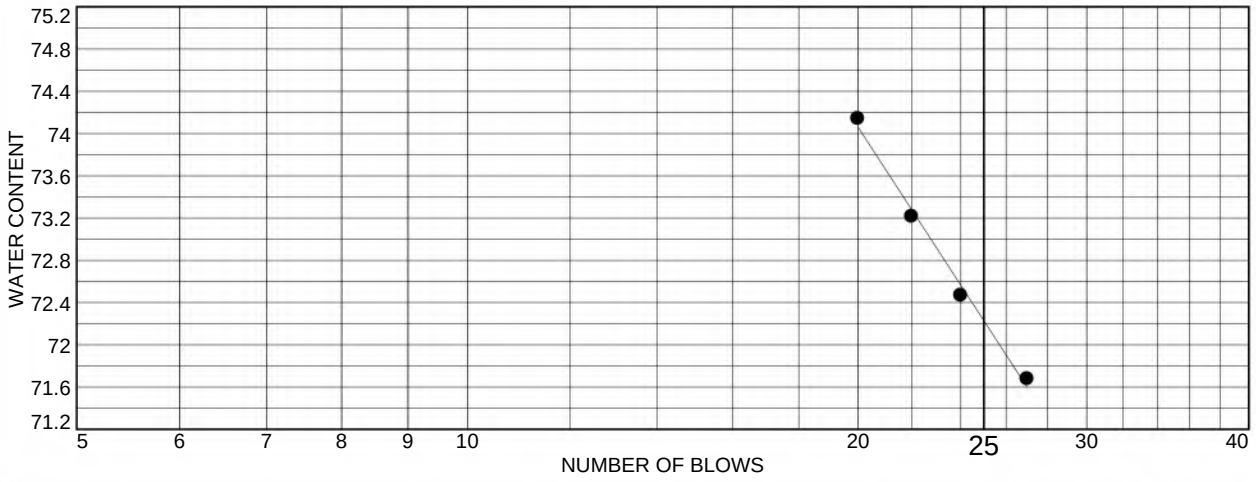
ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Sep-23

Compass BESS

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Very Dark Brown Fat CLAY	72.2	28.1	44.1			

Project No. 040-014 **Client:** LGC Geotechnical

Project: Compass, San Juan Capistrano - 22011-01

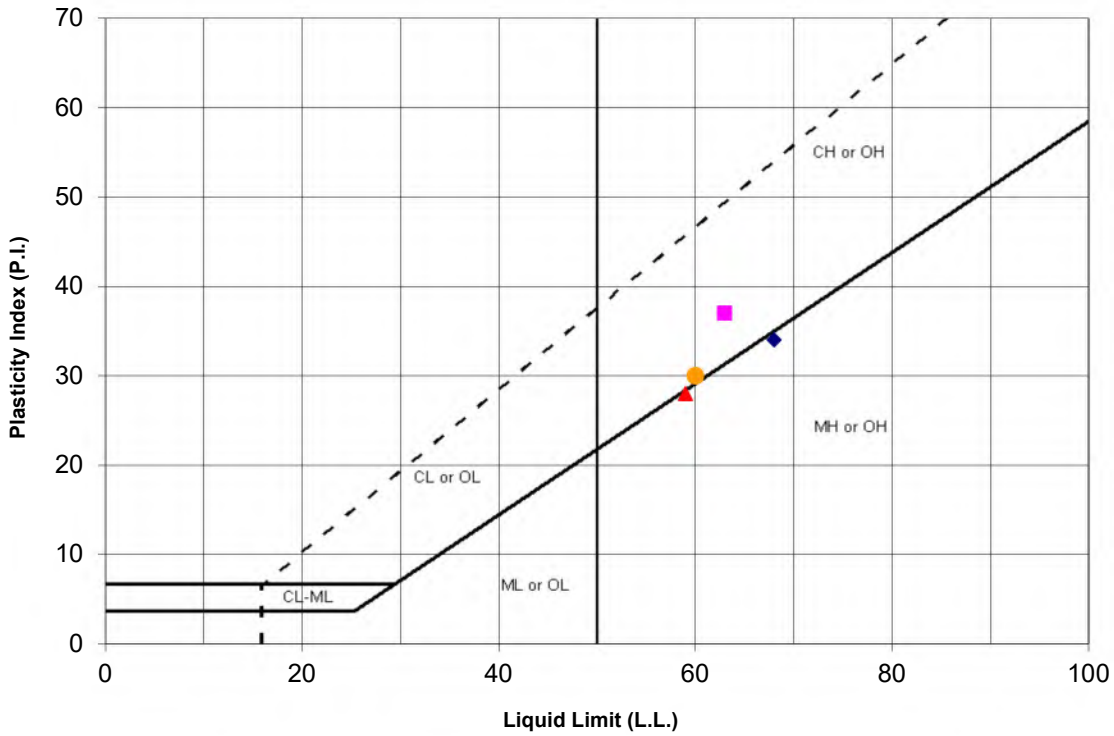
●**Source of Sample:** B-2 **Depth:** 84 **Sample Number:** G-2

Remarks:

Benchmark Geotechnical Labs, LLC

Figure

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	B-1	G-3	28'	-	68	34	34	MH
■	B-3	G-2	67.5'	-	63	26	37	CH
▲	B-4	G-1	24'	-	59	31	28	MH
●	B-4	G-2	55.5'	-	60	30	30	CH

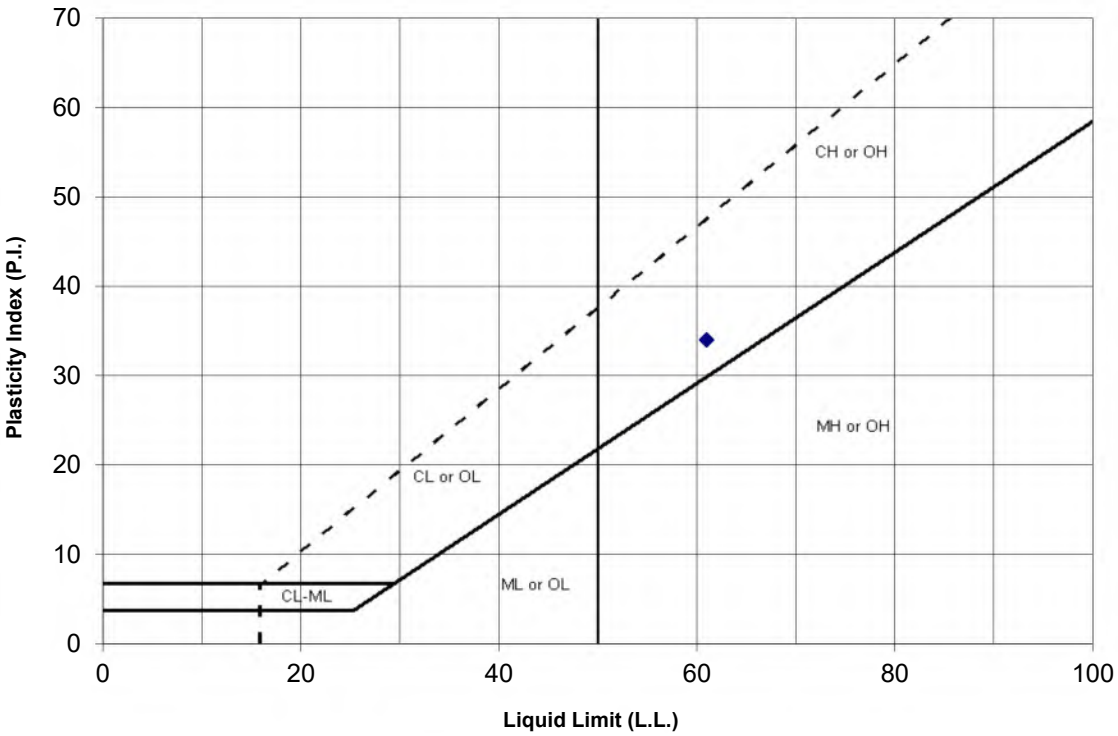
LGC Geotechnical, Inc.

ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Dec-22

Compass BESS

PLASTICITY CHART - CLASSIFICATION OF FINE-GRAINED SOILS



Symbol	Location.:	Sample No.:	Depth (ft)	Passing No. 200 Sieve (%)	Liquid Limit (%) LL	Plastic Limit (%) PL	Plasticity Index (%) PI	USCS
◆	B-5	G-1	49'	-	61	27	34	CH

LGC Geotechnical, Inc.

ATTERBERG LIMITS
(ASTM D 4318)

Project Number: 22011-01
Date: Sep-23

Compass - San Juan Capistrano

Location	Sample No.	Depth (ft)	Molding Moisture Content (%)	Initial Dry Density (pcf)	Final Moisture Content (%)	Expansion Index	Expansion Classification[1]
HS-1	B-1	1-5'	12.0	100.8	25.4	73	Medium
HS-2	B-1	1-5'	12.0	102.8	21.9	42	Low

LGC Geotechnical, Inc.

EXPANSION INDEX
(ASTM D 4829)

Project Number: 22011-01
Date: Aug-22

Compass BESS

Location	Sample No.	Depth (ft)	Molding Moisture Content (%)	Initial Dry Density (pcf)	Final Moisture Content (%)	Expansion Index	Expansion Classification[1]
HS-3	B-1	0-5'	10.3	106.7	20.0	28	Low
HS-4	B-1	0-5'	9.3	111.2	19.0	13	Very Low

LGC Geotechnical, Inc.

EXPANSION INDEX
(ASTM D 4829)

Project Number: 22011-01
Date: Sep-23

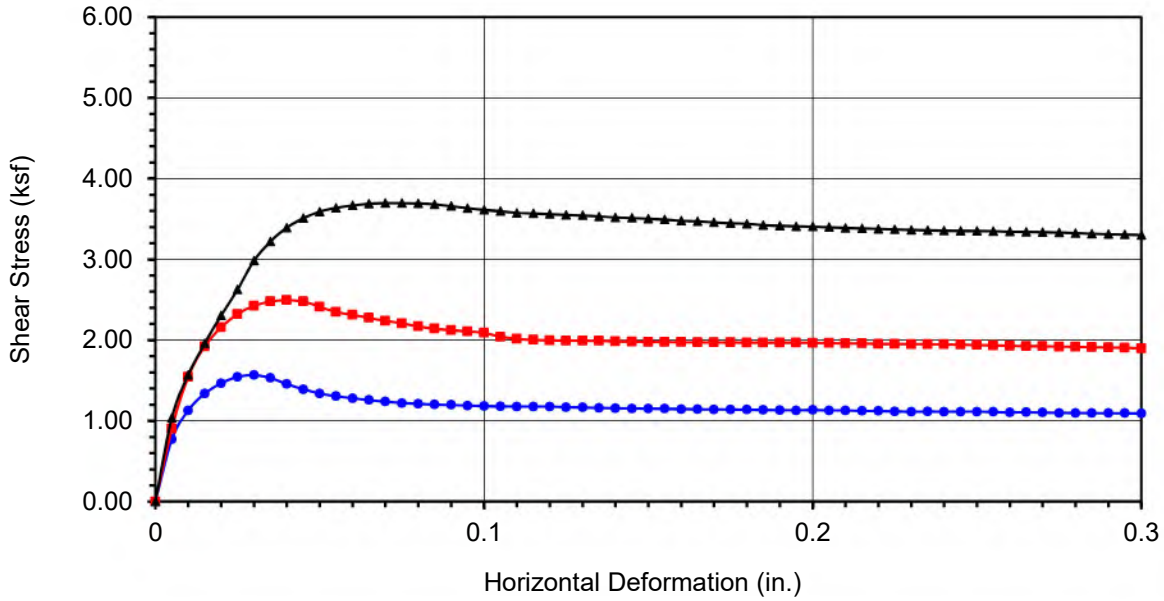
Compass BESS

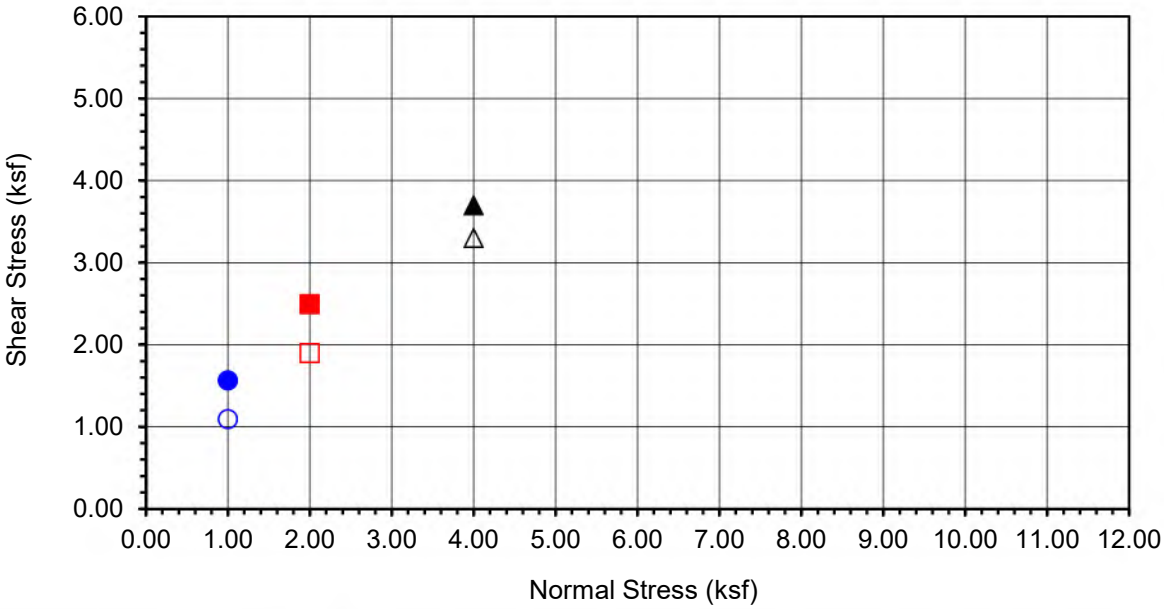
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass, San Juan Capistrano	Tested By:	G. Bathala	Date:	08/15/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/08/22
Boring No.:	B-2	Sample Type:	Ring		
Sample No.:	R-3	Depth (ft.):	30.0		
Soil Identification:	Olive lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	194.94	197.94	199.98
Weight of Ring(gm):	44.76	44.87	42.89
Before Shearing			
Weight of Wet Sample+Cont.(gm):	186.00	186.00	186.00
Weight of Dry Sample+Cont.(gm):	167.18	167.18	167.18
Weight of Container(gm):	55.80	55.80	55.80
Vertical Rdg.(in): Initial	0.2602	0.2656	0.0000
Vertical Rdg.(in): Final	0.2623	0.2712	-0.0132
After Shearing			
Weight of Wet Sample+Cont.(gm):	210.87	221.09	194.88
Weight of Dry Sample+Cont.(gm):	184.81	195.37	169.87
Weight of Container(gm):	57.50	66.06	37.73
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**B-2**
Sample No.	**R-3**
Depth (ft)	**30**
Sample Type:	
Ring	
Soil Identification:	
Olive lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.566	■ 2.493	▲ 3.697
Shear Stress @ End of Test (ksf)	○ 1.091	□ 1.896	△ 3.301
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	16.90	16.90	16.90
Dry Density (pcf)	106.8	108.9	111.8
Saturation (%)	79.0	83.3	89.8
Soil Height Before Shearing (in.)	0.9979	0.9944	0.9868
Final Moisture Content (%)	20.5	19.9	18.9

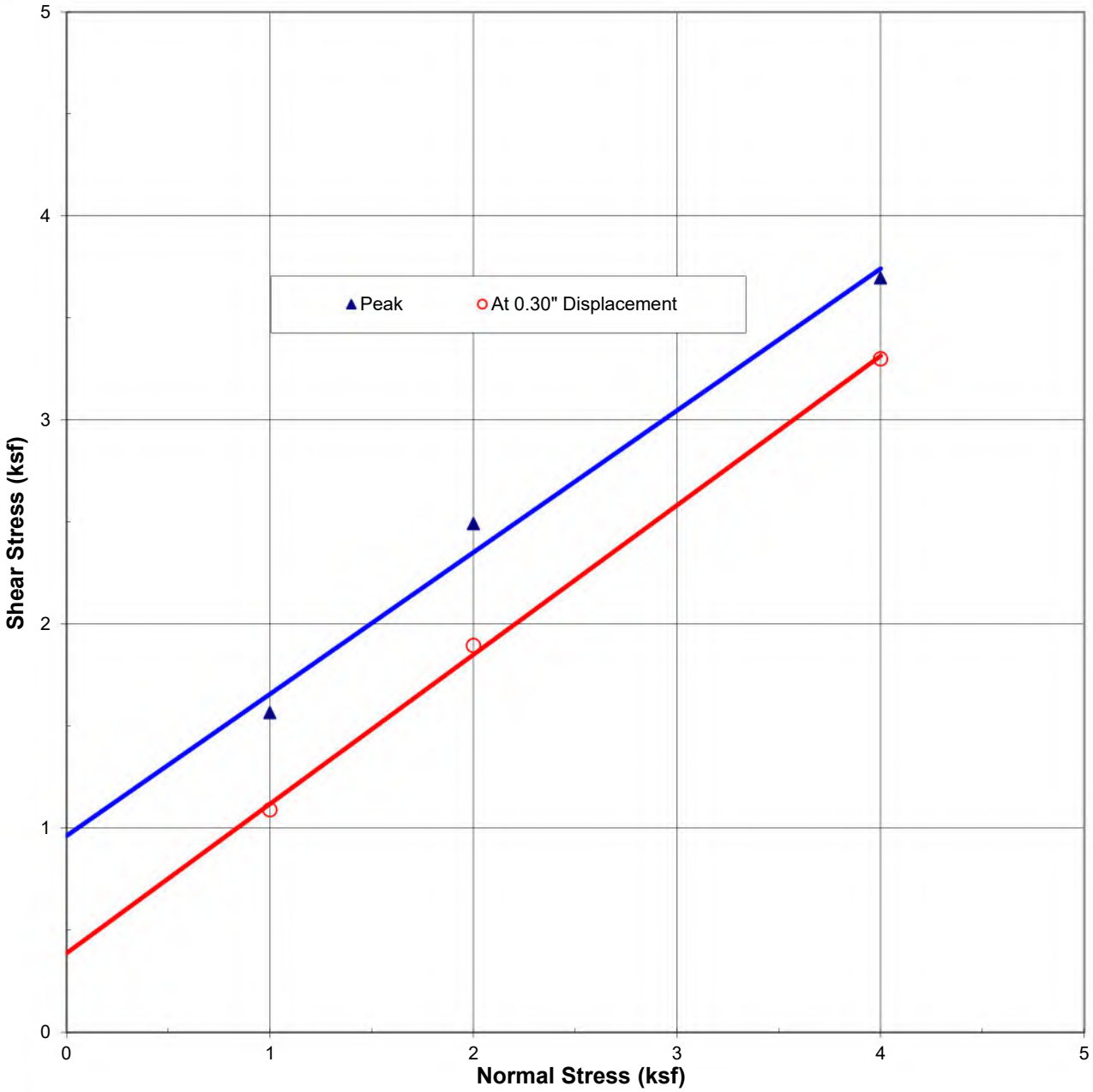
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass, San Juan Capistrano

08-22



Tested Sample:
B-2 at 30 ft

Peak:	At 0.30" Displacement:
34.8 Degrees	36.2 Degrees
0.96 ksf	0.39 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-22

Compass, San Juan Capistrano

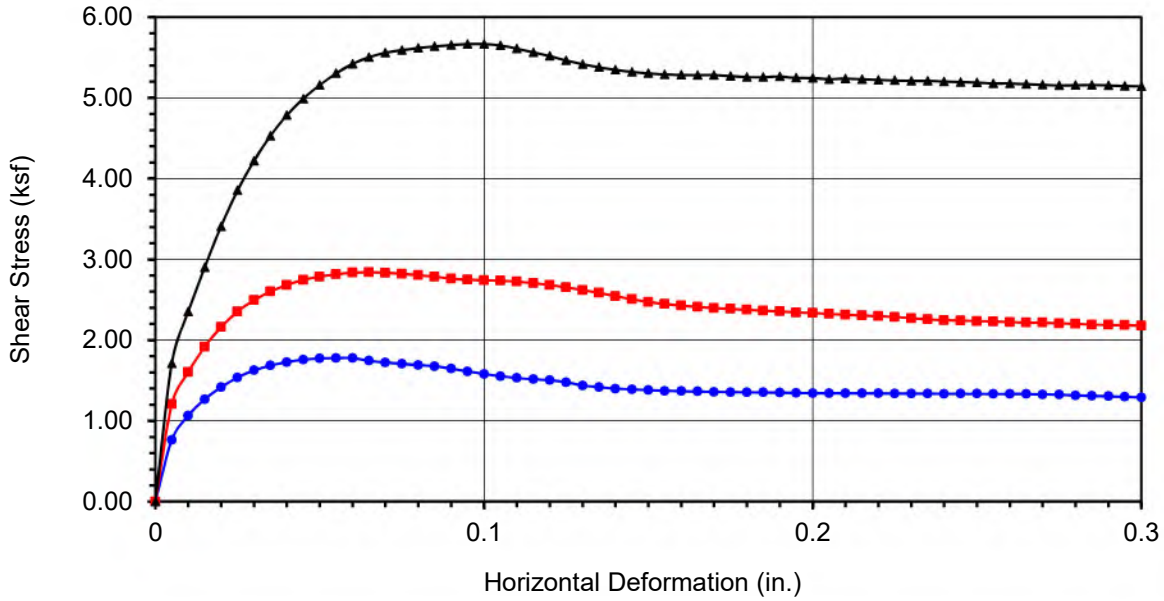
DIRECT SHEAR TEST

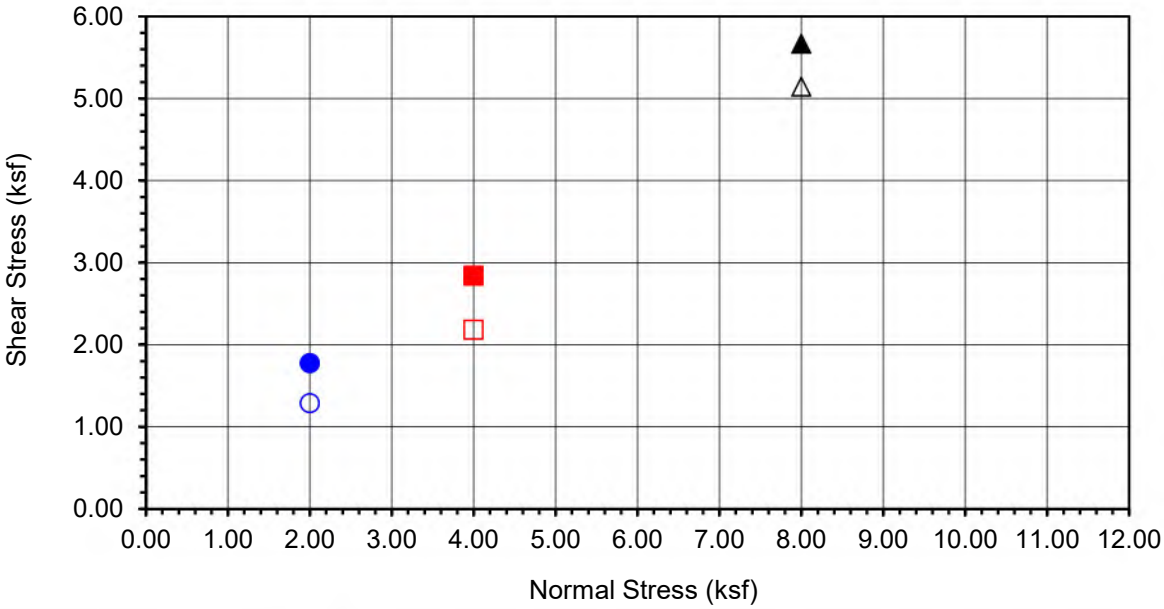
Consolidated Drained - ASTM D 3080

Project Name:	Compass, San Juan Capistrano	Tested By:	G. Bathala	Date:	08/15/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/09/22
Boring No.:	B-3	Sample Type:	Ring		
Sample No.:	R-4	Depth (ft.):	40.0		

Soil Identification: Olive gray lean clay (CL)

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	193.30	194.39	197.75
Weight of Ring(gm):	45.98	45.37	44.61
Before Shearing			
Weight of Wet Sample+Cont.(gm):	219.57	219.57	219.57
Weight of Dry Sample+Cont.(gm):	190.48	190.48	190.48
Weight of Container(gm):	69.10	69.10	69.10
Vertical Rdg.(in): Initial	0.0000	0.2453	0.2813
Vertical Rdg.(in): Final	-0.0145	0.2622	0.3112
After Shearing			
Weight of Wet Sample+Cont.(gm):	213.14	205.52	218.63
Weight of Dry Sample+Cont.(gm):	178.64	172.28	191.03
Weight of Container(gm):	64.60	56.65	65.86
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**B-3**
Sample No.	**R-4**
Depth (ft)	**40**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	2.000	4.000	8.000
Peak Shear Stress (kip/ft²)	● 1.776	■ 2.839	▲ 5.665
Shear Stress @ End of Test (ksf)	○ 1.289	□ 2.179	△ 5.143
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	23.97	23.97	23.97
Dry Density (pcf)	98.8	100.0	102.7
Saturation (%)	91.7	94.3	101.0
Soil Height Before Shearing (in.)	0.9855	0.9831	0.9701
Final Moisture Content (%)	30.3	28.7	22.1

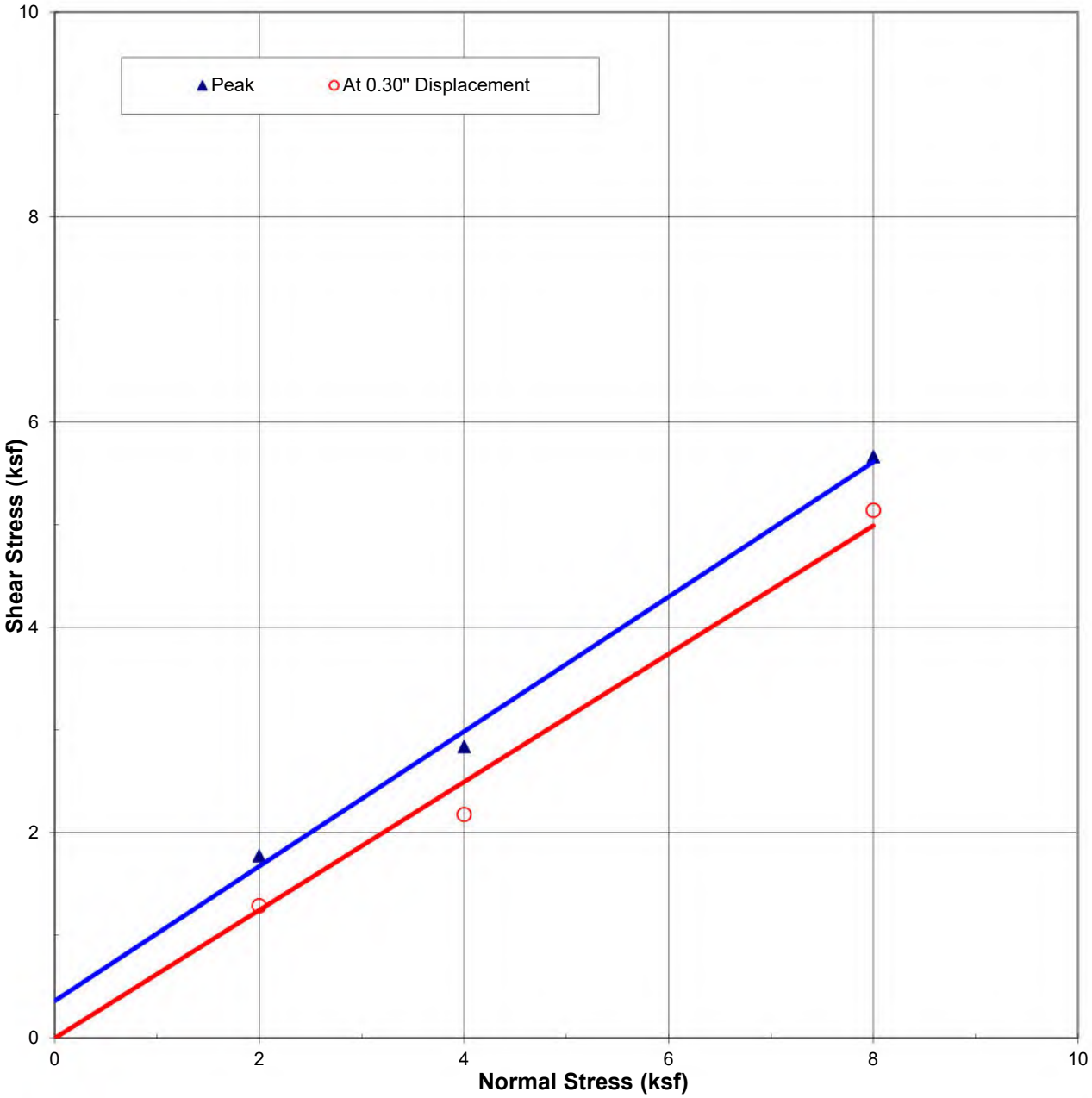
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass, San Juan Capistrano

08-22



Tested Sample:
B-3 at 40 ft

Peak:	At 0.30" Displacement:
33.3 Degrees	32.0 Degrees
0.36 ksf	0.0 ksf

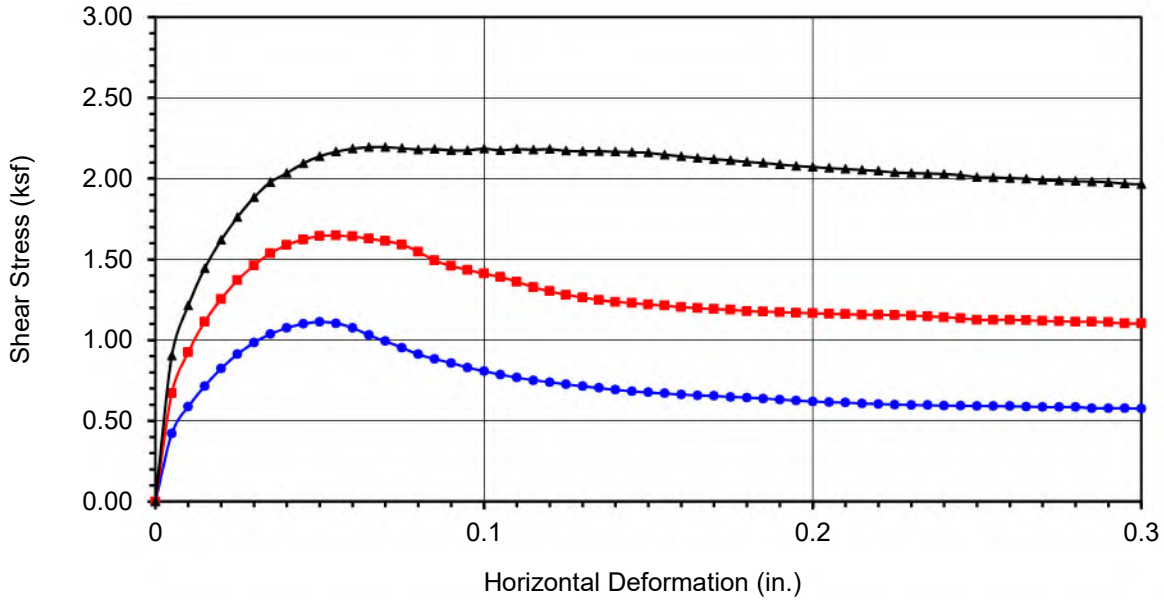
LGC Geotechnical, Inc.	**DIRECT SHEAR PLOT**	**Project Number:** 22011-01 **Date:** Sep-22
		Compass, San Juan Capistrano

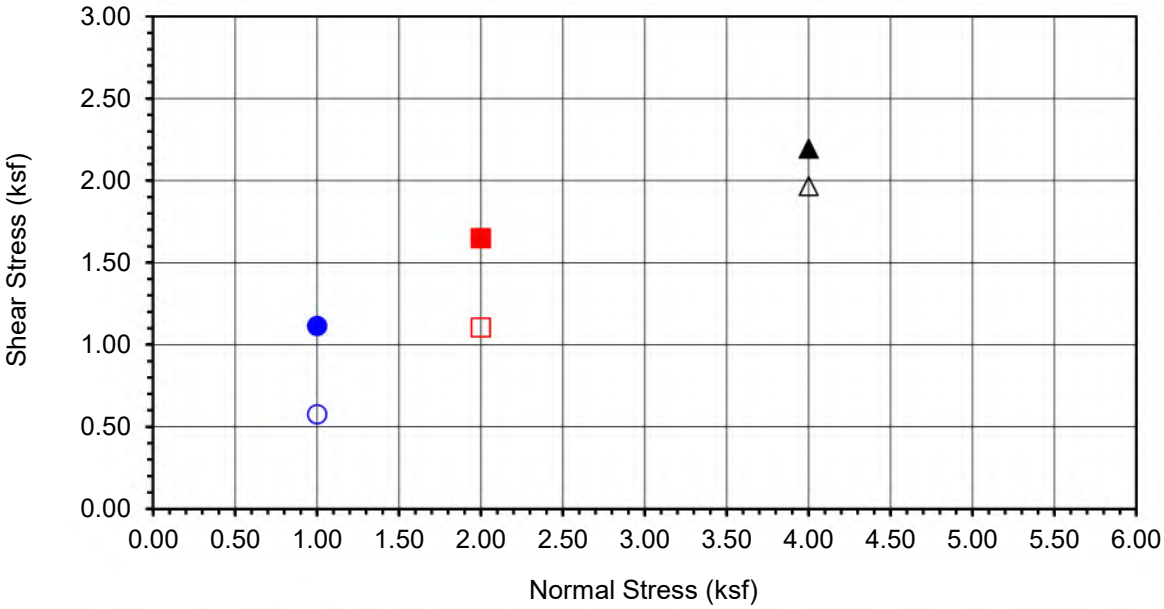
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass, San Juan Capistrano	Tested By:	G. Bathala	Date:	08/16/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/09/22
Boring No.:	B-4	Sample Type:	Ring		
Sample No.:	R-2	Depth (ft.):	20.0		
Soil Identification:	Olive lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	192.63	193.28	193.32
Weight of Ring(gm):	44.95	45.09	45.07
Before Shearing			
Weight of Wet Sample+Cont.(gm):	147.68	148.19	148.25
Weight of Dry Sample+Cont.(gm):	115.13	115.04	114.17
Weight of Container(gm):	0.00	0.00	0.00
Vertical Rdg.(in): Initial	0.0000	0.2347	0.2557
Vertical Rdg.(in): Final	-0.0028	0.2505	0.2769
After Shearing			
Weight of Wet Sample+Cont.(gm):	209.54	229.37	219.78
Weight of Dry Sample+Cont.(gm):	173.15	192.80	183.66
Weight of Container(gm):	58.02	77.76	69.49
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**B-4**
Sample No.	**R-2**
Depth (ft)	**20**
Sample Type:	
Ring	
Soil Identification:	
Olive lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.113	■ 1.647	▲ 2.194
Shear Stress @ End of Test (ksf)	○ 0.575	□ 1.103	△ 1.965
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	28.27	28.82	29.85
Dry Density (pcf)	95.7	95.7	95.0
Saturation (%)	100.4	102.1	104.0
Soil Height Before Shearing (in.)	0.9972	0.9842	0.9788
Final Moisture Content (%)	31.6	31.8	31.6

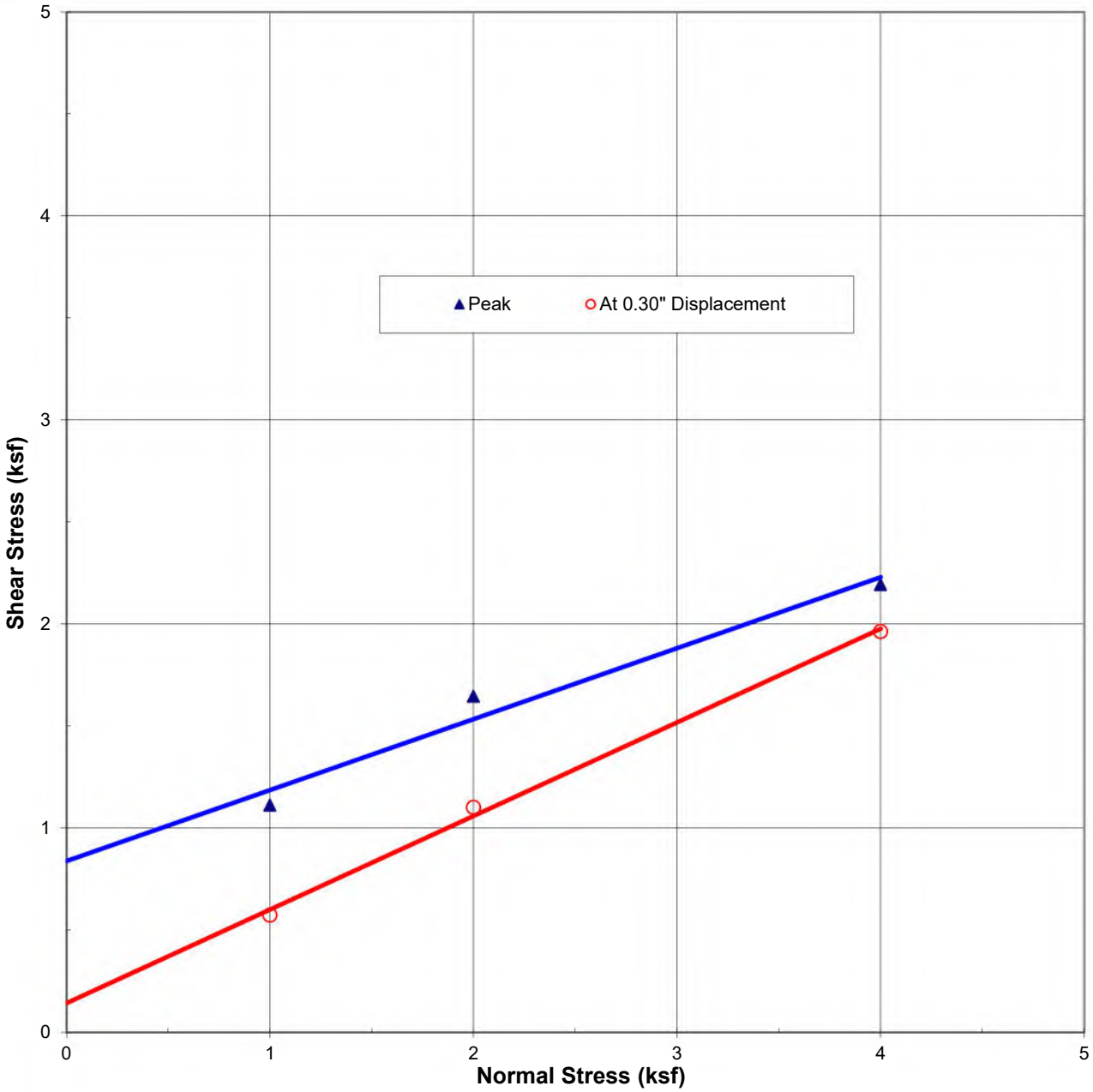
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass, San Juan Capistrano

08-22



Tested Sample:
B-4 at 20 ft

Peak:		At 0.30" Displacement:	
19.2	Degrees	24.6	Degrees
0.84	ksf	0.14	ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-22

Compass, San Juan Capistrano

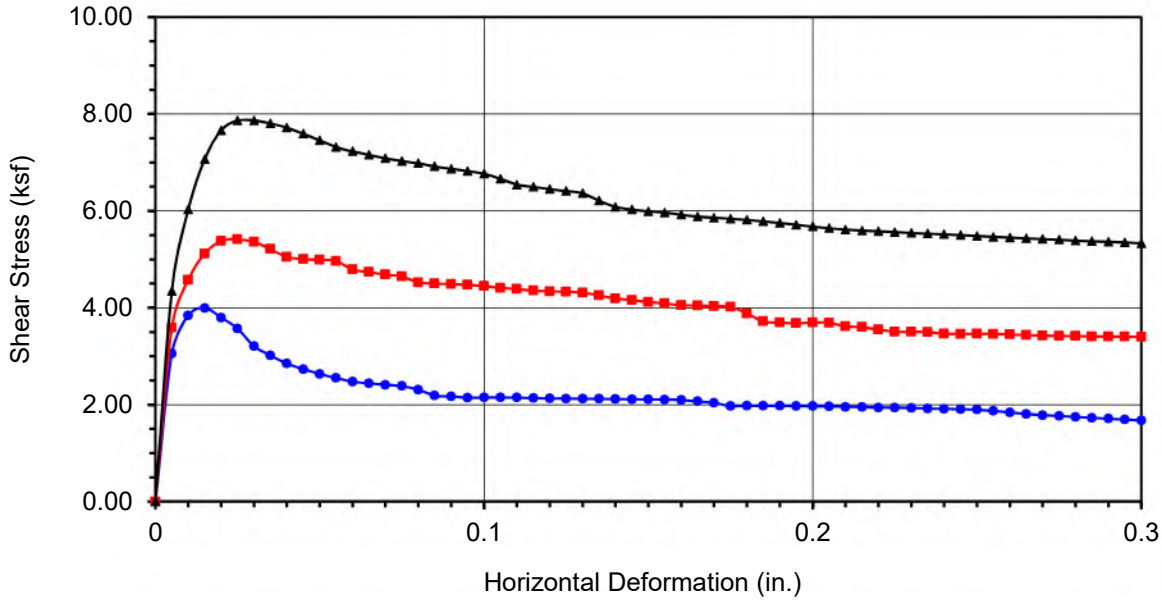
DIRECT SHEAR TEST

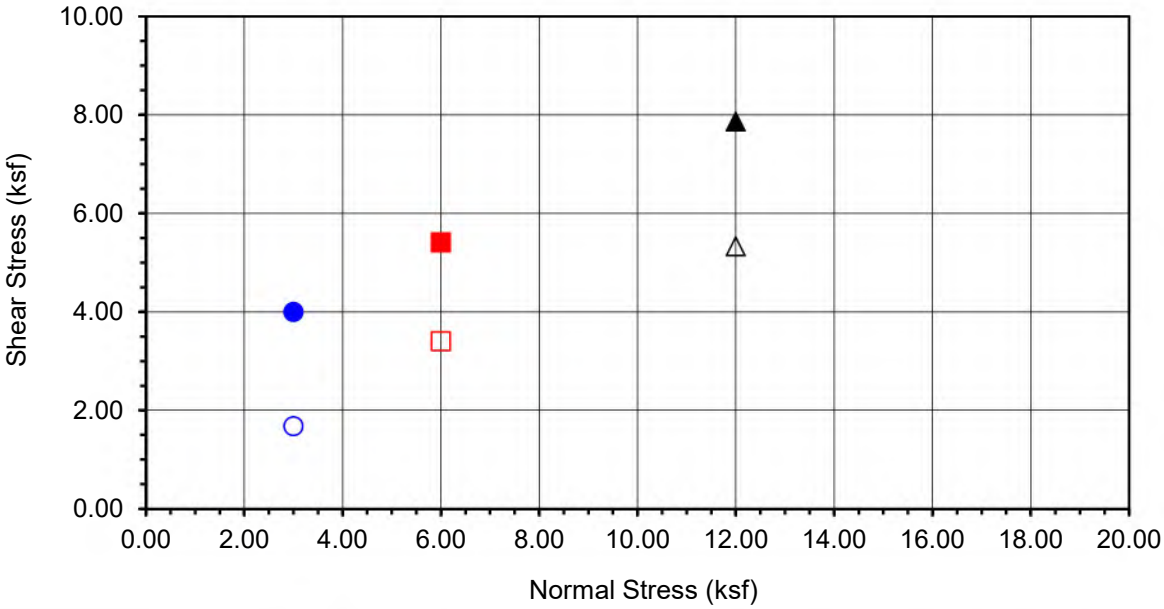
Consolidated Drained - ASTM D 3080

Project Name:	Compass, San Juan Capistrano	Tested By:	G. Bathala	Date:	08/16/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/09/22
Boring No.:	B-4	Sample Type:	Ring		
Sample No.:	R-7	Depth (ft.):	70.0		

Soil Identification: Olive gray lean clay (CL), noted as claystone

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	188.74	189.80	193.13
Weight of Ring(gm):	45.80	45.61	45.17
Before Shearing			
Weight of Wet Sample+Cont.(gm):	142.94	144.19	147.96
Weight of Dry Sample+Cont.(gm):	109.92	111.40	115.90
Weight of Container(gm):	0.00	0.00	0.00
Vertical Rdg.(in): Initial	0.2324	0.2550	0.0000
Vertical Rdg.(in): Final	0.2316	0.2600	-0.0171
After Shearing			
Weight of Wet Sample+Cont.(gm):	216.60	215.09	214.58
Weight of Dry Sample+Cont.(gm):	177.02	179.07	180.05
Weight of Container(gm):	67.10	67.67	64.15
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**B-4**
Sample No.	**R-7**
Depth (ft)	**70**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL), noted as claystone	

Normal Stress (kip/ft²)	3.000	6.000	12.000
Peak Shear Stress (kip/ft²)	● 3.996	■ 5.410	▲ 7.863
Shear Stress @ End of Test (ksf)	○ 1.676	□ 3.398	△ 5.329
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	30.04	29.43	27.66
Dry Density (pcf)	91.4	92.6	96.4
Saturation (%)	96.1	97.0	99.7
Soil Height Before Shearing (in.)	1.0008	0.9950	0.9829
Final Moisture Content (%)	36.0	32.3	29.8

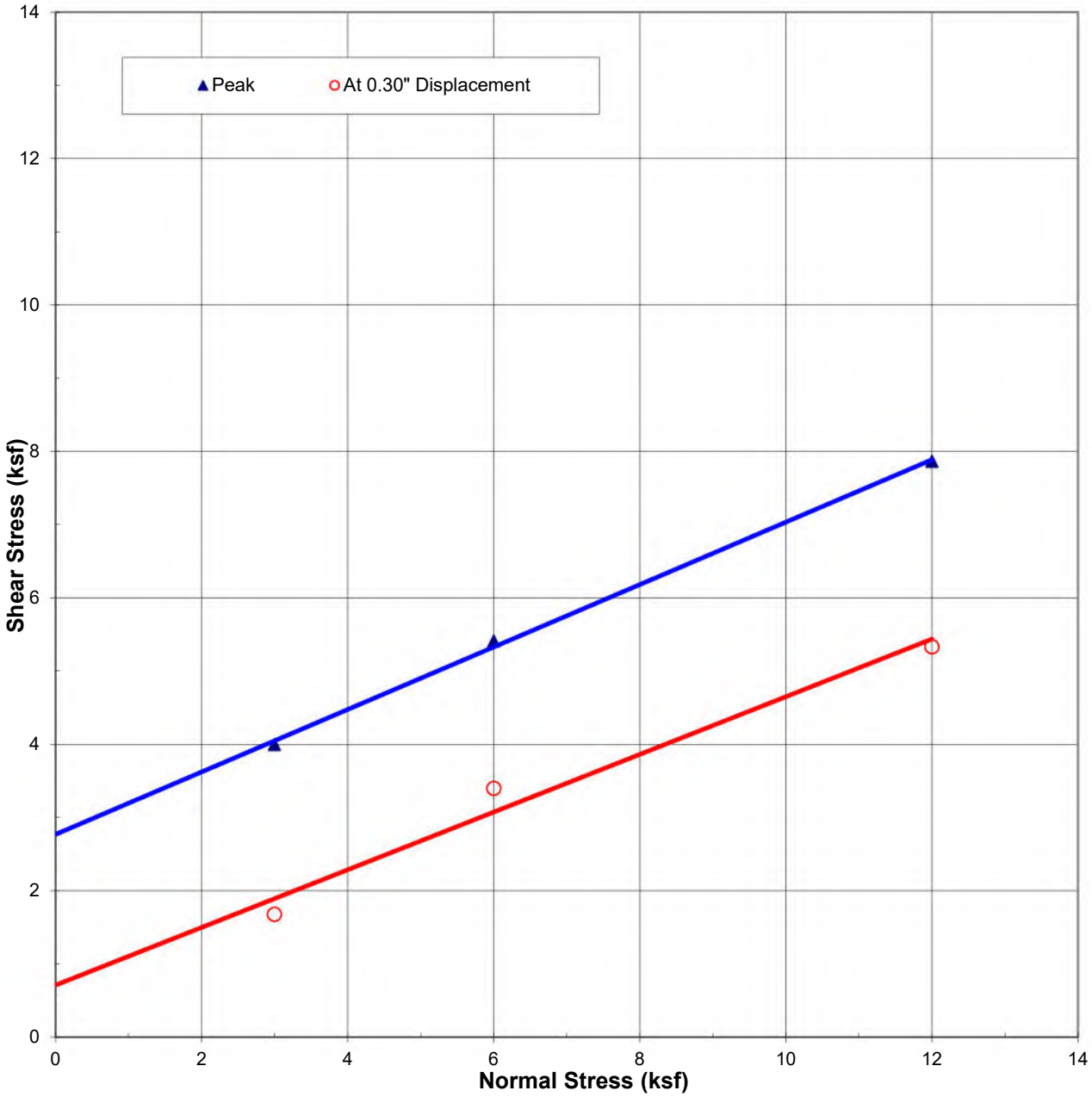
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass, San Juan Capistrano

08-22



Tested Sample:
B-4 at 70 ft

Peak:	At 0.30" Displacement:
23.1 Degrees	21.5 Degrees
2.77 ksf	0.71 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-22

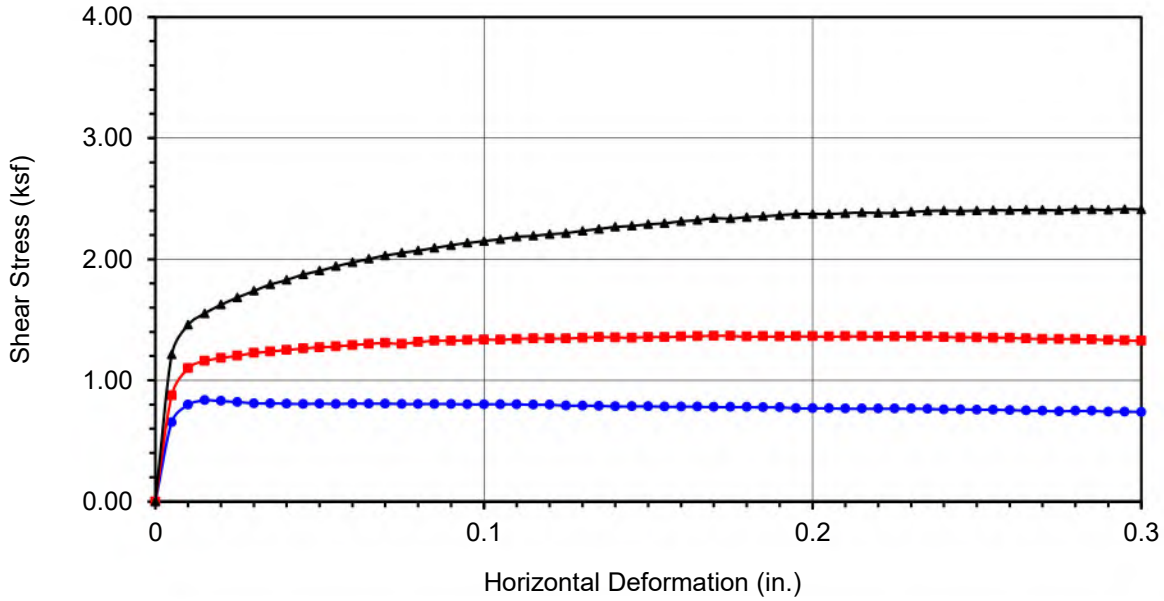
Compass, San Juan Capistrano

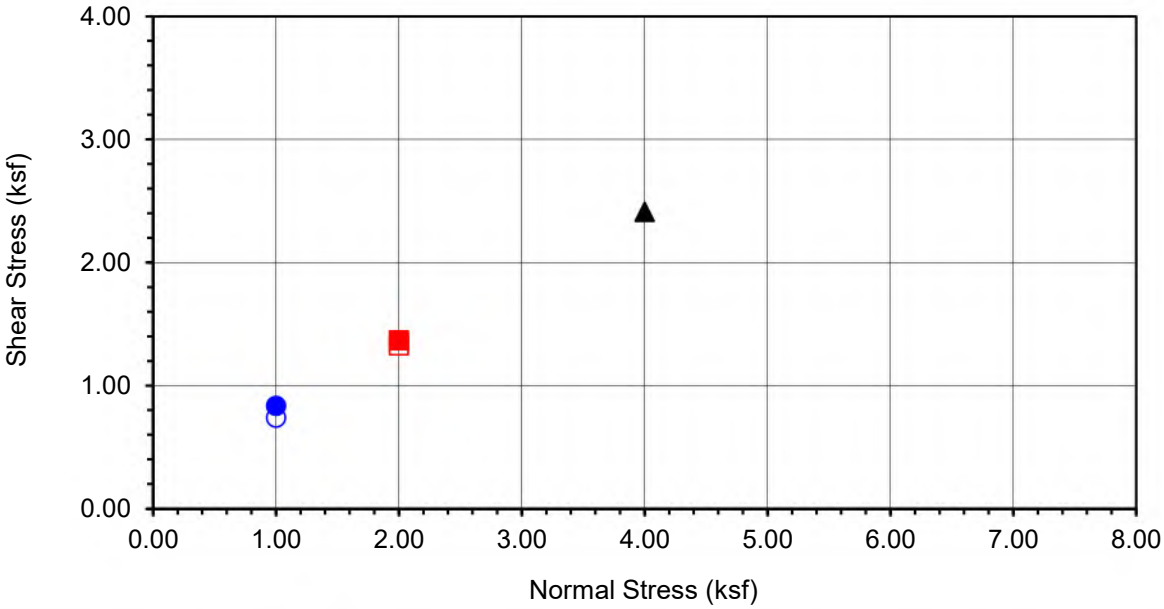
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass - San Juan Capistrano	Tested By:	G. Bathala	Date:	08/31/23
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/18/23
Boring No.:	B-5	Sample Type:	90% Remold		
Sample No.:	B-1	Depth (ft.):	0-5		
Soil Identification:	Grayish brown lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	185.12	184.37	185.31
Weight of Ring(gm):	45.51	44.55	45.34
Before Shearing			
Weight of Wet Sample+Cont.(gm):	155.89	155.89	155.89
Weight of Dry Sample+Cont.(gm):	144.62	144.62	144.62
Weight of Container(gm):	57.93	57.93	57.93
Vertical Rdg.(in): Initial	0.2384	0.2648	0.0000
Vertical Rdg.(in): Final	0.2207	N/A	N/A
After Shearing			
Weight of Wet Sample+Cont.(gm):	215.61	201.45	211.70
Weight of Dry Sample+Cont.(gm):	186.73	174.01	186.48
Weight of Container(gm):	65.42	52.00	64.00
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**B-5**
Sample No.	**B-1**
Depth (ft)	**0-5**
Sample Type:	
90% Remold	
Soil Identification:	
Grayish brown lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.836	■ 1.368	▲ 2.414
Shear Stress @ End of Test (ksf)	○ 0.739	□ 1.327	△ 2.411
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	13.00	13.00	13.00
Dry Density (pcf)	102.8	102.9	103.0
Saturation (%)	54.8	55.0	55.2
Soil Height Before Shearing (in.)	1.0177	N/A	N/A
Final Moisture Content (%)	23.8	22.5	20.6

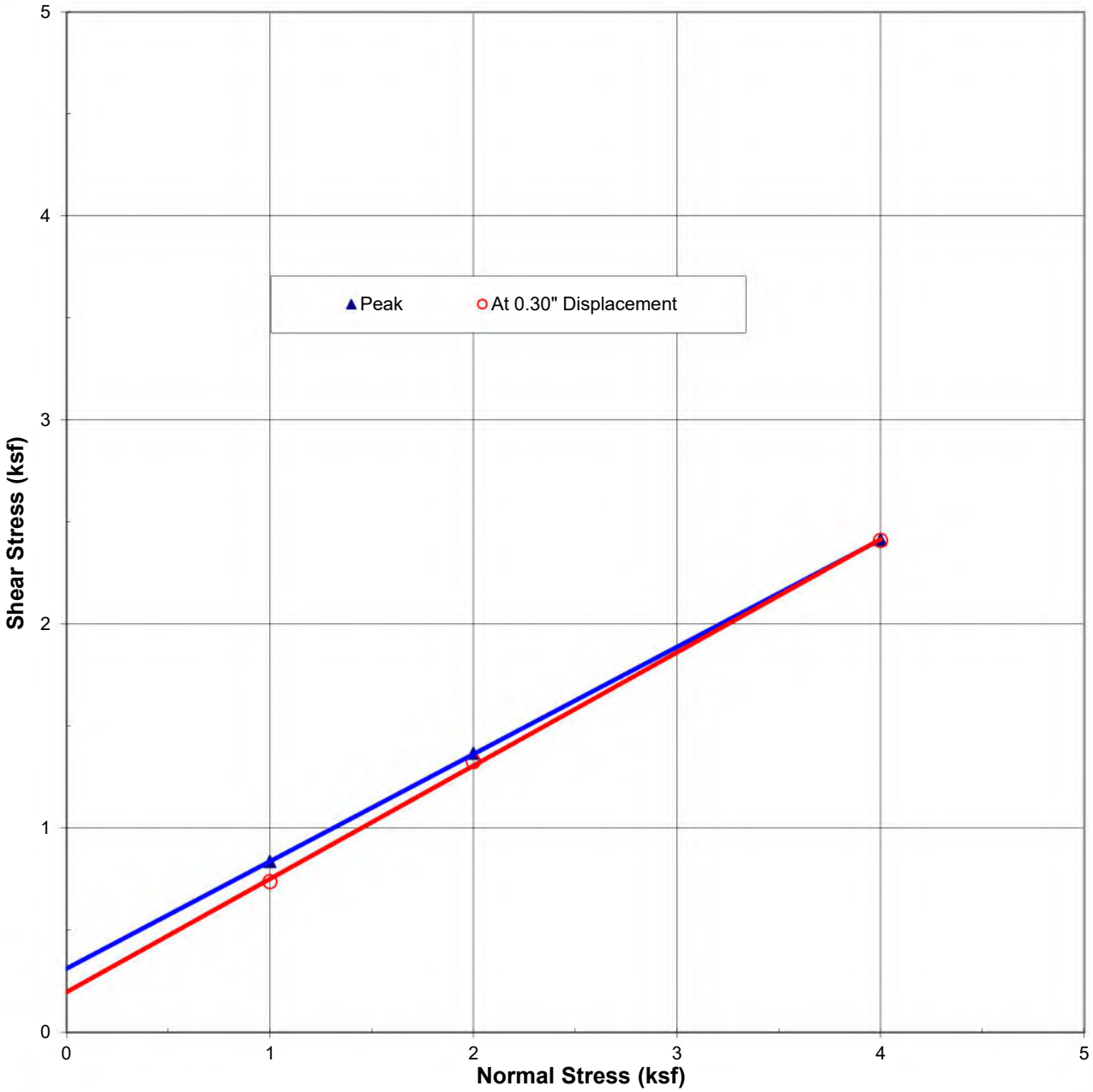
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass - San Juan Capistrano

08-23



Tested Sample:
B-5 at 0-5 ft

Peak:	At 0.30" Displacement:
27.7 Degrees	29.0 Degrees
0.31 ksf	0.20 ksf

Samples Remolded to 90% Relative Compaction

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-23

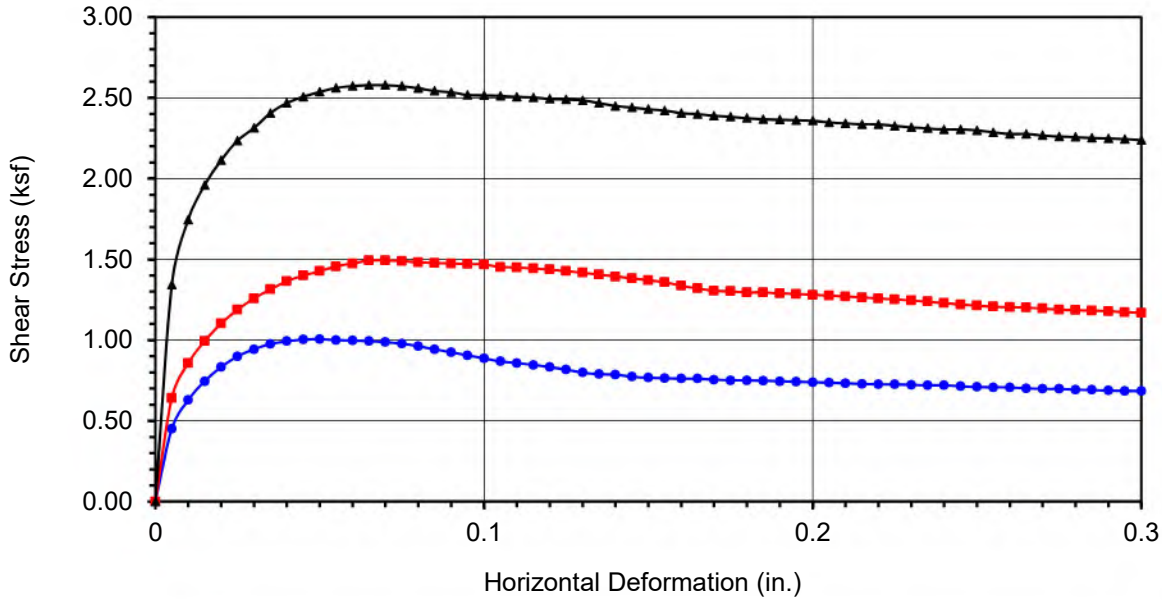
Compass, San Juan Capistrano

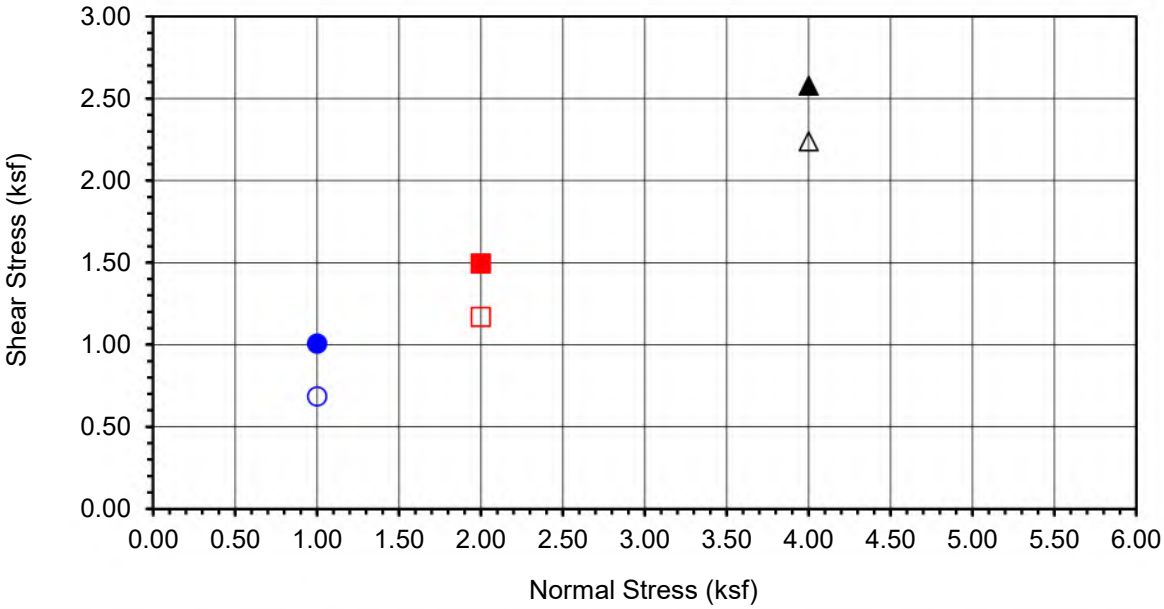
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass BESS - SJC	Tested By:	G. Bathala	Date:	10/15/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	10/19/22
Boring No.:	HS-1	Sample Type:	Ring		
Sample No.:	R-3	Depth (ft.):	15.0		
Soil Identification:	Olive lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	193.82	194.02	196.42
Weight of Ring(gm):	45.31	45.42	45.35
Before Shearing			
Weight of Wet Sample+Cont.(gm):	180.14	180.14	180.14
Weight of Dry Sample+Cont.(gm):	161.42	161.42	161.42
Weight of Container(gm):	57.62	57.62	57.62
Vertical Rdg.(in): Initial	0.2536	0.2638	0.0000
Vertical Rdg.(in): Final	0.2576	0.2751	-0.0122
After Shearing			
Weight of Wet Sample+Cont.(gm):	189.84	220.96	211.49
Weight of Dry Sample+Cont.(gm):	160.02	192.10	184.62
Weight of Container(gm):	38.37	69.44	60.28
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-1**
Sample No.	**R-3**
Depth (ft)	**15**
Sample Type:	
Ring	
Soil Identification:	
Olive lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.006	■ 1.493	▲ 2.578
Shear Stress @ End of Test (ksf)	○ 0.685	□ 1.169	△ 2.238
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	18.03	18.03	18.03
Dry Density (pcf)	104.6	104.7	106.4
Saturation (%)	79.7	79.8	83.4
Soil Height Before Shearing (in.)	0.9960	0.9887	0.9878
Final Moisture Content (%)	24.5	23.5	21.6

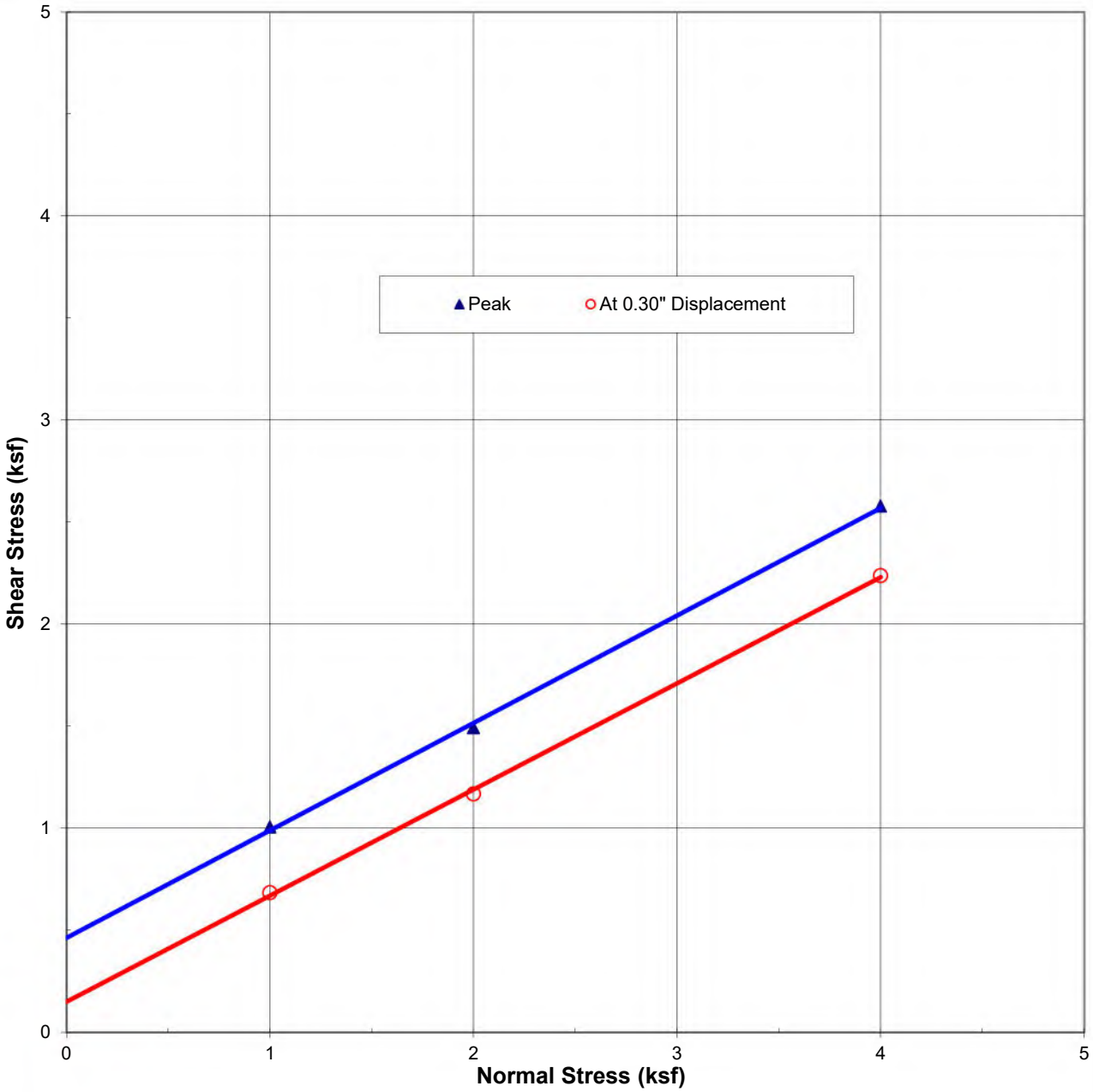
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass BESS - SJC

10-22



Tested Sample:
HS-1 at 15 ft

Peak:	At 0.30" Displacement:
27.8 Degrees	27.5 Degrees
0.46 ksf	0.15 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Oct-22

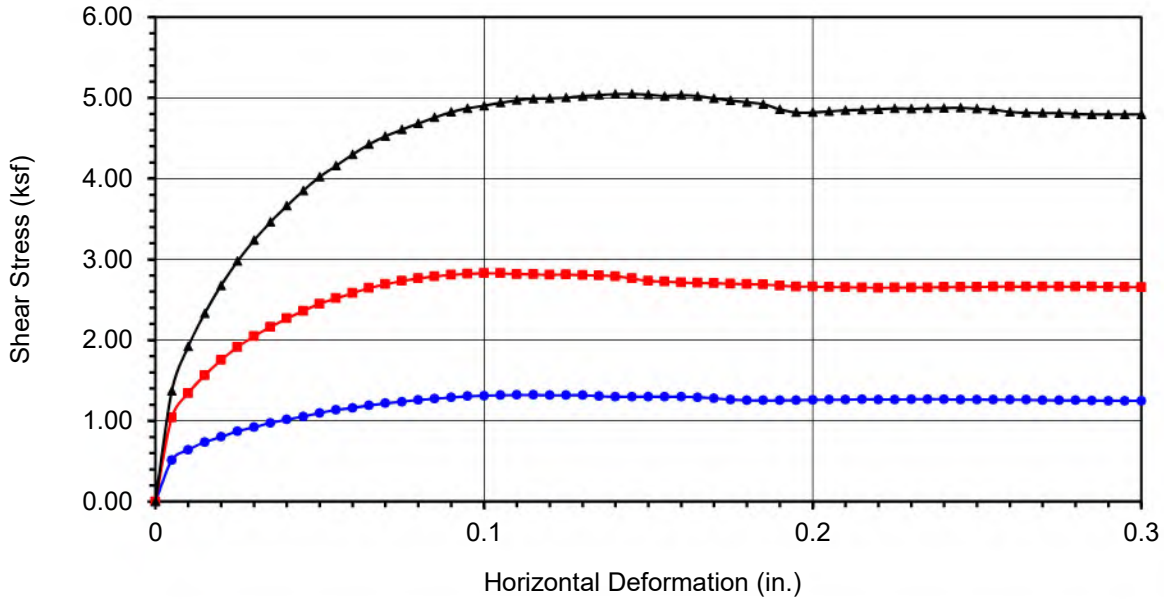
Compass, San Juan Capistrano

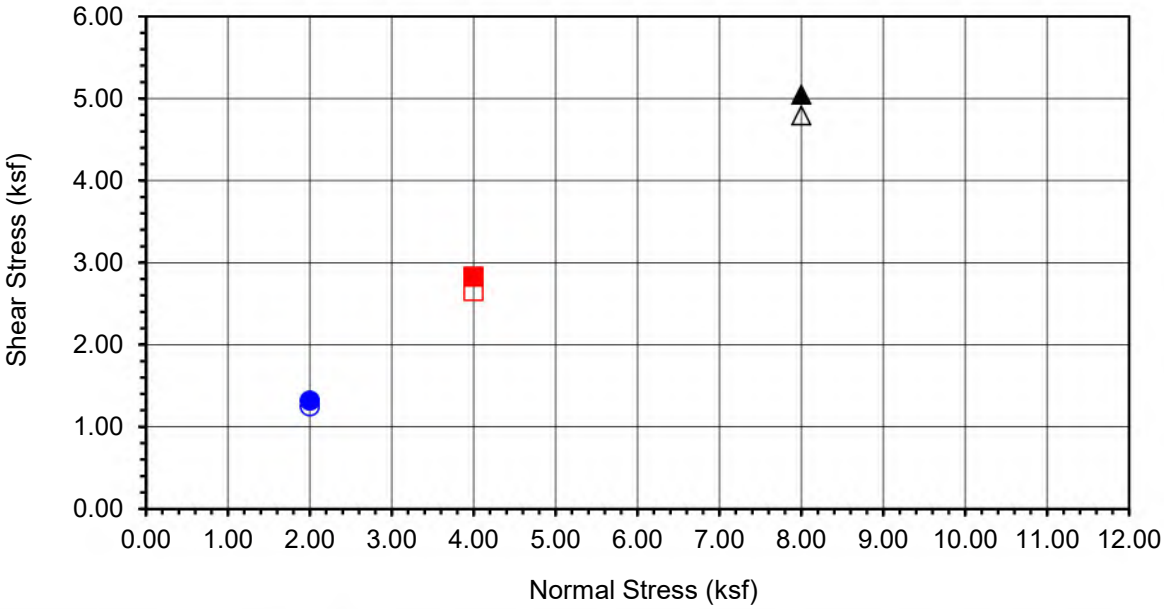
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass BESS - SJC	Tested By:	G. Bathala	Date:	10/15/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	10/19/22
Boring No.:	HS-1	Sample Type:	Ring		
Sample No.:	R-5	Depth (ft.):	35.0		
Soil Identification:	Olive silt (ML)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	184.98	190.05	191.25
Weight of Ring(gm):	42.99	46.48	46.11
Before Shearing			
Weight of Wet Sample+Cont.(gm):	188.82	188.82	188.82
Weight of Dry Sample+Cont.(gm):	159.36	159.36	159.36
Weight of Container(gm):	57.62	57.62	57.62
Vertical Rdg.(in): Initial	0.2475	0.2547	0.0000
Vertical Rdg.(in): Final	0.2684	0.2867	-0.0750
After Shearing			
Weight of Wet Sample+Cont.(gm):	196.78	209.04	207.42
Weight of Dry Sample+Cont.(gm):	164.09	181.37	179.98
Weight of Container(gm):	59.06	68.14	69.10
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-1**
Sample No.	**R-5**
Depth (ft)	**35**
Sample Type:	
Ring	
Soil Identification:	
Olive silt (ML)	

Normal Stress (kip/ft²)	2.000	4.000	8.000
Peak Shear Stress (kip/ft²)	● 1.320	■ 2.826	▲ 5.046
Shear Stress @ End of Test (ksf)	○ 1.248	□ 2.653	△ 4.794
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	28.96	28.96	28.96
Dry Density (pcf)	91.6	92.6	93.6
Saturation (%)	93.0	95.3	97.6
Soil Height Before Shearing (in.)	0.9791	0.9680	0.9250
Final Moisture Content (%)	31.1	24.4	24.7

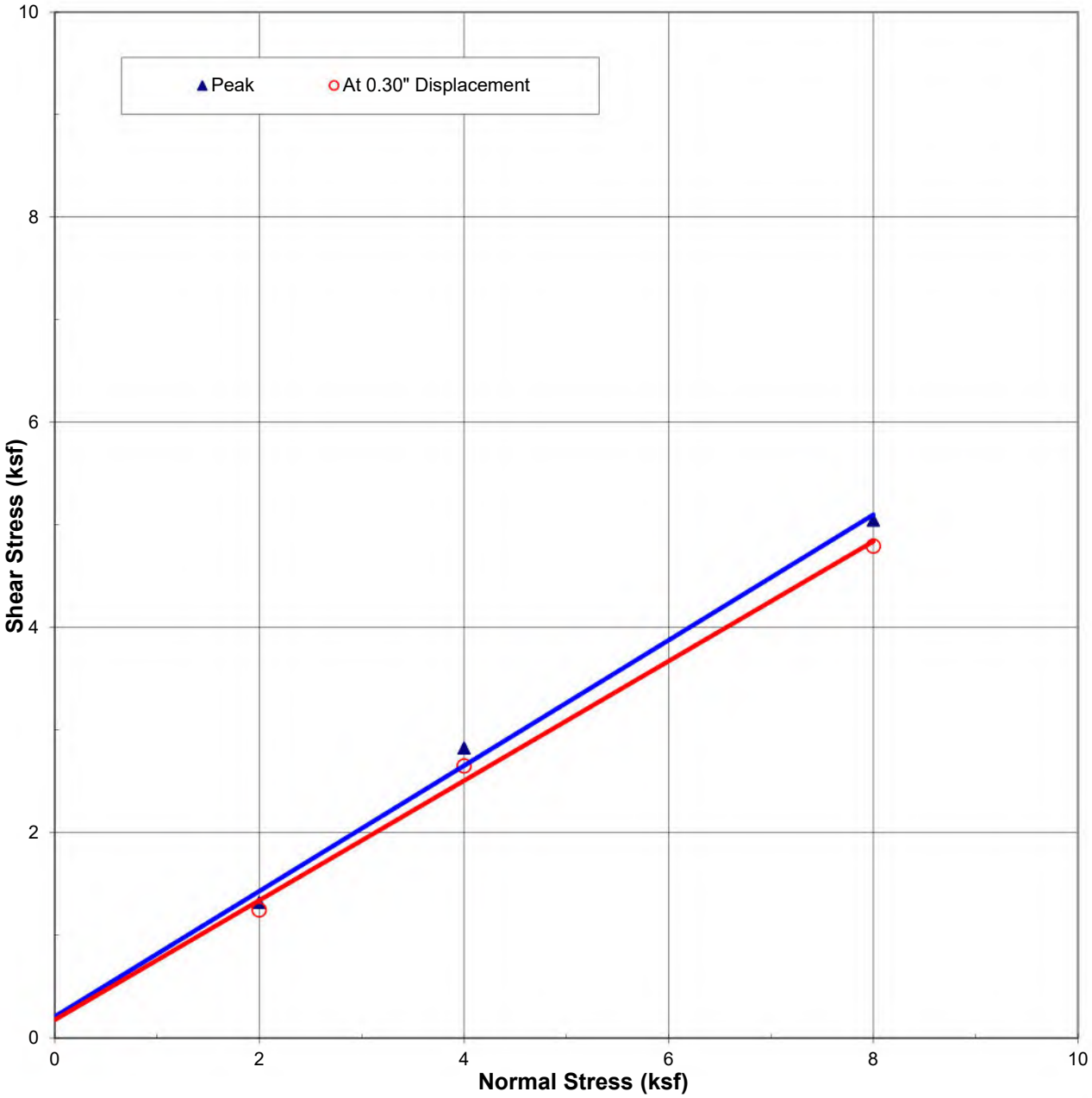
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass BESS - SJC

10-22



Tested Sample:
HS-1 at 35 ft

Peak:	At 0.30" Displacement:
31.4 Degrees	30.2 Degrees
0.21 ksf	0.18 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Oct-22

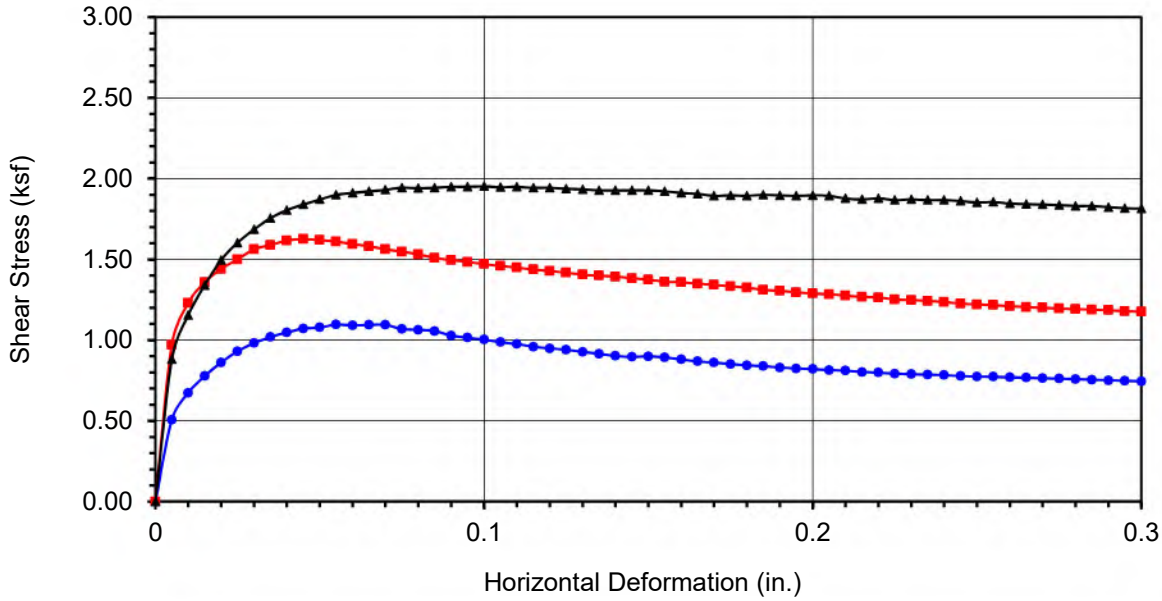
Compass, San Juan Capistrano

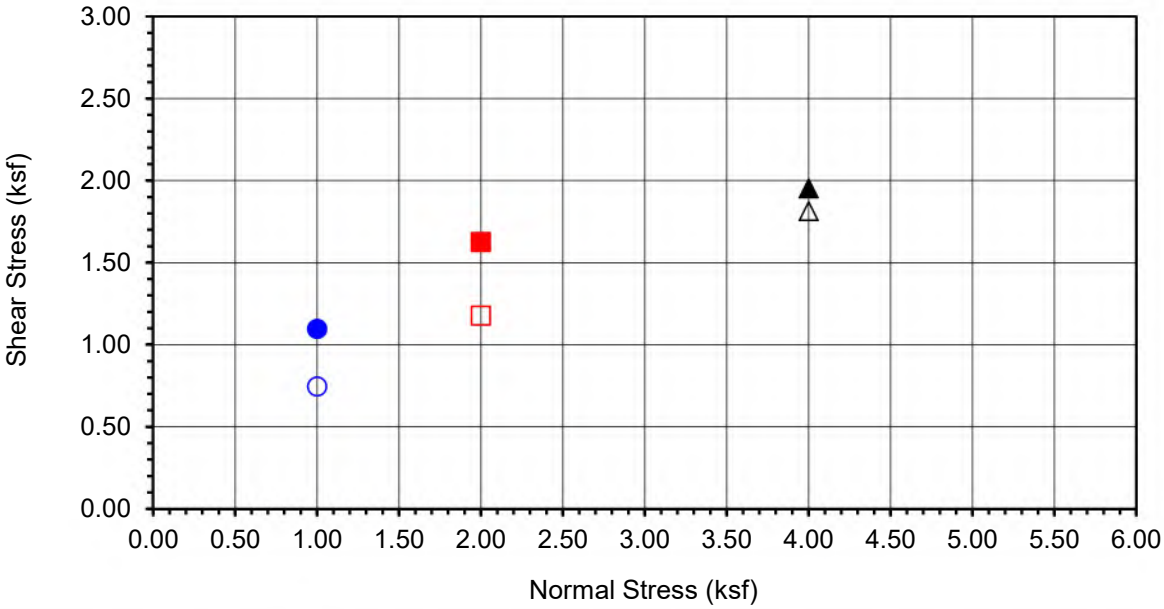
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass BESS - SJC	Tested By:	G. Bathala	Date:	10/15/22
Project No.:	22011-01	Checked By:	J. Ward	Date:	10/19/22
Boring No.:	HS-2	Sample Type:	Ring		
Sample No.:	R-4	Depth (ft.):	25.0		
Soil Identification:	Olive gray lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	196.66	196.77	197.43
Weight of Ring(gm):	45.37	45.12	45.17
Before Shearing			
Weight of Wet Sample+Cont.(gm):	198.17	198.17	198.17
Weight of Dry Sample+Cont.(gm):	173.10	173.10	173.10
Weight of Container(gm):	64.60	64.60	64.60
Vertical Rdg.(in): Initial	0.2348	0.2361	0.0000
Vertical Rdg.(in): Final	0.2431	0.2420	-0.0299
After Shearing			
Weight of Wet Sample+Cont.(gm):	210.80	207.40	209.83
Weight of Dry Sample+Cont.(gm):	180.58	177.44	180.25
Weight of Container(gm):	58.37	55.53	57.99
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-2**
Sample No.	**R-4**
Depth (ft)	**25**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.097	■ 1.625	▲ 1.952
Shear Stress @ End of Test (ksf)	○ 0.745	□ 1.176	△ 1.814
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	23.11	23.11	23.11
Dry Density (pcf)	102.2	102.4	102.9
Saturation (%)	96.1	96.7	97.7
Soil Height Before Shearing (in.)	0.9917	0.9941	0.9701
Final Moisture Content (%)	24.7	24.6	24.2

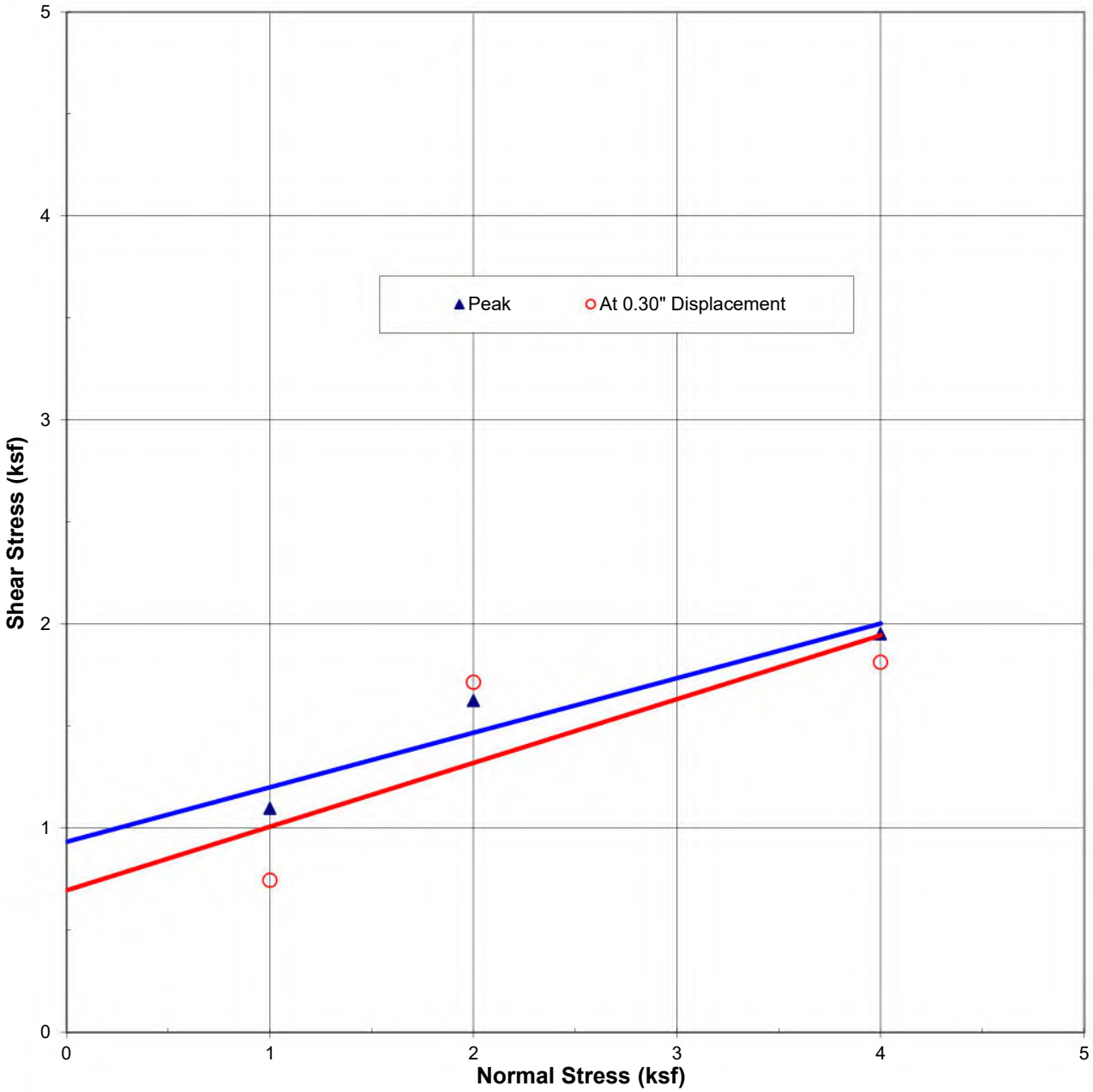
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass BESS - SJC

10-22



Tested Sample:
HS-2 at 25 ft

Peak:	At 0.30" Displacement:
15.0 Degrees	17.4 Degrees
0.93 ksf	0.70 ksf

LGC Geotechnical, Inc.

COMPOSITE DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Oct-22

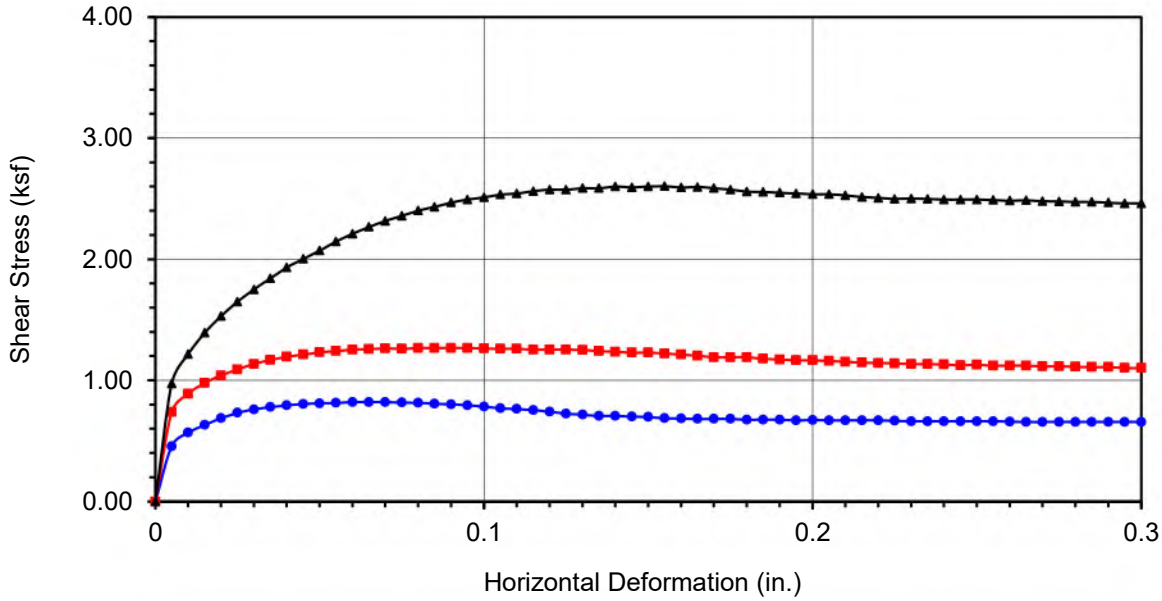
Compass, San Juan Capistrano

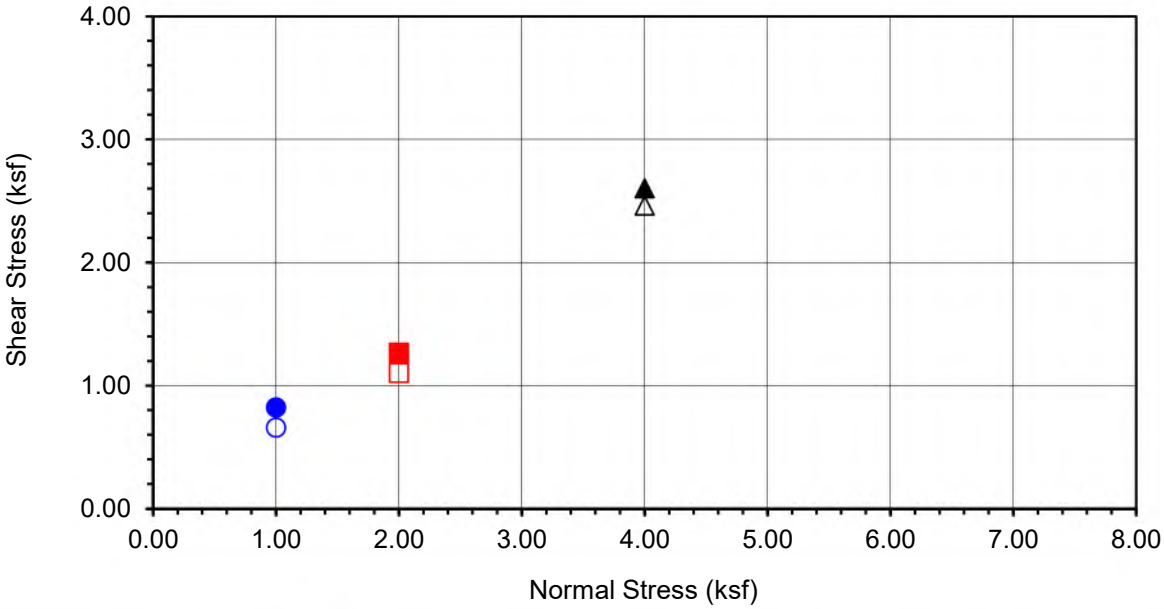
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass BESS - SJC	Tested By:	G. Bathala	Date:	09/01/23
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/18/23
Boring No.:	HS-3	Sample Type:	Ring		
Sample No.:	R-4	Depth (ft.):	20.0		
Soil Identification:	Olive gray lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	196.95	197.83	198.40
Weight of Ring(gm):	45.65	45.40	45.11
Before Shearing			
Weight of Wet Sample+Cont.(gm):	179.86	179.86	179.86
Weight of Dry Sample+Cont.(gm):	154.97	154.97	154.97
Weight of Container(gm):	64.60	64.60	64.60
Vertical Rdg.(in): Initial	0.0000	0.2504	0.2566
Vertical Rdg.(in): Final	-0.0105	0.2718	0.3025
After Shearing			
Weight of Wet Sample+Cont.(gm):	218.59	207.97	185.80
Weight of Dry Sample+Cont.(gm):	189.15	176.10	159.75
Weight of Container(gm):	68.08	56.66	36.58
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-3**
Sample No.	**R-4**
Depth (ft)	**20**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.821	■ 1.267	▲ 2.603
Shear Stress @ End of Test (ksf)	○ 0.657	□ 1.103	△ 2.462
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	27.54	27.54	27.54
Dry Density (pcf)	98.7	99.4	100.0
Saturation (%)	105.0	106.9	108.3
Soil Height Before Shearing (in.)	0.9895	0.9786	0.9541
Final Moisture Content (%)	24.3	26.7	21.1

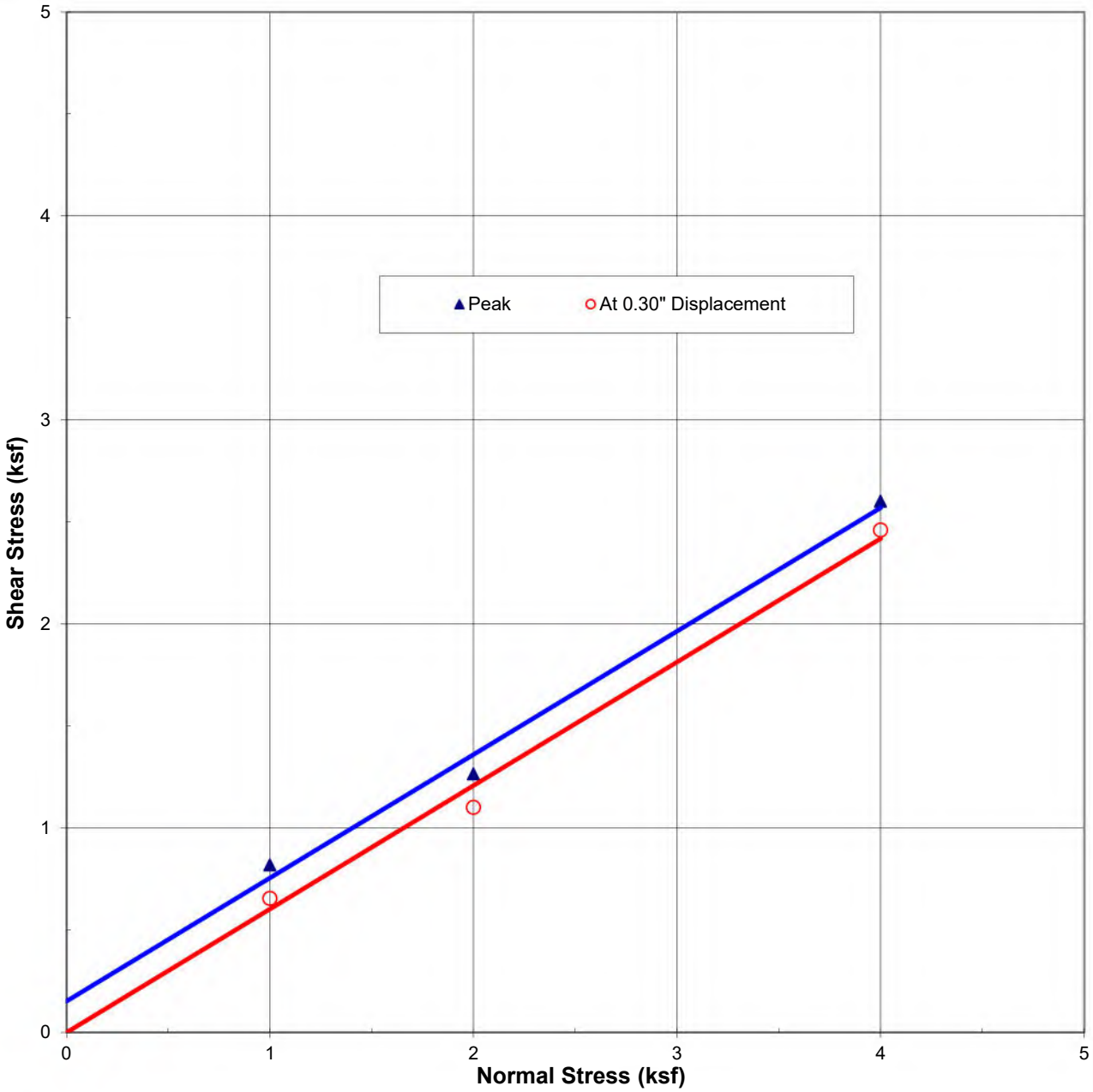
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass BESS - SJC

09-23



Tested Sample:
HS-3 at 20 ft

Peak:		At 0.30" Displacement:	
31.2	Degrees	31.2	Degrees
0.15	ksf	0.00	ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-23

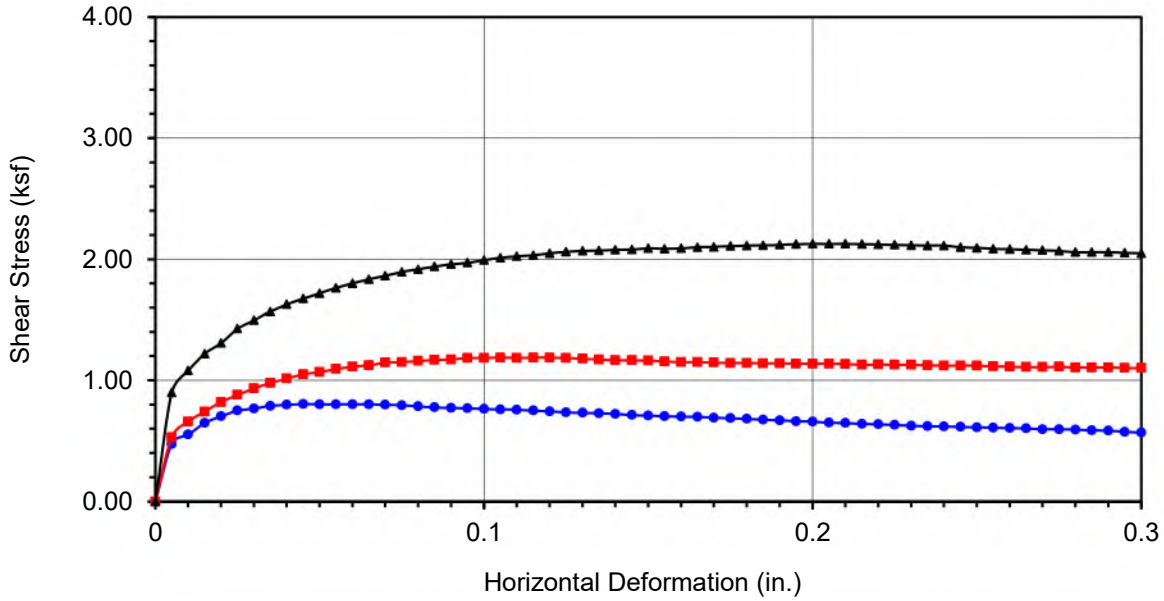
Compass, San Juan Capistrano

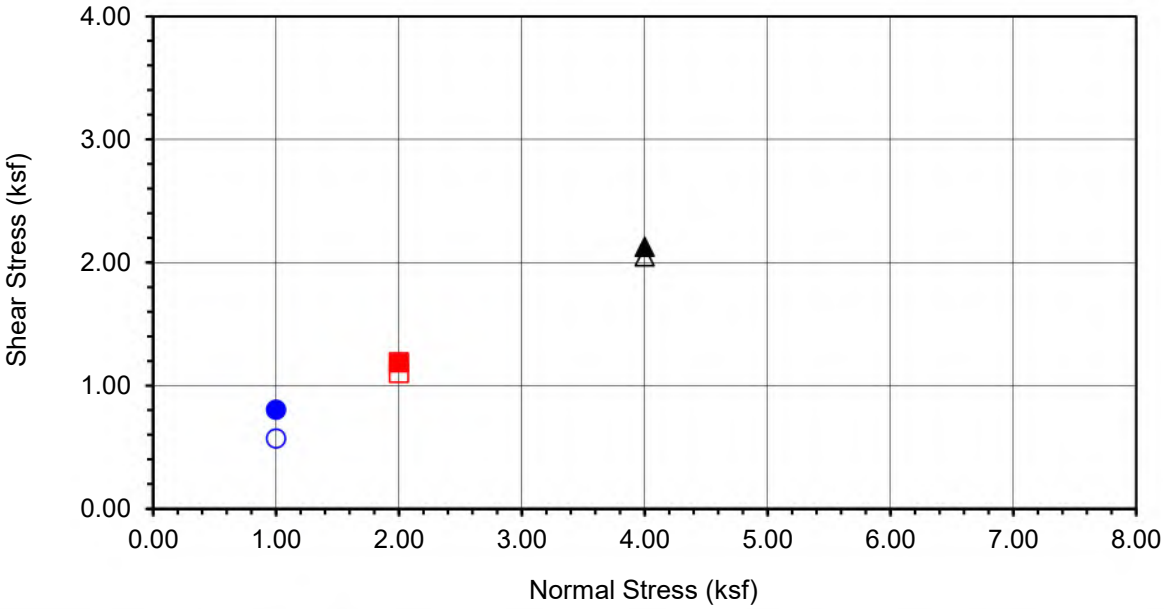
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass BESS - SJC	Tested By:	G. Bathala	Date:	09/01/23
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/18/23
Boring No.:	HS-3	Sample Type:	Ring		
Sample No.:	R-5	Depth (ft.):	30.0		
Soil Identification:	Olive gray lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	188.39	190.33	189.87
Weight of Ring(gm):	45.07	45.43	43.25
Before Shearing			
Weight of Wet Sample+Cont.(gm):	200.29	200.29	200.29
Weight of Dry Sample+Cont.(gm):	168.94	168.94	168.94
Weight of Container(gm):	66.15	66.15	66.15
Vertical Rdg.(in): Initial	0.2351	0.2624	0.0000
Vertical Rdg.(in): Final	0.2442	0.2940	-0.0537
After Shearing			
Weight of Wet Sample+Cont.(gm):	196.11	199.67	206.94
Weight of Dry Sample+Cont.(gm):	160.20	167.13	176.04
Weight of Container(gm):	53.31	56.95	65.80
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-3**
Sample No.	**R-5**
Depth (ft)	**30**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 0.805	■ 1.188	▲ 2.128
Shear Stress @ End of Test (ksf)	○ 0.569	□ 1.103	△ 2.050
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	30.50	30.50	30.50
Dry Density (pcf)	91.3	92.3	93.4
Saturation (%)	97.4	99.8	102.4
Soil Height Before Shearing (in.)	0.9909	0.9684	0.9463
Final Moisture Content (%)	33.6	29.5	28.0

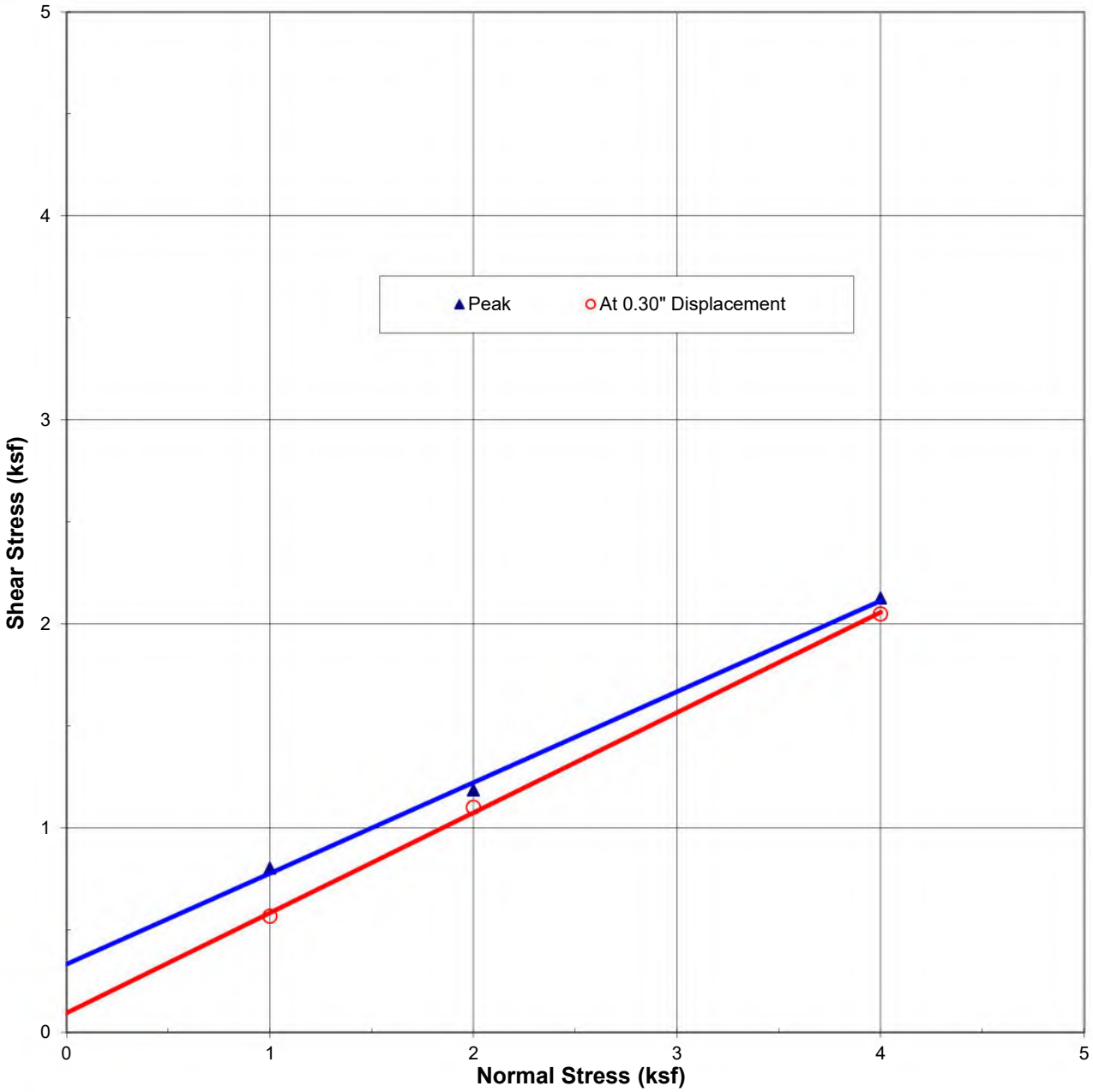
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass BESS - SJC

09-23



Tested Sample:
HS-3 at 30 ft

Peak:	At 0.30" Displacement:
24.0 Degrees	26.1 Degrees
0.34 ksf	0.10 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-23

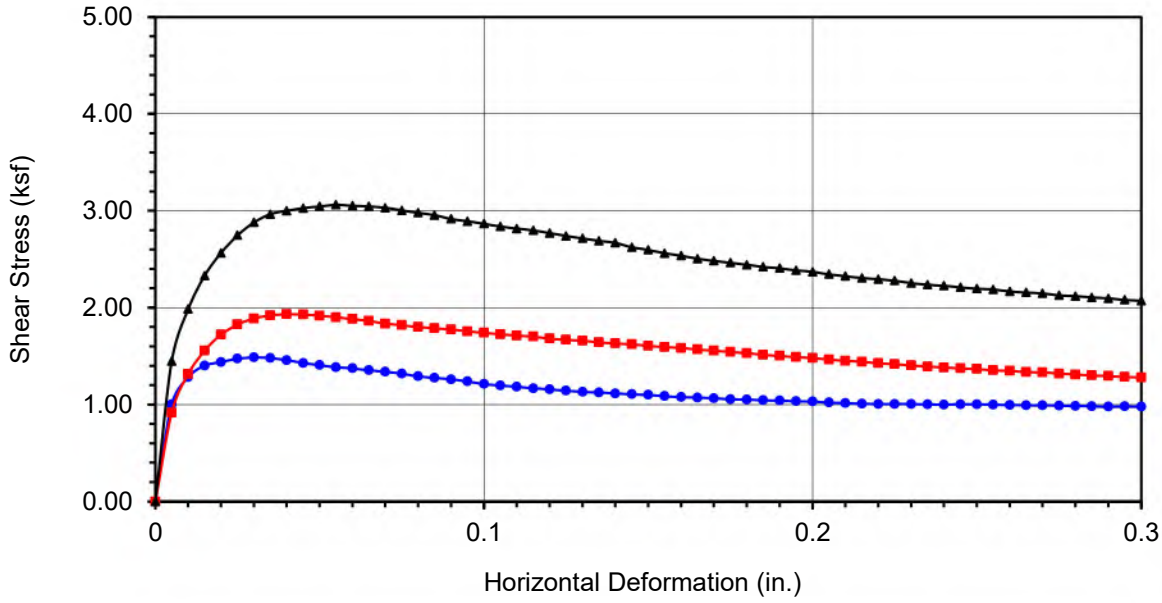
Compass, San Juan Capistrano

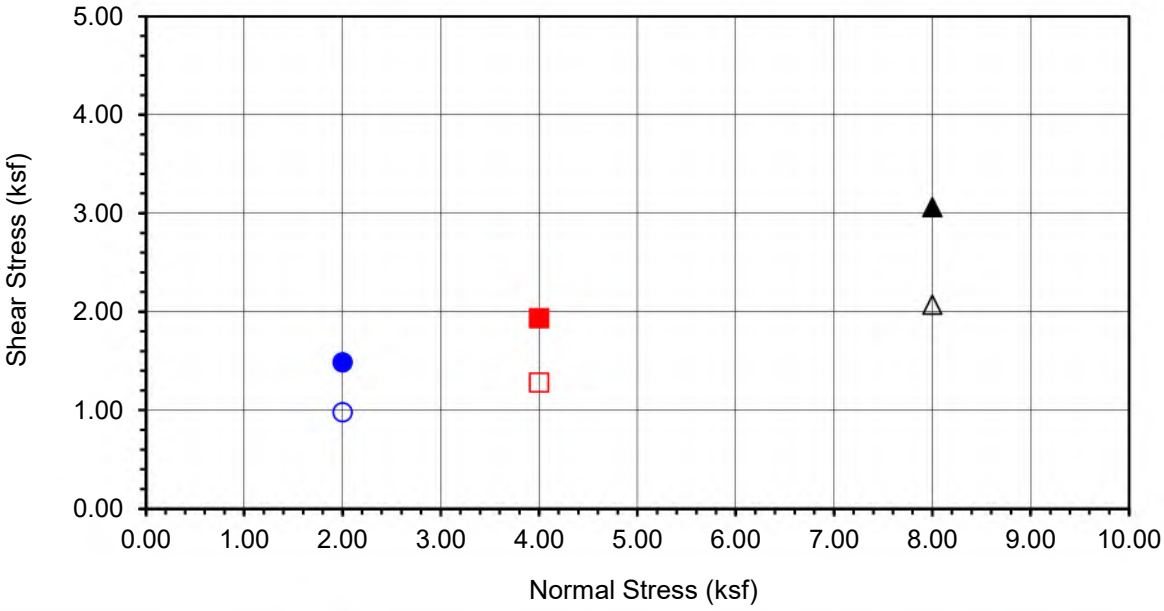
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass - San Juan Capistrano	Tested By:	G. Bathala	Date:	09/05/23
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/18/23
Boring No.:	HS-3	Sample Type:	Ring		
Sample No.:	R-7	Depth (ft.):	50.0		
Soil Identification:	Olive gray lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	173.55	177.60	178.36
Weight of Ring(gm):	44.33	44.95	45.36
Before Shearing			
Weight of Wet Sample+Cont.(gm):	161.41	161.41	161.41
Weight of Dry Sample+Cont.(gm):	125.84	125.84	125.84
Weight of Container(gm):	36.52	36.52	36.52
Vertical Rdg.(in): Initial	0.0000	0.2576	0.2533
Vertical Rdg.(in): Final	-0.0175	0.2969	0.3104
After Shearing			
Weight of Wet Sample+Cont.(gm):	196.43	198.21	199.71
Weight of Dry Sample+Cont.(gm):	156.62	158.37	163.58
Weight of Container(gm):	66.34	65.42	68.53
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-3**
Sample No.	**R-7**
Depth (ft)	**50**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	2.000	4.000	8.000
Peak Shear Stress (kip/ft²)	● 1.487	■ 1.933	▲ 3.062
Shear Stress @ End of Test (ksf)	○ 0.978	□ 1.280	△ 2.072
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	39.82	39.82	39.82
Dry Density (pcf)	76.9	78.9	79.1
Saturation (%)	90.1	94.6	95.1
Soil Height Before Shearing (in.)	0.9825	0.9607	0.9429
Final Moisture Content (%)	44.1	42.9	38.0

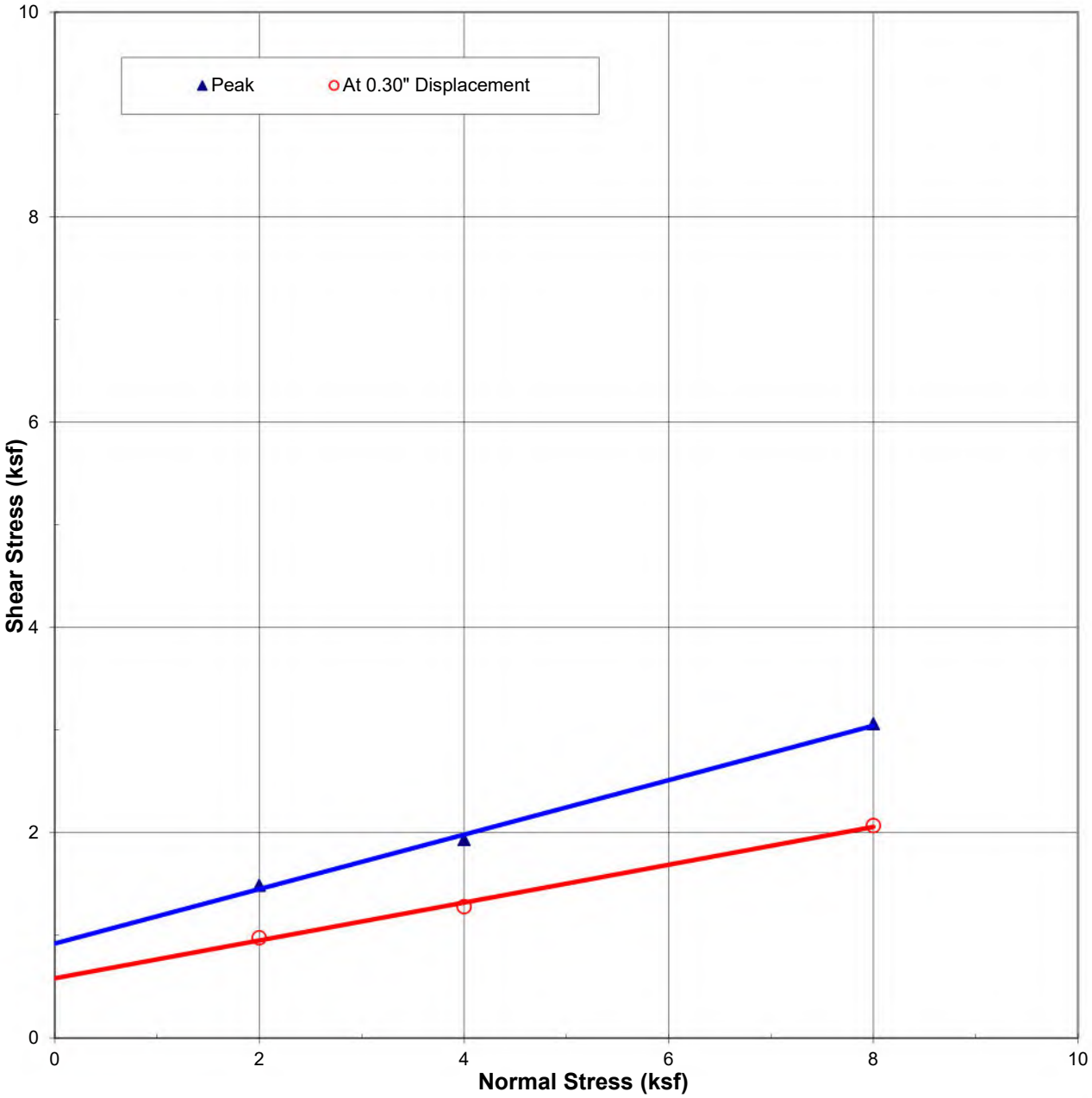
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass - San Juan Capistrano

09-23



Tested Sample:
HS-3 at 50 ft

	Peak:	At 0.30" Displacement:
	14.9 Degrees	10.5 Degrees
	0.92 ksf	0.58 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-23

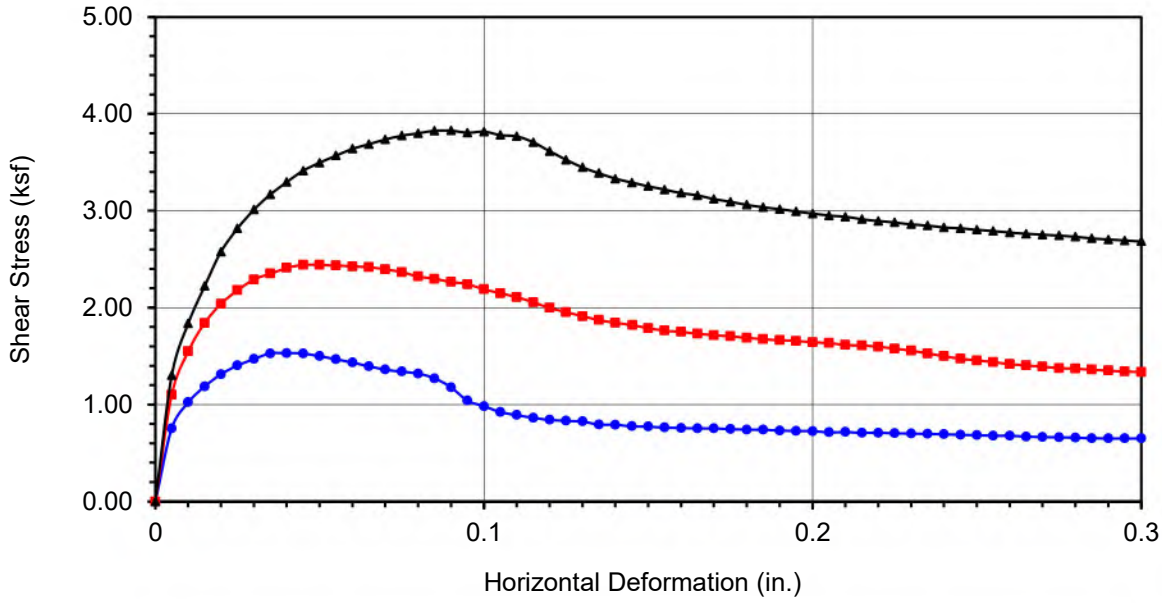
Compass, San Juan Capistrano

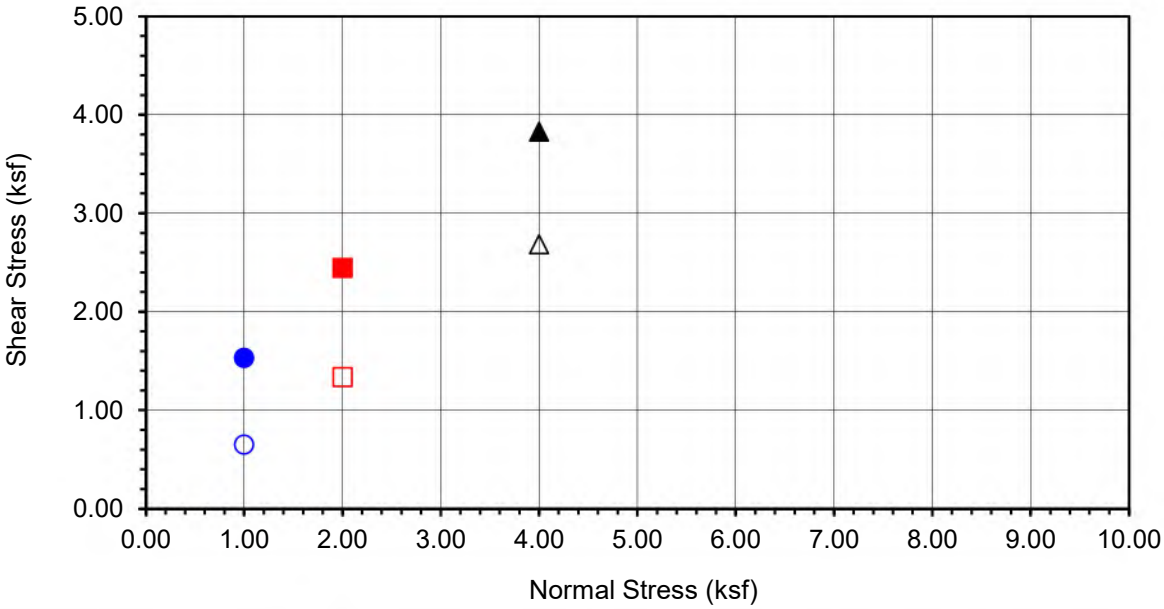
DIRECT SHEAR TEST

Consolidated Drained - ASTM D 3080

Project Name:	Compass - San Juan Capistrano	Tested By:	G. Bathala	Date:	09/05/23
Project No.:	22011-01	Checked By:	J. Ward	Date:	09/18/23
Boring No.:	HS-4	Sample Type:	Ring		
Sample No.:	R-2	Depth (ft.):	10.0		
Soil Identification:	Olive gray lean clay (CL)				

Sample Diameter(in):	2.415	2.415	2.415
Sample Thickness(in.):	1.000	1.000	1.000
Weight of Sample + ring(gm):	187.97	194.16	197.66
Weight of Ring(gm):	45.70	45.07	45.11
Before Shearing			
Weight of Wet Sample+Cont.(gm):	193.46	193.46	193.46
Weight of Dry Sample+Cont.(gm):	170.00	170.00	170.00
Weight of Container(gm):	58.12	58.12	58.12
Vertical Rdg.(in): Initial	0.0000	0.2550	0.2521
Vertical Rdg.(in): Final	0.0056	0.2632	0.2610
After Shearing			
Weight of Wet Sample+Cont.(gm):	206.13	193.06	226.10
Weight of Dry Sample+Cont.(gm):	173.82	163.04	198.98
Weight of Container(gm):	57.24	39.71	71.79
Specific Gravity (Assumed):	2.70	2.70	2.70
Water Density(pcf):	62.43	62.43	62.43





Boring No.	**HS-4**
Sample No.	**R-2**
Depth (ft)	**10**
Sample Type:	
Ring	
Soil Identification:	
Olive gray lean clay (CL)	

Normal Stress (kip/ft²)	1.000	2.000	4.000
Peak Shear Stress (kip/ft²)	● 1.531	■ 2.443	▲ 3.829
Shear Stress @ End of Test (ksf)	○ 0.651	□ 1.336	△ 2.685
Deformation Rate (in./min.)	0.0017	0.0017	0.0017
Initial Sample Height (in.)	1.000	1.000	1.000
Diameter (in.)	2.415	2.415	2.415
Initial Moisture Content (%)	20.97	20.97	20.97
Dry Density (pcf)	97.8	102.5	104.9
Saturation (%)	78.3	87.8	93.2
Soil Height Before Shearing (in.)	1.0056	0.9918	0.9911
Final Moisture Content (%)	27.7	24.3	21.3

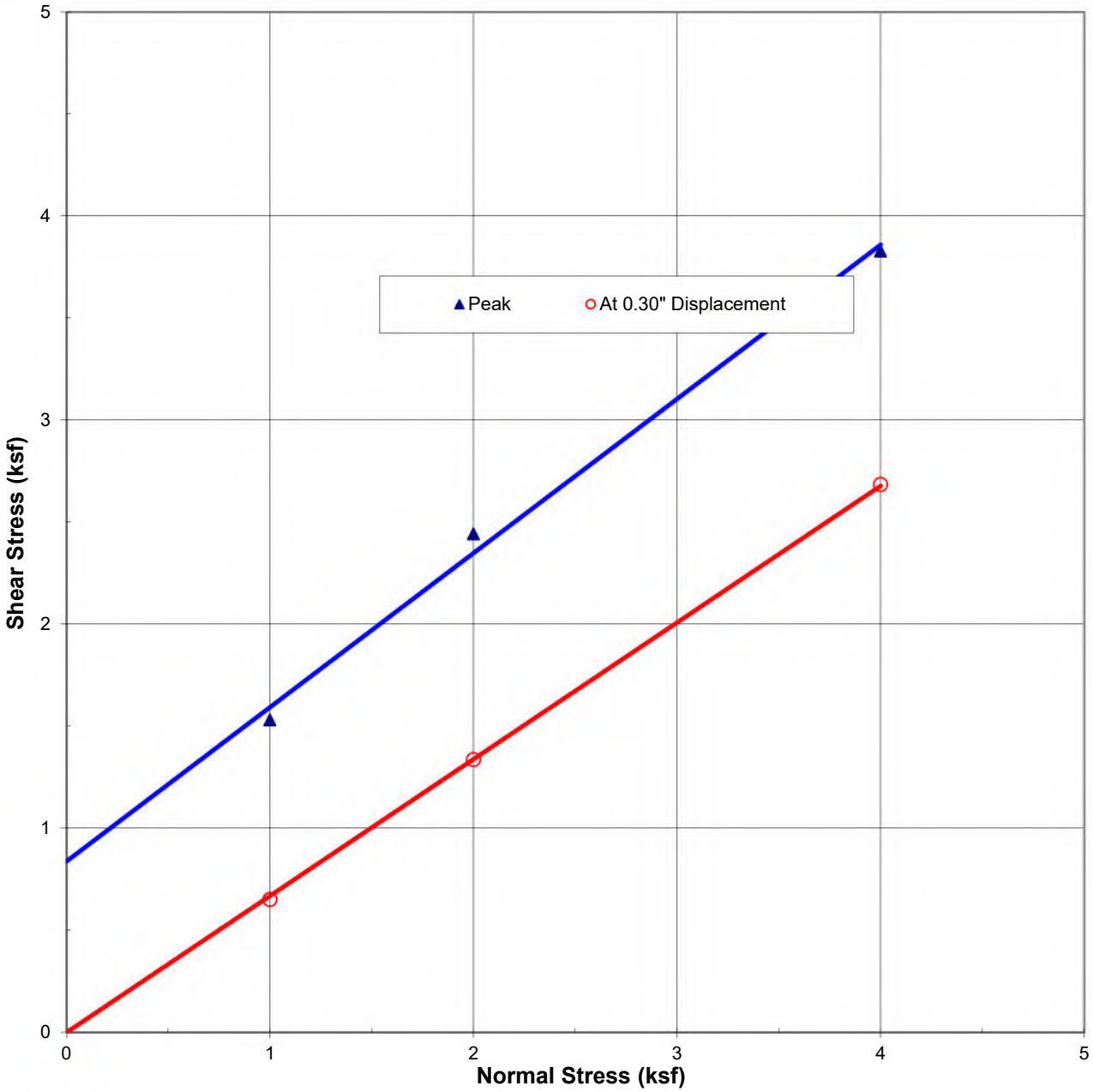
DIRECT SHEAR TEST RESULTS

Consolidated Drained - ASTM D 3080

Project No.: 22011-01

Compass - San Juan Capistrano

09-23



Tested Sample:
HS-4 at 10 ft

Peak:	At 0.30" Displacement:
37.1 Degrees	33.8 Degrees
0.84 ksf	0.00 ksf

LGC Geotechnical, Inc.

DIRECT SHEAR PLOT

Project Number: 22011-01
Date: Sep-23

Compass, San Juan Capistrano

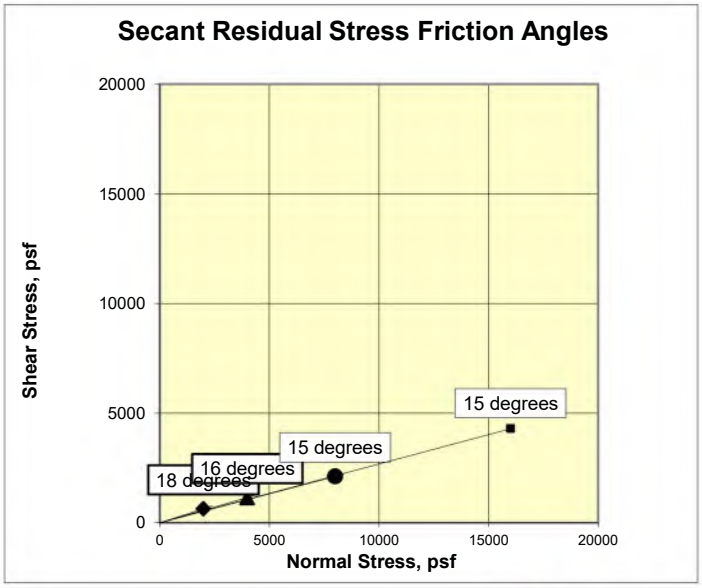
BENCHMARK GEOTECHNICAL LABS

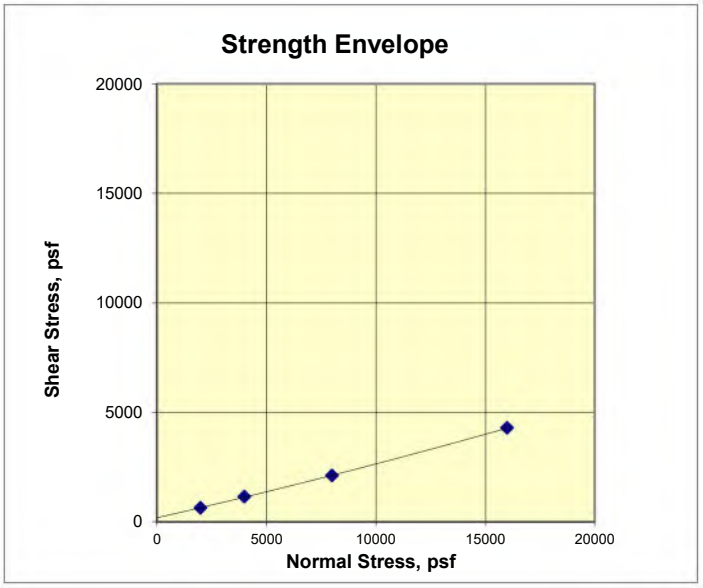
Drained Residual Torsional Shear Strength (ASTM D6467)

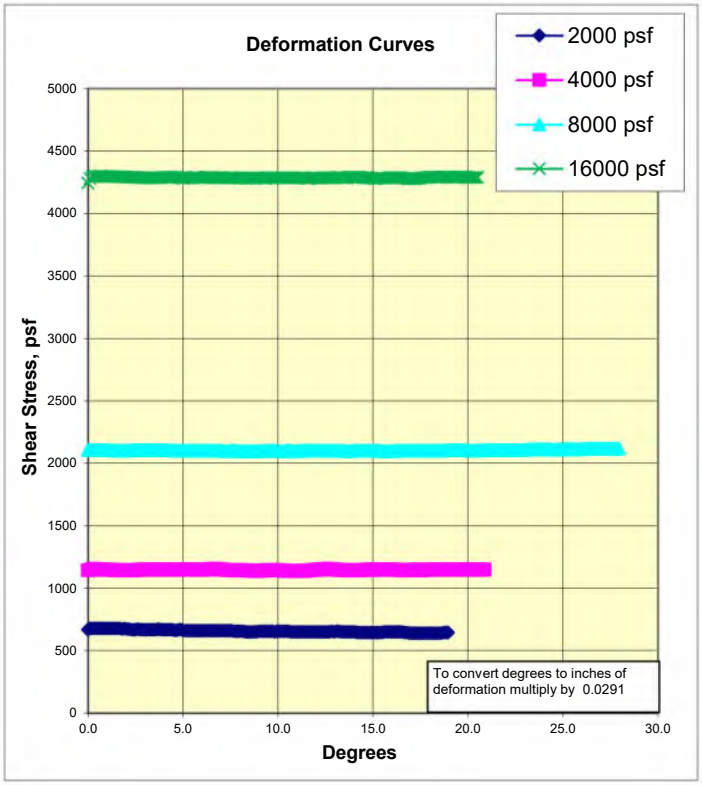
BGL Job No.:	040-0141	**Boring:**	B-2	**Date:**	9/10/2022	**Clay, %:**	
Client:	LGC Geotechnical	**Sample:**	G-2	**By:**	PJ	**LL:**	72.2
Project Name:	Compass, San Juan Capistrano	**Depth (ft):**	84	**Checked:**	PJ	**PL:**	28.1
Project Number:	22011-01	**Test Type:**	Reconstituted Residual			**Sample Preparation:**	<#40
Soil Type:	Very Dark Brown Fat CLAY						

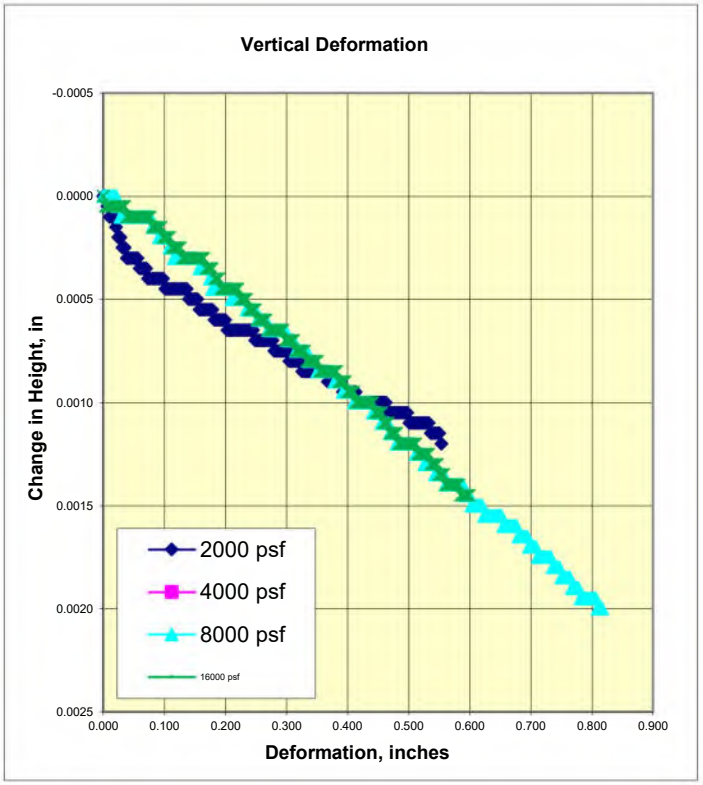
Normal Stress, psf	2000	4000	8000	16000
Secant Phi, deg.:	18	16	15	15

Remarks: A small friction correction was applied to each point. Sample prepared by the wet prep method.









BENCHMARK GEOTECHNICAL LABS

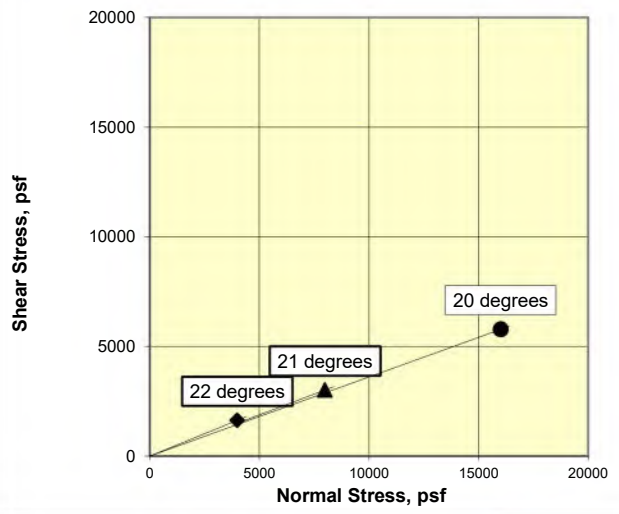
Drained Residual Torsional Shear Strength (ASTM D6467)

BGL Job No.:	040-015	**Boring:**	B-1	**Date:**	12/11/2022	**Clay, %:**	
Client:	LGC Geotechnical	**Sample:**	G-3	**By:**	PJ	**LL:**	62.7
Project Name:	Compass. San Juan Capistrano	**Depth (ft):**	28	**Checked:**	PJ	**PL:**	30.1
Project Number:	2211-01	**Test Type:**	Reconstituted Residual			**Sample Preparation:**	<#40
Soil Type:	Very Dark Brown Fat CLAY						

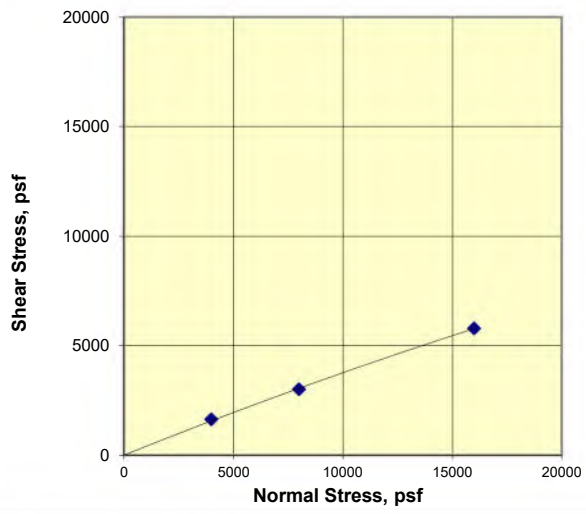
Normal Stress, psf	4000	8000	16000
Secant Phi, deg.:	22	21	20

Remarks: Sample prepared by the wet prep method. This material contained a noticeable amount of coarse silt and a small amount of very fine sand which gave it a slightly gritty consistency. A small friction corrrection was applied to each point.

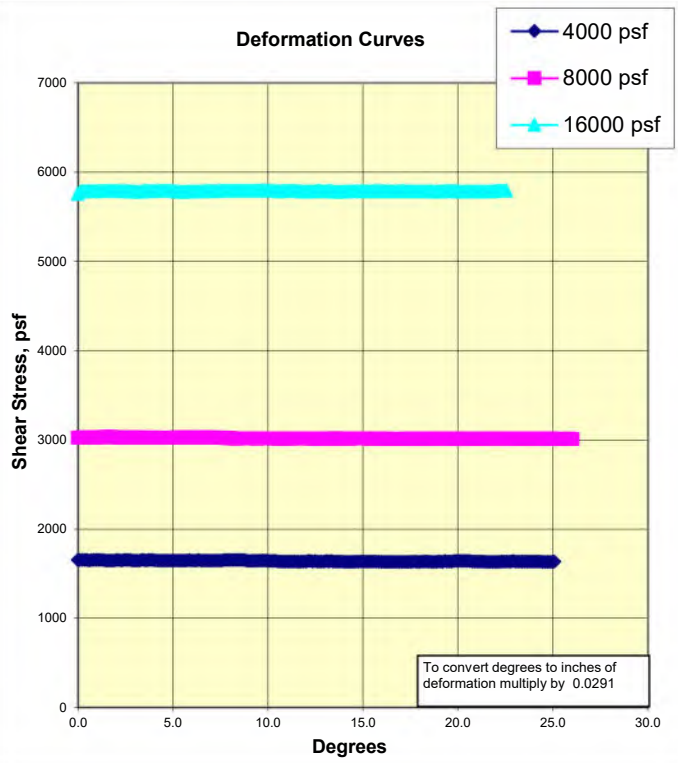
Secant Residual Stress Friction Angles



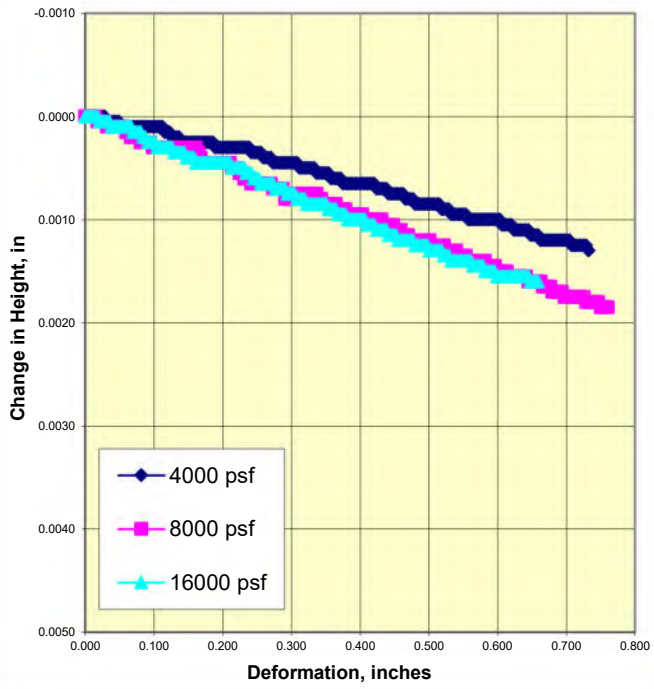
Strength Envelope



Deformation Curves



Vertical Deformation



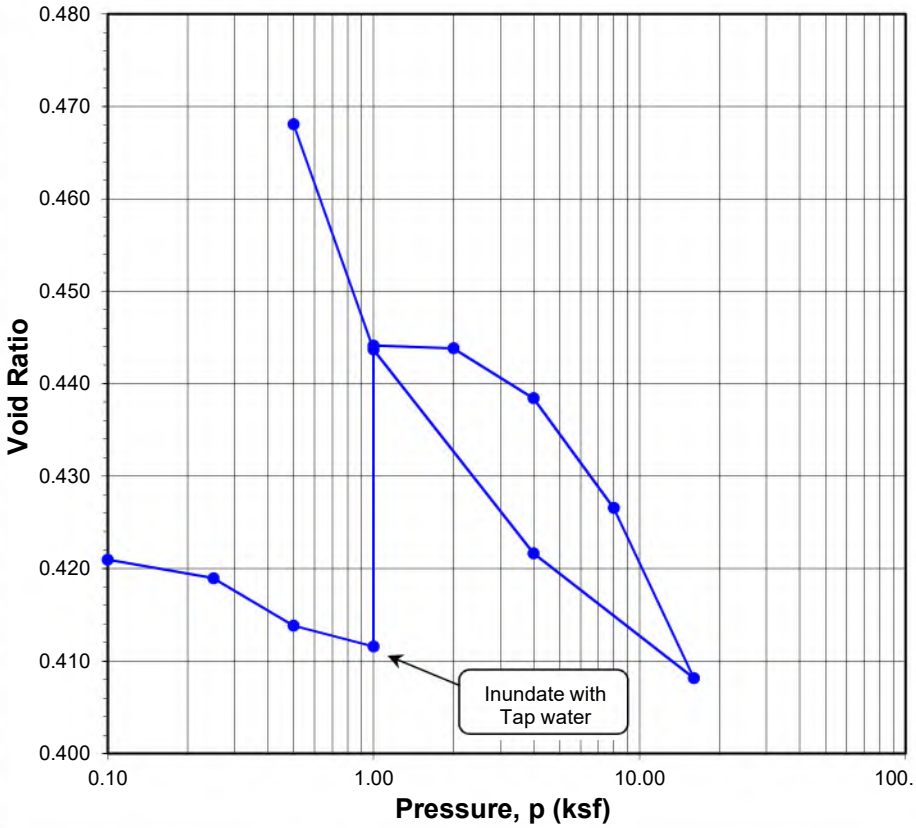
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name: Compass BESS - SJC
Project No.: 22011-01
Boring No.: HS-1
Sample No.: R-2
Soil Identification: Dark olive brown lean clay (CL)

Tested By: GB/JD Date: 08/08/22
Checked By: J. Ward Date: 09/16/22
Depth (ft.): 7.5
Sample Type: Ring

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	208.27
Weight of Ring (g)	44.95
Height after consol. (in.)	1.0330
Before Test	
Wt.Wet Sample+Cont. (g)	211.31
Wt.of Dry Sample+Cont. (g)	193.83
Weight of Container (g)	66.06
Initial Moisture Content (%)	13.7
Initial Dry Density (pcf)	119.5
Initial Saturation (%)	88
Initial Vertical Reading (in.)	0.2578
After Test	
Wt.of Wet Sample+Cont. (g)	252.26
Wt. of Dry Sample+Cont. (g)	227.42
Weight of Container (g)	39.02
Final Moisture Content (%)	17.32
Final Dry Density (pcf)	115.5
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2866
Specific Gravity (assumed)	2.72
Water Density (pcf)	62.43

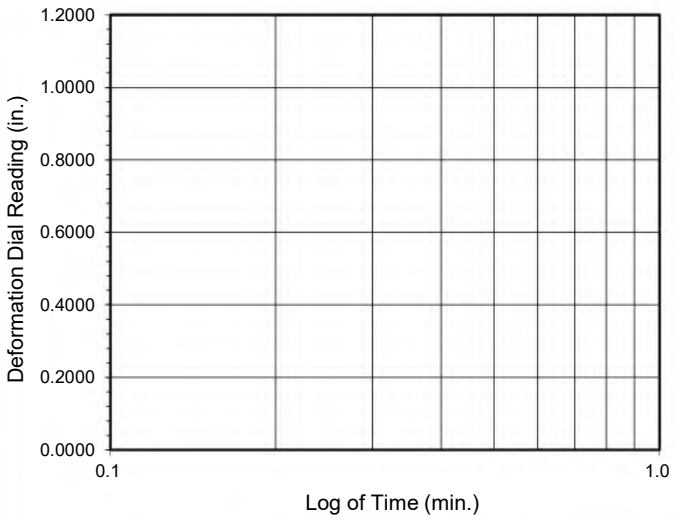


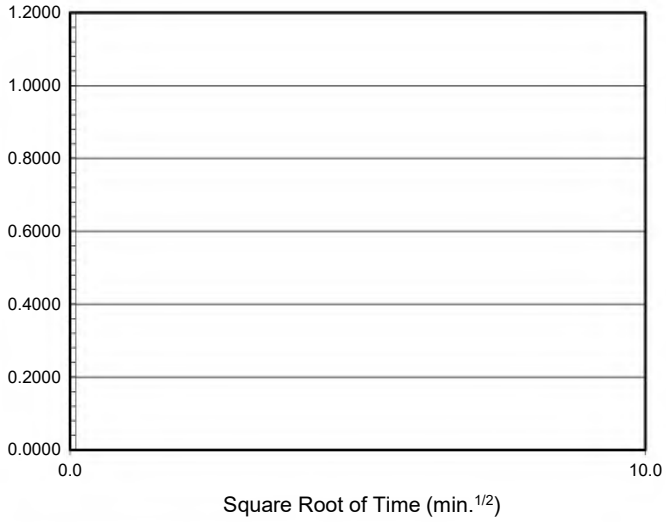
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.2576	0.9998	0.00	0.02	0.421	0.02
0.25	0.2553	0.9975	0.09	0.25	0.419	0.16
0.50	0.2508	0.9930	0.18	0.70	0.414	0.52
1.00	0.2481	0.9903	0.29	0.97	0.412	0.68
1.00	0.2710	1.0132	0.29	-1.32	0.444	-1.61
2.00	0.2694	1.0116	0.43	-1.16	0.444	-1.59
4.00	0.2637	1.0059	0.62	-0.59	0.438	-1.21
8.00	0.2532	0.9954	0.84	0.47	0.427	-0.37
16.00	0.2379	0.9801	1.07	1.99	0.408	0.92
4.00	0.2498	0.9920	0.83	0.80	0.422	-0.03
1.00	0.2682	1.0104	0.54	-1.04	0.444	-1.58
0.50	0.2866	1.0288	0.42	-2.88	0.468	-3.30

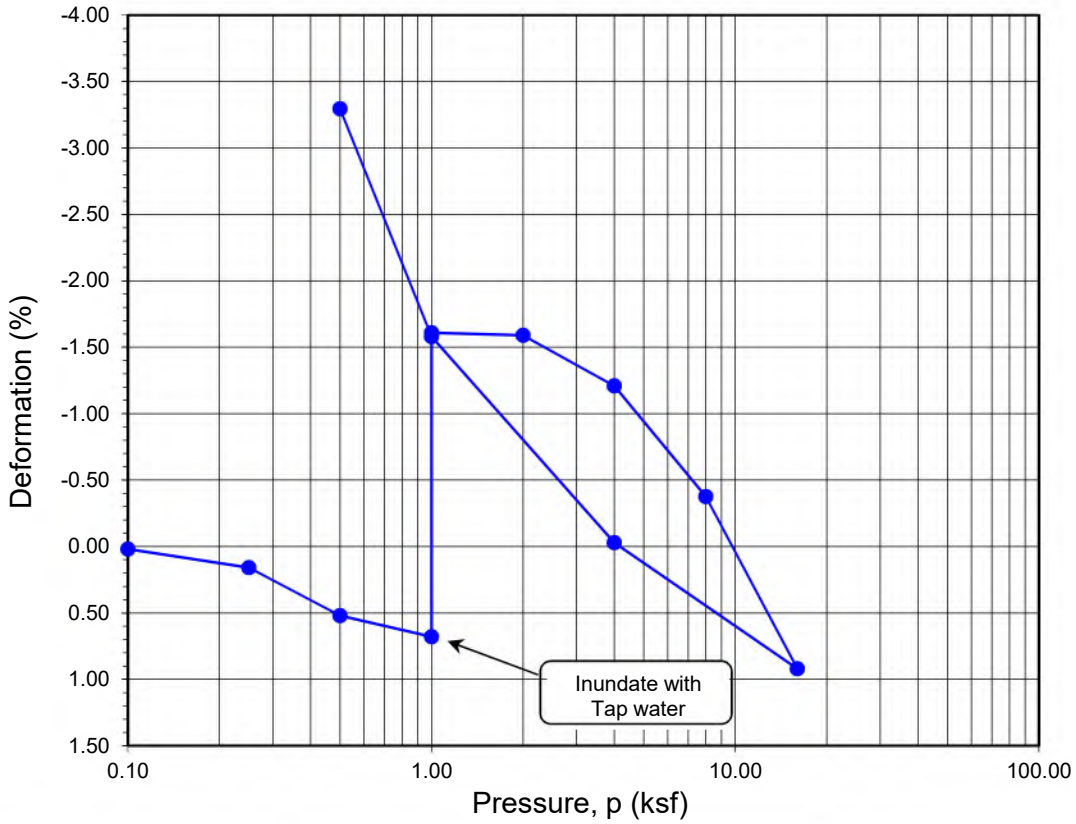
Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings







Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-1	**R-2**	**7.5**	**13.7**	**17.3**	**119.5**	**115.5**	**0.421**	**0.468**	**88**	**100**

Soil Identification: Dark olive brown lean clay (CL)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

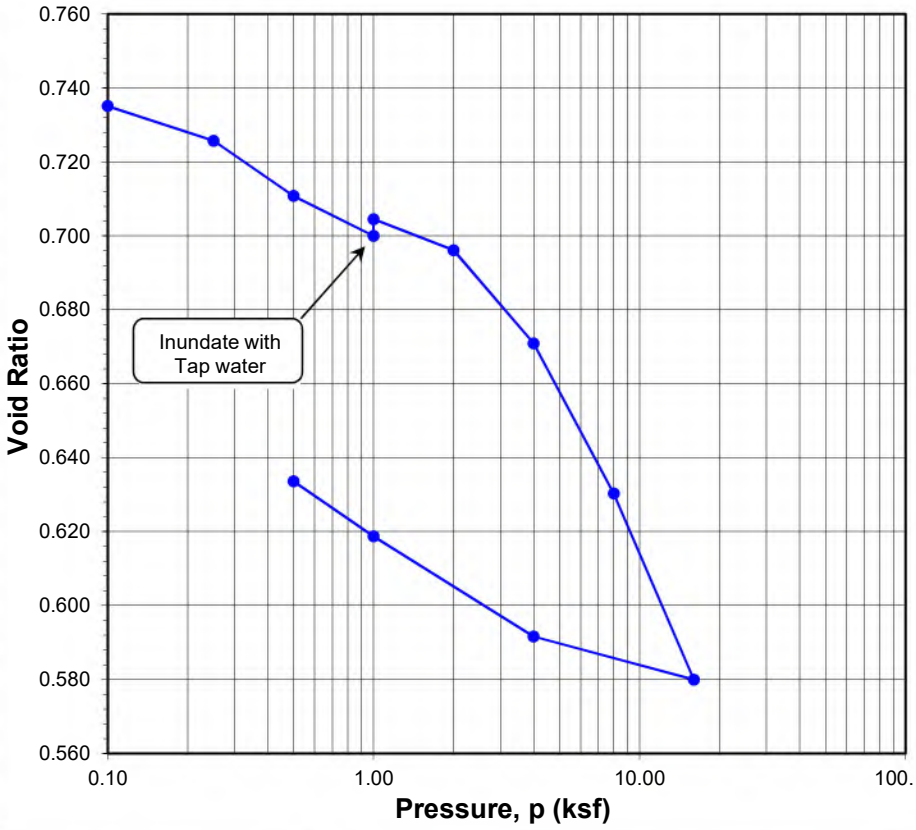
09-22

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	Compass BESS - SJC	Tested By: GB/JD	Date: 08/08/22
Project No.:	22011-01	Checked By: J. Ward	Date: 09/16/22
Boring No.:	HS-1	Depth (ft.): 25.0	
Sample No.:	R-4	Sample Type: Ring	
Soil Identification:	Olive brown lean clay (CL)		

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	198.43
Weight of Ring (g)	45.01
Height after consol. (in.)	0.9405
Before Test	
Wt.Wet Sample+Cont. (g)	173.40
Wt.of Dry Sample+Cont. (g)	150.61
Weight of Container (g)	56.15
Initial Moisture Content (%)	24.1
Initial Dry Density (pcf)	102.8
Initial Saturation (%)	94
Initial Vertical Reading (in.)	0.3022
After Test	
Wt.of Wet Sample+Cont. (g)	248.18
Wt. of Dry Sample+Cont. (g)	220.55
Weight of Container (g)	52.63
Final Moisture Content (%)	22.48
Final Dry Density (pcf)	108.7
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2392
Specific Gravity (assumed)	2.86
Water Density (pcf)	62.43

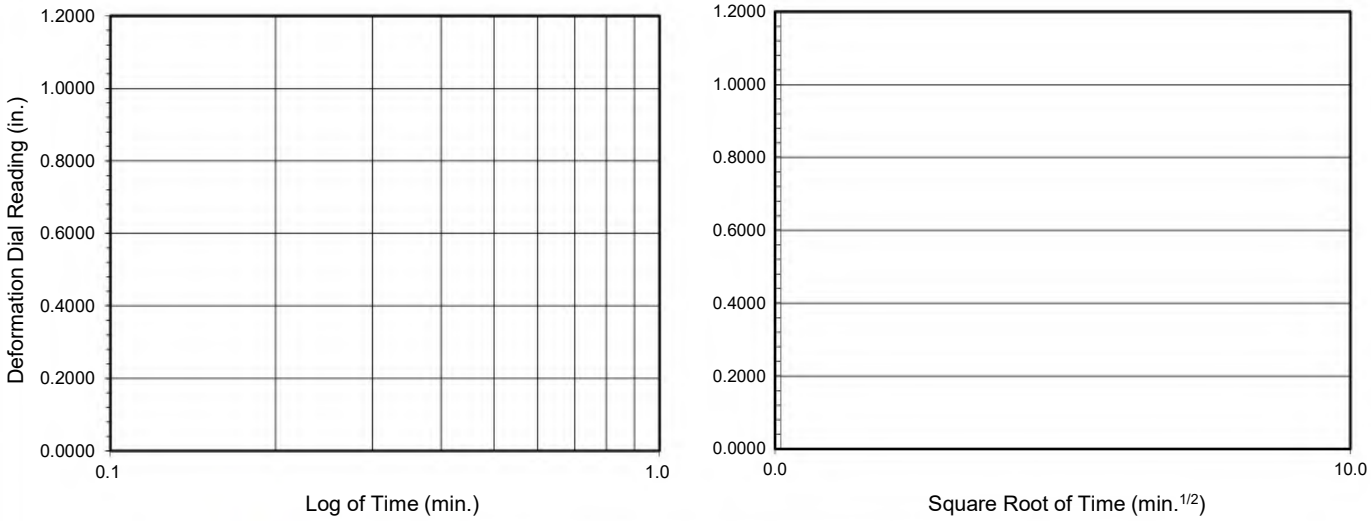


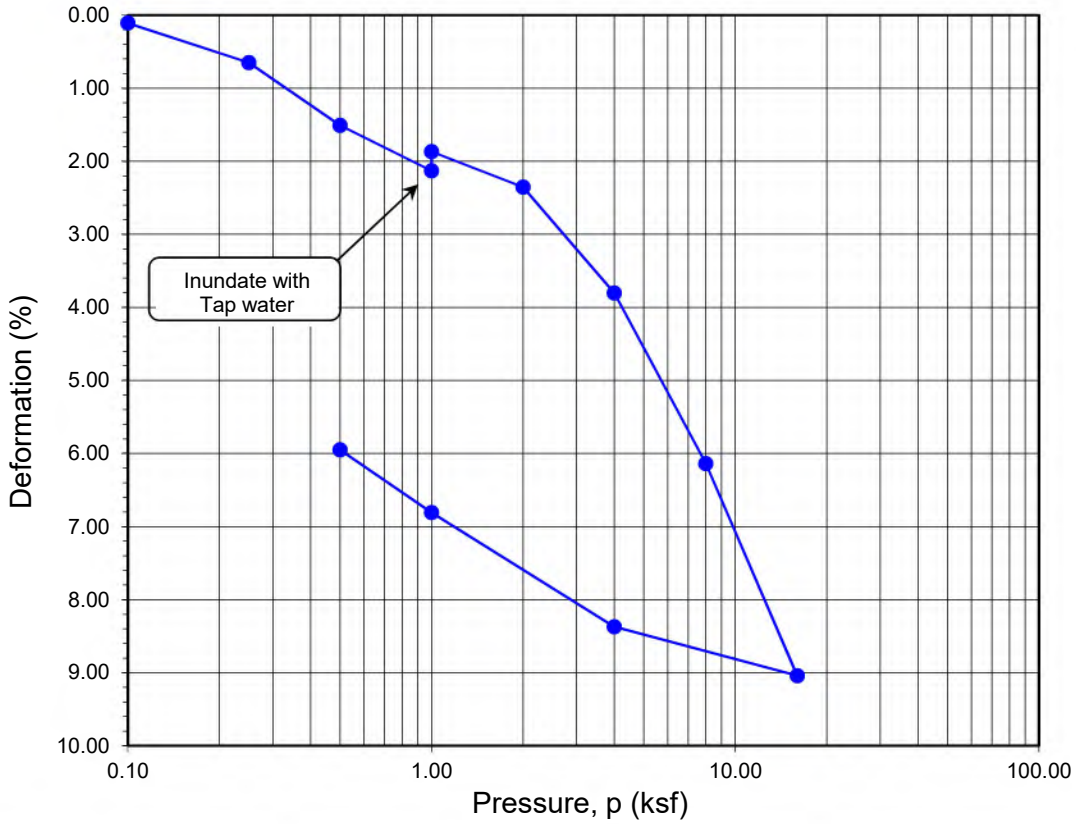
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3011	0.9989	0.00	0.11	0.735	0.11
0.25	0.2954	0.9932	0.03	0.68	0.726	0.65
0.50	0.2865	0.9843	0.06	1.57	0.711	1.51
1.00	0.2798	0.9776	0.11	2.24	0.700	2.13
1.00	0.2824	0.9802	0.11	1.98	0.705	1.87
2.00	0.2767	0.9745	0.20	2.56	0.696	2.36
4.00	0.2609	0.9587	0.33	4.14	0.671	3.81
8.00	0.2360	0.9338	0.48	6.62	0.630	6.14
16.00	0.2051	0.9029	0.67	9.71	0.580	9.04
4.00	0.2135	0.9113	0.50	8.87	0.592	8.37
1.00	0.2302	0.9280	0.39	7.20	0.619	6.81
0.50	0.2392	0.9370	0.35	6.30	0.634	5.95

Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-1	**R-4**	**25.0**	**24.1**	**22.5**	**102.8**	**108.7**	**0.737**	**0.634**	**94**	**100**

Soil Identification: Olive brown lean clay (CL)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

09-22

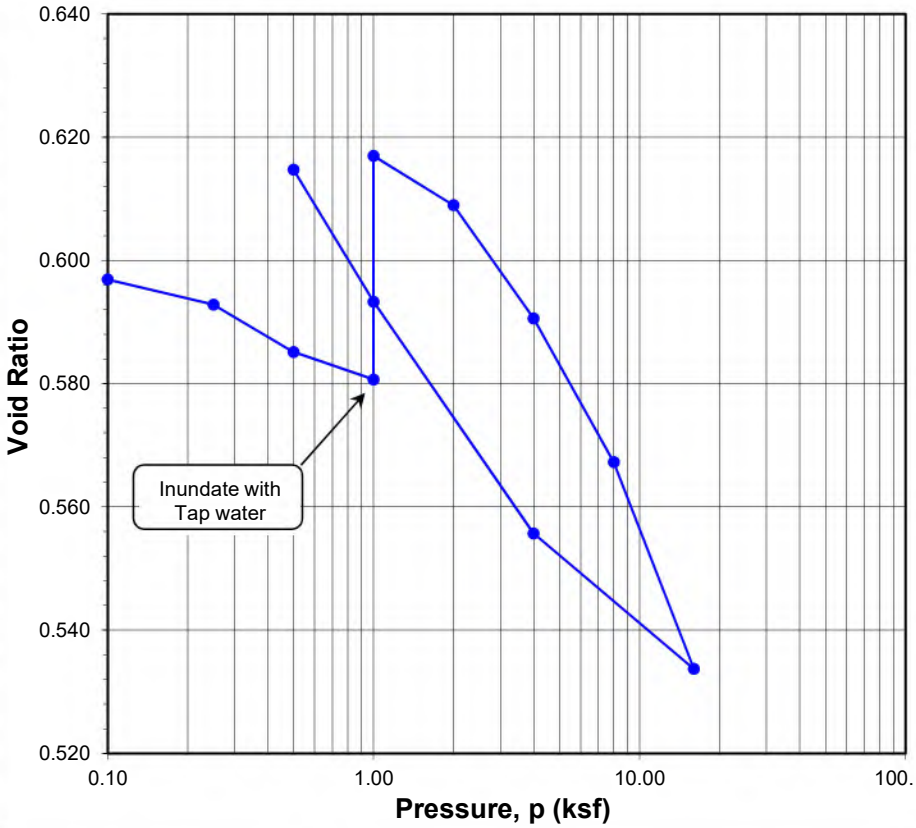
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name: Compass BESS - SJC
Project No.: 22011-01
Boring No.: HS-2
Sample No.: R-2
Soil Identification: Light olive brown silty clay (CL-ML)

Tested By: GB/JD Date: 08/08/22
Checked By: J. Ward Date: 09/16/22
Depth (ft.): 7.5
Sample Type: Ring

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	188.52
Weight of Ring (g)	46.00
Height after consol. (in.)	1.0108
Before Test	
Wt.Wet Sample+Cont. (g)	157.43
Wt.of Dry Sample+Cont. (g)	144.29
Weight of Container (g)	37.72
Initial Moisture Content (%)	12.3
Initial Dry Density (pcf)	105.5
Initial Saturation (%)	56
Initial Vertical Reading (in.)	0.3220
After Test	
Wt.of Wet Sample+Cont. (g)	264.68
Wt. of Dry Sample+Cont. (g)	232.48
Weight of Container (g)	69.10
Final Moisture Content (%)	27.43
Final Dry Density (pcf)	96.6
Final Saturation (%)	99
Final Vertical Reading (in.)	0.3285
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

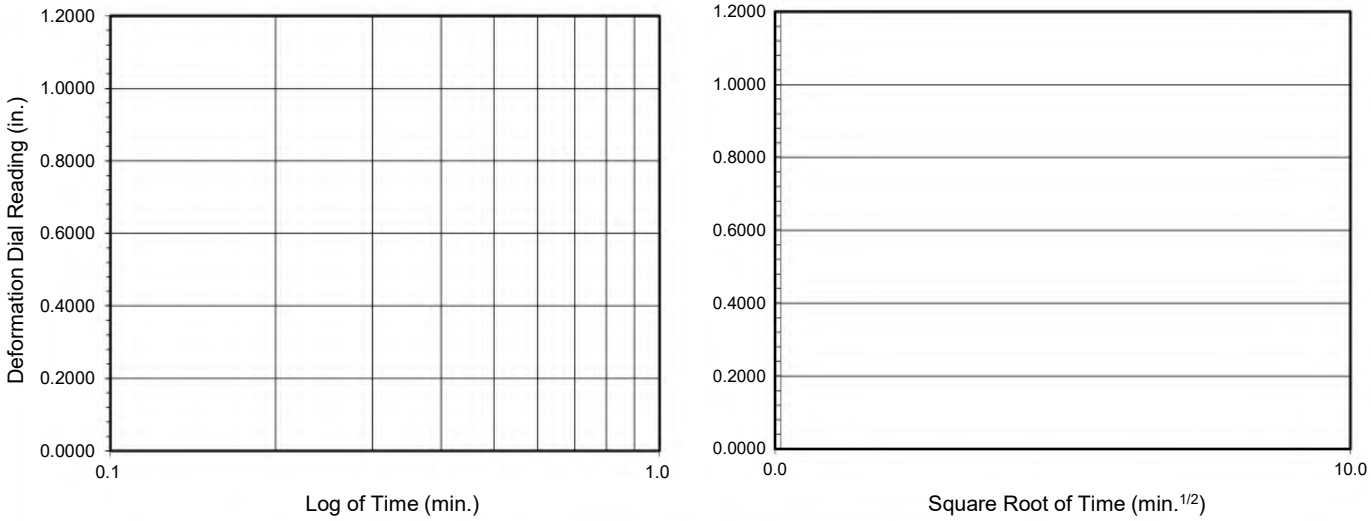


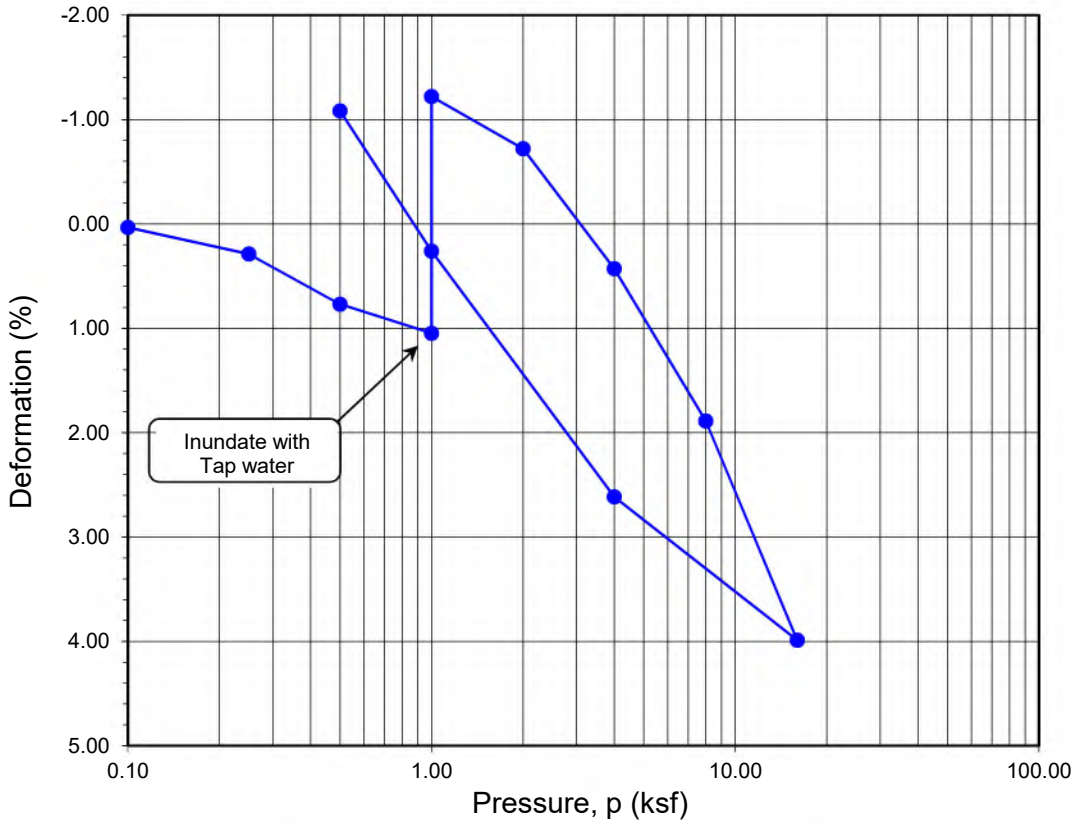
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3217	0.9997	0.00	0.04	0.597	0.04
0.25	0.3184	0.9964	0.07	0.36	0.593	0.29
0.50	0.3130	0.9910	0.13	0.90	0.585	0.77
1.00	0.3094	0.9874	0.21	1.26	0.581	1.05
1.00	0.3321	1.0101	0.21	-1.01	0.617	-1.22
2.00	0.3259	1.0039	0.33	-0.39	0.609	-0.72
4.00	0.3131	0.9911	0.46	0.89	0.591	0.43
8.00	0.2967	0.9747	0.64	2.53	0.567	1.89
16.00	0.2735	0.9515	0.86	4.85	0.534	3.99
4.00	0.2891	0.9671	0.68	3.30	0.556	2.62
1.00	0.3144	0.9924	0.50	0.76	0.593	0.26
0.50	0.3285	1.0065	0.43	-0.65	0.615	-1.08

Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-2	**R-2**	**7.5**	**12.3**	**27.4**	**105.5**	**96.6**	**0.597**	**0.615**	**56**	**99**

Soil Identification: Light olive brown silty clay (CL-ML)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

09-22

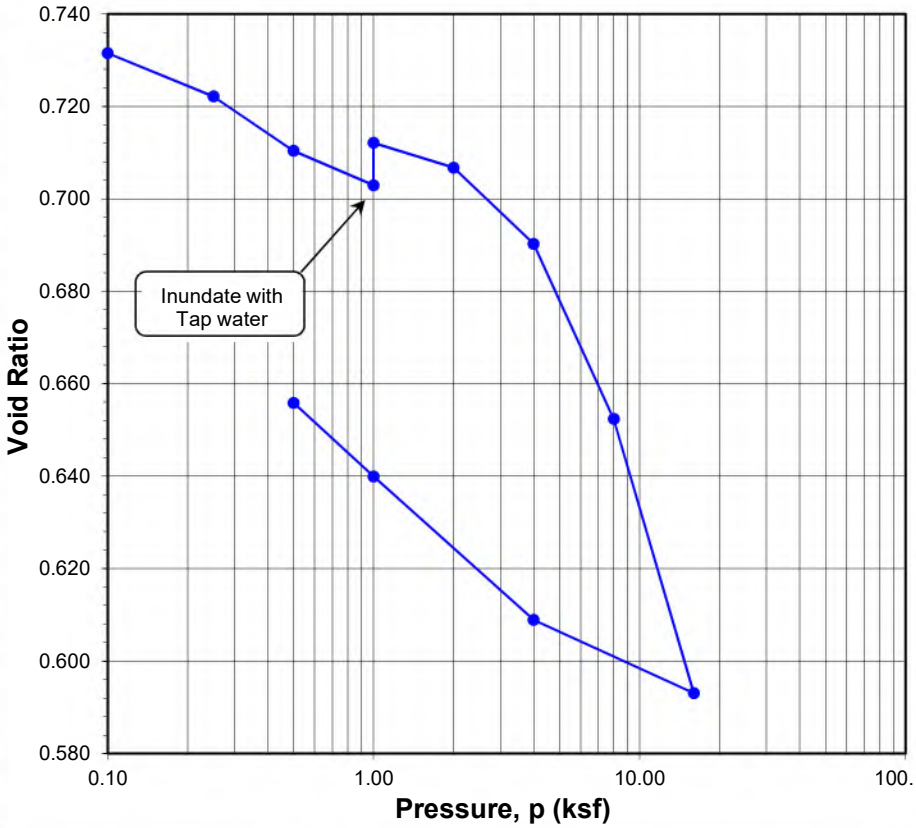
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name: Compass BESS - SJC
Project No.: 22011-01
Boring No.: HS-2
Sample No.: R-3
Soil Identification: Olive brown lean clay (CL)

Tested By: GB/JD Date: 08/08/22
Checked By: J. Ward Date: 09/16/22
Depth (ft.): 15.0
Sample Type: Ring

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	188.88
Weight of Ring (g)	44.73
Height after consol. (in.)	0.9563
Before Test	
Wt.Wet Sample+Cont. (g)	187.75
Wt.of Dry Sample+Cont. (g)	162.95
Weight of Container (g)	55.81
Initial Moisture Content (%)	23.1
Initial Dry Density (pcf)	97.3
Initial Saturation (%)	85
Initial Vertical Reading (in.)	0.3383
After Test	
Wt.of Wet Sample+Cont. (g)	252.85
Wt. of Dry Sample+Cont. (g)	222.59
Weight of Container (g)	65.86
Final Moisture Content (%)	27.02
Final Dry Density (pcf)	97.4
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2880
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

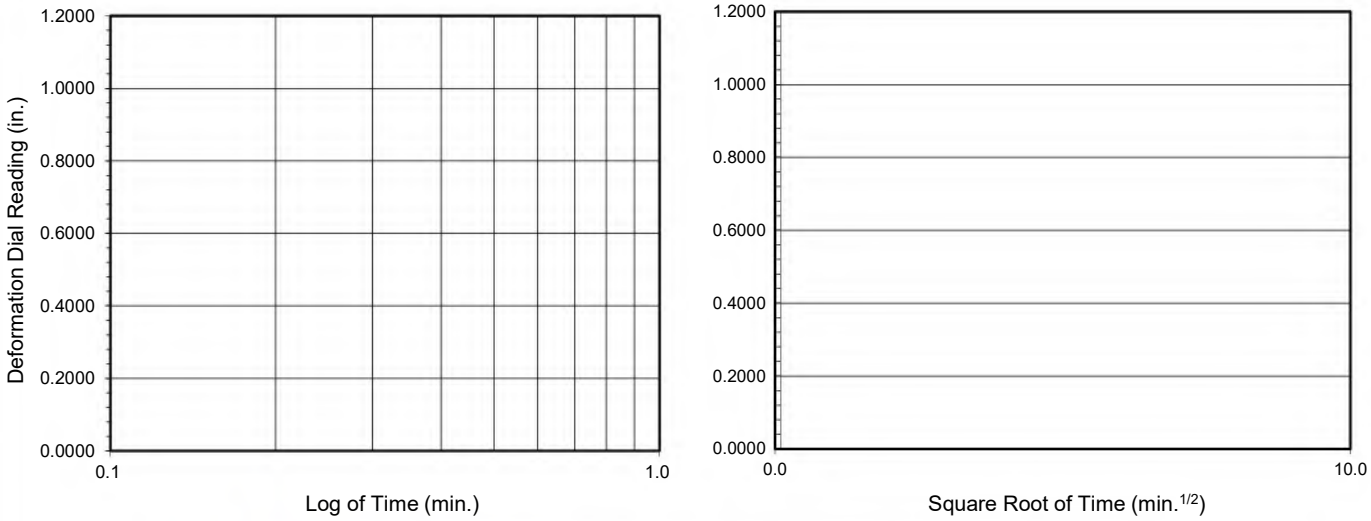


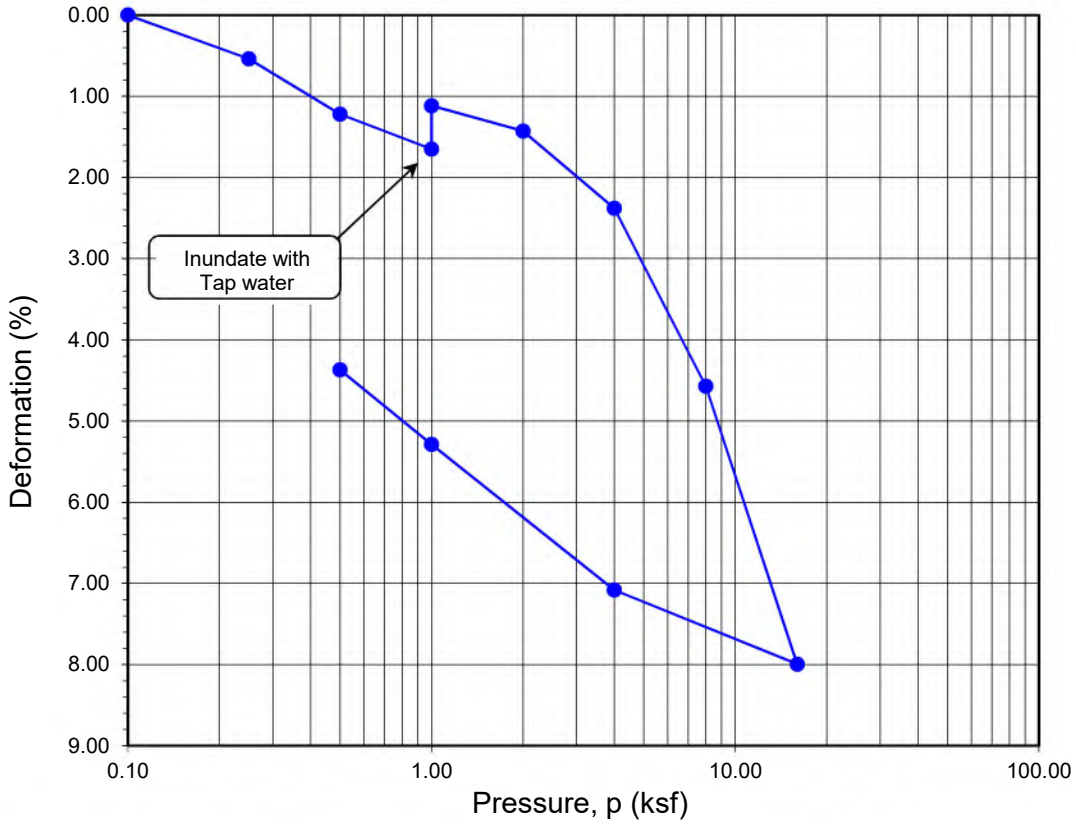
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3383	1.0000	0.00	0.00	0.731	0.00
0.25	0.3322	0.9939	0.07	0.61	0.722	0.54
0.50	0.3245	0.9862	0.16	1.38	0.710	1.22
1.00	0.3191	0.9808	0.27	1.92	0.703	1.65
1.00	0.3244	0.9861	0.27	1.39	0.712	1.12
2.00	0.3193	0.9810	0.47	1.90	0.707	1.43
4.00	0.3072	0.9689	0.73	3.11	0.690	2.38
8.00	0.2826	0.9443	1.00	5.57	0.652	4.57
16.00	0.2449	0.9066	1.35	9.35	0.593	8.00
4.00	0.2574	0.9191	1.01	8.09	0.609	7.08
1.00	0.2778	0.9395	0.76	6.05	0.640	5.29
0.50	0.2880	0.9497	0.66	5.03	0.656	4.37

Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-2	**R-3**	**15.0**	**23.1**	**27.0**	**97.3**	**97.4**	**0.731**	**0.656**	**85**	**100**

Soil Identification: Olive brown lean clay (CL)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

09-22

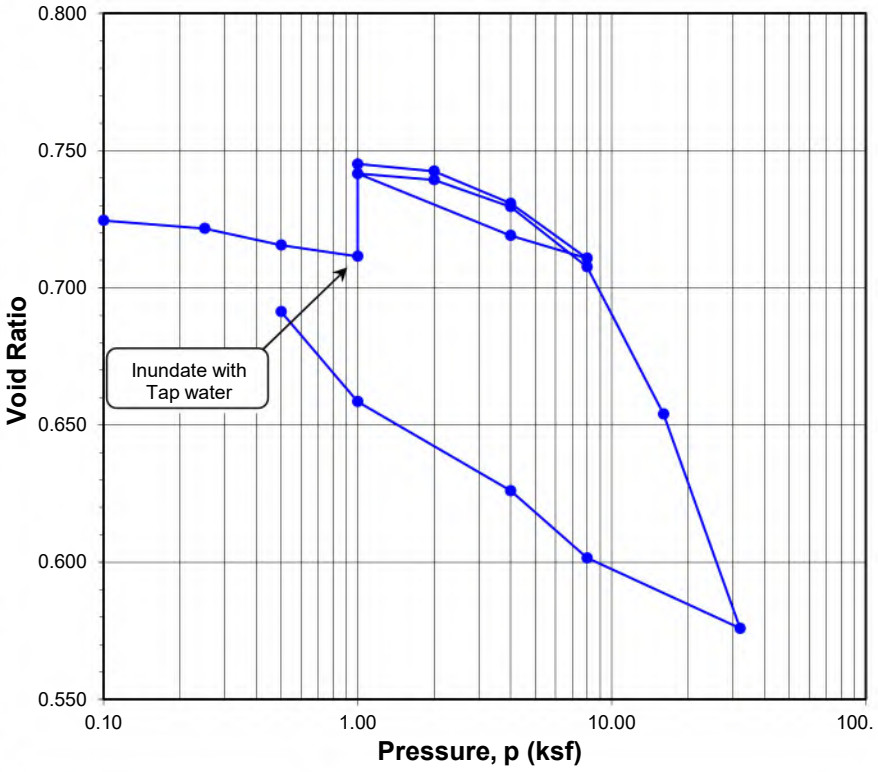
ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name: Compass BESS - SJC
Project No.: 22011-01
Boring No.: HS-3
Sample No.: R-3
Soil Identification: Dark olive gray lean clay (CL)

Tested By: GB/JD Date: 08/30/23
Checked By: J. Ward Date: 09/18/23
Depth (ft.): 10.0
Sample Type: Ring

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	189.78
Weight of Ring (g)	45.34
Height after consol. (in.)	0.9806
Before Test	
Wt.Wet Sample+Cont. (g)	182.45
Wt.of Dry Sample+Cont. (g)	159.47
Weight of Container (g)	59.17
Initial Moisture Content (%)	22.9
Initial Dry Density (pcf)	97.7
Initial Saturation (%)	85
Initial Vertical Reading (in.)	0.3119
After Test	
Wt.of Wet Sample+Cont. (g)	258.76
Wt. of Dry Sample+Cont. (g)	229.05
Weight of Container (g)	66.80
Final Moisture Content (%)	25.41
Final Dry Density (pcf)	99.2
Final Saturation (%)	98
Final Vertical Reading (in.)	0.2858
Specific Gravity (assumed)	2.70
Water Density (pcf)	62.43

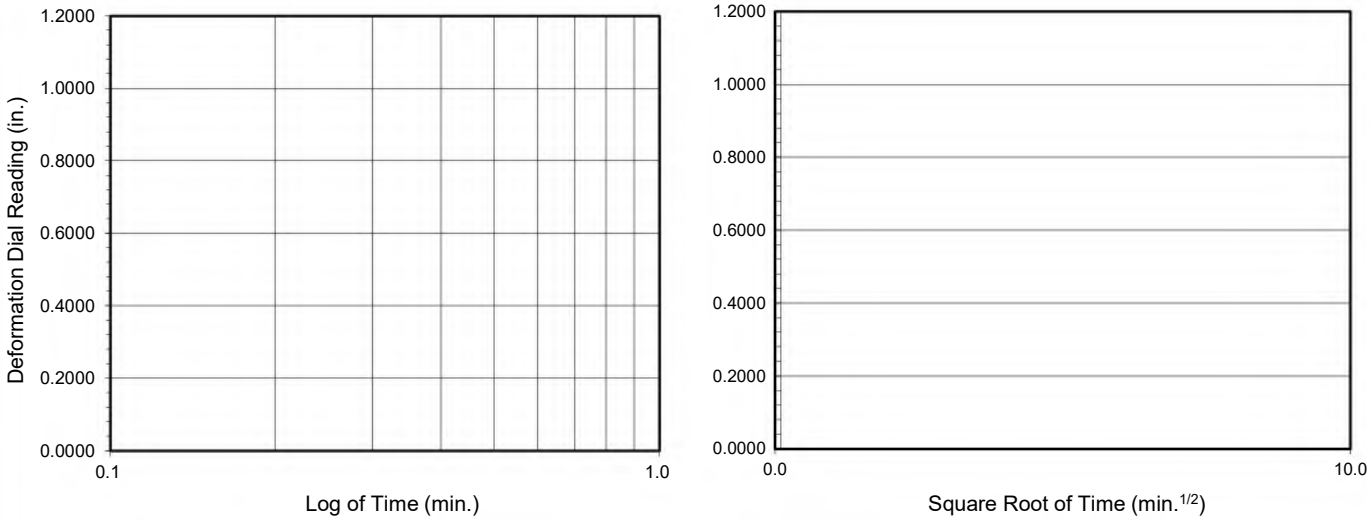


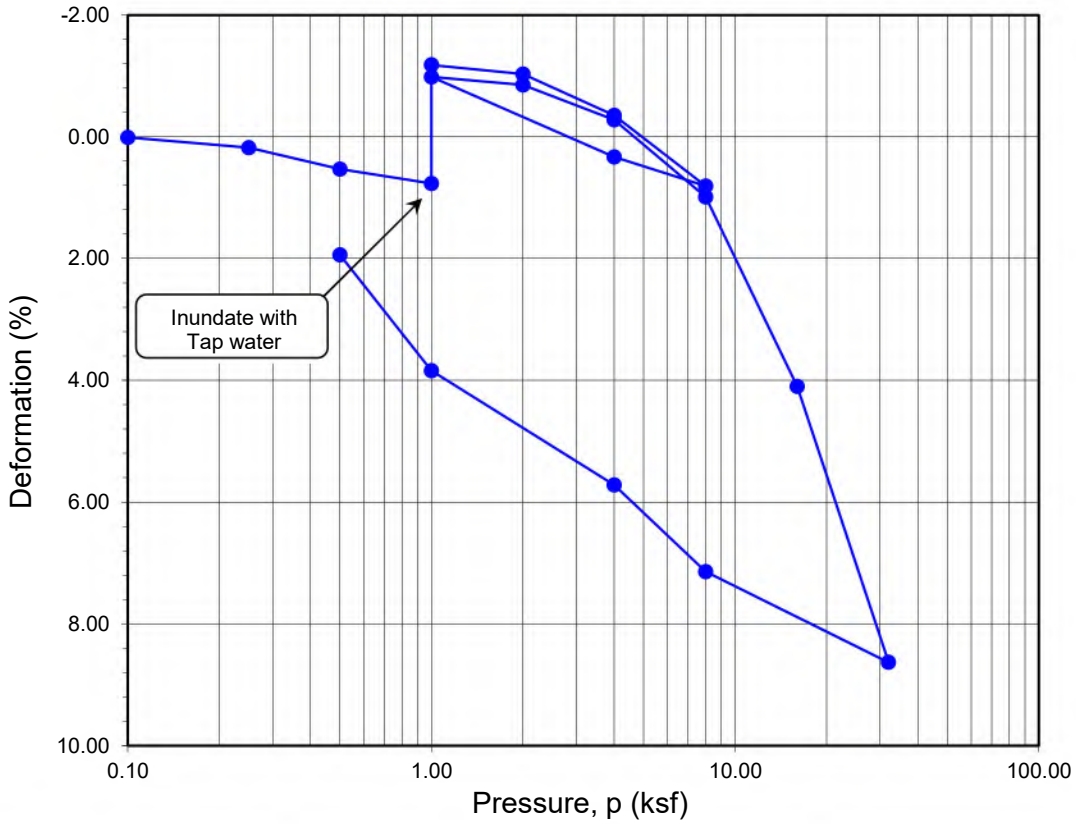
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3118	0.9999	0.00	0.01	0.725	0.01
0.25	0.3096	0.9977	0.05	0.23	0.722	0.18
0.50	0.3057	0.9938	0.09	0.62	0.716	0.53
1.00	0.3027	0.9908	0.15	0.92	0.711	0.77
1.00	0.3222	1.0103	0.15	-1.03	0.745	-1.18
2.00	0.3195	1.0076	0.27	-0.76	0.742	-1.03
4.00	0.3111	0.9992	0.43	0.08	0.731	-0.35
8.00	0.2972	0.9853	0.66	1.47	0.711	0.81
4.00	0.3032	0.9913	0.54	0.87	0.719	0.33
1.00	0.3181	1.0062	0.36	-0.62	0.742	-0.98
2.00	0.3162	1.0043	0.42	-0.43	0.739	-0.85
4.00	0.3093	0.9974	0.54	0.26	0.730	-0.28
8.00	0.2954	0.9835	0.66	1.65	0.708	0.99
16.00	0.2616	0.9497	0.93	5.03	0.654	4.10
32.00	0.2132	0.9013	1.24	9.87	0.576	8.63
8.00	0.2310	0.9191	0.95	8.09	0.602	7.14
4.00	0.2464	0.9345	0.83	6.55	0.626	5.72
1.00	0.2664	0.9545	0.71	4.55	0.658	3.84
0.50	0.2858	0.9739	0.67	2.61	0.691	1.94

Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-3	**R-3**	**10.0**	**22.9**	**25.4**	**97.7**	**99.2**	**0.725**	**0.691**	**85**	**98**

Soil Identification: Dark olive gray lean clay (CL)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

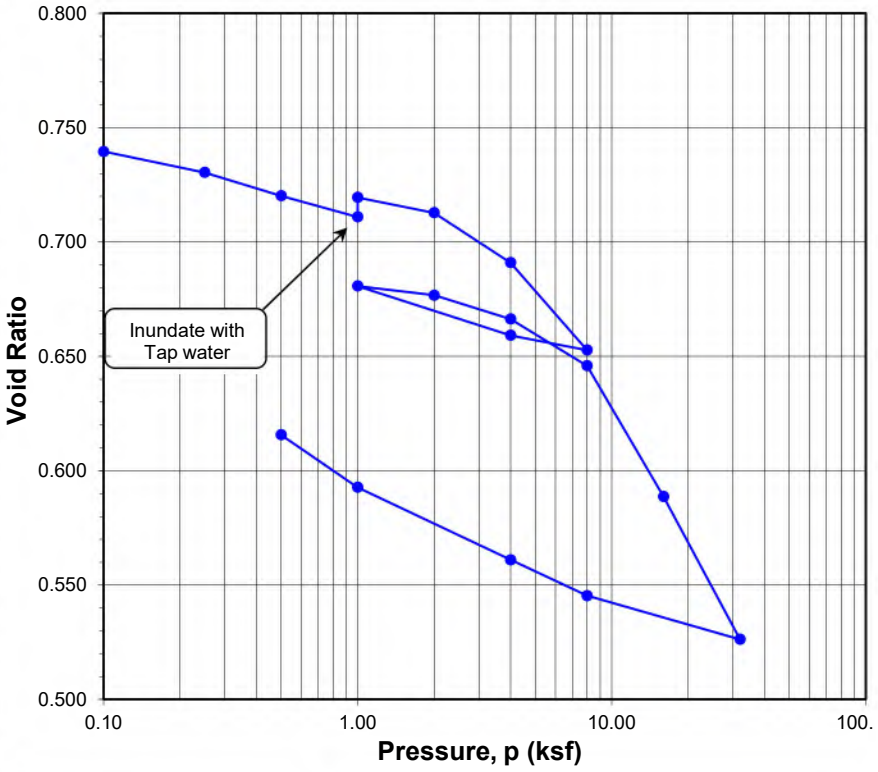
09-23

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS

ASTM D 2435

Project Name:	Compass BESS - SJC	Tested By: GB/JD	Date: 08/30/23
Project No.:	22011-01	Checked By: J. Ward	Date: 09/18/23
Boring No.:	HS-4	Depth (ft.): 20.0	
Sample No.:	R-3	Sample Type: Ring	
Soil Identification:	Olive brown lean clay (CL)		

Sample Diameter (in.)	2.415
Sample Thickness (in.)	1.000
Wt. of Sample + Ring (g)	190.27
Weight of Ring (g)	41.75
Height after consol. (in.)	0.9286
Before Test	
Wt.Wet Sample+Cont. (g)	202.69
Wt.of Dry Sample+Cont. (g)	173.83
Weight of Container (g)	57.10
Initial Moisture Content (%)	24.7
Initial Dry Density (pcf)	99.0
Initial Saturation (%)	92
Initial Vertical Reading (in.)	0.3129
After Test	
Wt.of Wet Sample+Cont. (g)	241.88
Wt. of Dry Sample+Cont. (g)	214.47
Weight of Container (g)	55.79
Final Moisture Content (%)	23.44
Final Dry Density (pcf)	104.7
Final Saturation (%)	100
Final Vertical Reading (in.)	0.2389
Specific Gravity (assumed)	2.76
Water Density (pcf)	62.43

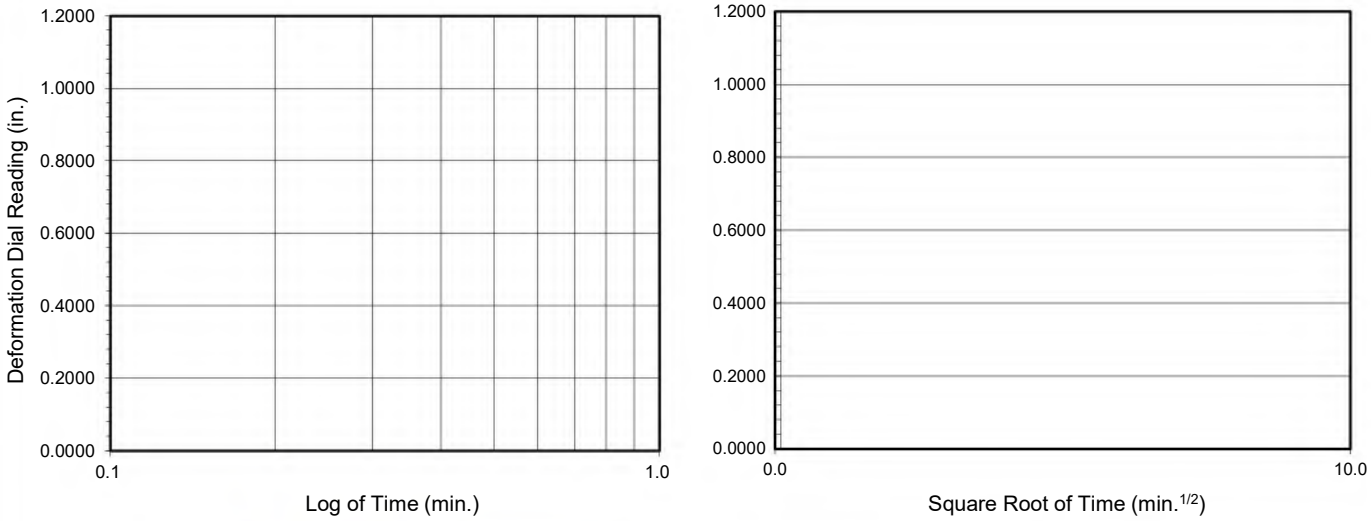


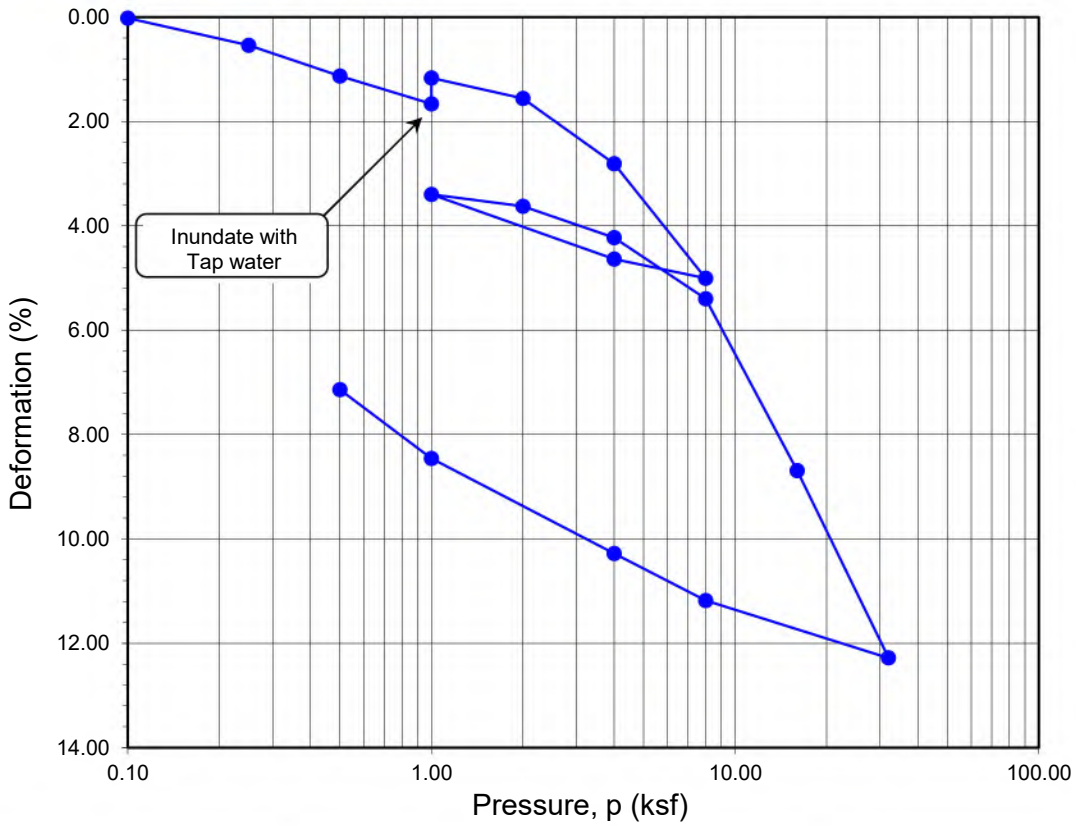
Pressure (p) (ksf)	Final Reading (in.)	Apparent Thickness (in.)	Load Compliance (%)	Deformation % of Sample Thickness	Void Ratio	Corrected Deformation (%)
0.10	0.3127	0.9998	0.00	0.02	0.740	0.02
0.25	0.3073	0.9944	0.02	0.56	0.730	0.54
0.50	0.3012	0.9883	0.04	1.17	0.720	1.13
1.00	0.2956	0.9827	0.07	1.74	0.711	1.67
1.00	0.3005	0.9876	0.07	1.24	0.720	1.17
2.00	0.2961	0.9832	0.12	1.68	0.713	1.56
4.00	0.2828	0.9699	0.20	3.01	0.691	2.81
8.00	0.2595	0.9466	0.33	5.34	0.653	5.01
4.00	0.2638	0.9509	0.27	4.91	0.659	4.64
1.00	0.2775	0.9646	0.14	3.54	0.681	3.40
2.00	0.2747	0.9618	0.19	3.82	0.677	3.63
4.00	0.2679	0.9550	0.27	4.50	0.666	4.23
8.00	0.2556	0.9427	0.33	5.73	0.646	5.40
16.00	0.2208	0.9079	0.52	9.21	0.589	8.69
32.00	0.1825	0.8696	0.76	13.04	0.526	12.28
8.00	0.1958	0.8829	0.53	11.71	0.545	11.18
4.00	0.2059	0.8930	0.42	10.70	0.561	10.28
1.00	0.2254	0.9125	0.29	8.75	0.593	8.46
0.50	0.2389	0.9260	0.26	7.40	0.616	7.14

Time Readings

Date	Time	Elapsed Time (min)	Square Root of Time	Dial Rdgs. (in.)

Time Readings





Boring No.	Sample No.	Depth (ft.)	Moisture Content (%)		Dry Density (pcf)		Void Ratio		Degree of Saturation (%)	
			Initial	Final	Initial	Final	Initial	Final	Initial	Final
HS-4	**R-3**	**20.0**	**24.7**	**23.4**	**99.0**	**104.7**	**0.740**	**0.616**	**92**	**100**

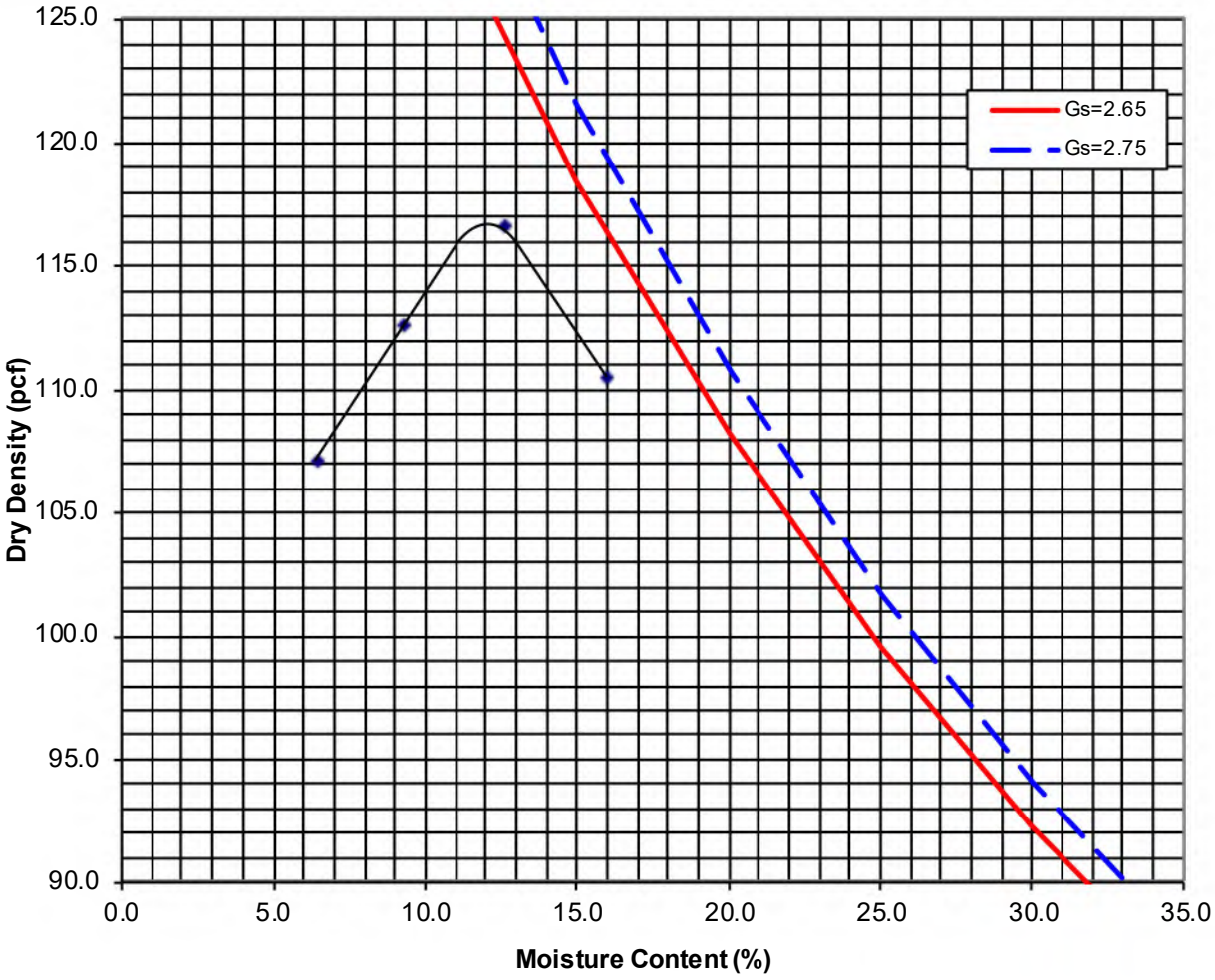
Soil Identification: Olive brown lean clay (CL)

ONE-DIMENSIONAL CONSOLIDATION PROPERTIES of SOILS
ASTM D 2435

Project No.: 22011-01

Compass BESS - SJC

09-23



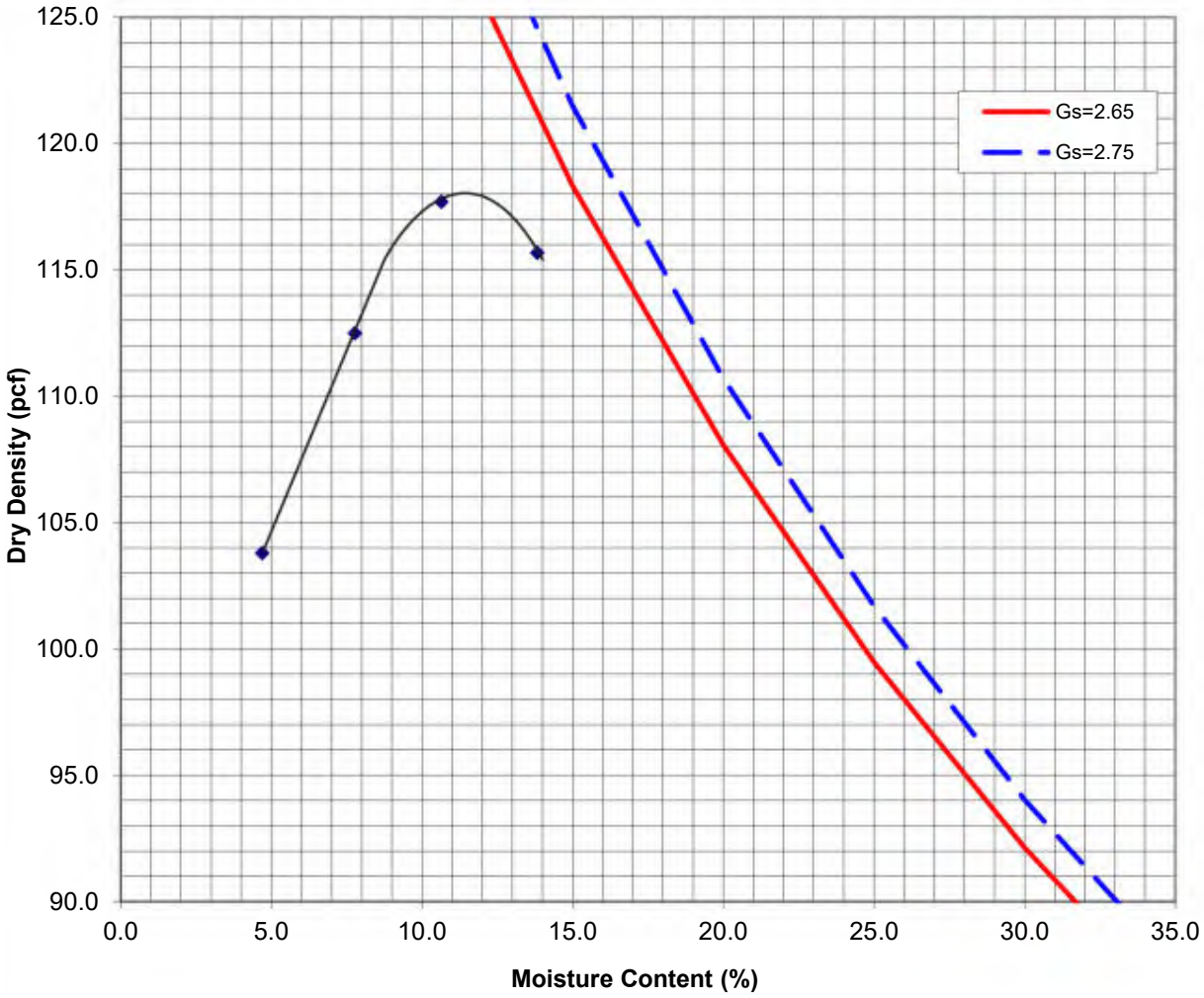
Location:	Sample No.:	Depth (ft)	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
NE Corner	B-1	0-8"	Dark gray sandy SILT (ML)	116.5	12.0

LGC Geotechnical, Inc.

LABORATORY COMPACTION
(ASTM D 1557)

Project Number: 22011-01
Date: Feb-23

Compass, San Juan Capistrano



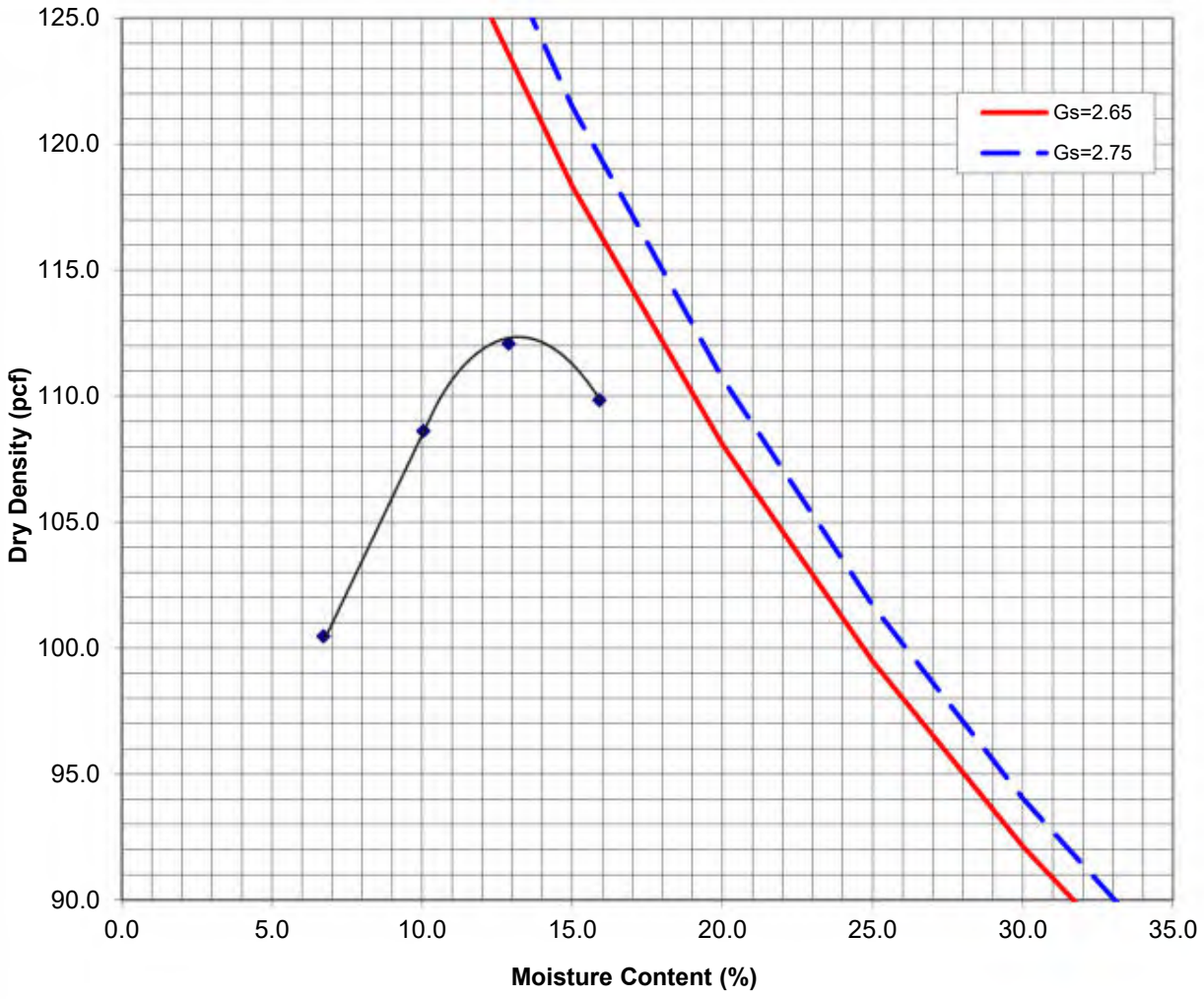
Location:	Sample No.:	Depth (ft)	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
SE Corner	B-2	0-8"	Brown silty SAND (SM)	118.0	11.5

LGC Geotechnical, Inc.

LABORATORY COMPACTION
(ASTM D 1557)

Project Number: 22011-01
Date: Feb-23

Compass, San Juan Capistrano



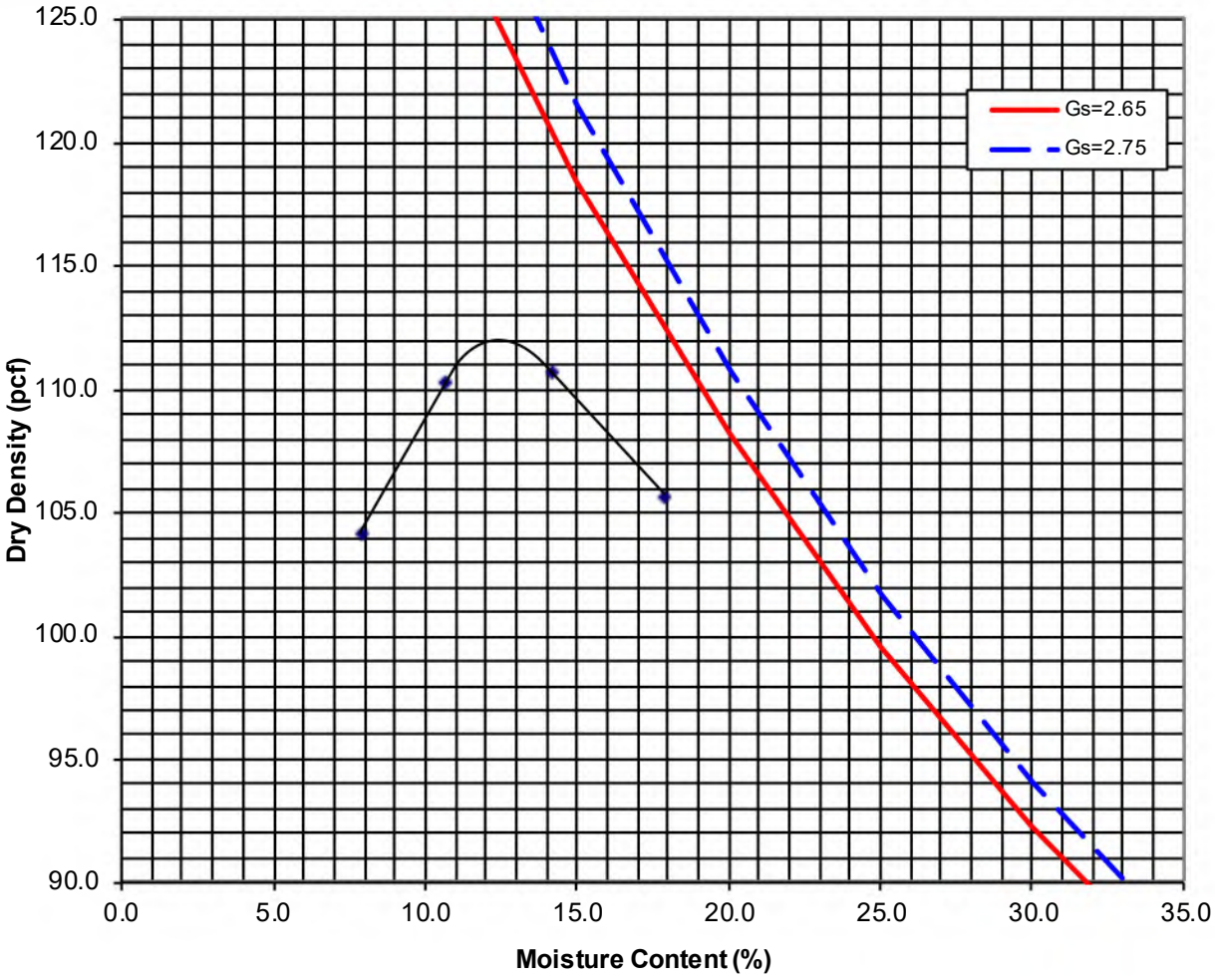
Location:	Sample No.:	Depth (ft)	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
NW Corner	B-3	4-12"	Brown SILT / CLAY (CL/ML)	112.5	13.0

LGC Geotechnical, Inc.

LABORATORY COMPACTION
(ASTM D 1557)

Project Number:	22011-01
Date:	Feb-23

Compass, San Juan Capistrano



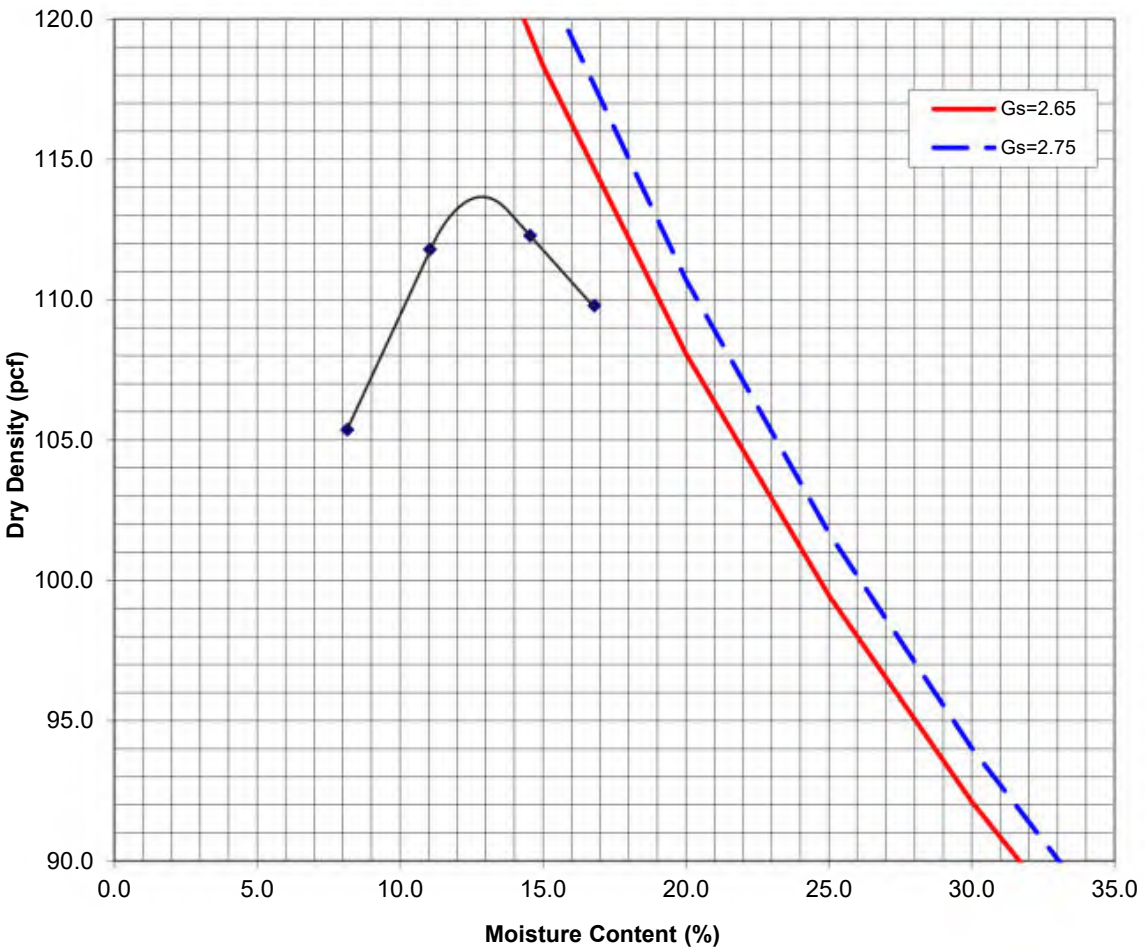
Location:	Sample No.:	Depth (ft)	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
SW Corner	B-4	0-8"	Dark gray SILT/CLAY (CL/ML)	112.0	12.5

LGC Geotechnical, Inc.

LABORATORY COMPACTION
(ASTM D 1557)

Project Number: 22011-01
Date: Feb-23

Compass, San Juan Capistrano



Location:	Sample No.:	Depth (ft)	Sample Description	Maximum Dry Density (pcf)	Optimum Moisture Content (%)
B-5	**B-1**	**0-5'**	**Grayish brown CLAY (CL)**	**113.5**	**13.0**

LGC Geotechnical, Inc.

LABORATORY COMPACTION
(ASTM D 1557)

Project Number: 22011-01
Date: Aug-23

Compass

TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: Compass BESS - SJC Tested By : G. Berdy Date: 08/08/22

Project No. : 22011-01 Checked By: J. Ward Date: 09/16/22

Boring No.	HS-1	HS-2		
Sample No.	B-1	B-1		
Sample Depth (ft)	1-5	1-5		
Soil Identification:	Grayish brown ML	Grayish brown ML		
Wet Weight of Soil + Container (g)	172.90	184.90		
Dry Weight of Soil + Container (g)	165.43	176.90		
Weight of Container (g)	56.34	39.39		
Moisture Content (%)	6.85	5.82		
Weight of Soaked Soil (g)	100.74	100.19		

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	152	307		
Crucible No.	8	7		
Furnace Temperature (°C)	860	860		
Time In / Time Out	7:15/8:00	7:15/8:00		
Duration of Combustion (min)	45	45		
Wt. of Crucible + Residue (g)	20.3990	22.7019		
Wt. of Crucible (g)	20.3955	22.6992		
Wt. of Residue (g) (A)	0.0035	0.0027		
PPM of Sulfate (A) x 41150	144.03	111.10		
PPM of Sulfate, Dry Weight Basis	**155**	**118**		

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	5	15		
ml of AgNO3 Soln. Used in Titration (C)	0.3	0.5		
PPM of Chloride (C -0.2) * 100 * 30 / B	60	60		
PPM of Chloride, Dry Wt. Basis	**64**	**64**		

pH TEST, DOT California Test 643

pH Value	**8.20**	**7.73**		
Temperature °C	20.4	20.6		

SOIL RESISTIVITY TEST

DOT CA TEST 643

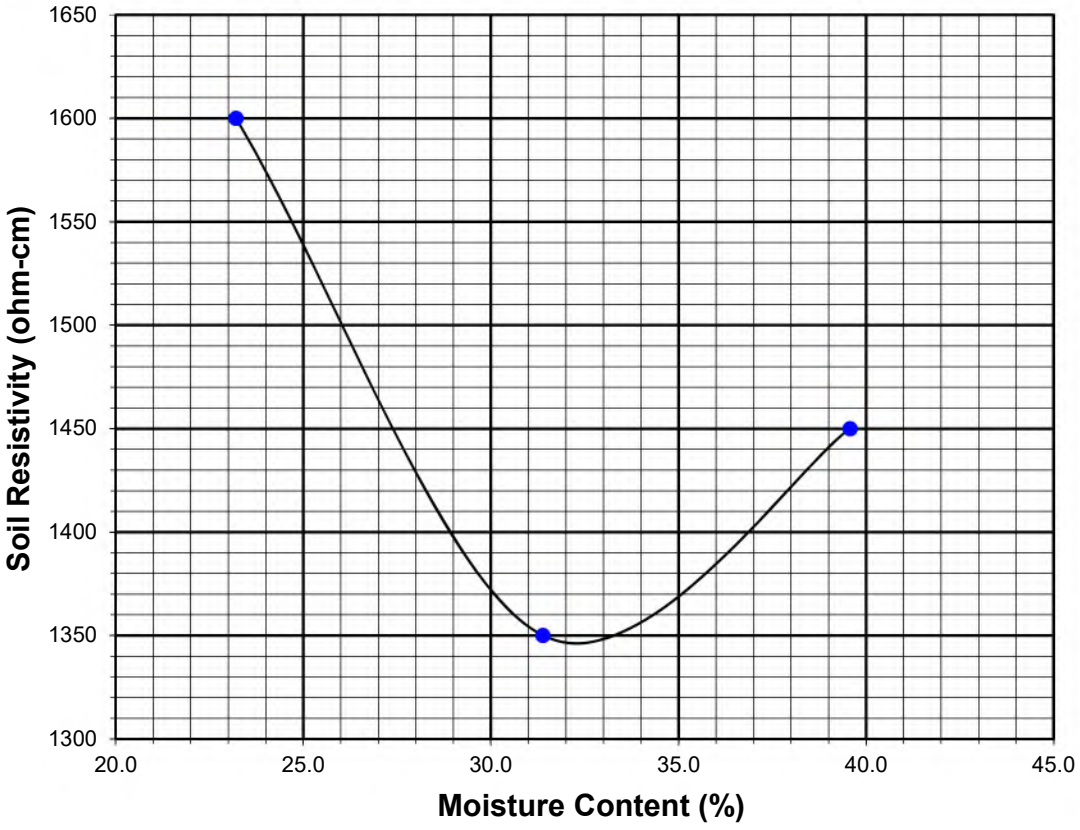
Project Name:	Compass BESS - SJC		Tested By :	J. Domingo	Date: 08/30/22
Project No. :	22011-01		Checked By:	J. Ward	Date: 09/16/22
Boring No.:	HS-1		Depth (ft.) :	1-5	
Sample No. :	B-1				
Soil Identification:*	Grayish brown ML				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	20	23.21	1600	1600
2	30	31.39	1350	1350
3	40	39.57	1450	1450
4				
5				

Moisture Content (%) (MCi)	6.85
Wet Wt. of Soil + Cont. (g)	172.90
Dry Wt. of Soil + Cont. (g)	165.43
Wt. of Container (g)	56.34
Container No.	
Initial Soil Wt. (g) (Wt)	130.60
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1345	**32.3**	**155**	**64**	**8.20**	**20.4**



SOIL RESISTIVITY TEST

DOT CA TEST 643

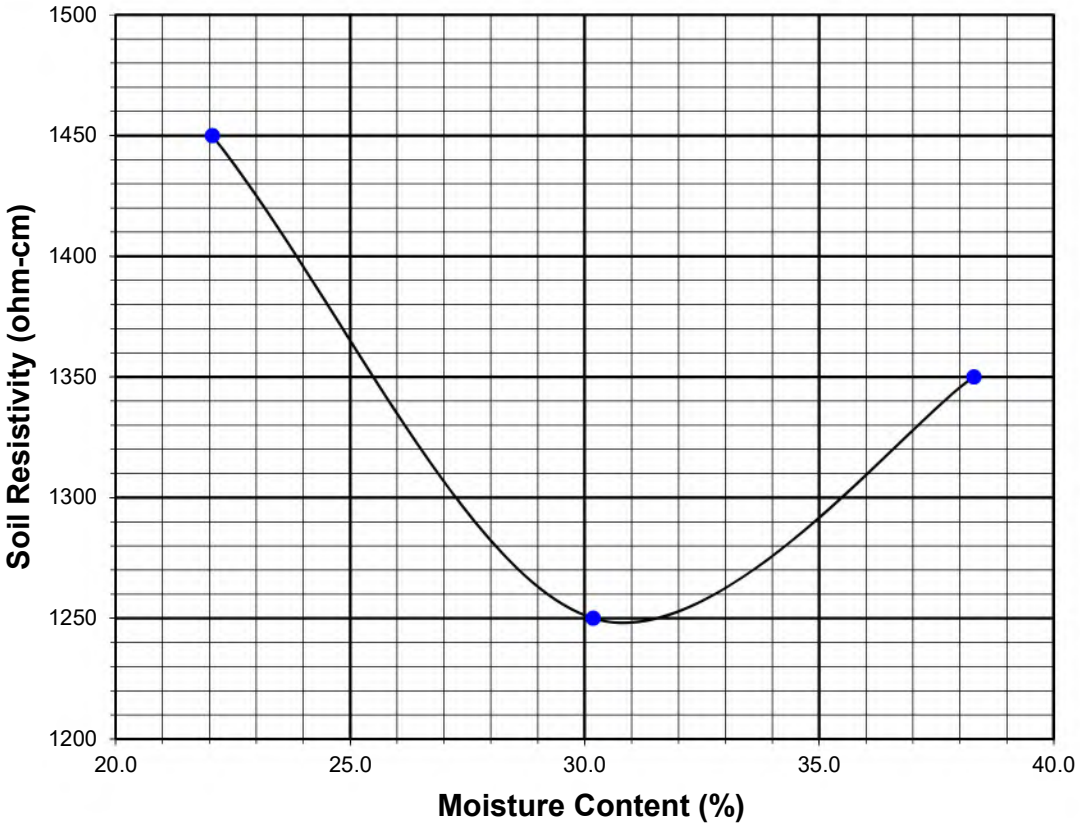
Project Name:	Compass BESS - SJC		Tested By :	J. Domingo	Date: 08/30/22
Project No. :	22011-01		Checked By:	J. Ward	Date: 09/16/22
Boring No.:	HS-2		Depth (ft.) :	1-5	
Sample No. :	B-1				
Soil Identification:*	Grayish brown ML				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	20	22.06	1450	1450
2	30	30.18	1250	1250
3	40	38.30	1350	1350
4				
5				

Moisture Content (%) (MCi)	5.82
Wet Wt. of Soil + Cont. (g)	184.90
Dry Wt. of Soil + Cont. (g)	176.90
Wt. of Container (g)	39.39
Container No.	
Initial Soil Wt. (g) (Wt)	130.30
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1250	**30.8**	**118**	**64**	**7.73**	**20.6**



TESTS for SULFATE CONTENT
CHLORIDE CONTENT and pH of SOILS

Project Name: Compass BESS - SJC Tested By : G. Berdy Date: 08/30/23

Project No. : 22011-01 Checked By: J. Ward Date: 09/18/23

Boring No.	HS-3	HS-4		
Sample No.	B-1	B-1		
Sample Depth (ft)	0-5	0-5		
Soil Identification:	Olive SC, organic material noted	Olive SC, organic material noted		
Wet Weight of Soil + Container (g)	182.04	183.56		
Dry Weight of Soil + Container (g)	171.63	177.34		
Weight of Container (g)	59.17	65.21		
Moisture Content (%)	9.26	5.55		
Weight of Soaked Soil (g)	100.86	100.19		

SULFATE CONTENT, DOT California Test 417, Part II

Beaker No.	7	401		
Crucible No.	2	4		
Furnace Temperature (°C)	860	860		
Time In / Time Out	7:45/8:30	7:45/8:30		
Duration of Combustion (min)	45	45		
Wt. of Crucible + Residue (g)	28.7221	21.6317		
Wt. of Crucible (g)	28.7194	21.6299		
Wt. of Residue (g) (A)	0.0027	0.0018		
PPM of Sulfate (A) x 41150	111.11	74.07		
PPM of Sulfate, Dry Weight Basis	**122**	**78**		

CHLORIDE CONTENT, DOT California Test 422

ml of Extract For Titration (B)	15	15		
ml of AgNO3 Soln. Used in Titration (C)	1.0	0.9		
PPM of Chloride (C -0.2) * 100 * 30 / B	160	140		
PPM of Chloride, Dry Wt. Basis	**176**	**148**		

pH TEST, DOT California Test 643

pH Value	**7.96**	**8.17**		
Temperature °C	21.8	21.8		

SOIL RESISTIVITY TEST

DOT CA TEST 643

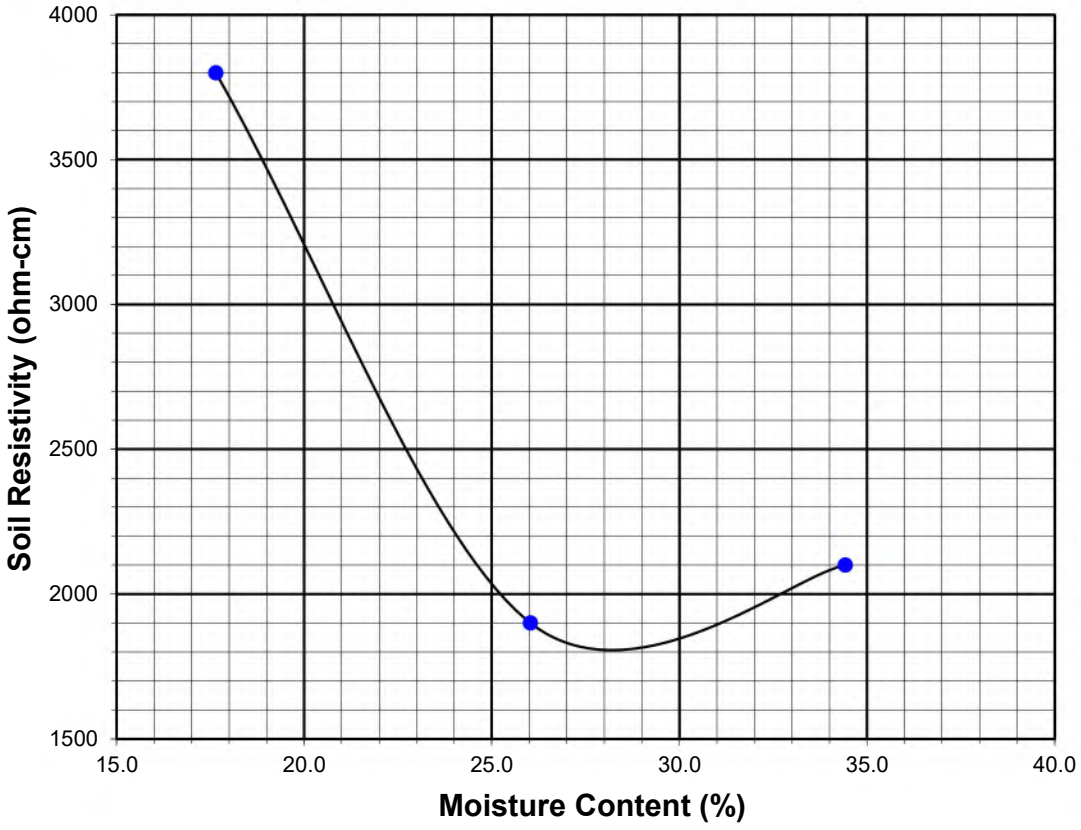
Project Name:	Compass BESS - SJC		Tested By :	G. Berdy	Date: 09/05/23
Project No. :	22011-01		Checked By:	J. Ward	Date: 09/18/23
Boring No.:	HS-3		Depth (ft.) :	0-5	
Sample No. :	B-1				
Soil Identification:*	Olive SC, organic material noted				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	10	17.64	3800	3800
2	20	26.03	1900	1900
3	30	34.42	2100	2100
4				
5				

Moisture Content (%) (MCi)	9.26
Wet Wt. of Soil + Cont. (g)	182.04
Dry Wt. of Soil + Cont. (g)	171.63
Wt. of Container (g)	59.17
Container No.	
Initial Soil Wt. (g) (Wt)	130.27
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
1800	**28.3**	**122**	**176**	**7.96**	**21.8**



SOIL RESISTIVITY TEST

DOT CA TEST 643

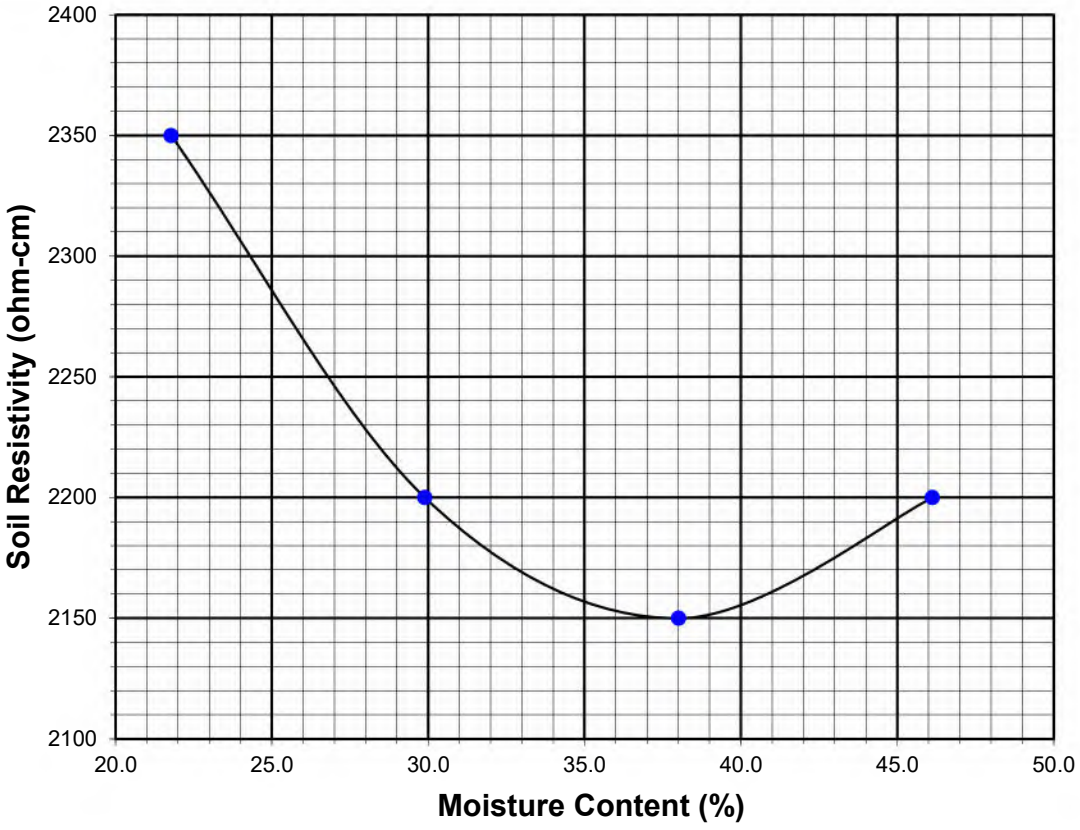
Project Name:	Compass BESS - SJC		Tested By :	G. Berdy	Date: 09/05/23
Project No. :	22011-01		Checked By:	J. Ward	Date: 09/18/23
Boring No.:	HS-4		Depth (ft.) :	0-5	
Sample No. :	B-1				
Soil Identification:*	Olive SC, organic material noted				

*California Test 643 requires soil specimens to consist only of portions of samples passing through the No. 8 US Standard Sieve before resistivity testing. Therefore, this test method may not be representative for coarser materials.

Specimen No.	Water Added (ml) (Wa)	Adjusted Moisture Content (MC)	Resistance Reading (ohm)	Soil Resistivity (ohm-cm)
1	20	21.78	2350	2350
2	30	29.89	2200	2200
3	40	38.01	2150	2150
4	50	46.12	2200	2200
5				

Moisture Content (%) (MCi)	5.55
Wet Wt. of Soil + Cont. (g)	183.56
Dry Wt. of Soil + Cont. (g)	177.34
Wt. of Container (g)	65.21
Container No.	
Initial Soil Wt. (g) (Wt)	130.06
Box Constant	1.000
MC =(((1+Mci/100)x(Wa/Wt+1))-1)x100	

Min. Resistivity (ohm-cm)	Moisture Content (%)	Sulfate Content (ppm)	Chloride Content (ppm)	Soil pH	
				pH	Temp. (°C)
DOT CA Test 643		DOT CA Test 417 Part II	DOT CA Test 422	DOT CA Test 643	
2150	**38.0**	**78**	**148**	**8.17**	**21.8**



Appendix C
Lab By Others

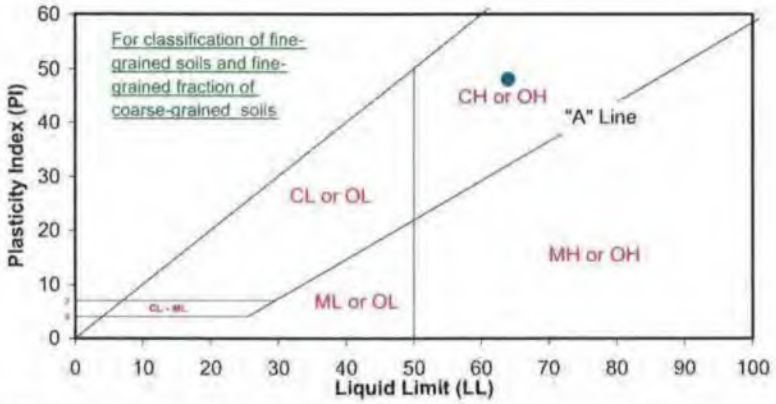
APPENDIX C

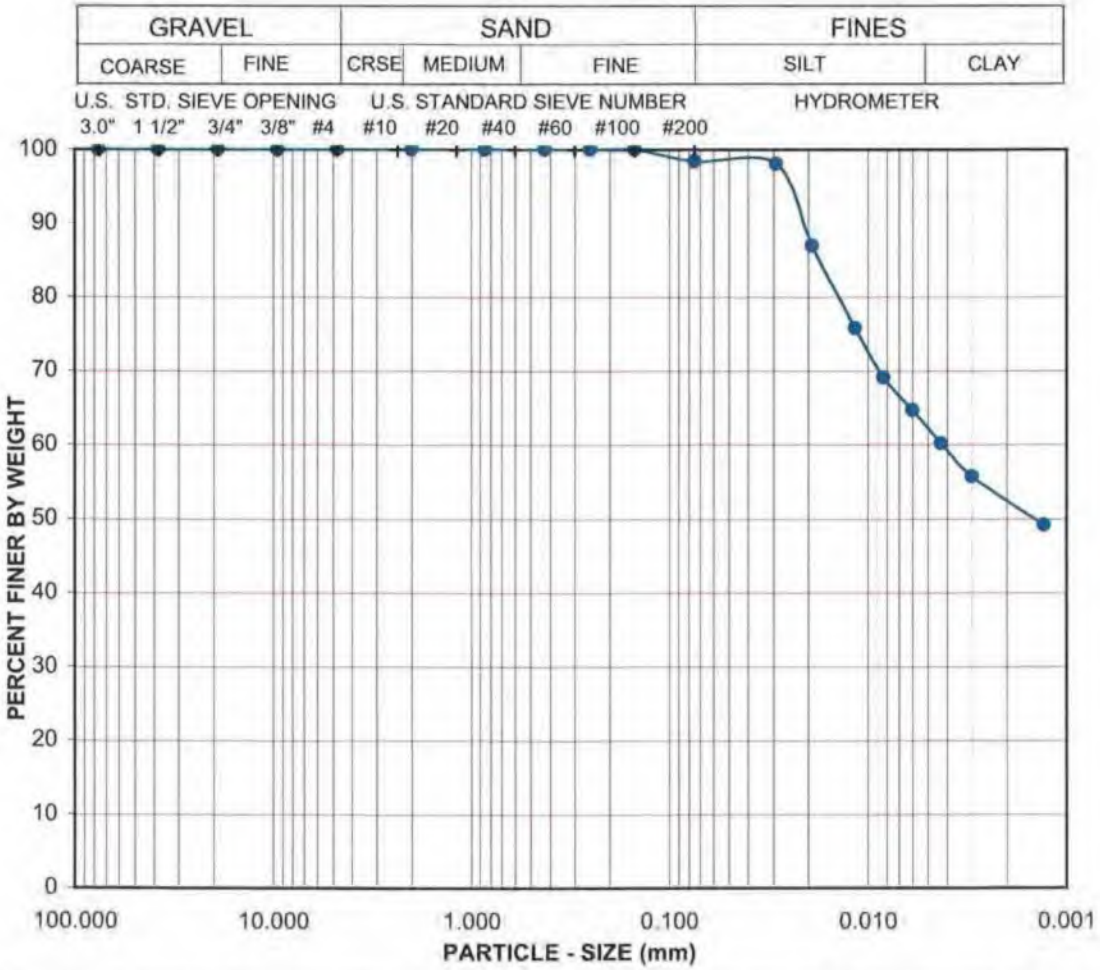
Laboratory Testing Procedures and Test Results

Classification or Grain Size Tests: Typical materials were subjected to mechanical grain-size analysis by sieving from U.S. Standard brass screens (ASTM Test Methods C136 or D422). Hydrometer analyses were performed on selected samples. The data was evaluated in determining the classification of the materials. Grain size distribution curves are attached.

Particle size analysis: Particle size analysis was performed by mechanical sieving and hydrometer methods according to ASTM D422 and D4318. the percent fines particle from these grading is summarized below.

Sample Location	USCS Soil Classification
LB-2 @ 58.5 feet	CH
LB-2 @ 58.5 feet	CH





Boring No.	Sample No.	Depth (m)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LB-2	B8-A	58.5	CH	0,0,2	64,16,48

Sample Description:
CH: BLACK FAT CLAY

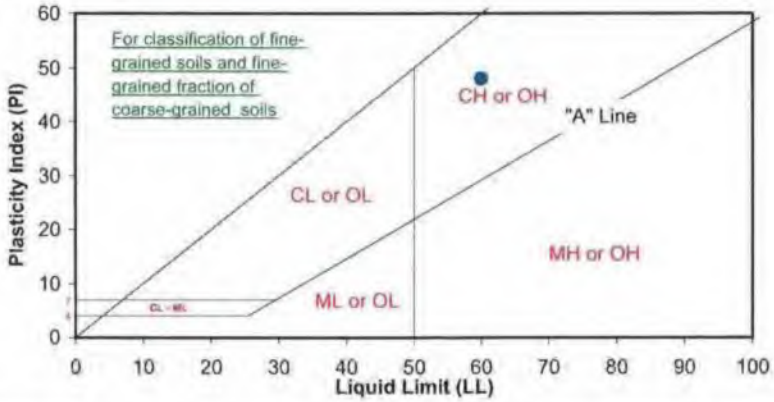
Project No. 012383-001

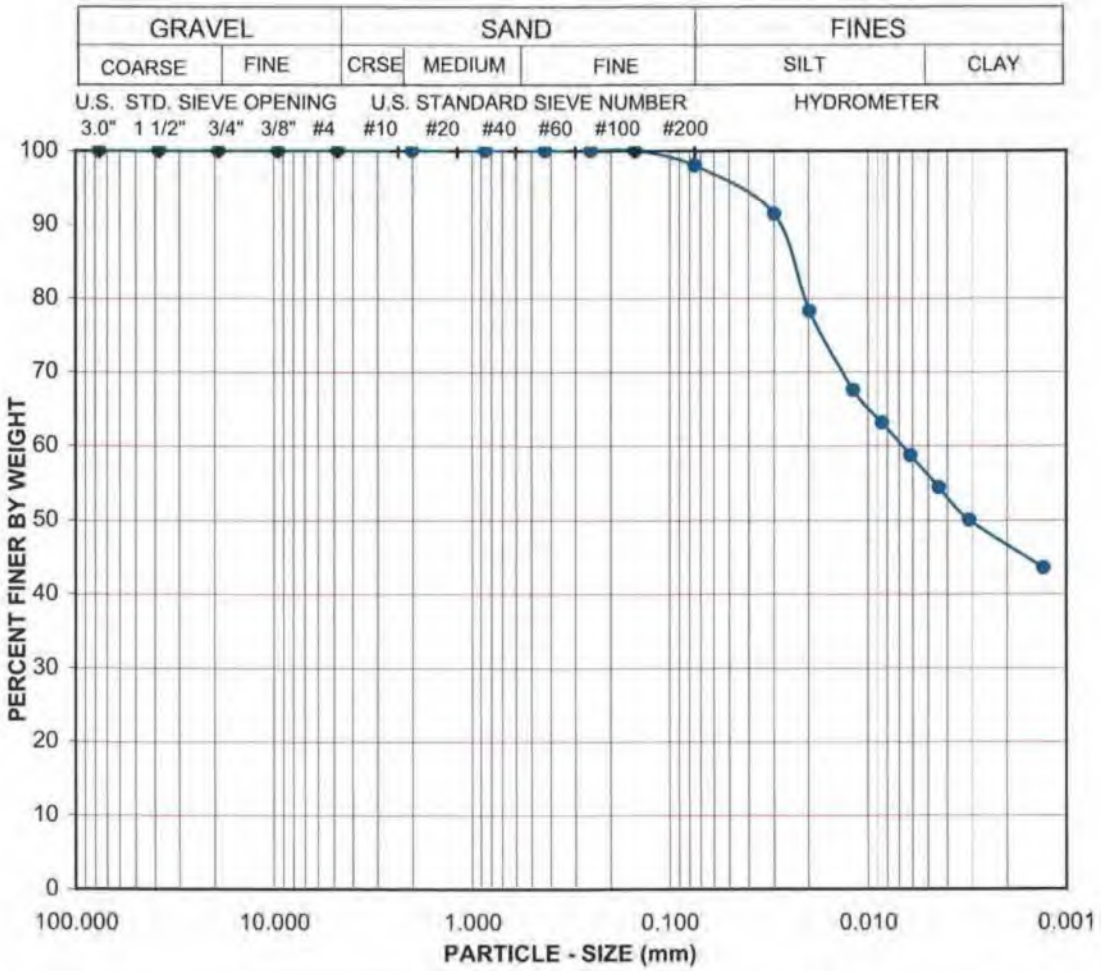
CONT. LIFE / ORCHARD

Leighton

ATTERBERG LIMITS, PARTICLE - SIZE CURVE
ASTM D 4318, D 422

Rev. 08-08





Boring No.	Sample No.	Depth (m)	Soil Type	GR:SA:FI (%)	LL,PL,PI
LB-2	B8-B	58.5	CH	0,0,2	60,12,48

Sample Description:
CH: GRAY-BLACK FAT CLAY

Leighton

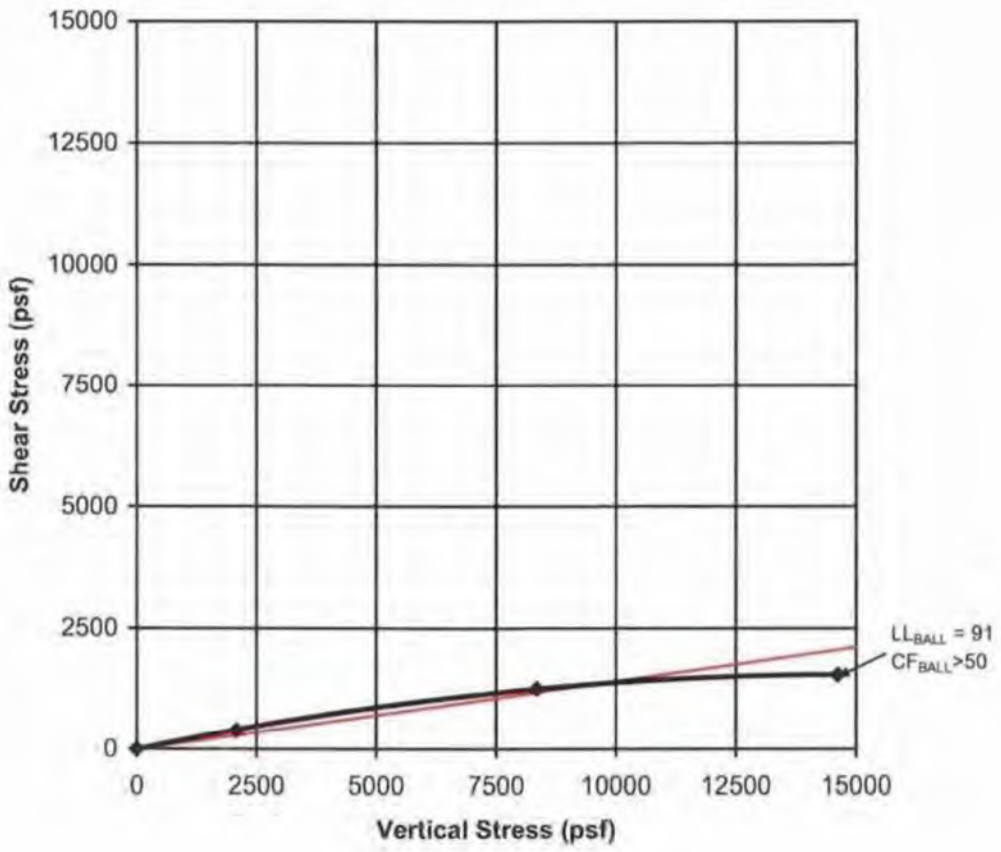
Project No.: 012383-001

CONT. LIFE / ORCHARD

ATTERBERG LIMITS, PARTICLE - SIZE CURVE

ASTM D 4318, D 422

Rev. 08-08



Boring Location	**LB-2**
Sample Depth (feet)	**58.5**

Linear Strength Envelope

Friction Angle, ϕ'_{res} (deg)	**8**
Cohesion, c'_{res} (psf)	**0**

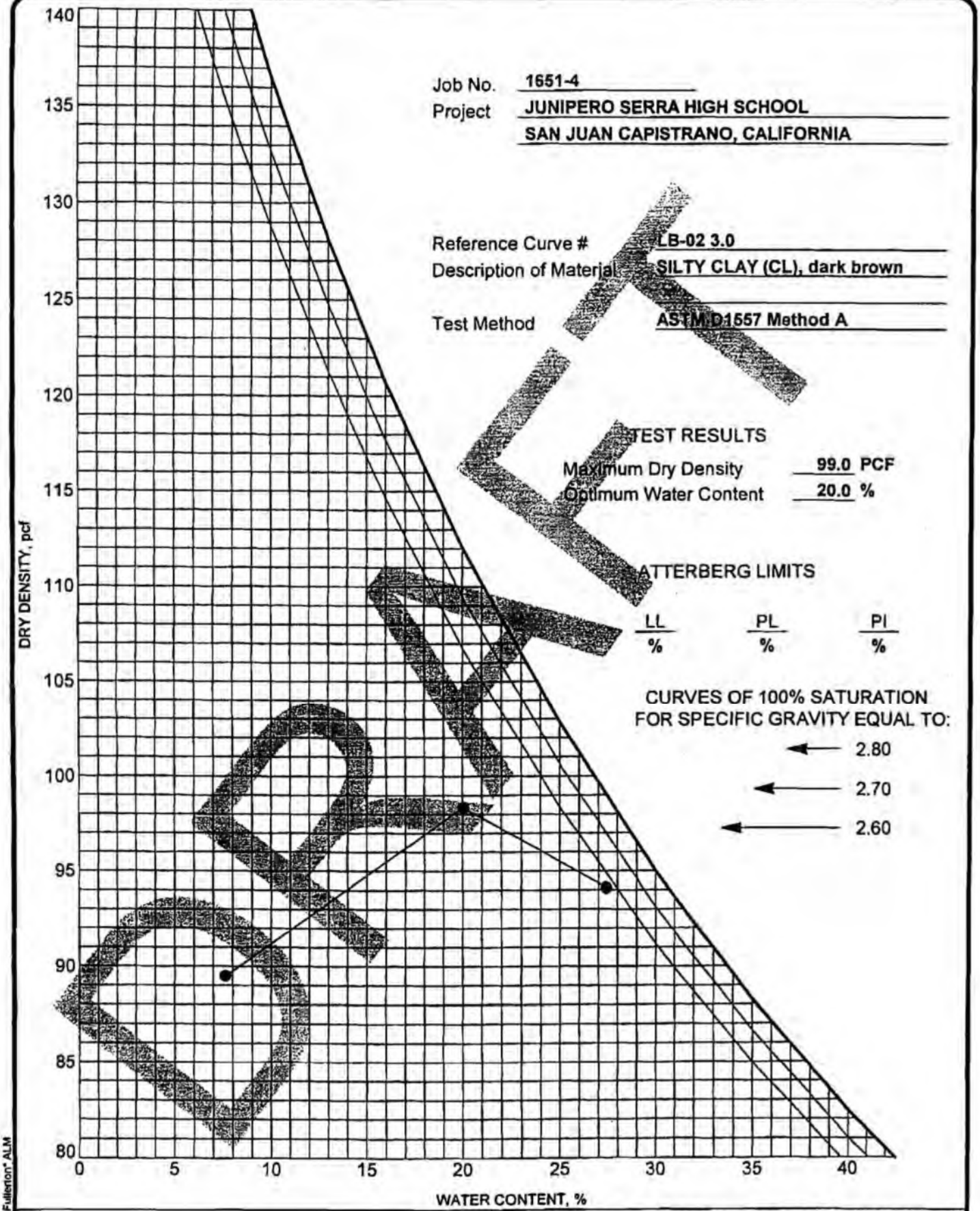
Legend

○ Shear Test Result — ◆ Envelope by Correlation (Stark, Choi, McCone, 2005) — / Linear Envelope

RESIDUAL STRENGTH
BY CORRELATION

Project No. 012383-001
Project Name Continuing Life

Leighton



Job No. 1651-4

Project JUNIPERO SERRA HIGH SCHOOL
SAN JUAN CAPISTRANO, CALIFORNIA

Reference Curve # LB-02 3.0

Description of Material SILTY CLAY (CL), dark brown

Test Method ASTM D1557 Method A

TEST RESULTS

Maximum Dry Density 99.0 PCF

Optimum Water Content 20.0 %

ATTERBERG LIMITS

LL	PL	PI
%	%	%

CURVES OF 100% SATURATION
FOR SPECIFIC GRAVITY EQUAL TO:

← 2.80

← 2.70

← 2.60

LA CORP.GDT 7/31/01 Fullerton* ALM

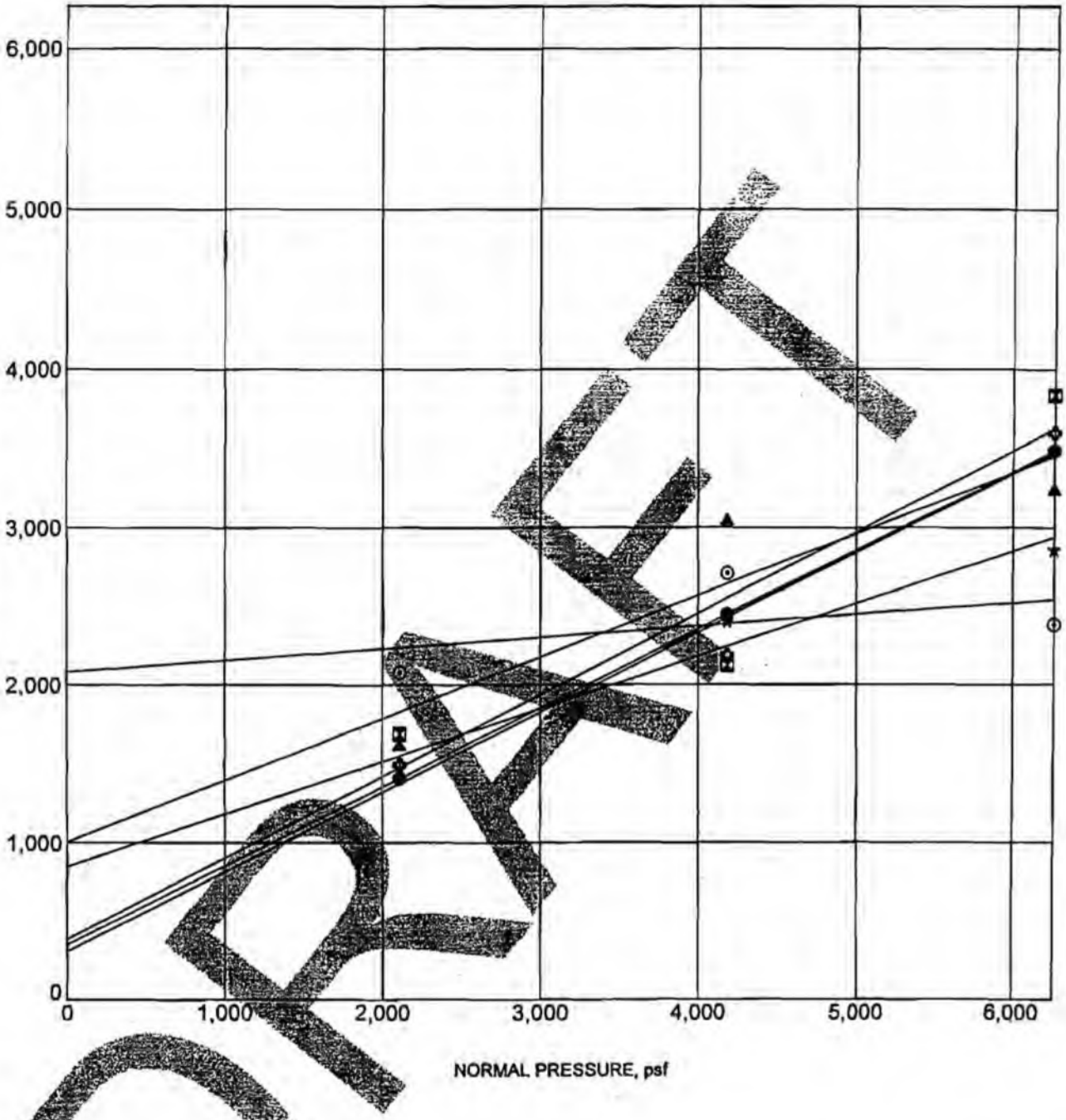
LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

MOISTURE-DENSITY RELATIONSHIP

Project: JUNIPERO SERRA HIGH SCHOOL

Location: SAN JUAN CAPISTRANO, CALIFORNIA

Project No.: 1651-4



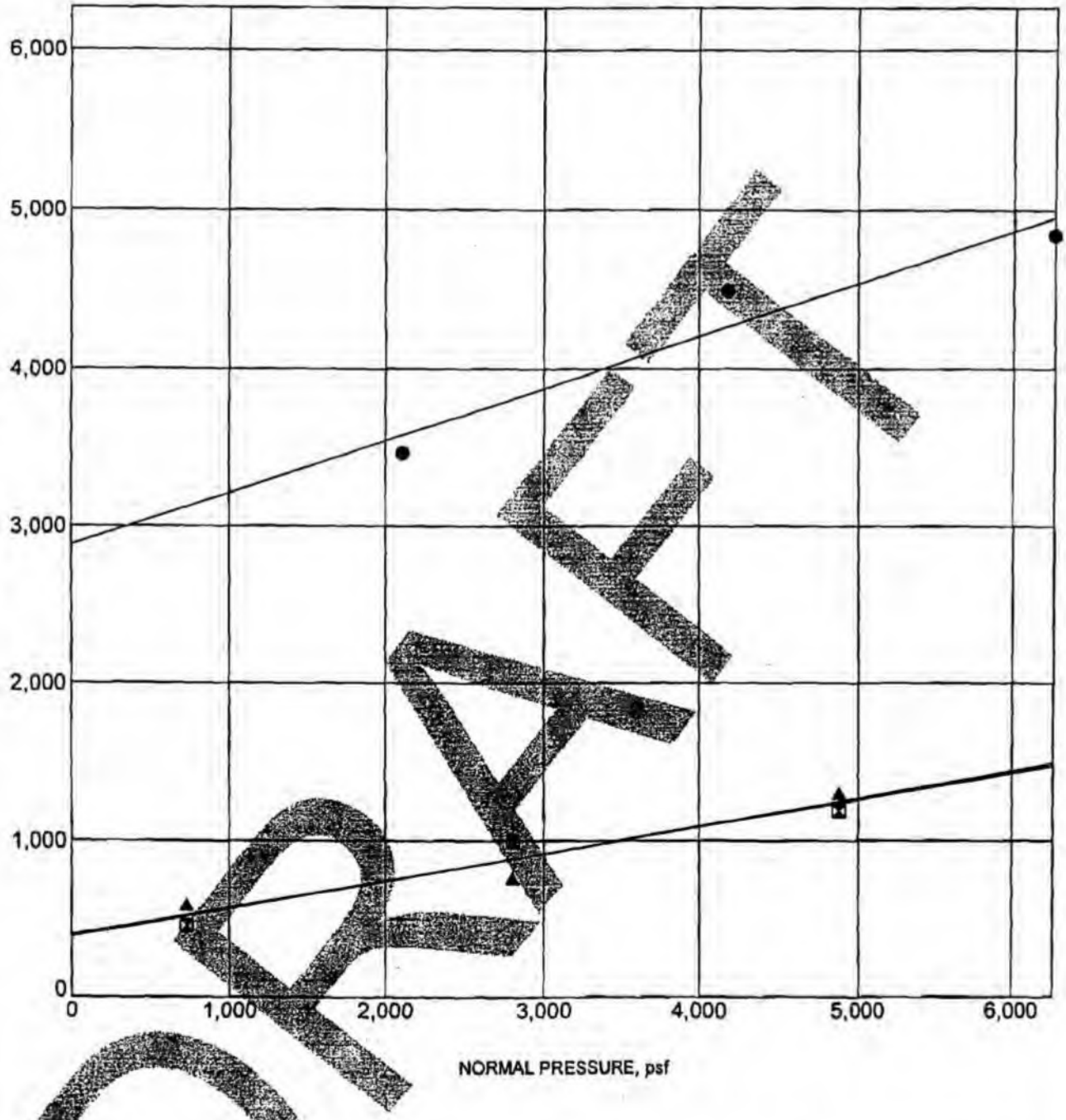
Exploration		Depth (feet)	Classification	γ_d	MOIST. (%)	c	ϕ
●	LB-01	30.0	CLAYEY SILT (ML), olive brown	100	26	350	27
⊡	LB-01	100.0	SILTSTONE (Tcsl), very dark gray	90	34	384	27
▲	LB-02	55.0	SILTSTONE (Tcsl), dark gray	89	36	1005	21
★	LB-03	25.0	CLAYEY SILT (ML), grayish brown-olive brown	93	28	848	18
⊙	LB-03	72.0	CLAYEY SILT (ML), grayish brown to gray	104	23	1925	4
✪	LB-04	20.0	CLAYEY SILT (ML), light brown	88	27	306	27

LOVNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

DIRECT SHEAR TEST

Project: JUNIPERO SERRA HIGH SCHOOL
Location: SAN JUAN CAPISTRANO, CALIFORNIA
Project No.: 1651-4

LA CORP.GDT 7/31/01 Fullerton* ALM



DRAFT

Exploration	Depth (feet)	Classification	γ_d	MOIST. (%)	c	ϕ
● LB-05	45.0	SILTSTONE (Tcsl), very dark gray	90	33	2883	18
⊠ LB-09	19.0	REMOLD: CLAY (CL), dark gray-brown	90	35	384	10
▲ LB-09	34.0	REMOLD: CLAY (CL), dark gray-brown	99	30	399	10

LOWNEY ASSOCIATES
Environmental/Geotechnical/Engineering Services

DIRECT SHEAR TEST

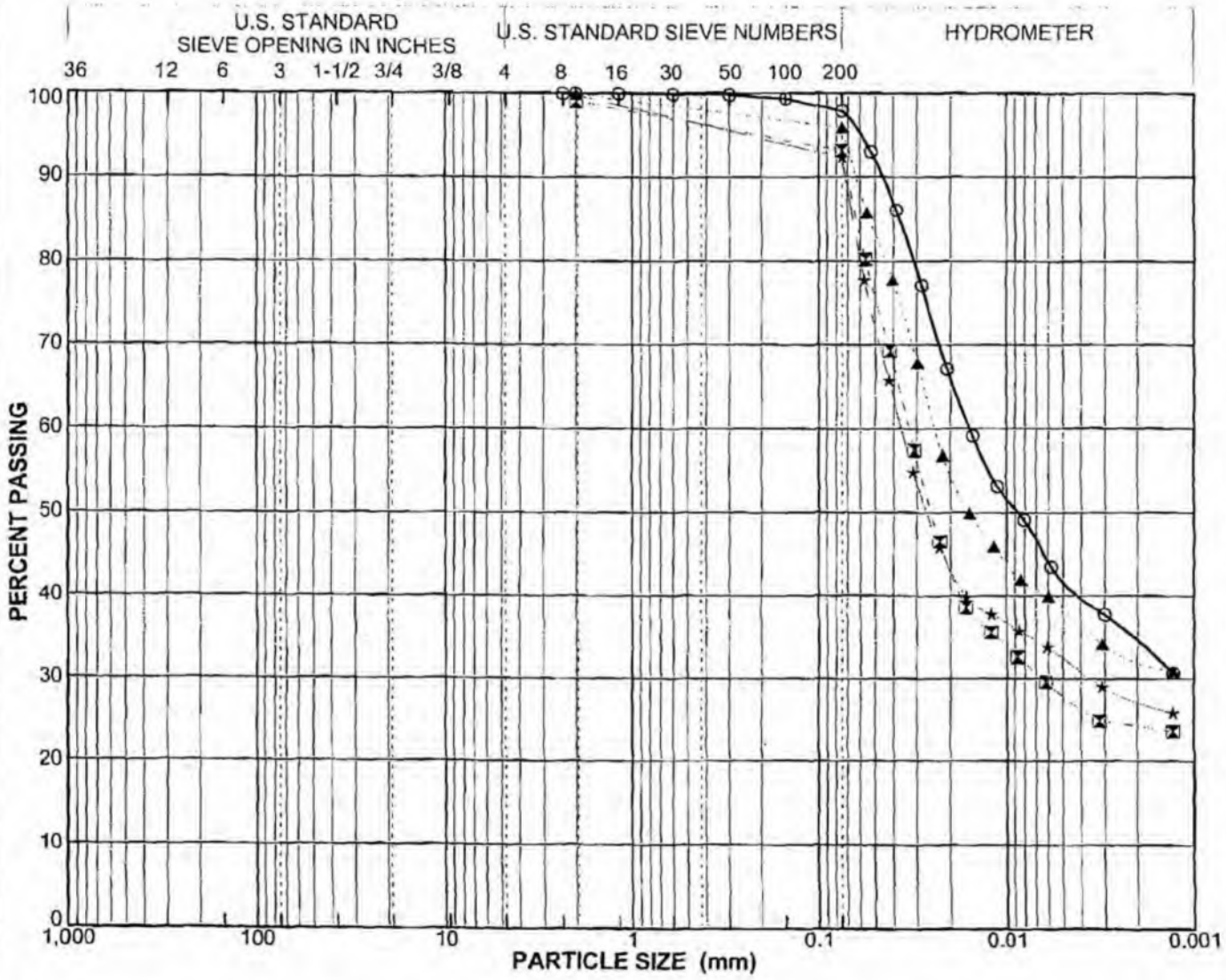
Project: JUNIPERO SERRA HIGH SCHOOL

Location: SAN JUAN CAPISTRANO, CALIFORNIA

Project No.: 1651-4

LA CORP.GDT 7/31/01 Fullerton* ALM

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		coarse	fine	coarse	medium	fine	



Symbol	Boring Number	Sample Number	Depth (feet)	Field Moisture (%)	LL	PI	Activity PI/-2μ	C_u	C_c	Passing No. 200 Sieve (%	Passing 2μ (%)	USCS
○	B- 3	SB-3	71.5		56	30				98	34	CL
⊠	H- 1	D-9	45.0	29	44	24				93	24	CL
▲	H- 1	D-10	50.0	30	50	29				96	32	CH
★	H- 1	D-12	60.0	31	48	26				92	27	CL

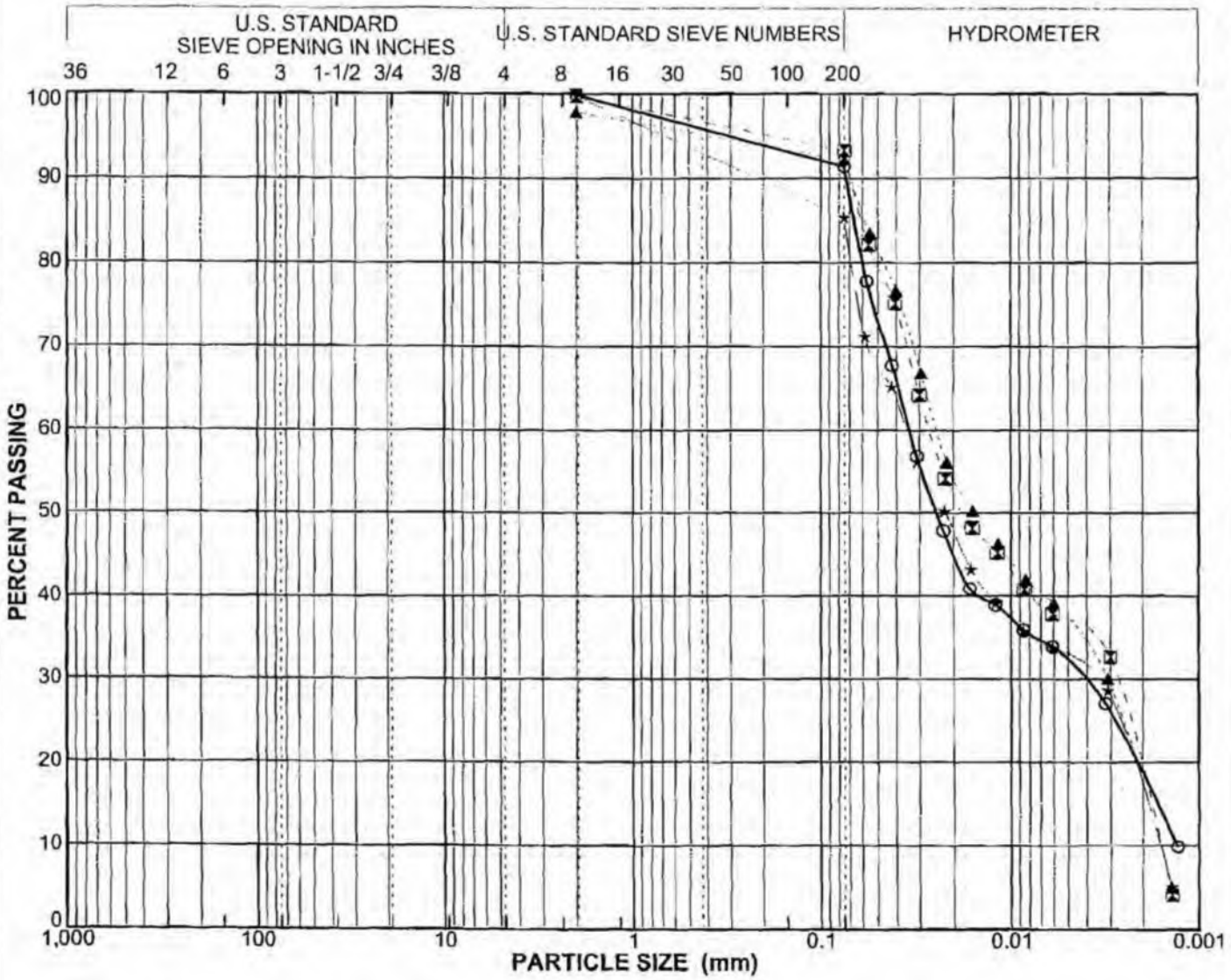
PARTICLE SIZE DISTRIBUTION

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

Template: NMSIV; Prj ID: 01012-02.GPJ; Printed: 9/28/01

BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		coarse	fine	coarse	medium	fine	



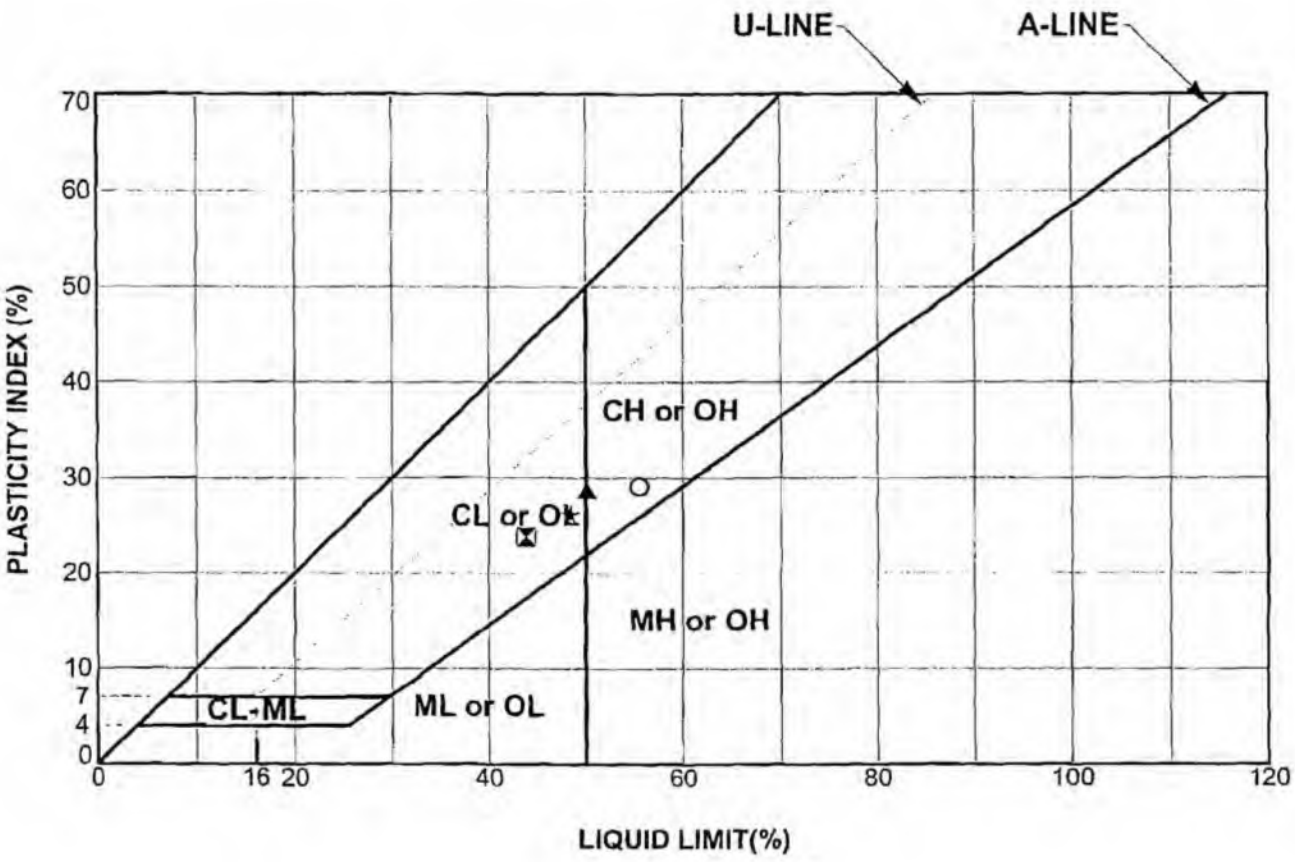
Symbol	Boring Number	Sample Number	Depth (feet)	Field Moisture (%)	LL	PI	Activity PI/-2μ	C_u	C_c	Passing No. 200 Sieve (%)	Passing 2μ (%)	USCS
○	H-2	D-2	10.0	27	44	24		25.99	0.40	91	18	CL
⊠	H-2	D-3	15.0	26	46	23		16.14	0.18	93	17	CL
▲	H-2	D-8	40.0	28	51	28		14.84	0.24	92	16	CH
★	H-2	D-9	45.0	26	48	26		21.43	0.23	85	16	CL

PARTICLE SIZE DISTRIBUTION

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

Template: NMSIV; Prj ID: 01012-02.GPJ; Printed: 9/28/01

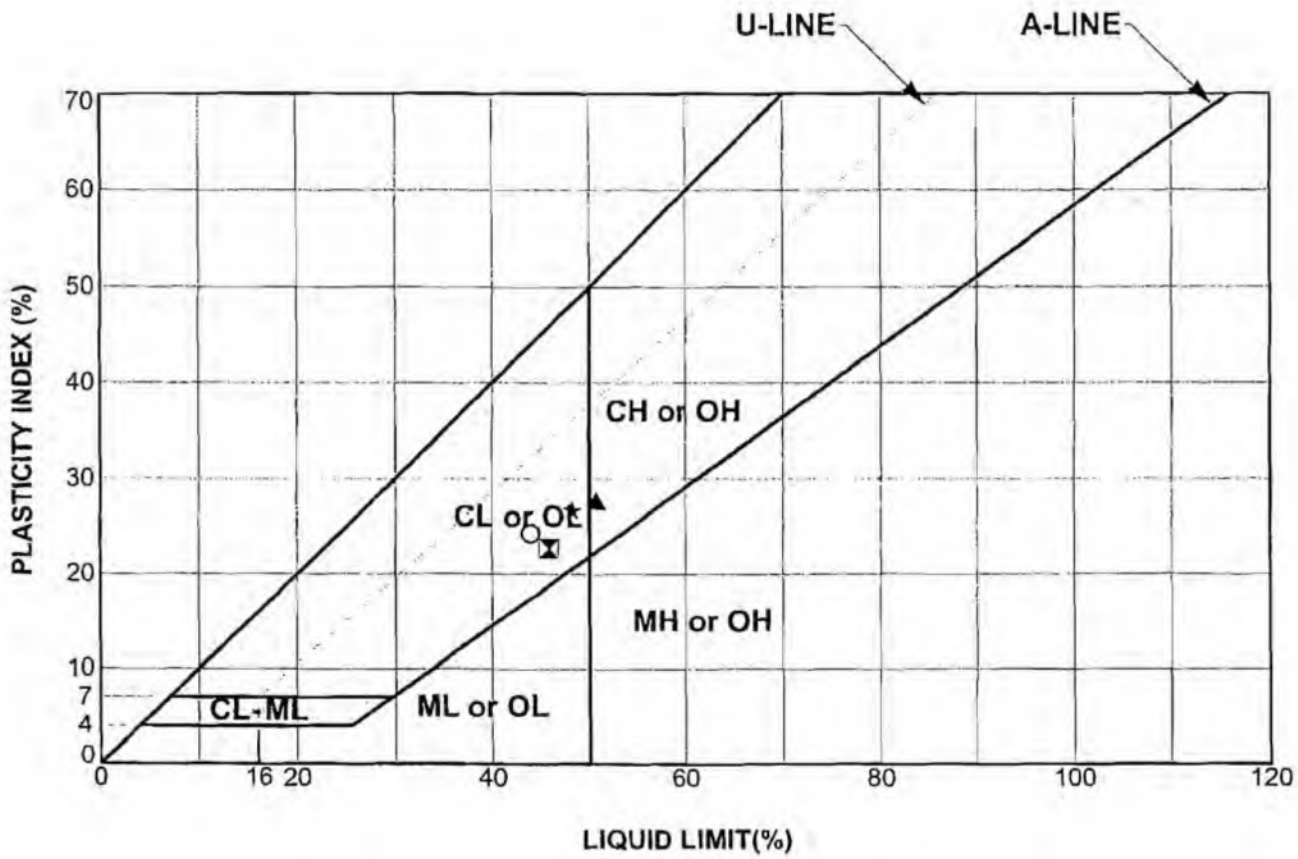


Symbol	Boring Number	Depth (feet)	Sample Number	Passing No. 200 Sieve (%)	LL	PI	USCS	Description
○	B- 3	71.5	SB-3	98	56	30	CL	CLAY
⊠	H- 1	45.0	D-9	93	44	24	CL	Silty CLAY
▲	H- 1	50.0	D-10	96	50	29	CH	Silty CLAY
★	H- 1	60.0	D-12	92	48	26	CL	CLAY

PLASTICITY CHART

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.

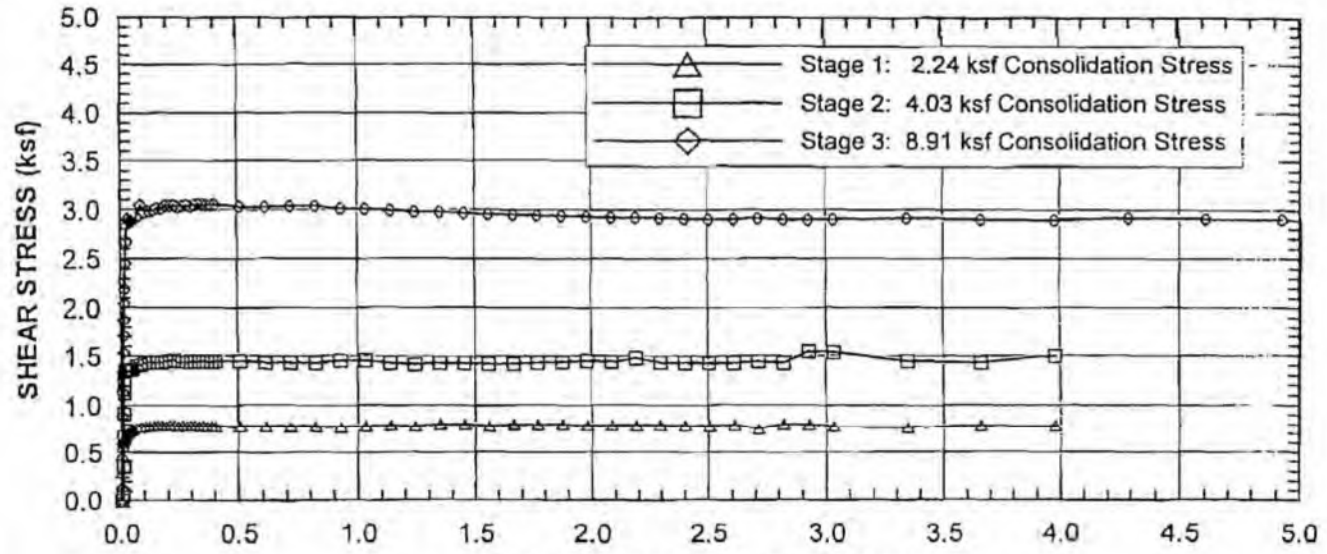


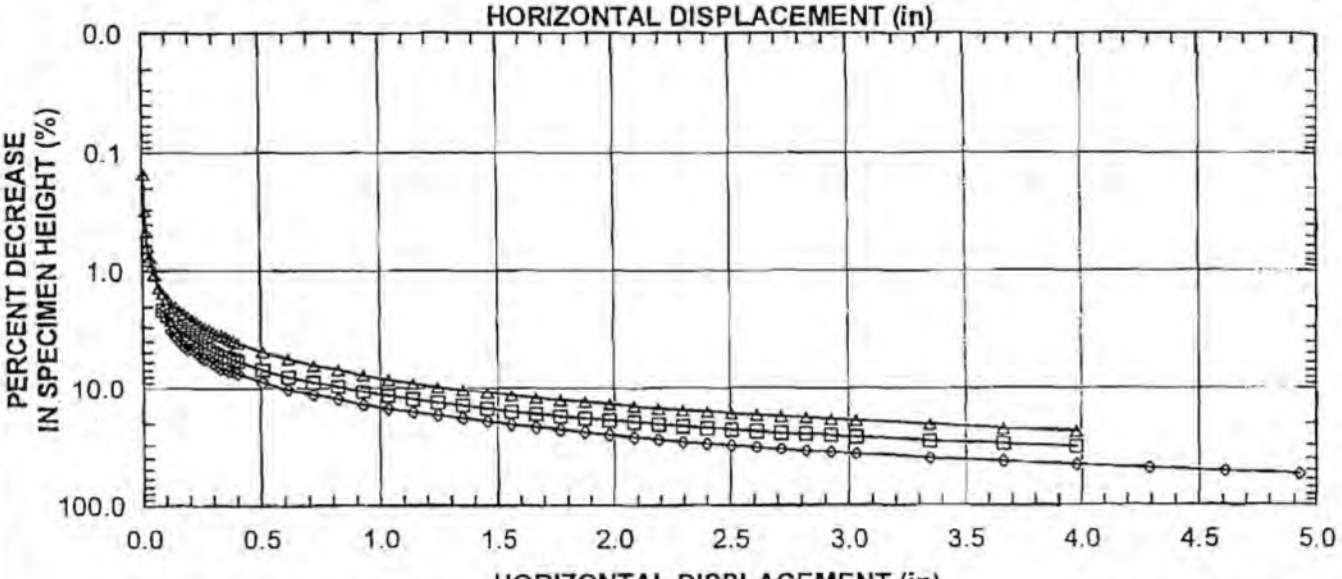
Symbol	Boring Number	Depth (feet)	Sample Number	Passing No. 200 Sieve (%)	LL	PI	USCS	Description
○	H- 2	10.0	D-2	91	44	24	CL	Silty CLAY
⊠	H- 2	15.0	D-3	93	46	23	CL	Silty CLAY
▲	H- 2	40.0	D-8	92	51	28	CH	CLAY
★	H- 2	45.0	D-9	85	48	26	CL	Silty CLAY

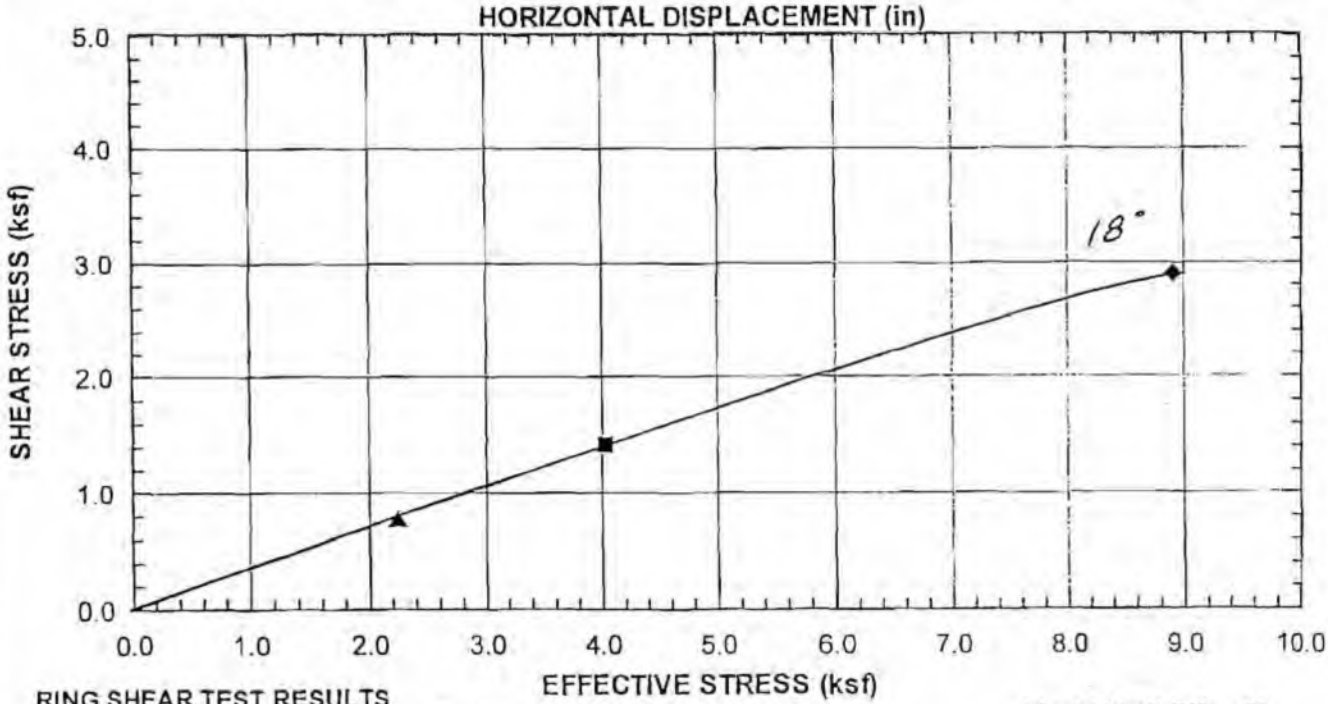
PLASTICITY CHART

CUSD/Rancho Capistrano
San Juan Capistrano
PROJECT NO. 01012-02

NMG Geotechnical, Inc.





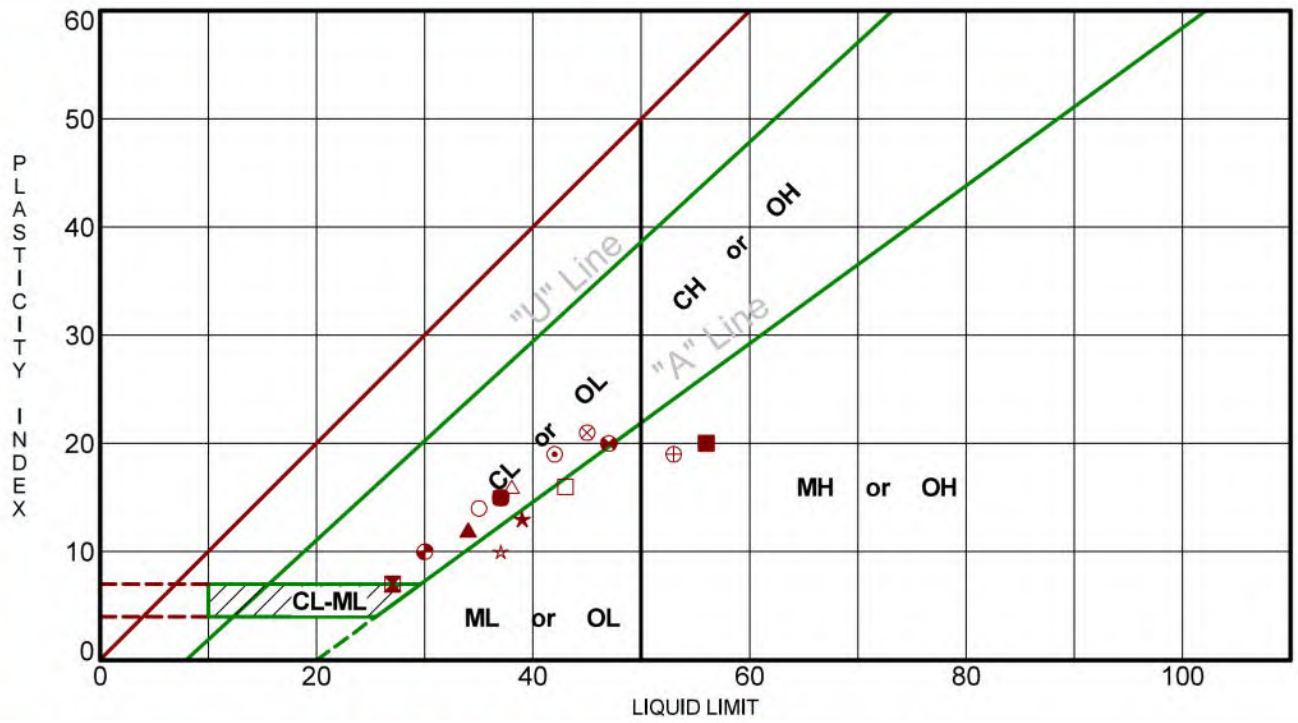


RING SHEAR TEST RESULTS
Project Name.: CUSD / Rancho Capistrano
Project Number: 01012-02
Exploration No.: B-3
Sample Number: SB-3 at 71.5 ft

Liquid Limit (%): 56
Clay Fraction (%): __
Test Number: RS20005r

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	B- 1	0 - 4	37	22	15	84.5	CL	LEAN CLAY with SAND
⊠	B- 2	5 - 6.5	27	20	7		CL-ML	SILTY CLAY
▲	B- 3	7.5 - 9	34	22	12		CL	LEAN CLAY
★	B- 4	5 - 6.5	39	26	13		ML	SILT
⊙	B- 5	15 - 16.5	42	23	19		CL	LEAN CLAY
✿	B- 8	2.5 - 4	37	22	15		CL	LEAN CLAY
○	B-10	2.5 - 4	35	21	14		CL	LEAN CLAY with SAND
△	B-11	7.5 - 9	38	22	16		CL	LEAN CLAY
⊗	B-11	40 - 41.5	45	24	21		CL	LEAN CLAY
⊕	B-12	65 - 66.5	53	34	19		MH	ELASTIC SILT
□	B-13	15 - 16.5	43	27	16		ML	SILT
◒	B-14	2.5 - 4	47	27	20		CL	LEAN CLAY
◕	B-17	0 - 5	30	20	10		CL	LEAN CLAY with SAND
☆	B-19	7.5 - 9	37	27	10		ML	SILT
⊠	B-20	5 - 6.5	37	22	15		CL	LEAN CLAY
■	B-24	65 - 66.5	56	36	20		MH	ELASTIC SILT

PROJECT: Broad Reach Power Compass BESS

PROJECT NUMBER: 60215170

SITE: San Juan Capistrano, CA

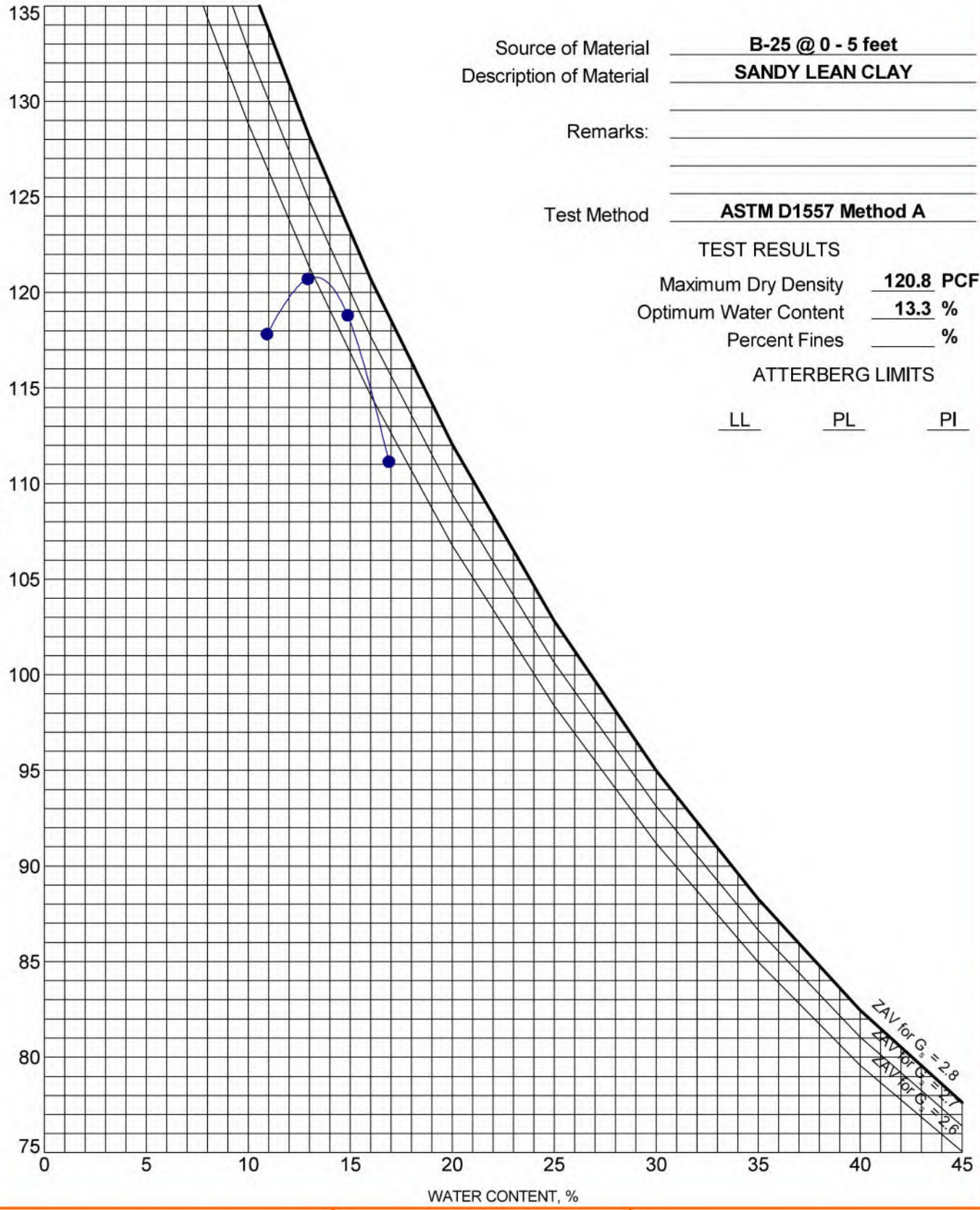
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: Sargent & Lundy LLC
Chicago, IL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/12/21

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **B-25 @ 0 - 5 feet**

Description of Material: **SANDY LEAN CLAY**

Remarks:

Test Method: **ASTM D1557 Method A**

TEST RESULTS

Maximum Dry Density	**120.8**	**PCF**
Optimum Water Content	**13.3**	**%**
Percent Fines		%

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Broad Reach Power Compass BESS

PROJECT NUMBER: 60215170

SITE: San Juan Capistrano, CA

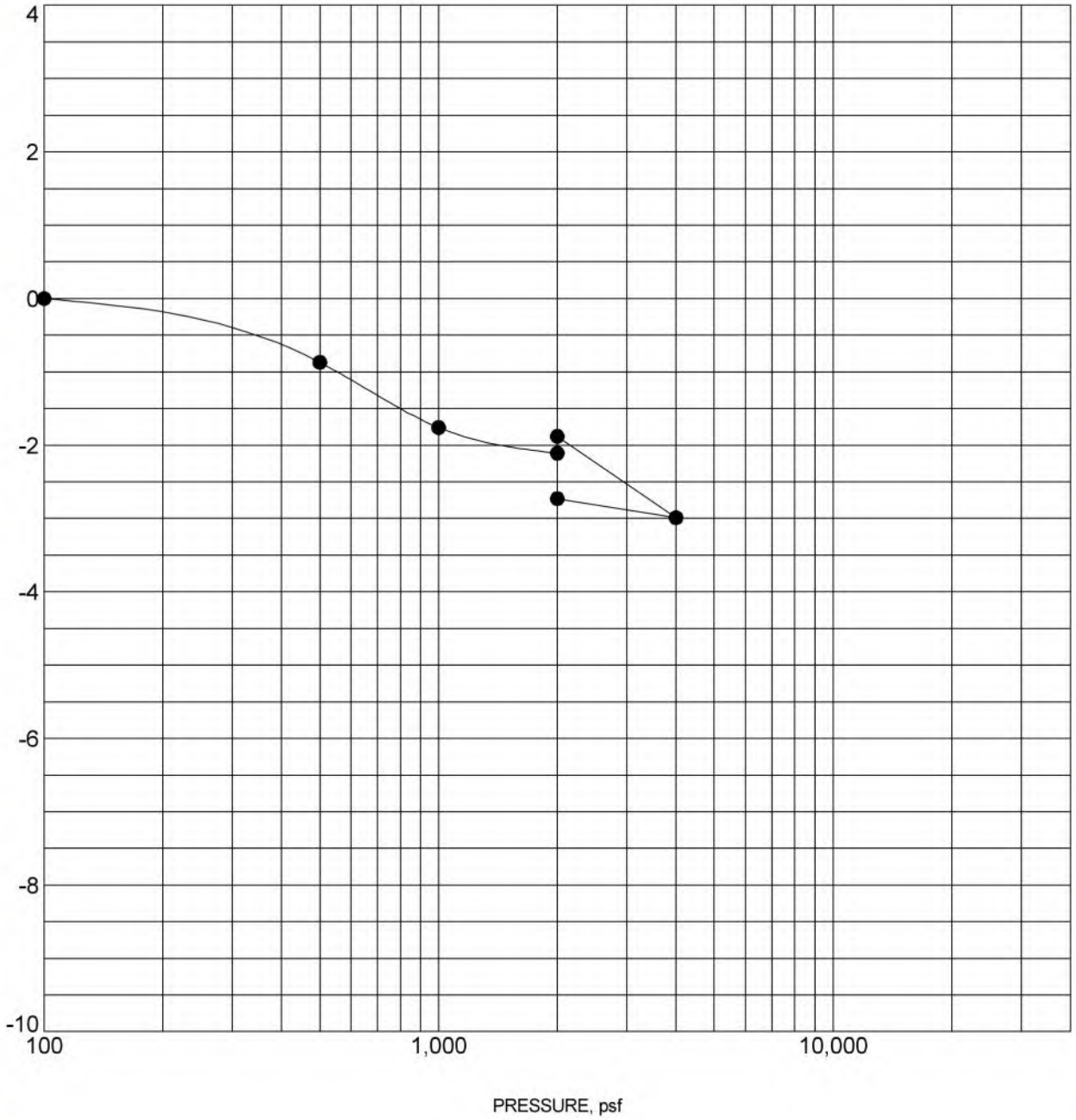
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: Sargent & Lundy LLC
Chicago, IL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V2 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/12/21

SWELL CONSOLIDATION TEST

ASTM D4546



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B- 1	5 - 6.5 ft	LEAN CLAY with SAND	100	18.7

NOTES: Water added at 2,000 psf

PROJECT: Broad Reach Power Compass BESS

PROJECT NUMBER: 60215170

SITE: San Juan Capistrano, CA

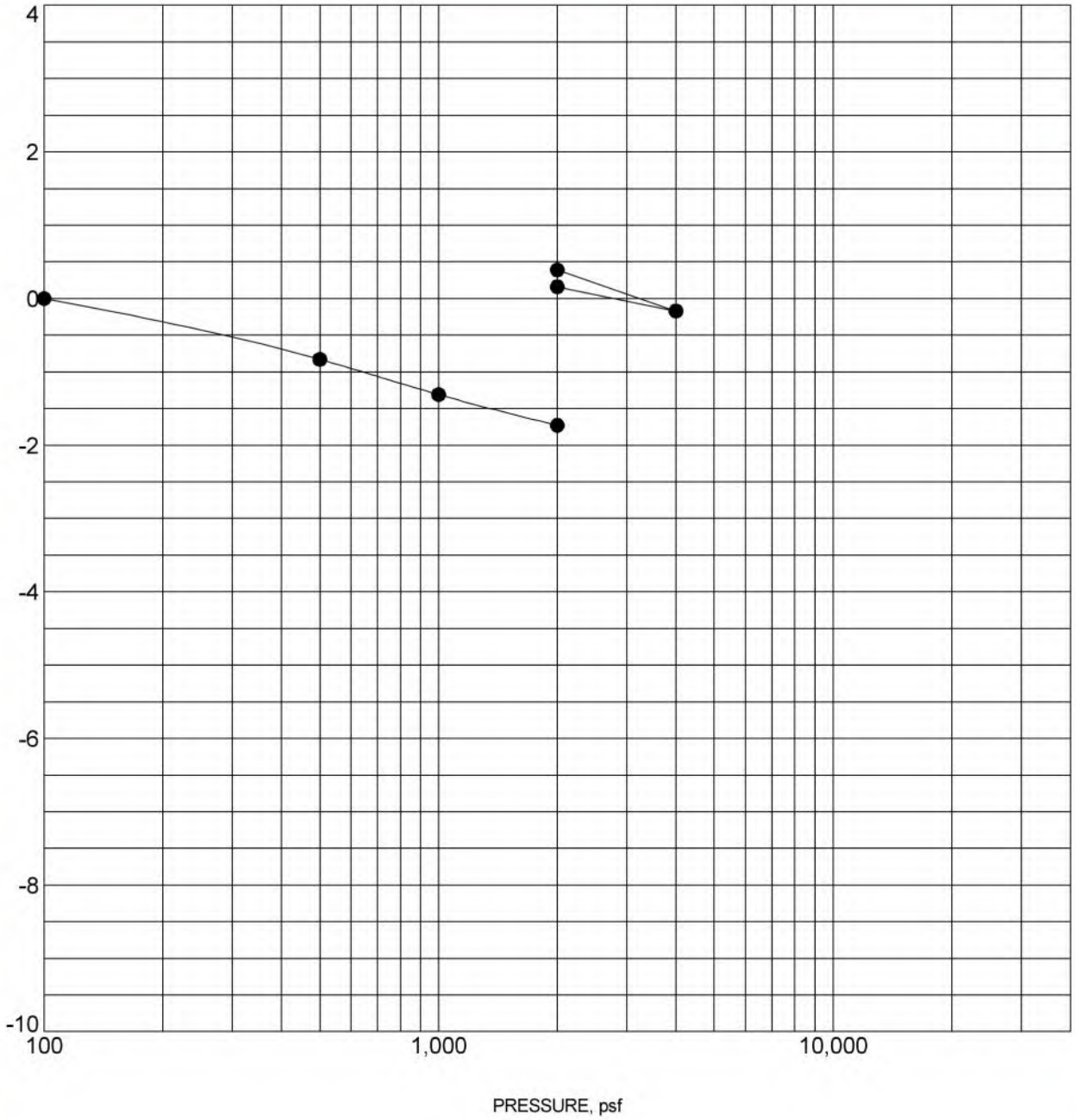
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: Sargent & Lundy LLC
Chicago, IL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/12/21

SWELL CONSOLIDATION TEST

ASTM D4546



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B- 3	5 - 6.5 ft	LEAN CLAY with SAND	103	17.4

NOTES: Water added at 2,000 psf

PROJECT: Broad Reach Power Compass BESS

PROJECT NUMBER: 60215170

SITE: San Juan Capistrano, CA

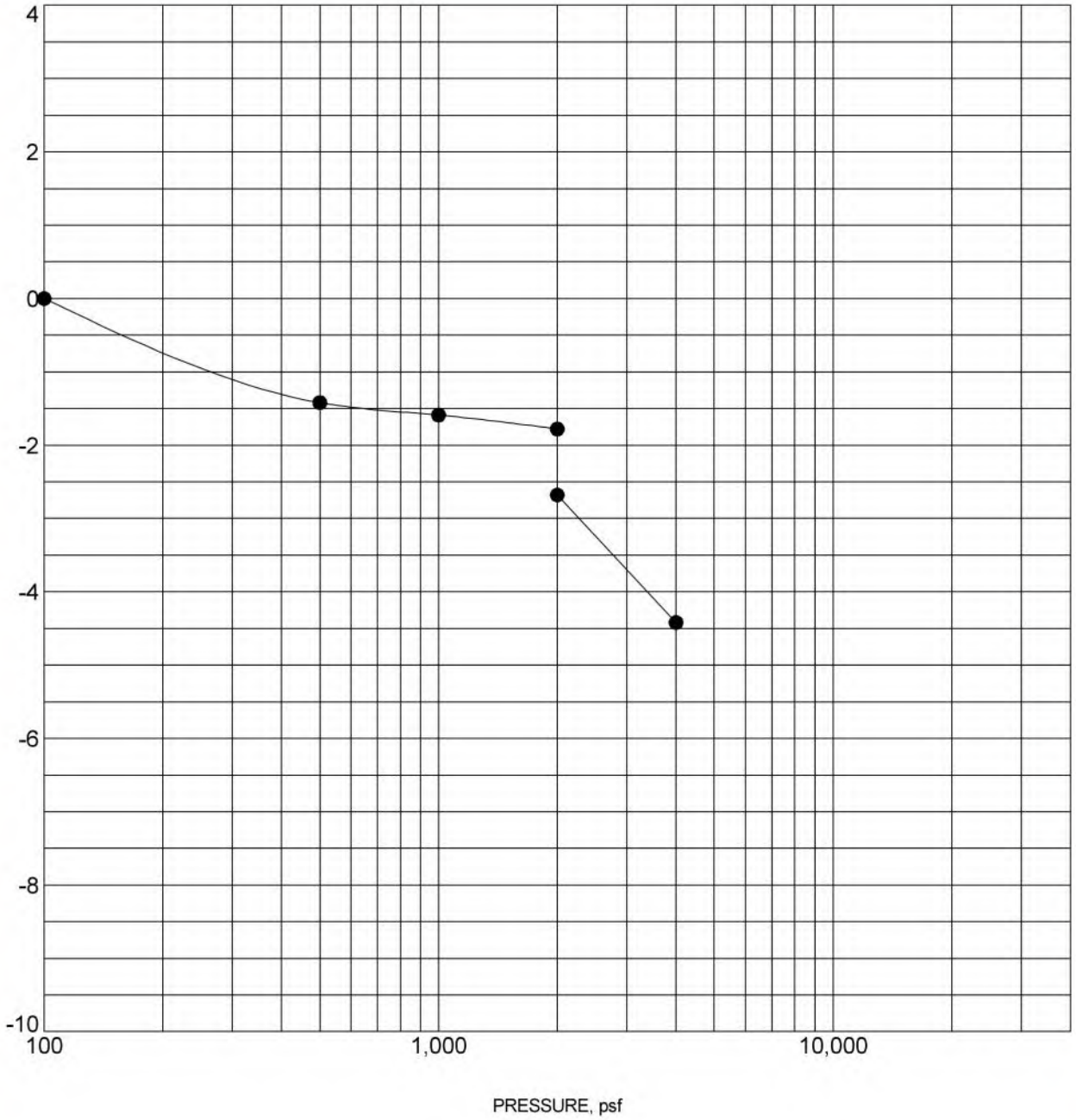
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: Sargent & Lundy LLC
Chicago, IL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/12/21

SWELL CONSOLIDATION TEST

ASTM D4546



Specimen Identification			Classification	γ_d, pcf	WC, %
●	B-20	2.5 - 4 ft	SANDY SILT	92	11.6

NOTES: Water added at 2,000 psf

PROJECT: Broad Reach Power Compass BESS

PROJECT NUMBER: 60215170

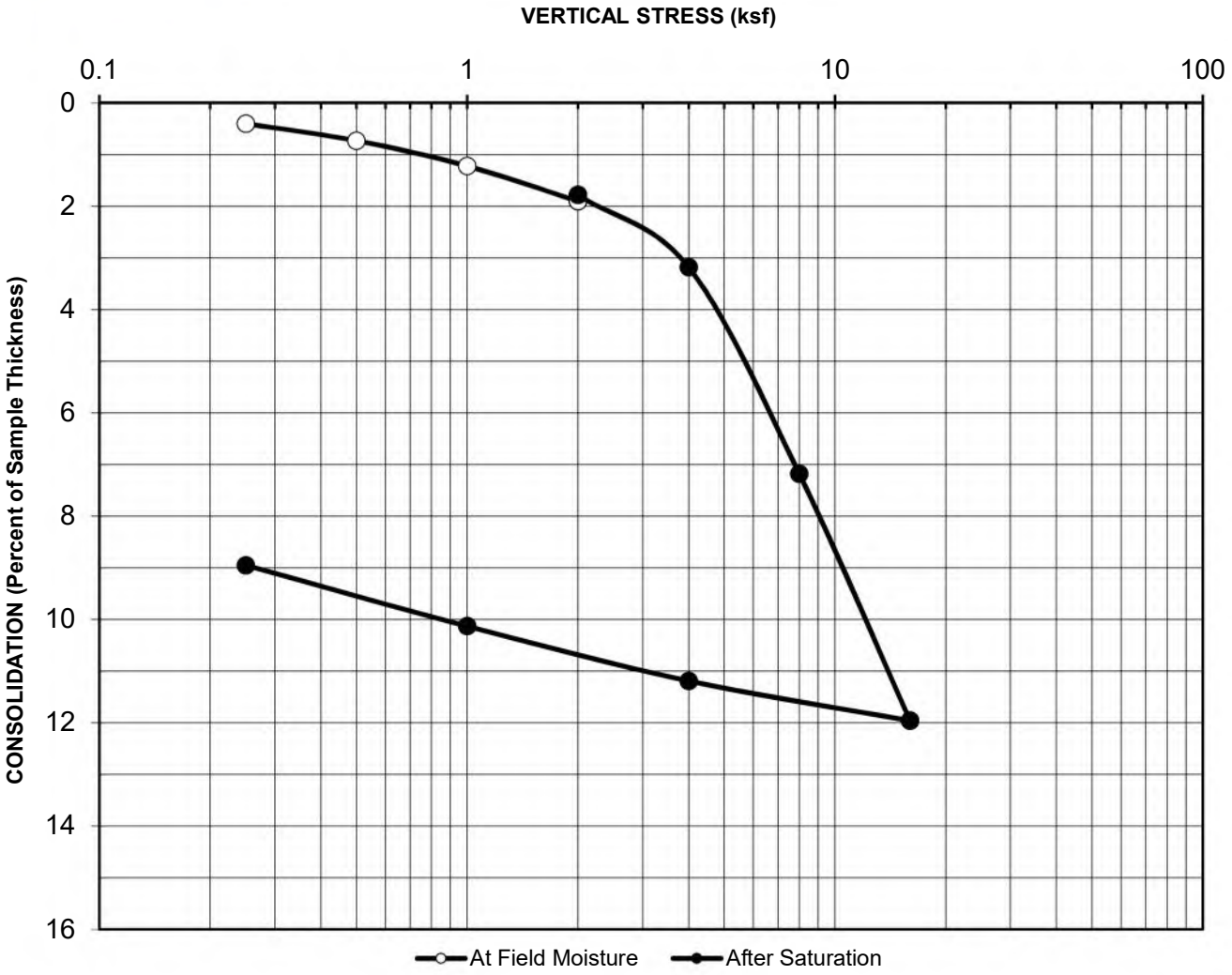
SITE: San Juan Capistrano, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: Sargent & Lundy LLC
Chicago, IL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. TC_CONSOL_STRAIN-USCS 60215170 COMPASS BESS.GPJ TERRACON_DATATEMPLATE.GDT 10/12/21

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com



Boring No. :	B-15	Initial Dry Unit Weight (pcf):	96.3
Sample No.:	-	Initial Moisture Content (%):	14.2
Depth (feet):	7.5	Final Moisture Content (%):	22.2
Sample Type:	Mod Cal	Assumed Specific Gravity:	2.7
Soil Description:	~~Sandy Clay~~ Lean Clay	Initial Void Ratio:	0.75
Remarks:	Swell= 0.12% upon inundation		

CONSOLIDATION CURVE
ASTM D 2435

Project Name:	Compass BESS
Project No.:	6E+07
Date:	9/22/2021
AP No:	21-0953 **Sheet No:** 1

AP Engineering and Testing, Inc.
DBE|MBE|SBE
2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

CORROSION TEST RESULTS

Client Name: Terracon
Project Name: Compass BESS
Project No.: 60215170

AP Job No.: 21-0953
Date: 09/23/21

Boring No.	Sample No.	Depth (feet)	Soil Description	Minimum Resistivity (ohm-cm)	pH	Sulfate Content (ppm)	Chloride Content (ppm)
B-1	-	0	Lean Clay	1,867	8.0	50	27
B-3	-	0	Silty Clay	2,215	8.0	46	40
B-12	-	0	Lean Clay	1,461	8.0	64	23
B-25	-	0	Lean Clay	1,313	8.1	91	36

NOTES: Resistivity Test and pH: California Test Method 643
Sulfate Content : California Test Method 417
Chloride Content : California Test Method 422
ND = Not Detectable
NA = Not Sufficient Sample
NR = Not Requested

AP Engineering and Testing, Inc.
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2607 Pomona Boulevard | Pomona, CA 91768
t. 909.869.6316 | f. 909.869.6318 | www.aplaboratory.com

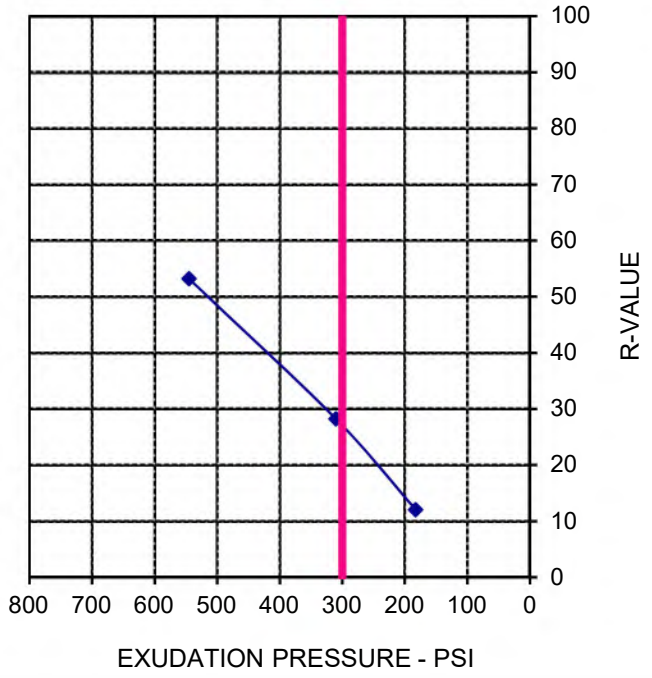
R-VALUE TEST DATA

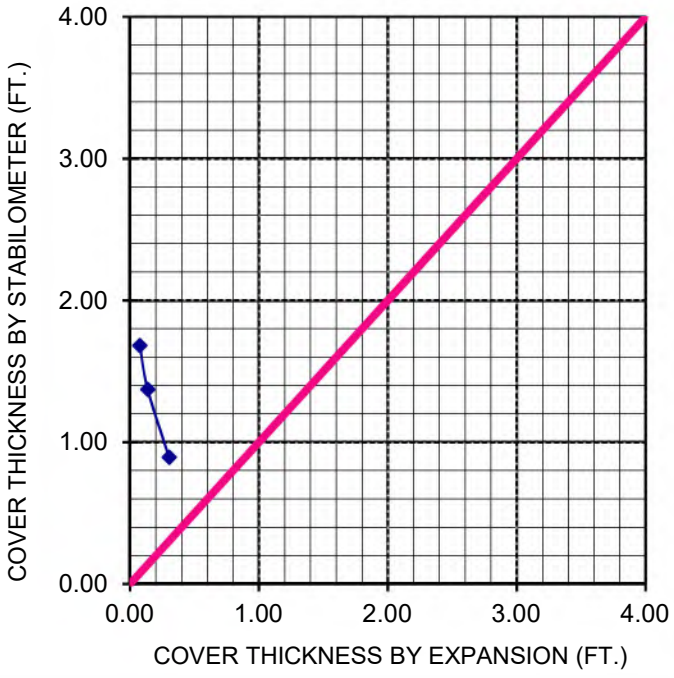
ASTM D2844

Project Name:	Compass BESS	Tested By:	ST	Date:	09/23/21
Project Number:	60215170	Computed By:	KM	Date:	09/24/21
Boring No.:	B-15	Checked By:	AP	Date:	09/28/21
Sample No.:	-	Depth (ft.):	0		
Location:	N/A				
Soil Description:	Clay w/sand				

Mold Number	A	C	B	
Water Added, g	61	75	92	
Compact Moisture(%)	15.8	17.2	18.9	
Compaction Gage Pressure, psi	250	180	125	
Exudation Pressure, psi	545	310	183	
Sample Height, Inches	2.4	2.5	2.5	
Gross Weight Mold, g	2979	2989	3004	
Tare Weight Mold, g	1967	1968	1966	
Net Sample Weight, g	1012	1021	1038	
Expansion, inchesx10^{-4}	91	41	23	
Stability 2,000 (160 psi)	22/52	40/92	55/125	
Turns Displacement	4.11	4.70	5.11	
R-Value Uncorrected	56	28	12	
R-Value Corrected	53	28	12	
Dry Density, pcf	110.4	105.5	105.8	
Traffic Index	8.0	8.0	8.0	
G.E. by Stability	0.89	1.37	1.68	
G.E. by Expansion	0.30	0.14	0.08	

R-VALUE		
	By Exudation:	27
	By Expansion:	*N/A
	At Equilibrium: (by Exudation)	27
Remarks	Gf = 1.34, and 1.1 % Retained on the ¾" *Not Applicable	





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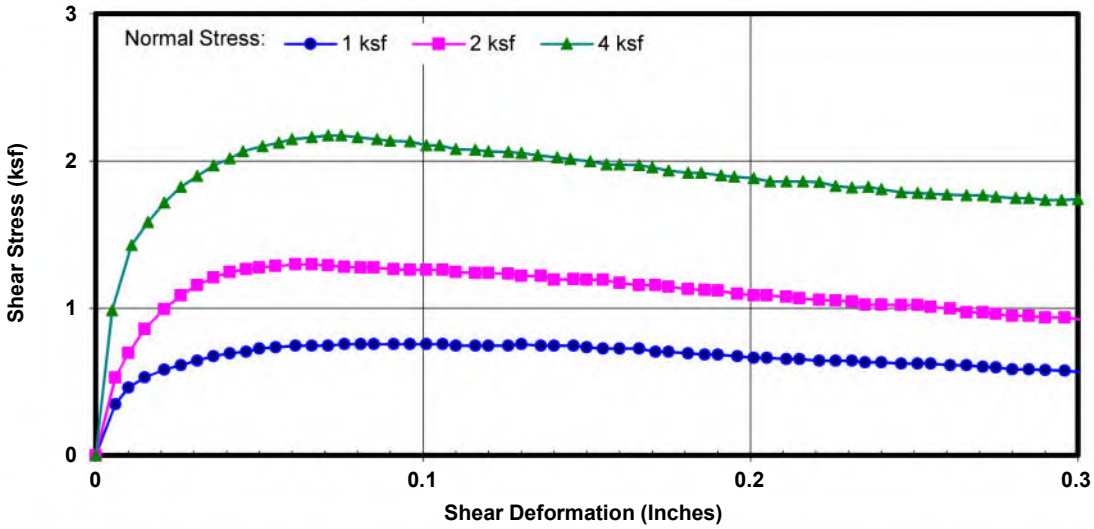
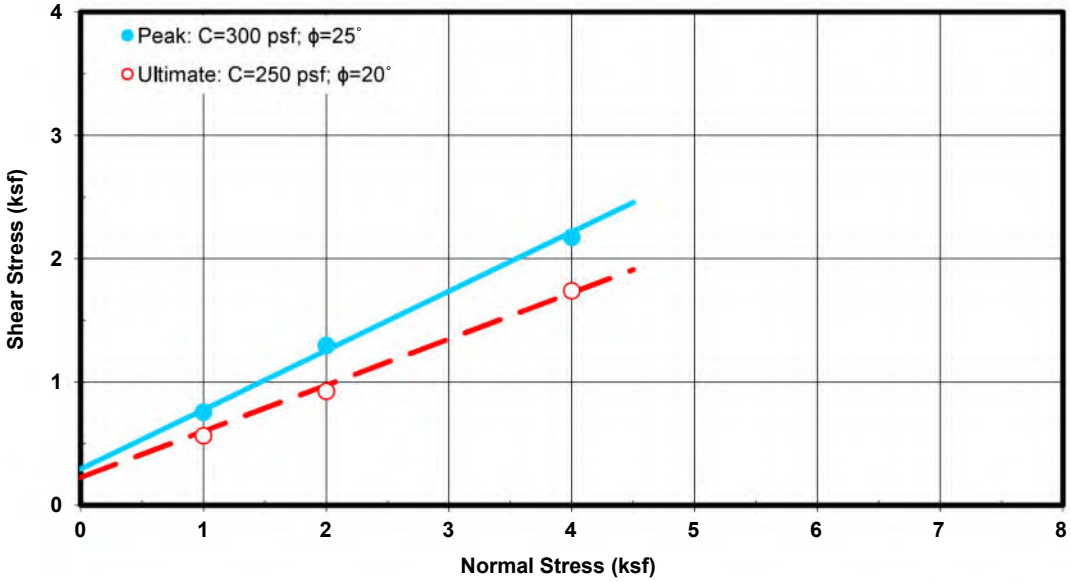
DIRECT SHEAR TEST RESULTS
ASTM D 3080

Client:	Terracon		**Tested By:**	LS	**Date:** 09/24/21
Project Name:	Compass BESS		**Computed By:**	NR	**Date:** 09/27/21
Project No.:	60215170		**Checked by:**	AP	**Date:** 09/28/21
Boring No.:	B-10				
Sample No.:	-	**Depth (ft):** 10			
Sample Type:	Mod. Cal.				
Soil Description:	Clay				
Test Condition:	Inundated	**Shear Type:** Regular			

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
108.4	79.5	36.3	41.5	88	100	1	0.755	0.564
						2	1.296	0.924
						4	2.172	1.740





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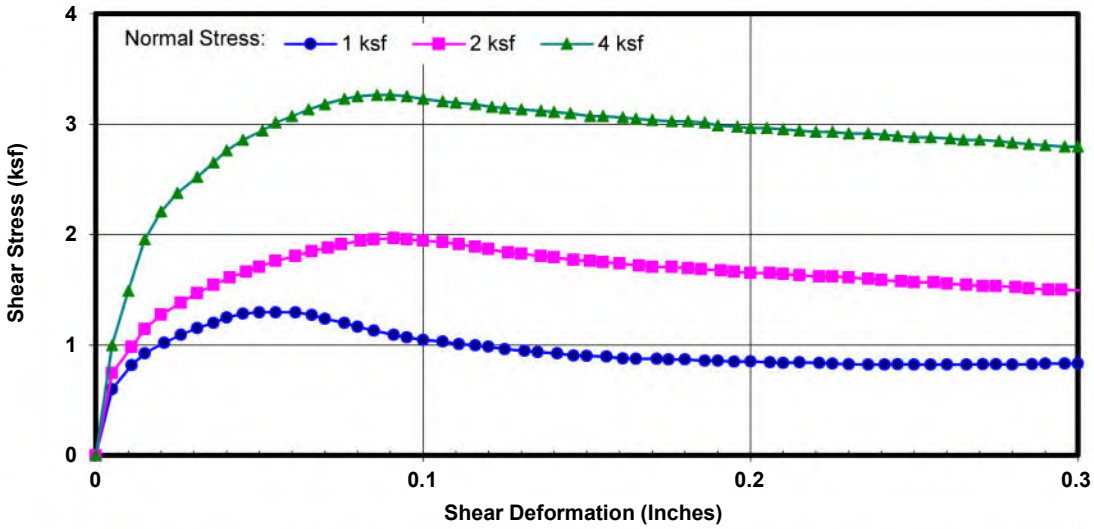
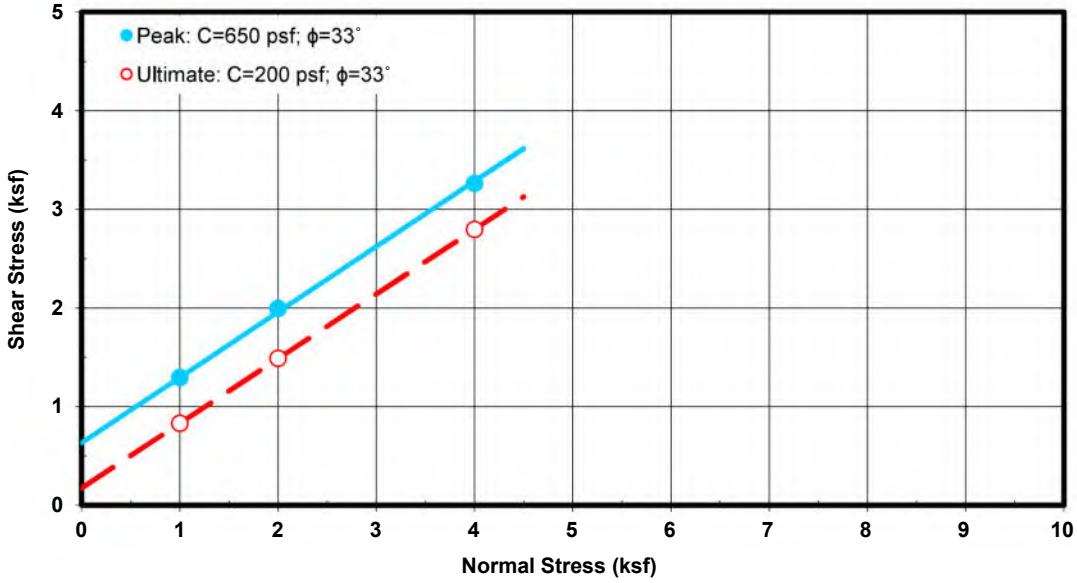
DIRECT SHEAR TEST RESULTS
ASTM D 3080

Client:	Terracon		**Tested By:**	LS	**Date:** 09/24/21
Project Name:	Compass BESS		**Computed By:**	NR	**Date:** 09/27/21
Project No.:	60215170		**Checked by:**	AP	**Date:** 09/28/21
Boring No.:	B-12				
Sample No.:	-	**Depth (ft):** 10			
Sample Type:	Mod. Cal.				
Soil Description:	Clay				
Test Condition:	Inundated	**Shear Type:** Regular			

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
124.4	107.3	15.9	21.2	75	100	1	1.296	0.831
						2	1.996	1.490
						4	3.264	2.796





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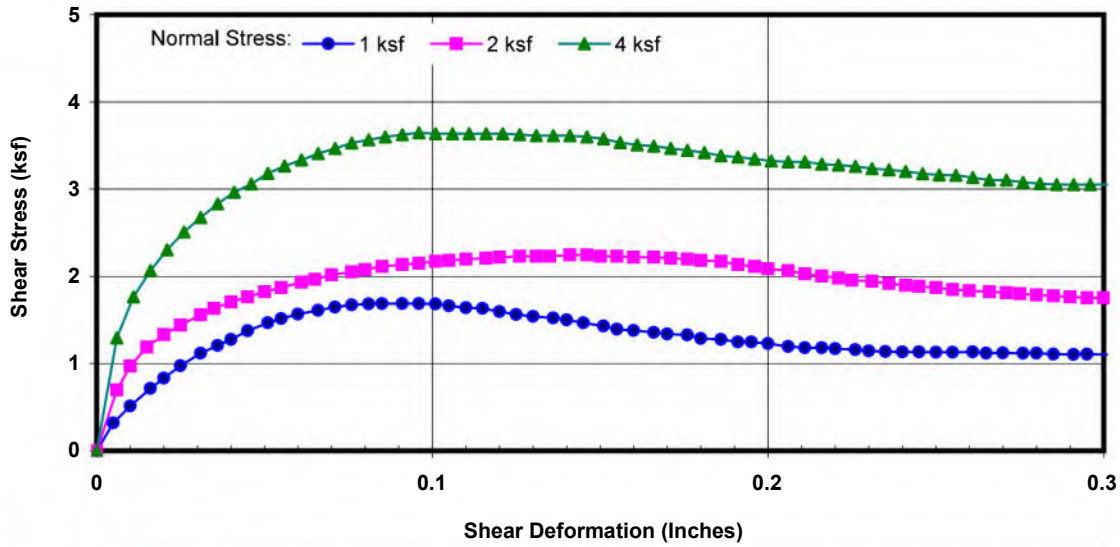
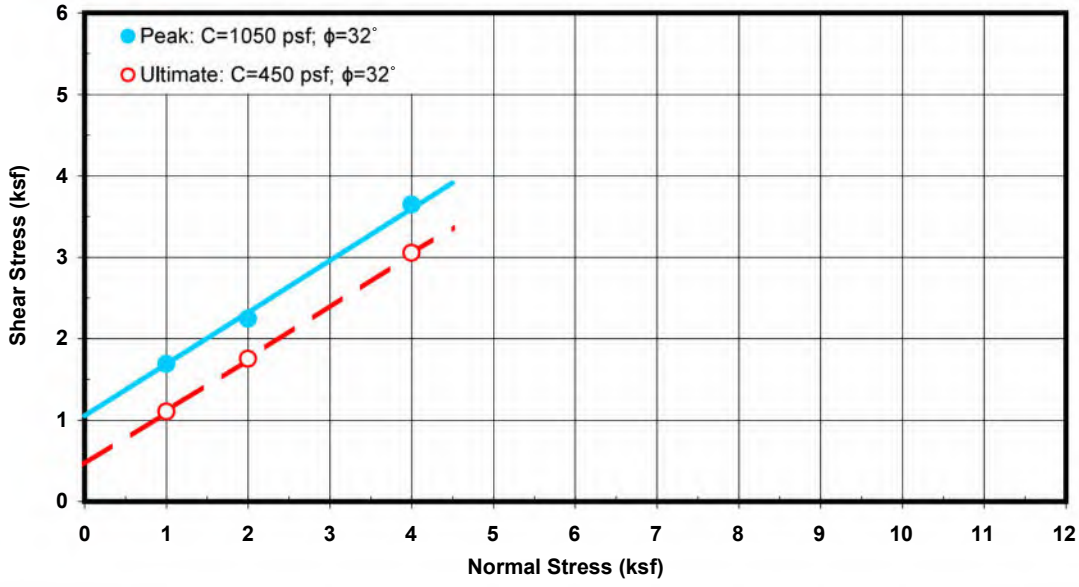
DIRECT SHEAR TEST RESULTS
ASTM D 3080

Client:	Terracon	**Tested By:**	LS	**Date:**	09/23/21
Project Name:	Compass BESS	**Computed By:**	NR	**Date:**	09/24/21
Project No.:	60215170	**Checked by:**	AP	**Date:**	09/28/21
Boring No.:	B-13				
Sample No.:	-	**Depth (ft):**	10		
Sample Type:	Mod. Cal.				
Soil Description:	Silty Clay				
Test Condition:	Inundated	**Shear Type:**	Regular		

Wet Unit Weight (pcf)	Dry Unit Weight (pcf)	Initial Moisture Content (%)	Final Moisture Content (%)	Initial Degree Saturation (%)	Final Degree Saturation (%)	Normal Stress (ksf)	Peak Shear Stress (ksf)	Ultimate Shear Stress (ksf)
128.3	105.5	21.6	22.0	98	100	1	1.688	1.103
						2	2.244	1.752
						4	3.648	3.052





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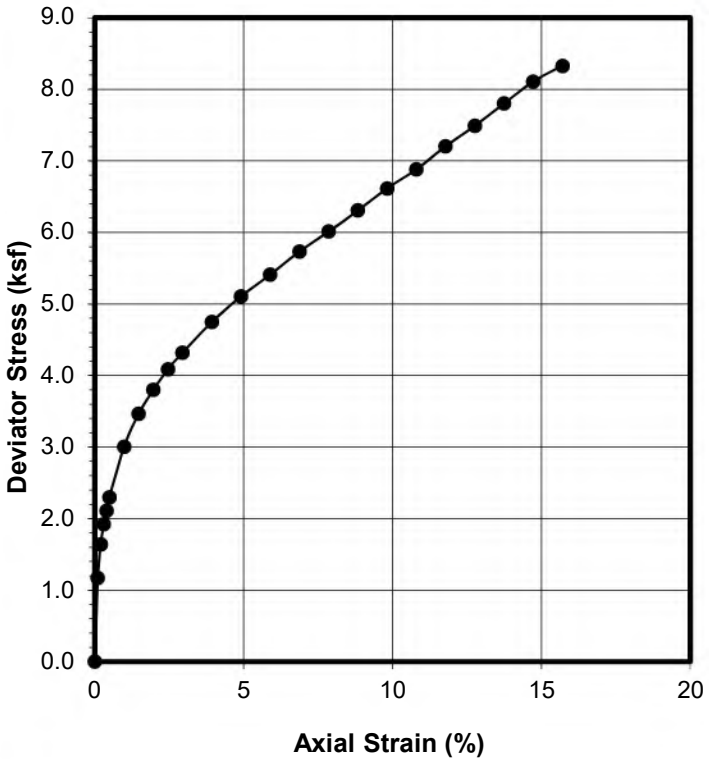
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
ASTM D 2850

Client Name:	Terracon		Tested By:	ST	Date: 09/23/21
Project Name:	Compass BESS		Checked by:	AP	Date: 09/28/21
Project No.:	60215170				
Boring No.:	B-5				
Sample No.:	-	Depth (feet): 60			
Soil Description	Silty Clay		Sample Type:	Mod. Cal.	

Sample Diameter (inch):	2.409	Wet Unit Weight (pcf):	128.7
Sample Height (inch):	5.093	Dry Unit Weight (pcf):	107.9
Sample Weight (g):	784.51	Moisture Content (%):	19.3
Wt. of Wet Soil+Container (g):	125.17	Void Ratio for Gs=2.7:	0.56
Wt. of Dry Soil+Container (g):	113.09	% Saturation:	92.7
Wt. of Container (g):	50.47		

TEST DATA

Cell Pressure (ksf):	7.00
Back Pressure (ksf):	0.0
Tested Total Confining Pressure (ksf):	7.00
Shear Rate (%/min):	0.3
Maximum Deviator Stress (ksf):	8.33
Ultimate Deviator Stress (ksf):	8.33
Ultimate Undrained Shear Strength (ksf):	4.16
Axial Strain @ Maximum Stress (%)	15.71



Load (lbs)	Def. (inch)	Area (sq.in)	Deviator Stress (ksf)	Axial Strain (%)
0	0.000	4.56	0.00	0.00
37	0.005	4.56	1.17	0.10
52	0.010	4.57	1.64	0.20
61	0.015	4.57	1.92	0.29
67	0.020	4.57	2.11	0.39
73	0.025	4.58	2.30	0.49
96	0.050	4.60	3.00	0.98
111	0.075	4.62	3.47	1.47
123	0.100	4.65	3.80	1.96
133	0.125	4.67	4.09	2.45
141	0.150	4.69	4.32	2.95
156	0.200	4.74	4.75	3.93
170	0.250	4.79	5.11	4.91
182	0.300	4.84	5.41	5.89
195	0.350	4.89	5.73	6.87
207	0.400	4.95	6.01	7.85
219	0.450	5.00	6.31	8.84
232	0.500	5.05	6.61	9.82
244	0.550	5.11	6.88	10.80
258	0.600	5.17	7.20	11.78
272	0.650	5.22	7.49	12.76
286	0.700	5.28	7.80	13.74
301	0.750	5.34	8.11	14.73
313	0.800	5.41	8.33	15.71

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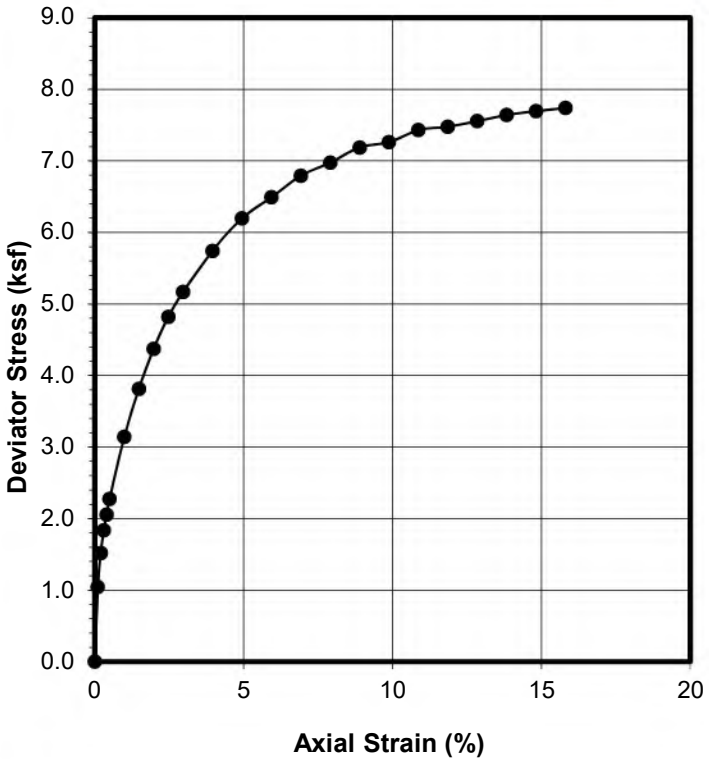
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
ASTM D 2850

Client Name:	Terracon		Tested By:	ST	Date: 09/23/21
Project Name:	Compass BESS		Checked by:	AP	Date: 09/28/21
Project No.:	60215170				
Boring No.:	B-13				
Sample No.:	-	Depth (feet): 30			
Soil Description	Lean Clay		Sample Type:	Mod. Cal.	

Sample Diameter (inch):	2.404	Wet Unit Weight (pcf):	122.4
Sample Height (inch):	5.061	Dry Unit Weight (pcf):	95.9
Sample Weight (g):	738.50	Moisture Content (%):	27.7
Wt. of Wet Soil+Container (g):	152.54	Void Ratio for Gs=2.7:	0.76
Wt. of Dry Soil+Container (g):	130.29	% Saturation:	98.7
Wt. of Container (g):	49.92		

TEST DATA

Cell Pressure (ksf):	3.50
Back Pressure (ksf):	0.0
Tested Total Confining Pressure (ksf):	3.50
Shear Rate (%/min):	0.3
Maximum Deviator Stress (ksf):	7.74
Ultimate Deviator Stress (ksf):	7.74
Ultimate Undrained Shear Strength (ksf):	3.87
Axial Strain @ Maximum Stress (%)	15.81



Load (lbs)	Def. (inch)	Area (sq.in)	Deviator Stress (ksf)	Axial Strain (%)
0	0.000	4.54	0.00	0.00
33	0.005	4.54	1.05	0.10
48	0.010	4.55	1.52	0.20
58	0.015	4.55	1.84	0.30
65	0.020	4.56	2.05	0.40
72	0.025	4.56	2.27	0.49
100	0.050	4.58	3.14	0.99
122	0.075	4.61	3.81	1.48
141	0.100	4.63	4.37	1.98
156	0.125	4.65	4.82	2.47
168	0.150	4.68	5.17	2.96
188	0.200	4.72	5.74	3.95
205	0.250	4.77	6.20	4.94
217	0.300	4.82	6.49	5.93
230	0.350	4.87	6.79	6.92
239	0.400	4.93	6.98	7.90
249	0.450	4.98	7.19	8.89
254	0.500	5.04	7.26	9.88
263	0.550	5.09	7.43	10.87
267	0.600	5.15	7.48	11.86
273	0.650	5.21	7.56	12.84
280	0.700	5.27	7.64	13.83
285	0.750	5.33	7.70	14.82
290	0.800	5.39	7.74	15.81

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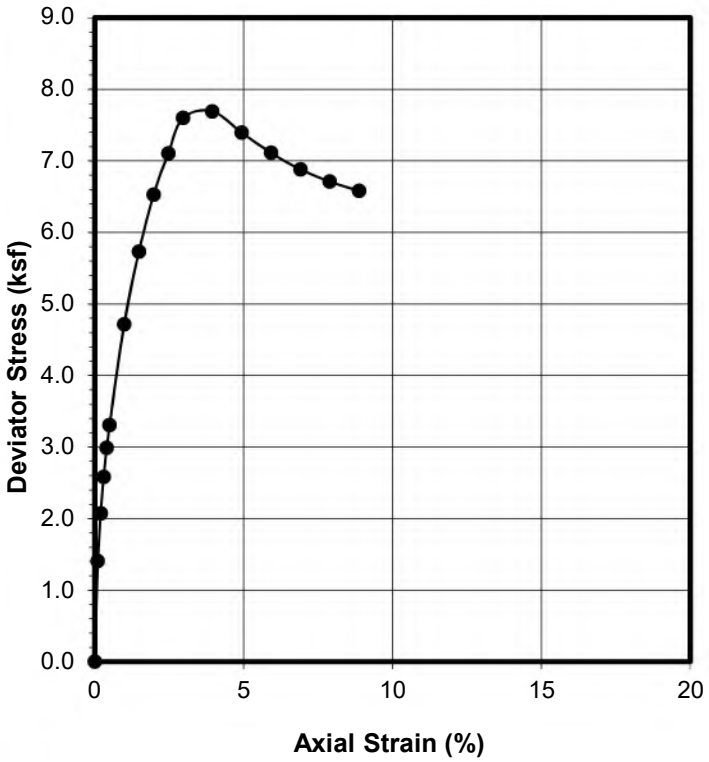
UNCONSOLIDATED UNDRAINED TRIAXIAL TEST (UU,Q)
ASTM D 2850

Client Name:	Terracon		Tested By:	ST	Date: 09/23/21
Project Name:	Compass BESS		Checked by:	AP	Date: 09/28/21
Project No.:	60215170				
Boring No.:	B-19				
Sample No.:	-	Depth (feet): 45			
Soil Description	Silty Clay		Sample Type:	Mod. Cal.	

Sample Diameter (inch):	2.395	Wet Unit Weight (pcf):	113.3
Sample Height (inch):	5.070	Dry Unit Weight (pcf):	85.6
Sample Weight (g):	679.89	Moisture Content (%):	32.4
Wt. of Wet Soil+Container (g):	105.81	Void Ratio for Gs=2.7:	0.97
Wt. of Dry Soil+Container (g):	92.53	% Saturation:	90.3
Wt. of Container (g):	51.56		

TEST DATA

Cell Pressure (ksf):	5.00
Back Pressure (ksf):	0.0
Tested Total Confining Pressure (ksf):	5.00
Shear Rate (%/min):	0.3
Maximum Deviator Stress (ksf):	7.69
Ultimate Deviator Stress (ksf):	6.58
Ultimate Undrained Shear Strength (ksf):	3.29
Axial Strain @ Maximum Stress (%)	3.94



Load (lbs)	Def. (inch)	Area (sq.in)	Deviator Stress (ksf)	Axial Strain (%)
0	0.000	4.51	0.00	0.00
44	0.005	4.51	1.40	0.10
65	0.010	4.52	2.07	0.20
81	0.015	4.52	2.58	0.30
94	0.020	4.52	2.99	0.39
104	0.025	4.53	3.31	0.49
149	0.050	4.55	4.71	0.99
182	0.075	4.57	5.73	1.48
208	0.100	4.60	6.53	1.97
228	0.125	4.62	7.11	2.47
245	0.150	4.64	7.60	2.96
251	0.200	4.69	7.69	3.94
243	0.250	4.74	7.39	4.93
237	0.300	4.79	7.11	5.92
231	0.350	4.84	6.88	6.90
228	0.400	4.89	6.71	7.89
226	0.450	4.95	6.58	8.88

Appendix D
Liquefaction

GeoLogismiki
Geotechnical Engineers
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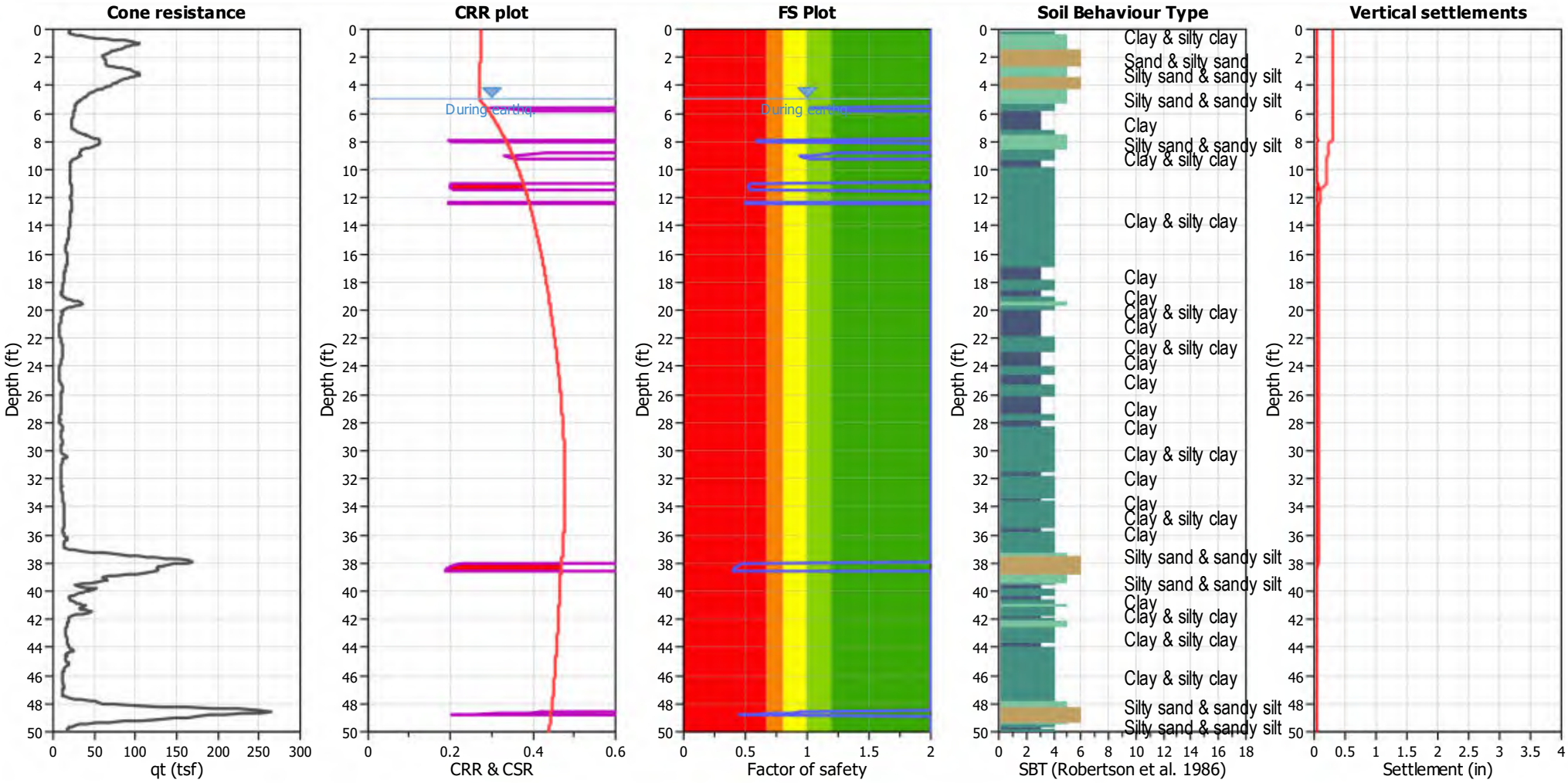
Project: **Compass 22011-01**
Location: **San Juan Capistrano**

CPT: CPT-1
Total depth: 63.92 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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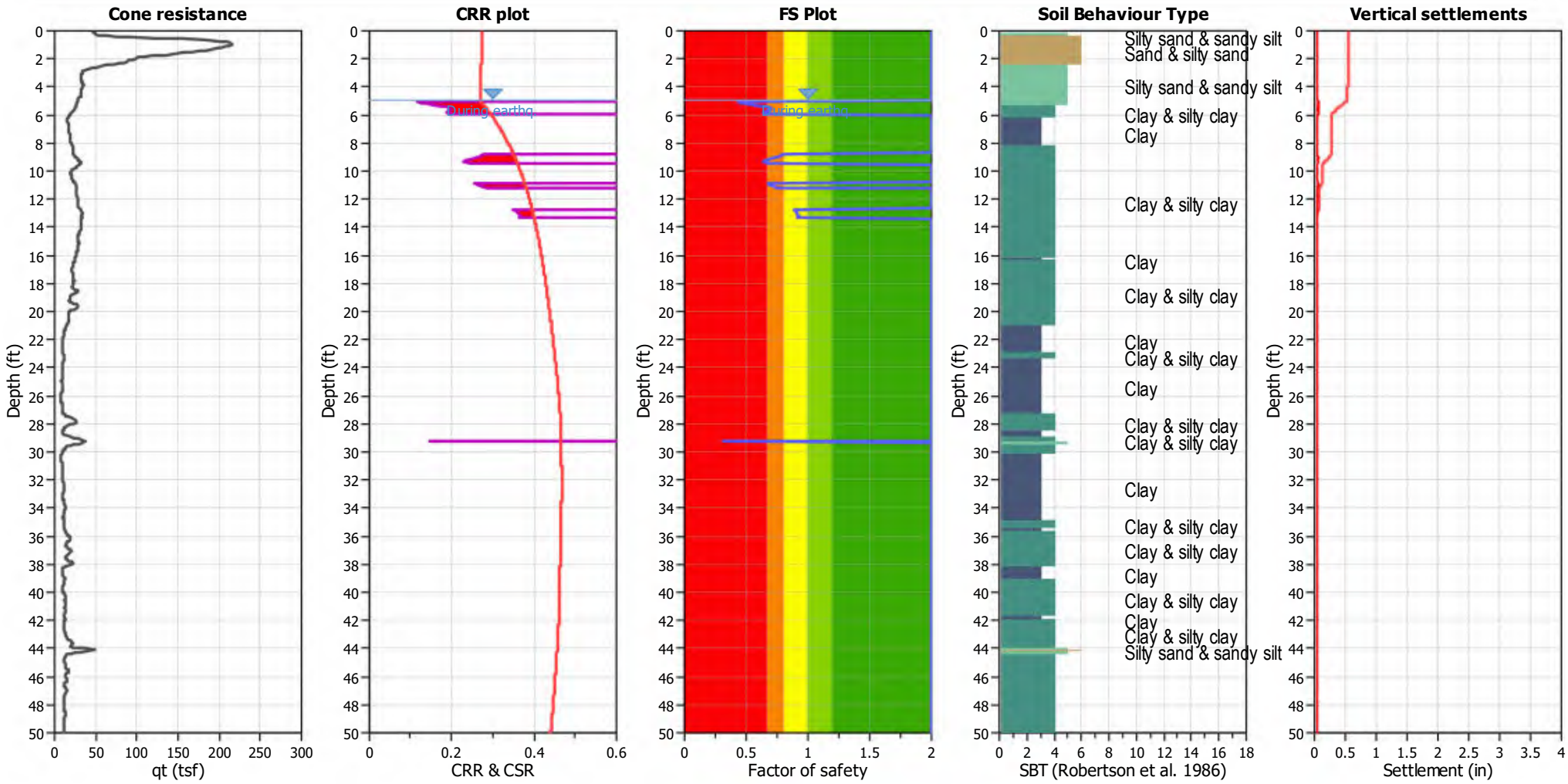
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-2
Total depth: 100.33 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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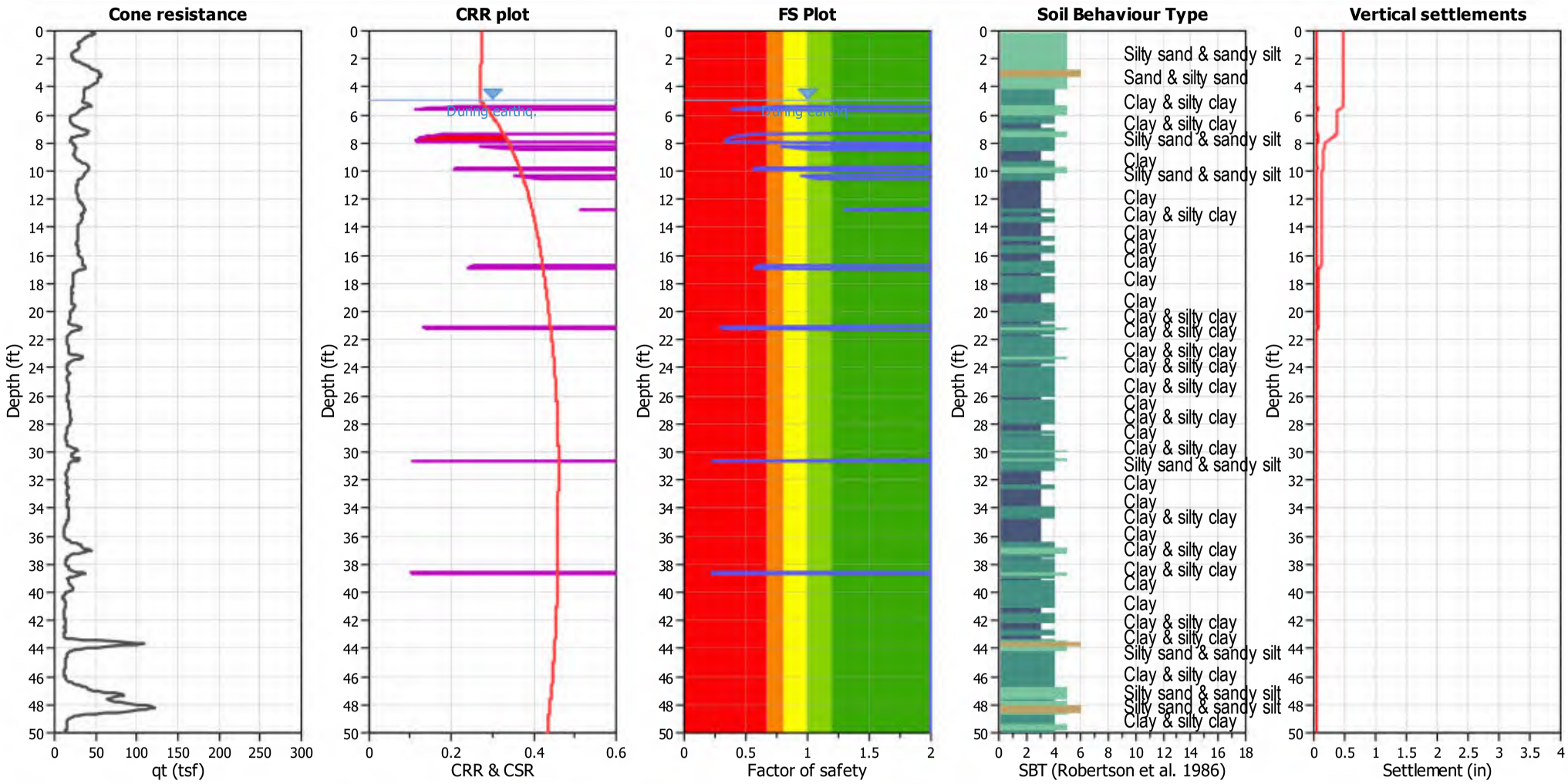
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-3
Total depth: 100.41 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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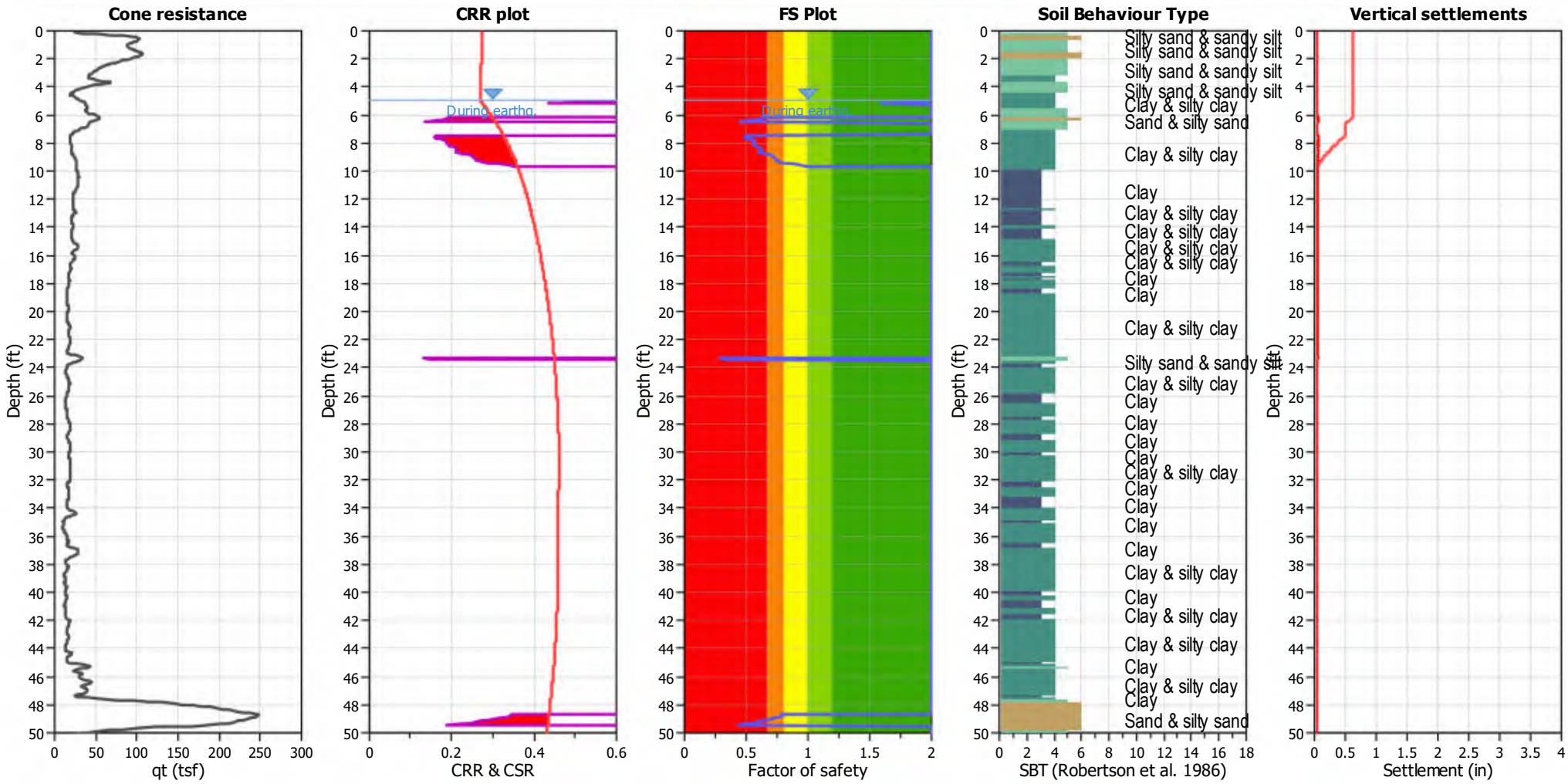
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-4
Total depth: 100.34 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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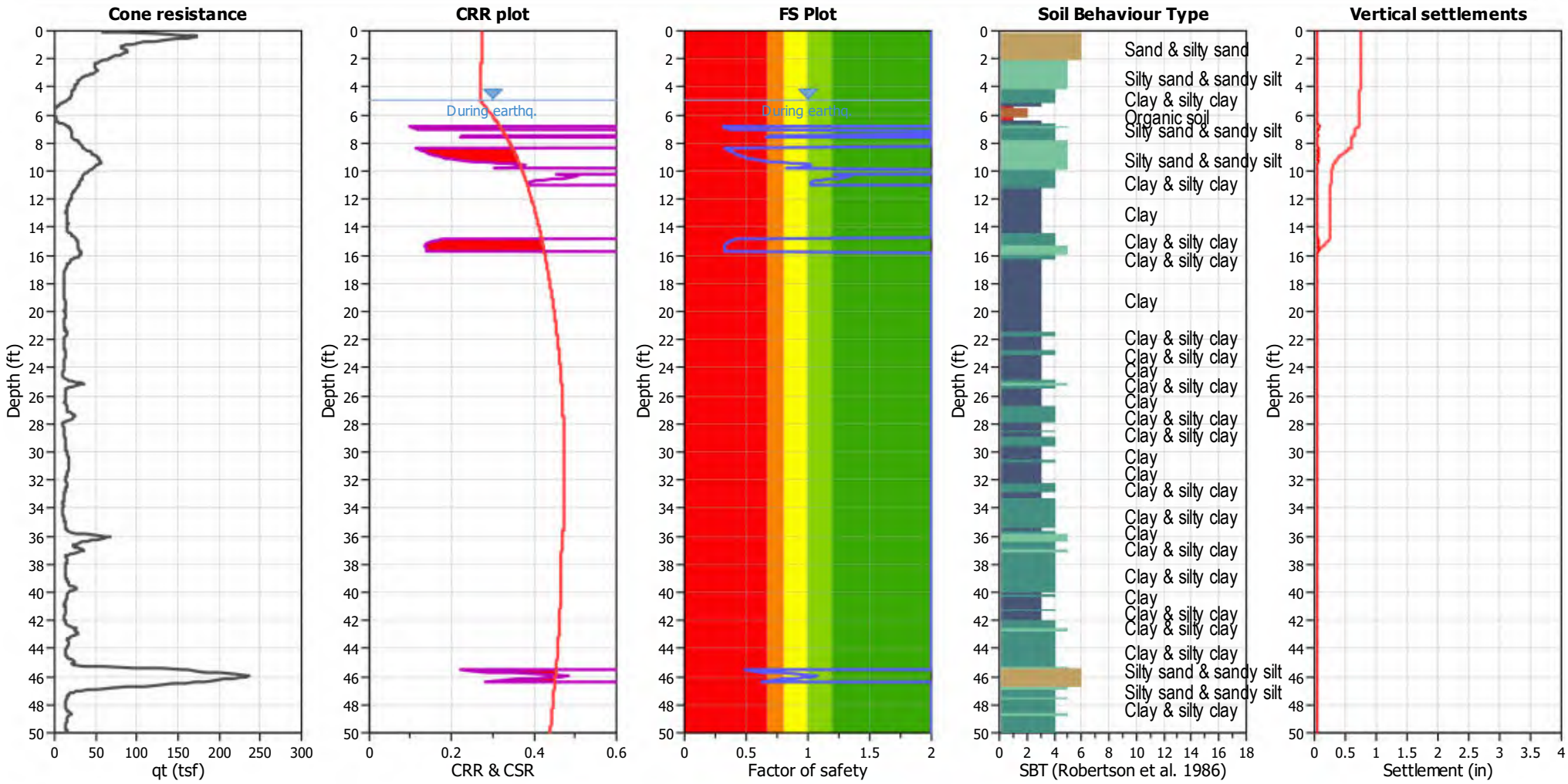
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-5
Total depth: 100.41 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	45.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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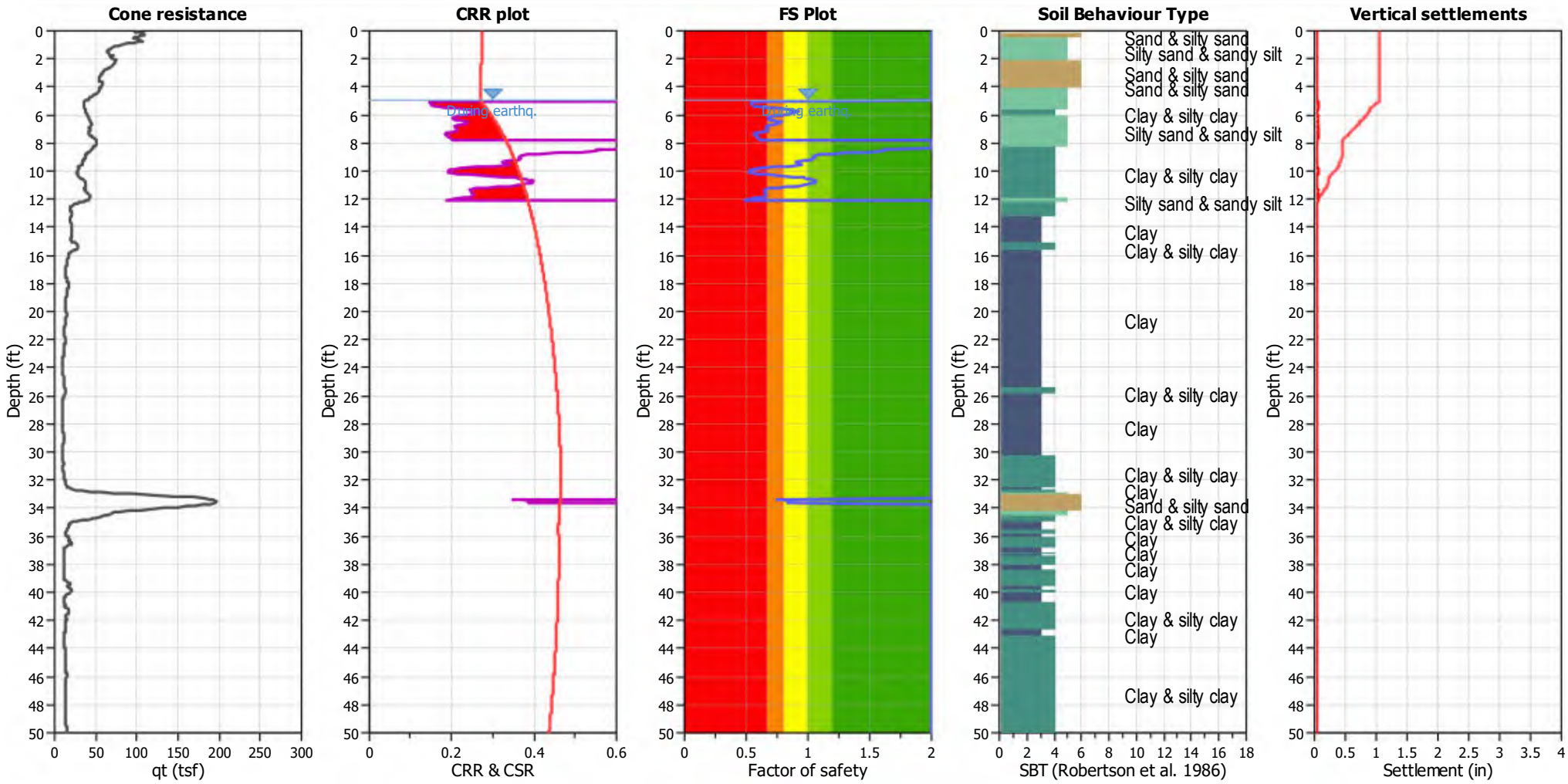
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-6
Total depth: 93.05 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	45.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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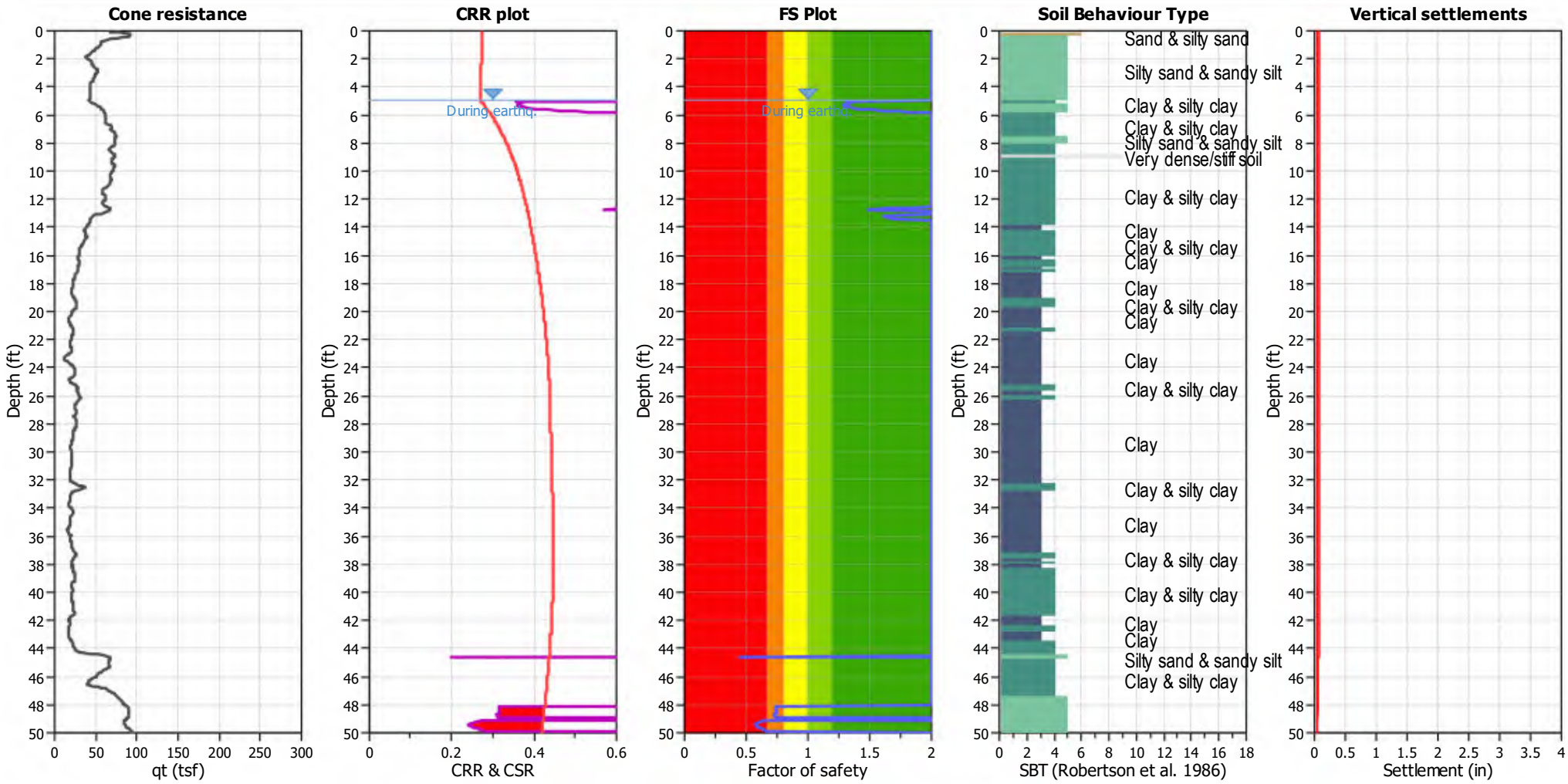
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-7
Total depth: 68.78 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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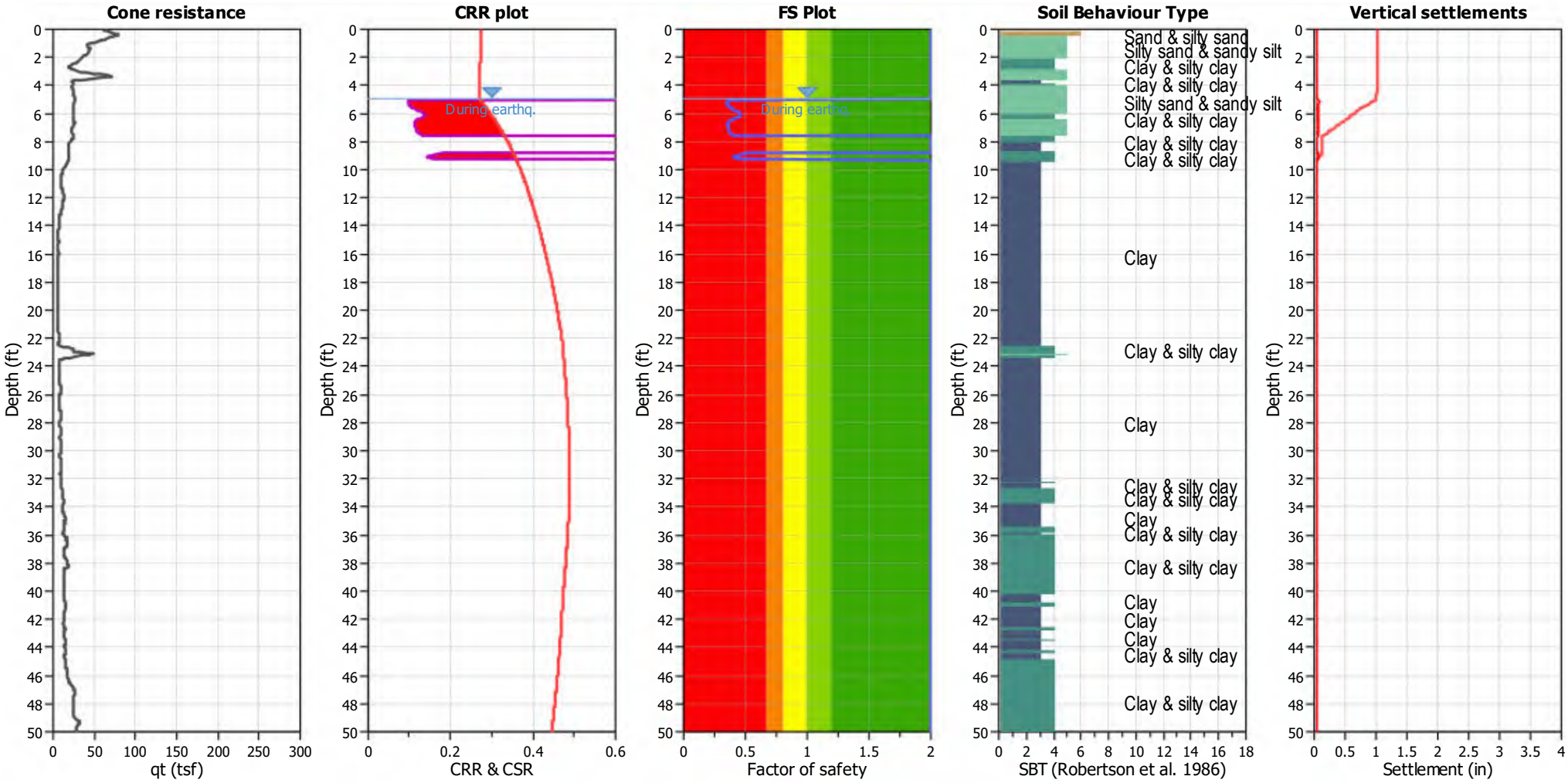
Project: **Compass 22011-01**
Location: **San Juan Capistrano**

CPT: CPT-8
Total depth: 90.43 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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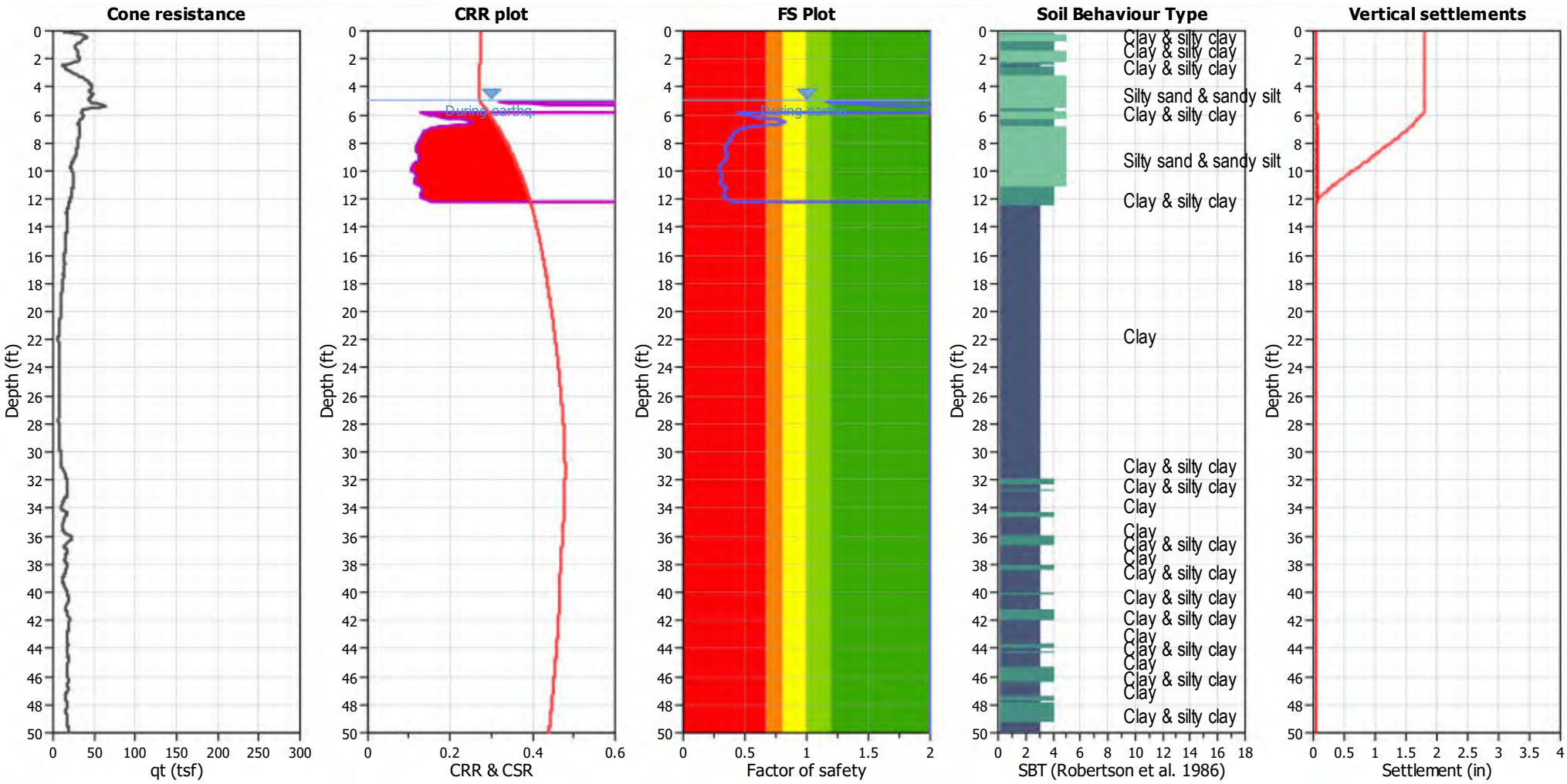
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-9
Total depth: 95.56 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	48.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	Yes
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	50.00 ft
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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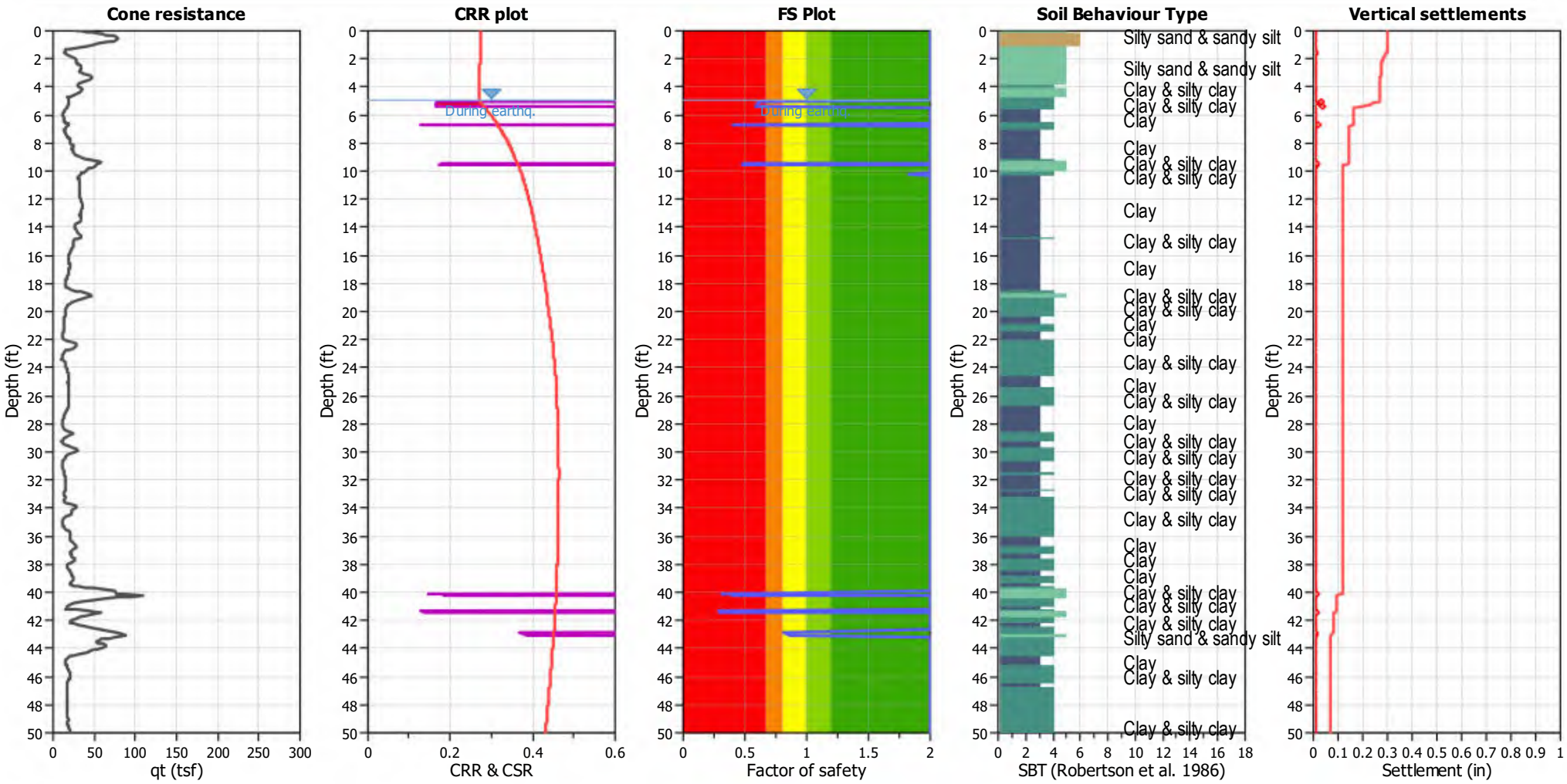
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-10
Total depth: 84.48 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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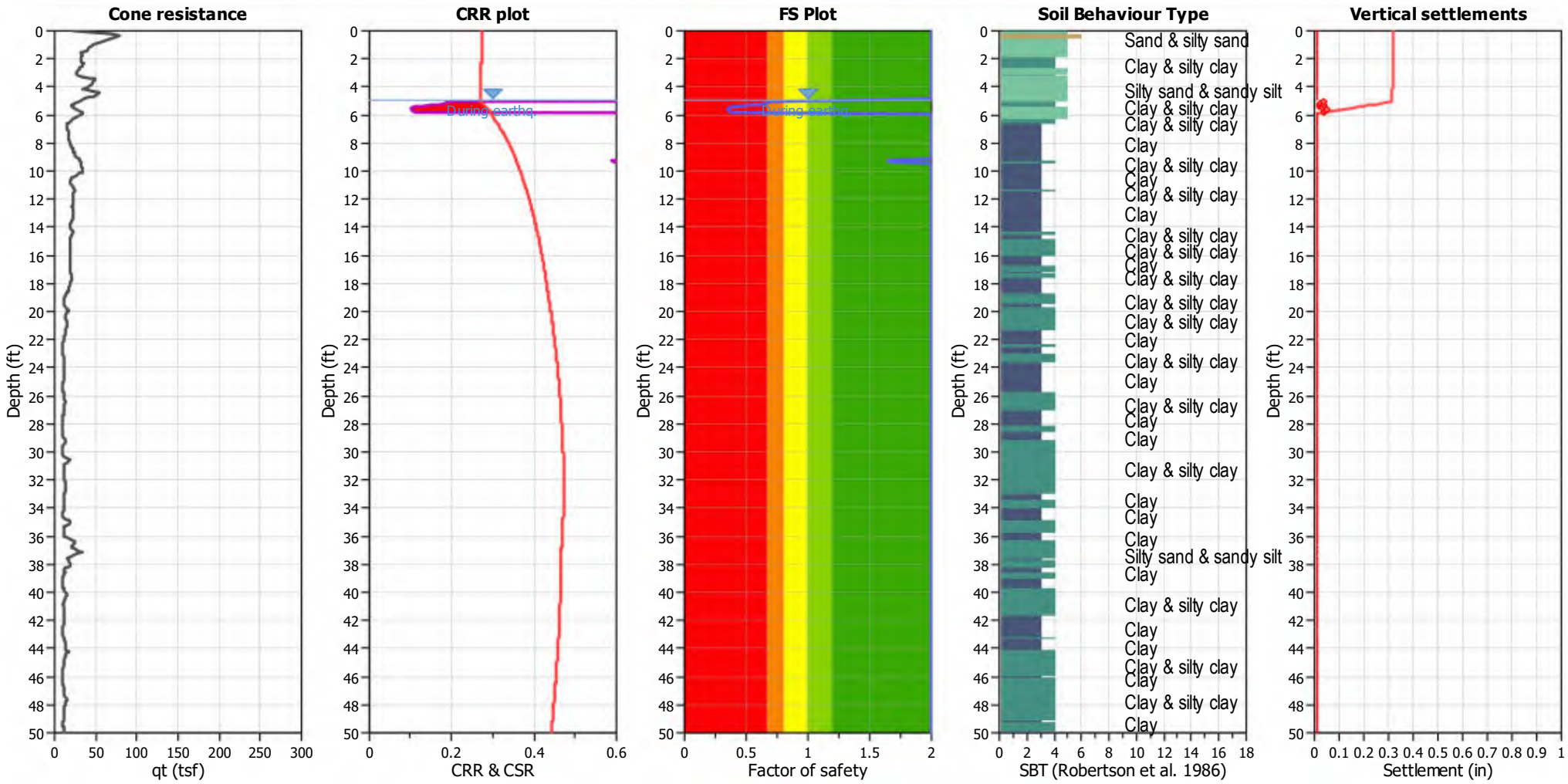
Project: **Compass 22011-01**
Location: **San Juan Capistrano**

CPT: CPT-11
Total depth: 97.94 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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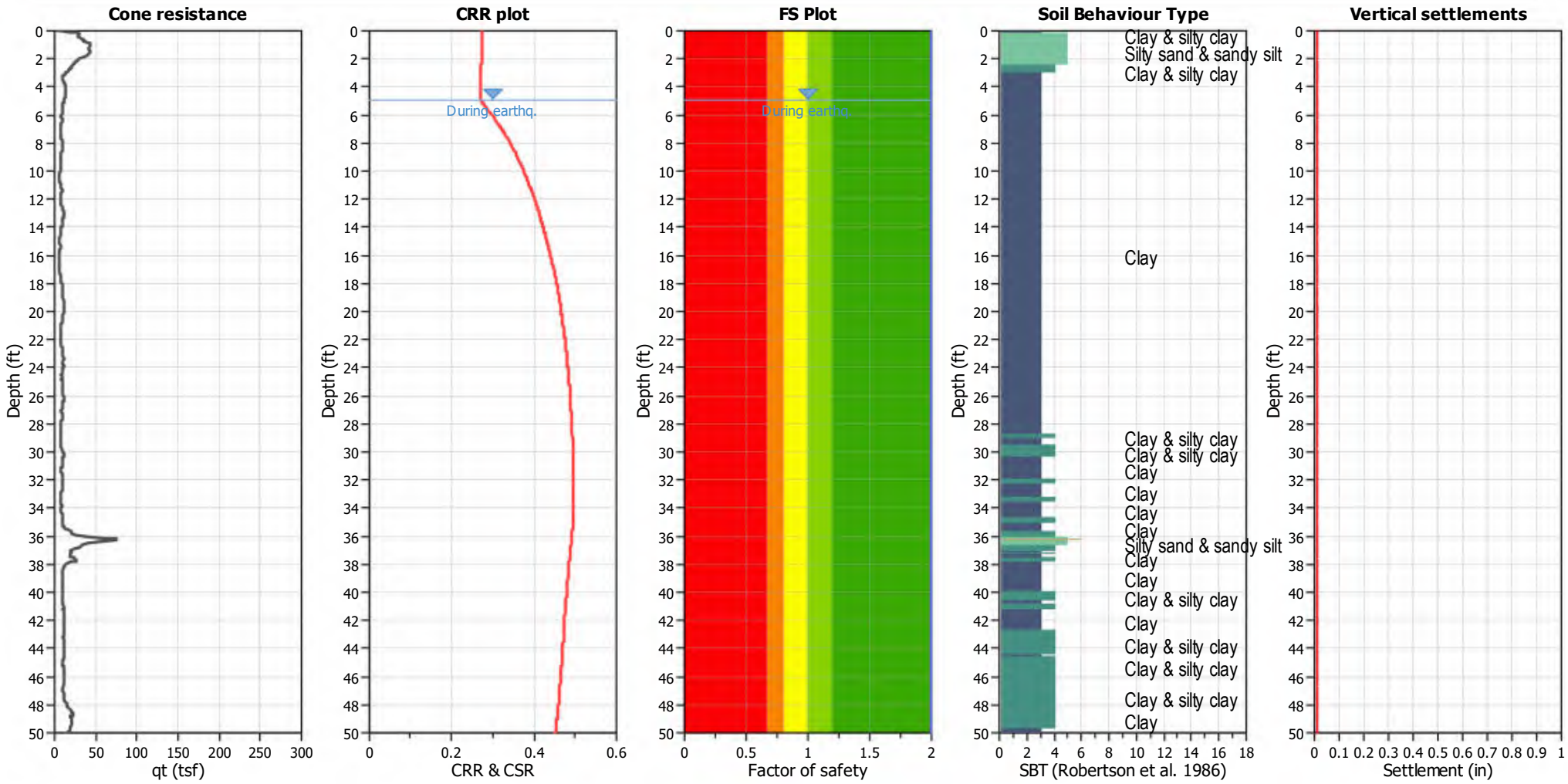
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-12
Total depth: 78.22 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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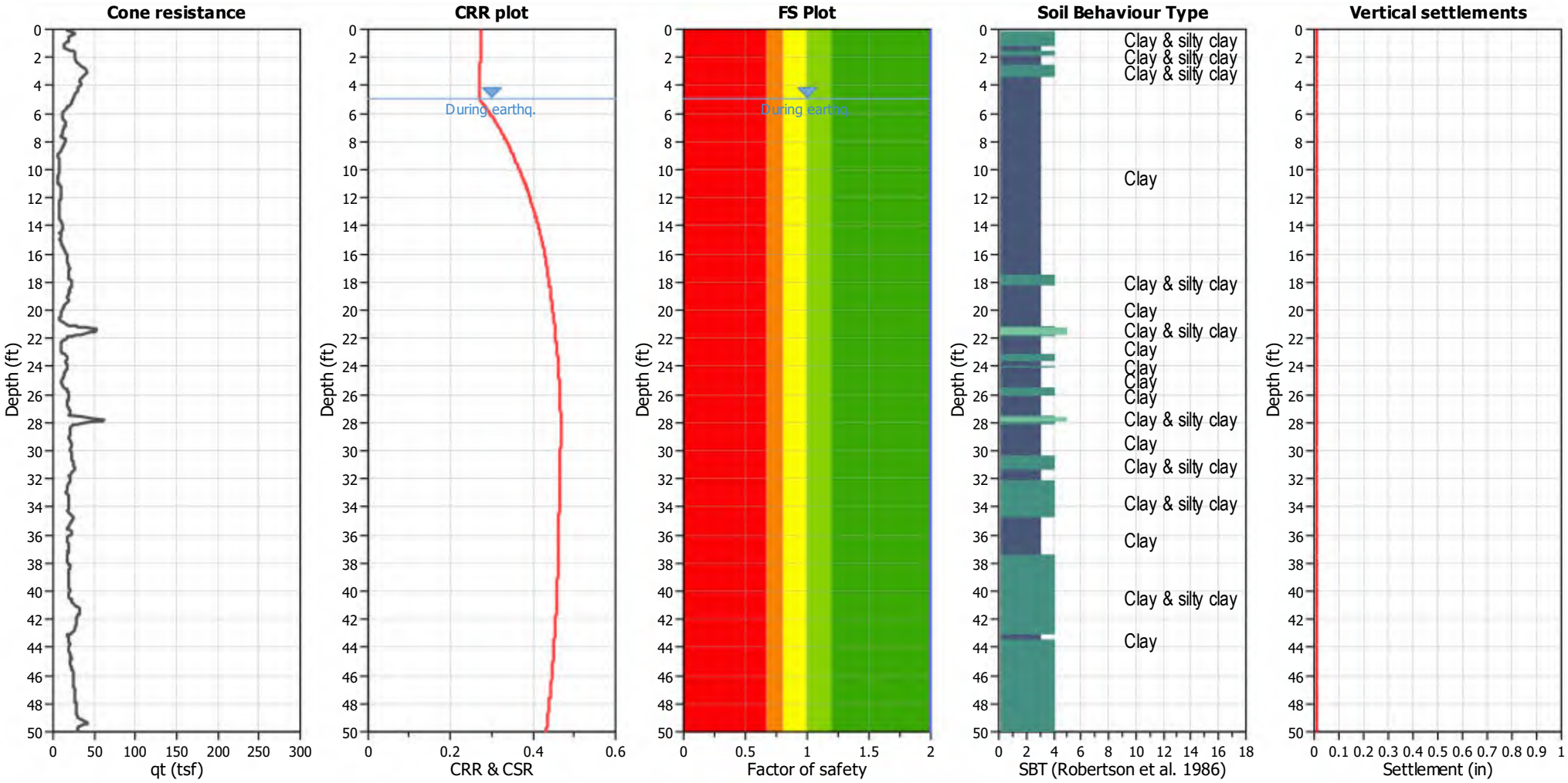
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-13
Total depth: 75.70 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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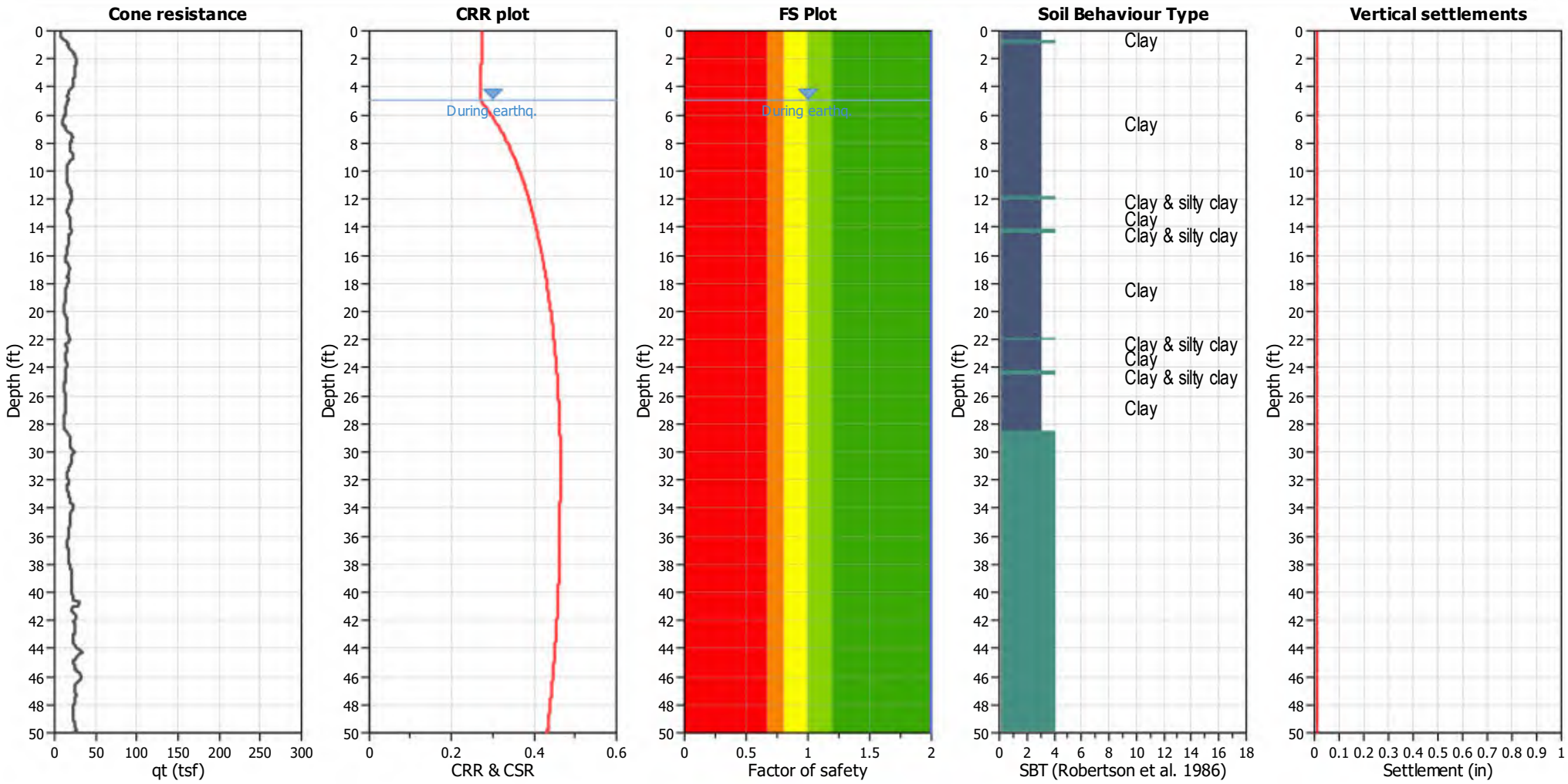
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-14
Total depth: 82.17 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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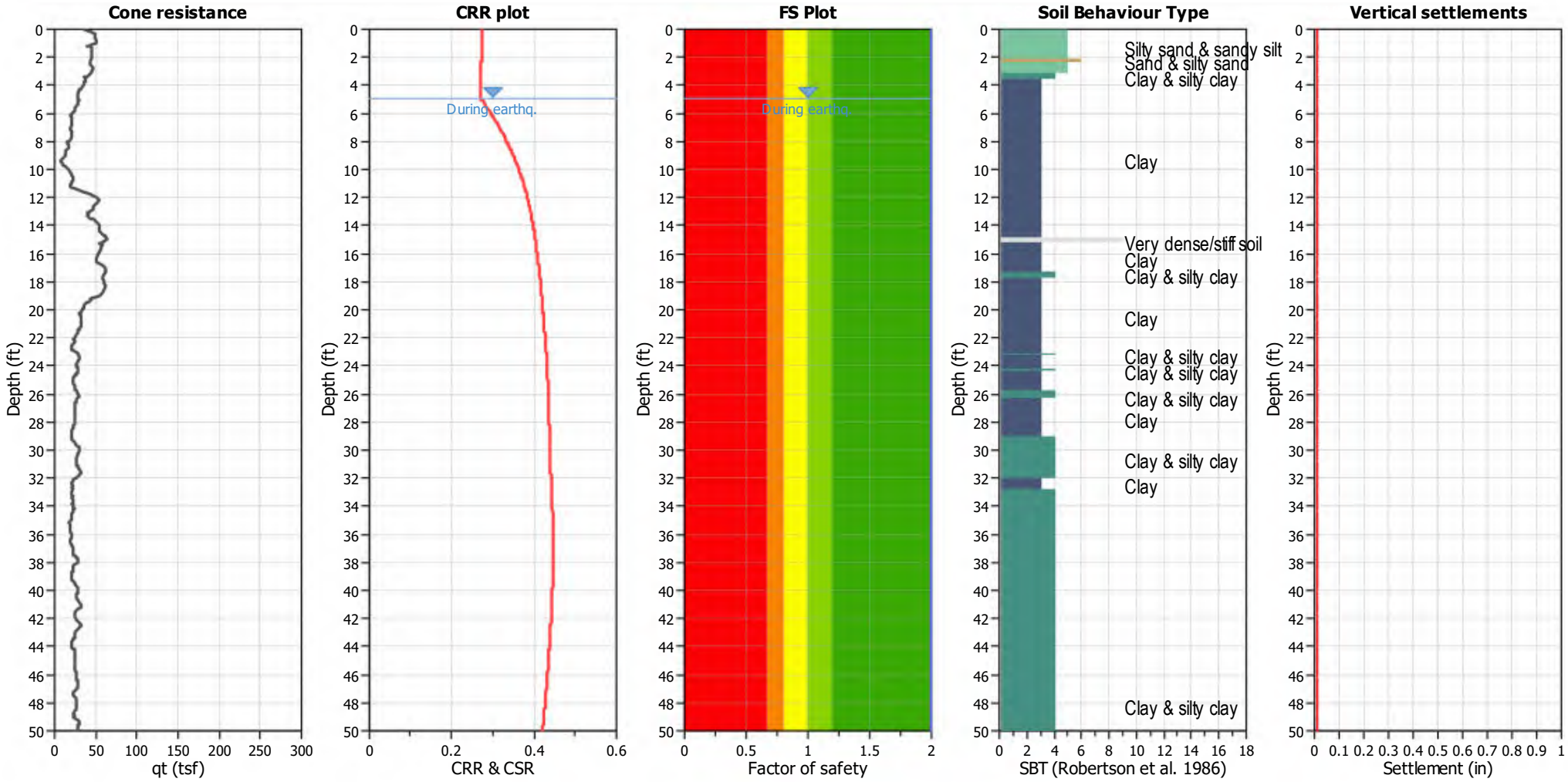
Project: **Compass 22011-01**
Location: **San Juan Capistrano**

CPT: CPT-15
Total depth: 89.87 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

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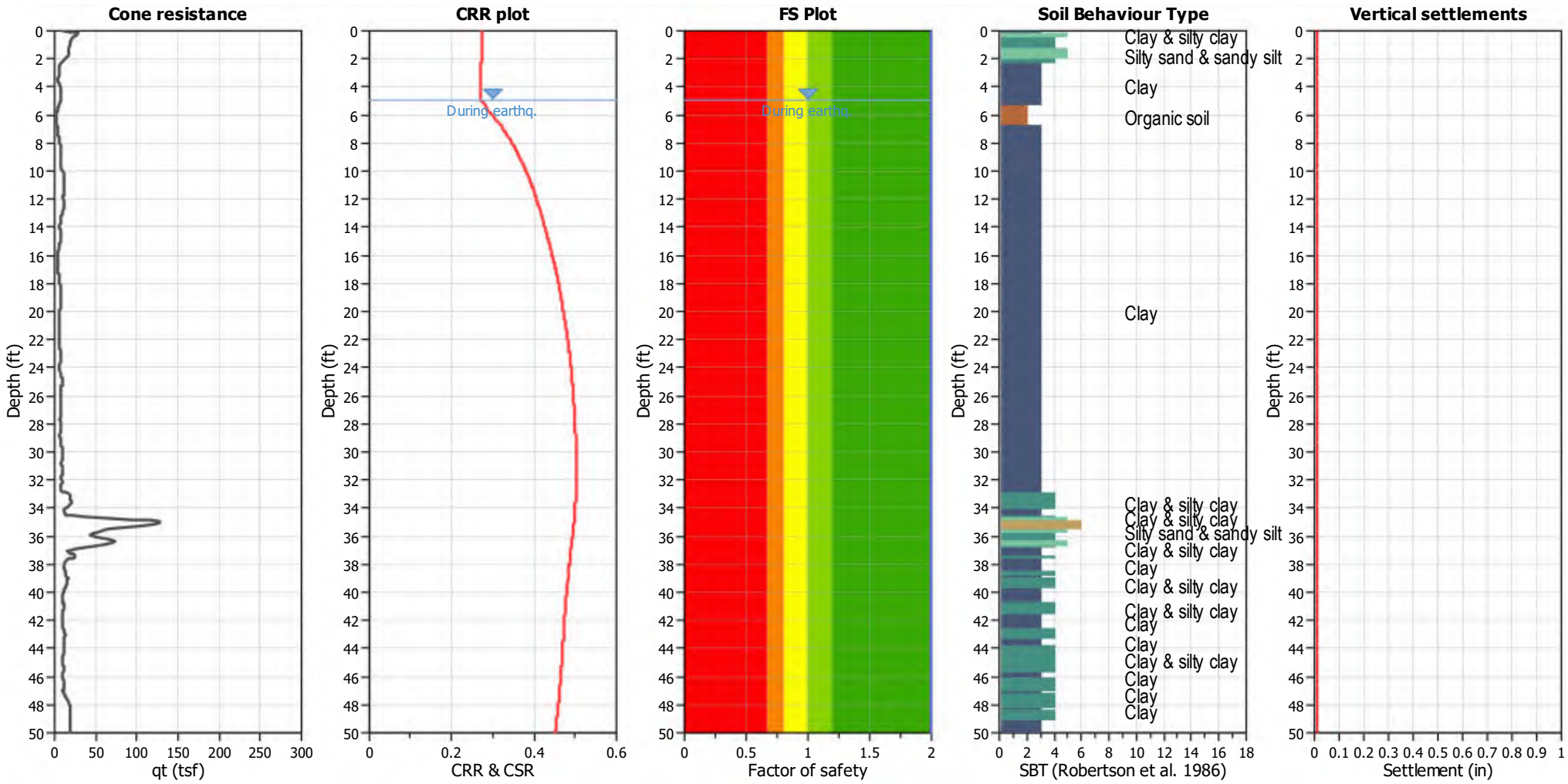
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-16
Total depth: 92.63 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

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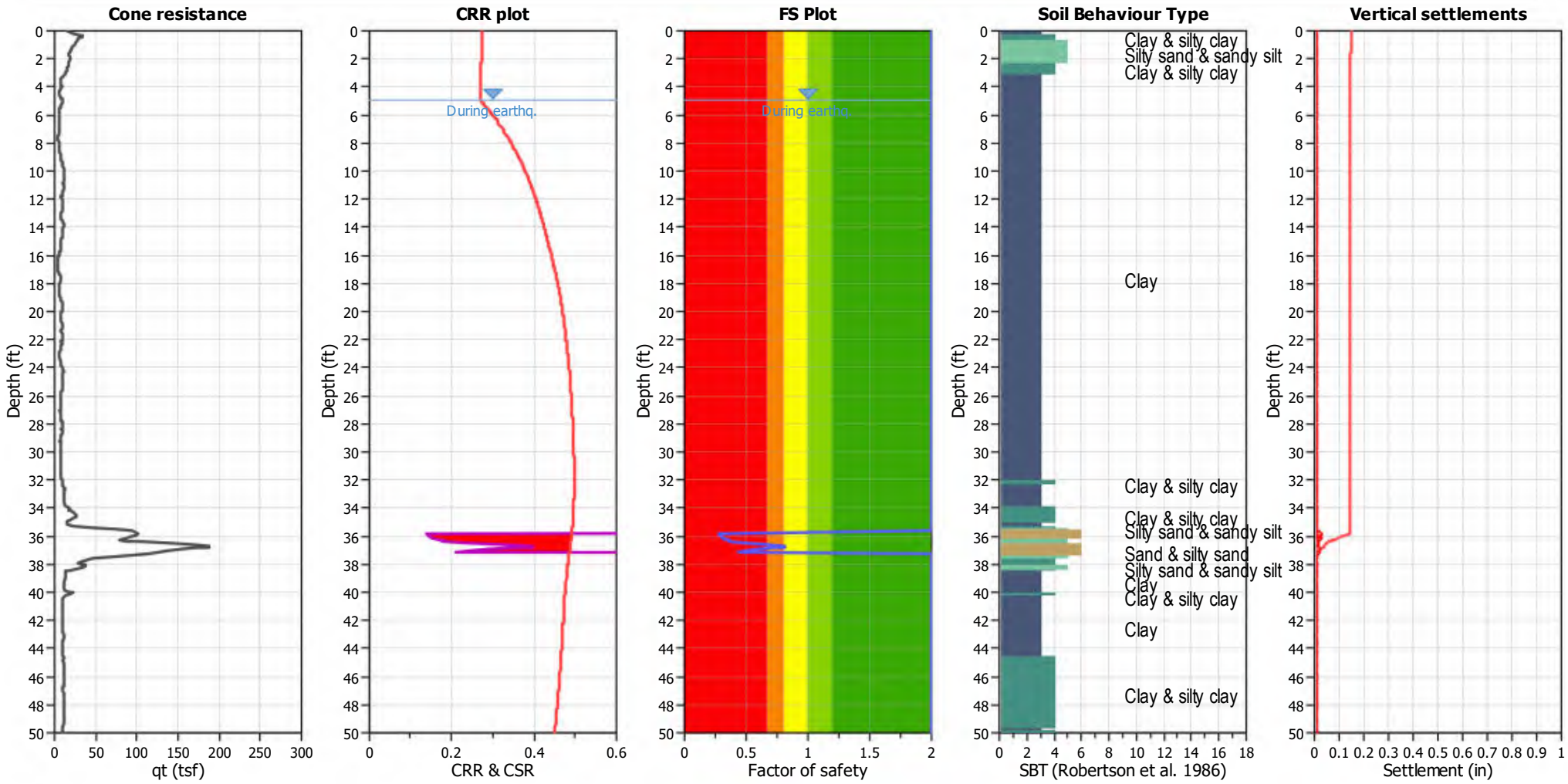
Project: Compass 22011-01
Location: San Juan Capistrano

CPT: CPT-17
Total depth: 100.18 ft



Analysis method:	NCEER (1998)	G.W.T. (in-situ):	35.00 ft	Use fill:	No	Clay like behavior applied:	Sands only
Fines correction method:	NCEER (1998)	G.W.T. (earthq.):	5.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.70	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.56	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

.

Appendix E
Slope Stability Analysis

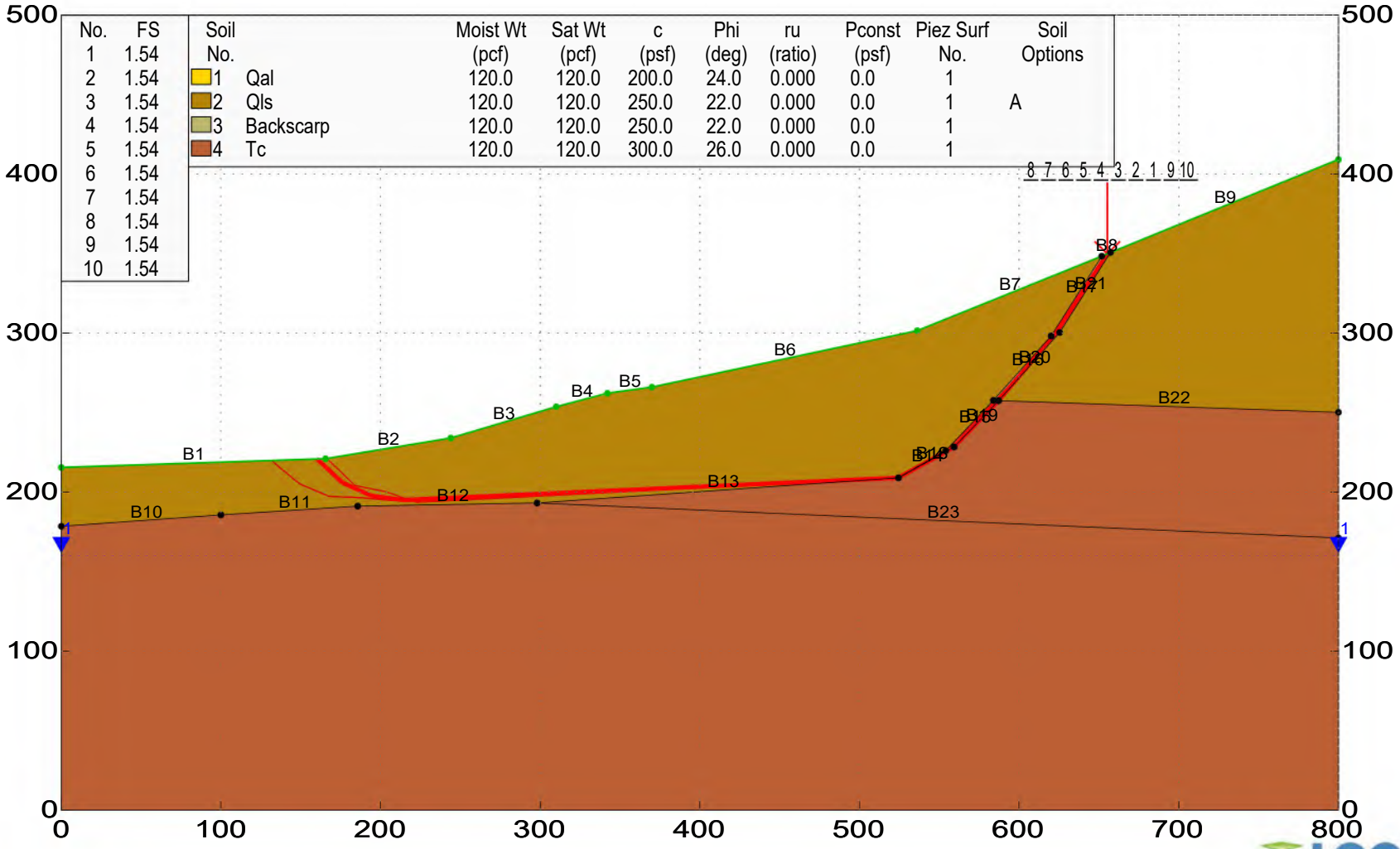
Summary of Slope Stability Analysis

Cross-Section	Folder Date	File Name	Factor of Safety	Description
A-A'	2024_03_29	xa	1.54	Existing Profile – Entire Qls - Static
	2024_03_29	xae	1.10	Existing Profile – Entire Qls - Seismic
	2024_03_29	xau	1.52	Existing Profile – Upper Claybed - Static
	2024_03_29	xaue	1.07	Existing Profile – Upper Claybed - Seismic
B-B'	2023_01_25	xb	2.06	Existing Profile – Entire Qls - Static
	2023_03_10	xbe	1.22	Existing Profile – Entire Qls - Seismic
C-C'	2024_04_04	xc	1.51	Oso Creek Channel Setback – Static
	2024_04_04	xce	1.12	Oso Creek Channel Setback - Seismic
H-H'	2023_10_27	xhLRG	1.42	Existing Profile - Larger Qls – Static
	2024_04_03	xhLRGe	1.05	Existing Profile - Larger Qls – Seismic
	2024_03_21	xh	1.47	Existing Profile - Smaller Qls - Static
	2024_04_03	xhe	0.94	Existing Profile - Smaller Qls - Seismic
	2024_03_21	xhLRGd	1.42	Design Profile – Larger Qls - Static
	2024_04_04	xhLRGde	1.05	Design Profile – Larger Qls - Seismic
	2024_03_21	xhd	1.47	Design Profile - Smaller Qls – Static
	2024_04_03	xhde	0.94	Design Profile - Smaller Qls – Seismic
Generic		----	2.03	Surficial Slope Stability

Soil Type	Static		Seismic		Total Soil Unit Weight (pcf)
	φ (Degrees)	Cohesion (psf)	φ (Degrees)	Cohesion (psf)	
Compacted Fill	26	300	26	300	120
Backscarp	22	250	30	300	120
Landslide Material (Qls)	22	250	30	300	120
Landslide Basal Rupture Surface	14	0	15	0	120
Clay Bed	18	0	18	0	120
Aggregate Base (CMB)	42	50	42	200	125
Capistrano Formation (Tc)	26	300	26	300	120

22011-01 - Compass Bess - SJC - Cross Section A-A'
Existing - Entire Qls - Static

LGC Geotechnical, Inc. \xa.gsd



GEOSTASE FS = 1.54

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 3/ 29/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xa.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xa.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section A-A'

DESCRIPTION: Existing - Entire Qls - Static

BOUNDARY DATA

9 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.500	165.500	221.000	2
2	165.500	221.000	244.000	234.000	2
3	244.000	234.000	310.000	253.700	2
4	310.000	253.700	342.000	262.100	2
5	342.000	262.100	369.900	266.000	2
6	369.900	266.000	536.100	301.500	2
7	536.100	301.500	651.800	348.400	2
8	651.800	348.400	657.200	350.600	3
9	657.200	350.600	800.000	409.100	2
10	0.000	178.500	100.000	185.700	4
11	100.000	185.700	185.700	191.100	4
12	185.700	191.100	298.100	193.100	4
13	298.100	193.100	524.400	209.000	4
14	524.400	209.000	553.900	226.000	3
15	553.900	226.000	583.900	257.600	3
16	583.900	257.600	620.000	298.100	3
17	620.000	298.100	651.800	348.400	3
18	524.400	209.000	559.300	228.300	4
19	559.300	228.300	587.100	257.500	4
20	587.100	257.500	625.400	300.400	2
21	625.400	300.400	657.200	350.600	2
22	587.100	257.500	800.000	250.200	4
23	298.100	193.100	800.000	171.200	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	15.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	110.00	190.00	250.00	190.00	10.00
2	524.40	209.00	524.40	209.00	0.00
3	553.90	226.00	559.30	228.30	0.00
4	583.90	257.60	587.10	257.50	0.00
5	620.00	298.10	625.40	300.40	0.00
6	651.80	348.40	657.20	350.60	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 2.465 FS Min = 1.537 FS Ave = 1.748
Standard Deviation = 0.277 Coefficient of Variation = 15.86 %

Critical Surface is Sequence Number 203 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.537

Table 1 - Geometry Data on the 102 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	1.44	0.58	160.76	220.26	220.84	-37.74	1.90	1.82
2	4.02	3.11	163.49	217.82	220.93	-43.18	1.90	5.51
3	5.28	7.98	168.14	213.46	221.44	-43.18	9.40	7.24
4	5.28	13.81	173.42	208.50	222.31	-43.18	9.40	7.24
5	4.55	18.14	178.34	204.98	223.13	-24.54	9.40	5.00
6	4.55	20.97	182.89	202.90	223.88	-24.54	9.40	5.00
7	4.55	23.80	187.43	200.83	224.63	-24.54	9.40	5.00
8	4.55	26.63	191.98	198.75	225.39	-24.54	9.40	5.00
9	4.95	28.80	196.73	197.37	226.17	-7.87	9.40	5.00
10	4.95	30.31	201.69	196.69	226.99	-7.87	9.40	5.00
11	4.95	31.81	206.64	196.00	227.81	-7.87	9.40	5.00
12	4.95	33.32	211.59	195.32	228.63	-7.87	9.40	5.00
13	4.99	34.37	216.56	195.09	229.46	2.59	9.40	4.99
14	4.99	34.97	221.55	195.31	230.28	2.59	9.40	4.99
15	4.99	35.57	226.54	195.54	231.11	2.59	9.40	4.99
16	4.99	36.17	231.53	195.76	231.93	2.59	9.40	4.99
17	4.99	36.77	236.52	195.99	232.76	2.59	9.40	4.99
18	4.99	37.37	241.51	196.21	233.59	2.59	9.40	4.99
19	5.08	38.32	246.54	196.44	234.76	2.59	16.62	5.08
20	5.08	39.60	251.62	196.67	236.27	2.59	16.62	5.08
21	5.08	40.89	256.69	196.90	237.79	2.59	16.62	5.08
22	5.08	42.17	261.77	197.13	239.30	2.59	16.62	5.08
23	5.08	43.46	266.85	197.36	240.82	2.59	16.62	5.08
24	5.08	44.74	271.92	197.59	242.33	2.59	16.62	5.08
25	5.08	46.03	277.00	197.82	243.85	2.59	16.62	5.08
26	5.08	47.32	282.08	198.05	245.37	2.59	16.62	5.08
27	5.08	48.60	287.15	198.28	246.88	2.59	16.62	5.08
28	5.08	49.89	292.23	198.51	248.40	2.59	16.62	5.08
29	5.08	51.17	297.31	198.74	249.91	2.59	16.62	5.08
30	5.08	52.46	302.38	198.97	251.43	2.59	16.62	5.08
31	5.08	53.75	307.46	199.20	252.94	2.59	16.62	5.08
32	5.33	54.97	312.67	199.43	254.40	2.59	14.71	5.34
33	5.33	56.13	318.00	199.67	255.80	2.59	14.71	5.34
34	5.33	57.29	323.33	199.91	257.20	2.59	14.71	5.34
35	5.33	58.45	328.67	200.15	258.60	2.59	14.71	5.34
36	5.33	59.60	334.00	200.40	260.00	2.59	14.71	5.34
37	5.33	60.76	339.33	200.64	261.40	2.59	14.71	5.34
38	4.65	61.56	344.32	200.86	262.43	2.59	7.96	4.65
39	4.65	62.00	348.98	201.07	263.08	2.59	7.96	4.65
40	4.65	62.44	353.62	201.28	263.73	2.59	7.96	4.65
41	4.65	62.88	358.27	201.49	264.38	2.59	7.96	4.65
42	4.65	63.32	362.92	201.70	265.02	2.59	7.96	4.65
43	4.65	63.76	367.57	201.91	265.68	2.59	7.96	4.65
44	4.98	64.40	372.39	202.13	266.53	2.59	12.06	4.99
45	4.98	65.24	377.38	202.36	267.60	2.59	12.06	4.99
46	4.98	66.08	382.36	202.58	268.66	2.59	12.06	4.99
47	4.98	66.92	387.34	202.81	269.73	2.59	12.06	4.99
48	4.98	67.76	392.33	203.03	270.79	2.59	12.06	4.99
49	4.98	68.60	397.31	203.26	271.85	2.59	12.06	4.99
50	4.98	69.44	402.30	203.48	272.92	2.59	12.06	4.99
51	4.98	70.28	407.28	203.71	273.98	2.59	12.06	4.99
52	4.98	71.12	412.26	203.93	275.05	2.59	12.06	4.99
53	4.98	71.96	417.25	204.16	276.11	2.59	12.06	4.99
54	4.98	72.80	422.23	204.38	277.18	2.59	12.06	4.99

55	4.98	73.63	427.21	204.61	278.24	2.59	12.06	4.99
56	4.98	74.47	432.20	204.83	279.31	2.59	12.06	4.99
57	4.98	75.31	437.18	205.06	280.37	2.59	12.06	4.99
58	4.98	76.15	442.17	205.28	281.44	2.59	12.06	4.99
59	4.98	76.99	447.15	205.51	282.50	2.59	12.06	4.99
60	4.98	77.83	452.13	205.73	283.56	2.59	12.06	4.99
61	4.98	78.67	457.12	205.96	284.63	2.59	12.06	4.99
62	4.98	79.51	462.10	206.18	285.69	2.59	12.06	4.99
63	4.98	80.35	467.09	206.41	286.76	2.59	12.06	4.99
64	4.98	81.19	472.07	206.63	287.82	2.59	12.06	4.99
65	4.98	82.03	477.05	206.86	288.89	2.59	12.06	4.99
66	4.98	82.87	482.04	207.09	289.95	2.59	12.06	4.99
67	4.98	83.71	487.02	207.31	291.02	2.59	12.06	4.99
68	4.98	84.55	492.00	207.54	292.08	2.59	12.06	4.99
69	4.98	85.38	496.99	207.76	293.15	2.59	12.06	4.99
70	4.98	86.22	501.97	207.99	294.21	2.59	12.06	4.99
71	4.98	87.06	506.96	208.21	295.27	2.59	12.06	4.99
72	4.98	87.90	511.94	208.44	296.34	2.59	12.06	4.99
73	4.98	88.74	516.92	208.66	297.40	2.59	12.06	4.99
74	4.98	89.58	521.91	208.89	298.47	2.59	12.06	4.99
75	5.85	89.00	527.33	210.62	299.63	29.01	12.06	6.69
76	5.85	87.01	533.18	213.87	300.88	29.01	12.06	6.69
77	4.45	85.68	538.33	216.72	302.40	29.01	22.07	5.09
78	4.45	85.01	542.77	219.19	304.21	29.01	22.07	5.09
79	4.45	84.35	547.23	221.66	306.01	29.01	22.07	5.09
80	4.45	83.69	551.67	224.13	307.81	29.01	22.07	5.09
81	4.96	82.98	556.38	226.74	309.72	29.01	22.07	5.67
82	5.01	81.02	561.36	230.72	311.74	46.22	22.07	7.24
83	5.01	77.82	566.37	235.95	313.77	46.22	22.07	7.24
84	5.01	74.62	571.38	241.18	315.80	46.22	22.07	7.24
85	5.01	71.43	576.39	246.40	317.83	46.22	22.07	7.24
86	5.01	68.23	581.40	251.63	319.86	46.22	22.07	7.24
87	3.12	65.64	585.46	255.87	321.51	46.22	22.07	4.52
88	4.71	62.81	589.38	260.29	323.10	49.79	22.07	7.30
89	4.71	59.15	594.09	265.86	325.01	49.79	22.07	7.30
90	4.71	55.48	598.80	271.43	326.92	49.79	22.07	7.30
91	4.71	51.82	603.51	277.00	328.83	49.79	22.07	7.30
92	4.71	48.16	608.22	282.58	330.74	49.79	22.07	7.30
93	4.71	44.50	612.93	288.15	332.65	49.79	22.07	7.30
94	4.71	40.83	617.64	293.72	334.55	49.79	22.07	7.30
95	2.11	38.18	621.05	297.75	335.94	49.79	22.07	3.26
96	4.95	34.57	624.58	302.80	337.37	56.92	22.07	9.07
97	4.95	28.98	629.53	310.39	339.37	56.92	22.07	9.07
98	4.95	23.39	634.48	317.99	341.38	56.92	22.07	9.07
99	4.95	17.80	639.43	325.59	343.38	56.92	22.07	9.07
100	4.95	12.21	644.38	333.18	345.39	56.92	22.07	9.07
101	4.95	6.62	649.33	340.78	347.40	56.92	22.07	9.07
102	3.39	1.91	653.49	347.18	349.09	56.92	22.17	6.21

Table 2 - Force Data On The 102 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	99.9	0.0	0.0	0.0	0.0	0.0
2	1501.3	0.0	0.0	0.0	0.0	0.0
3	5058.9	0.0	0.0	0.0	0.0	0.0
4	8755.3	0.0	0.0	0.0	0.0	0.0
5	9903.2	0.0	0.0	0.0	0.0	0.0
6	11447.8	0.0	0.0	0.0	0.0	0.0
7	12992.4	0.0	0.0	0.0	0.0	0.0
8	14537.0	0.0	0.0	0.0	0.0	0.0
9	17118.5	0.0	0.0	0.0	0.0	0.0
10	18012.8	0.0	0.0	0.0	0.0	0.0
11	18907.1	0.0	0.0	0.0	0.0	0.0
12	19801.4	0.0	0.0	0.0	0.0	0.0
13	20574.0	0.0	0.0	0.0	0.0	0.0
14	20933.6	0.0	0.0	0.0	0.0	0.0
15	21293.2	0.0	0.0	0.0	0.0	0.0
16	21652.7	0.0	0.0	0.0	0.0	0.0
17	22012.3	0.0	0.0	0.0	0.0	0.0
18	22371.9	0.0	0.0	0.0	0.0	0.0
19	23342.8	0.0	0.0	0.0	0.0	0.0
20	24126.3	0.0	0.0	0.0	0.0	0.0
21	24909.7	0.0	0.0	0.0	0.0	0.0
22	25693.2	0.0	0.0	0.0	0.0	0.0
23	26476.6	0.0	0.0	0.0	0.0	0.0
24	27260.0	0.0	0.0	0.0	0.0	0.0
25	28043.5	0.0	0.0	0.0	0.0	0.0
26	28826.9	0.0	0.0	0.0	0.0	0.0
27	29610.3	0.0	0.0	0.0	0.0	0.0
28	30393.8	0.0	0.0	0.0	0.0	0.0
29	31177.2	0.0	0.0	0.0	0.0	0.0
30	31960.6	0.0	0.0	0.0	0.0	0.0
31	32744.1	0.0	0.0	0.0	0.0	0.0
32	35180.2	0.0	0.0	0.0	0.0	0.0
33	35921.9	0.0	0.0	0.0	0.0	0.0
34	36663.6	0.0	0.0	0.0	0.0	0.0
35	37405.4	0.0	0.0	0.0	0.0	0.0
36	38147.1	0.0	0.0	0.0	0.0	0.0
37	38888.9	0.0	0.0	0.0	0.0	0.0
38	34352.3	0.0	0.0	0.0	0.0	0.0
39	34597.7	0.0	0.0	0.0	0.0	0.0
40	34843.2	0.0	0.0	0.0	0.0	0.0
41	35088.6	0.0	0.0	0.0	0.0	0.0
42	35334.0	0.0	0.0	0.0	0.0	0.0
43	35579.5	0.0	0.0	0.0	0.0	0.0
44	38516.6	0.0	0.0	0.0	0.0	0.0
45	39018.6	0.0	0.0	0.0	0.0	0.0
46	39520.5	0.0	0.0	0.0	0.0	0.0
47	40022.5	0.0	0.0	0.0	0.0	0.0
48	40524.4	0.0	0.0	0.0	0.0	0.0
49	41026.4	0.0	0.0	0.0	0.0	0.0
50	41528.4	0.0	0.0	0.0	0.0	0.0
51	42030.3	0.0	0.0	0.0	0.0	0.0
52	42532.3	0.0	0.0	0.0	0.0	0.0
53	43034.2	0.0	0.0	0.0	0.0	0.0
54	43536.2	0.0	0.0	0.0	0.0	0.0
55	44038.1	0.0	0.0	0.0	0.0	0.0
56	44540.1	0.0	0.0	0.0	0.0	0.0
57	45042.1	0.0	0.0	0.0	0.0	0.0
58	45544.0	0.0	0.0	0.0	0.0	0.0
59	46046.0	0.0	0.0	0.0	0.0	0.0
60	46547.9	0.0	0.0	0.0	0.0	0.0
61	47049.9	0.0	0.0	0.0	0.0	0.0
62	47551.9	0.0	0.0	0.0	0.0	0.0

63	48053.8	0.0	0.0	0.0	0.0	0.0
64	48555.8	0.0	0.0	0.0	0.0	0.0
65	49057.7	0.0	0.0	0.0	0.0	0.0
66	49559.7	0.0	0.0	0.0	0.0	0.0
67	50061.7	0.0	0.0	0.0	0.0	0.0
68	50563.6	0.0	0.0	0.0	0.0	0.0
69	51065.6	0.0	0.0	0.0	0.0	0.0
70	51567.5	0.0	0.0	0.0	0.0	0.0
71	52069.5	0.0	0.0	0.0	0.0	0.0
72	52571.4	0.0	0.0	0.0	0.0	0.0
73	53073.4	0.0	0.0	0.0	0.0	0.0
74	53575.4	0.0	0.0	0.0	0.0	0.0
75	62480.4	0.0	0.0	0.0	0.0	0.0
76	61079.8	0.0	0.0	0.0	0.0	0.0
77	45752.4	0.0	0.0	0.0	0.0	0.0
78	45397.6	0.0	0.0	0.0	0.0	0.0
79	45042.9	0.0	0.0	0.0	0.0	0.0
80	44688.2	0.0	0.0	0.0	0.0	0.0
81	49372.0	0.0	0.0	0.0	0.0	0.0
82	48690.9	0.0	0.0	0.0	0.0	0.0
83	46770.1	0.0	0.0	0.0	0.0	0.0
84	44849.3	0.0	0.0	0.0	0.0	0.0
85	42928.5	0.0	0.0	0.0	0.0	0.0
86	41007.7	0.0	0.0	0.0	0.0	0.0
87	24606.1	0.0	0.0	0.0	0.0	0.0
88	35506.0	0.0	0.0	0.0	0.0	0.0
89	33435.6	0.0	0.0	0.0	0.0	0.0
90	31365.2	0.0	0.0	0.0	0.0	0.0
91	29294.8	0.0	0.0	0.0	0.0	0.0
92	27224.4	0.0	0.0	0.0	0.0	0.0
93	25154.0	0.0	0.0	0.0	0.0	0.0
94	23083.6	0.0	0.0	0.0	0.0	0.0
95	9645.8	0.0	0.0	0.0	0.0	0.0
96	20531.6	0.0	0.0	0.0	0.0	0.0
97	17211.2	0.0	0.0	0.0	0.0	0.0
98	13890.9	0.0	0.0	0.0	0.0	0.0
99	10570.5	0.0	0.0	0.0	0.0	0.0
100	7250.2	0.0	0.0	0.0	0.0	0.0
101	3929.8	0.0	0.0	0.0	0.0	0.0
102	777.1	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 3382503.00(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 3382503.00(lbs)

TOTAL AREA OF SLIDING MASS = 28187.53(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 102 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	2	250.00	22.00	A
2	2	250.00	22.00	A
3	2	250.00	22.00	A
4	2	250.00	22.00	A
5	2	250.00	22.00	A
6	2	250.00	22.00	A
7	2	250.00	22.00	A
8	2	250.00	22.00	A
9	2	0.00	14.00	A
10	2	0.00	14.00	A
11	2	0.00	14.00	A
12	2	0.00	14.00	A
13	2	0.00	14.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	2	0.00	14.00	A
33	2	0.00	14.00	A
34	2	0.00	14.00	A
35	2	0.00	14.00	A
36	2	0.00	14.00	A
37	2	0.00	14.00	A
38	2	0.00	14.00	A
39	2	0.00	14.00	A
40	2	0.00	14.00	A
41	2	0.00	14.00	A
42	2	0.00	14.00	A
43	2	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A
57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A

69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A
72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	3	250.00	22.00	
76	3	250.00	22.00	
77	3	250.00	22.00	
78	3	250.00	22.00	
79	3	250.00	22.00	
80	3	250.00	22.00	
81	3	250.00	22.00	
82	3	250.00	22.00	
83	3	250.00	22.00	
84	3	250.00	22.00	
85	3	250.00	22.00	
86	3	250.00	22.00	
87	3	250.00	22.00	
88	3	250.00	22.00	
89	3	250.00	22.00	
90	3	250.00	22.00	
91	3	250.00	22.00	
92	3	250.00	22.00	
93	3	250.00	22.00	
94	3	250.00	22.00	
95	3	250.00	22.00	
96	3	250.00	22.00	
97	3	250.00	22.00	
98	3	250.00	22.00	
99	3	250.00	22.00	
100	3	250.00	22.00	
101	3	250.00	22.00	
102	3	250.00	22.00	

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 102 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-37.74	160.76	1.82	261.57	355.68	232.34
1	-37.74	160.76	1.82	261.57	355.68	232.34
2	-43.18	163.49	5.51	730.23	545.03	356.03
2	-43.18	163.49	5.51	730.23	545.03	356.03
3	-43.18	168.14	7.24	1524.55	865.96	565.67
3	-43.18	168.14	7.24	1524.55	865.96	565.67
4	-43.18	173.42	7.24	2475.98	1250.36	816.77
4	-43.18	173.42	7.24	2475.98	1250.36	816.77
5	-24.54	178.34	5.00	2590.18	1296.50	846.91
5	-24.54	178.34	5.00	2590.18	1296.50	846.91
6	-24.54	182.89	5.00	2979.92	1453.97	949.77
6	-24.54	182.89	5.00	2979.92	1453.97	949.77
7	-24.54	187.43	5.00	3369.66	1611.43	1052.63
7	-24.54	187.43	5.00	3369.66	1611.43	1052.63
8	-24.54	191.98	5.00	3759.41	1768.90	1155.50
8	-24.54	191.98	5.00	3759.41	1768.90	1155.50
9	-7.87	196.73	5.00	3541.32	882.95	576.77
9	-7.87	196.73	5.00	3541.32	882.95	576.77
10	-7.87	201.69	5.00	3726.32	929.08	606.90
10	-7.87	201.69	5.00	3726.32	929.08	606.90
11	-7.87	206.64	5.00	3911.32	975.20	637.03
11	-7.87	206.64	5.00	3911.32	975.20	637.03
12	-7.87	211.59	5.00	4096.33	1021.33	667.16
12	-7.87	211.59	5.00	4096.33	1021.33	667.16
13	2.59	216.56	4.99	4092.07	1020.27	666.47
13	2.59	216.56	4.99	4092.07	1020.27	666.47
14	2.59	221.55	4.99	4163.59	1038.10	678.12
14	2.59	221.55	4.99	4163.59	1038.10	678.12
15	2.59	226.54	4.99	4235.11	1055.93	689.77
15	2.59	226.54	4.99	4235.11	1055.93	689.77
16	2.59	231.53	4.99	4306.63	1073.76	701.41
16	2.59	231.53	4.99	4306.63	1073.76	701.41
17	2.59	236.52	4.99	4378.15	1091.60	713.06
17	2.59	236.52	4.99	4378.15	1091.60	713.06
18	2.59	241.51	4.99	4449.67	1109.43	724.71
18	2.59	241.51	4.99	4449.67	1109.43	724.71
19	2.59	246.54	5.08	4561.99	1137.43	743.00
19	2.59	246.54	5.08	4561.99	1137.43	743.00
20	2.59	251.62	5.08	4715.10	1175.61	767.94
20	2.59	251.62	5.08	4715.10	1175.61	767.94
21	2.59	256.69	5.08	4868.21	1213.78	792.88
21	2.59	256.69	5.08	4868.21	1213.78	792.88
22	2.59	261.77	5.08	5021.32	1251.95	817.81
22	2.59	261.77	5.08	5021.32	1251.95	817.81
23	2.59	266.85	5.08	5174.43	1290.13	842.75
23	2.59	266.85	5.08	5174.43	1290.13	842.75
24	2.59	271.92	5.08	5327.54	1328.30	867.69
24	2.59	271.92	5.08	5327.54	1328.30	867.69
25	2.59	277.00	5.08	5480.64	1366.48	892.62
25	2.59	277.00	5.08	5480.64	1366.48	892.62
26	2.59	282.08	5.08	5633.75	1404.65	917.56
26	2.59	282.08	5.08	5633.75	1404.65	917.56
27	2.59	287.15	5.08	5786.86	1442.83	942.50
27	2.59	287.15	5.08	5786.86	1442.83	942.50
28	2.59	292.23	5.08	5939.97	1481.00	967.43
28	2.59	292.23	5.08	5939.97	1481.00	967.43
29	2.59	297.31	5.08	6093.08	1519.18	992.37
29	2.59	297.31	5.08	6093.08	1519.18	992.37
30	2.59	302.38	5.08	6246.19	1557.35	1017.31
30	2.59	302.38	5.08	6246.19	1557.35	1017.31
31	2.59	307.46	5.08	6399.30	1595.53	1042.24
31	2.59	307.46	5.08	6399.30	1595.53	1042.24
32	2.59	312.67	5.34	6544.85	1631.82	1065.95
32	2.59	312.67	5.34	6544.85	1631.82	1065.95
33	2.59	318.00	5.34	6682.85	1666.22	1088.42
33	2.59	318.00	5.34	6682.85	1666.22	1088.42
34	2.59	323.33	5.34	6820.84	1700.63	1110.90
34	2.59	323.33	5.34	6820.84	1700.63	1110.90
35	2.59	328.67	5.34	6958.83	1735.03	1133.37
35	2.59	328.67	5.34	6958.83	1735.03	1133.37
36	2.59	334.00	5.34	7096.82	1769.44	1155.85

36	2.59	334.00	5.34	7096.82	1769.44	1155.85
37	2.59	339.33	5.34	7234.81	1803.84	1178.32
37	2.59	339.33	5.34	7234.81	1803.84	1178.32
38	2.59	344.32	4.65	7329.99	1827.57	1193.82
38	2.59	344.32	4.65	7329.99	1827.57	1193.82
39	2.59	348.98	4.65	7382.36	1840.63	1202.35
39	2.59	348.98	4.65	7382.36	1840.63	1202.35
40	2.59	353.62	4.65	7434.73	1853.69	1210.88
40	2.59	353.62	4.65	7434.73	1853.69	1210.88
41	2.59	358.27	4.65	7487.10	1866.74	1219.41
41	2.59	358.27	4.65	7487.10	1866.74	1219.41
42	2.59	362.92	4.65	7539.47	1879.80	1227.94
42	2.59	362.92	4.65	7539.47	1879.80	1227.94
43	2.59	367.57	4.65	7591.85	1892.86	1236.47
43	2.59	367.57	4.65	7591.85	1892.86	1236.47
44	2.59	372.39	4.99	7668.00	1911.85	1248.87
44	2.59	372.39	4.99	7668.00	1911.85	1248.87
45	2.59	377.38	4.99	7767.93	1936.76	1265.15
45	2.59	377.38	4.99	7767.93	1936.76	1265.15
46	2.59	382.36	4.99	7867.86	1961.68	1281.42
46	2.59	382.36	4.99	7867.86	1961.68	1281.42
47	2.59	387.34	4.99	7967.79	1986.59	1297.70
47	2.59	387.34	4.99	7967.79	1986.59	1297.70
48	2.59	392.33	4.99	8067.72	2011.51	1313.98
48	2.59	392.33	4.99	8067.72	2011.51	1313.98
49	2.59	397.31	4.99	8167.65	2036.42	1330.25
49	2.59	397.31	4.99	8167.65	2036.42	1330.25
50	2.59	402.30	4.99	8267.58	2061.34	1346.53
50	2.59	402.30	4.99	8267.58	2061.34	1346.53
51	2.59	407.28	4.99	8367.52	2086.26	1362.80
51	2.59	407.28	4.99	8367.52	2086.26	1362.80
52	2.59	412.26	4.99	8467.45	2111.17	1379.08
52	2.59	412.26	4.99	8467.45	2111.17	1379.08
53	2.59	417.25	4.99	8567.38	2136.09	1395.35
53	2.59	417.25	4.99	8567.38	2136.09	1395.35
54	2.59	422.23	4.99	8667.31	2161.00	1411.63
54	2.59	422.23	4.99	8667.31	2161.00	1411.63
55	2.59	427.21	4.99	8767.24	2185.92	1427.90
55	2.59	427.21	4.99	8767.24	2185.92	1427.90
56	2.59	432.20	4.99	8867.17	2210.83	1444.18
56	2.59	432.20	4.99	8867.17	2210.83	1444.18
57	2.59	437.18	4.99	8967.10	2235.75	1460.46
57	2.59	437.18	4.99	8967.10	2235.75	1460.46
58	2.59	442.17	4.99	9067.04	2260.67	1476.73
58	2.59	442.17	4.99	9067.04	2260.67	1476.73
59	2.59	447.15	4.99	9166.97	2285.58	1493.01
59	2.59	447.15	4.99	9166.97	2285.58	1493.01
60	2.59	452.13	4.99	9266.90	2310.50	1509.28
60	2.59	452.13	4.99	9266.90	2310.50	1509.28
61	2.59	457.12	4.99	9366.83	2335.41	1525.56
61	2.59	457.12	4.99	9366.83	2335.41	1525.56
62	2.59	462.10	4.99	9466.76	2360.33	1541.83
62	2.59	462.10	4.99	9466.76	2360.33	1541.83
63	2.59	467.09	4.99	9566.69	2385.24	1558.11
63	2.59	467.09	4.99	9566.69	2385.24	1558.11
64	2.59	472.07	4.99	9666.62	2410.16	1574.39
64	2.59	472.07	4.99	9666.62	2410.16	1574.39
65	2.59	477.05	4.99	9766.56	2435.08	1590.66
65	2.59	477.05	4.99	9766.56	2435.08	1590.66
66	2.59	482.04	4.99	9866.49	2459.99	1606.94
66	2.59	482.04	4.99	9866.49	2459.99	1606.94
67	2.59	487.02	4.99	9966.42	2484.91	1623.21
67	2.59	487.02	4.99	9966.42	2484.91	1623.21
68	2.59	492.00	4.99	10066.35	2509.82	1639.49
68	2.59	492.00	4.99	10066.35	2509.82	1639.49
69	2.59	496.99	4.99	10166.28	2534.74	1655.76
69	2.59	496.99	4.99	10166.28	2534.74	1655.76
70	2.59	501.97	4.99	10266.21	2559.65	1672.04
70	2.59	501.97	4.99	10266.21	2559.65	1672.04
71	2.59	506.96	4.99	10366.15	2584.57	1688.31
71	2.59	506.96	4.99	10366.15	2584.57	1688.31
72	2.59	511.94	4.99	10466.08	2609.49	1704.59
72	2.59	511.94	4.99	10466.08	2609.49	1704.59
73	2.59	516.92	4.99	10566.01	2634.40	1720.87
73	2.59	516.92	4.99	10566.01	2634.40	1720.87
74	2.59	521.91	4.99	10665.94	2659.32	1737.14
74	2.59	521.91	4.99	10665.94	2659.32	1737.14
75	29.01	527.33	6.69	9153.33	3948.19	2579.07
75	29.01	527.33	6.69	9153.33	3948.19	2579.07
76	29.01	533.18	6.69	8946.28	3864.53	2524.42
76	29.01	533.18	6.69	8946.28	3864.53	2524.42
77	29.01	538.33	5.09	8808.28	3808.78	2488.00
77	29.01	538.33	5.09	8808.28	3808.78	2488.00
78	29.01	542.77	5.09	8739.34	3780.92	2469.81
78	29.01	542.77	5.09	8739.34	3780.92	2469.81
79	29.01	547.23	5.09	8670.40	3753.07	2451.61
79	29.01	547.23	5.09	8670.40	3753.07	2451.61
80	29.01	551.67	5.09	8601.46	3725.21	2433.42
80	29.01	551.67	5.09	8601.46	3725.21	2433.42
81	29.01	556.38	5.67	8528.58	3695.77	2414.18
81	29.01	556.38	5.67	8528.58	3695.77	2414.18
82	46.22	561.36	7.24	7372.45	3228.66	2109.05
82	46.22	561.36	7.24	7372.45	3228.66	2109.05
83	46.22	566.37	7.24	7076.07	3108.92	2030.83
83	46.22	566.37	7.24	7076.07	3108.92	2030.83
84	46.22	571.38	7.24	6779.69	2989.17	1952.61
84	46.22	571.38	7.24	6779.69	2989.17	1952.61
85	46.22	576.39	7.24	6483.31	2869.43	1874.39
85	46.22	576.39	7.24	6483.31	2869.43	1874.39
86	46.22	581.40	7.24	6186.93	2749.68	1796.17
86	46.22	581.40	7.24	6186.93	2749.68	1796.17
87	46.22	585.46	4.52	5946.31	2652.46	1732.66
87	46.22	585.46	4.52	5946.31	2652.46	1732.66
88	49.79	589.38	7.30	5498.47	2471.53	1614.47
88	49.79	589.38	7.30	5498.47	2471.53	1614.47
89	49.79	594.09	7.30	5168.83	2338.34	1527.47
89	49.79	594.09	7.30	5168.83	2338.34	1527.47
90	49.79	598.80	7.30	4839.19	2205.16	1440.47
90	49.79	598.80	7.30	4839.19	2205.16	1440.47
91	49.79	603.51	7.30	4509.55	2071.98	1353.47
91	49.79	603.51	7.30	4509.55	2071.98	1353.47
92	49.79	608.22	7.30	4179.91	1938.79	1266.47
92	49.79	608.22	7.30	4179.91	1938.79	1266.47
93	49.79	612.93	7.30	3850.27	1805.61	1179.47
93	49.79	612.93	7.30	3850.27	1805.61	1179.47
94	49.79	617.64	7.30	3520.63	1672.42	1092.48
94	49.79	617.64	7.30	3520.63	1672.42	1092.48
95	49.79	621.05	3.26	3282.15	1576.08	1029.54
95	49.79	621.05	3.26	3282.15	1576.08	1029.54
96	56.92	624.58	9.07	2709.21	1344.59	878.33

96	56.92	624.58	9.07	2709.21	1344.59	878.33
97	56.92	629.53	9.07	2240.87	1155.37	754.72
97	56.92	629.53	9.07	2240.87	1155.37	754.72
98	56.92	634.48	9.07	1772.53	966.15	631.11
98	56.92	634.48	9.07	1772.53	966.15	631.11
99	56.92	639.43	9.07	1304.18	776.92	507.51
99	56.92	639.43	9.07	1304.18	776.92	507.51
100	56.92	644.38	9.07	835.84	587.70	383.90
100	56.92	644.38	9.07	835.84	587.70	383.90
101	56.92	649.33	9.07	367.50	398.48	260.30
101	56.92	649.33	9.07	367.50	398.48	260.30
102	56.92	653.49	6.21	160.07	64.67	42.25
102	56.92	653.49	6.21	160.07	64.67	42.25

Table 4 - Base Force Data on the 102 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-37.74	160.76	1.82	475.12	646.07	422.03
1	-37.74	160.76	1.82	475.12	646.07	422.03
2	-43.18	163.49	5.51	4025.30	3004.42	1962.57
2	-43.18	163.49	5.51	4025.30	3004.42	1962.57
3	-43.18	168.14	7.24	11043.58	6272.85	4097.60
3	-43.18	168.14	7.24	11043.58	6272.85	4097.60
4	-43.18	173.42	7.24	17935.56	9057.39	5916.54
4	-43.18	173.42	7.24	17935.56	9057.39	5916.54
5	-24.54	178.34	5.00	12950.88	6482.49	4234.55
5	-24.54	178.34	5.00	12950.88	6482.49	4234.55
6	-24.54	182.89	5.00	14899.60	7269.83	4748.86
6	-24.54	182.89	5.00	14899.60	7269.83	4748.86
7	-24.54	187.43	5.00	16848.32	8057.16	5263.17
7	-24.54	187.43	5.00	16848.32	8057.16	5263.17
8	-24.54	191.98	5.00	18797.03	8844.49	5777.48
8	-24.54	191.98	5.00	18797.03	8844.49	5777.48
9	-7.87	196.73	5.00	17706.59	4414.75	2883.84
9	-7.87	196.73	5.00	17706.59	4414.75	2883.84
10	-7.87	201.69	5.00	18631.61	4645.38	3034.50
10	-7.87	201.69	5.00	18631.61	4645.38	3034.50
11	-7.87	206.64	5.00	19556.62	4876.01	3185.15
11	-7.87	206.64	5.00	19556.62	4876.01	3185.15
12	-7.87	211.59	5.00	20481.64	5106.65	3335.81
12	-7.87	211.59	5.00	20481.64	5106.65	3335.81
13	2.59	216.56	4.99	20434.42	5094.87	3328.12
13	2.59	216.56	4.99	20434.42	5094.87	3328.12
14	2.59	221.55	4.99	20791.56	5183.92	3386.28
14	2.59	221.55	4.99	20791.56	5183.92	3386.28
15	2.59	226.54	4.99	21148.71	5272.96	3444.45
15	2.59	226.54	4.99	21148.71	5272.96	3444.45
16	2.59	231.53	4.99	21505.85	5362.01	3502.62
16	2.59	231.53	4.99	21505.85	5362.01	3502.62
17	2.59	236.52	4.99	21863.00	5451.06	3560.79
17	2.59	236.52	4.99	21863.00	5451.06	3560.79
18	2.59	241.51	4.99	22220.14	5540.10	3618.95
18	2.59	241.51	4.99	22220.14	5540.10	3618.95
19	2.59	246.54	5.08	23184.50	5780.54	3776.02
19	2.59	246.54	5.08	23184.50	5780.54	3776.02
20	2.59	251.62	5.08	23962.62	5974.55	3902.75
20	2.59	251.62	5.08	23962.62	5974.55	3902.75
21	2.59	256.69	5.08	24740.74	6168.56	4029.48
21	2.59	256.69	5.08	24740.74	6168.56	4029.48
22	2.59	261.77	5.08	25518.86	6362.57	4156.21
22	2.59	261.77	5.08	25518.86	6362.57	4156.21
23	2.59	266.85	5.08	26296.97	6556.57	4282.94
23	2.59	266.85	5.08	26296.97	6556.57	4282.94
24	2.59	271.92	5.08	27075.09	6750.58	4409.67
24	2.59	271.92	5.08	27075.09	6750.58	4409.67
25	2.59	277.00	5.08	27853.21	6944.59	4536.40
25	2.59	277.00	5.08	27853.21	6944.59	4536.40
26	2.59	282.08	5.08	28631.33	7138.59	4663.13
26	2.59	282.08	5.08	28631.33	7138.59	4663.13
27	2.59	287.15	5.08	29409.45	7332.60	4789.86
27	2.59	287.15	5.08	29409.45	7332.60	4789.86
28	2.59	292.23	5.08	30187.57	7526.61	4916.59
28	2.59	292.23	5.08	30187.57	7526.61	4916.59
29	2.59	297.31	5.08	30965.69	7720.61	5043.33
29	2.59	297.31	5.08	30965.69	7720.61	5043.33
30	2.59	302.38	5.08	31743.81	7914.62	5170.06
30	2.59	302.38	5.08	31743.81	7914.62	5170.06
31	2.59	307.46	5.08	32521.93	8108.63	5296.79
31	2.59	307.46	5.08	32521.93	8108.63	5296.79
32	2.59	312.67	5.34	34941.51	8711.90	5690.86
32	2.59	312.67	5.34	34941.51	8711.90	5690.86
33	2.59	318.00	5.34	35678.22	8895.58	5810.85
33	2.59	318.00	5.34	35678.22	8895.58	5810.85
34	2.59	323.33	5.34	36414.93	9079.26	5930.83
34	2.59	323.33	5.34	36414.93	9079.26	5930.83
35	2.59	328.67	5.34	37151.64	9262.94	6050.82
35	2.59	328.67	5.34	37151.64	9262.94	6050.82
36	2.59	334.00	5.34	37888.34	9446.62	6170.80
36	2.59	334.00	5.34	37888.34	9446.62	6170.80
37	2.59	339.33	5.34	38625.05	9630.31	6290.79
37	2.59	339.33	5.34	38625.05	9630.31	6290.79
38	2.59	344.32	4.65	34119.26	8506.89	5556.94
38	2.59	344.32	4.65	34119.26	8506.89	5556.94
39	2.59	348.98	4.65	34363.03	8567.67	5596.64
39	2.59	348.98	4.65	34363.03	8567.67	5596.64
40	2.59	353.62	4.65	34606.80	8628.44	5636.35
40	2.59	353.62	4.65	34606.80	8628.44	5636.35
41	2.59	358.27	4.65	34850.57	8689.22	5676.05
41	2.59	358.27	4.65	34850.57	8689.22	5676.05
42	2.59	362.92	4.65	35094.34	8750.00	5715.75
42	2.59	362.92	4.65	35094.34	8750.00	5715.75
43	2.59	367.57	4.65	35338.11	8810.78	5755.45
43	2.59	367.57	4.65	35338.11	8810.78	5755.45
44	2.59	372.39	4.99	38255.31	9538.12	6230.57
44	2.59	372.39	4.99	38255.31	9538.12	6230.57
45	2.59	377.38	4.99	38753.87	9662.42	6311.77
45	2.59	377.38	4.99	38753.87	9662.42	6311.77
46	2.59	382.36	4.99	39252.42	9786.73	6392.97
46	2.59	382.36	4.99	39252.42	9786.73	6392.97
47	2.59	387.34	4.99	39750.97	9911.03	6474.17
47	2.59	387.34	4.99	39750.97	9911.03	6474.17
48	2.59	392.33	4.99	40249.53	10035.33	6555.37
48	2.59	392.33	4.99	40249.53	10035.33	6555.37
49	2.59	397.31	4.99	40748.08	10159.64	6636.56
49	2.59	397.31	4.99	40748.08	10159.64	6636.56

50	2.59	402.30	4.99	41246.63	10283.94	6717.76
50	2.59	402.30	4.99	41246.63	10283.94	6717.76
51	2.59	407.28	4.99	41745.19	10408.24	6798.96
51	2.59	407.28	4.99	41745.19	10408.24	6798.96
52	2.59	412.26	4.99	42243.74	10532.55	6880.16
52	2.59	412.26	4.99	42243.74	10532.55	6880.16
53	2.59	417.25	4.99	42742.30	10656.85	6961.36
53	2.59	417.25	4.99	42742.30	10656.85	6961.36
54	2.59	422.23	4.99	43240.85	10781.15	7042.56
54	2.59	422.23	4.99	43240.85	10781.15	7042.56
55	2.59	427.21	4.99	43739.40	10905.46	7123.76
55	2.59	427.21	4.99	43739.40	10905.46	7123.76
56	2.59	432.20	4.99	44237.96	11029.76	7204.95
56	2.59	432.20	4.99	44237.96	11029.76	7204.95
57	2.59	437.18	4.99	44736.51	11154.06	7286.15
57	2.59	437.18	4.99	44736.51	11154.06	7286.15
58	2.59	442.17	4.99	45235.06	11278.37	7367.35
58	2.59	442.17	4.99	45235.06	11278.37	7367.35
59	2.59	447.15	4.99	45733.62	11402.67	7448.55
59	2.59	447.15	4.99	45733.62	11402.67	7448.55
60	2.59	452.13	4.99	46232.17	11526.97	7529.75
60	2.59	452.13	4.99	46232.17	11526.97	7529.75
61	2.59	457.12	4.99	46730.73	11651.28	7610.95
61	2.59	457.12	4.99	46730.73	11651.28	7610.95
62	2.59	462.10	4.99	47229.28	11775.58	7692.15
62	2.59	462.10	4.99	47229.28	11775.58	7692.15
63	2.59	467.09	4.99	47727.83	11899.88	7773.34
63	2.59	467.09	4.99	47727.83	11899.88	7773.34
64	2.59	472.07	4.99	48226.39	12024.19	7854.54
64	2.59	472.07	4.99	48226.39	12024.19	7854.54
65	2.59	477.05	4.99	48724.94	12148.49	7935.74
65	2.59	477.05	4.99	48724.94	12148.49	7935.74
66	2.59	482.04	4.99	49223.49	12272.80	8016.94
66	2.59	482.04	4.99	49223.49	12272.80	8016.94
67	2.59	487.02	4.99	49722.05	12397.10	8098.14
67	2.59	487.02	4.99	49722.05	12397.10	8098.14
68	2.59	492.00	4.99	50220.60	12521.40	8179.34
68	2.59	492.00	4.99	50220.60	12521.40	8179.34
69	2.59	496.99	4.99	50719.16	12645.71	8260.54
69	2.59	496.99	4.99	50719.16	12645.71	8260.54
70	2.59	501.97	4.99	51217.71	12770.01	8341.73
70	2.59	501.97	4.99	51217.71	12770.01	8341.73
71	2.59	506.96	4.99	51716.26	12894.31	8422.93
71	2.59	506.96	4.99	51716.26	12894.31	8422.93
72	2.59	511.94	4.99	52214.82	13018.62	8504.13
72	2.59	511.94	4.99	52214.82	13018.62	8504.13
73	2.59	516.92	4.99	52713.37	13142.92	8585.33
73	2.59	516.92	4.99	52713.37	13142.92	8585.33
74	2.59	521.91	4.99	53211.92	13267.22	8666.53
74	2.59	521.91	4.99	53211.92	13267.22	8666.53
75	29.01	527.33	6.69	61231.74	26411.62	17252.82
75	29.01	527.33	6.69	61231.74	26411.62	17252.82
76	29.01	533.18	6.69	59846.64	25852.00	16887.26
76	29.01	533.18	6.69	59846.64	25852.00	16887.26
77	29.01	538.33	5.09	44822.14	19381.48	12660.54
77	29.01	538.33	5.09	44822.14	19381.48	12660.54
78	29.01	542.77	5.09	44471.32	19239.74	12567.95
78	29.01	542.77	5.09	44471.32	19239.74	12567.95
79	29.01	547.23	5.09	44120.50	19098.00	12475.36
79	29.01	547.23	5.09	44120.50	19098.00	12475.36
80	29.01	551.67	5.09	43769.68	18956.26	12382.77
80	29.01	551.67	5.09	43769.68	18956.26	12382.77
81	29.01	556.38	5.67	48353.32	20953.40	13687.36
81	29.01	556.38	5.67	48353.32	20953.40	13687.36
82	46.22	561.36	7.24	53365.91	23370.87	15266.52
82	46.22	561.36	7.24	53365.91	23370.87	15266.52
83	46.22	566.37	7.24	51220.55	22504.08	14700.31
83	46.22	566.37	7.24	51220.55	22504.08	14700.31
84	46.22	571.38	7.24	49075.18	21637.30	14134.10
84	46.22	571.38	7.24	49075.18	21637.30	14134.10
85	46.22	576.39	7.24	46929.82	20770.52	13567.89
85	46.22	576.39	7.24	46929.82	20770.52	13567.89
86	46.22	581.40	7.24	44784.46	19903.73	13001.69
86	46.22	581.40	7.24	44784.46	19903.73	13001.69
87	46.22	585.46	4.52	26848.19	11976.15	7823.16
87	46.22	585.46	4.52	26848.19	11976.15	7823.16
88	49.79	589.38	7.30	40119.94	18033.65	11780.09
88	49.79	589.38	7.30	40119.94	18033.65	11780.09
89	49.79	594.09	7.30	37714.69	17061.87	11145.30
89	49.79	594.09	7.30	37714.69	17061.87	11145.30
90	49.79	598.80	7.30	35309.45	16090.08	10510.50
90	49.79	598.80	7.30	35309.45	16090.08	10510.50
91	49.79	603.51	7.30	32904.20	15118.30	9875.71
91	49.79	603.51	7.30	32904.20	15118.30	9875.71
92	49.79	608.22	7.30	30498.96	14146.52	9240.91
92	49.79	608.22	7.30	30498.96	14146.52	9240.91
93	49.79	612.93	7.30	28093.71	13174.74	8606.11
93	49.79	612.93	7.30	28093.71	13174.74	8606.11
94	49.79	617.64	7.30	25688.46	12202.95	7971.32
94	49.79	617.64	7.30	25688.46	12202.95	7971.32
95	49.79	621.05	3.26	10701.59	5138.86	3356.85
95	49.79	621.05	3.26	10701.59	5138.86	3356.85
96	56.92	624.58	9.07	24564.03	12191.23	7963.66
96	56.92	624.58	9.07	24564.03	12191.23	7963.66
97	56.92	629.53	9.07	20317.63	10475.57	6842.94
97	56.92	629.53	9.07	20317.63	10475.57	6842.94
98	56.92	634.48	9.07	16071.23	8759.91	5722.23
98	56.92	634.48	9.07	16071.23	8759.91	5722.23
99	56.92	639.43	9.07	11824.83	7044.26	4601.51
99	56.92	639.43	9.07	11824.83	7044.26	4601.51
100	56.92	644.38	9.07	7578.43	5328.60	3480.79
100	56.92	644.38	9.07	7578.43	5328.60	3480.79
101	56.92	649.33	9.07	3332.03	3612.94	2360.08
101	56.92	649.33	9.07	3332.03	3612.94	2360.08
102	56.92	653.49	6.21	993.87	401.55	262.30
102	56.92	653.49	6.21	993.87	401.55	262.30

Sum of the Resisting Forces = 954645.01 (lbs)

Average Available Shear Strength = 1682.13(psf)

Sum of the Driving Forces = 665477.62 (lbs)

Average Mobilized Shear Stress = 1172.60(psf)

Total length of the failure surface = 567.52(ft)

Factor of Safety Balance Check: FS = 1.43453

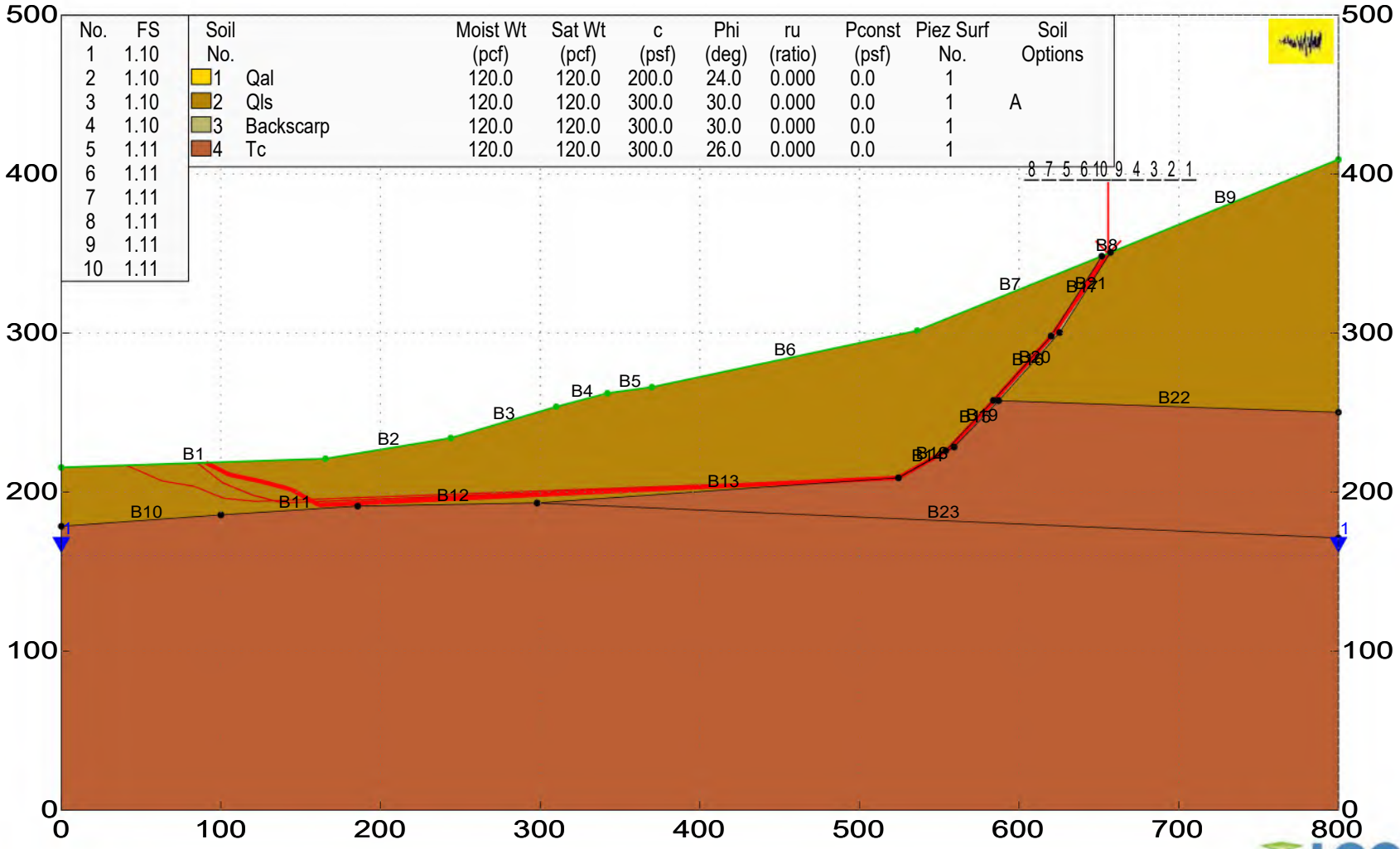
Janbu's Correction Factor (fo) = 1.0717

Janub's FS Corrected = 1.53741

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section A-A'
Existing - Entire Qls - Seismic

LGC Geotechnical, Inc. \xae.gsd



GEOSTASE FS = 1.10

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****

SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 4/ 2/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xae.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xae.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section A-A'

DESCRIPTION: Existing - Entire Qls - Seismic

BOUNDARY DATA

9 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.500	165.500	221.000	2
2	165.500	221.000	244.000	234.000	2
3	244.000	234.000	310.000	253.700	2
4	310.000	253.700	342.000	262.100	2
5	342.000	262.100	369.900	266.000	2
6	369.900	266.000	536.100	301.500	2
7	536.100	301.500	651.800	348.400	2
8	651.800	348.400	657.200	350.600	3
9	657.200	350.600	800.000	409.100	2
10	0.000	178.500	100.000	185.700	4
11	100.000	185.700	185.700	191.100	4
12	185.700	191.100	298.100	193.100	4
13	298.100	193.100	524.400	209.000	4
14	524.400	209.000	553.900	226.000	3
15	553.900	226.000	583.900	257.600	3
16	583.900	257.600	620.000	298.100	3
17	620.000	298.100	651.800	348.400	3
18	524.400	209.000	559.300	228.300	4
19	559.300	228.300	587.100	257.500	4
20	587.100	257.500	625.400	300.400	2
21	625.400	300.400	657.200	350.600	2
22	587.100	257.500	800.000	250.200	4
23	298.100	193.100	800.000	171.200	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	15.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	110.00	190.00	250.00	190.00	10.00
2	524.40	209.00	524.40	209.00	0.00
3	553.90	226.00	559.30	228.30	0.00
4	583.90	257.60	587.10	257.50	0.00
5	620.00	298.10	625.40	300.40	0.00
6	651.80	348.40	657.20	350.60	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.710 FS Min = 1.102 FS Ave = 1.254
Standard Deviation = 0.174 Coefficient of Variation = 13.86 %

Critical Surface is Sequence Number 151 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.102

Table 1 - Geometry Data on the 116 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	4.80	1.32	93.09	217.27	218.59	-27.40	1.90	5.40
2	4.80	3.97	97.89	214.78	218.75	-27.40	1.90	5.40
3	4.80	6.61	102.69	212.30	218.91	-27.40	1.90	5.40
4	4.88	8.55	107.53	210.52	219.07	-12.35	1.90	5.00
5	4.88	9.79	112.41	209.45	219.24	-12.35	1.90	5.00
6	4.88	11.02	117.30	208.38	219.40	-12.35	1.90	5.00
7	4.88	12.25	122.18	207.31	219.56	-12.35	1.90	5.00
8	4.83	13.58	127.04	206.14	219.72	-14.80	1.90	5.00
9	4.83	15.02	131.87	204.86	219.88	-14.80	1.90	5.00
10	4.83	16.46	136.71	203.58	220.04	-14.80	1.90	5.00
11	4.83	17.90	141.54	202.31	220.20	-14.80	1.90	5.00
12	5.80	20.35	146.86	200.03	220.38	-29.52	1.90	6.67
13	5.80	23.83	152.66	196.74	220.57	-29.52	1.90	6.67
14	5.80	27.31	158.46	193.46	220.77	-29.52	1.90	6.67
15	4.14	29.02	163.43	191.91	220.93	2.71	1.90	4.14
16	4.91	29.28	167.95	192.13	221.41	2.71	9.40	4.91
17	4.91	29.86	172.86	192.36	222.22	2.71	9.40	4.91
18	4.91	30.44	177.77	192.59	223.03	2.71	9.40	4.91
19	4.91	31.02	182.67	192.82	223.84	2.71	9.40	4.91
20	4.91	31.60	187.58	193.06	224.66	2.71	9.40	4.91
21	4.91	32.18	192.48	193.29	225.47	2.71	9.40	4.91
22	4.91	32.76	197.39	193.52	226.28	2.71	9.40	4.91
23	4.91	33.34	202.30	193.75	227.09	2.71	9.40	4.91
24	4.91	33.92	207.20	193.99	227.91	2.71	9.40	4.91
25	4.91	34.50	212.11	194.22	228.72	2.71	9.40	4.91
26	4.91	35.08	217.02	194.45	229.53	2.71	9.40	4.91
27	4.91	35.66	221.92	194.68	230.34	2.71	9.40	4.91
28	4.91	36.24	226.83	194.91	231.16	2.71	9.40	4.91
29	4.91	36.82	231.73	195.15	231.97	2.71	9.40	4.91
30	4.91	37.40	236.64	195.38	232.78	2.71	9.40	4.91
31	4.91	37.98	241.55	195.61	233.59	2.71	9.40	4.91
32	5.08	38.91	246.54	195.85	234.76	2.71	16.62	5.08
33	5.08	40.19	251.62	196.09	236.27	2.71	16.62	5.08
34	5.08	41.46	256.69	196.33	237.79	2.71	16.62	5.08
35	5.08	42.74	261.77	196.57	239.30	2.71	16.62	5.08
36	5.08	44.01	266.85	196.81	240.82	2.71	16.62	5.08
37	5.08	45.29	271.92	197.05	242.33	2.71	16.62	5.08
38	5.08	46.56	277.00	197.29	243.85	2.71	16.62	5.08
39	5.08	47.84	282.08	197.53	245.37	2.71	16.62	5.08
40	5.08	49.11	287.15	197.77	246.88	2.71	16.62	5.08
41	5.08	50.39	292.23	198.01	248.40	2.71	16.62	5.08
42	5.08	51.66	297.31	198.25	249.91	2.71	16.62	5.08
43	5.08	52.94	302.38	198.49	251.43	2.71	16.62	5.08

44	5.08	54.21	307.46	198.73	252.94	2.71	16.62	5.08
45	5.33	55.42	312.67	198.98	254.40	2.71	14.71	5.34
46	5.33	56.57	318.00	199.23	255.80	2.71	14.71	5.34
47	5.33	57.72	323.33	199.48	257.20	2.71	14.71	5.34
48	5.33	58.86	328.67	199.74	258.60	2.71	14.71	5.34
49	5.33	60.01	334.00	199.99	260.00	2.71	14.71	5.34
50	5.33	61.16	339.33	200.24	261.40	2.71	14.71	5.34
51	4.65	61.95	344.32	200.48	262.43	2.71	7.96	4.66
52	4.65	62.38	348.98	200.70	263.08	2.71	7.96	4.66
53	4.65	62.81	353.62	200.92	263.73	2.71	7.96	4.66
54	4.65	63.24	358.27	201.14	264.38	2.71	7.96	4.66
55	4.65	63.67	362.92	201.36	265.02	2.71	7.96	4.66
56	4.65	64.10	367.57	201.58	265.68	2.71	7.96	4.66
57	4.98	64.73	372.39	201.80	266.53	2.71	12.06	4.99
58	4.98	65.56	377.38	202.04	267.60	2.71	12.06	4.99
59	4.98	66.38	382.36	202.28	268.66	2.71	12.06	4.99
60	4.98	67.21	387.34	202.51	269.73	2.71	12.06	4.99
61	4.98	68.04	392.33	202.75	270.79	2.71	12.06	4.99
62	4.98	68.87	397.31	202.98	271.85	2.71	12.06	4.99
63	4.98	69.70	402.30	203.22	272.92	2.71	12.06	4.99
64	4.98	70.53	407.28	203.46	273.98	2.71	12.06	4.99
65	4.98	71.36	412.26	203.69	275.05	2.71	12.06	4.99
66	4.98	72.19	417.25	203.93	276.11	2.71	12.06	4.99
67	4.98	73.01	422.23	204.16	277.18	2.71	12.06	4.99
68	4.98	73.84	427.21	204.40	278.24	2.71	12.06	4.99
69	4.98	74.67	432.20	204.64	279.31	2.71	12.06	4.99
70	4.98	75.50	437.18	204.87	280.37	2.71	12.06	4.99
71	4.98	76.33	442.17	205.11	281.44	2.71	12.06	4.99
72	4.98	77.16	447.15	205.34	282.50	2.71	12.06	4.99
73	4.98	77.99	452.13	205.58	283.56	2.71	12.06	4.99
74	4.98	78.81	457.12	205.82	284.63	2.71	12.06	4.99
75	4.98	79.64	462.10	206.05	285.69	2.71	12.06	4.99
76	4.98	80.47	467.09	206.29	286.76	2.71	12.06	4.99
77	4.98	81.30	472.07	206.52	287.82	2.71	12.06	4.99
78	4.98	82.13	477.05	206.76	288.89	2.71	12.06	4.99
79	4.98	82.96	482.04	206.99	289.95	2.71	12.06	4.99
80	4.98	83.79	487.02	207.23	291.02	2.71	12.06	4.99
81	4.98	84.61	492.00	207.47	292.08	2.71	12.06	4.99
82	4.98	85.44	496.99	207.70	293.15	2.71	12.06	4.99
83	4.98	86.27	501.97	207.94	294.21	2.71	12.06	4.99
84	4.98	87.10	506.96	208.17	295.27	2.71	12.06	4.99
85	4.98	87.93	511.94	208.41	296.34	2.71	12.06	4.99
86	4.98	88.76	516.92	208.65	297.40	2.71	12.06	4.99
87	4.98	89.59	521.91	208.88	298.47	2.71	12.06	4.99
88	5.85	88.96	527.33	210.67	299.63	29.65	12.06	6.73
89	5.85	86.88	533.18	214.00	300.88	29.65	12.06	6.73
90	4.45	85.48	538.33	216.93	302.40	29.65	22.07	5.12
91	4.45	84.75	542.77	219.46	304.21	29.65	22.07	5.12
92	4.45	84.02	547.23	221.99	306.01	29.65	22.07	5.12
93	4.45	83.29	551.67	224.53	307.81	29.65	22.07	5.12
94	1.45	82.80	554.62	226.20	309.01	29.65	22.07	1.67
95	4.76	81.12	557.73	229.15	310.27	46.77	22.07	6.95
96	4.76	77.99	562.49	234.21	312.20	46.77	22.07	6.95
97	4.76	74.85	567.24	239.27	314.12	46.77	22.07	6.95
98	4.76	71.72	572.00	244.33	316.05	46.77	22.07	6.95
99	4.76	68.59	576.76	249.40	317.98	46.77	22.07	6.95
100	4.76	65.45	581.52	254.46	319.91	46.77	22.07	6.95
101	0.56	63.70	584.18	257.29	320.99	46.77	22.07	0.81
102	5.08	61.68	587.00	260.45	322.13	48.50	22.07	7.66
103	5.08	58.00	592.07	266.19	324.19	48.50	22.07	7.66
104	5.08	54.32	597.15	271.93	326.25	48.50	22.07	7.66
105	5.08	50.64	602.23	277.67	328.31	48.50	22.07	7.66
106	5.08	46.96	607.31	283.41	330.36	48.50	22.07	7.66
107	5.08	43.28	612.38	289.14	332.42	48.50	22.07	7.66
108	5.08	39.60	617.46	294.88	334.48	48.50	22.07	7.66
109	0.49	37.58	620.25	298.03	335.61	48.50	22.07	0.75
110	5.22	34.63	623.10	302.13	336.77	55.68	22.07	9.26
111	5.22	29.11	628.32	309.78	338.88	55.68	22.07	9.26
112	5.22	23.58	633.54	317.42	341.00	55.68	22.07	9.26
113	5.22	18.05	638.76	325.07	343.11	55.68	22.07	9.26
114	5.22	12.52	643.97	332.71	345.23	55.68	22.07	9.26
115	5.22	6.99	649.19	340.35	347.34	55.68	22.07	9.26
116	3.99	2.11	653.80	347.10	349.21	55.68	22.17	7.08

Table 2 - Force Data On The 116 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	761.5	0.0	0.0	114.2	0.0	0.0
2	2284.4	0.0	0.0	342.7	0.0	0.0
3	3807.4	0.0	0.0	571.1	0.0	0.0
4	5013.0	0.0	0.0	752.0	0.0	0.0
5	5735.1	0.0	0.0	860.3	0.0	0.0
6	6457.3	0.0	0.0	968.6	0.0	0.0
7	7179.4	0.0	0.0	1076.9	0.0	0.0
8	7880.2	0.0	0.0	1182.0	0.0	0.0
9	8714.1	0.0	0.0	1307.1	0.0	0.0
10	9548.0	0.0	0.0	1432.2	0.0	0.0
11	10381.9	0.0	0.0	1557.3	0.0	0.0
12	14170.0	0.0	0.0	2125.5	0.0	0.0
13	16590.7	0.0	0.0	2488.6	0.0	0.0
14	19011.4	0.0	0.0	2851.7	0.0	0.0
15	14403.7	0.0	0.0	2160.5	0.0	0.0
16	17237.7	0.0	0.0	2585.7	0.0	0.0
17	17579.4	0.0	0.0	2636.9	0.0	0.0
18	17921.0	0.0	0.0	2688.2	0.0	0.0
19	18262.6	0.0	0.0	2739.4	0.0	0.0
20	18604.3	0.0	0.0	2790.6	0.0	0.0
21	18945.9	0.0	0.0	2841.9	0.0	0.0
22	19287.5	0.0	0.0	2893.1	0.0	0.0
23	19629.2	0.0	0.0	2944.4	0.0	0.0
24	19970.8	0.0	0.0	2995.6	0.0	0.0
25	20312.4	0.0	0.0	3046.9	0.0	0.0
26	20654.0	0.0	0.0	3098.1	0.0	0.0
27	20995.7	0.0	0.0	3149.4	0.0	0.0
28	21337.3	0.0	0.0	3200.6	0.0	0.0
29	21678.9	0.0	0.0	3251.8	0.0	0.0
30	22020.6	0.0	0.0	3303.1	0.0	0.0
31	22362.2	0.0	0.0	3354.3	0.0	0.0
32	23705.3	0.0	0.0	3555.8	0.0	0.0
33	24482.1	0.0	0.0	3672.3	0.0	0.0
34	25258.9	0.0	0.0	3788.8	0.0	0.0
35	26035.7	0.0	0.0	3905.4	0.0	0.0
36	26812.5	0.0	0.0	4021.9	0.0	0.0
37	27589.3	0.0	0.0	4138.4	0.0	0.0

38	28366.1	0.0	0.0	4254.9	0.0	0.0
39	29143.0	0.0	0.0	4371.4	0.0	0.0
40	29919.8	0.0	0.0	4488.0	0.0	0.0
41	30696.6	0.0	0.0	4604.5	0.0	0.0
42	31473.4	0.0	0.0	4721.0	0.0	0.0
43	32250.2	0.0	0.0	4837.5	0.0	0.0
44	33027.0	0.0	0.0	4954.1	0.0	0.0
45	35470.3	0.0	0.0	5320.5	0.0	0.0
46	36204.7	0.0	0.0	5430.7	0.0	0.0
47	36939.1	0.0	0.0	5540.9	0.0	0.0
48	37673.6	0.0	0.0	5651.0	0.0	0.0
49	38408.0	0.0	0.0	5761.2	0.0	0.0
50	39142.4	0.0	0.0	5871.4	0.0	0.0
51	34567.4	0.0	0.0	5185.1	0.0	0.0
52	34807.3	0.0	0.0	5221.1	0.0	0.0
53	35047.2	0.0	0.0	5257.1	0.0	0.0
54	35287.1	0.0	0.0	5293.1	0.0	0.0
55	35526.9	0.0	0.0	5329.0	0.0	0.0
56	35766.8	0.0	0.0	5365.0	0.0	0.0
57	38711.2	0.0	0.0	5806.7	0.0	0.0
58	39206.8	0.0	0.0	5881.0	0.0	0.0
59	39702.4	0.0	0.0	5955.4	0.0	0.0
60	40198.0	0.0	0.0	6029.7	0.0	0.0
61	40693.5	0.0	0.0	6104.0	0.0	0.0
62	41189.1	0.0	0.0	6178.4	0.0	0.0
63	41684.7	0.0	0.0	6252.7	0.0	0.0
64	42180.3	0.0	0.0	6327.0	0.0	0.0
65	42675.9	0.0	0.0	6401.4	0.0	0.0
66	43171.4	0.0	0.0	6475.7	0.0	0.0
67	43667.0	0.0	0.0	6550.1	0.0	0.0
68	44162.6	0.0	0.0	6624.4	0.0	0.0
69	44658.2	0.0	0.0	6698.7	0.0	0.0
70	45153.7	0.0	0.0	6773.1	0.0	0.0
71	45649.3	0.0	0.0	6847.4	0.0	0.0
72	46144.9	0.0	0.0	6921.7	0.0	0.0
73	46640.5	0.0	0.0	6996.1	0.0	0.0
74	47136.1	0.0	0.0	7070.4	0.0	0.0
75	47631.6	0.0	0.0	7144.7	0.0	0.0
76	48127.2	0.0	0.0	7219.1	0.0	0.0
77	48622.8	0.0	0.0	7293.4	0.0	0.0
78	49118.4	0.0	0.0	7367.8	0.0	0.0
79	49613.9	0.0	0.0	7442.1	0.0	0.0
80	50109.5	0.0	0.0	7516.4	0.0	0.0
81	50605.1	0.0	0.0	7590.8	0.0	0.0
82	51100.7	0.0	0.0	7665.1	0.0	0.0
83	51596.2	0.0	0.0	7739.4	0.0	0.0
84	52091.8	0.0	0.0	7813.8	0.0	0.0
85	52587.4	0.0	0.0	7888.1	0.0	0.0
86	53083.0	0.0	0.0	7962.4	0.0	0.0
87	53578.6	0.0	0.0	8036.8	0.0	0.0
88	62450.4	0.0	0.0	9367.6	0.0	0.0
89	60989.9	0.0	0.0	9148.5	0.0	0.0
90	45643.8	0.0	0.0	6846.6	0.0	0.0
91	45254.4	0.0	0.0	6788.2	0.0	0.0
92	44865.0	0.0	0.0	6729.7	0.0	0.0
93	44475.6	0.0	0.0	6671.3	0.0	0.0
94	14393.5	0.0	0.0	2159.0	0.0	0.0
95	46321.3	0.0	0.0	6948.2	0.0	0.0
96	44532.1	0.0	0.0	6679.8	0.0	0.0
97	42742.9	0.0	0.0	6411.4	0.0	0.0
98	40953.7	0.0	0.0	6143.1	0.0	0.0
99	39164.5	0.0	0.0	5874.7	0.0	0.0
100	37375.3	0.0	0.0	5606.3	0.0	0.0
101	4256.6	0.0	0.0	638.5	0.0	0.0
102	37581.8	0.0	0.0	5637.3	0.0	0.0
103	35339.4	0.0	0.0	5300.9	0.0	0.0
104	33097.0	0.0	0.0	4964.5	0.0	0.0
105	30854.6	0.0	0.0	4628.2	0.0	0.0
106	28612.1	0.0	0.0	4291.8	0.0	0.0
107	26369.7	0.0	0.0	3955.5	0.0	0.0
108	24127.3	0.0	0.0	3619.1	0.0	0.0
109	2227.9	0.0	0.0	334.2	0.0	0.0
110	21685.5	0.0	0.0	3252.8	0.0	0.0
111	18223.4	0.0	0.0	2733.5	0.0	0.0
112	14761.4	0.0	0.0	2214.2	0.0	0.0
113	11299.4	0.0	0.0	1694.9	0.0	0.0
114	7837.4	0.0	0.0	1175.6	0.0	0.0
115	4375.3	0.0	0.0	656.3	0.0	0.0
116	1011.8	0.0	0.0	151.8	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 3553653.06(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 3553653.06(lbs)

TOTAL AREA OF SLIDING MASS = 29613.78(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 116 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	2	300.00	30.00	A
2	2	300.00	30.00	A
3	2	300.00	30.00	A
4	2	0.00	15.00	A
5	2	0.00	15.00	A
6	2	0.00	15.00	A
7	2	0.00	15.00	A
8	2	0.00	15.00	A
9	2	0.00	15.00	A
10	2	0.00	15.00	A
11	2	0.00	15.00	A
12	2	300.00	30.00	A
13	2	300.00	30.00	A
14	2	300.00	30.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	2	0.00	15.00	A
23	2	0.00	15.00	A
24	2	0.00	15.00	A
25	2	0.00	15.00	A
26	2	0.00	15.00	A
27	2	0.00	15.00	A
28	2	0.00	15.00	A
29	2	0.00	15.00	A

30	2	0.00	15.00	A
31	2	0.00	15.00	A
32	2	0.00	15.00	A
33	2	0.00	15.00	A
34	2	0.00	15.00	A
35	2	0.00	15.00	A
36	2	0.00	15.00	A
37	2	0.00	15.00	A
38	2	0.00	15.00	A
39	2	0.00	15.00	A
40	2	0.00	15.00	A
41	2	0.00	15.00	A
42	2	0.00	15.00	A
43	2	0.00	15.00	A
44	2	0.00	15.00	A
45	2	0.00	15.00	A
46	2	0.00	15.00	A
47	2	0.00	15.00	A
48	2	0.00	15.00	A
49	2	0.00	15.00	A
50	2	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A
77	2	0.00	15.00	A
78	2	0.00	15.00	A
79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	2	0.00	15.00	A
88	3	300.00	30.00	
89	3	300.00	30.00	
90	3	300.00	30.00	
91	3	300.00	30.00	
92	3	300.00	30.00	
93	3	300.00	30.00	
94	3	300.00	30.00	
95	3	300.00	30.00	
96	3	300.00	30.00	
97	3	300.00	30.00	
98	3	300.00	30.00	
99	3	300.00	30.00	
100	3	300.00	30.00	
101	3	300.00	30.00	
102	3	300.00	30.00	
103	3	300.00	30.00	
104	3	300.00	30.00	
105	3	300.00	30.00	
106	3	300.00	30.00	
107	3	300.00	30.00	
108	3	300.00	30.00	
109	3	300.00	30.00	
110	3	300.00	30.00	
111	3	300.00	30.00	
112	3	300.00	30.00	
113	3	300.00	30.00	
114	3	300.00	30.00	
115	3	300.00	30.00	
116	3	300.00	30.00	

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 116 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-27.40	93.09	5.40	436.19	551.84	501.28
1	-27.40	93.09	5.40	436.19	551.84	501.28
2	-27.40	97.89	5.40	883.53	810.11	735.89
2	-27.40	97.89	5.40	883.53	810.11	735.89
3	-27.40	102.69	5.40	1330.87	1068.38	970.50
3	-27.40	102.69	5.40	1330.87	1068.38	970.50
4	-12.35	107.53	5.00	1088.33	291.62	264.90
4	-12.35	107.53	5.00	1088.33	291.62	264.90
5	-12.35	112.41	5.00	1245.10	333.62	303.06
5	-12.35	112.41	5.00	1245.10	333.62	303.06
6	-12.35	117.30	5.00	1401.87	375.63	341.22
6	-12.35	117.30	5.00	1401.87	375.63	341.22
7	-12.35	122.18	5.00	1558.64	417.64	379.38
7	-12.35	122.18	5.00	1558.64	417.64	379.38
8	-14.80	127.04	5.00	1750.24	468.98	426.01
8	-14.80	127.04	5.00	1750.24	468.98	426.01
9	-14.80	131.87	5.00	1935.46	518.61	471.09
9	-14.80	131.87	5.00	1935.46	518.61	471.09

10	-14.80	136.71	5.00	2120.68	568.23	516.18
10	-14.80	136.71	5.00	2120.68	568.23	516.18
11	-14.80	141.54	5.00	2305.89	617.86	561.26
11	-14.80	141.54	5.00	2305.89	617.86	561.26
12	-29.52	146.86	6.67	3817.64	2504.11	2274.70
12	-29.52	146.86	6.67	3817.64	2504.11	2274.70
13	-29.52	152.66	6.67	4428.61	2856.86	2595.13
13	-29.52	152.66	6.67	4428.61	2856.86	2595.13
14	-29.52	158.46	6.67	5039.59	3209.61	2915.56
14	-29.52	158.46	6.67	5039.59	3209.61	2915.56
15	2.71	163.43	4.14	3439.79	921.69	837.25
15	2.71	163.43	4.14	3439.79	921.69	837.25
16	2.71	167.95	4.91	3470.72	929.98	844.78
16	2.71	167.95	4.91	3470.72	929.98	844.78
17	2.71	172.86	4.91	3539.51	948.41	861.52
17	2.71	172.86	4.91	3539.51	948.41	861.52
18	2.71	177.77	4.91	3608.29	966.84	878.26
18	2.71	177.77	4.91	3608.29	966.84	878.26
19	2.71	182.67	4.91	3677.08	985.27	895.01
19	2.71	182.67	4.91	3677.08	985.27	895.01
20	2.71	187.58	4.91	3745.86	1003.70	911.75
20	2.71	187.58	4.91	3745.86	1003.70	911.75
21	2.71	192.48	4.91	3814.65	1022.13	928.49
21	2.71	192.48	4.91	3814.65	1022.13	928.49
22	2.71	197.39	4.91	3883.44	1040.56	945.23
22	2.71	197.39	4.91	3883.44	1040.56	945.23
23	2.71	202.30	4.91	3952.22	1058.99	961.98
23	2.71	202.30	4.91	3952.22	1058.99	961.98
24	2.71	207.20	4.91	4021.01	1077.43	978.72
24	2.71	207.20	4.91	4021.01	1077.43	978.72
25	2.71	212.11	4.91	4089.79	1095.86	995.46
25	2.71	212.11	4.91	4089.79	1095.86	995.46
26	2.71	217.02	4.91	4158.58	1114.29	1012.20
26	2.71	217.02	4.91	4158.58	1114.29	1012.20
27	2.71	221.92	4.91	4227.36	1132.72	1028.95
27	2.71	221.92	4.91	4227.36	1132.72	1028.95
28	2.71	226.83	4.91	4296.15	1151.15	1045.69
28	2.71	226.83	4.91	4296.15	1151.15	1045.69
29	2.71	231.73	4.91	4364.93	1169.58	1062.43
29	2.71	231.73	4.91	4364.93	1169.58	1062.43
30	2.71	236.64	4.91	4433.72	1188.01	1079.17
30	2.71	236.64	4.91	4433.72	1188.01	1079.17
31	2.71	241.55	4.91	4502.50	1206.44	1095.92
31	2.71	241.55	4.91	4502.50	1206.44	1095.92
32	2.71	246.54	5.08	4612.47	1235.91	1122.68
32	2.71	246.54	5.08	4612.47	1235.91	1122.68
33	2.71	251.62	5.08	4763.62	1276.41	1159.47
33	2.71	251.62	5.08	4763.62	1276.41	1159.47
34	2.71	256.69	5.08	4914.77	1316.91	1196.26
34	2.71	256.69	5.08	4914.77	1316.91	1196.26
35	2.71	261.77	5.08	5065.92	1357.41	1233.05
35	2.71	261.77	5.08	5065.92	1357.41	1233.05
36	2.71	266.85	5.08	5217.07	1397.91	1269.84
36	2.71	266.85	5.08	5217.07	1397.91	1269.84
37	2.71	271.92	5.08	5368.22	1438.41	1306.63
37	2.71	271.92	5.08	5368.22	1438.41	1306.63
38	2.71	277.00	5.08	5519.36	1478.91	1343.42
38	2.71	277.00	5.08	5519.36	1478.91	1343.42
39	2.71	282.08	5.08	5670.51	1519.41	1380.21
39	2.71	282.08	5.08	5670.51	1519.41	1380.21
40	2.71	287.15	5.08	5821.66	1559.91	1417.00
40	2.71	287.15	5.08	5821.66	1559.91	1417.00
41	2.71	292.23	5.08	5972.81	1600.41	1453.79
41	2.71	292.23	5.08	5972.81	1600.41	1453.79
42	2.71	297.31	5.08	6123.96	1640.91	1490.58
42	2.71	297.31	5.08	6123.96	1640.91	1490.58
43	2.71	302.38	5.08	6275.11	1681.41	1527.37
43	2.71	302.38	5.08	6275.11	1681.41	1527.37
44	2.71	307.46	5.08	6426.26	1721.91	1564.16
44	2.71	307.46	5.08	6426.26	1721.91	1564.16
45	2.71	312.67	5.34	6569.85	1760.39	1599.11
45	2.71	312.67	5.34	6569.85	1760.39	1599.11
46	2.71	318.00	5.34	6705.88	1796.83	1632.22
46	2.71	318.00	5.34	6705.88	1796.83	1632.22
47	2.71	323.33	5.34	6841.91	1833.28	1665.33
47	2.71	323.33	5.34	6841.91	1833.28	1665.33
48	2.71	328.67	5.34	6977.94	1869.73	1698.44
48	2.71	328.67	5.34	6977.94	1869.73	1698.44
49	2.71	334.00	5.34	7113.98	1906.18	1731.55
49	2.71	334.00	5.34	7113.98	1906.18	1731.55
50	2.71	339.33	5.34	7250.01	1942.63	1764.66
50	2.71	339.33	5.34	7250.01	1942.63	1764.66
51	2.71	344.32	4.66	7343.50	1967.69	1787.42
51	2.71	344.32	4.66	7343.50	1967.69	1787.42
52	2.71	348.98	4.66	7394.46	1981.34	1799.82
52	2.71	348.98	4.66	7394.46	1981.34	1799.82
53	2.71	353.62	4.66	7445.42	1995.00	1812.23
53	2.71	353.62	4.66	7445.42	1995.00	1812.23
54	2.71	358.27	4.66	7496.38	2008.65	1824.63
54	2.71	358.27	4.66	7496.38	2008.65	1824.63
55	2.71	362.92	4.66	7547.35	2022.30	1837.03
55	2.71	362.92	4.66	7547.35	2022.30	1837.03
56	2.71	367.57	4.66	7598.31	2035.96	1849.44
56	2.71	367.57	4.66	7598.31	2035.96	1849.44
57	2.71	372.39	4.99	7672.90	2055.95	1867.59
57	2.71	372.39	4.99	7672.90	2055.95	1867.59
58	2.71	377.38	4.99	7771.13	2082.27	1891.50
58	2.71	377.38	4.99	7771.13	2082.27	1891.50
59	2.71	382.36	4.99	7869.35	2108.59	1915.41
59	2.71	382.36	4.99	7869.35	2108.59	1915.41
60	2.71	387.34	4.99	7967.58	2134.91	1939.32
60	2.71	387.34	4.99	7967.58	2134.91	1939.32
61	2.71	392.33	4.99	8065.81	2161.23	1963.23
61	2.71	392.33	4.99	8065.81	2161.23	1963.23
62	2.71	397.31	4.99	8164.04	2187.55	1987.14
62	2.71	397.31	4.99	8164.04	2187.55	1987.14
63	2.71	402.30	4.99	8262.27	2213.87	2011.05
63	2.71	402.30	4.99	8262.27	2213.87	2011.05
64	2.71	407.28	4.99	8360.49	2240.19	2034.96
64	2.71	407.28	4.99	8360.49	2240.19	2034.96
65	2.71	412.26	4.99	8458.72	2266.51	2058.86
65	2.71	412.26	4.99	8458.72	2266.51	2058.86
66	2.71	417.25	4.99	8556.95	2292.83	2082.77
66	2.71	417.25	4.99	8556.95	2292.83	2082.77
67	2.71	422.23	4.99	8655.18	2319.15	2106.68
67	2.71	422.23	4.99	8655.18	2319.15	2106.68
68	2.71	427.21	4.99	8753.40	2345.47	2130.59
68	2.71	427.21	4.99	8753.40	2345.47	2130.59
69	2.71	432.20	4.99	8851.63	2371.79	2154.50
69	2.71	432.20	4.99	8851.63	2371.79	2154.50

70	2.71	437.18	4.99	8949.86	2398.11	2178.41
70	2.71	437.18	4.99	8949.86	2398.11	2178.41
71	2.71	442.17	4.99	9048.09	2424.43	2202.32
71	2.71	442.17	4.99	9048.09	2424.43	2202.32
72	2.71	447.15	4.99	9146.32	2450.75	2226.23
72	2.71	447.15	4.99	9146.32	2450.75	2226.23
73	2.71	452.13	4.99	9244.54	2477.07	2250.13
73	2.71	452.13	4.99	9244.54	2477.07	2250.13
74	2.71	457.12	4.99	9342.77	2503.39	2274.04
74	2.71	457.12	4.99	9342.77	2503.39	2274.04
75	2.71	462.10	4.99	9441.00	2529.71	2297.95
75	2.71	462.10	4.99	9441.00	2529.71	2297.95
76	2.71	467.09	4.99	9539.23	2556.03	2321.86
76	2.71	467.09	4.99	9539.23	2556.03	2321.86
77	2.71	472.07	4.99	9637.45	2582.35	2345.77
77	2.71	472.07	4.99	9637.45	2582.35	2345.77
78	2.71	477.05	4.99	9735.68	2608.67	2369.68
78	2.71	477.05	4.99	9735.68	2608.67	2369.68
79	2.71	482.04	4.99	9833.91	2634.99	2393.59
79	2.71	482.04	4.99	9833.91	2634.99	2393.59
80	2.71	487.02	4.99	9932.14	2661.31	2417.50
80	2.71	487.02	4.99	9932.14	2661.31	2417.50
81	2.71	492.00	4.99	10030.36	2687.63	2441.40
81	2.71	492.00	4.99	10030.36	2687.63	2441.40
82	2.71	496.99	4.99	10128.59	2713.95	2465.31
82	2.71	496.99	4.99	10128.59	2713.95	2465.31
83	2.71	501.97	4.99	10226.82	2740.27	2489.22
83	2.71	501.97	4.99	10226.82	2740.27	2489.22
84	2.71	506.96	4.99	10325.05	2766.59	2513.13
84	2.71	506.96	4.99	10325.05	2766.59	2513.13
85	2.71	511.94	4.99	10423.28	2792.91	2537.04
85	2.71	511.94	4.99	10423.28	2792.91	2537.04
86	2.71	516.92	4.99	10521.50	2819.23	2560.95
86	2.71	516.92	4.99	10521.50	2819.23	2560.95
87	2.71	521.91	4.99	10619.73	2845.55	2584.86
87	2.71	521.91	4.99	10619.73	2845.55	2584.86
88	29.65	527.33	6.73	7969.05	4900.93	4451.94
88	29.65	527.33	6.73	7969.05	4900.93	4451.94
89	29.65	533.18	6.73	7779.74	4791.64	4352.66
89	29.65	533.18	6.73	7779.74	4791.64	4352.66
90	29.65	538.33	5.12	7651.91	4717.83	4285.62
90	29.65	538.33	5.12	7651.91	4717.83	4285.62
91	29.65	542.77	5.12	7585.56	4679.52	4250.81
91	29.65	542.77	5.12	7585.56	4679.52	4250.81
92	29.65	547.23	5.12	7519.20	4641.21	4216.01
92	29.65	547.23	5.12	7519.20	4641.21	4216.01
93	29.65	551.67	5.12	7452.85	4602.90	4181.21
93	29.65	551.67	5.12	7452.85	4602.90	4181.21
94	29.65	554.62	1.67	7408.87	4577.51	4158.15
94	29.65	554.62	1.67	7408.87	4577.51	4158.15
95	46.77	557.73	6.95	5905.95	3709.80	3369.93
95	46.77	557.73	6.95	5905.95	3709.80	3369.93
96	46.77	562.49	6.95	5670.33	3573.77	3246.36
96	46.77	562.49	6.95	5670.33	3573.77	3246.36
97	46.77	567.24	6.95	5434.72	3437.74	3122.79
97	46.77	567.24	6.95	5434.72	3437.74	3122.79
98	46.77	572.00	6.95	5199.10	3301.70	2999.22
98	46.77	572.00	6.95	5199.10	3301.70	2999.22
99	46.77	576.76	6.95	4963.49	3165.67	2875.65
99	46.77	576.76	6.95	4963.49	3165.67	2875.65
100	46.77	581.52	6.95	4727.87	3029.64	2752.08
100	46.77	581.52	6.95	4727.87	3029.64	2752.08
101	46.77	584.18	0.81	4596.28	2953.66	2683.07
101	46.77	584.18	0.81	4596.28	2953.66	2683.07
102	48.50	587.00	7.66	4331.16	2800.60	2544.02
102	48.50	587.00	7.66	4331.16	2800.60	2544.02
103	48.50	592.07	7.66	4060.71	2644.45	2402.19
103	48.50	592.07	7.66	4060.71	2644.45	2402.19
104	48.50	597.15	7.66	3790.26	2488.31	2260.35
104	48.50	597.15	7.66	3790.26	2488.31	2260.35
105	48.50	602.23	7.66	3519.82	2332.17	2118.51
105	48.50	602.23	7.66	3519.82	2332.17	2118.51
106	48.50	607.31	7.66	3249.37	2176.02	1976.67
106	48.50	607.31	7.66	3249.37	2176.02	1976.67
107	48.50	612.38	7.66	2978.92	2019.88	1834.83
107	48.50	612.38	7.66	2978.92	2019.88	1834.83
108	48.50	617.46	7.66	2708.47	1863.74	1692.99
108	48.50	617.46	7.66	2708.47	1863.74	1692.99
109	48.50	620.25	0.75	2560.09	1778.07	1615.17
109	48.50	620.25	0.75	2560.09	1778.07	1615.17
110	55.68	623.10	9.26	2048.73	1482.84	1346.99
110	55.68	623.10	9.26	2048.73	1482.84	1346.99
111	55.68	628.32	9.26	1684.27	1272.41	1155.84
111	55.68	628.32	9.26	1684.27	1272.41	1155.84
112	55.68	633.54	9.26	1319.80	1061.99	964.70
112	55.68	633.54	9.26	1319.80	1061.99	964.70
113	55.68	638.76	9.26	955.34	851.57	773.55
113	55.68	638.76	9.26	955.34	851.57	773.55
114	55.68	643.97	9.26	590.88	641.14	582.41
114	55.68	643.97	9.26	590.88	641.14	582.41
115	55.68	649.19	9.26	226.41	430.72	391.26
115	55.68	649.19	9.26	226.41	430.72	391.26
116	55.68	653.80	7.08	139.19	80.36	73.00
116	55.68	653.80	7.08	139.19	80.36	73.00

Table 4 - Base Force Data on the 116 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-27.40	93.09	5.40	2356.75	2981.57	2708.42
1	-27.40	93.09	5.40	2356.75	2981.57	2708.42
2	-27.40	97.89	5.40	4773.70	4376.99	3976.00
2	-27.40	97.89	5.40	4773.70	4376.99	3976.00
3	-27.40	102.69	5.40	7190.65	5772.42	5243.59
3	-27.40	102.69	5.40	7190.65	5772.42	5243.59
4	-12.35	107.53	5.00	5441.64	1458.08	1324.50
4	-12.35	107.53	5.00	5441.64	1458.08	1324.50
5	-12.35	112.41	5.00	6225.50	1668.12	1515.29
5	-12.35	112.41	5.00	6225.50	1668.12	1515.29
6	-12.35	117.30	5.00	7009.36	1878.15	1706.09
6	-12.35	117.30	5.00	7009.36	1878.15	1706.09
7	-12.35	122.18	5.00	7793.21	2088.19	1896.88
7	-12.35	122.18	5.00	7793.21	2088.19	1896.88
8	-14.80	127.04	5.00	8751.22	2344.88	2130.06
8	-14.80	127.04	5.00	8751.22	2344.88	2130.06
9	-14.80	131.87	5.00	9677.30	2593.03	2355.47

9	-14.80	131.87	5.00	9677.30	2593.03	2355.47
10	-14.80	136.71	5.00	10603.38	2841.17	2580.88
10	-14.80	136.71	5.00	10603.38	2841.17	2580.88
11	-14.80	141.54	5.00	11529.46	3089.31	2806.29
11	-14.80	141.54	5.00	11529.46	3089.31	2806.29
12	-29.52	146.86	6.67	25450.93	16694.10	15164.69
12	-29.52	146.86	6.67	25450.93	16694.10	15164.69
13	-29.52	152.66	6.67	29524.08	19045.74	17300.88
13	-29.52	152.66	6.67	29524.08	19045.74	17300.88
14	-29.52	158.46	6.67	33597.24	21397.37	19437.08
14	-29.52	158.46	6.67	33597.24	21397.37	19437.08
15	2.71	163.43	4.14	14244.52	3816.81	3467.14
15	2.71	163.43	4.14	14244.52	3816.81	3467.14
16	2.71	167.95	4.91	17047.30	4567.81	4149.34
16	2.71	167.95	4.91	17047.30	4567.81	4149.34
17	2.71	172.86	4.91	17385.16	4658.34	4231.57
17	2.71	172.86	4.91	17385.16	4658.34	4231.57
18	2.71	177.77	4.91	17723.01	4748.87	4313.80
18	2.71	177.77	4.91	17723.01	4748.87	4313.80
19	2.71	182.67	4.91	18060.87	4839.39	4396.04
19	2.71	182.67	4.91	18060.87	4839.39	4396.04
20	2.71	187.58	4.91	18398.72	4929.92	4478.27
20	2.71	187.58	4.91	18398.72	4929.92	4478.27
21	2.71	192.48	4.91	18736.58	5020.45	4560.51
21	2.71	192.48	4.91	18736.58	5020.45	4560.51
22	2.71	197.39	4.91	19074.44	5110.98	4642.74
22	2.71	197.39	4.91	19074.44	5110.98	4642.74
23	2.71	202.30	4.91	19412.29	5201.51	4724.98
23	2.71	202.30	4.91	19412.29	5201.51	4724.98
24	2.71	207.20	4.91	19750.15	5292.04	4807.21
24	2.71	207.20	4.91	19750.15	5292.04	4807.21
25	2.71	212.11	4.91	20088.01	5382.56	4889.45
25	2.71	212.11	4.91	20088.01	5382.56	4889.45
26	2.71	217.02	4.91	20425.86	5473.09	4971.68
26	2.71	217.02	4.91	20425.86	5473.09	4971.68
27	2.71	221.92	4.91	20763.72	5563.62	5053.92
27	2.71	221.92	4.91	20763.72	5563.62	5053.92
28	2.71	226.83	4.91	21101.58	5654.15	5136.15
28	2.71	226.83	4.91	21101.58	5654.15	5136.15
29	2.71	231.73	4.91	21439.43	5744.68	5218.39
29	2.71	231.73	4.91	21439.43	5744.68	5218.39
30	2.71	236.64	4.91	21777.29	5835.21	5300.62
30	2.71	236.64	4.91	21777.29	5835.21	5300.62
31	2.71	241.55	4.91	22115.14	5925.73	5382.86
31	2.71	241.55	4.91	22115.14	5925.73	5382.86
32	2.71	246.54	5.08	23443.38	6281.63	5706.15
32	2.71	246.54	5.08	23443.38	6281.63	5706.15
33	2.71	251.62	5.08	24211.61	6487.48	5893.14
33	2.71	251.62	5.08	24211.61	6487.48	5893.14
34	2.71	256.69	5.08	24979.84	6693.33	6080.13
34	2.71	256.69	5.08	24979.84	6693.33	6080.13
35	2.71	261.77	5.08	25748.07	6899.17	6267.12
35	2.71	261.77	5.08	25748.07	6899.17	6267.12
36	2.71	266.85	5.08	26516.30	7105.02	6454.10
36	2.71	266.85	5.08	26516.30	7105.02	6454.10
37	2.71	271.92	5.08	27284.53	7310.87	6641.09
37	2.71	271.92	5.08	27284.53	7310.87	6641.09
38	2.71	277.00	5.08	28052.76	7516.71	6828.08
38	2.71	277.00	5.08	28052.76	7516.71	6828.08
39	2.71	282.08	5.08	28820.99	7722.56	7015.07
39	2.71	282.08	5.08	28820.99	7722.56	7015.07
40	2.71	287.15	5.08	29589.22	7928.41	7202.06
40	2.71	287.15	5.08	29589.22	7928.41	7202.06
41	2.71	292.23	5.08	30357.45	8134.25	7389.04
41	2.71	292.23	5.08	30357.45	8134.25	7389.04
42	2.71	297.31	5.08	31125.68	8340.10	7576.03
42	2.71	297.31	5.08	31125.68	8340.10	7576.03
43	2.71	302.38	5.08	31893.91	8545.95	7763.02
43	2.71	302.38	5.08	31893.91	8545.95	7763.02
44	2.71	307.46	5.08	32662.14	8751.79	7950.01
44	2.71	307.46	5.08	32662.14	8751.79	7950.01
45	2.71	312.67	5.34	35078.42	9399.23	8538.13
45	2.71	312.67	5.34	35078.42	9399.23	8538.13
46	2.71	318.00	5.34	35804.73	9593.85	8714.92
46	2.71	318.00	5.34	35804.73	9593.85	8714.92
47	2.71	323.33	5.34	36531.05	9788.47	8891.71
47	2.71	323.33	5.34	36531.05	9788.47	8891.71
48	2.71	328.67	5.34	37257.37	9983.08	9068.49
48	2.71	328.67	5.34	37257.37	9983.08	9068.49
49	2.71	334.00	5.34	37983.68	10177.70	9245.28
49	2.71	334.00	5.34	37983.68	10177.70	9245.28
50	2.71	339.33	5.34	38710.00	10372.31	9422.07
50	2.71	339.33	5.34	38710.00	10372.31	9422.07
51	2.71	344.32	4.66	34185.53	9159.98	8320.80
51	2.71	344.32	4.66	34185.53	9159.98	8320.80
52	2.71	348.98	4.66	34422.76	9223.55	8378.55
52	2.71	348.98	4.66	34422.76	9223.55	8378.55
53	2.71	353.62	4.66	34659.99	9287.12	8436.29
53	2.71	353.62	4.66	34659.99	9287.12	8436.29
54	2.71	358.27	4.66	34897.22	9350.68	8494.03
54	2.71	358.27	4.66	34897.22	9350.68	8494.03
55	2.71	362.92	4.66	35134.45	9414.25	8551.77
55	2.71	362.92	4.66	35134.45	9414.25	8551.77
56	2.71	367.57	4.66	35371.68	9477.81	8609.51
56	2.71	367.57	4.66	35371.68	9477.81	8609.51
57	2.71	372.39	4.99	38283.56	10258.05	9318.27
57	2.71	372.39	4.99	38283.56	10258.05	9318.27
58	2.71	377.38	4.99	38773.66	10389.37	9437.56
58	2.71	377.38	4.99	38773.66	10389.37	9437.56
59	2.71	382.36	4.99	39263.76	10520.69	9556.85
59	2.71	382.36	4.99	39263.76	10520.69	9556.85
60	2.71	387.34	4.99	39753.86	10652.02	9676.14
60	2.71	387.34	4.99	39753.86	10652.02	9676.14
61	2.71	392.33	4.99	40243.97	10783.34	9795.44
61	2.71	392.33	4.99	40243.97	10783.34	9795.44
62	2.71	397.31	4.99	40734.07	10914.66	9914.73
62	2.71	397.31	4.99	40734.07	10914.66	9914.73
63	2.71	402.30	4.99	41224.17	11045.98	10034.02
63	2.71	402.30	4.99	41224.17	11045.98	10034.02
64	2.71	407.28	4.99	41714.27	11177.31	10153.31
64	2.71	407.28	4.99	41714.27	11177.31	10153.31
65	2.71	412.26	4.99	42204.38	11308.63	10272.60
65	2.71	412.26	4.99	42204.38	11308.63	10272.60
66	2.71	417.25	4.99	42694.48	11439.95	10391.89
66	2.71	417.25	4.99	42694.48	11439.95	10391.89
67	2.71	422.23	4.99	43184.58	11571.27	10511.19
67	2.71	422.23	4.99	43184.58	11571.27	10511.19
68	2.71	427.21	4.99	43674.68	11702.60	10630.48
68	2.71	427.21	4.99	43674.68	11702.60	10630.48
69	2.71	432.20	4.99	44164.79	11833.92	10749.77

69	2.71	432.20	4.99	44164.79	11833.92	10749.77
70	2.71	437.18	4.99	44654.89	11965.24	10869.06
70	2.71	437.18	4.99	44654.89	11965.24	10869.06
71	2.71	442.17	4.99	45144.99	12096.56	10988.35
71	2.71	442.17	4.99	45144.99	12096.56	10988.35
72	2.71	447.15	4.99	45635.09	12227.89	11107.64
72	2.71	447.15	4.99	45635.09	12227.89	11107.64
73	2.71	452.13	4.99	46125.20	12359.21	11226.93
73	2.71	452.13	4.99	46125.20	12359.21	11226.93
74	2.71	457.12	4.99	46615.30	12490.53	11346.23
74	2.71	457.12	4.99	46615.30	12490.53	11346.23
75	2.71	462.10	4.99	47105.40	12621.85	11465.52
75	2.71	462.10	4.99	47105.40	12621.85	11465.52
76	2.71	467.09	4.99	47595.50	12753.18	11584.81
76	2.71	467.09	4.99	47595.50	12753.18	11584.81
77	2.71	472.07	4.99	48085.60	12884.50	11704.10
77	2.71	472.07	4.99	48085.60	12884.50	11704.10
78	2.71	477.05	4.99	48575.71	13015.82	11823.39
78	2.71	477.05	4.99	48575.71	13015.82	11823.39
79	2.71	482.04	4.99	49065.81	13147.14	11942.68
79	2.71	482.04	4.99	49065.81	13147.14	11942.68
80	2.71	487.02	4.99	49555.91	13278.47	12061.98
80	2.71	487.02	4.99	49555.91	13278.47	12061.98
81	2.71	492.00	4.99	50046.01	13409.79	12181.27
81	2.71	492.00	4.99	50046.01	13409.79	12181.27
82	2.71	496.99	4.99	50536.12	13541.11	12300.56
82	2.71	496.99	4.99	50536.12	13541.11	12300.56
83	2.71	501.97	4.99	51026.22	13672.43	12419.85
83	2.71	501.97	4.99	51026.22	13672.43	12419.85
84	2.71	506.96	4.99	51516.32	13803.76	12539.14
84	2.71	506.96	4.99	51516.32	13803.76	12539.14
85	2.71	511.94	4.99	52006.42	13935.08	12658.43
85	2.71	511.94	4.99	52006.42	13935.08	12658.43
86	2.71	516.92	4.99	52496.53	14066.40	12777.73
86	2.71	516.92	4.99	52496.53	14066.40	12777.73
87	2.71	521.91	4.99	52986.63	14197.72	12897.02
87	2.71	521.91	4.99	52986.63	14197.72	12897.02
88	29.65	527.33	6.73	53642.72	32990.06	29967.71
88	29.65	527.33	6.73	53642.72	32990.06	29967.71
89	29.65	533.18	6.73	52368.44	32254.35	29299.40
89	29.65	533.18	6.73	52368.44	32254.35	29299.40
90	29.65	538.33	5.12	39181.27	24157.45	21944.30
90	29.65	538.33	5.12	39181.27	24157.45	21944.30
91	29.65	542.77	5.12	38841.50	23961.29	21766.10
91	29.65	542.77	5.12	38841.50	23961.29	21766.10
92	29.65	547.23	5.12	38501.74	23765.12	21587.91
92	29.65	547.23	5.12	38501.74	23765.12	21587.91
93	29.65	551.67	5.12	38161.97	23568.96	21409.72
93	29.65	551.67	5.12	38161.97	23568.96	21409.72
94	29.65	554.62	1.67	12349.04	7629.76	6930.77
94	29.65	554.62	1.67	12349.04	7629.76	6930.77
95	46.77	557.73	6.95	41032.52	25774.44	23413.14
95	46.77	557.73	6.95	41032.52	25774.44	23413.14
96	46.77	562.49	6.95	39395.55	24829.33	22554.62
96	46.77	562.49	6.95	39395.55	24829.33	22554.62
97	46.77	567.24	6.95	37758.58	23884.22	21696.10
97	46.77	567.24	6.95	37758.58	23884.22	21696.10
98	46.77	572.00	6.95	36121.60	22939.12	20837.58
98	46.77	572.00	6.95	36121.60	22939.12	20837.58
99	46.77	576.76	6.95	34484.63	21994.01	19979.05
99	46.77	576.76	6.95	34484.63	21994.01	19979.05
100	46.77	581.52	6.95	32847.66	21048.90	19120.53
100	46.77	581.52	6.95	32847.66	21048.90	19120.53
101	46.77	584.18	0.81	3736.76	2401.32	2181.33
101	46.77	584.18	0.81	3736.76	2401.32	2181.33
102	48.50	587.00	7.66	33187.06	21459.28	19493.31
102	48.50	587.00	7.66	33187.06	21459.28	19493.31
103	48.50	592.07	7.66	31114.79	20262.85	18406.49
103	48.50	592.07	7.66	31114.79	20262.85	18406.49
104	48.50	597.15	7.66	29042.51	19066.42	17319.67
104	48.50	597.15	7.66	29042.51	19066.42	17319.67
105	48.50	602.23	7.66	26970.23	17869.99	16232.85
105	48.50	602.23	7.66	26970.23	17869.99	16232.85
106	48.50	607.31	7.66	24897.95	16673.56	15146.03
106	48.50	607.31	7.66	24897.95	16673.56	15146.03
107	48.50	612.38	7.66	22825.67	15477.13	14059.21
107	48.50	612.38	7.66	22825.67	15477.13	14059.21
108	48.50	617.46	7.66	20753.40	14280.70	12972.39
108	48.50	617.46	7.66	20753.40	14280.70	12972.39
109	48.50	620.25	0.75	1908.70	1325.66	1204.21
109	48.50	620.25	0.75	1908.70	1325.66	1204.21
110	55.68	623.10	9.26	18961.61	13724.08	12466.76
110	55.68	623.10	9.26	18961.61	13724.08	12466.76
111	55.68	628.32	9.26	15588.39	11776.55	10697.66
111	55.68	628.32	9.26	15588.39	11776.55	10697.66
112	55.68	633.54	9.26	12215.18	9829.02	8928.55
112	55.68	633.54	9.26	12215.18	9829.02	8928.55
113	55.68	638.76	9.26	8841.96	7881.49	7159.44
113	55.68	638.76	9.26	8841.96	7881.49	7159.44
114	55.68	643.97	9.26	5468.74	5933.96	5390.33
114	55.68	643.97	9.26	5468.74	5933.96	5390.33
115	55.68	649.19	9.26	2095.52	3986.44	3621.22
115	55.68	649.19	9.26	2095.52	3986.44	3621.22
116	55.68	653.80	7.08	985.87	569.19	517.04
116	55.68	653.80	7.08	985.87	569.19	517.04

Sum of the Resisting Forces = 1116018.13 (lbs)

Average Available Shear Strength = 1758.18(psf)

Sum of the Driving Forces = 1081852.87 (lbs)

Average Mobilized Shear Stress = 1704.35(psf)

Total length of the failure surface = 634.76(ft)

Factor of Safety Balance Check: FS = 1.03158

Janbu's Correction Factor (fo) = 1.0686

Janub's FS Corrected = 1.10230

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.18429(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

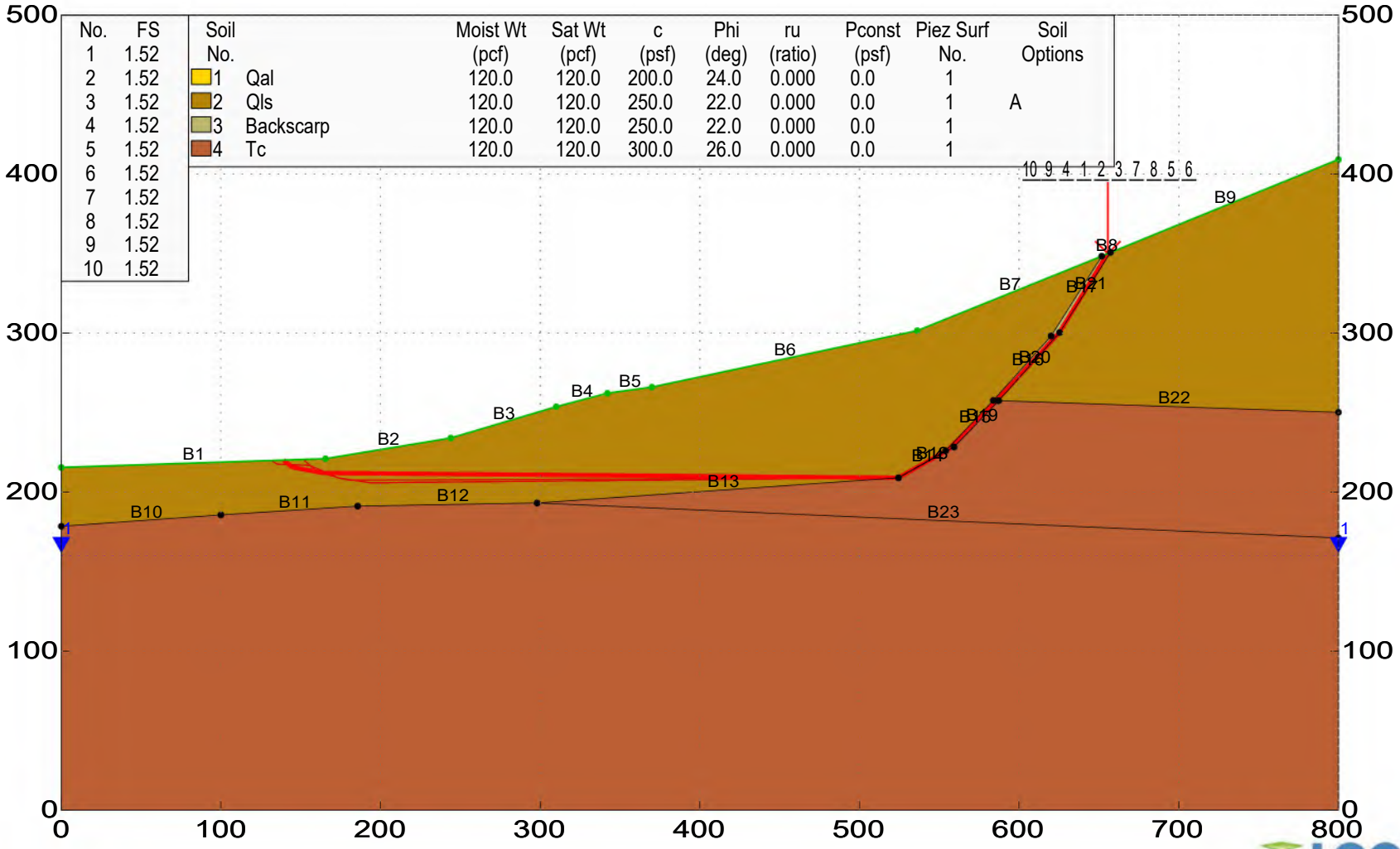
Average Elevation of Point of Application of kh on Sliding Mass = 217.873(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section A-A'
Existing - Upper Claybed - Static

LGC Geotechnical, Inc. \xau.gsd



GEOSTASE FS = 1.52

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 3/ 29/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xau.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xau.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section A-A'

DESCRIPTION: Existing - Upper Claybed - Static

BOUNDARY DATA

9 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.500	165.500	221.000	2
2	165.500	221.000	244.000	234.000	2
3	244.000	234.000	310.000	253.700	2
4	310.000	253.700	342.000	262.100	2
5	342.000	262.100	369.900	266.000	2
6	369.900	266.000	536.100	301.500	2
7	536.100	301.500	651.800	348.400	2
8	651.800	348.400	657.200	350.600	3
9	657.200	350.600	800.000	409.100	2
10	0.000	178.500	100.000	185.700	4
11	100.000	185.700	185.700	191.100	4
12	185.700	191.100	298.100	193.100	4
13	298.100	193.100	524.400	209.000	4
14	524.400	209.000	553.900	226.000	3
15	553.900	226.000	583.900	257.600	3
16	583.900	257.600	620.000	298.100	3
17	620.000	298.100	651.800	348.400	3
18	524.400	209.000	559.300	228.300	4
19	559.300	228.300	587.100	257.500	4
20	587.100	257.500	625.400	300.400	2
21	625.400	300.400	657.200	350.600	2
22	587.100	257.500	800.000	250.200	4
23	298.100	193.100	800.000	171.200	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	15.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	147.10	209.90	300.10	196.60	15.00
2	524.40	209.00	524.40	209.00	0.00
3	553.90	226.00	559.30	228.30	0.00
4	583.90	257.60	587.10	257.50	0.00
5	620.00	298.10	625.40	300.40	0.00
6	651.80	348.40	657.20	350.60	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 2.433 FS Min = 1.520 FS Ave = 1.597
Standard Deviation = 0.163 Coefficient of Variation = 10.18 %

Critical Surface is Sequence Number 61 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.520

Table 1 - Geometry Data on the 108 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	2.57	1.14	140.62	219.03	220.17	-40.60	1.90	3.38
2	2.57	3.43	143.18	216.83	220.26	-40.60	1.90	3.38
3	4.91	5.11	146.92	215.27	220.38	-10.63	1.90	5.00
4	4.91	6.20	151.84	214.35	220.55	-10.63	1.90	5.00
5	4.91	7.28	156.75	213.42	220.71	-10.63	1.90	5.00
6	4.91	8.37	161.67	212.50	220.87	-10.63	1.90	5.00
7	1.38	8.94	164.81	212.04	220.98	-0.48	1.90	1.38
8	4.91	9.40	167.95	212.01	221.41	-0.48	9.40	4.91
9	4.91	10.25	172.86	211.97	222.22	-0.48	9.40	4.91
10	4.91	11.11	177.77	211.93	223.03	-0.48	9.40	4.91
11	4.91	11.96	182.67	211.88	223.84	-0.48	9.40	4.91
12	4.91	12.81	187.58	211.84	224.66	-0.48	9.40	4.91
13	4.91	13.67	192.48	211.80	225.47	-0.48	9.40	4.91
14	4.91	14.52	197.39	211.76	226.28	-0.48	9.40	4.91
15	4.91	15.37	202.30	211.72	227.09	-0.48	9.40	4.91
16	4.91	16.23	207.20	211.68	227.91	-0.48	9.40	4.91
17	4.91	17.08	212.11	211.64	228.72	-0.48	9.40	4.91
18	4.91	17.94	217.02	211.59	229.53	-0.48	9.40	4.91
19	4.91	18.79	221.92	211.55	230.34	-0.48	9.40	4.91
20	4.91	19.64	226.83	211.51	231.16	-0.48	9.40	4.91
21	4.91	20.50	231.73	211.47	231.97	-0.48	9.40	4.91
22	4.91	21.35	236.64	211.43	232.78	-0.48	9.40	4.91
23	4.91	22.21	241.55	211.39	233.59	-0.48	9.40	4.91
24	5.08	23.41	246.54	211.35	234.76	-0.48	16.62	5.08
25	5.08	24.97	251.62	211.30	236.27	-0.48	16.62	5.08
26	5.08	26.53	256.69	211.26	237.79	-0.48	16.62	5.08
27	5.08	28.09	261.77	211.22	239.30	-0.48	16.62	5.08
28	5.08	29.65	266.85	211.17	240.82	-0.48	16.62	5.08
29	5.08	31.20	271.92	211.13	242.33	-0.48	16.62	5.08
30	5.08	32.76	277.00	211.09	243.85	-0.48	16.62	5.08
31	5.08	34.32	282.08	211.05	245.37	-0.48	16.62	5.08
32	5.08	35.88	287.15	211.00	246.88	-0.48	16.62	5.08
33	5.08	37.44	292.23	210.96	248.40	-0.48	16.62	5.08
34	5.08	38.99	297.31	210.92	249.91	-0.48	16.62	5.08
35	5.08	40.55	302.38	210.87	251.43	-0.48	16.62	5.08
36	5.08	42.11	307.46	210.83	252.94	-0.48	16.62	5.08
37	5.33	43.61	312.67	210.79	254.40	-0.48	14.71	5.33
38	5.33	45.06	318.00	210.74	255.80	-0.48	14.71	5.33
39	5.33	46.50	323.33	210.70	257.20	-0.48	14.71	5.33
40	5.33	47.95	328.67	210.65	258.60	-0.48	14.71	5.33
41	5.33	49.39	334.00	210.61	260.00	-0.48	14.71	5.33
42	5.33	50.84	339.33	210.56	261.40	-0.48	14.71	5.33
43	4.65	51.91	344.32	210.52	262.43	-0.48	7.96	4.65
44	4.65	52.59	348.98	210.48	263.08	-0.48	7.96	4.65
45	4.65	53.28	353.62	210.44	263.73	-0.48	7.96	4.65
46	4.65	53.97	358.27	210.40	264.38	-0.48	7.96	4.65
47	4.65	54.66	362.92	210.36	265.02	-0.48	7.96	4.65
48	4.65	55.35	367.57	210.32	265.68	-0.48	7.96	4.65
49	4.98	56.25	372.39	210.28	266.53	-0.48	12.06	4.98
50	4.98	57.36	377.38	210.24	267.60	-0.48	12.06	4.98
51	4.98	58.46	382.36	210.20	268.66	-0.48	12.06	4.98
52	4.98	59.57	387.34	210.16	269.73	-0.48	12.06	4.98
53	4.98	60.68	392.33	210.11	270.79	-0.48	12.06	4.98
54	4.98	61.78	397.31	210.07	271.85	-0.48	12.06	4.98

55	4.98	62.89	402.30	210.03	272.92	-0.48	12.06	4.98
56	4.98	64.00	407.28	209.99	273.98	-0.48	12.06	4.98
57	4.98	65.10	412.26	209.95	275.05	-0.48	12.06	4.98
58	4.98	66.21	417.25	209.90	276.11	-0.48	12.06	4.98
59	4.98	67.32	422.23	209.86	277.18	-0.48	12.06	4.98
60	4.98	68.42	427.21	209.82	278.24	-0.48	12.06	4.98
61	4.98	69.53	432.20	209.78	279.31	-0.48	12.06	4.98
62	4.98	70.64	437.18	209.74	280.37	-0.48	12.06	4.98
63	4.98	71.74	442.17	209.69	281.44	-0.48	12.06	4.98
64	4.98	72.85	447.15	209.65	282.50	-0.48	12.06	4.98
65	4.98	73.96	452.13	209.61	283.56	-0.48	12.06	4.98
66	4.98	75.06	457.12	209.57	284.63	-0.48	12.06	4.98
67	4.98	76.17	462.10	209.53	285.69	-0.48	12.06	4.98
68	4.98	77.27	467.09	209.48	286.76	-0.48	12.06	4.98
69	4.98	78.38	472.07	209.44	287.82	-0.48	12.06	4.98
70	4.98	79.49	477.05	209.40	288.89	-0.48	12.06	4.98
71	4.98	80.59	482.04	209.36	289.95	-0.48	12.06	4.98
72	4.98	81.70	487.02	209.32	291.02	-0.48	12.06	4.98
73	4.98	82.81	492.00	209.27	292.08	-0.48	12.06	4.98
74	4.98	83.91	496.99	209.23	293.15	-0.48	12.06	4.98
75	4.98	85.02	501.97	209.19	294.21	-0.48	12.06	4.98
76	4.98	86.13	506.96	209.15	295.27	-0.48	12.06	4.98
77	4.98	87.23	511.94	209.11	296.34	-0.48	12.06	4.98
78	4.98	88.34	516.92	209.06	297.40	-0.48	12.06	4.98
79	4.98	89.45	521.91	209.02	298.47	-0.48	12.06	4.98
80	5.85	88.96	527.33	210.66	299.63	29.62	12.06	6.73
81	5.85	86.89	533.18	213.99	300.88	29.62	12.06	6.73
82	4.45	85.49	538.33	216.92	302.40	29.62	22.07	5.12
83	4.45	84.76	542.77	219.45	304.21	29.62	22.07	5.12
84	4.45	84.03	547.23	221.98	306.01	29.62	22.07	5.12
85	4.45	83.31	551.67	224.51	307.81	29.62	22.07	5.12
86	1.61	82.81	554.70	226.23	309.04	29.62	22.07	1.85
87	4.73	81.24	557.87	229.09	310.33	45.45	22.07	6.74
88	4.73	78.35	562.61	233.89	312.24	45.45	22.07	6.74
89	4.73	75.46	567.34	238.70	314.16	45.45	22.07	6.74
90	4.73	72.57	572.07	243.51	316.08	45.45	22.07	6.74
91	4.73	69.68	576.80	248.31	318.00	45.45	22.07	6.74
92	4.73	66.80	581.53	253.12	319.92	45.45	22.07	6.74
93	1.98	64.75	584.89	256.53	321.28	45.45	22.07	2.83
94	4.87	62.48	588.32	260.19	322.67	47.40	22.07	7.20
95	4.87	59.15	593.19	265.49	324.64	47.40	22.07	7.20
96	4.87	55.83	598.07	270.79	326.62	47.40	22.07	7.20
97	4.87	52.51	602.94	276.09	328.59	47.40	22.07	7.20
98	4.87	49.18	607.82	281.39	330.57	47.40	22.07	7.20
99	4.87	45.86	612.69	286.69	332.55	47.40	22.07	7.20
100	4.87	42.53	617.56	291.99	334.52	47.40	22.07	7.20
101	2.62	39.98	621.31	296.06	336.04	47.40	22.07	3.86
102	2.62	38.19	623.92	298.91	337.10	47.40	22.07	3.86
103	5.31	34.03	627.89	304.68	338.71	58.58	22.07	10.19
104	5.31	27.48	633.20	313.38	340.86	58.58	22.07	10.19
105	5.31	20.94	638.52	322.08	343.01	58.58	22.07	10.19
106	5.31	14.39	643.83	330.78	345.17	58.58	22.07	10.19
107	5.31	7.85	649.14	339.48	347.32	58.58	22.07	10.19
108	3.72	2.29	653.66	346.87	349.16	58.58	22.17	7.14

Table 2 - Force Data On The 108 Slices (Excluding Reinforcement)

	Ubeta	Ualpha	Earthquake

Slice No.	Weight (lbs)	Force Top (lbs)	Force Bot (lbs)	Force Hor (lbs)	Force Ver (lbs)	Distributed Load (lbs)
1	352.0	0.0	0.0	0.0	0.0	0.0
2	1056.1	0.0	0.0	0.0	0.0	0.0
3	3015.7	0.0	0.0	0.0	0.0	0.0
4	3655.8	0.0	0.0	0.0	0.0	0.0
5	4296.0	0.0	0.0	0.0	0.0	0.0
6	4936.1	0.0	0.0	0.0	0.0	0.0
7	1476.6	0.0	0.0	0.0	0.0	0.0
8	5532.8	0.0	0.0	0.0	0.0	0.0
9	6035.5	0.0	0.0	0.0	0.0	0.0
10	6538.3	0.0	0.0	0.0	0.0	0.0
11	7041.0	0.0	0.0	0.0	0.0	0.0
12	7543.8	0.0	0.0	0.0	0.0	0.0
13	8046.5	0.0	0.0	0.0	0.0	0.0
14	8549.2	0.0	0.0	0.0	0.0	0.0
15	9052.0	0.0	0.0	0.0	0.0	0.0
16	9554.7	0.0	0.0	0.0	0.0	0.0
17	10057.5	0.0	0.0	0.0	0.0	0.0
18	10560.2	0.0	0.0	0.0	0.0	0.0
19	11062.9	0.0	0.0	0.0	0.0	0.0
20	11565.7	0.0	0.0	0.0	0.0	0.0
21	12068.4	0.0	0.0	0.0	0.0	0.0
22	12571.2	0.0	0.0	0.0	0.0	0.0
23	13073.9	0.0	0.0	0.0	0.0	0.0
24	14263.5	0.0	0.0	0.0	0.0	0.0
25	15212.8	0.0	0.0	0.0	0.0	0.0
26	16162.1	0.0	0.0	0.0	0.0	0.0
27	17111.5	0.0	0.0	0.0	0.0	0.0
28	18060.8	0.0	0.0	0.0	0.0	0.0
29	19010.1	0.0	0.0	0.0	0.0	0.0
30	19959.4	0.0	0.0	0.0	0.0	0.0
31	20908.8	0.0	0.0	0.0	0.0	0.0
32	21858.1	0.0	0.0	0.0	0.0	0.0
33	22807.4	0.0	0.0	0.0	0.0	0.0
34	23756.8	0.0	0.0	0.0	0.0	0.0
35	24706.1	0.0	0.0	0.0	0.0	0.0
36	25655.4	0.0	0.0	0.0	0.0	0.0
37	27912.2	0.0	0.0	0.0	0.0	0.0
38	28837.0	0.0	0.0	0.0	0.0	0.0
39	29761.8	0.0	0.0	0.0	0.0	0.0
40	30686.6	0.0	0.0	0.0	0.0	0.0
41	31611.4	0.0	0.0	0.0	0.0	0.0
42	32536.2	0.0	0.0	0.0	0.0	0.0
43	28963.0	0.0	0.0	0.0	0.0	0.0
44	29347.6	0.0	0.0	0.0	0.0	0.0
45	29732.2	0.0	0.0	0.0	0.0	0.0
46	30116.8	0.0	0.0	0.0	0.0	0.0
47	30501.4	0.0	0.0	0.0	0.0	0.0
48	30886.0	0.0	0.0	0.0	0.0	0.0
49	33640.6	0.0	0.0	0.0	0.0	0.0
50	34302.5	0.0	0.0	0.0	0.0	0.0
51	34964.3	0.0	0.0	0.0	0.0	0.0
52	35626.1	0.0	0.0	0.0	0.0	0.0
53	36287.9	0.0	0.0	0.0	0.0	0.0
54	36949.8	0.0	0.0	0.0	0.0	0.0
55	37611.6	0.0	0.0	0.0	0.0	0.0
56	38273.4	0.0	0.0	0.0	0.0	0.0

57	38935.3	0.0	0.0	0.0	0.0	0.0
58	39597.1	0.0	0.0	0.0	0.0	0.0
59	40258.9	0.0	0.0	0.0	0.0	0.0
60	40920.7	0.0	0.0	0.0	0.0	0.0
61	41582.6	0.0	0.0	0.0	0.0	0.0
62	42244.4	0.0	0.0	0.0	0.0	0.0
63	42906.2	0.0	0.0	0.0	0.0	0.0
64	43568.0	0.0	0.0	0.0	0.0	0.0
65	44229.9	0.0	0.0	0.0	0.0	0.0
66	44891.7	0.0	0.0	0.0	0.0	0.0
67	45553.5	0.0	0.0	0.0	0.0	0.0
68	46215.3	0.0	0.0	0.0	0.0	0.0
69	46877.2	0.0	0.0	0.0	0.0	0.0
70	47539.0	0.0	0.0	0.0	0.0	0.0
71	48200.8	0.0	0.0	0.0	0.0	0.0
72	48862.6	0.0	0.0	0.0	0.0	0.0
73	49524.5	0.0	0.0	0.0	0.0	0.0
74	50186.3	0.0	0.0	0.0	0.0	0.0
75	50848.1	0.0	0.0	0.0	0.0	0.0
76	51510.0	0.0	0.0	0.0	0.0	0.0
77	52171.8	0.0	0.0	0.0	0.0	0.0
78	52833.6	0.0	0.0	0.0	0.0	0.0
79	53495.4	0.0	0.0	0.0	0.0	0.0
80	62451.9	0.0	0.0	0.0	0.0	0.0
81	60994.4	0.0	0.0	0.0	0.0	0.0
82	45649.3	0.0	0.0	0.0	0.0	0.0
83	45261.6	0.0	0.0	0.0	0.0	0.0
84	44874.0	0.0	0.0	0.0	0.0	0.0
85	44486.3	0.0	0.0	0.0	0.0	0.0
86	15980.4	0.0	0.0	0.0	0.0	0.0
87	46130.1	0.0	0.0	0.0	0.0	0.0
88	44490.0	0.0	0.0	0.0	0.0	0.0
89	42849.9	0.0	0.0	0.0	0.0	0.0
90	41209.7	0.0	0.0	0.0	0.0	0.0
91	39569.6	0.0	0.0	0.0	0.0	0.0
92	37929.4	0.0	0.0	0.0	0.0	0.0
93	15404.2	0.0	0.0	0.0	0.0	0.0
94	36542.4	0.0	0.0	0.0	0.0	0.0
95	34597.9	0.0	0.0	0.0	0.0	0.0
96	32653.5	0.0	0.0	0.0	0.0	0.0
97	30709.1	0.0	0.0	0.0	0.0	0.0
98	28764.7	0.0	0.0	0.0	0.0	0.0
99	26820.3	0.0	0.0	0.0	0.0	0.0
100	24875.9	0.0	0.0	0.0	0.0	0.0
101	12547.3	0.0	0.0	0.0	0.0	0.0
102	11987.4	0.0	0.0	0.0	0.0	0.0
103	21699.0	0.0	0.0	0.0	0.0	0.0
104	17525.3	0.0	0.0	0.0	0.0	0.0
105	13351.5	0.0	0.0	0.0	0.0	0.0
106	9177.7	0.0	0.0	0.0	0.0	0.0
107	5004.0	0.0	0.0	0.0	0.0	0.0
108	1021.1	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 3033173.95(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 3033173.95(lbs)

TOTAL AREA OF SLIDING MASS = 25276.45(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 108 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	2	250.00	22.00	A
2	2	250.00	22.00	A
3	2	0.00	14.00	A
4	2	0.00	14.00	A
5	2	0.00	14.00	A
6	2	0.00	14.00	A
7	2	0.00	14.00	A
8	2	0.00	14.00	A
9	2	0.00	14.00	A
10	2	0.00	14.00	A
11	2	0.00	14.00	A
12	2	0.00	14.00	A
13	2	0.00	14.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	2	0.00	14.00	A
33	2	0.00	14.00	A
34	2	0.00	14.00	A
35	2	0.00	14.00	A
36	2	0.00	14.00	A
37	2	0.00	14.00	A
38	2	0.00	14.00	A
39	2	0.00	14.00	A
40	2	0.00	14.00	A
41	2	0.00	14.00	A
42	2	0.00	14.00	A
43	2	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A

57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A
69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A
72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	2	0.00	14.00	A
76	2	0.00	14.00	A
77	2	0.00	14.00	A
78	2	0.00	14.00	A
79	2	0.00	14.00	A
80	3	250.00	22.00	
81	3	250.00	22.00	
82	3	250.00	22.00	
83	3	250.00	22.00	
84	3	250.00	22.00	
85	3	250.00	22.00	
86	3	250.00	22.00	
87	3	250.00	22.00	
88	3	250.00	22.00	
89	3	250.00	22.00	
90	3	250.00	22.00	
91	3	250.00	22.00	
92	3	250.00	22.00	
93	3	250.00	22.00	
94	3	250.00	22.00	
95	3	250.00	22.00	
96	3	250.00	22.00	
97	3	250.00	22.00	
98	3	250.00	22.00	
99	3	250.00	22.00	
100	3	250.00	22.00	
101	3	250.00	22.00	
102	3	250.00	22.00	
103	3	250.00	22.00	
104	3	250.00	22.00	
105	3	250.00	22.00	
106	3	250.00	22.00	
107	3	250.00	22.00	
108	3	250.00	22.00	

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 108 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-40.60	140.62	3.38	381.24	404.03	264.81
1	-40.60	140.62	3.38	381.24	404.03	264.81
2	-40.60	143.18	3.38	744.08	550.63	360.90
2	-40.60	143.18	3.38	744.08	550.63	360.90
3	-10.63	146.92	5.00	634.60	158.22	103.70
3	-10.63	146.92	5.00	634.60	158.22	103.70
4	-10.63	151.84	5.00	769.30	191.81	125.72
4	-10.63	151.84	5.00	769.30	191.81	125.72
5	-10.63	156.75	5.00	904.01	225.39	147.73
5	-10.63	156.75	5.00	904.01	225.39	147.73
6	-10.63	161.67	5.00	1038.71	258.98	169.74
6	-10.63	161.67	5.00	1038.71	258.98	169.74
7	-0.48	164.81	1.38	1074.62	267.93	175.61
7	-0.48	164.81	1.38	1074.62	267.93	175.61
8	-0.48	167.95	4.91	1129.38	281.59	184.56
8	-0.48	167.95	4.91	1129.38	281.59	184.56
9	-0.48	172.86	4.91	1232.00	307.17	201.33
9	-0.48	172.86	4.91	1232.00	307.17	201.33
10	-0.48	177.77	4.91	1334.62	332.76	218.10
10	-0.48	177.77	4.91	1334.62	332.76	218.10
11	-0.48	182.67	4.91	1437.24	358.34	234.87
11	-0.48	182.67	4.91	1437.24	358.34	234.87
12	-0.48	187.58	4.91	1539.86	383.93	251.64
12	-0.48	187.58	4.91	1539.86	383.93	251.64
13	-0.48	192.48	4.91	1642.49	409.52	268.41
13	-0.48	192.48	4.91	1642.49	409.52	268.41
14	-0.48	197.39	4.91	1745.11	435.10	285.18
14	-0.48	197.39	4.91	1745.11	435.10	285.18
15	-0.48	202.30	4.91	1847.73	460.69	301.95
15	-0.48	202.30	4.91	1847.73	460.69	301.95
16	-0.48	207.20	4.91	1950.35	486.28	318.72
16	-0.48	207.20	4.91	1950.35	486.28	318.72
17	-0.48	212.11	4.91	2052.97	511.86	335.49
17	-0.48	212.11	4.91	2052.97	511.86	335.49
18	-0.48	217.02	4.91	2155.60	537.45	352.26
18	-0.48	217.02	4.91	2155.60	537.45	352.26
19	-0.48	221.92	4.91	2258.22	563.04	369.03
19	-0.48	221.92	4.91	2258.22	563.04	369.03
20	-0.48	226.83	4.91	2360.84	588.62	385.80
20	-0.48	226.83	4.91	2360.84	588.62	385.80
21	-0.48	231.73	4.91	2463.46	614.21	402.57
21	-0.48	231.73	4.91	2463.46	614.21	402.57
22	-0.48	236.64	4.91	2566.08	639.80	419.34
22	-0.48	236.64	4.91	2566.08	639.80	419.34
23	-0.48	241.55	4.91	2668.70	665.38	436.11
23	-0.48	241.55	4.91	2668.70	665.38	436.11
24	-0.48	246.54	5.08	2813.65	701.52	459.80
24	-0.48	246.54	5.08	2813.65	701.52	459.80
25	-0.48	251.62	5.08	3000.92	748.21	490.40
25	-0.48	251.62	5.08	3000.92	748.21	490.40
26	-0.48	256.69	5.08	3188.18	794.90	521.00
26	-0.48	256.69	5.08	3188.18	794.90	521.00
27	-0.48	261.77	5.08	3375.45	841.59	551.60

27	-0.48	261.77	5.08	3375.45	841.59	551.60
28	-0.48	266.85	5.08	3562.71	888.28	582.20
28	-0.48	266.85	5.08	3562.71	888.28	582.20
29	-0.48	271.92	5.08	3749.98	934.98	612.81
29	-0.48	271.92	5.08	3749.98	934.98	612.81
30	-0.48	277.00	5.08	3937.25	981.67	643.41
30	-0.48	277.00	5.08	3937.25	981.67	643.41
31	-0.48	282.08	5.08	4124.51	1028.36	674.01
31	-0.48	282.08	5.08	4124.51	1028.36	674.01
32	-0.48	287.15	5.08	4311.78	1075.05	704.61
32	-0.48	287.15	5.08	4311.78	1075.05	704.61
33	-0.48	292.23	5.08	4499.05	1121.74	735.22
33	-0.48	292.23	5.08	4499.05	1121.74	735.22
34	-0.48	297.31	5.08	4686.31	1168.43	765.82
34	-0.48	297.31	5.08	4686.31	1168.43	765.82
35	-0.48	302.38	5.08	4873.58	1215.12	796.42
35	-0.48	302.38	5.08	4873.58	1215.12	796.42
36	-0.48	307.46	5.08	5060.85	1261.81	827.02
36	-0.48	307.46	5.08	5060.85	1261.81	827.02
37	-0.48	312.67	5.33	5241.31	1306.81	856.51
37	-0.48	312.67	5.33	5241.31	1306.81	856.51
38	-0.48	318.00	5.33	5414.97	1350.10	884.89
38	-0.48	318.00	5.33	5414.97	1350.10	884.89
39	-0.48	323.33	5.33	5588.63	1393.40	913.27
39	-0.48	323.33	5.33	5588.63	1393.40	913.27
40	-0.48	328.67	5.33	5762.29	1436.70	941.65
40	-0.48	328.67	5.33	5762.29	1436.70	941.65
41	-0.48	334.00	5.33	5935.95	1480.00	970.03
41	-0.48	334.00	5.33	5935.95	1480.00	970.03
42	-0.48	339.33	5.33	6109.61	1523.30	998.41
42	-0.48	339.33	5.33	6109.61	1523.30	998.41
43	-0.48	344.32	4.65	6237.85	1555.27	1019.37
43	-0.48	344.32	4.65	6237.85	1555.27	1019.37
44	-0.48	348.98	4.65	6320.69	1575.92	1032.90
44	-0.48	348.98	4.65	6320.69	1575.92	1032.90
45	-0.48	353.62	4.65	6403.52	1596.58	1046.44
45	-0.48	353.62	4.65	6403.52	1596.58	1046.44
46	-0.48	358.27	4.65	6486.35	1617.23	1059.97
46	-0.48	358.27	4.65	6486.35	1617.23	1059.97
47	-0.48	362.92	4.65	6569.19	1637.88	1073.51
47	-0.48	362.92	4.65	6569.19	1637.88	1073.51
48	-0.48	367.57	4.65	6652.02	1658.53	1087.05
48	-0.48	367.57	4.65	6652.02	1658.53	1087.05
49	-0.48	372.39	4.98	6759.93	1685.44	1104.68
49	-0.48	372.39	4.98	6759.93	1685.44	1104.68
50	-0.48	377.38	4.98	6892.92	1718.60	1126.41
50	-0.48	377.38	4.98	6892.92	1718.60	1126.41
51	-0.48	382.36	4.98	7025.91	1751.76	1148.15
51	-0.48	382.36	4.98	7025.91	1751.76	1148.15
52	-0.48	387.34	4.98	7158.90	1784.92	1169.88
52	-0.48	387.34	4.98	7158.90	1784.92	1169.88
53	-0.48	392.33	4.98	7291.89	1818.07	1191.61
53	-0.48	392.33	4.98	7291.89	1818.07	1191.61
54	-0.48	397.31	4.98	7424.89	1851.23	1213.35
54	-0.48	397.31	4.98	7424.89	1851.23	1213.35
55	-0.48	402.30	4.98	7557.88	1884.39	1235.08
55	-0.48	402.30	4.98	7557.88	1884.39	1235.08
56	-0.48	407.28	4.98	7690.87	1917.55	1256.81
56	-0.48	407.28	4.98	7690.87	1917.55	1256.81
57	-0.48	412.26	4.98	7823.86	1950.71	1278.54
57	-0.48	412.26	4.98	7823.86	1950.71	1278.54
58	-0.48	417.25	4.98	7956.85	1983.87	1300.28
58	-0.48	417.25	4.98	7956.85	1983.87	1300.28
59	-0.48	422.23	4.98	8089.84	2017.02	1322.01
59	-0.48	422.23	4.98	8089.84	2017.02	1322.01
60	-0.48	427.21	4.98	8222.83	2050.18	1343.74
60	-0.48	427.21	4.98	8222.83	2050.18	1343.74
61	-0.48	432.20	4.98	8355.82	2083.34	1365.48
61	-0.48	432.20	4.98	8355.82	2083.34	1365.48
62	-0.48	437.18	4.98	8488.81	2116.50	1387.21
62	-0.48	437.18	4.98	8488.81	2116.50	1387.21
63	-0.48	442.17	4.98	8621.80	2149.66	1408.94
63	-0.48	442.17	4.98	8621.80	2149.66	1408.94
64	-0.48	447.15	4.98	8754.79	2182.82	1430.67
64	-0.48	447.15	4.98	8754.79	2182.82	1430.67
65	-0.48	452.13	4.98	8887.79	2215.97	1452.41
65	-0.48	452.13	4.98	8887.79	2215.97	1452.41
66	-0.48	457.12	4.98	9020.78	2249.13	1474.14
66	-0.48	457.12	4.98	9020.78	2249.13	1474.14
67	-0.48	462.10	4.98	9153.77	2282.29	1495.87
67	-0.48	462.10	4.98	9153.77	2282.29	1495.87
68	-0.48	467.09	4.98	9286.76	2315.45	1517.61
68	-0.48	467.09	4.98	9286.76	2315.45	1517.61
69	-0.48	472.07	4.98	9419.75	2348.61	1539.34
69	-0.48	472.07	4.98	9419.75	2348.61	1539.34
70	-0.48	477.05	4.98	9552.74	2381.77	1561.07
70	-0.48	477.05	4.98	9552.74	2381.77	1561.07
71	-0.48	482.04	4.98	9685.73	2414.92	1582.80
71	-0.48	482.04	4.98	9685.73	2414.92	1582.80
72	-0.48	487.02	4.98	9818.72	2448.08	1604.54
72	-0.48	487.02	4.98	9818.72	2448.08	1604.54
73	-0.48	492.00	4.98	9951.71	2481.24	1626.27
73	-0.48	492.00	4.98	9951.71	2481.24	1626.27
74	-0.48	496.99	4.98	10084.70	2514.40	1648.00
74	-0.48	496.99	4.98	10084.70	2514.40	1648.00
75	-0.48	501.97	4.98	10217.69	2547.56	1669.74
75	-0.48	501.97	4.98	10217.69	2547.56	1669.74
76	-0.48	506.96	4.98	10350.69	2580.72	1691.47
76	-0.48	506.96	4.98	10350.69	2580.72	1691.47
77	-0.48	511.94	4.98	10483.68	2613.87	1713.20
77	-0.48	511.94	4.98	10483.68	2613.87	1713.20
78	-0.48	516.92	4.98	10616.67	2647.03	1734.93
78	-0.48	516.92	4.98	10616.67	2647.03	1734.93
79	-0.48	521.91	4.98	10749.66	2680.19	1756.67
79	-0.48	521.91	4.98	10749.66	2680.19	1756.67
80	29.62	527.33	6.73	9101.73	3927.34	2574.08
80	29.62	527.33	6.73	9101.73	3927.34	2574.08
81	29.62	533.18	6.73	8887.30	3840.70	2517.30
81	29.62	533.18	6.73	8887.30	3840.70	2517.30
82	29.62	538.33	5.12	8742.60	3782.24	2478.98
82	29.62	538.33	5.12	8742.60	3782.24	2478.98
83	29.62	542.77	5.12	8667.63	3751.95	2459.12
83	29.62	542.77	5.12	8667.63	3751.95	2459.12
84	29.62	547.23	5.12	8592.65	3721.65	2439.27
84	29.62	547.23	5.12	8592.65	3721.65	2439.27
85	29.62	551.67	5.12	8517.67	3691.36	2419.41
85	29.62	551.67	5.12	8517.67	3691.36	2419.41
86	29.62	554.70	1.85	8466.63	3670.74	2405.90
86	29.62	554.70	1.85	8466.63	3670.74	2405.90
87	45.45	557.87	6.74	7422.40	3248.84	2129.38

87	45.45	557.87	6.74	7422.40	3248.84	2129.38
88	45.45	562.61	6.74	7153.56	3140.23	2058.19
88	45.45	562.61	6.74	7153.56	3140.23	2058.19
89	45.45	567.34	6.74	6884.73	3031.61	1987.00
89	45.45	567.34	6.74	6884.73	3031.61	1987.00
90	45.45	572.07	6.74	6615.89	2922.99	1915.81
90	45.45	572.07	6.74	6615.89	2922.99	1915.81
91	45.45	576.80	6.74	6347.05	2814.38	1844.61
91	45.45	576.80	6.74	6347.05	2814.38	1844.61
92	45.45	581.53	6.74	6078.21	2705.76	1773.42
92	45.45	581.53	6.74	6078.21	2705.76	1773.42
93	45.45	584.89	2.83	5887.48	2628.69	1722.92
93	45.45	584.89	2.83	5887.48	2628.69	1722.92
94	47.40	588.32	7.20	5578.28	2503.77	1641.04
94	47.40	588.32	7.20	5578.28	2503.77	1641.04
95	47.40	593.19	7.20	5273.67	2380.70	1560.37
95	47.40	593.19	7.20	5273.67	2380.70	1560.37
96	47.40	598.07	7.20	4969.07	2257.63	1479.71
96	47.40	598.07	7.20	4969.07	2257.63	1479.71
97	47.40	602.94	7.20	4664.46	2134.56	1399.05
97	47.40	602.94	7.20	4664.46	2134.56	1399.05
98	47.40	607.82	7.20	4359.86	2011.50	1318.39
98	47.40	607.82	7.20	4359.86	2011.50	1318.39
99	47.40	612.69	7.20	4055.25	1888.43	1237.72
99	47.40	612.69	7.20	4055.25	1888.43	1237.72
100	47.40	617.56	7.20	3750.65	1765.36	1157.06
100	47.40	617.56	7.20	3750.65	1765.36	1157.06
101	47.40	621.31	3.86	3516.61	1670.80	1095.09
101	47.40	621.31	3.86	3516.61	1670.80	1095.09
102	47.40	623.92	3.86	3353.15	1604.76	1051.80
102	47.40	623.92	3.86	3353.15	1604.76	1051.80
103	58.58	627.89	10.19	2588.24	1295.72	849.25
103	58.58	627.89	10.19	2588.24	1295.72	849.25
104	58.58	633.20	10.19	2052.55	1079.28	707.39
104	58.58	633.20	10.19	2052.55	1079.28	707.39
105	58.58	638.52	10.19	1516.86	862.85	565.54
105	58.58	638.52	10.19	1516.86	862.85	565.54
106	58.58	643.83	10.19	981.17	646.42	423.68
106	58.58	643.83	10.19	981.17	646.42	423.68
107	58.58	649.14	10.19	445.48	429.99	281.82
107	58.58	649.14	10.19	445.48	429.99	281.82
108	58.58	653.66	7.14	187.20	75.63	49.57
108	58.58	653.66	7.14	187.20	75.63	49.57

Table 4 - Base Force Data on the 108 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-40.60	140.62	3.38	1288.96	1366.01	895.32
1	-40.60	140.62	3.38	1288.96	1366.01	895.32
2	-40.60	143.18	3.38	2515.70	1861.65	1220.17
2	-40.60	143.18	3.38	2515.70	1861.65	1220.17
3	-10.63	146.92	5.00	3172.99	791.12	518.52
3	-10.63	146.92	5.00	3172.99	791.12	518.52
4	-10.63	151.84	5.00	3846.51	959.04	628.58
4	-10.63	151.84	5.00	3846.51	959.04	628.58
5	-10.63	156.75	5.00	4520.04	1126.97	738.65
5	-10.63	156.75	5.00	4520.04	1126.97	738.65
6	-10.63	161.67	5.00	5193.56	1294.90	848.71
6	-10.63	161.67	5.00	5193.56	1294.90	848.71
7	-0.48	164.81	1.38	1478.88	368.73	241.67
7	-0.48	164.81	1.38	1478.88	368.73	241.67
8	-0.48	167.95	4.91	5541.20	1381.58	905.52
8	-0.48	167.95	4.91	5541.20	1381.58	905.52
9	-0.48	172.86	4.91	6044.71	1507.12	987.80
9	-0.48	172.86	4.91	6044.71	1507.12	987.80
10	-0.48	177.77	4.91	6548.22	1632.65	1070.08
10	-0.48	177.77	4.91	6548.22	1632.65	1070.08
11	-0.48	182.67	4.91	7051.72	1758.19	1152.36
11	-0.48	182.67	4.91	7051.72	1758.19	1152.36
12	-0.48	187.58	4.91	7555.23	1883.73	1234.65
12	-0.48	187.58	4.91	7555.23	1883.73	1234.65
13	-0.48	192.48	4.91	8058.74	2009.27	1316.93
13	-0.48	192.48	4.91	8058.74	2009.27	1316.93
14	-0.48	197.39	4.91	8562.24	2134.81	1399.21
14	-0.48	197.39	4.91	8562.24	2134.81	1399.21
15	-0.48	202.30	4.91	9065.75	2260.34	1481.49
15	-0.48	202.30	4.91	9065.75	2260.34	1481.49
16	-0.48	207.20	4.91	9569.25	2385.88	1563.77
16	-0.48	207.20	4.91	9569.25	2385.88	1563.77
17	-0.48	212.11	4.91	10072.76	2511.42	1646.05
17	-0.48	212.11	4.91	10072.76	2511.42	1646.05
18	-0.48	217.02	4.91	10576.27	2636.96	1728.33
18	-0.48	217.02	4.91	10576.27	2636.96	1728.33
19	-0.48	221.92	4.91	11079.77	2762.50	1810.61
19	-0.48	221.92	4.91	11079.77	2762.50	1810.61
20	-0.48	226.83	4.91	11583.28	2888.04	1892.89
20	-0.48	226.83	4.91	11583.28	2888.04	1892.89
21	-0.48	231.73	4.91	12086.79	3013.57	1975.17
21	-0.48	231.73	4.91	12086.79	3013.57	1975.17
22	-0.48	236.64	4.91	12590.29	3139.11	2057.46
22	-0.48	236.64	4.91	12590.29	3139.11	2057.46
23	-0.48	241.55	4.91	13093.80	3264.65	2139.74
23	-0.48	241.55	4.91	13093.80	3264.65	2139.74
24	-0.48	246.54	5.08	14285.19	3561.70	2334.43
24	-0.48	246.54	5.08	14285.19	3561.70	2334.43
25	-0.48	251.62	5.08	15235.96	3798.75	2489.80
25	-0.48	251.62	5.08	15235.96	3798.75	2489.80
26	-0.48	256.69	5.08	16186.73	4035.80	2645.17
26	-0.48	256.69	5.08	16186.73	4035.80	2645.17
27	-0.48	261.77	5.08	17137.50	4272.86	2800.54
27	-0.48	261.77	5.08	17137.50	4272.86	2800.54
28	-0.48	266.85	5.08	18088.27	4509.91	2955.91
28	-0.48	266.85	5.08	18088.27	4509.91	2955.91
29	-0.48	271.92	5.08	19039.04	4746.97	3111.29
29	-0.48	271.92	5.08	19039.04	4746.97	3111.29
30	-0.48	277.00	5.08	19989.81	4984.02	3266.66
30	-0.48	277.00	5.08	19989.81	4984.02	3266.66
31	-0.48	282.08	5.08	20940.58	5221.07	3422.03
31	-0.48	282.08	5.08	20940.58	5221.07	3422.03
32	-0.48	287.15	5.08	21891.36	5458.13	3577.40
32	-0.48	287.15	5.08	21891.36	5458.13	3577.40
33	-0.48	292.23	5.08	22842.13	5695.18	3732.77
33	-0.48	292.23	5.08	22842.13	5695.18	3732.77
34	-0.48	297.31	5.08	23792.90	5932.24	3888.14
34	-0.48	297.31	5.08	23792.90	5932.24	3888.14

35	-0.48	302.38	5.08	24743.67	6169.29	4043.51
35	-0.48	302.38	5.08	24743.67	6169.29	4043.51
36	-0.48	307.46	5.08	25694.44	6406.34	4198.88
36	-0.48	307.46	5.08	25694.44	6406.34	4198.88
37	-0.48	312.67	5.33	27954.64	6969.88	4568.24
37	-0.48	312.67	5.33	27954.64	6969.88	4568.24
38	-0.48	318.00	5.33	28880.86	7200.81	4719.60
38	-0.48	318.00	5.33	28880.86	7200.81	4719.60
39	-0.48	323.33	5.33	29807.08	7431.74	4870.96
39	-0.48	323.33	5.33	29807.08	7431.74	4870.96
40	-0.48	328.67	5.33	30733.30	7662.67	5022.31
40	-0.48	328.67	5.33	30733.30	7662.67	5022.31
41	-0.48	334.00	5.33	31659.52	7893.60	5173.67
41	-0.48	334.00	5.33	31659.52	7893.60	5173.67
42	-0.48	339.33	5.33	32585.74	8124.54	5325.03
42	-0.48	339.33	5.33	32585.74	8124.54	5325.03
43	-0.48	344.32	4.65	29007.06	7232.27	4740.22
43	-0.48	344.32	4.65	29007.06	7232.27	4740.22
44	-0.48	348.98	4.65	29392.24	7328.31	4803.16
44	-0.48	348.98	4.65	29392.24	7328.31	4803.16
45	-0.48	353.62	4.65	29777.43	7424.35	4866.11
45	-0.48	353.62	4.65	29777.43	7424.35	4866.11
46	-0.48	358.27	4.65	30162.62	7520.38	4929.06
46	-0.48	358.27	4.65	30162.62	7520.38	4929.06
47	-0.48	362.92	4.65	30547.80	7616.42	4992.00
47	-0.48	362.92	4.65	30547.80	7616.42	4992.00
48	-0.48	367.57	4.65	30932.99	7712.46	5054.95
48	-0.48	367.57	4.65	30932.99	7712.46	5054.95
49	-0.48	372.39	4.98	33691.82	8400.31	5505.78
49	-0.48	372.39	4.98	33691.82	8400.31	5505.78
50	-0.48	377.38	4.98	34354.66	8565.58	5614.10
50	-0.48	377.38	4.98	34354.66	8565.58	5614.10
51	-0.48	382.36	4.98	35017.49	8730.84	5722.42
51	-0.48	382.36	4.98	35017.49	8730.84	5722.42
52	-0.48	387.34	4.98	35680.32	8896.10	5830.74
52	-0.48	387.34	4.98	35680.32	8896.10	5830.74
53	-0.48	392.33	4.98	36343.16	9061.37	5939.05
53	-0.48	392.33	4.98	36343.16	9061.37	5939.05
54	-0.48	397.31	4.98	37005.99	9226.63	6047.37
54	-0.48	397.31	4.98	37005.99	9226.63	6047.37
55	-0.48	402.30	4.98	37668.82	9391.89	6155.69
55	-0.48	402.30	4.98	37668.82	9391.89	6155.69
56	-0.48	407.28	4.98	38331.65	9557.15	6264.01
56	-0.48	407.28	4.98	38331.65	9557.15	6264.01
57	-0.48	412.26	4.98	38994.49	9722.42	6372.33
57	-0.48	412.26	4.98	38994.49	9722.42	6372.33
58	-0.48	417.25	4.98	39657.32	9887.68	6480.64
58	-0.48	417.25	4.98	39657.32	9887.68	6480.64
59	-0.48	422.23	4.98	40320.15	10052.94	6588.96
59	-0.48	422.23	4.98	40320.15	10052.94	6588.96
60	-0.48	427.21	4.98	40982.99	10218.21	6697.28
60	-0.48	427.21	4.98	40982.99	10218.21	6697.28
61	-0.48	432.20	4.98	41645.82	10383.47	6805.60
61	-0.48	432.20	4.98	41645.82	10383.47	6805.60
62	-0.48	437.18	4.98	42308.65	10548.73	6913.91
62	-0.48	437.18	4.98	42308.65	10548.73	6913.91
63	-0.48	442.17	4.98	42971.49	10713.99	7022.23
63	-0.48	442.17	4.98	42971.49	10713.99	7022.23
64	-0.48	447.15	4.98	43634.32	10879.26	7130.55
64	-0.48	447.15	4.98	43634.32	10879.26	7130.55
65	-0.48	452.13	4.98	44297.15	11044.52	7238.87
65	-0.48	452.13	4.98	44297.15	11044.52	7238.87
66	-0.48	457.12	4.98	44959.99	11209.78	7347.18
66	-0.48	457.12	4.98	44959.99	11209.78	7347.18
67	-0.48	462.10	4.98	45622.82	11375.05	7455.50
67	-0.48	462.10	4.98	45622.82	11375.05	7455.50
68	-0.48	467.09	4.98	46285.65	11540.31	7563.82
68	-0.48	467.09	4.98	46285.65	11540.31	7563.82
69	-0.48	472.07	4.98	46948.49	11705.57	7672.14
69	-0.48	472.07	4.98	46948.49	11705.57	7672.14
70	-0.48	477.05	4.98	47611.32	11870.84	7780.45
70	-0.48	477.05	4.98	47611.32	11870.84	7780.45
71	-0.48	482.04	4.98	48274.15	12036.10	7888.77
71	-0.48	482.04	4.98	48274.15	12036.10	7888.77
72	-0.48	487.02	4.98	48936.99	12201.36	7997.09
72	-0.48	487.02	4.98	48936.99	12201.36	7997.09
73	-0.48	492.00	4.98	49599.82	12366.62	8105.41
73	-0.48	492.00	4.98	49599.82	12366.62	8105.41
74	-0.48	496.99	4.98	50262.65	12531.89	8213.72
74	-0.48	496.99	4.98	50262.65	12531.89	8213.72
75	-0.48	501.97	4.98	50925.49	12697.15	8322.04
75	-0.48	501.97	4.98	50925.49	12697.15	8322.04
76	-0.48	506.96	4.98	51588.32	12862.41	8430.36
76	-0.48	506.96	4.98	51588.32	12862.41	8430.36
77	-0.48	511.94	4.98	52251.15	13027.68	8538.68
77	-0.48	511.94	4.98	52251.15	13027.68	8538.68
78	-0.48	516.92	4.98	52913.99	13192.94	8646.99
78	-0.48	516.92	4.98	52913.99	13192.94	8646.99
79	-0.48	521.91	4.98	53576.82	13358.20	8755.31
79	-0.48	521.91	4.98	53576.82	13358.20	8755.31
80	29.62	527.33	6.73	61247.89	26428.07	17321.64
80	29.62	527.33	6.73	61247.89	26428.07	17321.64
81	29.62	533.18	6.73	59804.97	25845.09	16939.54
81	29.62	533.18	6.73	59804.97	25845.09	16939.54
82	29.62	538.33	5.12	44751.97	19360.68	12689.49
82	29.62	538.33	5.12	44751.97	19360.68	12689.49
83	29.62	542.77	5.12	44368.17	19205.61	12587.86
83	29.62	542.77	5.12	44368.17	19205.61	12587.86
84	29.62	547.23	5.12	43984.37	19050.55	12486.22
84	29.62	547.23	5.12	43984.37	19050.55	12486.22
85	29.62	551.67	5.12	43600.57	18895.48	12384.59
85	29.62	551.67	5.12	43600.57	18895.48	12384.59
86	29.62	554.70	1.85	15661.26	6790.00	4450.34
86	29.62	554.70	1.85	15661.26	6790.00	4450.34
87	45.45	557.87	6.74	50063.85	21913.35	14362.58
87	45.45	557.87	6.74	50063.85	21913.35	14362.58
88	45.45	562.61	6.74	48250.55	21180.73	13882.40
88	45.45	562.61	6.74	48250.55	21180.73	13882.40
89	45.45	567.34	6.74	46437.25	20448.11	13402.22
89	45.45	567.34	6.74	46437.25	20448.11	13402.22
90	45.45	572.07	6.74	44623.95	19715.49	12922.04
90	45.45	572.07	6.74	44623.95	19715.49	12922.04
91	45.45	576.80	6.74	42810.66	18982.87	12441.87
91	45.45	576.80	6.74	42810.66	18982.87	12441.87
92	45.45	581.53	6.74	40997.36	18250.25	11961.69
92	45.45	581.53	6.74	40997.36	18250.25	11961.69
93	45.45	584.89	2.83	16638.12	7428.74	4868.99
93	45.45	584.89	2.83	16638.12	7428.74	4868.99
94	47.40	588.32	7.20	40166.43	18028.42	11816.29
94	47.40	588.32	7.20	40166.43	18028.42	11816.29

95	47.40	593.19	7.20	37973.11	17142.26	11235.48
95	47.40	593.19	7.20	37973.11	17142.26	11235.48
96	47.40	598.07	7.20	35779.80	16256.10	10654.67
96	47.40	598.07	7.20	35779.80	16256.10	10654.67
97	47.40	602.94	7.20	33586.48	15369.95	10073.86
97	47.40	602.94	7.20	33586.48	15369.95	10073.86
98	47.40	607.82	7.20	31393.17	14483.79	9493.05
98	47.40	607.82	7.20	31393.17	14483.79	9493.05
99	47.40	612.69	7.20	29199.86	13597.63	8912.24
99	47.40	612.69	7.20	29199.86	13597.63	8912.24
100	47.40	617.56	7.20	27006.54	12711.48	8331.43
100	47.40	617.56	7.20	27006.54	12711.48	8331.43
101	47.40	621.31	3.86	13588.08	6455.93	4231.39
101	47.40	621.31	3.86	13588.08	6455.93	4231.39
102	47.40	623.92	3.86	12956.48	6200.75	4064.13
102	47.40	623.92	3.86	12956.48	6200.75	4064.13
103	58.58	627.89	10.19	26384.49	13208.52	8657.21
103	58.58	627.89	10.19	26384.49	13208.52	8657.21
104	58.58	633.20	10.19	20923.68	11002.21	7211.13
104	58.58	633.20	10.19	20923.68	11002.21	7211.13
105	58.58	638.52	10.19	15462.87	8795.90	5765.06
105	58.58	638.52	10.19	15462.87	8795.90	5765.06
106	58.58	643.83	10.19	10002.06	6589.59	4318.99
106	58.58	643.83	10.19	10002.06	6589.59	4318.99
107	58.58	649.14	10.19	4541.24	4383.28	2872.91
107	58.58	649.14	10.19	4541.24	4383.28	2872.91
108	58.58	653.66	7.14	1335.97	539.77	353.78
108	58.58	653.66	7.14	1335.97	539.77	353.78

Sum of the Resisting Forces = 848440.83 (lbs)

Average Available Shear Strength = 1456.88(psf)

Sum of the Driving Forces = 597650.48 (lbs)

Average Mobilized Shear Stress = 1026.24(psf)

Total length of the failure surface = 582.37(ft)

Factor of Safety Balance Check: FS = 1.41963

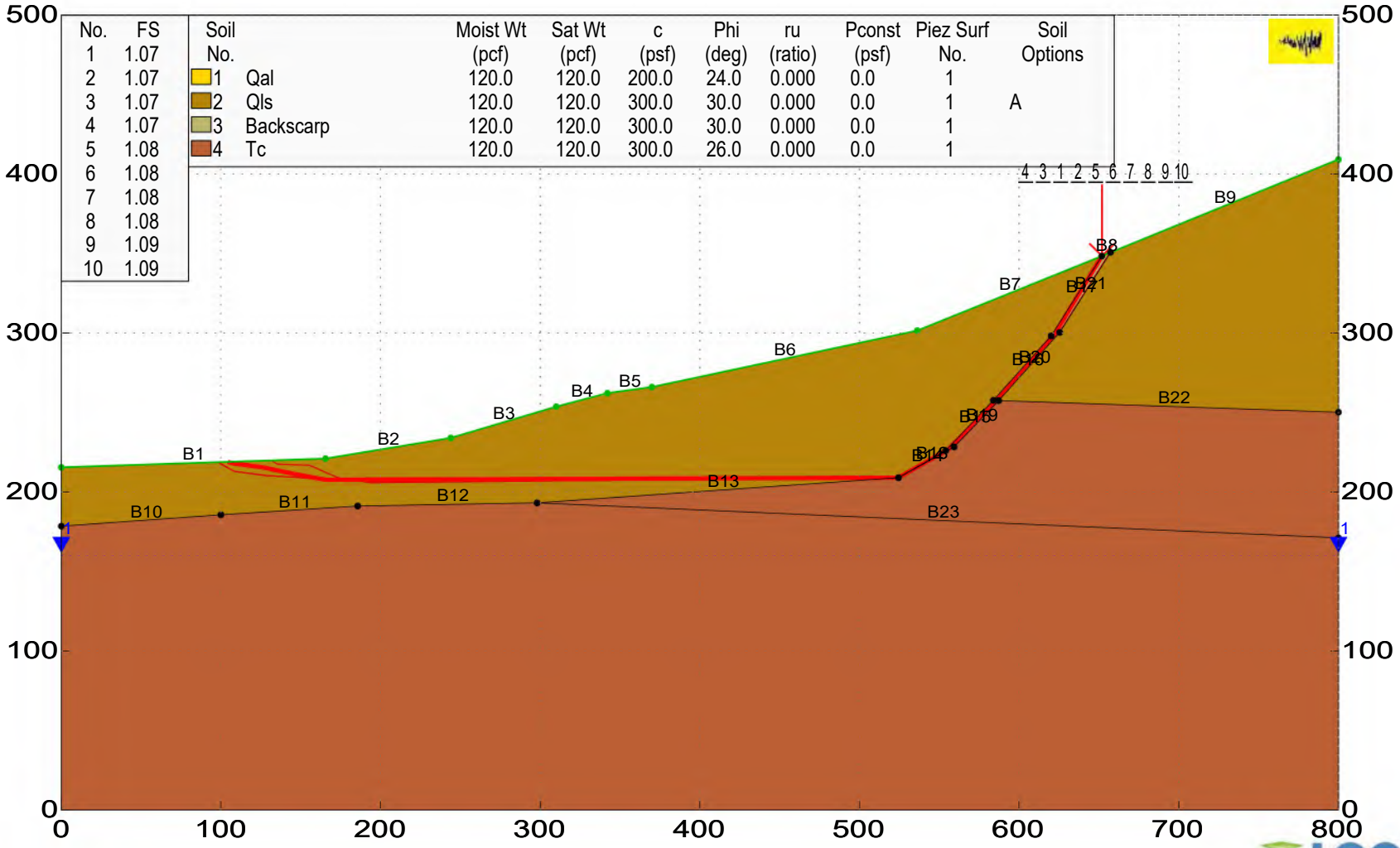
Janbu's Correction Factor (fo) = 1.0708

Janub's FS Corrected = 1.52008

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section A-A'
Existing - Upper Claybed - Seismic

LGC Geotechnical, Inc. \xaue.gsd



GEOSTASE FS = 1.07

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 2/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xaue.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec A\2024_03_29\xaue.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section A-A'

DESCRIPTION: Existing - Upper Claybed - Seismic

BOUNDARY DATA

9 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.500	165.500	221.000	2
2	165.500	221.000	244.000	234.000	2
3	244.000	234.000	310.000	253.700	2
4	310.000	253.700	342.000	262.100	2
5	342.000	262.100	369.900	266.000	2
6	369.900	266.000	536.100	301.500	2
7	536.100	301.500	651.800	348.400	2
8	651.800	348.400	657.200	350.600	3
9	657.200	350.600	800.000	409.100	2
10	0.000	178.500	100.000	185.700	4
11	100.000	185.700	185.700	191.100	4
12	185.700	191.100	298.100	193.100	4
13	298.100	193.100	524.400	209.000	4
14	524.400	209.000	553.900	226.000	3
15	553.900	226.000	583.900	257.600	3
16	583.900	257.600	620.000	298.100	3
17	620.000	298.100	651.800	348.400	3
18	524.400	209.000	559.300	228.300	4
19	559.300	228.300	587.100	257.500	4
20	587.100	257.500	625.400	300.400	2
21	625.400	300.400	657.200	350.600	2
22	587.100	257.500	800.000	250.200	4
23	298.100	193.100	800.000	171.200	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	15.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	147.10	209.90	300.10	196.60	15.00
2	524.40	209.00	524.40	209.00	0.00
3	553.90	226.00	559.30	228.30	0.00
4	583.90	257.60	587.10	257.50	0.00
5	620.00	298.10	625.40	300.40	0.00
6	651.80	348.40	657.20	350.60	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.765 FS Min = 1.074 FS Ave = 1.179
Standard Deviation = 0.123 Coefficient of Variation = 10.44 %

Critical Surface is Sequence Number 115 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.074

Table 1 - Geometry Data on the 115 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	2.01	0.43	105.45	218.58	219.00	-21.30	1.90	2.16
2	4.95	1.28	108.93	217.84	219.12	-7.93	1.90	5.00
3	4.95	2.13	113.88	217.15	219.28	-7.93	1.90	5.00
4	4.95	2.99	118.83	216.46	219.45	-7.93	1.90	5.00
5	4.95	3.84	123.79	215.77	219.61	-7.93	1.90	5.00
6	4.89	4.87	128.71	214.90	219.78	-12.03	1.90	5.00
7	4.89	6.08	133.60	213.86	219.94	-12.03	1.90	5.00
8	4.89	7.28	138.49	212.82	220.10	-12.03	1.90	5.00
9	4.89	8.49	143.38	211.78	220.26	-12.03	1.90	5.00
10	4.92	9.62	148.28	210.81	220.43	-10.22	1.90	5.00
11	4.92	10.67	153.20	209.92	220.59	-10.22	1.90	5.00
12	4.92	11.72	158.12	209.04	220.75	-10.22	1.90	5.00
13	4.92	12.77	163.04	208.15	220.92	-10.22	1.90	5.00
14	0.01	13.29	165.50	207.71	221.00	-10.22	9.40	0.01
15	4.91	13.69	167.96	207.71	221.41	0.21	9.40	4.91
16	4.91	14.49	172.86	207.73	222.22	0.21	9.40	4.91
17	4.91	15.28	177.77	207.75	223.03	0.21	9.40	4.91
18	4.91	16.08	182.68	207.77	223.84	0.21	9.40	4.91
19	4.91	16.87	187.58	207.79	224.66	0.21	9.40	4.91
20	4.91	17.67	192.49	207.80	225.47	0.21	9.40	4.91
21	4.91	18.46	197.39	207.82	226.28	0.21	9.40	4.91
22	4.91	19.26	202.30	207.84	227.09	0.21	9.40	4.91
23	4.91	20.05	207.21	207.86	227.91	0.21	9.40	4.91
24	4.91	20.85	212.11	207.87	228.72	0.21	9.40	4.91
25	4.91	21.64	217.02	207.89	229.53	0.21	9.40	4.91
26	4.91	22.43	221.92	207.91	230.34	0.21	9.40	4.91
27	4.91	23.23	226.83	207.93	231.16	0.21	9.40	4.91
28	4.91	24.02	231.74	207.94	231.97	0.21	9.40	4.91
29	4.91	24.82	236.64	207.96	232.78	0.21	9.40	4.91
30	4.91	25.61	241.55	207.98	233.59	0.21	9.40	4.91
31	5.08	26.76	246.54	208.00	234.76	0.21	16.62	5.08
32	5.08	28.26	251.62	208.02	236.27	0.21	16.62	5.08
33	5.08	29.75	256.69	208.03	237.79	0.21	16.62	5.08
34	5.08	31.25	261.77	208.05	239.30	0.21	16.62	5.08
35	5.08	32.75	266.85	208.07	240.82	0.21	16.62	5.08
36	5.08	34.25	271.92	208.09	242.33	0.21	16.62	5.08
37	5.08	35.74	277.00	208.11	243.85	0.21	16.62	5.08
38	5.08	37.24	282.08	208.13	245.37	0.21	16.62	5.08
39	5.08	38.74	287.15	208.14	246.88	0.21	16.62	5.08
40	5.08	40.23	292.23	208.16	248.40	0.21	16.62	5.08
41	5.08	41.73	297.31	208.18	249.91	0.21	16.62	5.08
42	5.08	43.23	302.38	208.20	251.43	0.21	16.62	5.08
43	5.08	44.72	307.46	208.22	252.94	0.21	16.62	5.08

44	5.33	46.16	312.67	208.24	254.40	0.21	14.71	5.33
45	5.33	47.54	318.00	208.26	255.80	0.21	14.71	5.33
46	5.33	48.93	323.33	208.27	257.20	0.21	14.71	5.33
47	5.33	50.31	328.67	208.29	258.60	0.21	14.71	5.33
48	5.33	51.69	334.00	208.31	260.00	0.21	14.71	5.33
49	5.33	53.07	339.33	208.33	261.40	0.21	14.71	5.33
50	4.65	54.07	344.32	208.35	262.43	0.21	7.96	4.65
51	4.65	54.71	348.98	208.37	263.08	0.21	7.96	4.65
52	4.65	55.34	353.62	208.38	263.73	0.21	7.96	4.65
53	4.65	55.97	358.27	208.40	264.38	0.21	7.96	4.65
54	4.65	56.61	362.92	208.42	265.02	0.21	7.96	4.65
55	4.65	57.24	367.57	208.43	265.68	0.21	7.96	4.65
56	4.98	58.08	372.39	208.45	266.53	0.21	12.06	4.98
57	4.98	59.13	377.38	208.47	267.60	0.21	12.06	4.98
58	4.98	60.17	382.36	208.49	268.66	0.21	12.06	4.98
59	4.98	61.22	387.34	208.51	269.73	0.21	12.06	4.98
60	4.98	62.27	392.33	208.52	270.79	0.21	12.06	4.98
61	4.98	63.31	397.31	208.54	271.85	0.21	12.06	4.98
62	4.98	64.36	402.30	208.56	272.92	0.21	12.06	4.98
63	4.98	65.41	407.28	208.58	273.98	0.21	12.06	4.98
64	4.98	66.45	412.26	208.60	275.05	0.21	12.06	4.98
65	4.98	67.50	417.25	208.61	276.11	0.21	12.06	4.98
66	4.98	68.55	422.23	208.63	277.18	0.21	12.06	4.98
67	4.98	69.59	427.21	208.65	278.24	0.21	12.06	4.98
68	4.98	70.64	432.20	208.67	279.31	0.21	12.06	4.98
69	4.98	71.69	437.18	208.69	280.37	0.21	12.06	4.98
70	4.98	72.73	442.17	208.70	281.44	0.21	12.06	4.98
71	4.98	73.78	447.15	208.72	282.50	0.21	12.06	4.98
72	4.98	74.83	452.13	208.74	283.56	0.21	12.06	4.98
73	4.98	75.87	457.12	208.76	284.63	0.21	12.06	4.98
74	4.98	76.92	462.10	208.78	285.69	0.21	12.06	4.98
75	4.98	77.97	467.09	208.79	286.76	0.21	12.06	4.98
76	4.98	79.01	472.07	208.81	287.82	0.21	12.06	4.98
77	4.98	80.06	477.05	208.83	288.89	0.21	12.06	4.98
78	4.98	81.11	482.04	208.85	289.95	0.21	12.06	4.98
79	4.98	82.15	487.02	208.87	291.02	0.21	12.06	4.98
80	4.98	83.20	492.00	208.88	292.08	0.21	12.06	4.98
81	4.98	84.24	496.99	208.90	293.15	0.21	12.06	4.98
82	4.98	85.29	501.97	208.92	294.21	0.21	12.06	4.98
83	4.98	86.34	506.96	208.94	295.27	0.21	12.06	4.98
84	4.98	87.38	511.94	208.96	296.34	0.21	12.06	4.98
85	4.98	88.43	516.92	208.97	297.40	0.21	12.06	4.98
86	4.98	89.48	521.91	208.99	298.47	0.21	12.06	4.98
87	5.85	88.96	527.33	210.66	299.63	29.59	12.06	6.73
88	5.85	86.89	533.18	213.98	300.88	29.59	12.06	6.73
89	4.45	85.50	538.33	216.91	302.40	29.59	22.07	5.12
90	4.45	84.77	542.77	219.43	304.21	29.59	22.07	5.12
91	4.45	84.05	547.23	221.96	306.01	29.59	22.07	5.12
92	4.45	83.33	551.67	224.49	307.81	29.59	22.07	5.12
93	1.76	82.82	554.78	226.25	309.07	29.59	22.07	2.03
94	4.71	81.23	558.02	229.16	310.38	45.63	22.07	6.73
95	4.71	78.32	562.72	233.97	312.29	45.63	22.07	6.73
96	4.71	75.42	567.43	238.78	314.20	45.63	22.07	6.73
97	4.71	72.52	572.13	243.59	316.11	45.63	22.07	6.73
98	4.71	69.61	576.84	248.40	318.01	45.63	22.07	6.73
99	4.71	66.71	581.55	253.21	319.92	45.63	22.07	6.73
100	1.88	64.68	584.84	256.58	321.26	45.63	22.07	2.69
101	4.89	62.28	588.22	260.35	322.63	48.94	22.07	7.44
102	4.89	58.65	593.11	265.96	324.61	48.94	22.07	7.44
103	4.89	55.02	598.00	271.57	326.59	48.94	22.07	7.44
104	4.89	51.40	602.89	277.18	328.57	48.94	22.07	7.44
105	4.89	47.77	607.78	282.79	330.56	48.94	22.07	7.44
106	4.89	44.14	612.67	288.40	332.54	48.94	22.07	7.44
107	4.89	40.51	617.56	294.01	334.52	48.94	22.07	7.44
108	1.78	38.03	620.89	297.84	335.87	48.94	22.07	2.71
109	5.00	34.27	624.28	302.97	337.24	58.72	22.07	9.64
110	5.00	28.06	629.28	311.21	339.27	58.72	22.07	9.64
111	5.00	21.86	634.29	319.44	341.30	58.72	22.07	9.64
112	5.00	15.65	639.29	327.68	343.33	58.72	22.07	9.64
113	5.00	9.44	644.29	335.91	345.36	58.72	22.07	9.64
114	5.00	3.24	649.30	344.15	347.39	58.72	22.07	9.64
115	0.11	0.07	651.85	348.35	348.42	58.72	22.17	0.21

Table 2 - Force Data On The 115 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	102.8	0.0	0.0	15.4	0.0	0.0
2	759.8	0.0	0.0	114.0	0.0	0.0
3	1267.7	0.0	0.0	190.2	0.0	0.0
4	1775.7	0.0	0.0	266.3	0.0	0.0
5	2283.6	0.0	0.0	342.5	0.0	0.0
6	2859.3	0.0	0.0	428.9	0.0	0.0
7	3566.5	0.0	0.0	535.0	0.0	0.0
8	4273.6	0.0	0.0	641.0	0.0	0.0
9	4980.7	0.0	0.0	747.1	0.0	0.0
10	5676.1	0.0	0.0	851.4	0.0	0.0
11	6296.3	0.0	0.0	944.4	0.0	0.0
12	6916.5	0.0	0.0	1037.5	0.0	0.0
13	7536.7	0.0	0.0	1130.5	0.0	0.0
14	9.5	0.0	0.0	1.4	0.0	0.0
15	8060.9	0.0	0.0	1209.1	0.0	0.0
16	8528.7	0.0	0.0	1279.3	0.0	0.0
17	8996.6	0.0	0.0	1349.5	0.0	0.0
18	9464.5	0.0	0.0	1419.7	0.0	0.0
19	9932.4	0.0	0.0	1489.9	0.0	0.0
20	10400.2	0.0	0.0	1560.0	0.0	0.0
21	10868.1	0.0	0.0	1630.2	0.0	0.0
22	11336.0	0.0	0.0	1700.4	0.0	0.0
23	11803.8	0.0	0.0	1770.6	0.0	0.0
24	12271.7	0.0	0.0	1840.8	0.0	0.0
25	12739.6	0.0	0.0	1910.9	0.0	0.0
26	13207.5	0.0	0.0	1981.1	0.0	0.0
27	13675.3	0.0	0.0	2051.3	0.0	0.0
28	14143.2	0.0	0.0	2121.5	0.0	0.0
29	14611.1	0.0	0.0	2191.7	0.0	0.0
30	15079.0	0.0	0.0	2261.8	0.0	0.0
31	16302.8	0.0	0.0	2445.4	0.0	0.0
32	17214.9	0.0	0.0	2582.2	0.0	0.0
33	18126.9	0.0	0.0	2719.0	0.0	0.0
34	19039.0	0.0	0.0	2855.9	0.0	0.0
35	19951.1	0.0	0.0	2992.7	0.0	0.0
36	20863.1	0.0	0.0	3129.5	0.0	0.0
37	21775.2	0.0	0.0	3266.3	0.0	0.0
38	22687.3	0.0	0.0	3403.1	0.0	0.0

39	23599.3	0.0	0.0	3539.9	0.0	0.0
40	24511.4	0.0	0.0	3676.7	0.0	0.0
41	25423.5	0.0	0.0	3813.5	0.0	0.0
42	26335.5	0.0	0.0	3950.3	0.0	0.0
43	27247.6	0.0	0.0	4087.1	0.0	0.0
44	29544.6	0.0	0.0	4431.7	0.0	0.0
45	30428.3	0.0	0.0	4564.3	0.0	0.0
46	31312.0	0.0	0.0	4696.8	0.0	0.0
47	32195.7	0.0	0.0	4829.4	0.0	0.0
48	33079.4	0.0	0.0	4961.9	0.0	0.0
49	33963.1	0.0	0.0	5094.5	0.0	0.0
50	30173.5	0.0	0.0	4526.0	0.0	0.0
51	30526.8	0.0	0.0	4579.0	0.0	0.0
52	30880.2	0.0	0.0	4632.0	0.0	0.0
53	31233.5	0.0	0.0	4685.0	0.0	0.0
54	31586.9	0.0	0.0	4738.0	0.0	0.0
55	31940.2	0.0	0.0	4791.0	0.0	0.0
56	34735.8	0.0	0.0	5210.4	0.0	0.0
57	35361.8	0.0	0.0	5304.3	0.0	0.0
58	35987.7	0.0	0.0	5398.2	0.0	0.0
59	36613.6	0.0	0.0	5492.0	0.0	0.0
60	37239.5	0.0	0.0	5585.9	0.0	0.0
61	37865.4	0.0	0.0	5679.8	0.0	0.0
62	38491.3	0.0	0.0	5773.7	0.0	0.0
63	39117.3	0.0	0.0	5867.6	0.0	0.0
64	39743.2	0.0	0.0	5961.5	0.0	0.0
65	40369.1	0.0	0.0	6055.4	0.0	0.0
66	40995.0	0.0	0.0	6149.3	0.0	0.0
67	41620.9	0.0	0.0	6243.1	0.0	0.0
68	42246.9	0.0	0.0	6337.0	0.0	0.0
69	42872.8	0.0	0.0	6430.9	0.0	0.0
70	43498.7	0.0	0.0	6524.8	0.0	0.0
71	44124.6	0.0	0.0	6618.7	0.0	0.0
72	44750.5	0.0	0.0	6712.6	0.0	0.0
73	45376.4	0.0	0.0	6806.5	0.0	0.0
74	46002.4	0.0	0.0	6900.4	0.0	0.0
75	46628.3	0.0	0.0	6994.2	0.0	0.0
76	47254.2	0.0	0.0	7088.1	0.0	0.0
77	47880.1	0.0	0.0	7182.0	0.0	0.0
78	48506.0	0.0	0.0	7275.9	0.0	0.0
79	49132.0	0.0	0.0	7369.8	0.0	0.0
80	49757.9	0.0	0.0	7463.7	0.0	0.0
81	50383.8	0.0	0.0	7557.6	0.0	0.0
82	51009.7	0.0	0.0	7651.5	0.0	0.0
83	51635.6	0.0	0.0	7745.3	0.0	0.0
84	52261.6	0.0	0.0	7839.2	0.0	0.0
85	52887.5	0.0	0.0	7933.1	0.0	0.0
86	53513.4	0.0	0.0	8027.0	0.0	0.0
87	62453.3	0.0	0.0	9368.0	0.0	0.0
88	60998.8	0.0	0.0	9149.8	0.0	0.0
89	45654.5	0.0	0.0	6848.2	0.0	0.0
90	45268.5	0.0	0.0	6790.3	0.0	0.0
91	44882.5	0.0	0.0	6732.4	0.0	0.0
92	44496.5	0.0	0.0	6674.5	0.0	0.0
93	17515.1	0.0	0.0	2627.3	0.0	0.0
94	45873.4	0.0	0.0	6881.0	0.0	0.0
95	44233.6	0.0	0.0	6635.0	0.0	0.0
96	42593.7	0.0	0.0	6389.1	0.0	0.0
97	40953.9	0.0	0.0	6143.1	0.0	0.0
98	39314.0	0.0	0.0	5897.1	0.0	0.0
99	37674.2	0.0	0.0	5651.1	0.0	0.0
100	14593.3	0.0	0.0	2189.0	0.0	0.0
101	36536.4	0.0	0.0	5480.5	0.0	0.0
102	34407.5	0.0	0.0	5161.1	0.0	0.0
103	32278.5	0.0	0.0	4841.8	0.0	0.0
104	30149.6	0.0	0.0	4522.4	0.0	0.0
105	28020.6	0.0	0.0	4203.1	0.0	0.0
106	25891.7	0.0	0.0	3883.8	0.0	0.0
107	23762.8	0.0	0.0	3564.4	0.0	0.0
108	8115.4	0.0	0.0	1217.3	0.0	0.0
109	20576.9	0.0	0.0	3086.5	0.0	0.0
110	16850.4	0.0	0.0	2527.6	0.0	0.0
111	13123.9	0.0	0.0	1968.6	0.0	0.0
112	9397.4	0.0	0.0	1409.6	0.0	0.0
113	5670.9	0.0	0.0	850.6	0.0	0.0
114	1944.4	0.0	0.0	291.7	0.0	0.0
115	0.9	0.0	0.0	0.1	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 3134460.55(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 3134460.55(lbs)

TOTAL AREA OF SLIDING MASS = 26120.50(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 115 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	2	300.00	30.00	A
2	2	0.00	15.00	A
3	2	0.00	15.00	A
4	2	0.00	15.00	A
5	2	0.00	15.00	A
6	2	0.00	15.00	A
7	2	0.00	15.00	A
8	2	0.00	15.00	A
9	2	0.00	15.00	A
10	2	0.00	15.00	A
11	2	0.00	15.00	A
12	2	0.00	15.00	A
13	2	0.00	15.00	A
14	2	0.00	15.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	2	0.00	15.00	A
23	2	0.00	15.00	A
24	2	0.00	15.00	A
25	2	0.00	15.00	A
26	2	0.00	15.00	A
27	2	0.00	15.00	A
28	2	0.00	15.00	A
29	2	0.00	15.00	A
30	2	0.00	15.00	A
31	2	0.00	15.00	A

32	2	0.00	15.00	A
33	2	0.00	15.00	A
34	2	0.00	15.00	A
35	2	0.00	15.00	A
36	2	0.00	15.00	A
37	2	0.00	15.00	A
38	2	0.00	15.00	A
39	2	0.00	15.00	A
40	2	0.00	15.00	A
41	2	0.00	15.00	A
42	2	0.00	15.00	A
43	2	0.00	15.00	A
44	2	0.00	15.00	A
45	2	0.00	15.00	A
46	2	0.00	15.00	A
47	2	0.00	15.00	A
48	2	0.00	15.00	A
49	2	0.00	15.00	A
50	2	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A
77	2	0.00	15.00	A
78	2	0.00	15.00	A
79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	3	300.00	30.00	
88	3	300.00	30.00	
89	3	300.00	30.00	
90	3	300.00	30.00	
91	3	300.00	30.00	
92	3	300.00	30.00	
93	3	300.00	30.00	
94	3	300.00	30.00	
95	3	300.00	30.00	
96	3	300.00	30.00	
97	3	300.00	30.00	
98	3	300.00	30.00	
99	3	300.00	30.00	
100	3	300.00	30.00	
101	3	300.00	30.00	
102	3	300.00	30.00	
103	3	300.00	30.00	
104	3	300.00	30.00	
105	3	300.00	30.00	
106	3	300.00	30.00	
107	3	300.00	30.00	
108	3	300.00	30.00	
109	3	300.00	30.00	
110	3	300.00	30.00	
111	3	300.00	30.00	
112	3	300.00	30.00	
113	3	300.00	30.00	
114	3	300.00	30.00	
115	3	300.00	30.00	

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 115 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-21.30	105.45	2.16	215.97	424.69	393.46
1	-21.30	105.45	2.16	215.97	424.69	393.46
2	-7.93	108.93	5.00	159.36	42.70	39.56
2	-7.93	108.93	5.00	159.36	42.70	39.56
3	-7.93	113.88	5.00	265.89	71.24	66.00
3	-7.93	113.88	5.00	265.89	71.24	66.00
4	-7.93	118.83	5.00	372.41	99.79	92.45
4	-7.93	118.83	5.00	372.41	99.79	92.45
5	-7.93	123.79	5.00	478.94	128.33	118.90
5	-7.93	123.79	5.00	478.94	128.33	118.90
6	-12.03	128.71	5.00	619.99	166.13	153.91
6	-12.03	128.71	5.00	619.99	166.13	153.91
7	-12.03	133.60	5.00	773.32	207.21	191.97
7	-12.03	133.60	5.00	773.32	207.21	191.97
8	-12.03	138.49	5.00	926.65	248.30	230.04
8	-12.03	138.49	5.00	926.65	248.30	230.04
9	-12.03	143.38	5.00	1079.98	289.38	268.10
9	-12.03	143.38	5.00	1079.98	289.38	268.10
10	-10.22	148.28	5.00	1212.23	324.82	300.93
10	-10.22	148.28	5.00	1212.23	324.82	300.93
11	-10.22	153.20	5.00	1344.69	360.31	333.81

11	-10.22	153.20	5.00	1344.69	360.31	333.81
12	-10.22	158.12	5.00	1477.15	395.80	366.69
12	-10.22	158.12	5.00	1477.15	395.80	366.69
13	-10.22	163.04	5.00	1609.61	431.29	399.58
13	-10.22	163.04	5.00	1609.61	431.29	399.58
14	-10.22	165.50	0.01	1675.97	449.08	416.05
14	-10.22	165.50	0.01	1675.97	449.08	416.05
15	0.21	167.96	4.91	1641.52	439.84	407.50
15	0.21	167.96	4.91	1641.52	439.84	407.50
16	0.21	172.86	4.91	1736.80	465.37	431.15
16	0.21	172.86	4.91	1736.80	465.37	431.15
17	0.21	177.77	4.91	1832.08	490.90	454.80
17	0.21	177.77	4.91	1832.08	490.90	454.80
18	0.21	182.68	4.91	1927.36	516.43	478.46
18	0.21	182.68	4.91	1927.36	516.43	478.46
19	0.21	187.58	4.91	2022.64	541.96	502.11
19	0.21	187.58	4.91	2022.64	541.96	502.11
20	0.21	192.49	4.91	2117.91	567.49	525.76
20	0.21	192.49	4.91	2117.91	567.49	525.76
21	0.21	197.39	4.91	2213.19	593.02	549.41
21	0.21	197.39	4.91	2213.19	593.02	549.41
22	0.21	202.30	4.91	2308.47	618.55	573.06
22	0.21	202.30	4.91	2308.47	618.55	573.06
23	0.21	207.21	4.91	2403.75	644.08	596.72
23	0.21	207.21	4.91	2403.75	644.08	596.72
24	0.21	212.11	4.91	2499.03	669.61	620.37
24	0.21	212.11	4.91	2499.03	669.61	620.37
25	0.21	217.02	4.91	2594.30	695.14	644.02
25	0.21	217.02	4.91	2594.30	695.14	644.02
26	0.21	221.92	4.91	2689.58	720.67	667.67
26	0.21	221.92	4.91	2689.58	720.67	667.67
27	0.21	226.83	4.91	2784.86	746.20	691.32
27	0.21	226.83	4.91	2784.86	746.20	691.32
28	0.21	231.74	4.91	2880.14	771.73	714.98
28	0.21	231.74	4.91	2880.14	771.73	714.98
29	0.21	236.64	4.91	2975.42	797.26	738.63
29	0.21	236.64	4.91	2975.42	797.26	738.63
30	0.21	241.55	4.91	3070.69	822.79	762.28
30	0.21	241.55	4.91	3070.69	822.79	762.28
31	0.21	246.54	5.08	3208.07	859.60	796.38
31	0.21	246.54	5.08	3208.07	859.60	796.38
32	0.21	251.62	5.08	3387.55	907.69	840.94
32	0.21	251.62	5.08	3387.55	907.69	840.94
33	0.21	256.69	5.08	3567.02	955.78	885.49
33	0.21	256.69	5.08	3567.02	955.78	885.49
34	0.21	261.77	5.08	3746.50	1003.87	930.05
34	0.21	261.77	5.08	3746.50	1003.87	930.05
35	0.21	266.85	5.08	3925.98	1051.96	974.60
35	0.21	266.85	5.08	3925.98	1051.96	974.60
36	0.21	271.92	5.08	4105.45	1100.05	1019.15
36	0.21	271.92	5.08	4105.45	1100.05	1019.15
37	0.21	277.00	5.08	4284.93	1148.14	1063.71
37	0.21	277.00	5.08	4284.93	1148.14	1063.71
38	0.21	282.08	5.08	4464.41	1196.23	1108.26
38	0.21	282.08	5.08	4464.41	1196.23	1108.26
39	0.21	287.15	5.08	4643.88	1244.32	1152.82
39	0.21	287.15	5.08	4643.88	1244.32	1152.82
40	0.21	292.23	5.08	4823.36	1292.42	1197.37
40	0.21	292.23	5.08	4823.36	1292.42	1197.37
41	0.21	297.31	5.08	5002.84	1340.51	1241.92
41	0.21	297.31	5.08	5002.84	1340.51	1241.92
42	0.21	302.38	5.08	5182.31	1388.60	1286.48
42	0.21	302.38	5.08	5182.31	1388.60	1286.48
43	0.21	307.46	5.08	5361.79	1436.69	1331.03
43	0.21	307.46	5.08	5361.79	1436.69	1331.03
44	0.21	312.67	5.33	5534.29	1482.91	1373.86
44	0.21	312.67	5.33	5534.29	1482.91	1373.86
45	0.21	318.00	5.33	5699.83	1527.26	1414.95
45	0.21	318.00	5.33	5699.83	1527.26	1414.95
46	0.21	323.33	5.33	5865.36	1571.62	1456.04
46	0.21	323.33	5.33	5865.36	1571.62	1456.04
47	0.21	328.67	5.33	6030.89	1615.97	1497.13
47	0.21	328.67	5.33	6030.89	1615.97	1497.13
48	0.21	334.00	5.33	6196.43	1660.33	1538.23
48	0.21	334.00	5.33	6196.43	1660.33	1538.23
49	0.21	339.33	5.33	6361.96	1704.68	1579.32
49	0.21	339.33	5.33	6361.96	1704.68	1579.32
50	0.21	344.32	4.65	6482.68	1737.03	1609.29
50	0.21	344.32	4.65	6482.68	1737.03	1609.29
51	0.21	348.98	4.65	6558.60	1757.37	1628.13
51	0.21	348.98	4.65	6558.60	1757.37	1628.13
52	0.21	353.62	4.65	6634.51	1777.71	1646.98
52	0.21	353.62	4.65	6634.51	1777.71	1646.98
53	0.21	358.27	4.65	6710.43	1798.05	1665.82
53	0.21	358.27	4.65	6710.43	1798.05	1665.82
54	0.21	362.92	4.65	6786.34	1818.39	1684.67
54	0.21	362.92	4.65	6786.34	1818.39	1684.67
55	0.21	367.57	4.65	6862.26	1838.74	1703.51
55	0.21	367.57	4.65	6862.26	1838.74	1703.51
56	0.21	372.39	4.98	6962.95	1865.72	1728.51
56	0.21	372.39	4.98	6962.95	1865.72	1728.51
57	0.21	377.38	4.98	7088.42	1899.34	1759.66
57	0.21	377.38	4.98	7088.42	1899.34	1759.66
58	0.21	382.36	4.98	7213.88	1932.95	1790.80
58	0.21	382.36	4.98	7213.88	1932.95	1790.80
59	0.21	387.34	4.98	7339.35	1966.57	1821.95
59	0.21	387.34	4.98	7339.35	1966.57	1821.95
60	0.21	392.33	4.98	7464.82	2000.19	1853.10
60	0.21	392.33	4.98	7464.82	2000.19	1853.10
61	0.21	397.31	4.98	7590.29	2033.81	1884.24
61	0.21	397.31	4.98	7590.29	2033.81	1884.24
62	0.21	402.30	4.98	7715.76	2067.43	1915.39
62	0.21	402.30	4.98	7715.76	2067.43	1915.39
63	0.21	407.28	4.98	7841.22	2101.05	1946.54
63	0.21	407.28	4.98	7841.22	2101.05	1946.54
64	0.21	412.26	4.98	7966.69	2134.67	1977.68
64	0.21	412.26	4.98	7966.69	2134.67	1977.68
65	0.21	417.25	4.98	8092.16	2168.29	2008.83
65	0.21	417.25	4.98	8092.16	2168.29	2008.83
66	0.21	422.23	4.98	8217.63	2201.91	2039.98
66	0.21	422.23	4.98	8217.63	2201.91	2039.98
67	0.21	427.21	4.98	8343.10	2235.53	2071.12
67	0.21	427.21	4.98	8343.10	2235.53	2071.12
68	0.21	432.20	4.98	8468.57	2269.15	2102.27
68	0.21	432.20	4.98	8468.57	2269.15	2102.27
69	0.21	437.18	4.98	8594.03	2302.76	2133.42
69	0.21	437.18	4.98	8594.03	2302.76	2133.42
70	0.21	442.17	4.98	8719.50	2336.38	2164.56
70	0.21	442.17	4.98	8719.50	2336.38	2164.56
71	0.21	447.15	4.98	8844.97	2370.00	2195.71

71	0.21	447.15	4.98	8844.97	2370.00	2195.71
72	0.21	452.13	4.98	8970.44	2403.62	2226.86
72	0.21	452.13	4.98	8970.44	2403.62	2226.86
73	0.21	457.12	4.98	9095.91	2437.24	2258.00
73	0.21	457.12	4.98	9095.91	2437.24	2258.00
74	0.21	462.10	4.98	9221.37	2470.86	2289.15
74	0.21	462.10	4.98	9221.37	2470.86	2289.15
75	0.21	467.09	4.98	9346.84	2504.48	2320.30
75	0.21	467.09	4.98	9346.84	2504.48	2320.30
76	0.21	472.07	4.98	9472.31	2538.10	2351.44
76	0.21	472.07	4.98	9472.31	2538.10	2351.44
77	0.21	477.05	4.98	9597.78	2571.72	2382.59
77	0.21	477.05	4.98	9597.78	2571.72	2382.59
78	0.21	482.04	4.98	9723.25	2605.34	2413.74
78	0.21	482.04	4.98	9723.25	2605.34	2413.74
79	0.21	487.02	4.98	9848.71	2638.95	2444.88
79	0.21	487.02	4.98	9848.71	2638.95	2444.88
80	0.21	492.00	4.98	9974.18	2672.57	2476.03
80	0.21	492.00	4.98	9974.18	2672.57	2476.03
81	0.21	496.99	4.98	10099.65	2706.19	2507.18
81	0.21	496.99	4.98	10099.65	2706.19	2507.18
82	0.21	501.97	4.98	10225.12	2739.81	2538.32
82	0.21	501.97	4.98	10225.12	2739.81	2538.32
83	0.21	506.96	4.98	10350.59	2773.43	2569.47
83	0.21	506.96	4.98	10350.59	2773.43	2569.47
84	0.21	511.94	4.98	10476.05	2807.05	2600.62
84	0.21	511.94	4.98	10476.05	2807.05	2600.62
85	0.21	516.92	4.98	10601.52	2840.67	2631.76
85	0.21	516.92	4.98	10601.52	2840.67	2631.76
86	0.21	521.91	4.98	10726.99	2874.29	2662.91
86	0.21	521.91	4.98	10726.99	2874.29	2662.91
87	29.59	527.33	6.73	7920.05	4872.64	4514.31
87	29.59	527.33	6.73	7920.05	4872.64	4514.31
88	29.59	533.18	6.73	7732.61	4764.42	4414.04
88	29.59	533.18	6.73	7732.61	4764.42	4414.04
89	29.59	538.33	5.12	7606.19	4691.44	4346.42
89	29.59	538.33	5.12	7606.19	4691.44	4346.42
90	29.59	542.77	5.12	7540.80	4653.68	4311.45
90	29.59	542.77	5.12	7540.80	4653.68	4311.45
91	29.59	547.23	5.12	7475.41	4615.93	4276.47
91	29.59	547.23	5.12	7475.41	4615.93	4276.47
92	29.59	551.67	5.12	7410.02	4578.18	4241.50
92	29.59	551.67	5.12	7410.02	4578.18	4241.50
93	29.59	554.78	2.03	7364.38	4551.82	4217.08
93	29.59	554.78	2.03	7364.38	4551.82	4217.08
94	45.63	558.02	6.73	5946.04	3732.95	3458.42
94	45.63	558.02	6.73	5946.04	3732.95	3458.42
95	45.63	562.72	6.73	5726.60	3606.26	3341.05
95	45.63	562.72	6.73	5726.60	3606.26	3341.05
96	45.63	567.43	6.73	5507.17	3479.57	3223.68
96	45.63	567.43	6.73	5507.17	3479.57	3223.68
97	45.63	572.13	6.73	5287.74	3352.88	3106.31
97	45.63	572.13	6.73	5287.74	3352.88	3106.31
98	45.63	576.84	6.73	5068.31	3226.19	2988.93
98	45.63	576.84	6.73	5068.31	3226.19	2988.93
99	45.63	581.55	6.73	4848.88	3099.50	2871.56
99	45.63	581.55	6.73	4848.88	3099.50	2871.56
100	45.63	584.84	2.69	4695.32	3010.85	2789.43
100	45.63	584.84	2.69	4695.32	3010.85	2789.43
101	48.94	588.22	7.44	4295.67	2780.11	2575.66
101	48.94	588.22	7.44	4295.67	2780.11	2575.66
102	48.94	593.11	7.44	4033.33	2628.64	2435.33
102	48.94	593.11	7.44	4033.33	2628.64	2435.33
103	48.94	598.00	7.44	3770.99	2477.18	2295.01
103	48.94	598.00	7.44	3770.99	2477.18	2295.01
104	48.94	602.89	7.44	3508.64	2325.72	2154.68
104	48.94	602.89	7.44	3508.64	2325.72	2154.68
105	48.94	607.78	7.44	3246.30	2174.25	2014.36
105	48.94	607.78	7.44	3246.30	2174.25	2014.36
106	48.94	612.67	7.44	2983.96	2022.79	1874.03
106	48.94	612.67	7.44	2983.96	2022.79	1874.03
107	48.94	617.56	7.44	2721.61	1871.32	1733.71
107	48.94	617.56	7.44	2721.61	1871.32	1733.71
108	48.94	620.89	2.71	2542.73	1768.05	1638.02
108	48.94	620.89	2.71	2542.73	1768.05	1638.02
109	58.72	624.28	9.64	1860.16	1373.96	1272.92
109	58.72	624.28	9.64	1860.16	1373.96	1272.92
110	58.72	629.28	9.64	1477.53	1153.05	1068.25
110	58.72	629.28	9.64	1477.53	1153.05	1068.25
111	58.72	634.29	9.64	1094.89	932.14	863.59
111	58.72	634.29	9.64	1094.89	932.14	863.59
112	58.72	639.29	9.64	712.26	711.22	658.92
112	58.72	639.29	9.64	712.26	711.22	658.92
113	58.72	644.29	9.64	329.63	490.31	454.25
113	58.72	644.29	9.64	329.63	490.31	454.25
114	58.72	649.30	9.64	199.65	115.27	106.79
114	58.72	649.30	9.64	199.65	115.27	106.79
115	58.72	651.85	0.21	4.16	2.40	2.23
115	58.72	651.85	0.21	4.16	2.40	2.23

Table 4 - Base Force Data on the 115 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-21.30	105.45	2.16	466.40	917.14	849.70
1	-21.30	105.45	2.16	466.40	917.14	849.70
2	-7.93	108.93	5.00	796.78	213.50	197.80
2	-7.93	108.93	5.00	796.78	213.50	197.80
3	-7.93	113.88	5.00	1329.43	356.22	330.02
3	-7.93	113.88	5.00	1329.43	356.22	330.02
4	-7.93	118.83	5.00	1862.07	498.94	462.25
4	-7.93	118.83	5.00	1862.07	498.94	462.25
5	-7.93	123.79	5.00	2394.72	641.66	594.48
5	-7.93	123.79	5.00	2394.72	641.66	594.48
6	-12.03	128.71	5.00	3099.97	830.63	769.55
6	-12.03	128.71	5.00	3099.97	830.63	769.55
7	-12.03	133.60	5.00	3866.62	1036.06	959.86
7	-12.03	133.60	5.00	3866.62	1036.06	959.86
8	-12.03	138.49	5.00	4633.27	1241.48	1150.18
8	-12.03	138.49	5.00	4633.27	1241.48	1150.18
9	-12.03	143.38	5.00	5399.92	1446.90	1340.50
9	-12.03	143.38	5.00	5399.92	1446.90	1340.50
10	-10.22	148.28	5.00	6059.33	1623.59	1504.19
10	-10.22	148.28	5.00	6059.33	1623.59	1504.19
11	-10.22	153.20	5.00	6721.43	1801.00	1668.55
11	-10.22	153.20	5.00	6721.43	1801.00	1668.55

12	-10.22	158.12	5.00	7383.53	1978.41	1832.92
12	-10.22	158.12	5.00	7383.53	1978.41	1832.92
13	-10.22	163.04	5.00	8045.63	2155.82	1997.28
13	-10.22	163.04	5.00	8045.63	2155.82	1997.28
14	-10.22	165.50	0.01	10.12	2.71	2.51
14	-10.22	165.50	0.01	10.12	2.71	2.51
15	0.21	167.96	4.91	8053.17	2157.84	1999.15
15	0.21	167.96	4.91	8053.17	2157.84	1999.15
16	0.21	172.86	4.91	8520.59	2283.09	2115.19
16	0.21	172.86	4.91	8520.59	2283.09	2115.19
17	0.21	177.77	4.91	8988.02	2408.33	2231.22
17	0.21	177.77	4.91	8988.02	2408.33	2231.22
18	0.21	182.68	4.91	9455.44	2533.58	2347.26
18	0.21	182.68	4.91	9455.44	2533.58	2347.26
19	0.21	187.58	4.91	9922.87	2658.83	2463.29
19	0.21	187.58	4.91	9922.87	2658.83	2463.29
20	0.21	192.49	4.91	10390.30	2784.07	2579.33
20	0.21	192.49	4.91	10390.30	2784.07	2579.33
21	0.21	197.39	4.91	10857.72	2909.32	2695.36
21	0.21	197.39	4.91	10857.72	2909.32	2695.36
22	0.21	202.30	4.91	11325.15	3034.56	2811.40
22	0.21	202.30	4.91	11325.15	3034.56	2811.40
23	0.21	207.21	4.91	11792.57	3159.81	2927.44
23	0.21	207.21	4.91	11792.57	3159.81	2927.44
24	0.21	212.11	4.91	12260.00	3285.06	3043.47
24	0.21	212.11	4.91	12260.00	3285.06	3043.47
25	0.21	217.02	4.91	12727.42	3410.30	3159.51
25	0.21	217.02	4.91	12727.42	3410.30	3159.51
26	0.21	221.92	4.91	13194.85	3535.55	3275.54
26	0.21	221.92	4.91	13194.85	3535.55	3275.54
27	0.21	226.83	4.91	13662.28	3660.80	3391.58
27	0.21	226.83	4.91	13662.28	3660.80	3391.58
28	0.21	231.74	4.91	14129.70	3786.04	3507.61
28	0.21	231.74	4.91	14129.70	3786.04	3507.61
29	0.21	236.64	4.91	14597.13	3911.29	3623.65
29	0.21	236.64	4.91	14597.13	3911.29	3623.65
30	0.21	241.55	4.91	15064.55	4036.53	3739.69
30	0.21	241.55	4.91	15064.55	4036.53	3739.69
31	0.21	246.54	5.08	16287.24	4364.15	4043.21
31	0.21	246.54	5.08	16287.24	4364.15	4043.21
32	0.21	251.62	5.08	17198.43	4608.31	4269.41
32	0.21	251.62	5.08	17198.43	4608.31	4269.41
33	0.21	256.69	5.08	18109.63	4852.46	4495.61
33	0.21	256.69	5.08	18109.63	4852.46	4495.61
34	0.21	261.77	5.08	19020.82	5096.61	4721.81
34	0.21	261.77	5.08	19020.82	5096.61	4721.81
35	0.21	266.85	5.08	19932.02	5340.77	4948.00
35	0.21	266.85	5.08	19932.02	5340.77	4948.00
36	0.21	271.92	5.08	20843.21	5584.92	5174.20
36	0.21	271.92	5.08	20843.21	5584.92	5174.20
37	0.21	277.00	5.08	21754.41	5829.08	5400.40
37	0.21	277.00	5.08	21754.41	5829.08	5400.40
38	0.21	282.08	5.08	22665.60	6073.23	5626.60
38	0.21	282.08	5.08	22665.60	6073.23	5626.60
39	0.21	287.15	5.08	23576.80	6317.38	5852.80
39	0.21	287.15	5.08	23576.80	6317.38	5852.80
40	0.21	292.23	5.08	24487.99	6561.54	6079.00
40	0.21	292.23	5.08	24487.99	6561.54	6079.00
41	0.21	297.31	5.08	25399.18	6805.69	6305.20
41	0.21	297.31	5.08	25399.18	6805.69	6305.20
42	0.21	302.38	5.08	26310.38	7049.84	6531.39
42	0.21	302.38	5.08	26310.38	7049.84	6531.39
43	0.21	307.46	5.08	27221.57	7294.00	6757.59
43	0.21	307.46	5.08	27221.57	7294.00	6757.59
44	0.21	312.67	5.33	29516.43	7908.90	7327.28
44	0.21	312.67	5.33	29516.43	7908.90	7327.28
45	0.21	318.00	5.33	30399.28	8145.46	7546.44
45	0.21	318.00	5.33	30399.28	8145.46	7546.44
46	0.21	323.33	5.33	31282.13	8382.02	7765.60
46	0.21	323.33	5.33	31282.13	8382.02	7765.60
47	0.21	328.67	5.33	32164.97	8618.58	7984.76
47	0.21	328.67	5.33	32164.97	8618.58	7984.76
48	0.21	334.00	5.33	33047.82	8855.14	8203.93
48	0.21	334.00	5.33	33047.82	8855.14	8203.93
49	0.21	339.33	5.33	33930.67	9091.70	8423.09
49	0.21	339.33	5.33	33930.67	9091.70	8423.09
50	0.21	344.32	4.65	30144.67	8077.24	7483.24
50	0.21	344.32	4.65	30144.67	8077.24	7483.24
51	0.21	348.98	4.65	30497.68	8171.83	7570.87
51	0.21	348.98	4.65	30497.68	8171.83	7570.87
52	0.21	353.62	4.65	30850.68	8266.42	7658.50
52	0.21	353.62	4.65	30850.68	8266.42	7658.50
53	0.21	358.27	4.65	31203.69	8361.00	7746.13
53	0.21	358.27	4.65	31203.69	8361.00	7746.13
54	0.21	362.92	4.65	31556.70	8455.59	7833.76
54	0.21	362.92	4.65	31556.70	8455.59	7833.76
55	0.21	367.57	4.65	31909.70	8550.18	7921.39
55	0.21	367.57	4.65	31909.70	8550.18	7921.39
56	0.21	372.39	4.98	34702.66	9298.55	8614.73
56	0.21	372.39	4.98	34702.66	9298.55	8614.73
57	0.21	377.38	4.98	35327.98	9466.10	8769.96
57	0.21	377.38	4.98	35327.98	9466.10	8769.96
58	0.21	382.36	4.98	35953.30	9633.66	8925.19
58	0.21	382.36	4.98	35953.30	9633.66	8925.19
59	0.21	387.34	4.98	36578.62	9801.21	9080.43
59	0.21	387.34	4.98	36578.62	9801.21	9080.43
60	0.21	392.33	4.98	37203.94	9968.77	9235.66
60	0.21	392.33	4.98	37203.94	9968.77	9235.66
61	0.21	397.31	4.98	37829.27	10136.32	9390.89
61	0.21	397.31	4.98	37829.27	10136.32	9390.89
62	0.21	402.30	4.98	38454.59	10303.87	9546.12
62	0.21	402.30	4.98	38454.59	10303.87	9546.12
63	0.21	407.28	4.98	39079.91	10471.43	9701.35
63	0.21	407.28	4.98	39079.91	10471.43	9701.35
64	0.21	412.26	4.98	39705.23	10638.98	9856.59
64	0.21	412.26	4.98	39705.23	10638.98	9856.59
65	0.21	417.25	4.98	40330.55	10806.54	10011.82
65	0.21	417.25	4.98	40330.55	10806.54	10011.82
66	0.21	422.23	4.98	40955.87	10974.09	10167.05
66	0.21	422.23	4.98	40955.87	10974.09	10167.05
67	0.21	427.21	4.98	41581.19	11141.65	10322.28
67	0.21	427.21	4.98	41581.19	11141.65	10322.28
68	0.21	432.20	4.98	42206.51	11309.20	10477.51
68	0.21	432.20	4.98	42206.51	11309.20	10477.51
69	0.21	437.18	4.98	42831.83	11476.75	10632.75
69	0.21	437.18	4.98	42831.83	11476.75	10632.75
70	0.21	442.17	4.98	43457.15	11644.31	10787.98
70	0.21	442.17	4.98	43457.15	11644.31	10787.98
71	0.21	447.15	4.98	44082.47	11811.86	10943.21
71	0.21	447.15	4.98	44082.47	11811.86	10943.21

72	0.21	452.13	4.98	44707.79	11979.42	11098.44
72	0.21	452.13	4.98	44707.79	11979.42	11098.44
73	0.21	457.12	4.98	45333.11	12146.97	11253.68
73	0.21	457.12	4.98	45333.11	12146.97	11253.68
74	0.21	462.10	4.98	45958.43	12314.52	11408.91
74	0.21	462.10	4.98	45958.43	12314.52	11408.91
75	0.21	467.09	4.98	46583.76	12482.08	11564.14
75	0.21	467.09	4.98	46583.76	12482.08	11564.14
76	0.21	472.07	4.98	47209.08	12649.63	11719.37
76	0.21	472.07	4.98	47209.08	12649.63	11719.37
77	0.21	477.05	4.98	47834.40	12817.19	11874.60
77	0.21	477.05	4.98	47834.40	12817.19	11874.60
78	0.21	482.04	4.98	48459.72	12984.74	12029.84
78	0.21	482.04	4.98	48459.72	12984.74	12029.84
79	0.21	487.02	4.98	49085.04	13152.30	12185.07
79	0.21	487.02	4.98	49085.04	13152.30	12185.07
80	0.21	492.00	4.98	49710.36	13319.85	12340.30
80	0.21	492.00	4.98	49710.36	13319.85	12340.30
81	0.21	496.99	4.98	50335.68	13487.40	12495.53
81	0.21	496.99	4.98	50335.68	13487.40	12495.53
82	0.21	501.97	4.98	50961.00	13654.96	12650.76
82	0.21	501.97	4.98	50961.00	13654.96	12650.76
83	0.21	506.96	4.98	51586.32	13822.51	12806.00
83	0.21	506.96	4.98	51586.32	13822.51	12806.00
84	0.21	511.94	4.98	52211.64	13990.07	12961.23
84	0.21	511.94	4.98	52211.64	13990.07	12961.23
85	0.21	516.92	4.98	52836.96	14157.62	13116.46
85	0.21	516.92	4.98	52836.96	14157.62	13116.46
86	0.21	521.91	4.98	53462.28	14325.17	13271.69
86	0.21	521.91	4.98	53462.28	14325.17	13271.69
87	29.59	527.33	6.73	53279.96	32779.37	30368.75
87	29.59	527.33	6.73	53279.96	32779.37	30368.75
88	29.59	533.18	6.73	52018.99	32051.35	29694.27
88	29.59	533.18	6.73	52018.99	32051.35	29694.27
89	29.59	538.33	5.12	38923.09	24007.44	22241.92
89	29.59	538.33	5.12	38923.09	24007.44	22241.92
90	29.59	542.77	5.12	38588.47	23814.25	22062.94
90	29.59	542.77	5.12	38588.47	23814.25	22062.94
91	29.59	547.23	5.12	38253.85	23621.06	21883.95
91	29.59	547.23	5.12	38253.85	23621.06	21883.95
92	29.59	551.67	5.12	37919.23	23427.87	21704.97
92	29.59	551.67	5.12	37919.23	23427.87	21704.97
93	29.59	554.78	2.03	14924.51	9224.65	8546.26
93	29.59	554.78	2.03	14924.51	9224.65	8546.26
94	45.63	558.02	6.73	40019.33	25124.30	23276.64
94	45.63	558.02	6.73	40019.33	25124.30	23276.64
95	45.63	562.72	6.73	38542.46	24271.63	22486.68
95	45.63	562.72	6.73	38542.46	24271.63	22486.68
96	45.63	567.43	6.73	37065.59	23418.95	21696.71
96	45.63	567.43	6.73	37065.59	23418.95	21696.71
97	45.63	572.13	6.73	35588.72	22566.28	20906.74
97	45.63	572.13	6.73	35588.72	22566.28	20906.74
98	45.63	576.84	6.73	34111.85	21713.61	20116.78
98	45.63	576.84	6.73	34111.85	21713.61	20116.78
99	45.63	581.55	6.73	32634.98	20860.94	19326.81
99	45.63	581.55	6.73	32634.98	20860.94	19326.81
100	45.63	584.84	2.69	12625.57	8096.07	7500.68
100	45.63	584.84	2.69	12625.57	8096.07	7500.68
101	48.94	588.22	7.44	31966.94	20688.62	19167.17
101	48.94	588.22	7.44	31966.94	20688.62	19167.17
102	48.94	593.11	7.44	30014.67	19561.48	18122.92
102	48.94	593.11	7.44	30014.67	19561.48	18122.92
103	48.94	598.00	7.44	28062.40	18434.33	17078.66
103	48.94	598.00	7.44	28062.40	18434.33	17078.66
104	48.94	602.89	7.44	26110.13	17307.19	16034.41
104	48.94	602.89	7.44	26110.13	17307.19	16034.41
105	48.94	607.78	7.44	24157.86	16180.05	14990.16
105	48.94	607.78	7.44	24157.86	16180.05	14990.16
106	48.94	612.67	7.44	22205.60	15052.90	13945.90
106	48.94	612.67	7.44	22205.60	15052.90	13945.90
107	48.94	617.56	7.44	20253.33	13925.76	12901.65
107	48.94	617.56	7.44	20253.33	13925.76	12901.65
108	48.94	620.89	2.71	6882.67	4785.75	4433.80
108	48.94	620.89	2.71	6882.67	4785.75	4433.80
109	58.72	624.28	9.64	17923.77	13238.98	12265.37
109	58.72	624.28	9.64	17923.77	13238.98	12265.37
110	58.72	629.28	9.64	14236.86	11110.34	10293.28
110	58.72	629.28	9.64	14236.86	11110.34	10293.28
111	58.72	634.29	9.64	10549.96	8981.70	8321.18
111	58.72	634.29	9.64	10549.96	8981.70	8321.18
112	58.72	639.29	9.64	6863.05	6853.07	6349.09
112	58.72	639.29	9.64	6863.05	6853.07	6349.09
113	58.72	644.29	9.64	3176.14	4724.43	4376.99
113	58.72	644.29	9.64	3176.14	4724.43	4376.99
114	58.72	649.30	9.64	1923.71	1110.65	1028.97
114	58.72	649.30	9.64	1923.71	1110.65	1028.97
115	58.72	651.85	0.21	0.87	0.51	0.47
115	58.72	651.85	0.21	0.87	0.51	0.47

Sum of the Resisting Forces = 962477.97 (lbs)

Average Available Shear Strength = 1570.37(psf)

Sum of the Driving Forces = 958339.19 (lbs)

Average Mobilized Shear Stress = 1563.61(psf)

Total length of the failure surface = 612.90(ft)

Factor of Safety Balance Check: FS = 1.00432

Janbu's Correction Factor (fo) = 1.0693

Janub's FS Corrected = 1.07390

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.17609(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

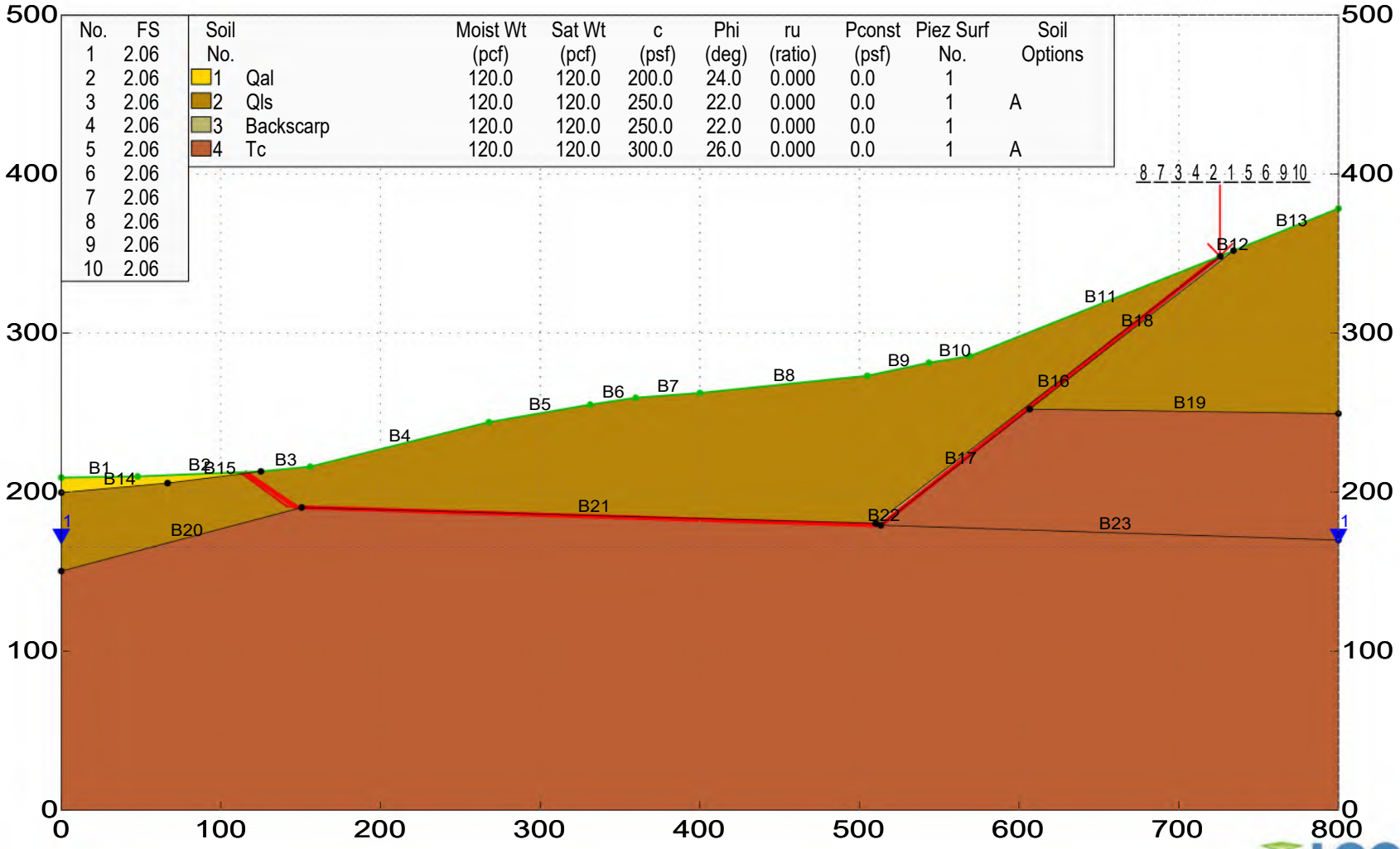
Average Elevation of Point of Application of kh on Sliding Mass = 223.925(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section B-B'
Existing - Entire Qls - Static

LGC Geotechnical, Inc. \xb.gsd



GEOSTASE FS = 2.06

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 2/ 2/ 2023
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec B\2023_01_25\xb.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec B\2023_01_25\xb.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section B-B'

DESCRIPTION: Existing - Entire Qls - Static

BOUNDARY DATA

13 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	209.200	47.800	209.900	1
2	47.800	209.900	125.100	213.000	1
3	125.100	213.000	155.900	216.000	2
4	155.900	216.000	267.800	244.000	2
5	267.800	244.000	331.300	255.000	2
6	331.300	255.000	359.800	259.400	2
7	359.800	259.400	400.000	262.300	2
8	400.000	262.300	505.000	273.200	2
9	505.000	273.200	543.400	281.400	2
10	543.400	281.400	569.100	285.500	2
11	569.100	285.500	725.900	348.400	2
12	725.900	348.400	734.200	351.800	3
13	734.200	351.800	800.000	378.400	2
14	0.000	199.700	66.600	205.700	2
15	66.600	205.700	125.100	213.000	2
16	510.100	180.300	725.900	348.400	3
17	513.200	179.100	606.600	252.100	4
18	606.600	252.100	734.200	351.800	2
19	606.600	252.100	800.000	249.400	4
20	0.000	150.400	150.600	190.400	4
21	150.600	190.400	510.100	180.300	4
22	510.100	180.300	513.200	179.100	4
23	513.200	179.100	800.000	169.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-3.0	250.00	22.00
2	3.0	0.00	14.00
3	90.0	250.00	22.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)

1	-3.0	300.00	26.00
2	3.0	0.00	14.00
3	90.0	300.00	26.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	165.10
2	800.00	165.10

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

3 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 50.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	100.00	191.60	200.00	189.20	0.00
2	513.20	179.10	513.20	179.10	0.00
3	725.80	348.30	725.80	348.30	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 2.145 FS Min = 2.056 FS Ave = 2.076
Standard Deviation = 0.019 Coefficient of Variation = 0.92 %

Critical Surface is Sequence Number 208 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 2.056

Table 1 - Geometry Data on the 128 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	1.09	0.40	115.20	212.21	212.60	-34.38	2.30	1.32
2	4.68	2.49	118.09	210.23	212.72	-34.38	2.30	5.67
3	4.68	5.87	122.76	207.03	212.91	-34.38	2.30	5.67
4	5.47	9.70	127.83	203.56	213.27	-34.38	5.56	6.62
5	5.47	13.97	133.30	199.82	213.80	-34.38	5.56	6.62
6	5.47	18.25	138.77	196.08	214.33	-34.38	5.56	6.62
7	5.47	22.52	144.23	192.34	214.86	-34.38	5.56	6.62
8	3.50	24.88	148.72	190.42	215.30	-1.78	5.56	3.50
9	0.13	25.12	150.53	190.36	215.48	-1.78	5.56	0.13
10	2.65	25.29	151.93	190.32	215.61	-1.78	5.56	2.65
11	2.65	25.63	154.57	190.24	215.87	-1.78	5.56	2.65
12	5.09	26.52	158.44	190.12	216.64	-1.78	14.05	5.09
13	5.09	27.95	163.53	189.96	217.91	-1.78	14.05	5.09
14	5.09	29.38	168.62	189.80	219.18	-1.78	14.05	5.09
15	5.09	30.81	173.70	189.64	220.45	-1.78	14.05	5.09
16	5.09	32.24	178.79	189.48	221.73	-1.78	14.05	5.09
17	5.09	33.67	183.88	189.33	223.00	-1.78	14.05	5.09
18	5.09	35.10	188.96	189.17	224.27	-1.78	14.05	5.09
19	5.09	36.53	194.05	189.01	225.55	-1.78	14.05	5.09
20	5.09	37.97	199.13	188.85	226.82	-1.78	14.05	5.09
21	5.09	39.40	204.22	188.69	228.09	-1.78	14.05	5.09
22	5.09	40.83	209.31	188.54	229.36	-1.78	14.05	5.09
23	5.09	42.26	214.39	188.38	230.64	-1.78	14.05	5.09
24	5.09	43.69	219.48	188.22	231.91	-1.78	14.05	5.09
25	5.09	45.12	224.57	188.06	233.18	-1.78	14.05	5.09
26	5.09	46.55	229.65	187.91	234.45	-1.78	14.05	5.09
27	5.09	47.98	234.74	187.75	235.73	-1.78	14.05	5.09
28	5.09	49.41	239.83	187.59	237.00	-1.78	14.05	5.09
29	5.09	50.84	244.91	187.43	238.27	-1.78	14.05	5.09
30	5.09	52.27	250.00	187.27	239.55	-1.78	14.05	5.09
31	5.09	53.70	255.08	187.12	240.82	-1.78	14.05	5.09
32	5.09	55.13	260.17	186.96	242.09	-1.78	14.05	5.09
33	5.09	56.56	265.26	186.80	243.36	-1.78	14.05	5.09
34	4.88	57.78	270.24	186.64	244.42	-1.78	9.83	4.89
35	4.88	58.78	275.13	186.49	245.27	-1.78	9.83	4.89
36	4.88	59.77	280.01	186.34	246.12	-1.78	9.83	4.89
37	4.88	60.77	284.90	186.19	246.96	-1.78	9.83	4.89
38	4.88	61.77	289.78	186.04	247.81	-1.78	9.83	4.89
39	4.88	62.77	294.67	185.89	248.65	-1.78	9.83	4.89
40	4.88	63.77	299.55	185.73	249.50	-1.78	9.83	4.89
41	4.88	64.76	304.43	185.58	250.35	-1.78	9.83	4.89
42	4.88	65.76	309.32	185.43	251.19	-1.78	9.83	4.89
43	4.88	66.76	314.20	185.28	252.04	-1.78	9.83	4.89
44	4.88	67.76	319.09	185.13	252.88	-1.78	9.83	4.89

45	4.88	68.75	323.97	184.98	253.73	-1.78	9.83	4.89
46	4.88	69.75	328.86	184.82	254.58	-1.78	9.83	4.89
47	4.75	70.69	333.68	184.67	255.37	-1.78	8.78	4.75
48	4.75	71.57	338.43	184.53	256.10	-1.78	8.78	4.75
49	4.75	72.45	343.18	184.38	256.83	-1.78	8.78	4.75
50	4.75	73.33	347.93	184.23	257.57	-1.78	8.78	4.75
51	4.75	74.22	352.68	184.08	258.30	-1.78	8.78	4.75
52	4.75	75.10	357.43	183.94	259.03	-1.78	8.78	4.75
53	5.02	75.80	362.31	183.79	259.58	-1.78	4.13	5.03
54	5.03	76.31	367.34	183.63	259.94	-1.78	4.13	5.03
55	5.02	76.83	372.36	183.47	260.31	-1.78	4.13	5.03
56	5.02	77.35	377.39	183.32	260.67	-1.78	4.13	5.03
57	5.03	77.87	382.41	183.16	261.03	-1.78	4.13	5.03
58	5.02	78.39	387.44	183.01	261.39	-1.78	4.13	5.03
59	5.03	78.91	392.46	182.85	261.76	-1.78	4.13	5.03
60	5.02	79.43	397.49	182.69	262.12	-1.78	4.13	5.03
61	5.00	80.02	402.50	182.54	262.56	-1.78	5.93	5.00
62	5.00	80.70	407.50	182.38	263.08	-1.78	5.93	5.00
63	5.00	81.37	412.50	182.23	263.60	-1.78	5.93	5.00
64	5.00	82.04	417.50	182.07	264.12	-1.78	5.93	5.00
65	5.00	82.72	422.50	181.92	264.64	-1.78	5.93	5.00
66	5.00	83.39	427.50	181.76	265.15	-1.78	5.93	5.00
67	5.00	84.07	432.50	181.61	265.67	-1.78	5.93	5.00
68	5.00	84.74	437.50	181.45	266.19	-1.78	5.93	5.00
69	5.00	85.42	442.50	181.30	266.71	-1.78	5.93	5.00
70	5.00	86.09	447.50	181.14	267.23	-1.78	5.93	5.00
71	5.00	86.77	452.50	180.98	267.75	-1.78	5.93	5.00
72	5.00	87.44	457.50	180.83	268.27	-1.78	5.93	5.00
73	5.00	88.11	462.50	180.67	268.79	-1.78	5.93	5.00
74	5.00	88.79	467.50	180.52	269.31	-1.78	5.93	5.00
75	5.00	89.46	472.50	180.36	269.83	-1.78	5.93	5.00
76	5.00	90.14	477.50	180.21	270.35	-1.78	5.93	5.00
77	5.00	90.81	482.50	180.05	270.86	-1.78	5.93	5.00
78	5.00	91.49	487.50	179.90	271.38	-1.78	5.93	5.00
79	5.00	92.16	492.50	179.74	271.90	-1.78	5.93	5.00
80	5.00	92.83	497.50	179.59	272.42	-1.78	5.93	5.00
81	5.00	93.51	502.50	179.43	272.94	-1.78	5.93	5.00
82	2.55	94.16	506.27	179.32	273.47	-1.78	12.05	2.55
83	2.55	94.78	508.83	179.24	274.02	-1.78	12.05	2.55
84	3.10	95.47	511.65	179.15	274.62	-1.78	12.05	3.10
85	5.03	94.39	515.72	181.10	275.49	38.51	12.05	6.43
86	5.03	91.45	520.75	185.11	276.56	38.51	12.05	6.43
87	5.03	88.52	525.78	189.11	277.64	38.51	12.05	6.43
88	5.03	85.59	530.82	193.12	278.71	38.51	12.05	6.43
89	5.03	82.66	535.85	197.13	279.79	38.51	12.05	6.43
90	5.03	79.73	540.88	201.13	280.86	38.51	12.05	6.43
91	5.14	76.63	545.97	205.18	281.81	38.51	9.06	6.57
92	5.14	73.36	551.11	209.27	282.63	38.51	9.06	6.57
93	5.14	70.09	556.25	213.36	283.45	38.51	9.06	6.57
94	5.14	66.82	561.39	217.45	284.27	38.51	9.06	6.57
95	5.14	63.55	566.53	221.54	285.09	38.51	9.06	6.57
96	5.05	60.91	571.63	225.60	286.51	38.51	21.86	6.46
97	5.05	58.92	576.68	229.62	288.54	38.51	21.86	6.46
98	5.05	56.92	581.74	233.65	290.57	38.51	21.86	6.46
99	5.05	54.93	586.79	237.67	292.60	38.51	21.86	6.46
100	5.05	52.93	591.85	241.69	294.62	38.51	21.86	6.46
101	5.05	50.94	596.90	245.71	296.65	38.51	21.86	6.46
102	5.05	48.94	601.96	249.74	298.68	38.51	21.86	6.46
103	5.05	46.95	607.01	253.76	300.71	38.51	21.86	6.46
104	5.05	44.95	612.07	257.78	302.74	38.51	21.86	6.46
105	5.05	42.96	617.12	261.81	304.76	38.51	21.86	6.46
106	5.05	40.96	622.18	265.83	306.79	38.51	21.86	6.46
107	5.05	38.97	627.23	269.85	308.82	38.51	21.86	6.46
108	5.05	36.97	632.29	273.88	310.85	38.51	21.86	6.46
109	5.05	34.98	637.34	277.90	312.87	38.51	21.86	6.46
110	5.05	32.98	642.40	281.92	314.90	38.51	21.86	6.46
111	5.05	30.99	647.45	285.94	316.93	38.51	21.86	6.46
112	5.05	28.99	652.50	289.97	318.96	38.51	21.86	6.46
113	5.05	27.00	657.56	293.99	320.99	38.51	21.86	6.46
114	5.05	25.00	662.61	298.01	323.01	38.51	21.86	6.46
115	5.05	23.00	667.67	302.04	325.04	38.51	21.86	6.46
116	5.05	21.01	672.72	306.06	327.07	38.51	21.86	6.46
117	5.05	19.01	677.78	310.08	329.10	38.51	21.86	6.46
118	5.05	17.02	682.83	314.10	331.12	38.51	21.86	6.46
119	5.05	15.02	687.89	318.13	333.15	38.51	21.86	6.46
120	5.05	13.03	692.94	322.15	335.18	38.51	21.86	6.46
121	5.05	11.03	698.00	326.17	337.21	38.51	21.86	6.46
122	5.05	9.04	703.05	330.20	339.24	38.51	21.86	6.46
123	5.05	7.04	708.11	334.22	341.26	38.51	21.86	6.46
124	5.05	5.05	713.16	338.24	343.29	38.51	21.86	6.46
125	5.05	3.05	718.22	342.27	345.32	38.51	21.86	6.46
126	5.05	1.06	723.27	346.29	347.35	38.51	21.86	6.46
127	0.03	0.04	725.82	348.32	348.37	54.92	21.86	0.06
128	0.02	0.01	725.85	348.37	348.38	54.92	21.86	0.04

Table 2 - Force Data On The 128 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	51.9	0.0	0.0	0.0	0.0	0.0
2	1394.5	0.0	0.0	0.0	0.0	0.0
3	3294.9	0.0	0.0	0.0	0.0	0.0
4	6364.5	0.0	0.0	0.0	0.0	0.0
5	9167.5	0.0	0.0	0.0	0.0	0.0
6	11970.5	0.0	0.0	0.0	0.0	0.0
7	14773.5	0.0	0.0	0.0	0.0	0.0
8	10445.9	0.0	0.0	0.0	0.0	0.0
9	406.7	0.0	0.0	0.0	0.0	0.0
10	8043.5	0.0	0.0	0.0	0.0	0.0
11	8151.7	0.0	0.0	0.0	0.0	0.0
12	16186.8	0.0	0.0	0.0	0.0	0.0
13	17060.0	0.0	0.0	0.0	0.0	0.0
14	17933.3	0.0	0.0	0.0	0.0	0.0
15	18806.5	0.0	0.0	0.0	0.0	0.0
16	19679.7	0.0	0.0	0.0	0.0	0.0
17	20553.0	0.0	0.0	0.0	0.0	0.0
18	21426.2	0.0	0.0	0.0	0.0	0.0
19	22299.4	0.0	0.0	0.0	0.0	0.0
20	23172.7	0.0	0.0	0.0	0.0	0.0
21	24045.9	0.0	0.0	0.0	0.0	0.0
22	24919.1	0.0	0.0	0.0	0.0	0.0
23	25792.4	0.0	0.0	0.0	0.0	0.0
24	26665.6	0.0	0.0	0.0	0.0	0.0
25	27538.8	0.0	0.0	0.0	0.0	0.0
26	28412.1	0.0	0.0	0.0	0.0	0.0

27	29285.3	0.0	0.0	0.0	0.0	0.0
28	30158.5	0.0	0.0	0.0	0.0	0.0
29	31031.8	0.0	0.0	0.0	0.0	0.0
30	31905.0	0.0	0.0	0.0	0.0	0.0
31	32778.2	0.0	0.0	0.0	0.0	0.0
32	33651.5	0.0	0.0	0.0	0.0	0.0
33	34524.7	0.0	0.0	0.0	0.0	0.0
34	33867.0	0.0	0.0	0.0	0.0	0.0
35	34451.9	0.0	0.0	0.0	0.0	0.0
36	35036.8	0.0	0.0	0.0	0.0	0.0
37	35621.7	0.0	0.0	0.0	0.0	0.0
38	36206.6	0.0	0.0	0.0	0.0	0.0
39	36791.5	0.0	0.0	0.0	0.0	0.0
40	37376.4	0.0	0.0	0.0	0.0	0.0
41	37961.2	0.0	0.0	0.0	0.0	0.0
42	38546.1	0.0	0.0	0.0	0.0	0.0
43	39131.0	0.0	0.0	0.0	0.0	0.0
44	39715.9	0.0	0.0	0.0	0.0	0.0
45	40300.8	0.0	0.0	0.0	0.0	0.0
46	40885.7	0.0	0.0	0.0	0.0	0.0
47	40294.3	0.0	0.0	0.0	0.0	0.0
48	40796.4	0.0	0.0	0.0	0.0	0.0
49	41298.5	0.0	0.0	0.0	0.0	0.0
50	41800.6	0.0	0.0	0.0	0.0	0.0
51	42302.6	0.0	0.0	0.0	0.0	0.0
52	42804.7	0.0	0.0	0.0	0.0	0.0
53	45704.8	0.0	0.0	0.0	0.0	0.0
54	46017.5	0.0	0.0	0.0	0.0	0.0
55	46330.2	0.0	0.0	0.0	0.0	0.0
56	46642.8	0.0	0.0	0.0	0.0	0.0
57	46955.5	0.0	0.0	0.0	0.0	0.0
58	47268.2	0.0	0.0	0.0	0.0	0.0
59	47580.9	0.0	0.0	0.0	0.0	0.0
60	47893.6	0.0	0.0	0.0	0.0	0.0
61	48013.1	0.0	0.0	0.0	0.0	0.0
62	48417.7	0.0	0.0	0.0	0.0	0.0
63	48822.3	0.0	0.0	0.0	0.0	0.0
64	49226.9	0.0	0.0	0.0	0.0	0.0
65	49631.5	0.0	0.0	0.0	0.0	0.0
66	50036.1	0.0	0.0	0.0	0.0	0.0
67	50440.7	0.0	0.0	0.0	0.0	0.0
68	50845.3	0.0	0.0	0.0	0.0	0.0
69	51249.9	0.0	0.0	0.0	0.0	0.0
70	51654.4	0.0	0.0	0.0	0.0	0.0
71	52059.0	0.0	0.0	0.0	0.0	0.0
72	52463.6	0.0	0.0	0.0	0.0	0.0
73	52868.2	0.0	0.0	0.0	0.0	0.0
74	53272.8	0.0	0.0	0.0	0.0	0.0
75	53677.4	0.0	0.0	0.0	0.0	0.0
76	54082.0	0.0	0.0	0.0	0.0	0.0
77	54486.6	0.0	0.0	0.0	0.0	0.0
78	54891.2	0.0	0.0	0.0	0.0	0.0
79	55295.7	0.0	0.0	0.0	0.0	0.0
80	55700.3	0.0	0.0	0.0	0.0	0.0
81	56104.9	0.0	0.0	0.0	0.0	0.0
82	28812.1	0.0	0.0	0.0	0.0	0.0
83	29003.0	0.0	0.0	0.0	0.0	0.0
84	35515.6	0.0	0.0	0.0	0.0	0.0
85	57008.9	0.0	0.0	0.0	0.0	0.0
86	55238.5	0.0	0.0	0.0	0.0	0.0
87	53468.2	0.0	0.0	0.0	0.0	0.0
88	51697.9	0.0	0.0	0.0	0.0	0.0
89	49927.6	0.0	0.0	0.0	0.0	0.0
90	48157.2	0.0	0.0	0.0	0.0	0.0
91	47265.2	0.0	0.0	0.0	0.0	0.0
92	45247.8	0.0	0.0	0.0	0.0	0.0
93	43230.4	0.0	0.0	0.0	0.0	0.0
94	41213.0	0.0	0.0	0.0	0.0	0.0
95	39195.6	0.0	0.0	0.0	0.0	0.0
96	36949.1	0.0	0.0	0.0	0.0	0.0
97	35738.9	0.0	0.0	0.0	0.0	0.0
98	34528.6	0.0	0.0	0.0	0.0	0.0
99	33318.4	0.0	0.0	0.0	0.0	0.0
100	32108.1	0.0	0.0	0.0	0.0	0.0
101	30897.8	0.0	0.0	0.0	0.0	0.0
102	29687.6	0.0	0.0	0.0	0.0	0.0
103	28477.3	0.0	0.0	0.0	0.0	0.0
104	27267.1	0.0	0.0	0.0	0.0	0.0
105	26056.8	0.0	0.0	0.0	0.0	0.0
106	24846.6	0.0	0.0	0.0	0.0	0.0
107	23636.3	0.0	0.0	0.0	0.0	0.0
108	22426.1	0.0	0.0	0.0	0.0	0.0
109	21215.8	0.0	0.0	0.0	0.0	0.0
110	20005.5	0.0	0.0	0.0	0.0	0.0
111	18795.3	0.0	0.0	0.0	0.0	0.0
112	17585.0	0.0	0.0	0.0	0.0	0.0
113	16374.8	0.0	0.0	0.0	0.0	0.0
114	15164.5	0.0	0.0	0.0	0.0	0.0
115	13954.3	0.0	0.0	0.0	0.0	0.0
116	12744.0	0.0	0.0	0.0	0.0	0.0
117	11533.8	0.0	0.0	0.0	0.0	0.0
118	10323.5	0.0	0.0	0.0	0.0	0.0
119	9113.2	0.0	0.0	0.0	0.0	0.0
120	7903.0	0.0	0.0	0.0	0.0	0.0
121	6692.7	0.0	0.0	0.0	0.0	0.0
122	5482.5	0.0	0.0	0.0	0.0	0.0
123	4272.2	0.0	0.0	0.0	0.0	0.0
124	3062.0	0.0	0.0	0.0	0.0	0.0
125	1851.7	0.0	0.0	0.0	0.0	0.0
126	641.5	0.0	0.0	0.0	0.0	0.0
127	0.2	0.0	0.0	0.0	0.0	0.0
128	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 4042349.55(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 4042349.55(lbs)

TOTAL AREA OF SLIDING MASS = 33686.25(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 128 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	2	250.00	22.00	A
3	2	250.00	22.00	A
4	2	250.00	22.00	A
5	2	250.00	22.00	A
6	2	250.00	22.00	A

7	2	250.00	22.00	A
8	2	0.00	14.00	A
9	4	0.00	14.00	A
10	4	0.00	14.00	A
11	4	0.00	14.00	A
12	4	0.00	14.00	A
13	4	0.00	14.00	A
14	4	0.00	14.00	A
15	4	0.00	14.00	A
16	4	0.00	14.00	A
17	4	0.00	14.00	A
18	4	0.00	14.00	A
19	4	0.00	14.00	A
20	4	0.00	14.00	A
21	4	0.00	14.00	A
22	4	0.00	14.00	A
23	4	0.00	14.00	A
24	4	0.00	14.00	A
25	4	0.00	14.00	A
26	4	0.00	14.00	A
27	4	0.00	14.00	A
28	4	0.00	14.00	A
29	4	0.00	14.00	A
30	4	0.00	14.00	A
31	4	0.00	14.00	A
32	4	0.00	14.00	A
33	4	0.00	14.00	A
34	4	0.00	14.00	A
35	4	0.00	14.00	A
36	4	0.00	14.00	A
37	4	0.00	14.00	A
38	4	0.00	14.00	A
39	4	0.00	14.00	A
40	4	0.00	14.00	A
41	4	0.00	14.00	A
42	4	0.00	14.00	A
43	4	0.00	14.00	A
44	4	0.00	14.00	A
45	4	0.00	14.00	A
46	4	0.00	14.00	A
47	4	0.00	14.00	A
48	4	0.00	14.00	A
49	4	0.00	14.00	A
50	4	0.00	14.00	A
51	4	0.00	14.00	A
52	4	0.00	14.00	A
53	4	0.00	14.00	A
54	4	0.00	14.00	A
55	4	0.00	14.00	A
56	4	0.00	14.00	A
57	4	0.00	14.00	A
58	4	0.00	14.00	A
59	4	0.00	14.00	A
60	4	0.00	14.00	A
61	4	0.00	14.00	A
62	4	0.00	14.00	A
63	4	0.00	14.00	A
64	4	0.00	14.00	A
65	4	0.00	14.00	A
66	4	0.00	14.00	A
67	4	0.00	14.00	A
68	4	0.00	14.00	A
69	4	0.00	14.00	A
70	4	0.00	14.00	A
71	4	0.00	14.00	A
72	4	0.00	14.00	A
73	4	0.00	14.00	A
74	4	0.00	14.00	A
75	4	0.00	14.00	A
76	4	0.00	14.00	A
77	4	0.00	14.00	A
78	4	0.00	14.00	A
79	4	0.00	14.00	A
80	4	0.00	14.00	A
81	4	0.00	14.00	A
82	4	0.00	14.00	A
83	4	0.00	14.00	A
84	4	0.00	14.00	A
85	3	250.00	22.00	
86	3	250.00	22.00	
87	3	250.00	22.00	
88	3	250.00	22.00	
89	3	250.00	22.00	
90	3	250.00	22.00	
91	3	250.00	22.00	
92	3	250.00	22.00	
93	3	250.00	22.00	
94	3	250.00	22.00	
95	3	250.00	22.00	
96	3	250.00	22.00	
97	3	250.00	22.00	
98	3	250.00	22.00	
99	3	250.00	22.00	
100	3	250.00	22.00	
101	3	250.00	22.00	
102	3	250.00	22.00	
103	3	250.00	22.00	
104	3	250.00	22.00	
105	3	250.00	22.00	
106	3	250.00	22.00	
107	3	250.00	22.00	
108	3	250.00	22.00	
109	3	250.00	22.00	
110	3	250.00	22.00	
111	3	250.00	22.00	
112	3	250.00	22.00	
113	3	250.00	22.00	
114	3	250.00	22.00	
115	3	250.00	22.00	
116	3	250.00	22.00	
117	3	250.00	22.00	
118	3	250.00	22.00	
119	3	250.00	22.00	
120	3	250.00	22.00	
121	3	250.00	22.00	
122	3	250.00	22.00	
123	3	250.00	22.00	
124	3	250.00	22.00	
125	3	250.00	22.00	
126	3	250.00	22.00	

127 3 250.00 22.00
128 2 250.00 22.00 A

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 128 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-34.38	115.20	1.32	141.09	262.82	127.84
1	-34.38	115.20	1.32	141.09	262.82	127.84
2	-34.38	118.09	5.67	452.32	432.75	210.50
2	-34.38	118.09	5.67	452.32	432.75	210.50
3	-34.38	122.76	5.67	927.02	624.54	303.79
3	-34.38	122.76	5.67	927.02	624.54	303.79
4	-34.38	127.83	6.62	1463.82	841.42	409.29
4	-34.38	127.83	6.62	1463.82	841.42	409.29
5	-34.38	133.30	6.62	2062.72	1083.39	526.99
5	-34.38	133.30	6.62	2062.72	1083.39	526.99
6	-34.38	138.77	6.62	2661.61	1325.36	644.68
6	-34.38	138.77	6.62	2661.61	1325.36	644.68
7	-34.38	144.23	6.62	3260.50	1567.33	762.38
7	-34.38	144.23	6.62	3260.50	1567.33	762.38
8	-1.78	148.72	3.50	2997.89	747.46	363.58
8	-1.78	148.72	3.50	2997.89	747.46	363.58
9	-1.78	150.53	0.13	3026.01	754.47	366.99
9	-1.78	150.53	0.13	3026.01	754.47	366.99
10	-1.78	151.93	2.65	3047.56	759.84	369.60
10	-1.78	151.93	2.65	3047.56	759.84	369.60
11	-1.78	154.57	2.65	3088.57	770.07	374.58
11	-1.78	154.57	2.65	3088.57	770.07	374.58
12	-1.78	158.44	5.09	3195.27	796.67	387.52
12	-1.78	158.44	5.09	3195.27	796.67	387.52
13	-1.78	163.53	5.09	3367.64	839.65	408.42
13	-1.78	163.53	5.09	3367.64	839.65	408.42
14	-1.78	168.62	5.09	3540.02	882.63	429.33
14	-1.78	168.62	5.09	3540.02	882.63	429.33
15	-1.78	173.70	5.09	3712.39	925.60	450.23
15	-1.78	173.70	5.09	3712.39	925.60	450.23
16	-1.78	178.79	5.09	3884.77	968.58	471.14
16	-1.78	178.79	5.09	3884.77	968.58	471.14
17	-1.78	183.88	5.09	4057.15	1011.56	492.05
17	-1.78	183.88	5.09	4057.15	1011.56	492.05
18	-1.78	188.96	5.09	4229.52	1054.54	512.95
18	-1.78	188.96	5.09	4229.52	1054.54	512.95
19	-1.78	194.05	5.09	4401.90	1097.52	533.86
19	-1.78	194.05	5.09	4401.90	1097.52	533.86
20	-1.78	199.13	5.09	4574.27	1140.49	554.76
20	-1.78	199.13	5.09	4574.27	1140.49	554.76
21	-1.78	204.22	5.09	4746.65	1183.47	575.67
21	-1.78	204.22	5.09	4746.65	1183.47	575.67
22	-1.78	209.31	5.09	4919.02	1226.45	596.57
22	-1.78	209.31	5.09	4919.02	1226.45	596.57
23	-1.78	214.39	5.09	5091.40	1269.43	617.48
23	-1.78	214.39	5.09	5091.40	1269.43	617.48
24	-1.78	219.48	5.09	5263.77	1312.41	638.38
24	-1.78	219.48	5.09	5263.77	1312.41	638.38
25	-1.78	224.57	5.09	5436.15	1355.38	659.29
25	-1.78	224.57	5.09	5436.15	1355.38	659.29
26	-1.78	229.65	5.09	5608.53	1398.36	680.19
26	-1.78	229.65	5.09	5608.53	1398.36	680.19
27	-1.78	234.74	5.09	5780.90	1441.34	701.10
27	-1.78	234.74	5.09	5780.90	1441.34	701.10
28	-1.78	239.83	5.09	5953.28	1484.32	722.01
28	-1.78	239.83	5.09	5953.28	1484.32	722.01
29	-1.78	244.91	5.09	6125.65	1527.30	742.91
29	-1.78	244.91	5.09	6125.65	1527.30	742.91
30	-1.78	250.00	5.09	6298.03	1570.27	763.82
30	-1.78	250.00	5.09	6298.03	1570.27	763.82
31	-1.78	255.08	5.09	6470.40	1613.25	784.72
31	-1.78	255.08	5.09	6470.40	1613.25	784.72
32	-1.78	260.17	5.09	6642.78	1656.23	805.63
32	-1.78	260.17	5.09	6642.78	1656.23	805.63
33	-1.78	265.26	5.09	6815.16	1699.21	826.53
33	-1.78	265.26	5.09	6815.16	1699.21	826.53
34	-1.78	270.24	4.89	6961.46	1735.69	844.28
34	-1.78	270.24	4.89	6961.46	1735.69	844.28
35	-1.78	275.13	4.89	7081.68	1765.66	858.86
35	-1.78	275.13	4.89	7081.68	1765.66	858.86
36	-1.78	280.01	4.89	7201.91	1795.64	873.44
36	-1.78	280.01	4.89	7201.91	1795.64	873.44
37	-1.78	284.90	4.89	7322.13	1825.61	888.02
37	-1.78	284.90	4.89	7322.13	1825.61	888.02
38	-1.78	289.78	4.89	7442.36	1855.59	902.60
38	-1.78	289.78	4.89	7442.36	1855.59	902.60
39	-1.78	294.67	4.89	7562.58	1885.56	917.18
39	-1.78	294.67	4.89	7562.58	1885.56	917.18
40	-1.78	299.55	4.89	7682.81	1915.54	931.76
40	-1.78	299.55	4.89	7682.81	1915.54	931.76
41	-1.78	304.43	4.89	7803.03	1945.51	946.34
41	-1.78	304.43	4.89	7803.03	1945.51	946.34
42	-1.78	309.32	4.89	7923.25	1975.49	960.92
42	-1.78	309.32	4.89	7923.25	1975.49	960.92
43	-1.78	314.20	4.89	8043.48	2005.46	975.50
43	-1.78	314.20	4.89	8043.48	2005.46	975.50
44	-1.78	319.09	4.89	8163.70	2035.44	990.08
44	-1.78	319.09	4.89	8163.70	2035.44	990.08
45	-1.78	323.97	4.89	8283.93	2065.42	1004.66
45	-1.78	323.97	4.89	8283.93	2065.42	1004.66
46	-1.78	328.86	4.89	8404.15	2095.39	1019.24
46	-1.78	328.86	4.89	8404.15	2095.39	1019.24
47	-1.78	333.68	4.75	8517.33	2123.61	1032.97
47	-1.78	333.68	4.75	8517.33	2123.61	1032.97
48	-1.78	338.43	4.75	8623.46	2150.07	1045.84
48	-1.78	338.43	4.75	8623.46	2150.07	1045.84
49	-1.78	343.18	4.75	8729.59	2176.53	1058.71
49	-1.78	343.18	4.75	8729.59	2176.53	1058.71
50	-1.78	347.93	4.75	8835.72	2202.99	1071.58
50	-1.78	347.93	4.75	8835.72	2202.99	1071.58
51	-1.78	352.68	4.75	8941.84	2229.45	1084.45
51	-1.78	352.68	4.75	8941.84	2229.45	1084.45
52	-1.78	357.43	4.75	9047.97	2255.91	1097.33

52	-1.78	357.43	4.75	9047.97	2255.91	1097.33
53	-1.78	362.31	5.03	9132.27	2276.93	1107.55
53	-1.78	362.31	5.03	9132.27	2276.93	1107.55
54	-1.78	367.34	5.03	9194.75	2292.51	1115.13
54	-1.78	367.34	5.03	9194.75	2292.51	1115.13
55	-1.78	372.36	5.03	9257.23	2308.09	1122.70
55	-1.78	372.36	5.03	9257.23	2308.09	1122.70
56	-1.78	377.39	5.03	9319.70	2323.66	1130.28
56	-1.78	377.39	5.03	9319.70	2323.66	1130.28
57	-1.78	382.41	5.03	9382.18	2339.24	1137.86
57	-1.78	382.41	5.03	9382.18	2339.24	1137.86
58	-1.78	387.44	5.03	9444.66	2354.82	1145.44
58	-1.78	387.44	5.03	9444.66	2354.82	1145.44
59	-1.78	392.46	5.03	9507.14	2370.39	1153.01
59	-1.78	392.46	5.03	9507.14	2370.39	1153.01
60	-1.78	397.49	5.03	9569.61	2385.97	1160.59
60	-1.78	397.49	5.03	9569.61	2385.97	1160.59
61	-1.78	402.50	5.00	9641.47	2403.89	1169.31
61	-1.78	402.50	5.00	9641.47	2403.89	1169.31
62	-1.78	407.50	5.00	9722.72	2424.15	1179.16
62	-1.78	407.50	5.00	9722.72	2424.15	1179.16
63	-1.78	412.50	5.00	9803.96	2444.40	1189.01
63	-1.78	412.50	5.00	9803.96	2444.40	1189.01
64	-1.78	417.50	5.00	9885.21	2464.66	1198.86
64	-1.78	417.50	5.00	9885.21	2464.66	1198.86
65	-1.78	422.50	5.00	9966.45	2484.92	1208.72
65	-1.78	422.50	5.00	9966.45	2484.92	1208.72
66	-1.78	427.50	5.00	10047.70	2505.17	1218.57
66	-1.78	427.50	5.00	10047.70	2505.17	1218.57
67	-1.78	432.50	5.00	10128.94	2525.43	1228.42
67	-1.78	432.50	5.00	10128.94	2525.43	1228.42
68	-1.78	437.50	5.00	10210.19	2545.69	1238.28
68	-1.78	437.50	5.00	10210.19	2545.69	1238.28
69	-1.78	442.50	5.00	10291.43	2565.94	1248.13
69	-1.78	442.50	5.00	10291.43	2565.94	1248.13
70	-1.78	447.50	5.00	10372.68	2586.20	1257.98
70	-1.78	447.50	5.00	10372.68	2586.20	1257.98
71	-1.78	452.50	5.00	10453.92	2606.46	1267.84
71	-1.78	452.50	5.00	10453.92	2606.46	1267.84
72	-1.78	457.50	5.00	10535.17	2626.71	1277.69
72	-1.78	457.50	5.00	10535.17	2626.71	1277.69
73	-1.78	462.50	5.00	10616.41	2646.97	1287.54
73	-1.78	462.50	5.00	10616.41	2646.97	1287.54
74	-1.78	467.50	5.00	10697.66	2667.23	1297.40
74	-1.78	467.50	5.00	10697.66	2667.23	1297.40
75	-1.78	472.50	5.00	10778.90	2687.48	1307.25
75	-1.78	472.50	5.00	10778.90	2687.48	1307.25
76	-1.78	477.50	5.00	10860.15	2707.74	1317.10
76	-1.78	477.50	5.00	10860.15	2707.74	1317.10
77	-1.78	482.50	5.00	10941.39	2728.00	1326.96
77	-1.78	482.50	5.00	10941.39	2728.00	1326.96
78	-1.78	487.50	5.00	11022.64	2748.25	1336.81
78	-1.78	487.50	5.00	11022.64	2748.25	1336.81
79	-1.78	492.50	5.00	11103.88	2768.51	1346.66
79	-1.78	492.50	5.00	11103.88	2768.51	1346.66
80	-1.78	497.50	5.00	11185.13	2788.77	1356.52
80	-1.78	497.50	5.00	11185.13	2788.77	1356.52
81	-1.78	502.50	5.00	11266.37	2809.02	1366.37
81	-1.78	502.50	5.00	11266.37	2809.02	1366.37
82	-1.78	506.27	2.55	11344.57	2828.52	1375.85
82	-1.78	506.27	2.55	11344.57	2828.52	1375.85
83	-1.78	508.83	2.55	11419.72	2847.26	1384.97
83	-1.78	508.83	2.55	11419.72	2847.26	1384.97
84	-1.78	511.65	3.10	11502.97	2868.01	1395.07
84	-1.78	511.65	3.10	11502.97	2868.01	1395.07
85	38.51	515.72	6.43	9614.11	4134.35	2011.04
85	38.51	515.72	6.43	9614.11	4134.35	2011.04
86	38.51	520.75	6.43	9312.80	4012.62	1951.83
86	38.51	520.75	6.43	9312.80	4012.62	1951.83
87	38.51	525.78	6.43	9011.50	3890.88	1892.61
87	38.51	525.78	6.43	9011.50	3890.88	1892.61
88	38.51	530.82	6.43	8710.19	3769.14	1833.40
88	38.51	530.82	6.43	8710.19	3769.14	1833.40
89	38.51	535.85	6.43	8408.88	3647.41	1774.18
89	38.51	535.85	6.43	8408.88	3647.41	1774.18
90	38.51	540.88	6.43	8107.58	3525.67	1714.97
90	38.51	540.88	6.43	8107.58	3525.67	1714.97
91	38.51	545.97	6.57	7788.81	3396.88	1652.32
91	38.51	545.97	6.57	7788.81	3396.88	1652.32
92	38.51	551.11	6.57	7452.58	3261.04	1586.24
92	38.51	551.11	6.57	7452.58	3261.04	1586.24
93	38.51	556.25	6.57	7116.35	3125.19	1520.16
93	38.51	556.25	6.57	7116.35	3125.19	1520.16
94	38.51	561.39	6.57	6780.12	2989.35	1454.08
94	38.51	561.39	6.57	6780.12	2989.35	1454.08
95	38.51	566.53	6.57	6443.89	2853.50	1388.01
95	38.51	566.53	6.57	6443.89	2853.50	1388.01
96	38.51	571.63	6.46	6173.22	2744.14	1334.81
96	38.51	571.63	6.46	6173.22	2744.14	1334.81
97	38.51	576.68	6.46	5968.12	2661.28	1294.50
97	38.51	576.68	6.46	5968.12	2661.28	1294.50
98	38.51	581.74	6.46	5763.01	2578.41	1254.19
98	38.51	581.74	6.46	5763.01	2578.41	1254.19
99	38.51	586.79	6.46	5557.90	2495.54	1213.89
99	38.51	586.79	6.46	5557.90	2495.54	1213.89
100	38.51	591.85	6.46	5352.80	2412.67	1173.58
100	38.51	591.85	6.46	5352.80	2412.67	1173.58
101	38.51	596.90	6.46	5147.69	2329.80	1133.27
101	38.51	596.90	6.46	5147.69	2329.80	1133.27
102	38.51	601.96	6.46	4942.58	2246.93	1092.96
102	38.51	601.96	6.46	4942.58	2246.93	1092.96
103	38.51	607.01	6.46	4737.48	2164.06	1052.65
103	38.51	607.01	6.46	4737.48	2164.06	1052.65
104	38.51	612.07	6.46	4532.37	2081.20	1012.34
104	38.51	612.07	6.46	4532.37	2081.20	1012.34
105	38.51	617.12	6.46	4327.26	1998.33	972.03
105	38.51	617.12	6.46	4327.26	1998.33	972.03
106	38.51	622.18	6.46	4122.15	1915.46	931.72
106	38.51	622.18	6.46	4122.15	1915.46	931.72
107	38.51	627.23	6.46	3917.05	1832.59	891.41
107	38.51	627.23	6.46	3917.05	1832.59	891.41
108	38.51	632.29	6.46	3711.94	1749.72	851.10
108	38.51	632.29	6.46	3711.94	1749.72	851.10
109	38.51	637.34	6.46	3506.83	1666.85	810.79
109	38.51	637.34	6.46	3506.83	1666.85	810.79
110	38.51	642.40	6.46	3301.73	1583.98	770.49
110	38.51	642.40	6.46	3301.73	1583.98	770.49
111	38.51	647.45	6.46	3096.62	1501.12	730.18
111	38.51	647.45	6.46	3096.62	1501.12	730.18
112	38.51	652.50	6.46	2891.51	1418.25	689.87

112	38.51	652.50	6.46	2891.51	1418.25	689.87
113	38.51	657.56	6.46	2686.41	1335.38	649.56
113	38.51	657.56	6.46	2686.41	1335.38	649.56
114	38.51	662.61	6.46	2481.30	1252.51	609.25
114	38.51	662.61	6.46	2481.30	1252.51	609.25
115	38.51	667.67	6.46	2276.19	1169.64	568.94
115	38.51	667.67	6.46	2276.19	1169.64	568.94
116	38.51	672.72	6.46	2071.09	1086.77	528.63
116	38.51	672.72	6.46	2071.09	1086.77	528.63
117	38.51	677.78	6.46	1865.98	1003.90	488.32
117	38.51	677.78	6.46	1865.98	1003.90	488.32
118	38.51	682.83	6.46	1660.87	921.04	448.01
118	38.51	682.83	6.46	1660.87	921.04	448.01
119	38.51	687.89	6.46	1455.77	838.17	407.70
119	38.51	687.89	6.46	1455.77	838.17	407.70
120	38.51	692.94	6.46	1250.66	755.30	367.39
120	38.51	692.94	6.46	1250.66	755.30	367.39
121	38.51	698.00	6.46	1045.55	672.43	327.09
121	38.51	698.00	6.46	1045.55	672.43	327.09
122	38.51	703.05	6.46	840.44	589.56	286.78
122	38.51	703.05	6.46	840.44	589.56	286.78
123	38.51	708.11	6.46	635.34	506.69	246.47
123	38.51	708.11	6.46	635.34	506.69	246.47
124	38.51	713.16	6.46	430.23	423.82	206.16
124	38.51	713.16	6.46	430.23	423.82	206.16
125	38.51	718.22	6.46	225.12	340.96	165.85
125	38.51	718.22	6.46	225.12	340.96	165.85
126	38.51	723.27	6.46	108.71	43.92	21.36
126	38.51	723.27	6.46	108.71	43.92	21.36
127	54.92	725.82	0.06	3.91	1.58	0.77
127	54.92	725.82	0.06	3.91	1.58	0.77
128	54.92	725.85	0.04	1.15	0.46	0.23
128	54.92	725.85	0.04	1.15	0.46	0.23

Table 4 - Base Force Data on the 128 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-34.38	115.20	1.32	186.91	348.17	169.36
1	-34.38	115.20	1.32	186.91	348.17	169.36
2	-34.38	118.09	5.67	2562.64	2451.77	1192.60
2	-34.38	118.09	5.67	2562.64	2451.77	1192.60
3	-34.38	122.76	5.67	5252.13	3538.40	1721.16
3	-34.38	122.76	5.67	5252.13	3538.40	1721.16
4	-34.38	127.83	6.62	9696.06	5573.41	2711.03
4	-34.38	127.83	6.62	9696.06	5573.41	2711.03
5	-34.38	133.30	6.62	13663.02	7176.17	3490.65
5	-34.38	133.30	6.62	13663.02	7176.17	3490.65
6	-34.38	138.77	6.62	17629.97	8778.92	4270.26
6	-34.38	138.77	6.62	17629.97	8778.92	4270.26
7	-34.38	144.23	6.62	21596.93	10381.68	5049.88
7	-34.38	144.23	6.62	21596.93	10381.68	5049.88
8	-1.78	148.72	3.50	10493.22	2616.25	1272.60
8	-1.78	148.72	3.50	10493.22	2616.25	1272.60
9	-1.78	150.53	0.13	408.50	101.85	49.54
9	-1.78	150.53	0.13	408.50	101.85	49.54
10	-1.78	151.93	2.65	8079.92	2014.55	979.92
10	-1.78	151.93	2.65	8079.92	2014.55	979.92
11	-1.78	154.57	2.65	8188.66	2041.66	993.11
11	-1.78	154.57	2.65	8188.66	2041.66	993.11
12	-1.78	158.44	5.09	16260.12	4054.10	1972.01
12	-1.78	158.44	5.09	16260.12	4054.10	1972.01
13	-1.78	163.53	5.09	17137.31	4272.81	2078.39
13	-1.78	163.53	5.09	17137.31	4272.81	2078.39
14	-1.78	168.62	5.09	18014.50	4491.52	2184.77
14	-1.78	168.62	5.09	18014.50	4491.52	2184.77
15	-1.78	173.70	5.09	18891.69	4710.23	2291.16
15	-1.78	173.70	5.09	18891.69	4710.23	2291.16
16	-1.78	178.79	5.09	19768.88	4928.93	2397.54
16	-1.78	178.79	5.09	19768.88	4928.93	2397.54
17	-1.78	183.88	5.09	20646.06	5147.64	2503.93
17	-1.78	183.88	5.09	20646.06	5147.64	2503.93
18	-1.78	188.96	5.09	21523.25	5366.35	2610.31
18	-1.78	188.96	5.09	21523.25	5366.35	2610.31
19	-1.78	194.05	5.09	22400.44	5585.06	2716.70
19	-1.78	194.05	5.09	22400.44	5585.06	2716.70
20	-1.78	199.13	5.09	23277.63	5803.76	2823.08
20	-1.78	199.13	5.09	23277.63	5803.76	2823.08
21	-1.78	204.22	5.09	24154.81	6022.47	2929.46
21	-1.78	204.22	5.09	24154.81	6022.47	2929.46
22	-1.78	209.31	5.09	25032.00	6241.18	3035.85
22	-1.78	209.31	5.09	25032.00	6241.18	3035.85
23	-1.78	214.39	5.09	25909.19	6459.89	3142.23
23	-1.78	214.39	5.09	25909.19	6459.89	3142.23
24	-1.78	219.48	5.09	26786.38	6678.59	3248.62
24	-1.78	219.48	5.09	26786.38	6678.59	3248.62
25	-1.78	224.57	5.09	27663.57	6897.30	3355.00
25	-1.78	224.57	5.09	27663.57	6897.30	3355.00
26	-1.78	229.65	5.09	28540.75	7116.01	3461.38
26	-1.78	229.65	5.09	28540.75	7116.01	3461.38
27	-1.78	234.74	5.09	29417.94	7334.72	3567.77
27	-1.78	234.74	5.09	29417.94	7334.72	3567.77
28	-1.78	239.83	5.09	30295.13	7553.42	3674.15
28	-1.78	239.83	5.09	30295.13	7553.42	3674.15
29	-1.78	244.91	5.09	31172.32	7772.13	3780.54
29	-1.78	244.91	5.09	31172.32	7772.13	3780.54
30	-1.78	250.00	5.09	32049.50	7990.84	3886.92
30	-1.78	250.00	5.09	32049.50	7990.84	3886.92
31	-1.78	255.08	5.09	32926.69	8209.55	3993.31
31	-1.78	255.08	5.09	32926.69	8209.55	3993.31
32	-1.78	260.17	5.09	33803.88	8428.25	4099.69
32	-1.78	260.17	5.09	33803.88	8428.25	4099.69
33	-1.78	265.26	5.09	34681.07	8646.96	4206.07
33	-1.78	265.26	5.09	34681.07	8646.96	4206.07
34	-1.78	270.24	4.89	34020.42	8482.24	4125.95
34	-1.78	270.24	4.89	34020.42	8482.24	4125.95
35	-1.78	275.13	4.89	34607.96	8628.73	4197.21
35	-1.78	275.13	4.89	34607.96	8628.73	4197.21
36	-1.78	280.01	4.89	35195.50	8775.22	4268.46
36	-1.78	280.01	4.89	35195.50	8775.22	4268.46
37	-1.78	284.90	4.89	35783.03	8921.71	4339.72
37	-1.78	284.90	4.89	35783.03	8921.71	4339.72
38	-1.78	289.78	4.89	36370.57	9068.20	4410.97
38	-1.78	289.78	4.89	36370.57	9068.20	4410.97
39	-1.78	294.67	4.89	36958.10	9214.69	4482.23
39	-1.78	294.67	4.89	36958.10	9214.69	4482.23

40	-1.78	299.55	4.89	37545.64	9361.18	4553.49
40	-1.78	299.55	4.89	37545.64	9361.18	4553.49
41	-1.78	304.43	4.89	38133.17	9507.67	4624.74
41	-1.78	304.43	4.89	38133.17	9507.67	4624.74
42	-1.78	309.32	4.89	38720.71	9654.16	4696.00
42	-1.78	309.32	4.89	38720.71	9654.16	4696.00
43	-1.78	314.20	4.89	39308.24	9800.65	4767.25
43	-1.78	314.20	4.89	39308.24	9800.65	4767.25
44	-1.78	319.09	4.89	39895.78	9947.13	4838.51
44	-1.78	319.09	4.89	39895.78	9947.13	4838.51
45	-1.78	323.97	4.89	40483.32	10093.62	4909.76
45	-1.78	323.97	4.89	40483.32	10093.62	4909.76
46	-1.78	328.86	4.89	41070.85	10240.11	4981.02
46	-1.78	328.86	4.89	41070.85	10240.11	4981.02
47	-1.78	333.68	4.75	40476.82	10092.01	4908.98
47	-1.78	333.68	4.75	40476.82	10092.01	4908.98
48	-1.78	338.43	4.75	40981.18	10217.75	4970.14
48	-1.78	338.43	4.75	40981.18	10217.75	4970.14
49	-1.78	343.18	4.75	41485.53	10343.50	5031.31
49	-1.78	343.18	4.75	41485.53	10343.50	5031.31
50	-1.78	347.93	4.75	41989.88	10469.25	5092.48
50	-1.78	347.93	4.75	41989.88	10469.25	5092.48
51	-1.78	352.68	4.75	42494.23	10595.00	5153.64
51	-1.78	352.68	4.75	42494.23	10595.00	5153.64
52	-1.78	357.43	4.75	42998.58	10720.75	5214.81
52	-1.78	357.43	4.75	42998.58	10720.75	5214.81
53	-1.78	362.31	5.03	45911.80	11447.10	5568.12
53	-1.78	362.31	5.03	45911.80	11447.10	5568.12
54	-1.78	367.34	5.03	46225.89	11525.41	5606.21
54	-1.78	367.34	5.03	46225.89	11525.41	5606.21
55	-1.78	372.36	5.03	46539.99	11603.72	5644.31
55	-1.78	372.36	5.03	46539.99	11603.72	5644.31
56	-1.78	377.39	5.03	46854.09	11682.04	5682.40
56	-1.78	377.39	5.03	46854.09	11682.04	5682.40
57	-1.78	382.41	5.03	47168.19	11760.35	5720.50
57	-1.78	382.41	5.03	47168.19	11760.35	5720.50
58	-1.78	387.44	5.03	47482.28	11838.66	5758.59
58	-1.78	387.44	5.03	47482.28	11838.66	5758.59
59	-1.78	392.46	5.03	47796.38	11916.98	5796.68
59	-1.78	392.46	5.03	47796.38	11916.98	5796.68
60	-1.78	397.49	5.03	48110.48	11995.29	5834.78
60	-1.78	397.49	5.03	48110.48	11995.29	5834.78
61	-1.78	402.50	5.00	48230.60	12025.24	5849.34
61	-1.78	402.50	5.00	48230.60	12025.24	5849.34
62	-1.78	407.50	5.00	48637.02	12126.57	5898.63
62	-1.78	407.50	5.00	48637.02	12126.57	5898.63
63	-1.78	412.50	5.00	49043.45	12227.90	5947.92
63	-1.78	412.50	5.00	49043.45	12227.90	5947.92
64	-1.78	417.50	5.00	49449.87	12329.24	5997.21
64	-1.78	417.50	5.00	49449.87	12329.24	5997.21
65	-1.78	422.50	5.00	49856.29	12430.57	6046.50
65	-1.78	422.50	5.00	49856.29	12430.57	6046.50
66	-1.78	427.50	5.00	50262.71	12531.90	6095.79
66	-1.78	427.50	5.00	50262.71	12531.90	6095.79
67	-1.78	432.50	5.00	50669.13	12633.23	6145.08
67	-1.78	432.50	5.00	50669.13	12633.23	6145.08
68	-1.78	437.50	5.00	51075.55	12734.57	6194.38
68	-1.78	437.50	5.00	51075.55	12734.57	6194.38
69	-1.78	442.50	5.00	51481.97	12835.90	6243.67
69	-1.78	442.50	5.00	51481.97	12835.90	6243.67
70	-1.78	447.50	5.00	51888.39	12937.23	6292.96
70	-1.78	447.50	5.00	51888.39	12937.23	6292.96
71	-1.78	452.50	5.00	52294.82	13038.56	6342.25
71	-1.78	452.50	5.00	52294.82	13038.56	6342.25
72	-1.78	457.50	5.00	52701.24	13139.89	6391.54
72	-1.78	457.50	5.00	52701.24	13139.89	6391.54
73	-1.78	462.50	5.00	53107.66	13241.23	6440.83
73	-1.78	462.50	5.00	53107.66	13241.23	6440.83
74	-1.78	467.50	5.00	53514.08	13342.56	6490.12
74	-1.78	467.50	5.00	53514.08	13342.56	6490.12
75	-1.78	472.50	5.00	53920.50	13443.89	6539.41
75	-1.78	472.50	5.00	53920.50	13443.89	6539.41
76	-1.78	477.50	5.00	54326.92	13545.22	6588.70
76	-1.78	477.50	5.00	54326.92	13545.22	6588.70
77	-1.78	482.50	5.00	54733.34	13646.55	6637.99
77	-1.78	482.50	5.00	54733.34	13646.55	6637.99
78	-1.78	487.50	5.00	55139.76	13747.89	6687.28
78	-1.78	487.50	5.00	55139.76	13747.89	6687.28
79	-1.78	492.50	5.00	55546.19	13849.22	6736.57
79	-1.78	492.50	5.00	55546.19	13849.22	6736.57
80	-1.78	497.50	5.00	55952.61	13950.55	6785.86
80	-1.78	497.50	5.00	55952.61	13950.55	6785.86
81	-1.78	502.50	5.00	56359.03	14051.88	6835.15
81	-1.78	502.50	5.00	56359.03	14051.88	6835.15
82	-1.78	506.27	2.55	28942.60	7216.20	3510.12
82	-1.78	506.27	2.55	28942.60	7216.20	3510.12
83	-1.78	508.83	2.55	29134.33	7264.00	3533.37
83	-1.78	508.83	2.55	29134.33	7264.00	3533.37
84	-1.78	511.65	3.10	35676.41	8895.13	4326.79
84	-1.78	511.65	3.10	35676.41	8895.13	4326.79
85	38.51	515.72	6.43	61845.81	26595.53	12936.66
85	38.51	515.72	6.43	61845.81	26595.53	12936.66
86	38.51	520.75	6.43	59907.56	25812.43	12555.74
86	38.51	520.75	6.43	59907.56	25812.43	12555.74
87	38.51	525.78	6.43	57969.31	25029.32	12174.82
87	38.51	525.78	6.43	57969.31	25029.32	12174.82
88	38.51	530.82	6.43	56031.06	24246.22	11793.90
88	38.51	530.82	6.43	56031.06	24246.22	11793.90
89	38.51	535.85	6.43	54092.81	23463.12	11412.98
89	38.51	535.85	6.43	54092.81	23463.12	11412.98
90	38.51	540.88	6.43	52154.56	22680.01	11032.06
90	38.51	540.88	6.43	52154.56	22680.01	11032.06
91	38.51	545.97	6.57	51165.79	22314.61	10854.32
91	38.51	545.97	6.57	51165.79	22314.61	10854.32
92	38.51	551.11	6.57	48957.05	21422.22	10420.24
92	38.51	551.11	6.57	48957.05	21422.22	10420.24
93	38.51	556.25	6.57	46748.31	20529.83	9986.17
93	38.51	556.25	6.57	46748.31	20529.83	9986.17
94	38.51	561.39	6.57	44539.58	19637.44	9552.09
94	38.51	561.39	6.57	44539.58	19637.44	9552.09
95	38.51	566.53	6.57	42330.84	18745.05	9118.01
95	38.51	566.53	6.57	42330.84	18745.05	9118.01
96	38.51	571.63	6.46	39880.89	17728.00	8623.29
96	38.51	571.63	6.46	39880.89	17728.00	8623.29
97	38.51	576.68	6.46	38555.84	17192.64	8362.88
97	38.51	576.68	6.46	38555.84	17192.64	8362.88
98	38.51	581.74	6.46	37230.78	16657.29	8102.47
98	38.51	581.74	6.46	37230.78	16657.29	8102.47
99	38.51	586.79	6.46	35905.73	16121.93	7842.07
99	38.51	586.79	6.46	35905.73	16121.93	7842.07

100	38.51	591.85	6.46	34580.68	15586.58	7581.66
100	38.51	591.85	6.46	34580.68	15586.58	7581.66
101	38.51	596.90	6.46	33255.63	15051.22	7321.25
101	38.51	596.90	6.46	33255.63	15051.22	7321.25
102	38.51	601.96	6.46	31930.57	14515.86	7060.84
102	38.51	601.96	6.46	31930.57	14515.86	7060.84
103	38.51	607.01	6.46	30605.52	13980.51	6800.43
103	38.51	607.01	6.46	30605.52	13980.51	6800.43
104	38.51	612.07	6.46	29280.47	13445.15	6540.02
104	38.51	612.07	6.46	29280.47	13445.15	6540.02
105	38.51	617.12	6.46	27955.42	12909.80	6279.61
105	38.51	617.12	6.46	27955.42	12909.80	6279.61
106	38.51	622.18	6.46	26630.36	12374.44	6019.20
106	38.51	622.18	6.46	26630.36	12374.44	6019.20
107	38.51	627.23	6.46	25305.31	11839.09	5758.79
107	38.51	627.23	6.46	25305.31	11839.09	5758.79
108	38.51	632.29	6.46	23980.26	11303.73	5498.38
108	38.51	632.29	6.46	23980.26	11303.73	5498.38
109	38.51	637.34	6.46	22655.21	10768.37	5237.98
109	38.51	637.34	6.46	22655.21	10768.37	5237.98
110	38.51	642.40	6.46	21330.16	10233.02	4977.57
110	38.51	642.40	6.46	21330.16	10233.02	4977.57
111	38.51	647.45	6.46	20005.10	9697.66	4717.16
111	38.51	647.45	6.46	20005.10	9697.66	4717.16
112	38.51	652.50	6.46	18680.05	9162.31	4456.75
112	38.51	652.50	6.46	18680.05	9162.31	4456.75
113	38.51	657.56	6.46	17355.00	8626.95	4196.34
113	38.51	657.56	6.46	17355.00	8626.95	4196.34
114	38.51	662.61	6.46	16029.95	8091.59	3935.93
114	38.51	662.61	6.46	16029.95	8091.59	3935.93
115	38.51	667.67	6.46	14704.89	7556.24	3675.52
115	38.51	667.67	6.46	14704.89	7556.24	3675.52
116	38.51	672.72	6.46	13379.84	7020.88	3415.11
116	38.51	672.72	6.46	13379.84	7020.88	3415.11
117	38.51	677.78	6.46	12054.79	6485.53	3154.70
117	38.51	677.78	6.46	12054.79	6485.53	3154.70
118	38.51	682.83	6.46	10729.74	5950.17	2894.29
118	38.51	682.83	6.46	10729.74	5950.17	2894.29
119	38.51	687.89	6.46	9404.68	5414.81	2633.89
119	38.51	687.89	6.46	9404.68	5414.81	2633.89
120	38.51	692.94	6.46	8079.63	4879.46	2373.48
120	38.51	692.94	6.46	8079.63	4879.46	2373.48
121	38.51	698.00	6.46	6754.58	4344.10	2113.07
121	38.51	698.00	6.46	6754.58	4344.10	2113.07
122	38.51	703.05	6.46	5429.53	3808.75	1852.66
122	38.51	703.05	6.46	5429.53	3808.75	1852.66
123	38.51	708.11	6.46	4104.47	3273.39	1592.25
123	38.51	708.11	6.46	4104.47	3273.39	1592.25
124	38.51	713.16	6.46	2779.42	2738.03	1331.84
124	38.51	713.16	6.46	2779.42	2738.03	1331.84
125	38.51	718.22	6.46	1454.37	2202.68	1071.43
125	38.51	718.22	6.46	1454.37	2202.68	1071.43
126	38.51	723.27	6.46	702.30	283.75	138.02
126	38.51	723.27	6.46	702.30	283.75	138.02
127	54.92	725.82	0.06	0.23	0.09	0.05
127	54.92	725.82	0.06	0.23	0.09	0.05
128	54.92	725.85	0.04	0.05	0.02	0.01
128	54.92	725.85	0.04	0.05	0.02	0.01

Sum of the Resisting Forces = 1182919.37 (lbs)

Average Available Shear Strength = 1746.33(psf)

Sum of the Driving Forces = 615378.38 (lbs)

Average Mobilized Shear Stress = 908.48(psf)

Total length of the failure surface = 677.38(ft)

Factor of Safety Balance Check: FS = 1.92226

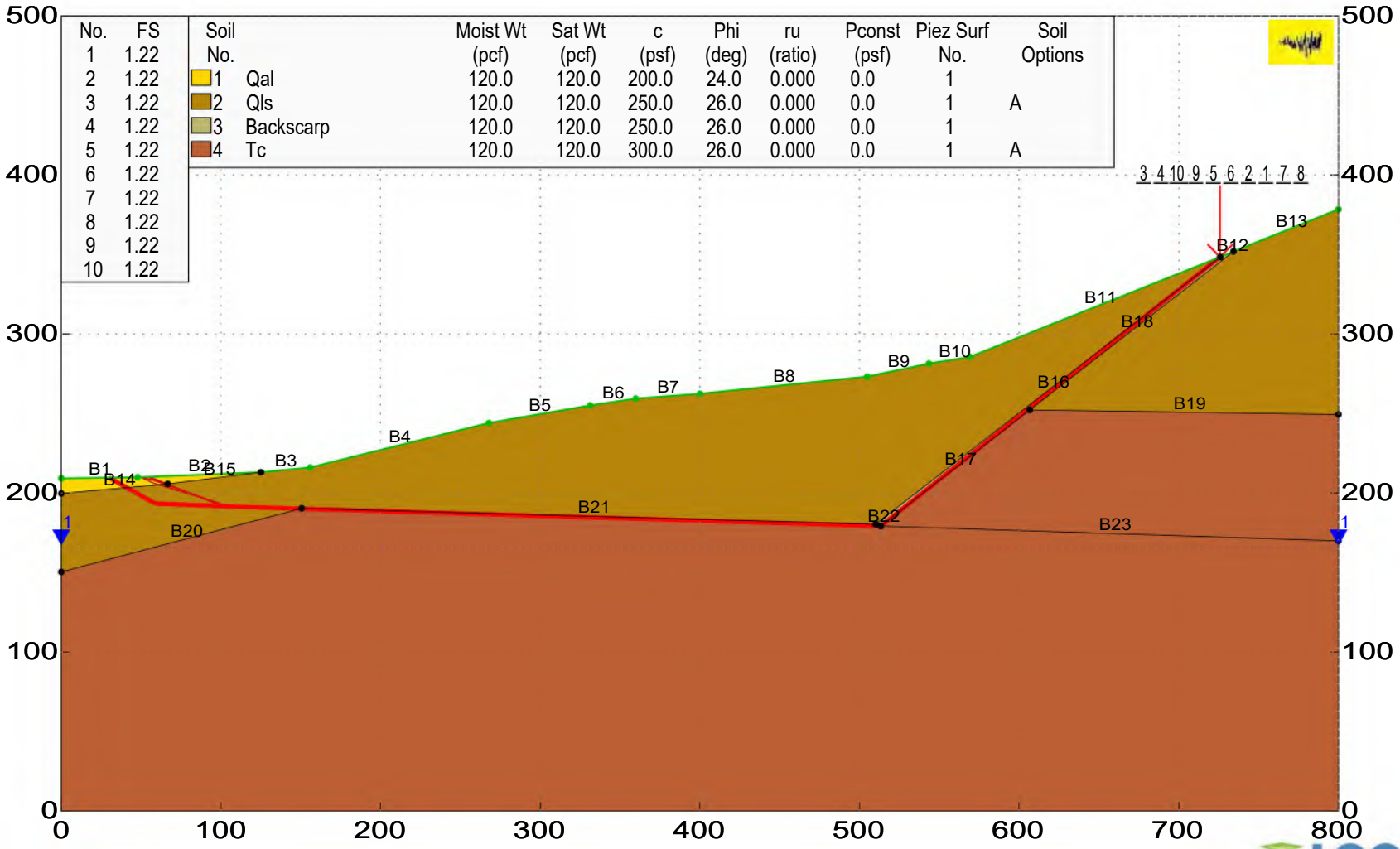
Janbu's Correction Factor (fo) = 1.0695

Janub's FS Corrected = 2.05591

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section B-B'
Existing - Entire Qls - Seismic

LGC Geotechnical, Inc. \xbe.gsd



GEOSTASE FS = 1.22

Spencer Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 3/ 17/ 2023
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec B\2023_03_10\xbe.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec B\2023_03_10\xbe.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section B-B'

DESCRIPTION: Existing - Entire Qls - Seismic

BOUNDARY DATA

13 Surface Boundaries
23 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	209.200	47.800	209.900	1
2	47.800	209.900	125.100	213.000	1
3	125.100	213.000	155.900	216.000	2
4	155.900	216.000	267.800	244.000	2
5	267.800	244.000	331.300	255.000	2
6	331.300	255.000	359.800	259.400	2
7	359.800	259.400	400.000	262.300	2
8	400.000	262.300	505.000	273.200	2
9	505.000	273.200	543.400	281.400	2
10	543.400	281.400	569.100	285.500	2
11	569.100	285.500	725.900	348.400	2
12	725.900	348.400	734.200	351.800	3
13	734.200	351.800	800.000	378.400	2
14	0.000	199.700	66.600	205.700	2
15	66.600	205.700	125.100	213.000	2
16	510.100	180.300	725.900	348.400	3
17	513.200	179.100	606.600	252.100	4
18	606.600	252.100	734.200	351.800	2
19	606.600	252.100	800.000	249.400	4
20	0.000	150.400	150.600	190.400	4
21	150.600	190.400	510.100	180.300	4
22	510.100	180.300	513.200	179.100	4
23	513.200	179.100	800.000	169.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	26.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	26.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-3.0	250.00	22.00
2	3.0	0.00	15.00
3	90.0	250.00	22.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)

1	-3.0	300.00	26.00
2	3.0	0.00	15.00
3	90.0	300.00	26.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	165.10
2	800.00	165.10

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

3 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 50.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	100.00	191.60	200.00	189.20	0.00
2	513.20	179.10	513.20	179.10	0.00
3	725.80	348.30	725.80	348.30	0.00

The Spencer Method Was Selected for FS Analysis.

Selected fx function = Bi-linear

SELECTED CONVERGENCE PARAMETERS FOR SPENCER METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 5.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Allowable negative side force = -1000.0(lbs)
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Specified Tension Crack Water Depth Factor = 0.000

Total Number of Trial Surfaces Attempted = 1000

WARNING! The Factor of Safety Calculation for one or More Trial Surfaces
Did Not Converge in 50 Iterations.

Number of Trial Surfaces with Non-Converged FS = 30

Number of Trial Surfaces With Valid FS = 970

Percentage of Trial Surfaces With Non-Converged and/or
Non-Valid FS Solutions of the Total Attempted = 3.0 %

Statistical Data On All Valid FS Values:
FS Max = 1.395 FS Min = 1.221 FS Ave = 1.272
Standard Deviation = 0.036 Coefficient of Variation = 2.86 %

Critical Surface is Sequence Number 155 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Iter. No.	Theta (deg) (fx=1.0)	FS (Moment)	FS (Force)	Lambda	Delta FS
1	5.0000	1.416449	1.148921	0.087	0.2675281E+00
2	6.6500	1.407480	1.156151	0.117	0.2513291E+00
3	32.2448	0.000000	1.334842	0.631	0.1334842E+01
4	10.7047	1.376188	1.174885	0.189	0.2013030E+00
5	13.5311	1.343187	1.188962	0.241	0.1542244E+00
6	22.7885	1.049990	1.244486	0.420	0.1944958E+00
7	17.6245	1.267042	1.211350	0.318	0.5569163E-01
8	18.7748	1.235855	1.218179	0.340	0.1767604E-01
9	19.3095	1.219173	1.221449	0.350	0.2275138E-02
10	19.2485	1.221156	1.221073	0.349	0.8294110E-04
11	19.2507	1.221086	1.221086	0.349	0.7333096E-07

Factor Of Safety For The Preceding Specified Surface = 1.221
Theta (fx = 1.0) = 19.25 Deg Lambda = 0.349

The Spencer Method Has Been Selected For Analysis.

Selected fx function = Bi-linear

SELECTED CONVERGENCE PARAMETERS FOR ANALYSIS METHOD:
Initial estimate of FS = 1.500
FS tolerance = 0.000001000
Initial estimate of theta(deg) = 5.00
Theta tolerance(radians) = 0.0001000
Minimum theta(deg) = -45.00 ; Maximum theta(deg) = 45.00
Theta convergence Step Factor = 5000.00
Maximum number of iterations = 50
Maximum force imbalance = 100.000000(lbs)
Maximum moment imbalance(if Applicable) = 100.000000 (ft/lbs)

Selected Lambda Coefficient = 1.00

Tension Crack Water Force = 0.00(lbs)

Specified Tension Crack Water Depth Factor = 0.000

Depth of Tension Crack (zo) at Side of Last Slice = 0.000(ft)

Depth of Water in Tension Crack = 0.000(ft)

Theoretical Tension Crack Depth = 6.177(ft)

NOTE: In Table 1 following, when a tension crack with water is present on the first slice (right facing slope) or on the last slice (left facing slope), the "side force" in the tension crack is set equal to the water pressure resultant.

*** Table 1 - Line of Thrust(if applicable) and Slice Force Data ***

Slice No.	X Coord.	Y Coord.	h/H	Side Force (lbs)	fx	Force Angle (Deg)	Vert. Shear Force(lbs)
1	35.42	209.04	0.790	4633.27	1.000	19.25	1527.6
2	40.97	207.61	0.659	13147.58	1.000	19.25	4334.8
3	44.38	206.73	0.628	20038.13	1.000	19.25	6606.6
4	47.80	205.84	0.608	28248.32	1.000	19.25	9313.5
5	53.29	204.40	0.581	44269.63	1.000	19.25	14595.8
6	58.77	202.92	0.563	63844.28	1.000	19.25	21049.6
7	62.69	203.95	0.621	64886.96	1.000	19.25	21393.4
8	66.60	204.96	0.677	65948.60	1.000	19.25	21743.4
9	71.87	206.28	0.746	67407.29	1.000	19.25	22224.3
10	77.13	207.57	0.810	68900.32	1.000	19.25	22716.6
11	82.40	208.81	0.869	70427.68	1.000	19.25	23220.2
12	87.67	210.02	0.923	71989.38	1.000	19.25	23735.1
13	92.93	211.19	0.974	73585.41	1.000	19.25	24261.3
14	98.20	212.33	1.000+	75215.78	1.000	19.25	24798.8
15	103.47	213.43	1.000+	76880.48	1.000	19.25	25347.7
16	108.73	214.50	1.000+	78579.52	1.000	19.25	25907.8
17	114.19	215.63	1.000+	80211.05	1.000	19.25	26445.8
18	119.64	216.72	1.000+	81872.24	1.000	19.25	26993.5
19	125.10	217.79	1.000+	83563.10	1.000	19.25	27550.9
20	130.01	218.72	1.000+	85119.96	1.000	19.25	28064.2
21	134.92	219.61	1.000+	86720.39	1.000	19.25	28591.9
22	139.83	220.47	1.000+	88364.38	1.000	19.25	29133.9
23	144.74	221.30	1.000+	90051.93	1.000	19.25	29690.3
24	149.65	222.10	1.000+	91783.05	1.000	19.25	30261.1
25	150.60	222.25	1.000+	92123.77	1.000	19.25	30373.4
26	153.25	222.66	1.000+	93080.82	1.000	19.25	30689.0
27	155.90	223.06	1.000+	94050.57	1.000	19.25	31008.7
28	160.99	223.79	1.000+	95975.40	1.000	19.25	31643.3
29	166.07	224.45	1.000+	98002.90	1.000	19.25	32311.8
30	171.16	225.04	1.000+	100133.09	1.000	19.25	33014.1
31	176.25	225.57	1.000+	102365.95	1.000	19.25	33750.3
32	181.33	226.03	1.000+	104701.49	1.000	19.25	34520.3
33	186.42	226.42	1.000+	107139.70	1.000	19.25	35324.2
34	191.50	226.76	1.000+	109680.59	1.000	19.25	36161.9
35	196.59	227.04	1.000+	112324.16	1.000	19.25	37033.5
36	201.68	227.26	0.995	115070.41	1.000	19.25	37939.0
37	206.76	227.44	0.968	117919.33	1.000	19.25	38878.3
38	211.85	227.56	0.942	120870.93	1.000	19.25	39851.4
39	216.94	227.64	0.916	123925.21	1.000	19.25	40858.4
40	222.02	227.67	0.891	127082.17	1.000	19.25	41899.3
41	227.11	227.67	0.866	130341.80	1.000	19.25	42974.0
42	232.20	227.63	0.843	133704.11	1.000	19.25	44082.5
43	237.28	227.55	0.820	137169.09	1.000	19.25	45224.9
44	242.37	227.44	0.797	140736.76	1.000	19.25	46401.2
45	247.45	227.30	0.776	144407.10	1.000	19.25	47611.3
46	252.54	227.13	0.754	148180.12	1.000	19.25	48855.3
47	257.63	226.93	0.734	152055.81	1.000	19.25	50133.1
48	262.71	226.71	0.714	156034.19	1.000	19.25	51444.8
49	267.80	226.47	0.695	160115.24	1.000	19.25	52790.3
50	272.68	226.22	0.681	164118.07	1.000	19.25	54110.1
51	277.57	225.98	0.668	168189.62	1.000	19.25	55452.5
52	282.45	225.74	0.656	172329.87	1.000	19.25	56817.5
53	287.34	225.50	0.644	176538.84	1.000	19.25	58205.2
54	292.22	225.26	0.632	180816.52	1.000	19.25	59615.6
55	297.11	225.02	0.621	185162.91	1.000	19.25	61048.6
56	301.99	224.79	0.610	189578.01	1.000	19.25	62504.3
57	306.88	224.56	0.599	194061.82	1.000	19.25	63982.6
58	311.76	224.32	0.589	198614.35	1.000	19.25	65483.6
59	316.65	224.09	0.579	203235.58	1.000	19.25	67007.2
60	321.53	223.87	0.569	207925.53	1.000	19.25	68553.5
61	326.42	223.64	0.560	212684.18	1.000	19.25	70122.4
62	331.30	223.42	0.551	217511.55	1.000	19.25	71714.0
63	336.05	223.21	0.543	222268.77	1.000	19.25	73282.5
64	340.80	223.00	0.536	227084.95	1.000	19.25	74870.4
65	345.55	222.80	0.529	231960.10	1.000	19.25	76477.7
66	350.30	222.60	0.522	236894.21	1.000	19.25	78104.5
67	355.05	222.42	0.515	241887.28	1.000	19.25	79750.8
68	359.80	222.23	0.509	246939.31	1.000	19.25	81416.4
69	364.82	222.05	0.505	252333.33	1.000	19.25	83194.8
70	369.85	221.89	0.501	257763.96	1.000	19.25	84985.3
71	374.88	221.75	0.498	263231.21	1.000	19.25	86787.9
72	379.90	221.63	0.495	268735.08	1.000	19.25	88602.5
73	384.93	221.52	0.493	274275.55	1.000	19.25	90429.2
74	389.95	221.44	0.490	279852.65	1.000	19.25	92268.0
75	394.98	221.37	0.488	285466.36	1.000	19.25	94118.9
76	400.00	221.31	0.486	291116.68	1.000	19.25	95981.8
77	405.00	221.27	0.483	296780.84	1.000	19.25	97849.3
78	410.00	221.24	0.481	302492.44	1.000	19.25	99732.4

79	415.00	221.21	0.479	308251.50	1.000	19.25	101631.2
80	420.00	221.19	0.476	314058.00	1.000	19.25	103545.6
81	425.00	221.18	0.474	319911.96	1.000	19.25	105475.7
82	430.00	221.18	0.472	325813.36	1.000	19.25	107421.4
83	435.00	221.18	0.470	331762.22	1.000	19.25	109382.7
84	440.00	221.19	0.468	337758.52	1.000	19.25	111359.7
85	445.00	221.21	0.467	343802.28	1.000	19.25	113352.4
86	450.00	221.23	0.465	349893.48	1.000	19.25	115360.6
87	455.00	221.26	0.464	356032.14	1.000	19.25	117384.6
88	460.00	221.29	0.462	362218.24	1.000	19.25	119424.1
89	465.00	221.33	0.461	368451.80	1.000	19.25	121479.4
90	470.00	221.37	0.459	374732.80	1.000	19.25	123550.2
91	475.00	221.42	0.458	381061.26	1.000	19.25	125636.7
92	480.00	221.48	0.457	387437.16	1.000	19.25	127738.9
93	485.00	221.53	0.456	393860.52	1.000	19.25	129856.7
94	490.00	221.59	0.455	400331.32	1.000	19.25	131990.1
95	495.00	221.66	0.454	406849.57	1.000	19.25	134139.2
96	500.00	221.73	0.453	413415.28	1.000	19.25	136303.9
97	505.00	221.80	0.452	420028.43	1.000	19.25	138484.3
98	507.55	221.84	0.451	423424.46	1.000	19.25	139604.0
99	510.10	221.88	0.449	426842.92	1.000	19.25	140731.0
100	513.20	221.91	0.447	431028.91	1.000	19.25	142111.2
101	518.23	225.02	0.451	407618.67	1.000	19.25	134392.8
102	523.27	228.13	0.456	384973.42	1.000	19.25	126926.6
103	528.30	231.26	0.461	363093.16	1.000	19.25	119712.6
104	533.33	234.40	0.467	341977.89	1.000	19.25	112750.9
105	538.37	237.55	0.473	321627.60	1.000	19.25	106041.3
106	543.40	240.72	0.480	302042.30	1.000	19.25	99584.0
107	548.54	243.96	0.490	282868.43	1.000	19.25	93262.3
108	553.68	247.22	0.501	264566.30	1.000	19.25	87228.1
109	558.82	250.50	0.513	247135.91	1.000	19.25	81481.2
110	563.96	253.78	0.526	230577.27	1.000	19.25	76021.8
111	569.10	257.07	0.541	214890.37	1.000	19.25	70849.8
112	574.15	260.33	0.546	200153.51	1.000	19.25	65991.0
113	579.21	263.61	0.552	185939.63	1.000	19.25	61304.7
114	584.26	266.92	0.559	172248.72	1.000	19.25	56790.8
115	589.32	270.19	0.566	159041.99	0.981	18.91	51538.5
116	594.37	273.40	0.572	146346.52	0.945	18.26	45843.9
117	599.43	276.57	0.578	134200.05	0.908	17.60	40573.1
118	604.48	279.72	0.583	122597.86	0.872	16.94	35711.4
119	609.54	282.84	0.589	111535.55	0.836	16.27	31244.2
120	614.59	285.93	0.595	101008.96	0.799	15.60	27156.5
121	619.65	289.00	0.600	91014.29	0.763	14.92	23432.9
122	624.70	292.03	0.605	81548.03	0.727	14.24	20058.2
123	629.76	295.04	0.610	72607.01	0.690	13.55	17016.7
124	634.81	298.02	0.615	64188.43	0.654	12.87	14292.6
125	639.87	300.97	0.620	56289.84	0.618	12.17	11869.7
126	644.92	303.89	0.624	48909.17	0.581	11.48	9731.7
127	649.98	306.79	0.628	42044.76	0.545	10.78	7862.2
128	655.03	309.67	0.632	35695.36	0.509	10.07	6244.2
129	660.09	312.52	0.635	29860.12	0.472	9.37	4860.9
130	665.14	315.35	0.638	24538.68	0.436	8.66	3694.8
131	670.20	318.16	0.641	19731.09	0.400	7.95	2728.5
132	675.25	320.96	0.644	15437.89	0.363	7.23	1944.1
133	680.31	323.76	0.647	11660.12	0.327	6.52	1323.7
134	685.36	326.56	0.652	8399.31	0.291	5.80	848.8
135	690.42	329.42	0.662	5657.49	0.255	5.08	501.0
136	695.47	332.41	0.686	3437.23	0.218	4.36	261.2
137	700.53	335.83	0.762	1741.66	0.182	3.64	110.4
138	705.58	341.40	1.000+	574.44	0.146	2.91	29.2
139	710.64	302.14	0.000-	-60.17	0.109	2.19	-2.3
140	715.69	331.91	0.000-	-157.37	0.073	1.46	-4.0
141	720.75	346.44	1.000+	288.29	0.037	0.73	3.7
142	725.80	346.29	0.000-	1282.82	0.000	0.01	0.2
143	725.83	346.31	0.000-	1294.40	0.000	0.00	0.1
144	725.85	348.38	0.000	1305.57	0.000	0.00	0.0

NOTE: A value of 0.000- for h/H indicates that the line of thrust is at or below the lower boundary of the sliding mass. A value of 1.000+ for h/H indicates that the line of thrust is at or above the upper boundary of the sliding mass.

Table 2 - Geometry Data on the 144 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.55	1.60	32.65	208.08	209.68	-29.39	0.84	6.37
2	5.55	4.81	38.19	204.95	209.76	-29.39	0.84	6.37
3	3.42	7.40	42.68	202.43	209.82	-29.39	0.84	3.92
4	3.42	9.37	46.09	200.50	209.87	-29.39	0.84	3.92
5	5.49	12.01	50.54	198.00	210.01	-29.39	2.30	6.30
6	5.49	15.32	56.03	194.91	210.23	-29.39	2.30	6.30
7	3.91	17.13	60.73	193.29	210.42	-2.26	2.30	3.92
8	3.91	17.44	64.64	193.13	210.58	-2.26	2.30	3.92
9	5.27	17.81	69.23	192.95	210.76	-2.26	2.30	5.27
10	5.27	18.23	74.50	192.74	210.97	-2.26	2.30	5.27
11	5.27	18.65	79.77	192.53	211.18	-2.26	2.30	5.27
12	5.27	19.07	85.03	192.33	211.39	-2.26	2.30	5.27
13	5.27	19.49	90.30	192.12	211.60	-2.26	2.30	5.27
14	5.27	19.91	95.57	191.91	211.82	-2.26	2.30	5.27
15	5.27	20.32	100.83	191.70	212.03	-2.26	2.30	5.27
16	5.27	20.74	106.10	191.49	212.24	-2.26	2.30	5.27
17	5.46	21.15	111.46	191.31	212.45	-1.74	2.30	5.46
18	5.46	21.53	116.92	191.14	212.67	-1.74	2.30	5.46
19	5.46	21.91	122.37	190.98	212.89	-1.74	2.30	5.46
20	4.91	22.42	127.55	190.82	213.24	-1.74	5.56	4.91
21	4.91	23.05	132.46	190.67	213.72	-1.74	5.56	4.91
22	4.91	23.68	137.37	190.52	214.20	-1.74	5.56	4.91
23	4.91	24.30	142.28	190.37	214.67	-1.74	5.56	4.91
24	4.91	24.93	147.19	190.22	215.15	-1.74	5.56	4.91
25	0.95	25.30	150.12	190.13	215.44	-1.74	5.56	0.95
26	2.65	25.53	151.93	190.08	215.61	-1.74	5.56	2.65
27	2.65	25.87	154.57	190.00	215.87	-1.74	5.56	2.65
28	5.09	26.76	158.44	189.88	216.64	-1.74	14.05	5.09
29	5.09	28.18	163.53	189.73	217.91	-1.74	14.05	5.09
30	5.09	29.61	168.62	189.57	219.18	-1.74	14.05	5.09
31	5.09	31.04	173.70	189.42	220.45	-1.74	14.05	5.09
32	5.09	32.47	178.79	189.26	221.73	-1.74	14.05	5.09
33	5.09	33.89	183.88	189.11	223.00	-1.74	14.05	5.09
34	5.09	35.32	188.96	188.95	224.27	-1.74	14.05	5.09
35	5.09	36.75	194.05	188.80	225.55	-1.74	14.05	5.09
36	5.09	38.17	199.13	188.64	226.82	-1.74	14.05	5.09
37	5.09	39.60	204.22	188.49	228.09	-1.74	14.05	5.09
38	5.09	41.03	209.31	188.33	229.36	-1.74	14.05	5.09
39	5.09	42.46	214.39	188.18	230.64	-1.74	14.05	5.09
40	5.09	43.88	219.48	188.03	231.91	-1.74	14.05	5.09
41	5.09	45.31	224.57	187.87	233.18	-1.74	14.05	5.09
42	5.09	46.74	229.65	187.72	234.45	-1.74	14.05	5.09

43	5.09	48.17	234.74	187.56	235.73	-1.74	14.05	5.09
44	5.09	49.59	239.83	187.41	237.00	-1.74	14.05	5.09
45	5.09	51.02	244.91	187.25	238.27	-1.74	14.05	5.09
46	5.09	52.45	250.00	187.10	239.55	-1.74	14.05	5.09
47	5.09	53.87	255.08	186.94	240.82	-1.74	14.05	5.09
48	5.09	55.30	260.17	186.79	242.09	-1.74	14.05	5.09
49	5.09	56.73	265.26	186.63	243.36	-1.74	14.05	5.09
50	4.88	57.94	270.24	186.48	244.42	-1.74	9.83	4.89
51	4.88	58.93	275.13	186.33	245.27	-1.74	9.83	4.89
52	4.88	59.93	280.01	186.19	246.12	-1.74	9.83	4.89
53	4.88	60.92	284.90	186.04	246.96	-1.74	9.83	4.89
54	4.88	61.92	289.78	185.89	247.81	-1.74	9.83	4.89
55	4.88	62.91	294.67	185.74	248.65	-1.74	9.83	4.89
56	4.88	63.91	299.55	185.59	249.50	-1.74	9.83	4.89
57	4.88	64.90	304.43	185.44	250.35	-1.74	9.83	4.89
58	4.88	65.90	309.32	185.30	251.19	-1.74	9.83	4.89
59	4.88	66.89	314.20	185.15	252.04	-1.74	9.83	4.89
60	4.88	67.89	319.09	185.00	252.88	-1.74	9.83	4.89
61	4.88	68.88	323.97	184.85	253.73	-1.74	9.83	4.89
62	4.88	69.88	328.86	184.70	254.58	-1.74	9.83	4.89
63	4.75	70.81	333.68	184.56	255.37	-1.74	8.78	4.75
64	4.75	71.69	338.43	184.41	256.10	-1.74	8.78	4.75
65	4.75	72.57	343.18	184.27	256.83	-1.74	8.78	4.75
66	4.75	73.44	347.93	184.12	257.57	-1.74	8.78	4.75
67	4.75	74.32	352.68	183.98	258.30	-1.74	8.78	4.75
68	4.75	75.20	357.43	183.83	259.03	-1.74	8.78	4.75
69	5.02	75.90	362.31	183.68	259.58	-1.74	4.13	5.03
70	5.03	76.41	367.34	183.53	259.94	-1.74	4.13	5.03
71	5.02	76.93	372.36	183.38	260.31	-1.74	4.13	5.03
72	5.02	77.44	377.39	183.23	260.67	-1.74	4.13	5.03
73	5.03	77.96	382.41	183.07	261.03	-1.74	4.13	5.03
74	5.02	78.47	387.44	182.92	261.39	-1.74	4.13	5.03
75	5.03	78.99	392.46	182.77	261.76	-1.74	4.13	5.03
76	5.02	79.50	397.49	182.62	262.12	-1.74	4.13	5.03
77	5.00	80.10	402.50	182.46	262.56	-1.74	5.93	5.00
78	5.00	80.77	407.50	182.31	263.08	-1.74	5.93	5.00
79	5.00	81.44	412.50	182.16	263.60	-1.74	5.93	5.00
80	5.00	82.11	417.50	182.01	264.12	-1.74	5.93	5.00
81	5.00	82.78	422.50	181.86	264.64	-1.74	5.93	5.00
82	5.00	83.45	427.50	181.70	265.15	-1.74	5.93	5.00
83	5.00	84.12	432.50	181.55	265.67	-1.74	5.93	5.00
84	5.00	84.79	437.50	181.40	266.19	-1.74	5.93	5.00
85	5.00	85.46	442.50	181.25	266.71	-1.74	5.93	5.00
86	5.00	86.13	447.50	181.10	267.23	-1.74	5.93	5.00
87	5.00	86.81	452.50	180.94	267.75	-1.74	5.93	5.00
88	5.00	87.48	457.50	180.79	268.27	-1.74	5.93	5.00
89	5.00	88.15	462.50	180.64	268.79	-1.74	5.93	5.00
90	5.00	88.82	467.50	180.49	269.31	-1.74	5.93	5.00
91	5.00	89.49	472.50	180.34	269.83	-1.74	5.93	5.00
92	5.00	90.16	477.50	180.18	270.35	-1.74	5.93	5.00
93	5.00	90.83	482.50	180.03	270.86	-1.74	5.93	5.00
94	5.00	91.50	487.50	179.88	271.38	-1.74	5.93	5.00
95	5.00	92.17	492.50	179.73	271.90	-1.74	5.93	5.00
96	5.00	92.84	497.50	179.58	272.42	-1.74	5.93	5.00
97	5.00	93.52	502.50	179.43	272.94	-1.74	5.93	5.00
98	2.55	94.16	506.27	179.31	273.47	-1.74	12.05	2.55
99	2.55	94.78	508.83	179.23	274.02	-1.74	12.05	2.55
100	3.10	95.47	511.65	179.15	274.62	-1.74	12.05	3.10
101	5.03	94.39	515.72	181.10	275.49	38.51	12.05	6.43
102	5.03	91.45	520.75	185.11	276.56	38.51	12.05	6.43
103	5.03	88.52	525.78	189.11	277.64	38.51	12.05	6.43
104	5.03	85.59	530.82	193.12	278.71	38.51	12.05	6.43
105	5.03	82.66	535.85	197.13	279.79	38.51	12.05	6.43
106	5.03	79.73	540.88	201.13	280.86	38.51	12.05	6.43
107	5.14	76.63	545.97	205.18	281.81	38.51	9.06	6.57
108	5.14	73.36	551.11	209.27	282.63	38.51	9.06	6.57
109	5.14	70.09	556.25	213.36	283.45	38.51	9.06	6.57
110	5.14	66.82	561.39	217.45	284.27	38.51	9.06	6.57
111	5.14	63.55	566.53	221.54	285.09	38.51	9.06	6.57
112	5.05	60.91	571.63	225.60	286.51	38.51	21.86	6.46
113	5.05	58.92	576.68	229.62	288.54	38.51	21.86	6.46
114	5.05	56.92	581.74	233.65	290.57	38.51	21.86	6.46
115	5.05	54.93	586.79	237.67	292.60	38.51	21.86	6.46
116	5.05	52.93	591.85	241.69	294.62	38.51	21.86	6.46
117	5.05	50.94	596.90	245.71	296.65	38.51	21.86	6.46
118	5.05	48.94	601.96	249.74	298.68	38.51	21.86	6.46
119	5.05	46.95	607.01	253.76	300.71	38.51	21.86	6.46
120	5.05	44.95	612.07	257.78	302.74	38.51	21.86	6.46
121	5.05	42.96	617.12	261.81	304.76	38.51	21.86	6.46
122	5.05	40.96	622.18	265.83	306.79	38.51	21.86	6.46
123	5.05	38.97	627.23	269.85	308.82	38.51	21.86	6.46
124	5.05	36.97	632.29	273.88	310.85	38.51	21.86	6.46
125	5.05	34.98	637.34	277.90	312.87	38.51	21.86	6.46
126	5.05	32.98	642.40	281.92	314.90	38.51	21.86	6.46
127	5.05	30.99	647.45	285.94	316.93	38.51	21.86	6.46
128	5.05	28.99	652.50	289.97	318.96	38.51	21.86	6.46
129	5.05	27.00	657.56	293.99	320.99	38.51	21.86	6.46
130	5.05	25.00	662.61	298.01	323.01	38.51	21.86	6.46
131	5.05	23.00	667.67	302.04	325.04	38.51	21.86	6.46
132	5.05	21.01	672.72	306.06	327.07	38.51	21.86	6.46
133	5.05	19.01	677.78	310.08	329.10	38.51	21.86	6.46
134	5.05	17.02	682.83	314.10	331.12	38.51	21.86	6.46
135	5.05	15.02	687.89	318.13	333.15	38.51	21.86	6.46
136	5.05	13.03	692.94	322.15	335.18	38.51	21.86	6.46
137	5.05	11.03	698.00	326.17	337.21	38.51	21.86	6.46
138	5.05	9.04	703.05	330.20	339.24	38.51	21.86	6.46
139	5.05	7.04	708.11	334.22	341.26	38.51	21.86	6.46
140	5.05	5.05	713.16	338.24	343.29	38.51	21.86	6.46
141	5.05	3.05	718.22	342.27	345.32	38.51	21.86	6.46
142	5.05	1.06	723.27	346.29	347.35	38.51	21.86	6.46
143	0.03	0.04	725.81	348.32	348.36	58.82	21.86	0.05
144	0.02	0.01	725.84	348.36	348.37	58.82	21.86	0.04

Table 2A - Coordinates of Slice Points Defining the Slip Surface

Point No.	X-Pt (ft)	Y-Pt (ft)
1	29.874568	209.637494
2	35.420866	206.514115
3	40.967165	203.390736
4	44.383582	201.466792
5	47.800000	199.542848
6	53.286537	196.453123
7	58.773074	193.363399
8	62.686537	193.208852
9	66.600000	193.054305
10	71.866766	192.846314

11	77.133533	192.638324
12	82.400299	192.430333
13	87.667065	192.222343
14	92.933832	192.014352
15	98.200598	191.806362
16	103.467365	191.598371
17	108.734131	191.390381
18	114.189421	191.224613
19	119.644710	191.058844
20	125.100000	190.893076
21	130.009599	190.743890
22	134.919198	190.594703
23	139.828798	190.445517
24	144.738397	190.296330
25	149.647996	190.147144
26	150.600000	190.118215
27	153.250000	190.037691
28	155.900000	189.957166
29	160.986364	189.802608
30	166.072727	189.648050
31	171.159091	189.493493
32	176.245455	189.338935
33	181.331818	189.184377
34	186.418182	189.029819
35	191.504545	188.875262
36	196.590909	188.720704
37	201.677273	188.566146
38	206.763636	188.411588
39	211.850000	188.257030
40	216.936364	188.102473
41	222.022727	187.947915
42	227.109091	187.793357
43	232.195455	187.638799
44	237.281818	187.484242
45	242.368182	187.329684
46	247.454545	187.175126
47	252.540909	187.020568
48	257.627273	186.866010
49	262.713636	186.711453
50	267.800000	186.556895
51	272.684615	186.408468
52	277.569231	186.260040
53	282.453846	186.111613
54	287.338462	185.963186
55	292.223077	185.814758
56	297.107692	185.666331
57	301.992308	185.517904
58	306.876923	185.369476
59	311.761538	185.221049
60	316.646154	185.072622
61	321.530769	184.924194
62	326.415385	184.775767
63	331.300000	184.627340
64	336.050000	184.483003
65	340.800000	184.338666
66	345.550000	184.194329
67	350.300000	184.049993
68	355.050000	183.905656
69	359.800000	183.761319
70	364.825000	183.608626
71	369.850000	183.455933
72	374.875000	183.303240
73	379.900000	183.150546
74	384.925000	182.997853
75	389.950000	182.845160
76	394.975000	182.692467
77	400.000000	182.539774
78	405.000000	182.387840
79	410.000000	182.235907
80	415.000000	182.083973
81	420.000000	181.932040
82	425.000000	181.780106
83	430.000000	181.628173
84	435.000000	181.476240
85	440.000000	181.324306
86	445.000000	181.172373
87	450.000000	181.020439
88	455.000000	180.868506
89	460.000000	180.716572
90	465.000000	180.564639
91	470.000000	180.412705
92	475.000000	180.260772
93	480.000000	180.108838
94	485.000000	179.956905
95	490.000000	179.804971
96	495.000000	179.653038
97	500.000000	179.501104
98	505.000000	179.349171
99	507.550000	179.271685
100	510.100000	179.194199
101	513.200000	179.100000
102	518.233333	183.105833
103	523.266667	187.111665
104	528.300000	191.117498
105	533.333333	195.123330
106	538.366667	199.129163
107	543.400000	203.134995
108	548.540000	207.225720
109	553.680000	211.316444
110	558.820000	215.407168
111	563.960000	219.497893
112	569.100000	223.588617
113	574.154839	227.611565
114	579.209677	231.634513
115	584.264516	235.657461
116	589.319355	239.680408
117	594.374194	243.703356
118	599.429032	247.726304
119	604.483871	251.749252
120	609.538710	255.772200
121	614.593548	259.795148
122	619.648387	263.818095
123	624.703226	267.841043
124	629.758065	271.863991
125	634.812903	275.886939
126	639.867742	279.909887
127	644.922581	283.932835
128	649.977419	287.955782
129	655.032258	291.978730
130	660.087097	296.001678

131	665.141935	300.024626
132	670.196774	304.047574
133	675.251613	308.070522
134	680.306452	312.093469
135	685.361290	316.116417
136	690.416129	320.139365
137	695.470968	324.162313
138	700.525806	328.185261
139	705.580645	332.208209
140	710.635484	336.231156
141	715.690323	340.254104
142	720.745161	344.277052
143	725.800000	348.300000
144	725.825307	348.341817
145	725.847861	348.379085

Table 3 - Force and Pore Pressure Data On The 144 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ubeta Stress Top (psf)	Ualpha Force Bot (lbs)	Pore Pressure (psf)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1066.4	0.0	0.0	0.0	0.0	160.0	0.0	0.00
2	3199.3	0.0	0.0	0.0	0.0	479.9	0.0	0.00
3	3032.2	0.0	0.0	0.0	0.0	454.8	0.0	0.00
4	3841.5	0.0	0.0	0.0	0.0	576.2	0.0	0.00
5	7908.5	0.0	0.0	0.0	0.0	1186.3	0.0	0.00
6	10087.6	0.0	0.0	0.0	0.0	1513.1	0.0	0.00
7	8045.6	0.0	0.0	0.0	0.0	1206.8	0.0	0.00
8	8191.9	0.0	0.0	0.0	0.0	1228.8	0.0	0.00
9	11255.7	0.0	0.0	0.0	0.0	1688.3	0.0	0.00
10	11520.6	0.0	0.0	0.0	0.0	1728.1	0.0	0.00
11	11785.5	0.0	0.0	0.0	0.0	1767.8	0.0	0.00
12	12050.5	0.0	0.0	0.0	0.0	1807.6	0.0	0.00
13	12315.4	0.0	0.0	0.0	0.0	1847.3	0.0	0.00
14	12580.4	0.0	0.0	0.0	0.0	1887.1	0.0	0.00
15	12845.3	0.0	0.0	0.0	0.0	1926.8	0.0	0.00
16	13110.3	0.0	0.0	0.0	0.0	1966.5	0.0	0.00
17	13842.6	0.0	0.0	0.0	0.0	2076.4	0.0	0.00
18	14094.4	0.0	0.0	0.0	0.0	2114.2	0.0	0.00
19	14346.1	0.0	0.0	0.0	0.0	2151.9	0.0	0.00
20	13209.2	0.0	0.0	0.0	0.0	1981.4	0.0	0.00
21	13578.8	0.0	0.0	0.0	0.0	2036.8	0.0	0.00
22	13948.4	0.0	0.0	0.0	0.0	2092.3	0.0	0.00
23	14318.0	0.0	0.0	0.0	0.0	2147.7	0.0	0.00
24	14687.7	0.0	0.0	0.0	0.0	2203.2	0.0	0.00
25	2890.8	0.0	0.0	0.0	0.0	433.6	0.0	0.00
26	8120.1	0.0	0.0	0.0	0.0	1218.0	0.0	0.00
27	8227.8	0.0	0.0	0.0	0.0	1234.2	0.0	0.00
28	16331.2	0.0	0.0	0.0	0.0	2449.7	0.0	0.00
29	17202.3	0.0	0.0	0.0	0.0	2580.4	0.0	0.00
30	18073.5	0.0	0.0	0.0	0.0	2711.0	0.0	0.00
31	18944.7	0.0	0.0	0.0	0.0	2841.7	0.0	0.00
32	19815.8	0.0	0.0	0.0	0.0	2972.4	0.0	0.00
33	20687.0	0.0	0.0	0.0	0.0	3103.0	0.0	0.00
34	21558.2	0.0	0.0	0.0	0.0	3233.7	0.0	0.00
35	22429.3	0.0	0.0	0.0	0.0	3364.4	0.0	0.00
36	23300.5	0.0	0.0	0.0	0.0	3495.1	0.0	0.00
37	24171.6	0.0	0.0	0.0	0.0	3625.7	0.0	0.00
38	25042.8	0.0	0.0	0.0	0.0	3756.4	0.0	0.00
39	25914.0	0.0	0.0	0.0	0.0	3887.1	0.0	0.00
40	26785.1	0.0	0.0	0.0	0.0	4017.8	0.0	0.00
41	27656.3	0.0	0.0	0.0	0.0	4148.4	0.0	0.00
42	28527.5	0.0	0.0	0.0	0.0	4279.1	0.0	0.00
43	29398.6	0.0	0.0	0.0	0.0	4409.8	0.0	0.00
44	30269.8	0.0	0.0	0.0	0.0	4540.5	0.0	0.00
45	31140.9	0.0	0.0	0.0	0.0	4671.1	0.0	0.00
46	32012.1	0.0	0.0	0.0	0.0	4801.8	0.0	0.00
47	32883.3	0.0	0.0	0.0	0.0	4932.5	0.0	0.00
48	33754.4	0.0	0.0	0.0	0.0	5063.2	0.0	0.00
49	34625.6	0.0	0.0	0.0	0.0	5193.8	0.0	0.00
50	33962.0	0.0	0.0	0.0	0.0	5094.3	0.0	0.00
51	34545.0	0.0	0.0	0.0	0.0	5181.7	0.0	0.00
52	35127.9	0.0	0.0	0.0	0.0	5269.2	0.0	0.00
53	35710.9	0.0	0.0	0.0	0.0	5356.6	0.0	0.00
54	36293.9	0.0	0.0	0.0	0.0	5444.1	0.0	0.00
55	36876.9	0.0	0.0	0.0	0.0	5531.5	0.0	0.00
56	37459.9	0.0	0.0	0.0	0.0	5619.0	0.0	0.00
57	38042.8	0.0	0.0	0.0	0.0	5706.4	0.0	0.00
58	38625.8	0.0	0.0	0.0	0.0	5793.9	0.0	0.00
59	39208.8	0.0	0.0	0.0	0.0	5881.3	0.0	0.00
60	39791.8	0.0	0.0	0.0	0.0	5968.8	0.0	0.00
61	40374.7	0.0	0.0	0.0	0.0	6056.2	0.0	0.00
62	40957.7	0.0	0.0	0.0	0.0	6143.7	0.0	0.00
63	40362.6	0.0	0.0	0.0	0.0	6054.4	0.0	0.00
64	40862.8	0.0	0.0	0.0	0.0	6129.4	0.0	0.00
65	41363.1	0.0	0.0	0.0	0.0	6204.5	0.0	0.00
66	41863.4	0.0	0.0	0.0	0.0	6279.5	0.0	0.00
67	42363.6	0.0	0.0	0.0	0.0	6354.5	0.0	0.00
68	42863.9	0.0	0.0	0.0	0.0	6429.6	0.0	0.00
69	45765.5	0.0	0.0	0.0	0.0	6864.8	0.0	0.00
70	46076.1	0.0	0.0	0.0	0.0	6911.4	0.0	0.00
71	46386.8	0.0	0.0	0.0	0.0	6958.0	0.0	0.00
72	46697.4	0.0	0.0	0.0	0.0	7004.6	0.0	0.00
73	47008.1	0.0	0.0	0.0	0.0	7051.2	0.0	0.00
74	47318.8	0.0	0.0	0.0	0.0	7097.8	0.0	0.00
75	47629.4	0.0	0.0	0.0	0.0	7144.4	0.0	0.00
76	47940.1	0.0	0.0	0.0	0.0	7191.0	0.0	0.00
77	48057.4	0.0	0.0	0.0	0.0	7208.6	0.0	0.00
78	48460.0	0.0	0.0	0.0	0.0	7269.0	0.0	0.00
79	48862.6	0.0	0.0	0.0	0.0	7329.4	0.0	0.00
80	49265.2	0.0	0.0	0.0	0.0	7389.8	0.0	0.00
81	49667.8	0.0	0.0	0.0	0.0	7450.2	0.0	0.00
82	50070.4	0.0	0.0	0.0	0.0	7510.6	0.0	0.00
83	50473.0	0.0	0.0	0.0	0.0	7570.9	0.0	0.00
84	50875.6	0.0	0.0	0.0	0.0	7631.3	0.0	0.00
85	51278.1	0.0	0.0	0.0	0.0	7691.7	0.0	0.00
86	51680.7	0.0	0.0	0.0	0.0	7752.1	0.0	0.00
87	52083.3	0.0	0.0	0.0	0.0	7812.5	0.0	0.00
88	52485.9	0.0	0.0	0.0	0.0	7872.9	0.0	0.00
89	52888.5	0.0	0.0	0.0	0.0	7933.3	0.0	0.00
90	53291.1	0.0	0.0	0.0	0.0	7993.7	0.0	0.00
91	53693.7	0.0	0.0	0.0	0.0	8054.1	0.0	0.00
92	54096.3	0.0	0.0	0.0	0.0	8114.4	0.0	0.00
93	54498.8	0.0	0.0	0.0	0.0	8174.8	0.0	0.00
94	54901.4	0.0	0.0	0.0	0.0	8235.2	0.0	0.00
95	55304.0	0.0	0.0	0.0	0.0	8295.6	0.0	0.00
96	55706.6	0.0	0.0	0.0	0.0	8356.0	0.0	0.00

97	56109.2	0.0	0.0	0.0	0.0	8416.4	0.0	0.00
98	28813.5	0.0	0.0	0.0	0.0	4322.0	0.0	0.00
99	29003.9	0.0	0.0	0.0	0.0	4350.6	0.0	0.00
100	35515.9	0.0	0.0	0.0	0.0	5327.4	0.0	0.00
101	57008.9	0.0	0.0	0.0	0.0	8551.3	0.0	0.00
102	55238.5	0.0	0.0	0.0	0.0	8285.8	0.0	0.00
103	53468.2	0.0	0.0	0.0	0.0	8020.2	0.0	0.00
104	51697.9	0.0	0.0	0.0	0.0	7754.7	0.0	0.00
105	49927.6	0.0	0.0	0.0	0.0	7489.1	0.0	0.00
106	48157.2	0.0	0.0	0.0	0.0	7223.6	0.0	0.00
107	47265.2	0.0	0.0	0.0	0.0	7089.8	0.0	0.00
108	45247.8	0.0	0.0	0.0	0.0	6787.2	0.0	0.00
109	43230.4	0.0	0.0	0.0	0.0	6484.6	0.0	0.00
110	41213.0	0.0	0.0	0.0	0.0	6182.0	0.0	0.00
111	39195.6	0.0	0.0	0.0	0.0	5879.3	0.0	0.00
112	36949.1	0.0	0.0	0.0	0.0	5542.4	0.0	0.00
113	35738.9	0.0	0.0	0.0	0.0	5360.8	0.0	0.00
114	34528.6	0.0	0.0	0.0	0.0	5179.3	0.0	0.00
115	33318.4	0.0	0.0	0.0	0.0	4997.8	0.0	0.00
116	32108.1	0.0	0.0	0.0	0.0	4816.2	0.0	0.00
117	30897.8	0.0	0.0	0.0	0.0	4634.7	0.0	0.00
118	29687.6	0.0	0.0	0.0	0.0	4453.1	0.0	0.00
119	28477.3	0.0	0.0	0.0	0.0	4271.6	0.0	0.00
120	27267.1	0.0	0.0	0.0	0.0	4090.1	0.0	0.00
121	26056.8	0.0	0.0	0.0	0.0	3908.5	0.0	0.00
122	24846.6	0.0	0.0	0.0	0.0	3727.0	0.0	0.00
123	23636.3	0.0	0.0	0.0	0.0	3545.4	0.0	0.00
124	22426.1	0.0	0.0	0.0	0.0	3363.9	0.0	0.00
125	21215.8	0.0	0.0	0.0	0.0	3182.4	0.0	0.00
126	20005.5	0.0	0.0	0.0	0.0	3000.8	0.0	0.00
127	18795.3	0.0	0.0	0.0	0.0	2819.3	0.0	0.00
128	17585.0	0.0	0.0	0.0	0.0	2637.8	0.0	0.00
129	16374.8	0.0	0.0	0.0	0.0	2456.2	0.0	0.00
130	15164.5	0.0	0.0	0.0	0.0	2274.7	0.0	0.00
131	13954.3	0.0	0.0	0.0	0.0	2093.1	0.0	0.00
132	12744.0	0.0	0.0	0.0	0.0	1911.6	0.0	0.00
133	11533.8	0.0	0.0	0.0	0.0	1730.1	0.0	0.00
134	10323.5	0.0	0.0	0.0	0.0	1548.5	0.0	0.00
135	9113.2	0.0	0.0	0.0	0.0	1367.0	0.0	0.00
136	7903.0	0.0	0.0	0.0	0.0	1185.4	0.0	0.00
137	6692.7	0.0	0.0	0.0	0.0	1003.9	0.0	0.00
138	5482.5	0.0	0.0	0.0	0.0	822.4	0.0	0.00
139	4272.2	0.0	0.0	0.0	0.0	640.8	0.0	0.00
140	3062.0	0.0	0.0	0.0	0.0	459.3	0.0	0.00
141	1851.7	0.0	0.0	0.0	0.0	277.8	0.0	0.00
142	641.5	0.0	0.0	0.0	0.0	96.2	0.0	0.00
143	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.00
144	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

TOTAL WEIGHT OF SLIDING MASS = 4247492.08(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 4247492.08(lbs)

TOTAL AREA OF SLIDING MASS = 35395.77(ft2)

TABLE 4 - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 144 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	2	250.00	22.00	A
4	2	250.00	22.00	A
5	2	250.00	22.00	A
6	2	250.00	22.00	A
7	2	0.00	15.00	A
8	2	0.00	15.00	A
9	2	0.00	15.00	A
10	2	0.00	15.00	A
11	2	0.00	15.00	A
12	2	0.00	15.00	A
13	2	0.00	15.00	A
14	2	0.00	15.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	2	0.00	15.00	A
23	2	0.00	15.00	A
24	2	0.00	15.00	A
25	4	0.00	15.00	A
26	4	0.00	15.00	A
27	4	0.00	15.00	A
28	4	0.00	15.00	A
29	4	0.00	15.00	A
30	4	0.00	15.00	A
31	4	0.00	15.00	A
32	4	0.00	15.00	A
33	4	0.00	15.00	A
34	4	0.00	15.00	A
35	4	0.00	15.00	A
36	4	0.00	15.00	A
37	4	0.00	15.00	A
38	4	0.00	15.00	A
39	4	0.00	15.00	A
40	4	0.00	15.00	A
41	4	0.00	15.00	A
42	4	0.00	15.00	A
43	4	0.00	15.00	A
44	4	0.00	15.00	A
45	4	0.00	15.00	A
46	4	0.00	15.00	A
47	4	0.00	15.00	A
48	4	0.00	15.00	A
49	4	0.00	15.00	A
50	4	0.00	15.00	A
51	4	0.00	15.00	A
52	4	0.00	15.00	A
53	4	0.00	15.00	A
54	4	0.00	15.00	A
55	4	0.00	15.00	A
56	4	0.00	15.00	A
57	4	0.00	15.00	A
58	4	0.00	15.00	A
59	4	0.00	15.00	A
60	4	0.00	15.00	A

61	4	0.00	15.00	A
62	4	0.00	15.00	A
63	4	0.00	15.00	A
64	4	0.00	15.00	A
65	4	0.00	15.00	A
66	4	0.00	15.00	A
67	4	0.00	15.00	A
68	4	0.00	15.00	A
69	4	0.00	15.00	A
70	4	0.00	15.00	A
71	4	0.00	15.00	A
72	4	0.00	15.00	A
73	4	0.00	15.00	A
74	4	0.00	15.00	A
75	4	0.00	15.00	A
76	4	0.00	15.00	A
77	4	0.00	15.00	A
78	4	0.00	15.00	A
79	4	0.00	15.00	A
80	4	0.00	15.00	A
81	4	0.00	15.00	A
82	4	0.00	15.00	A
83	4	0.00	15.00	A
84	4	0.00	15.00	A
85	4	0.00	15.00	A
86	4	0.00	15.00	A
87	4	0.00	15.00	A
88	4	0.00	15.00	A
89	4	0.00	15.00	A
90	4	0.00	15.00	A
91	4	0.00	15.00	A
92	4	0.00	15.00	A
93	4	0.00	15.00	A
94	4	0.00	15.00	A
95	4	0.00	15.00	A
96	4	0.00	15.00	A
97	4	0.00	15.00	A
98	4	0.00	15.00	A
99	4	0.00	15.00	A
100	4	0.00	15.00	A
101	3	250.00	26.00	
102	3	250.00	26.00	
103	3	250.00	26.00	
104	3	250.00	26.00	
105	3	250.00	26.00	
106	3	250.00	26.00	
107	3	250.00	26.00	
108	3	250.00	26.00	
109	3	250.00	26.00	
110	3	250.00	26.00	
111	3	250.00	26.00	
112	3	250.00	26.00	
113	3	250.00	26.00	
114	3	250.00	26.00	
115	3	250.00	26.00	
116	3	250.00	26.00	
117	3	250.00	26.00	
118	3	250.00	26.00	
119	3	250.00	26.00	
120	3	250.00	26.00	
121	3	250.00	26.00	
122	3	250.00	26.00	
123	3	250.00	26.00	
124	3	250.00	26.00	
125	3	250.00	26.00	
126	3	250.00	26.00	
127	3	250.00	26.00	
128	3	250.00	26.00	
129	3	250.00	26.00	
130	3	250.00	26.00	
131	3	250.00	26.00	
132	3	250.00	26.00	
133	3	250.00	26.00	
134	3	250.00	26.00	
135	3	250.00	26.00	
136	3	250.00	26.00	
137	3	250.00	26.00	
138	3	250.00	26.00	
139	3	250.00	26.00	
140	3	250.00	26.00	
141	3	250.00	26.00	
142	3	250.00	26.00	
143	3	250.00	26.00	
144	2	250.00	22.00	A

SOIL OPTIONS:
A = ANISOTROPIC SHEAR STRENGTH
C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C)
F = FIBER-REINFORCED SOIL (FRS)
M = INDEPENDENT MULTI-STAGE SHEAR STRENGTH
N = NONLINEAR UNDRAINED SHEAR STRENGTH
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified Soil Options (if any).

TABLE 5 - Total Base Stress Data on the 144 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Stress (psf)	Total Vert. Stress (psf)	Total Normal/Vert. Stress Ratio
1	-29.39	32.65	6.37	704.62	192.28	3.665
2	-29.39	38.19	6.37	1478.86	576.83	2.564
3	-29.39	42.68	3.92	2049.74	887.54	2.309
4	-29.39	46.09	3.92	2497.38	1124.42	2.221
5	-29.39	50.54	6.30	3096.48	1441.44	2.148
6	-29.39	56.03	6.30	3847.03	1838.61	2.092
7	-2.26	60.73	3.92	2162.47	2055.89	1.052
8	-2.26	64.64	3.92	2201.79	2093.27	1.052
9	-2.26	69.23	5.27	2247.90	2137.11	1.052
10	-2.26	74.50	5.27	2300.82	2187.41	1.052
11	-2.26	79.77	5.27	2353.73	2237.72	1.052
12	-2.26	85.03	5.27	2406.64	2288.02	1.052
13	-2.26	90.30	5.27	2459.55	2338.33	1.052
14	-2.26	95.57	5.27	2512.47	2388.63	1.052
15	-2.26	100.83	5.27	2565.38	2438.94	1.052
16	-2.26	106.10	5.27	2618.29	2489.24	1.052
17	-1.74	111.46	5.46	2653.77	2537.47	1.046

18	-1.74	116.92	5.46	2702.03	2583.61	1.046
19	-1.74	122.37	5.46	2750.29	2629.76	1.046
20	-1.74	127.55	4.91	2813.79	2690.47	1.046
21	-1.74	132.46	4.91	2892.52	2765.76	1.046
22	-1.74	137.37	4.91	2971.26	2841.05	1.046
23	-1.74	142.28	4.91	3050.00	2916.34	1.046
24	-1.74	147.19	4.91	3128.74	2991.62	1.046
25	-1.74	150.12	0.95	3175.74	3036.57	1.046
26	-1.74	151.93	2.65	3204.63	3064.18	1.046
27	-1.74	154.57	2.65	3247.12	3104.82	1.046
28	-1.74	158.44	5.09	3357.94	3210.78	1.046
29	-1.74	163.53	5.09	3537.06	3382.05	1.046
30	-1.74	168.62	5.09	3716.18	3553.33	1.046
31	-1.74	173.70	5.09	3895.31	3724.60	1.046
32	-1.74	178.79	5.09	4074.43	3895.87	1.046
33	-1.74	183.88	5.09	4253.56	4067.15	1.046
34	-1.74	188.96	5.09	4432.68	4238.42	1.046
35	-1.74	194.05	5.09	4611.81	4409.70	1.046
36	-1.74	199.13	5.09	4790.93	4580.97	1.046
37	-1.74	204.22	5.09	4970.05	4752.25	1.046
38	-1.74	209.31	5.09	5149.18	4923.52	1.046
39	-1.74	214.39	5.09	5328.30	5094.79	1.046
40	-1.74	219.48	5.09	5507.43	5266.07	1.046
41	-1.74	224.57	5.09	5686.55	5437.34	1.046
42	-1.74	229.65	5.09	5865.68	5608.62	1.046
43	-1.74	234.74	5.09	6044.80	5779.89	1.046
44	-1.74	239.83	5.09	6223.92	5951.16	1.046
45	-1.74	244.91	5.09	6403.05	6122.44	1.046
46	-1.74	250.00	5.09	6582.17	6293.71	1.046
47	-1.74	255.08	5.09	6761.30	6464.99	1.046
48	-1.74	260.17	5.09	6940.42	6636.26	1.046
49	-1.74	265.26	5.09	7119.54	6807.54	1.046
50	-1.74	270.24	4.89	7271.52	6952.85	1.046
51	-1.74	275.13	4.89	7396.34	7072.20	1.046
52	-1.74	280.01	4.89	7521.16	7191.55	1.046
53	-1.74	284.90	4.89	7645.98	7310.90	1.046
54	-1.74	289.78	4.89	7770.80	7430.25	1.046
55	-1.74	294.67	4.89	7895.62	7549.60	1.046
56	-1.74	299.55	4.89	8020.44	7668.95	1.046
57	-1.74	304.43	4.89	8145.26	7788.30	1.046
58	-1.74	309.32	4.89	8270.08	7907.65	1.046
59	-1.74	314.20	4.89	8394.90	8027.00	1.046
60	-1.74	319.09	4.89	8519.72	8146.34	1.046
61	-1.74	323.97	4.89	8644.54	8265.69	1.046
62	-1.74	328.86	4.89	8769.36	8385.04	1.046
63	-1.74	333.68	4.75	8886.84	8497.38	1.046
64	-1.74	338.43	4.75	8996.99	8602.70	1.046
65	-1.74	343.18	4.75	9107.13	8708.02	1.046
66	-1.74	347.93	4.75	9217.28	8813.34	1.046
67	-1.74	352.68	4.75	9327.43	8918.66	1.046
68	-1.74	357.43	4.75	9437.58	9023.98	1.046
69	-1.74	362.31	5.03	9524.98	9107.55	1.046
70	-1.74	367.34	5.03	9589.64	9169.38	1.046
71	-1.74	372.36	5.03	9654.29	9231.20	1.046
72	-1.74	377.39	5.03	9718.95	9293.02	1.046
73	-1.74	382.41	5.03	9783.61	9354.85	1.046
74	-1.74	387.44	5.03	9848.26	9416.67	1.046
75	-1.74	392.46	5.03	9912.92	9478.49	1.046
76	-1.74	397.49	5.03	9977.58	9540.32	1.046
77	-1.74	402.50	5.00	10052.01	9611.49	1.046
78	-1.74	407.50	5.00	10136.22	9692.00	1.046
79	-1.74	412.50	5.00	10220.42	9772.52	1.046
80	-1.74	417.50	5.00	10304.63	9853.04	1.046
81	-1.74	422.50	5.00	10388.84	9933.56	1.046
82	-1.74	427.50	5.00	10473.05	10014.07	1.046
83	-1.74	432.50	5.00	10557.26	10094.59	1.046
84	-1.74	437.50	5.00	10641.47	10175.11	1.046
85	-1.74	442.50	5.00	10725.67	10255.63	1.046
86	-1.74	447.50	5.00	10809.88	10336.15	1.046
87	-1.74	452.50	5.00	10894.09	10416.66	1.046
88	-1.74	457.50	5.00	10978.30	10497.18	1.046
89	-1.74	462.50	5.00	11062.51	10577.70	1.046
90	-1.74	467.50	5.00	11146.71	10658.22	1.046
91	-1.74	472.50	5.00	11230.92	10738.73	1.046
92	-1.74	477.50	5.00	11315.13	10819.25	1.046
93	-1.74	482.50	5.00	11399.34	10899.77	1.046
94	-1.74	487.50	5.00	11483.55	10980.29	1.046
95	-1.74	492.50	5.00	11567.75	11060.81	1.046
96	-1.74	497.50	5.00	11651.96	11141.32	1.046
97	-1.74	502.50	5.00	11736.17	11221.84	1.046
98	-1.74	506.27	2.55	11817.31	11299.42	1.046
99	-1.74	508.83	2.55	11895.37	11374.06	1.046
100	-1.74	511.65	3.10	11981.85	11456.75	1.046
101	38.51	515.72	6.43	7307.05	11326.26	0.645
102	38.51	520.75	6.43	7078.19	10974.54	0.645
103	38.51	525.78	6.43	6849.33	10622.82	0.645
104	38.51	530.82	6.43	6620.47	10271.10	0.645
105	38.51	535.85	6.43	6391.61	9919.38	0.644
106	38.51	540.88	6.43	6162.75	9567.66	0.644
107	38.51	545.97	6.57	5920.63	9195.56	0.644
108	38.51	551.11	6.57	5665.24	8803.07	0.644
109	38.51	556.25	6.57	5409.86	8410.58	0.643
110	38.51	561.39	6.57	5154.47	8018.10	0.643
111	38.51	566.53	6.57	4899.09	7625.61	0.642
112	38.51	571.63	6.46	4693.50	7309.65	0.642
113	38.51	576.68	6.46	4537.71	7070.23	0.642
114	38.51	581.74	6.46	4381.92	6830.80	0.641
115	38.51	586.79	6.46	4237.44	6591.38	0.643
116	38.51	591.85	6.46	4101.92	6351.95	0.646
117	38.51	596.90	6.46	3964.81	6112.53	0.649
118	38.51	601.96	6.46	3826.12	5873.10	0.651
119	38.51	607.01	6.46	3685.82	5633.68	0.654
120	38.51	612.07	6.46	3543.89	5394.25	0.657
121	38.51	617.12	6.46	3400.32	5154.83	0.660
122	38.51	622.18	6.46	3255.09	4915.40	0.662
123	38.51	627.23	6.46	3108.19	4675.98	0.665
124	38.51	632.29	6.46	2959.58	4436.55	0.667
125	38.51	637.34	6.46	2809.27	4197.13	0.669
126	38.51	642.40	6.46	2657.22	3957.70	0.671
127	38.51	647.45	6.46	2503.42	3718.28	0.673
128	38.51	652.50	6.46	2347.85	3478.85	0.675
129	38.51	657.56	6.46	2190.49	3239.43	0.676
130	38.51	662.61	6.46	2031.32	3000.00	0.677
131	38.51	667.67	6.46	1870.33	2760.58	0.678
132	38.51	672.72	6.46	1707.48	2521.15	0.677
133	38.51	677.78	6.46	1542.76	2281.73	0.676
134	38.51	682.83	6.46	1376.16	2042.30	0.674
135	38.51	687.89	6.46	1207.64	1802.87	0.670
136	38.51	692.94	6.46	1037.19	1563.45	0.663
137	38.51	698.00	6.46	864.79	1324.02	0.653

138	38.51	703.05	6.46	690.41	1084.60	0.637
139	38.51	708.11	6.46	514.03	845.17	0.608
140	38.51	713.16	6.46	335.63	605.75	0.554
141	38.51	718.22	6.46	155.18	366.32	0.424
142	38.51	723.27	6.46	-27.33	126.90	-0.215
143	58.82	725.81	0.05	-200.60	5.29	-37.946
144	58.82	725.84	0.04	-217.63	1.69	*******

TABLE 5A - Total Base Force Data on the 144 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Total Normal Force (lbs)	Total Vert. Force (lbs)	Total Normal/Vert. Force Ratio
1	-29.39	32.65	6.37	4485.12	1066.42	4.206
2	-29.39	38.19	6.37	9413.38	3199.26	2.942
3	-29.39	42.68	3.92	8036.84	3032.22	2.650
4	-29.39	46.09	3.92	9791.99	3841.49	2.549
5	-29.39	50.54	6.30	19497.60	7908.53	2.465
6	-29.39	56.03	6.30	24223.60	10087.62	2.401
7	-2.26	60.73	3.92	8469.35	8045.64	1.053
8	-2.26	64.64	3.92	8623.34	8191.92	1.053
9	-2.26	69.23	5.27	11848.41	11255.66	1.053
10	-2.26	74.50	5.27	12127.31	11520.60	1.053
11	-2.26	79.77	5.27	12406.20	11785.54	1.053
12	-2.26	85.03	5.27	12685.10	12050.49	1.053
13	-2.26	90.30	5.27	12964.00	12315.43	1.053
14	-2.26	95.57	5.27	13242.89	12580.37	1.053
15	-2.26	100.83	5.27	13521.79	12845.32	1.053
16	-2.26	106.10	5.27	13800.68	13110.26	1.053
17	-1.74	111.46	5.46	14483.75	13842.62	1.046
18	-1.74	116.92	5.46	14747.15	14094.36	1.046
19	-1.74	122.37	5.46	15010.54	14346.09	1.046
20	-1.74	127.55	4.91	13820.94	13209.15	1.046
21	-1.74	132.46	4.91	14207.69	13578.78	1.046
22	-1.74	137.37	4.91	14594.44	13948.41	1.046
23	-1.74	142.28	4.91	14981.19	14318.04	1.046
24	-1.74	147.19	4.91	15367.94	14687.67	1.046
25	-1.74	150.12	0.95	3024.71	2890.82	1.046
26	-1.74	151.93	2.65	8496.18	8120.09	1.046
27	-1.74	154.57	2.65	8608.85	8227.78	1.046
28	-1.74	158.44	5.09	17087.57	16331.18	1.046
29	-1.74	163.53	5.09	17999.08	17202.34	1.046
30	-1.74	168.62	5.09	18910.59	18073.51	1.046
31	-1.74	173.70	5.09	19822.10	18944.67	1.046
32	-1.74	178.79	5.09	20733.62	19815.83	1.046
33	-1.74	183.88	5.09	21645.13	20686.99	1.046
34	-1.74	188.96	5.09	22556.64	21558.16	1.046
35	-1.74	194.05	5.09	23468.15	22429.32	1.046
36	-1.74	199.13	5.09	24379.66	23300.48	1.046
37	-1.74	204.22	5.09	25291.17	24171.65	1.046
38	-1.74	209.31	5.09	26202.68	25042.81	1.046
39	-1.74	214.39	5.09	27114.20	25913.97	1.046
40	-1.74	219.48	5.09	28025.71	26785.14	1.046
41	-1.74	224.57	5.09	28937.22	27656.30	1.046
42	-1.74	229.65	5.09	29848.73	28527.46	1.046
43	-1.74	234.74	5.09	30760.24	29398.62	1.046
44	-1.74	239.83	5.09	31671.75	30269.79	1.046
45	-1.74	244.91	5.09	32583.26	31140.95	1.046
46	-1.74	250.00	5.09	33494.77	32012.11	1.046
47	-1.74	255.08	5.09	34406.29	32883.28	1.046
48	-1.74	260.17	5.09	35317.80	33754.44	1.046
49	-1.74	265.26	5.09	36229.31	34625.60	1.046
50	-1.74	270.24	4.89	35534.96	33961.99	1.046
51	-1.74	275.13	4.89	36144.94	34544.96	1.046
52	-1.74	280.01	4.89	36754.92	35127.94	1.046
53	-1.74	284.90	4.89	37364.89	35710.92	1.046
54	-1.74	289.78	4.89	37974.87	36293.90	1.046
55	-1.74	294.67	4.89	38584.85	36876.87	1.046
56	-1.74	299.55	4.89	39194.83	37459.85	1.046
57	-1.74	304.43	4.89	39804.81	38042.83	1.046
58	-1.74	309.32	4.89	40414.79	38625.81	1.046
59	-1.74	314.20	4.89	41024.77	39208.78	1.046
60	-1.74	319.09	4.89	41634.74	39791.76	1.046
61	-1.74	323.97	4.89	42244.72	40374.74	1.046
62	-1.74	328.86	4.89	42854.70	40957.72	1.046
63	-1.74	333.68	4.75	42231.97	40362.55	1.046
64	-1.74	338.43	4.75	42755.41	40862.82	1.046
65	-1.74	343.18	4.75	43278.86	41363.10	1.046
66	-1.74	347.93	4.75	43802.30	41863.37	1.046
67	-1.74	352.68	4.75	44325.74	42363.64	1.046
68	-1.74	357.43	4.75	44849.18	42863.91	1.046
69	-1.74	362.31	5.03	47885.11	45765.46	1.046
70	-1.74	367.34	5.03	48210.16	46076.12	1.046
71	-1.74	372.36	5.03	48535.21	46386.78	1.046
72	-1.74	377.39	5.03	48860.26	46697.44	1.046
73	-1.74	382.41	5.03	49185.31	47008.10	1.046
74	-1.74	387.44	5.03	49510.36	47318.76	1.046
75	-1.74	392.46	5.03	49835.41	47629.42	1.046
76	-1.74	397.49	5.03	50160.46	47940.09	1.046
77	-1.74	402.50	5.00	50283.24	48057.43	1.046
78	-1.74	407.50	5.00	50704.48	48460.02	1.046
79	-1.74	412.50	5.00	51125.71	48862.61	1.046
80	-1.74	417.50	5.00	51546.95	49265.20	1.046
81	-1.74	422.50	5.00	51968.18	49667.78	1.046
82	-1.74	427.50	5.00	52389.42	50070.37	1.046
83	-1.74	432.50	5.00	52810.65	50472.96	1.046
84	-1.74	437.50	5.00	53231.89	50875.55	1.046
85	-1.74	442.50	5.00	53653.12	51278.14	1.046
86	-1.74	447.50	5.00	54074.36	51680.73	1.046
87	-1.74	452.50	5.00	54495.59	52083.32	1.046
88	-1.74	457.50	5.00	54916.83	52485.91	1.046
89	-1.74	462.50	5.00	55338.06	52888.49	1.046
90	-1.74	467.50	5.00	55759.29	53291.08	1.046
91	-1.74	472.50	5.00	56180.53	53693.67	1.046
92	-1.74	477.50	5.00	56601.76	54096.26	1.046
93	-1.74	482.50	5.00	57023.00	54498.85	1.046
94	-1.74	487.50	5.00	57444.23	54901.44	1.046
95	-1.74	492.50	5.00	57865.47	55304.03	1.046
96	-1.74	497.50	5.00	58286.70	55706.61	1.046
97	-1.74	502.50	5.00	58707.94	56109.20	1.046
98	-1.74	506.27	2.55	30148.04	28813.52	1.046
99	-1.74	508.83	2.55	30347.19	29003.86	1.046
100	-1.74	511.65	3.10	37160.88	35515.94	1.046
101	38.51	515.72	6.43	47004.92	57008.87	0.825
102	38.51	520.75	6.43	45532.70	55238.54	0.824
103	38.51	525.78	6.43	44060.49	53468.21	0.824
104	38.51	530.82	6.43	42588.28	51697.88	0.824
105	38.51	535.85	6.43	41116.07	49927.55	0.824

106	38.51	540.88	6.43	39643.85	48157.23	0.823
107	38.51	545.97	6.57	38893.45	47265.16	0.823
108	38.51	551.11	6.57	37215.79	45247.78	0.822
109	38.51	556.25	6.57	35538.12	43230.40	0.822
110	38.51	561.39	6.57	33860.46	41213.02	0.822
111	38.51	566.53	6.57	32182.79	39195.63	0.821
112	38.51	571.63	6.46	30321.42	36949.12	0.821
113	38.51	576.68	6.46	29314.96	35738.86	0.820
114	38.51	581.74	6.46	28308.51	34528.61	0.820
115	38.51	586.79	6.46	27375.16	33318.35	0.822
116	38.51	591.85	6.46	26499.62	32108.10	0.825
117	38.51	596.90	6.46	25613.90	30897.84	0.829
118	38.51	601.96	6.46	24717.90	29687.59	0.833
119	38.51	607.01	6.46	23811.51	28477.33	0.836
120	38.51	612.07	6.46	22894.62	27267.07	0.840
121	38.51	617.12	6.46	21967.11	26056.82	0.843
122	38.51	622.18	6.46	21028.89	24846.56	0.846
123	38.51	627.23	6.46	20079.83	23636.31	0.850
124	38.51	632.29	6.46	19119.81	22426.05	0.853
125	38.51	637.34	6.46	18148.72	21215.80	0.855
126	38.51	642.40	6.46	17166.44	20005.54	0.858
127	38.51	647.45	6.46	16172.85	18795.29	0.860
128	38.51	652.50	6.46	15167.82	17585.03	0.863
129	38.51	657.56	6.46	14151.23	16374.77	0.864
130	38.51	662.61	6.46	13122.96	15164.52	0.865
131	38.51	667.67	6.46	12082.87	13954.26	0.866
132	38.51	672.72	6.46	11030.83	12744.01	0.866
133	38.51	677.78	6.46	9966.72	11533.75	0.864
134	38.51	682.83	6.46	8890.40	10323.50	0.861
135	38.51	687.89	6.46	7801.73	9113.24	0.856
136	38.51	692.94	6.46	6700.57	7902.99	0.848
137	38.51	698.00	6.46	5586.79	6692.73	0.835
138	38.51	703.05	6.46	4460.24	5482.48	0.814
139	38.51	708.11	6.46	3320.78	4272.22	0.777
140	38.51	713.16	6.46	2168.25	3061.96	0.708
141	38.51	718.22	6.46	1002.52	1851.71	0.541
142	38.51	723.27	6.46	-176.56	641.45	-0.275
143	58.82	725.81	0.05	-9.80	0.13	-73.290
144	58.82	725.84	0.04	-9.48	0.04	*******

TABLE 6 - Effective and Base Shear Stress Data on the 144 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-29.39	32.65	6.37	704.62	513.72	420.71
2	-29.39	38.19	6.37	1478.86	858.43	703.01
3	-29.39	42.68	3.92	2049.74	1078.15	882.94
4	-29.39	46.09	3.92	2497.38	1259.01	1031.06
5	-29.39	50.54	6.30	3096.48	1501.06	1229.28
6	-29.39	56.03	6.30	3847.03	1804.30	1477.62
7	-2.26	60.73	3.92	2162.47	579.43	474.52
8	-2.26	64.64	3.92	2201.79	589.97	483.15
9	-2.26	69.23	5.27	2247.90	602.32	493.27
10	-2.26	74.50	5.27	2300.82	616.50	504.88
11	-2.26	79.77	5.27	2353.73	630.68	516.49
12	-2.26	85.03	5.27	2406.64	644.86	528.10
13	-2.26	90.30	5.27	2459.55	659.04	539.71
14	-2.26	95.57	5.27	2512.47	673.21	551.32
15	-2.26	100.83	5.27	2565.38	687.39	562.93
16	-2.26	106.10	5.27	2618.29	701.57	574.55
17	-1.74	111.46	5.46	2653.77	711.07	582.33
18	-1.74	116.92	5.46	2702.03	724.01	592.92
19	-1.74	122.37	5.46	2750.29	736.94	603.51
20	-1.74	127.55	4.91	2813.79	753.95	617.44
21	-1.74	132.46	4.91	2892.52	775.05	634.72
22	-1.74	137.37	4.91	2971.26	796.15	652.00
23	-1.74	142.28	4.91	3050.00	817.25	669.28
24	-1.74	147.19	4.91	3128.74	838.34	686.56
25	-1.74	150.12	0.95	3175.74	850.94	696.87
26	-1.74	151.93	2.65	3204.63	858.68	703.21
27	-1.74	154.57	2.65	3247.12	870.06	712.53
28	-1.74	158.44	5.09	3357.94	899.76	736.85
29	-1.74	163.53	5.09	3537.06	947.75	776.16
30	-1.74	168.62	5.09	3716.18	995.75	815.46
31	-1.74	173.70	5.09	3895.31	1043.74	854.77
32	-1.74	178.79	5.09	4074.43	1091.74	894.07
33	-1.74	183.88	5.09	4253.56	1139.74	933.38
34	-1.74	188.96	5.09	4432.68	1187.73	972.69
35	-1.74	194.05	5.09	4611.81	1235.73	1011.99
36	-1.74	199.13	5.09	4790.93	1283.73	1051.30
37	-1.74	204.22	5.09	4970.05	1331.72	1090.60
38	-1.74	209.31	5.09	5149.18	1379.72	1129.91
39	-1.74	214.39	5.09	5328.30	1427.71	1169.22
40	-1.74	219.48	5.09	5507.43	1475.71	1208.52
41	-1.74	224.57	5.09	5686.55	1523.71	1247.83
42	-1.74	229.65	5.09	5865.68	1571.70	1287.14
43	-1.74	234.74	5.09	6044.80	1619.70	1326.44
44	-1.74	239.83	5.09	6223.92	1667.70	1365.75
45	-1.74	244.91	5.09	6403.05	1715.69	1405.05
46	-1.74	250.00	5.09	6582.17	1763.69	1444.36
47	-1.74	255.08	5.09	6761.30	1811.68	1483.67
48	-1.74	260.17	5.09	6940.42	1859.68	1522.97
49	-1.74	265.26	5.09	7119.54	1907.68	1562.28
50	-1.74	270.24	4.89	7271.52	1948.40	1595.63
51	-1.74	275.13	4.89	7396.34	1981.84	1623.02
52	-1.74	280.01	4.89	7521.16	2015.29	1650.41
53	-1.74	284.90	4.89	7645.98	2048.73	1677.80
54	-1.74	289.78	4.89	7770.80	2082.18	1705.19
55	-1.74	294.67	4.89	7895.62	2115.62	1732.58
56	-1.74	299.55	4.89	8020.44	2149.07	1759.97
57	-1.74	304.43	4.89	8145.26	2182.51	1787.36
58	-1.74	309.32	4.89	8270.08	2215.96	1814.75
59	-1.74	314.20	4.89	8394.90	2249.41	1842.14
60	-1.74	319.09	4.89	8519.72	2282.85	1869.53
61	-1.74	323.97	4.89	8644.54	2316.30	1896.92
62	-1.74	328.86	4.89	8769.36	2349.74	1924.31
63	-1.74	333.68	4.75	8886.84	2381.22	1950.09
64	-1.74	338.43	4.75	8996.99	2410.74	1974.26
65	-1.74	343.18	4.75	9107.13	2440.25	1998.43
66	-1.74	347.93	4.75	9217.28	2469.76	2022.60
67	-1.74	352.68	4.75	9327.43	2499.28	2046.77
68	-1.74	357.43	4.75	9437.58	2528.79	2070.94
69	-1.74	362.31	5.03	9524.98	2552.21	2090.12
70	-1.74	367.34	5.03	9589.64	2569.54	2104.30
71	-1.74	372.36	5.03	9654.29	2586.86	2118.49
72	-1.74	377.39	5.03	9718.95	2604.18	2132.68
73	-1.74	382.41	5.03	9783.61	2621.51	2146.87

74	-1.74	387.44	5.03	9848.26	2638.83	2161.06
75	-1.74	392.46	5.03	9912.92	2656.16	2175.24
76	-1.74	397.49	5.03	9977.58	2673.48	2189.43
77	-1.74	402.50	5.00	10052.01	2693.43	2205.76
78	-1.74	407.50	5.00	10136.22	2715.99	2224.24
79	-1.74	412.50	5.00	10220.42	2738.55	2242.72
80	-1.74	417.50	5.00	10304.63	2761.12	2261.20
81	-1.74	422.50	5.00	10388.84	2783.68	2279.68
82	-1.74	427.50	5.00	10473.05	2806.24	2298.16
83	-1.74	432.50	5.00	10557.26	2828.81	2316.63
84	-1.74	437.50	5.00	10641.47	2851.37	2335.11
85	-1.74	442.50	5.00	10725.67	2873.94	2353.59
86	-1.74	447.50	5.00	10809.88	2896.50	2372.07
87	-1.74	452.50	5.00	10894.09	2919.06	2390.55
88	-1.74	457.50	5.00	10978.30	2941.63	2409.02
89	-1.74	462.50	5.00	11062.51	2964.19	2427.50
90	-1.74	467.50	5.00	11146.71	2986.75	2445.98
91	-1.74	472.50	5.00	11230.92	3009.32	2464.46
92	-1.74	477.50	5.00	11315.13	3031.88	2482.94
93	-1.74	482.50	5.00	11399.34	3054.44	2501.42
94	-1.74	487.50	5.00	11483.55	3077.01	2519.89
95	-1.74	492.50	5.00	11567.75	3099.57	2538.37
96	-1.74	497.50	5.00	11651.96	3122.13	2556.85
97	-1.74	502.50	5.00	11736.17	3144.70	2575.33
98	-1.74	506.27	2.55	11817.31	3166.44	2593.13
99	-1.74	508.83	2.55	11895.37	3187.35	2610.26
100	-1.74	511.65	3.10	11981.85	3210.53	2629.24
101	38.51	515.72	6.43	7307.05	3813.89	3123.36
102	38.51	520.75	6.43	7078.19	3702.26	3031.94
103	38.51	525.78	6.43	6849.33	3590.64	2940.53
104	38.51	530.82	6.43	6620.47	3479.02	2849.12
105	38.51	535.85	6.43	6391.61	3367.40	2757.71
106	38.51	540.88	6.43	6162.75	3255.77	2666.29
107	38.51	545.97	6.57	5920.63	3137.68	2569.58
108	38.51	551.11	6.57	5665.24	3013.12	2467.58
109	38.51	556.25	6.57	5409.86	2888.56	2365.57
110	38.51	561.39	6.57	5154.47	2764.00	2263.56
111	38.51	566.53	6.57	4899.09	2639.44	2161.55
112	38.51	571.63	6.46	4693.50	2539.17	2079.44
113	38.51	576.68	6.46	4537.71	2463.19	2017.21
114	38.51	581.74	6.46	4381.92	2387.20	1954.98
115	38.51	586.79	6.46	4237.44	2316.74	1897.28
116	38.51	591.85	6.46	4101.92	2250.64	1843.15
117	38.51	596.90	6.46	3964.81	2183.77	1788.38
118	38.51	601.96	6.46	3826.12	2116.12	1732.99
119	38.51	607.01	6.46	3685.82	2047.69	1676.95
120	38.51	612.07	6.46	3543.89	1978.47	1620.26
121	38.51	617.12	6.46	3400.32	1908.45	1562.91
122	38.51	622.18	6.46	3255.09	1837.62	1504.90
123	38.51	627.23	6.46	3108.19	1765.96	1446.22
124	38.51	632.29	6.46	2959.58	1693.49	1386.87
125	38.51	637.34	6.46	2809.27	1620.17	1326.83
126	38.51	642.40	6.46	2657.22	1546.01	1266.10
127	38.51	647.45	6.46	2503.42	1471.00	1204.66
128	38.51	652.50	6.46	2347.85	1395.12	1142.53
129	38.51	657.56	6.46	2190.49	1318.37	1079.67
130	38.51	662.61	6.46	2031.32	1240.74	1016.10
131	38.51	667.67	6.46	1870.33	1162.22	951.79
132	38.51	672.72	6.46	1707.48	1082.79	886.75
133	38.51	677.78	6.46	1542.76	1002.46	820.95
134	38.51	682.83	6.46	1376.16	921.20	754.41
135	38.51	687.89	6.46	1207.64	839.01	687.10
136	38.51	692.94	6.46	1037.19	755.87	619.02
137	38.51	698.00	6.46	864.79	671.79	550.15
138	38.51	703.05	6.46	690.41	586.73	480.50
139	38.51	708.11	6.46	514.03	500.71	410.05
140	38.51	713.16	6.46	335.63	413.70	338.79
141	38.51	718.22	6.46	155.18	325.69	266.72
142	38.51	723.27	6.46	0.00	0.00	0.00
143	58.82	725.81	0.05	0.00	0.00	0.00
144	58.82	725.84	0.04	0.00	0.00	0.00

TABLE 6A - Effective and Base Shear Force Data on the 144 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-29.39	32.65	6.37	4485.12	3269.96	2677.91
2	-29.39	38.19	6.37	9413.38	5464.17	4474.84
3	-29.39	42.68	3.92	8036.84	4227.32	3461.94
4	-29.39	46.09	3.92	9791.99	4936.44	4042.67
5	-29.39	50.54	6.30	19497.60	9451.72	7740.42
6	-29.39	56.03	6.30	24223.60	11361.15	9304.13
7	-2.26	60.73	3.92	8469.35	2269.36	1858.47
8	-2.26	64.64	3.92	8623.34	2310.62	1892.26
9	-2.26	69.23	5.27	11848.41	3174.77	2599.96
10	-2.26	74.50	5.27	12127.31	3249.50	2661.16
11	-2.26	79.77	5.27	12406.20	3324.23	2722.36
12	-2.26	85.03	5.27	12685.10	3398.96	2783.56
13	-2.26	90.30	5.27	12964.00	3473.69	2844.76
14	-2.26	95.57	5.27	13242.89	3548.42	2905.96
15	-2.26	100.83	5.27	13521.79	3623.15	2967.16
16	-2.26	106.10	5.27	13800.68	3697.88	3028.36
17	-1.74	111.46	5.46	14483.75	3880.91	3178.24
18	-1.74	116.92	5.46	14747.15	3951.49	3236.04
19	-1.74	122.37	5.46	15010.54	4022.06	3293.84
20	-1.74	127.55	4.91	13820.94	3703.31	3032.80
21	-1.74	132.46	4.91	14207.69	3806.94	3117.67
22	-1.74	137.37	4.91	14594.44	3910.57	3202.53
23	-1.74	142.28	4.91	14981.19	4014.20	3287.40
24	-1.74	147.19	4.91	15367.94	4117.83	3372.27
25	-1.74	150.12	0.95	3024.71	810.47	663.73
26	-1.74	151.93	2.65	8496.18	2276.54	1864.36
27	-1.74	154.57	2.65	8608.85	2306.73	1889.09
28	-1.74	158.44	5.09	17087.57	4578.60	3749.61
29	-1.74	163.53	5.09	17999.08	4822.84	3949.63
30	-1.74	168.62	5.09	18910.59	5067.08	4149.65
31	-1.74	173.70	5.09	19822.10	5311.32	4349.67
32	-1.74	178.79	5.09	20733.62	5555.56	4549.68
33	-1.74	183.88	5.09	21645.13	5799.79	4749.70
34	-1.74	188.96	5.09	22556.64	6044.03	4949.72
35	-1.74	194.05	5.09	23468.15	6288.27	5149.74
36	-1.74	199.13	5.09	24379.66	6532.51	5349.76
37	-1.74	204.22	5.09	25291.17	6776.75	5549.77
38	-1.74	209.31	5.09	26202.68	7020.99	5749.79
39	-1.74	214.39	5.09	27114.20	7265.23	5949.81
40	-1.74	219.48	5.09	28025.71	7509.47	6149.83
41	-1.74	224.57	5.09	28937.22	7753.70	6349.84

42	-1.74	229.65	5.09	29848.73	7997.94	6549.86
43	-1.74	234.74	5.09	30760.24	8242.18	6749.88
44	-1.74	239.83	5.09	31671.75	8486.42	6949.90
45	-1.74	244.91	5.09	32583.26	8730.66	7149.91
46	-1.74	250.00	5.09	33494.77	8974.90	7349.93
47	-1.74	255.08	5.09	34406.29	9219.14	7549.95
48	-1.74	260.17	5.09	35317.80	9463.38	7749.97
49	-1.74	265.26	5.09	36229.31	9707.61	7949.98
50	-1.74	270.24	4.89	35534.96	9521.56	7797.62
51	-1.74	275.13	4.89	36144.94	9685.01	7931.47
52	-1.74	280.01	4.89	36754.92	9848.45	8065.32
53	-1.74	284.90	4.89	37364.89	10011.89	8199.17
54	-1.74	289.78	4.89	37974.87	10175.34	8333.02
55	-1.74	294.67	4.89	38584.85	10338.78	8466.87
56	-1.74	299.55	4.89	39194.83	10502.22	8600.72
57	-1.74	304.43	4.89	39804.81	10665.67	8734.58
58	-1.74	309.32	4.89	40414.79	10829.11	8868.43
59	-1.74	314.20	4.89	41024.77	10992.55	9002.28
60	-1.74	319.09	4.89	41634.74	11156.00	9136.13
61	-1.74	323.97	4.89	42244.72	11319.44	9269.98
62	-1.74	328.86	4.89	42854.70	11482.88	9403.83
63	-1.74	333.68	4.75	42231.97	11316.02	9267.18
64	-1.74	338.43	4.75	42755.41	11456.28	9382.04
65	-1.74	343.18	4.75	43278.86	11596.53	9496.90
66	-1.74	347.93	4.75	43802.30	11736.79	9611.77
67	-1.74	352.68	4.75	44325.74	11877.05	9726.63
68	-1.74	357.43	4.75	44849.18	12017.30	9841.49
69	-1.74	362.31	5.03	47885.11	12830.78	10507.68
70	-1.74	367.34	5.03	48210.16	12917.87	10579.01
71	-1.74	372.36	5.03	48535.21	13004.97	10650.33
72	-1.74	377.39	5.03	48860.26	13092.07	10721.66
73	-1.74	382.41	5.03	49185.31	13179.16	10792.99
74	-1.74	387.44	5.03	49510.36	13266.26	10864.32
75	-1.74	392.46	5.03	49835.41	13353.36	10935.64
76	-1.74	397.49	5.03	50160.46	13440.46	11006.97
77	-1.74	402.50	5.00	50283.24	13473.35	11033.91
78	-1.74	407.50	5.00	50704.48	13586.22	11126.35
79	-1.74	412.50	5.00	51125.71	13699.09	11218.78
80	-1.74	417.50	5.00	51546.95	13811.96	11311.21
81	-1.74	422.50	5.00	51968.18	13924.83	11403.65
82	-1.74	427.50	5.00	52389.42	14037.70	11496.08
83	-1.74	432.50	5.00	52810.65	14150.57	11588.51
84	-1.74	437.50	5.00	53231.89	14263.44	11680.95
85	-1.74	442.50	5.00	53653.12	14376.31	11773.38
86	-1.74	447.50	5.00	54074.36	14489.18	11865.82
87	-1.74	452.50	5.00	54495.59	14602.05	11958.25
88	-1.74	457.50	5.00	54916.83	14714.92	12050.68
89	-1.74	462.50	5.00	55338.06	14827.79	12143.12
90	-1.74	467.50	5.00	55759.29	14940.66	12235.55
91	-1.74	472.50	5.00	56180.53	15053.53	12327.98
92	-1.74	477.50	5.00	56601.76	15166.40	12420.42
93	-1.74	482.50	5.00	57023.00	15279.27	12512.85
94	-1.74	487.50	5.00	57444.23	15392.14	12605.29
95	-1.74	492.50	5.00	57865.47	15505.01	12697.72
96	-1.74	497.50	5.00	58286.70	15617.87	12790.15
97	-1.74	502.50	5.00	58707.94	15730.74	12882.59
98	-1.74	506.27	2.55	30148.04	8078.14	6615.54
99	-1.74	508.83	2.55	30347.19	8131.51	6659.24
100	-1.74	511.65	3.10	37160.88	9957.23	8154.40
101	38.51	515.72	6.43	47004.92	24534.03	20091.98
102	38.51	520.75	6.43	45532.70	23815.99	19503.94
103	38.51	525.78	6.43	44060.49	23097.94	18915.90
104	38.51	530.82	6.43	42588.28	22379.90	18327.86
105	38.51	535.85	6.43	41116.07	21661.85	17739.83
106	38.51	540.88	6.43	39643.85	20943.80	17151.79
107	38.51	545.97	6.57	38893.45	20611.89	16879.97
108	38.51	551.11	6.57	37215.79	19793.64	16209.87
109	38.51	556.25	6.57	35538.12	18975.38	15539.76
110	38.51	561.39	6.57	33860.46	18157.13	14869.66
111	38.51	566.53	6.57	32182.79	17338.88	14199.56
112	38.51	571.63	6.46	30321.42	16403.82	13433.80
113	38.51	576.68	6.46	29314.96	15912.94	13031.79
114	38.51	581.74	6.46	28308.51	15422.06	12629.79
115	38.51	586.79	6.46	27375.16	14966.84	12256.99
116	38.51	591.85	6.46	26499.62	14539.80	11907.27
117	38.51	596.90	6.46	25613.90	14107.81	11553.49
118	38.51	601.96	6.46	24717.90	13670.80	11195.61
119	38.51	607.01	6.46	23811.51	13228.72	10833.57
120	38.51	612.07	6.46	22894.62	12781.53	10467.34
121	38.51	617.12	6.46	21967.11	12329.15	10096.88
122	38.51	622.18	6.46	21028.89	11871.55	9722.13
123	38.51	627.23	6.46	20079.83	11408.66	9343.05
124	38.51	632.29	6.46	19119.81	10940.43	8959.59
125	38.51	637.34	6.46	18148.72	10466.80	8571.71
126	38.51	642.40	6.46	17166.44	9987.71	8179.37
127	38.51	647.45	6.46	16172.85	9503.10	7782.50
128	38.51	652.50	6.46	15167.82	9012.91	7381.07
129	38.51	657.56	6.46	14151.23	8517.09	6975.01
130	38.51	662.61	6.46	13122.96	8015.57	6564.30
131	38.51	667.67	6.46	12082.87	7508.28	6148.86
132	38.51	672.72	6.46	11030.83	6995.17	5728.65
133	38.51	677.78	6.46	9966.72	6476.17	5303.62
134	38.51	682.83	6.46	8890.40	5951.21	4873.71
135	38.51	687.89	6.46	7801.73	5420.23	4438.86
136	38.51	692.94	6.46	6700.57	4883.16	3999.03
137	38.51	698.00	6.46	5586.79	4339.93	3554.16
138	38.51	703.05	6.46	4460.24	3790.48	3104.19
139	38.51	708.11	6.46	3320.78	3234.73	2649.06
140	38.51	713.16	6.46	2168.25	2672.60	2188.71
141	38.51	718.22	6.46	1002.52	2104.04	1723.09
142	38.51	723.27	6.46	0.00	0.00	0.00
143	58.82	725.81	0.05	0.00	0.00	0.00
144	58.82	725.84	0.04	0.00	0.00	0.00

Average Effective Normal Stress = 5594.1250(psf)
Average Available Shear Strength = 1878.4695(psf)
Total Length of Failure Surface = 759.6228(ft)

SUM OF MOMENTS = 0.457635E+02 (ft/lbs);Imbalance (Fraction of Total Weight) = 0.1077423E-04
SUM OF FORCES = 0.236343E-01 (lbs);Imbalance (Fraction of Total Weight) = 0.5564300E-08

Sum of Available Shear Forces = 1426928.18(lbs)

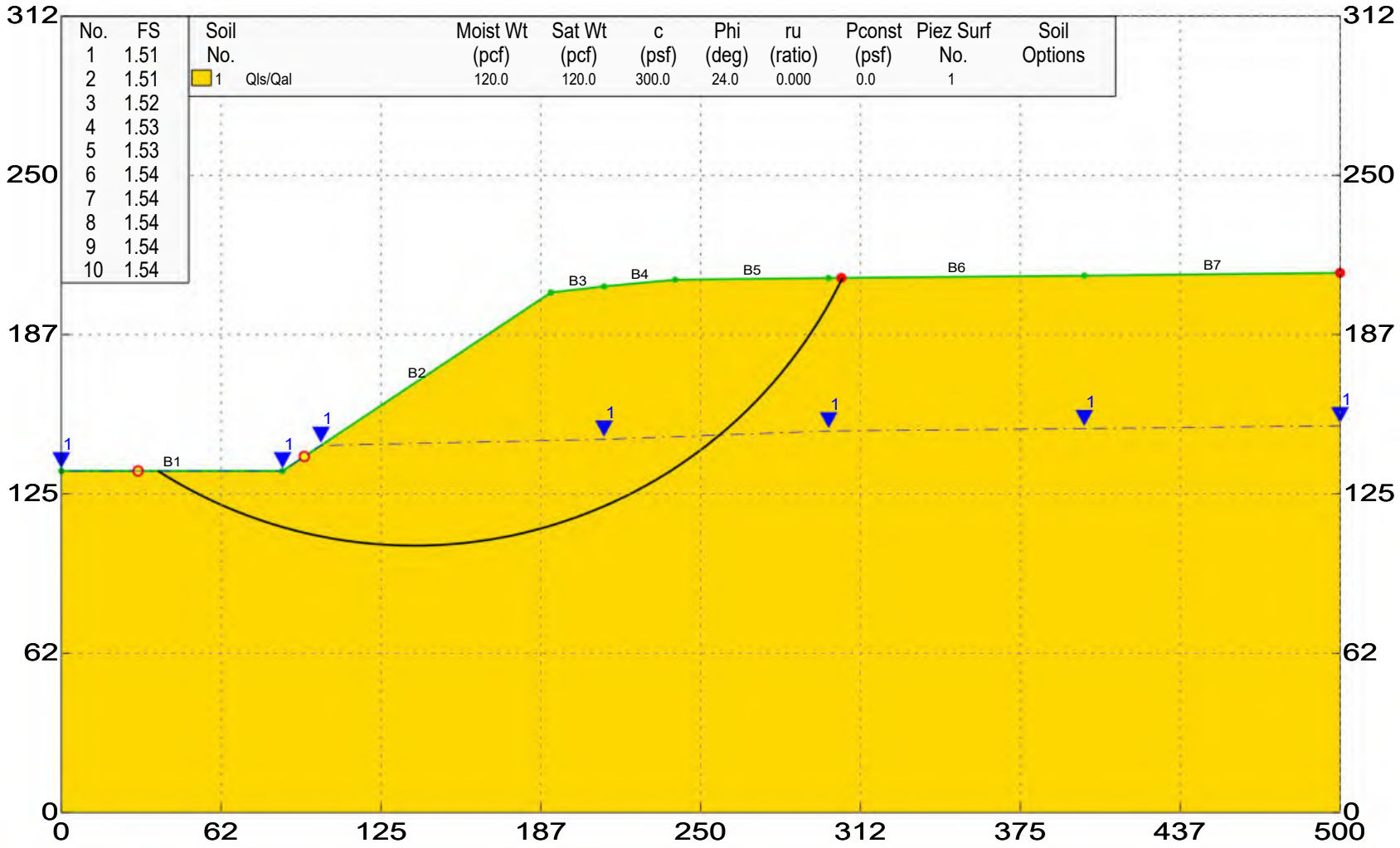
Sum of Mobilized Shear Forces = 1168573.21(lbs)

FS Balance Check: FS = 1.221086

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Section C-C'
115' Oso Creek Setback - Static

LGC Geotechnical \xc.gsd



No.	FS
1	1.51
2	1.51
3	1.52
4	1.53
5	1.53
6	1.54
7	1.54
8	1.54
9	1.54
10	1.54

Soil No.		Moist Wt (pcf)	Sat Wt (pcf)	c (psf)	Phi (deg)	ru (ratio)	Pconst (psf)	Piez Surf No.	Soil Options
1	Qls/Qal	120.0	120.0	300.0	24.0	0.000	0.0	1	

GEOSTASE FS = 1.51

Simplified Bishop Method

GEOSTASE Slope Stability Analysis

*** GEOSTASE(R) ***

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** Current Version 4.30.31-Double Precision, August 2019 **
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SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 4/ 4/ 2024
Analysis Time:
Analysis By: LGC Geotechnical
Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano
\Engineering\Slope Stability\Sec C\2024_04_04\xc.gsd
Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano
\Engineering\Slope Stability\Sec C\2024_04_04\xc.OUT
Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Section C-C'

DESCRIPTION: 115' Oso Creek Setback - Static

BOUNDARY DATA

7 Surface Boundaries
7 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	134.000	86.500	134.000	1
2	86.500	134.000	191.400	204.000	1
3	191.400	204.000	212.200	206.400	1
4	212.200	206.400	240.000	209.000	1
5	240.000	209.000	300.000	209.700	1
6	300.000	209.700	400.000	210.600	1
7	400.000	210.600	500.000	211.700	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface Option No.
1 Qls/Qal	120.0	120.0	300.00	24.00	0.000	0.0	1 0

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 7 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	134.00
2	86.50	134.00
3	101.50	144.00
4	212.20	146.40
5	300.00	149.70
6	400.00	150.60
7	500.00	151.70

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.3902(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 30.00(ft)
and X = 95.00(ft)

Each Surface Enters within a Range Between X = 305.00(ft)
and X = 500.00(ft)

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 0.00(ft)

Specified Maximum Radius = 10000.000(ft)

5.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Simplified Bishop Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 2000

Number of Trial Surfaces With Valid FS = 2000

Statistical Data On All Valid FS Values:
FS Max = 4.215 FS Min = 1.512 FS Ave = 2.475
Standard Deviation = 0.538 Coefficient of Variation = 21.73 %

Critical Surface is Sequence Number 240 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 137.972957(ft) ; Y = 290.710802(ft); and Radius = 186.007071(ft)

Circular Trial Failure Surface Generated With 64 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	37.771	134.000
2	42.020	131.363
3	46.337	128.842
4	50.721	126.437
5	55.168	124.152
6	59.675	121.986
7	64.238	119.942
8	68.855	118.022
9	73.521	116.227
10	78.234	114.558
11	82.991	113.016
12	87.787	111.602
13	92.619	110.318
14	97.484	109.164
15	102.378	108.141
16	107.298	107.250
17	112.241	106.492
18	117.201	105.867
19	122.177	105.376
20	127.164	105.018
21	132.159	104.795
22	137.158	104.706
23	142.158	104.751
24	147.155	104.931
25	152.145	105.244
26	157.125	105.692
27	162.091	106.274
28	167.040	106.989
29	171.967	107.837
30	176.870	108.816
31	181.745	109.927
32	186.589	111.169
33	191.397	112.541
34	196.167	114.041
35	200.894	115.669
36	205.576	117.424
37	210.209	119.303
38	214.790	121.307
39	219.316	123.433
40	223.783	125.680
41	228.187	128.046
42	232.527	130.529
43	236.798	133.128
44	240.998	135.842
45	245.124	138.667
46	249.171	141.602
47	253.139	144.644
48	257.023	147.793
49	260.822	151.044
50	264.531	154.397
51	268.150	157.848
52	271.674	161.394
53	275.101	165.035
54	278.430	168.766
55	281.657	172.585
56	284.780	176.490
57	287.797	180.477
58	290.705	184.544
59	293.504	188.687
60	296.190	192.905
61	298.762	197.193
62	301.217	201.548
63	303.555	205.968
64	305.426	209.749

Factor Of Safety For The Critical or Specified Surface = 1.512

Table 1 - Geometry Data on the 70 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	4.25	1.32	39.90	132.68	134.00	-31.82	0.00	5.00
2	4.32	3.90	44.18	130.10	134.00	-30.28	0.00	5.00
3	4.38	6.36	48.53	127.64	134.00	-28.74	0.00	5.00
4	4.45	8.71	52.94	125.29	134.00	-27.20	0.00	5.00
5	4.51	10.93	57.42	123.07	134.00	-25.66	0.00	5.00
6	4.56	13.04	61.96	120.96	134.00	-24.12	0.00	5.00
7	4.62	15.02	66.55	118.98	134.00	-22.58	0.00	5.00
8	4.67	16.88	71.19	117.12	134.00	-21.04	0.00	5.00
9	4.71	18.61	75.88	115.39	134.00	-19.50	0.00	5.00
10	4.76	20.21	80.61	113.79	134.00	-17.96	0.00	5.00
11	3.51	21.50	84.75	112.50	134.00	-16.42	0.00	3.66
12	1.29	22.64	87.14	111.79	134.43	-16.42	33.72	1.34
13	4.83	25.51	90.20	110.96	136.47	-14.88	33.72	5.00
14	4.87	29.97	95.05	109.74	139.71	-13.34	33.72	5.00
15	4.02	33.93	99.49	108.74	142.67	-11.80	33.72	4.10
16	0.88	36.07	101.94	108.23	144.30	-11.80	33.72	0.90
17	4.92	38.54	104.84	107.70	146.24	-10.26	33.72	5.00
18	4.94	42.66	109.77	106.87	149.53	-8.72	33.72	5.00
19	4.96	46.65	114.72	106.18	152.83	-7.18	33.72	5.00
20	4.98	50.53	119.69	105.62	156.15	-5.64	33.72	5.00
21	4.99	54.27	124.67	105.20	159.47	-4.10	33.72	5.00
22	5.00	57.90	129.66	104.91	162.80	-2.56	33.72	5.00
23	5.00	61.39	134.66	104.75	166.14	-1.02	33.72	5.00
24	5.00	64.74	139.66	104.73	169.47	0.52	33.72	5.00
25	5.00	67.97	144.66	104.84	172.81	2.06	33.72	5.00
26	4.99	71.05	149.65	105.09	176.14	3.60	33.72	5.00
27	4.98	74.00	154.64	105.47	179.47	5.14	33.72	5.00
28	4.97	76.80	159.61	105.98	182.79	6.68	33.72	5.00
29	4.95	79.46	164.57	106.63	186.09	8.22	33.72	5.00
30	4.93	81.98	169.50	107.41	189.39	9.76	33.72	5.00
31	4.90	84.34	174.42	108.33	192.67	11.30	33.72	5.00
32	4.87	86.56	179.31	109.37	195.93	12.84	33.72	5.00
33	4.84	88.63	184.17	110.55	199.17	14.38	33.72	5.00
34	4.81	90.54	188.99	111.86	202.39	15.92	33.72	5.00
35	0.00	91.46	191.40	112.54	204.00	17.46	33.72	0.00
36	4.77	90.98	193.78	113.29	204.27	17.46	6.58	5.00
37	4.73	89.97	198.53	114.86	204.82	19.00	6.58	5.00
38	4.68	88.82	203.24	116.55	205.37	20.54	6.58	5.00
39	4.63	87.54	207.89	118.36	205.90	22.08	6.58	5.00
40	1.99	86.55	211.20	119.74	206.29	23.62	6.58	2.17
41	2.59	85.78	213.50	120.74	206.52	23.62	5.34	2.83
42	4.53	84.48	217.05	122.37	206.85	25.16	5.34	5.00
43	4.47	82.72	221.55	124.56	207.27	26.70	5.34	5.00
44	4.40	80.83	225.99	126.86	207.69	28.24	5.34	5.00
45	4.34	78.81	230.36	129.29	208.10	29.78	5.34	5.00
46	4.27	76.67	234.66	131.83	208.50	31.32	5.34	5.00
47	3.20	74.69	238.40	134.16	208.85	32.86	5.34	3.81
48	1.00	73.49	240.50	135.52	209.01	32.86	0.67	1.19
49	4.13	71.78	243.06	137.25	209.04	34.40	0.67	5.00
50	4.05	68.95	247.15	140.13	209.08	35.94	0.67	5.00
51	3.97	66.01	251.16	143.12	209.13	37.48	0.67	5.00
52	3.88	62.96	255.08	146.22	209.18	39.02	0.67	5.00
53	0.36	61.26	257.20	147.95	209.20	40.56	0.67	0.47
54	3.44	59.65	259.10	149.57	209.22	40.56	0.67	4.53
55	3.71	56.54	262.68	152.72	209.26	42.10	0.67	5.00
56	3.62	53.19	266.34	156.12	209.31	43.64	0.67	5.00
57	3.52	49.73	269.91	159.62	209.35	45.18	0.67	5.00
58	3.43	46.17	273.39	163.21	209.39	46.73	0.67	5.00
59	3.33	42.53	276.77	166.90	209.43	48.27	0.67	5.00
60	3.23	38.79	280.04	170.68	209.47	49.81	0.67	5.00
61	3.12	34.97	283.22	174.54	209.50	51.35	0.67	5.00
62	3.02	31.06	286.29	178.48	209.54	52.89	0.67	5.00
63	2.91	27.06	289.25	182.51	209.57	54.43	0.67	5.00
64	2.80	22.99	292.10	186.62	209.61	55.97	0.67	5.00

65	2.69	18.84	294.85	190.80	209.64	57.51	0.67	5.00
66	2.57	14.62	297.48	195.05	209.67	59.05	0.67	5.00
67	1.24	11.40	299.38	198.29	209.69	60.59	0.67	2.52
68	1.22	9.24	300.61	200.47	209.71	60.59	0.52	2.48
69	2.34	5.96	302.39	203.76	209.72	62.13	0.52	5.00
70	1.87	1.88	304.49	207.86	209.74	63.67	0.52	4.22

Table 2 - Force Data On The 70 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	672.1	0.0	411.3	0.0	0.0	0.0
2	2019.3	0.0	1216.0	0.0	0.0	0.0
3	3346.0	0.0	1984.4	0.0	0.0	0.0
4	4645.5	0.0	2716.1	0.0	0.0	0.0
5	5911.7	0.0	3410.5	0.0	0.0	0.0
6	7138.3	0.0	4067.1	0.0	0.0	0.0
7	8319.6	0.0	4685.5	0.0	0.0	0.0
8	9449.9	0.0	5265.1	0.0	0.0	0.0
9	10524.0	0.0	5805.6	0.0	0.0	0.0
10	11536.8	0.0	6306.6	0.0	0.0	0.0
11	9054.7	0.0	4908.7	0.0	0.0	0.0
12	3495.4	0.0	1894.9	0.0	0.0	0.0
13	14793.1	0.0	7958.7	0.0	0.0	0.0
14	17494.1	0.0	9347.6	0.0	0.0	0.0
15	16349.2	0.0	8683.1	0.0	0.0	0.0
16	3801.6	0.0	2003.1	0.0	0.0	0.0
17	22754.9	0.0	11349.5	0.0	0.0	0.0
18	25297.8	0.0	11640.1	0.0	0.0	0.0
19	27771.7	0.0	11889.4	0.0	0.0	0.0
20	30168.6	0.0	12097.2	0.0	0.0	0.0
21	32481.3	0.0	12263.3	0.0	0.0	0.0
22	34702.7	0.0	12387.7	0.0	0.0	0.0
23	36826.0	0.0	12470.3	0.0	0.0	0.0
24	38845.1	0.0	12510.9	0.0	0.0	0.0
25	40754.1	0.0	12509.6	0.0	0.0	0.0
26	42547.5	0.0	12466.4	0.0	0.0	0.0
27	44220.5	0.0	12381.3	0.0	0.0	0.0
28	45768.4	0.0	12254.3	0.0	0.0	0.0
29	47187.3	0.0	12085.6	0.0	0.0	0.0
30	48473.5	0.0	11875.2	0.0	0.0	0.0
31	49624.1	0.0	11623.4	0.0	0.0	0.0
32	50636.6	0.0	11330.3	0.0	0.0	0.0
33	51508.8	0.0	10996.1	0.0	0.0	0.0
34	52239.3	0.0	10621.0	0.0	0.0	0.0
35	33.8	0.0	6.7	0.0	0.0	0.0
36	52040.9	0.0	10198.7	0.0	0.0	0.0
37	51039.1	0.0	9749.5	0.0	0.0	0.0
38	49903.0	0.0	9253.7	0.0	0.0	0.0
39	48670.9	0.0	8718.3	0.0	0.0	0.0
40	20673.7	0.0	3611.7	0.0	0.0	0.0
41	26665.0	0.0	4535.6	0.0	0.0	0.0
42	45880.3	0.0	7554.3	0.0	0.0	0.0
43	44337.9	0.0	6924.9	0.0	0.0	0.0
44	42722.6	0.0	6257.3	0.0	0.0	0.0
45	41040.6	0.0	5552.1	0.0	0.0	0.0
46	39298.2	0.0	4809.6	0.0	0.0	0.0
47	28695.5	0.0	3144.9	0.0	0.0	0.0
48	8801.7	0.0	885.7	0.0	0.0	0.0
49	35535.2	0.0	3215.4	0.0	0.0	0.0
50	33492.5	0.0	2364.7	0.0	0.0	0.0
51	31426.9	0.0	1479.2	0.0	0.0	0.0
52	29346.2	0.0	559.5	0.0	0.0	0.0
53	2623.1	0.0	4.3	0.0	0.0	0.0
54	24635.2	0.0	0.0	0.0	0.0	0.0
55	25170.9	0.0	0.0	0.0	0.0	0.0
56	23092.0	0.0	0.0	0.0	0.0	0.0
57	21029.6	0.0	0.0	0.0	0.0	0.0
58	18991.7	0.0	0.0	0.0	0.0	0.0
59	16986.3	0.0	0.0	0.0	0.0	0.0
60	15021.3	0.0	0.0	0.0	0.0	0.0
61	13104.5	0.0	0.0	0.0	0.0	0.0
62	11243.8	0.0	0.0	0.0	0.0	0.0
63	9446.8	0.0	0.0	0.0	0.0	0.0
64	7721.0	0.0	0.0	0.0	0.0	0.0
65	6073.8	0.0	0.0	0.0	0.0	0.0
66	4512.4	0.0	0.0	0.0	0.0	0.0
67	1694.4	0.0	0.0	0.0	0.0	0.0
68	1349.1	0.0	0.0	0.0	0.0	0.0
69	1672.8	0.0	0.0	0.0	0.0	0.0
70	422.6	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 1684754.74(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 1325223.45(lbs)

TOTAL AREA OF SLIDING MASS = 14039.62(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 70 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	300.00	24.00	
2	1	300.00	24.00	
3	1	300.00	24.00	
4	1	300.00	24.00	
5	1	300.00	24.00	
6	1	300.00	24.00	
7	1	300.00	24.00	
8	1	300.00	24.00	
9	1	300.00	24.00	
10	1	300.00	24.00	
11	1	300.00	24.00	
12	1	300.00	24.00	
13	1	300.00	24.00	
14	1	300.00	24.00	
15	1	300.00	24.00	
16	1	300.00	24.00	
17	1	300.00	24.00	
18	1	300.00	24.00	
19	1	300.00	24.00	
20	1	300.00	24.00	
21	1	300.00	24.00	
22	1	300.00	24.00	
23	1	300.00	24.00	
24	1	300.00	24.00	
25	1	300.00	24.00	
26	1	300.00	24.00	
27	1	300.00	24.00	
28	1	300.00	24.00	
29	1	300.00	24.00	
30	1	300.00	24.00	
31	1	300.00	24.00	
32	1	300.00	24.00	
33	1	300.00	24.00	
34	1	300.00	24.00	
35	1	300.00	24.00	
36	1	300.00	24.00	
37	1	300.00	24.00	
38	1	300.00	24.00	
39	1	300.00	24.00	
40	1	300.00	24.00	
41	1	300.00	24.00	
42	1	300.00	24.00	
43	1	300.00	24.00	
44	1	300.00	24.00	
45	1	300.00	24.00	
46	1	300.00	24.00	

47	1	300.00	24.00
48	1	300.00	24.00
49	1	300.00	24.00
50	1	300.00	24.00
51	1	300.00	24.00
52	1	300.00	24.00
53	1	300.00	24.00
54	1	300.00	24.00
55	1	300.00	24.00
56	1	300.00	24.00
57	1	300.00	24.00
58	1	300.00	24.00
59	1	300.00	24.00
60	1	300.00	24.00
61	1	300.00	24.00
62	1	300.00	24.00
63	1	300.00	24.00
64	1	300.00	24.00
65	1	300.00	24.00
66	1	300.00	24.00
67	1	300.00	24.00
68	1	300.00	24.00
69	1	300.00	24.00
70	1	300.00	24.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 70 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-31.82	39.90	5.00	243.57	408.44	270.08
1	-31.82	39.90	5.00	243.57	408.44	270.08
2	-30.28	44.18	5.00	411.02	483.00	319.38
2	-30.28	44.18	5.00	411.02	483.00	319.38
3	-28.74	48.53	5.00	566.69	552.31	365.21
3	-28.74	48.53	5.00	566.69	552.31	365.21
4	-27.20	52.94	5.00	711.03	616.57	407.70
4	-27.20	52.94	5.00	711.03	616.57	407.70
5	-25.66	57.42	5.00	844.43	675.96	446.97
5	-25.66	57.42	5.00	844.43	675.96	446.97
6	-24.12	61.96	5.00	967.23	730.64	483.13
6	-24.12	61.96	5.00	967.23	730.64	483.13
7	-22.58	66.55	5.00	1079.76	780.74	516.25
7	-22.58	66.55	5.00	1079.76	780.74	516.25
8	-21.04	71.19	5.00	1182.27	826.38	546.43
8	-21.04	71.19	5.00	1182.27	826.38	546.43
9	-19.50	75.88	5.00	1275.03	867.68	573.74
9	-19.50	75.88	5.00	1275.03	867.68	573.74
10	-17.96	80.61	5.00	1358.27	904.74	598.25
10	-17.96	80.61	5.00	1358.27	904.74	598.25
11	-16.42	84.75	3.66	1420.22	932.32	616.48
11	-16.42	84.75	3.66	1420.22	932.32	616.48
12	-16.42	87.14	1.34	1491.91	964.24	637.59
12	-16.42	87.14	1.34	1491.91	964.24	637.59
13	-14.88	90.20	5.00	1651.53	1035.31	684.58
13	-14.88	90.20	5.00	1651.53	1035.31	684.58
14	-13.34	95.05	5.00	1906.55	1148.85	759.66
14	-13.34	95.05	5.00	1906.55	1148.85	759.66
15	-11.80	99.49	4.10	2126.92	1246.96	824.54
15	-11.80	99.49	4.10	2126.92	1246.96	824.54
16	-11.80	101.94	0.90	2277.46	1313.99	868.86
16	-11.80	101.94	0.90	2277.46	1313.99	868.86
17	-10.26	104.84	5.00	2525.62	1424.48	941.92
17	-10.26	104.84	5.00	2525.62	1424.48	941.92
18	-8.72	109.77	5.00	2954.65	1615.49	1068.22
18	-8.72	109.77	5.00	2954.65	1615.49	1068.22
19	-7.18	114.72	5.00	3370.43	1800.61	1190.63
19	-7.18	114.72	5.00	3370.43	1800.61	1190.63
20	-5.64	119.69	5.00	3773.00	1979.85	1309.15
20	-5.64	119.69	5.00	3773.00	1979.85	1309.15
21	-4.10	124.67	5.00	4162.38	2153.21	1423.78
21	-4.10	124.67	5.00	4162.38	2153.21	1423.78
22	-2.56	129.66	5.00	4538.58	2320.70	1534.53
22	-2.56	129.66	5.00	4538.58	2320.70	1534.53
23	-1.02	134.66	5.00	4901.57	2482.32	1641.40
23	-1.02	134.66	5.00	4901.57	2482.32	1641.40
24	0.52	139.66	5.00	5251.35	2638.05	1744.37
24	0.52	139.66	5.00	5251.35	2638.05	1744.37
25	2.06	144.66	5.00	5587.87	2787.88	1843.45
25	2.06	144.66	5.00	5587.87	2787.88	1843.45
26	3.60	149.65	5.00	5911.08	2931.78	1938.60
26	3.60	149.65	5.00	5911.08	2931.78	1938.60
27	5.14	154.64	5.00	6220.95	3069.74	2029.82
27	5.14	154.64	5.00	6220.95	3069.74	2029.82
28	6.68	159.61	5.00	6517.40	3201.74	2117.10
28	6.68	159.61	5.00	6517.40	3201.74	2117.10
29	8.22	164.57	5.00	6800.39	3327.73	2200.41
29	8.22	164.57	5.00	6800.39	3327.73	2200.41
30	9.76	169.50	5.00	7069.85	3447.70	2279.74
30	9.76	169.50	5.00	7069.85	3447.70	2279.74
31	11.30	174.42	5.00	7325.71	3561.62	2355.07
31	11.30	174.42	5.00	7325.71	3561.62	2355.07
32	12.84	179.31	5.00	7567.90	3669.45	2426.37
32	12.84	179.31	5.00	7567.90	3669.45	2426.37
33	14.38	184.17	5.00	7796.35	3771.16	2493.63
33	14.38	184.17	5.00	7796.35	3771.16	2493.63
34	15.92	188.99	5.00	8011.00	3866.73	2556.82
34	15.92	188.99	5.00	8011.00	3866.73	2556.82
35	17.46	191.40	0.00	8079.58	3897.26	2577.01
35	17.46	191.40	0.00	8079.58	3897.26	2577.01
36	17.46	193.78	5.00	8067.39	3891.83	2573.42
36	17.46	193.78	5.00	8067.39	3891.83	2573.42
37	19.00	198.53	5.00	7969.83	3848.40	2544.70
37	19.00	198.53	5.00	7969.83	3848.40	2544.70
38	20.54	203.24	5.00	7865.45	3801.92	2513.97
38	20.54	203.24	5.00	7865.45	3801.92	2513.97
39	22.08	207.89	5.00	7754.37	3752.47	2481.27
39	22.08	207.89	5.00	7754.37	3752.47	2481.27
40	23.62	211.20	2.17	7651.25	3706.56	2450.91
40	23.62	211.20	2.17	7651.25	3706.56	2450.91
41	23.62	213.50	2.83	7621.34	3693.24	2442.10
41	23.62	213.50	2.83	7621.34	3693.24	2442.10
42	25.16	217.05	5.00	7497.09	3637.92	2405.52
42	25.16	217.05	5.00	7497.09	3637.92	2405.52
43	26.70	221.55	5.00	7352.51	3573.55	2362.96
43	26.70	221.55	5.00	7352.51	3573.55	2362.96
44	28.24	225.99	5.00	7202.12	3506.59	2318.68
44	28.24	225.99	5.00	7202.12	3506.59	2318.68
45	29.78	230.36	5.00	7046.05	3437.10	2272.74
45	29.78	230.36	5.00	7046.05	3437.10	2272.74
46	31.32	234.66	5.00	6884.44	3365.15	2225.16
46	31.32	234.66	5.00	6884.44	3365.15	2225.16
47	32.86	238.40	3.81	6729.32	3296.09	2179.49
47	32.86	238.40	3.81	6729.32	3296.09	2179.49
48	32.86	240.50	1.19	6675.21	3272.00	2163.56
48	32.86	240.50	1.19	6675.21	3272.00	2163.56
49	34.40	243.06	5.00	6520.20	3202.98	2117.92
49	34.40	243.06	5.00	6520.20	3202.98	2117.92
50	35.94	247.15	5.00	6310.07	3109.42	2056.06
50	35.94	247.15	5.00	6310.07	3109.42	2056.06
51	37.48	251.16	5.00	6096.35	3014.27	1993.14
51	37.48	251.16	5.00	6096.35	3014.27	1993.14
52	39.02	255.08	5.00	5879.24	2917.61	1929.23
52	39.02	255.08	5.00	5879.24	2917.61	1929.23
53	40.56	257.20	0.47	5728.01	2850.28	1884.70

53	40.56	257.20	0.47	5728.01	2850.28	1884.70
54	40.56	259.10	4.53	5581.60	2785.09	1841.60
54	40.56	259.10	4.53	5581.60	2785.09	1841.60
55	42.10	262.68	5.00	5217.69	2623.07	1734.47
55	42.10	262.68	5.00	5217.69	2623.07	1734.47
56	43.64	266.34	5.00	4835.19	2452.77	1621.86
56	43.64	266.34	5.00	4835.19	2452.77	1621.86
57	45.18	269.91	5.00	4449.22	2280.92	1508.23
57	45.18	269.91	5.00	4449.22	2280.92	1508.23
58	46.73	273.39	5.00	4060.50	2107.85	1393.79
58	46.73	273.39	5.00	4060.50	2107.85	1393.79
59	48.27	276.77	5.00	3669.79	1933.89	1278.76
59	48.27	276.77	5.00	3669.79	1933.89	1278.76
60	49.81	280.04	5.00	3277.90	1759.41	1163.39
60	49.81	280.04	5.00	3277.90	1759.41	1163.39
61	51.35	283.22	5.00	2885.70	1584.80	1047.93
61	51.35	283.22	5.00	2885.70	1584.80	1047.93
62	52.89	286.29	5.00	2494.12	1410.45	932.64
62	52.89	286.29	5.00	2494.12	1410.45	932.64
63	54.43	289.25	5.00	2104.14	1236.82	817.83
63	54.43	289.25	5.00	2104.14	1236.82	817.83
64	55.97	292.10	5.00	1716.84	1064.39	703.81
64	55.97	292.10	5.00	1716.84	1064.39	703.81
65	57.51	294.85	5.00	1333.38	893.66	590.92
65	57.51	294.85	5.00	1333.38	893.66	590.92
66	59.05	297.48	5.00	955.01	725.20	479.53
66	59.05	297.48	5.00	955.01	725.20	479.53
67	60.59	299.38	2.52	667.64	597.25	394.93
67	60.59	299.38	2.52	667.64	597.25	394.93
68	60.59	300.61	2.48	496.97	521.27	344.68
68	60.59	300.61	2.48	496.97	521.27	344.68
69	62.13	302.39	5.00	218.72	397.38	262.76
69	62.13	302.39	5.00	218.72	397.38	262.76
70	63.67	304.49	4.22	141.60	63.04	41.69
70	63.67	304.49	4.22	141.60	63.04	41.69

Table 4 - Base Force Data on the 70 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-31.82	39.90	5.00	1217.85	2042.22	1350.39
1	-31.82	39.90	5.00	1217.85	2042.22	1350.39
2	-30.28	44.18	5.00	2055.10	2414.99	1596.88
2	-30.28	44.18	5.00	2055.10	2414.99	1596.88
3	-28.74	48.53	5.00	2833.45	2761.53	1826.03
3	-28.74	48.53	5.00	2833.45	2761.53	1826.03
4	-27.20	52.94	5.00	3555.14	3082.85	2038.49
4	-27.20	52.94	5.00	3555.14	3082.85	2038.49
5	-25.66	57.42	5.00	4222.13	3379.81	2234.85
5	-25.66	57.42	5.00	4222.13	3379.81	2234.85
6	-24.12	61.96	5.00	4836.17	3653.20	2415.63
6	-24.12	61.96	5.00	4836.17	3653.20	2415.63
7	-22.58	66.55	5.00	5398.79	3903.69	2581.26
7	-22.58	66.55	5.00	5398.79	3903.69	2581.26
8	-21.04	71.19	5.00	5911.37	4131.91	2732.17
8	-21.04	71.19	5.00	5911.37	4131.91	2732.17
9	-19.50	75.88	5.00	6375.17	4338.41	2868.71
9	-19.50	75.88	5.00	6375.17	4338.41	2868.71
10	-17.96	80.61	5.00	6791.33	4523.70	2991.23
10	-17.96	80.61	5.00	6791.33	4523.70	2991.23
11	-16.42	84.75	3.66	5195.96	3410.96	2255.45
11	-16.42	84.75	3.66	5195.96	3410.96	2255.45
12	-16.42	87.14	1.34	2001.30	1293.47	855.29
12	-16.42	87.14	1.34	2001.30	1293.47	855.29
13	-14.88	90.20	5.00	8257.67	5176.55	3422.92
13	-14.88	90.20	5.00	8257.67	5176.55	3422.92
14	-13.34	95.05	5.00	9532.73	5744.25	3798.30
14	-13.34	95.05	5.00	9532.73	5744.25	3798.30
15	-11.80	99.49	4.10	8726.16	5115.95	3382.85
15	-11.80	99.49	4.10	8726.16	5115.95	3382.85
16	-11.80	101.94	0.90	2043.52	1179.01	779.61
16	-11.80	101.94	0.90	2043.52	1179.01	779.61
17	-10.26	104.84	5.00	12628.08	7122.38	4709.58
17	-10.26	104.84	5.00	12628.08	7122.38	4709.58
18	-8.72	109.77	5.00	14773.23	8077.47	5341.11
18	-8.72	109.77	5.00	14773.23	8077.47	5341.11
19	-7.18	114.72	5.00	16852.13	9003.05	5953.14
19	-7.18	114.72	5.00	16852.13	9003.05	5953.14
20	-5.64	119.69	5.00	18864.99	9899.24	6545.73
20	-5.64	119.69	5.00	18864.99	9899.24	6545.73
21	-4.10	124.67	5.00	20811.91	10766.06	7118.90
21	-4.10	124.67	5.00	20811.91	10766.06	7118.90
22	-2.56	129.66	5.00	22692.88	11603.52	7672.67
22	-2.56	129.66	5.00	22692.88	11603.52	7672.67
23	-1.02	134.66	5.00	24507.87	12411.61	8207.00
23	-1.02	134.66	5.00	24507.87	12411.61	8207.00
24	0.52	139.66	5.00	26256.74	13190.25	8721.87
24	0.52	139.66	5.00	26256.74	13190.25	8721.87
25	2.06	144.66	5.00	27939.33	13939.39	9217.23
25	2.06	144.66	5.00	27939.33	13939.39	9217.23
26	3.60	149.65	5.00	29555.41	14658.91	9693.00
26	3.60	149.65	5.00	29555.41	14658.91	9693.00
27	5.14	154.64	5.00	31104.73	15348.72	10149.12
27	5.14	154.64	5.00	31104.73	15348.72	10149.12
28	6.68	159.61	5.00	32587.02	16008.68	10585.51
28	6.68	159.61	5.00	32587.02	16008.68	10585.51
29	8.22	164.57	5.00	34001.97	16638.65	11002.07
29	8.22	164.57	5.00	34001.97	16638.65	11002.07
30	9.76	169.50	5.00	35349.25	17238.50	11398.72
30	9.76	169.50	5.00	35349.25	17238.50	11398.72
31	11.30	174.42	5.00	36628.54	17808.08	11775.34
31	11.30	174.42	5.00	36628.54	17808.08	11775.34
32	12.84	179.31	5.00	37839.50	18347.23	12131.85
32	12.84	179.31	5.00	37839.50	18347.23	12131.85
33	14.38	184.17	5.00	38981.77	18855.80	12468.13
33	14.38	184.17	5.00	38981.77	18855.80	12468.13
34	15.92	188.99	5.00	40055.00	19333.64	12784.10
34	15.92	188.99	5.00	40055.00	19333.64	12784.10
35	17.46	191.40	0.00	26.09	12.59	8.32
35	17.46	191.40	0.00	26.09	12.59	8.32
36	17.46	193.78	5.00	40310.91	19446.60	12858.79
36	17.46	193.78	5.00	40310.91	19446.60	12858.79
37	19.00	198.53	5.00	39849.13	19241.98	12723.49
37	19.00	198.53	5.00	39849.13	19241.98	12723.49
38	20.54	203.24	5.00	39327.25	19009.62	12569.84
38	20.54	203.24	5.00	39327.25	19009.62	12569.84
39	22.08	207.89	5.00	38771.83	18762.33	12406.33
39	22.08	207.89	5.00	38771.83	18762.33	12406.33
40	23.62	211.20	2.17	16623.65	8053.12	5325.02
40	23.62	211.20	2.17	16623.65	8053.12	5325.02
41	23.62	213.50	2.83	21548.03	10442.00	6904.63
41	23.62	213.50	2.83	21548.03	10442.00	6904.63
42	25.16	217.05	5.00	37485.46	18189.60	12027.62
42	25.16	217.05	5.00	37485.46	18189.60	12027.62
43	26.70	221.55	5.00	36762.57	17867.75	11814.80
43	26.70	221.55	5.00	36762.57	17867.75	11814.80
44	28.24	225.99	5.00	36010.60	17532.95	11593.42
44	28.24	225.99	5.00	36010.60	17532.95	11593.42
45	29.78	230.36	5.00	35230.23	17185.51	11363.68
45	29.78	230.36	5.00	35230.23	17185.51	11363.68
46	31.32	234.66	5.00	34422.18	16825.74	11125.79
46	31.32	234.66	5.00	34422.18	16825.74	11125.79
47	32.86	238.40	3.81	25650.33	12563.78	8307.62
47	32.86	238.40	3.81	25650.33	12563.78	8307.62
48	32.86	240.50	1.19	7931.98	3888.03	2570.90
48	32.86	240.50	1.19	7931.98	3888.03	2570.90
49	34.40	243.06	5.00	32600.98	16014.89	10589.62
49	34.40	243.06	5.00	32600.98	16014.89	10589.62
50	35.94	247.15	5.00	31550.35	15547.12	10280.32
50	35.94	247.15	5.00	31550.35	15547.12	10280.32

51	37.48	251.16	5.00	30481.76	15071.35	9965.72
51	37.48	251.16	5.00	30481.76	15071.35	9965.72
52	39.02	255.08	5.00	29396.20	14588.03	9646.13
52	39.02	255.08	5.00	29396.20	14588.03	9646.13
53	40.56	257.20	0.47	2690.71	1338.90	885.33
53	40.56	257.20	0.47	2690.71	1338.90	885.33
54	40.56	259.10	4.53	25286.05	12617.15	8342.92
54	40.56	259.10	4.53	25286.05	12617.15	8342.92
55	42.10	262.68	5.00	26088.46	13115.33	8672.33
55	42.10	262.68	5.00	26088.46	13115.33	8672.33
56	43.64	266.34	5.00	24175.96	12263.83	8109.29
56	43.64	266.34	5.00	24175.96	12263.83	8109.29
57	45.18	269.91	5.00	22246.10	11404.60	7541.13
57	45.18	269.91	5.00	22246.10	11404.60	7541.13
58	46.73	273.39	5.00	20302.48	10539.25	6968.93
58	46.73	273.39	5.00	20302.48	10539.25	6968.93
59	48.27	276.77	5.00	18348.93	9669.47	6393.80
59	48.27	276.77	5.00	18348.93	9669.47	6393.80
60	49.81	280.04	5.00	16389.50	8797.07	5816.94
60	49.81	280.04	5.00	16389.50	8797.07	5816.94
61	51.35	283.22	5.00	14428.51	7923.99	5239.63
61	51.35	283.22	5.00	14428.51	7923.99	5239.63
62	52.89	286.29	5.00	12470.60	7052.27	4663.21
62	52.89	286.29	5.00	12470.60	7052.27	4663.21
63	54.43	289.25	5.00	10520.71	6184.12	4089.16
63	54.43	289.25	5.00	10520.71	6184.12	4089.16
64	55.97	292.10	5.00	8584.21	5321.94	3519.06
64	55.97	292.10	5.00	8584.21	5321.94	3519.06
65	57.51	294.85	5.00	6666.88	4468.29	2954.59
65	57.51	294.85	5.00	6666.88	4468.29	2954.59
66	59.05	297.48	5.00	4775.03	3625.98	2397.63
66	59.05	297.48	5.00	4775.03	3625.98	2397.63
67	60.59	299.38	2.52	1683.58	1506.08	995.88
67	60.59	299.38	2.52	1683.58	1506.08	995.88
68	60.59	300.61	2.48	1231.65	1291.86	854.23
68	60.59	300.61	2.48	1231.65	1291.86	854.23
69	62.13	302.39	5.00	1093.58	1986.89	1313.81
69	62.13	302.39	5.00	1093.58	1986.89	1313.81
70	63.67	304.49	4.22	597.33	265.95	175.86
70	63.67	304.49	4.22	597.33	265.95	175.86

SUM OF MOMENTS = -0.301617E-01 (ft/lbs);Imbalance (Fraction of Total Weight) = -0.1790273E-07

Sum of the Resisting Forces = 686019.65 (lbs)

Average Available Shear Strength = 2183.26(psf)

Sum of the Driving Forces = 453620.87 (lbs)

Average Mobilized Shear Stress = 1443.65(psf)

Total length of the failure surface = 314.22(ft)

Factor of Safety Balance Check: FS = 1.51232

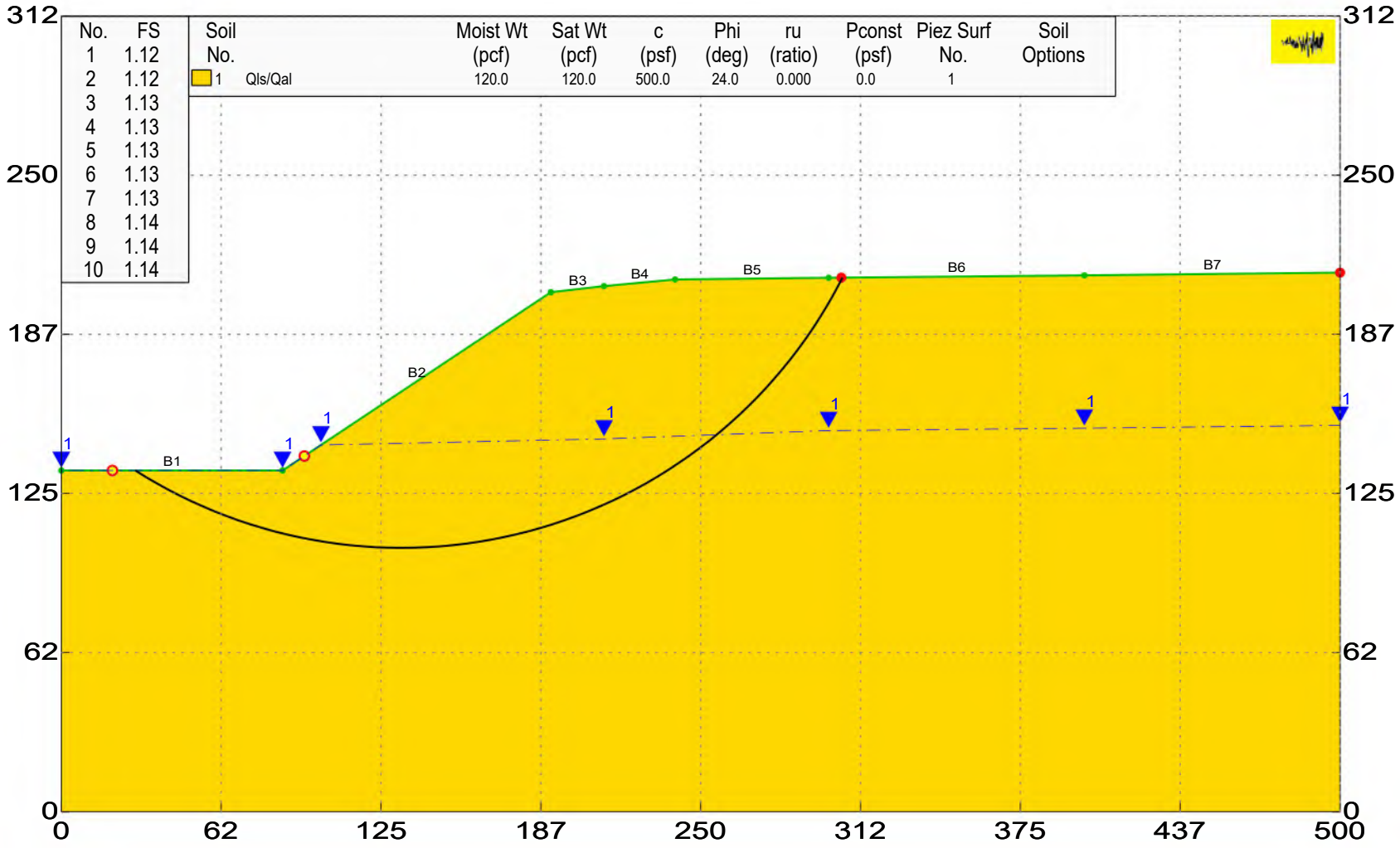
CAUTION - Factor Of Safety Is Calculated By The Simplified Bishop Method. This Method Is Valid Only If The Failure Surface Approximates A Circular Arc.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Section C-C'
115' Oso Creek Setback - Seismic

LGC Geotechnical

\xce.gsd



GEOSTASE FS = 1.12

Simplified Bishop Method

kh = 0.15000

GEOSTASE
Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

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** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 4/ 2024
Analysis Time:
Analysis By: LGC Geotechnical
Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano
\Engineering\Slope Stability\Sec C\2024_04_04\xce.gsd
Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano
\Engineering\Slope Stability\Sec C\2024_04_04\xce.OUT
Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Section C-C'

DESCRIPTION: 115' Oso Creek Setback - Seismic

BOUNDARY DATA

7 Surface Boundaries
7 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	134.000	86.500	134.000	1
2	86.500	134.000	191.400	204.000	1
3	191.400	204.000	212.200	206.400	1
4	212.200	206.400	240.000	209.000	1
5	240.000	209.000	300.000	209.700	1
6	300.000	209.700	400.000	210.600	1
7	400.000	210.600	500.000	211.700	1

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

1 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.
1 Qls/Qal	120.0	120.0	500.00	24.00	0.000	0.0	1
0							

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 7 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	134.00
2	86.50	134.00
3	101.50	144.00
4	212.20	146.40
5	300.00	149.70
6	400.00	150.60
7	500.00	151.70

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Circular Trial Failure Surfaces Have Been Generated Using A Random Procedure.

2000 Trial Surfaces Have Been Generated.

2000 Surfaces Generated at Increments of 0.4502(in) Equally Spaced Within the Start Range

Along The Specified Surface Between X = 20.00(ft)
and X = 95.00(ft)

Each Surface Enters within a Range Between X = 305.00(ft)
and X = 500.00(ft)

Unless XCLUDE Lines Were Specified, The Minimum Elevation
To Which A Surface Extends Is Y = 0.00(ft)

Specified Maximum Radius = 10000.000(ft)

5.000(ft) Line Segments Were Used For Each Trial Failure Surface.

The Simplified Bishop Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 2000

Number of Trial Surfaces With Valid FS = 2000

Statistical Data On All Valid FS Values:
FS Max = 2.069 FS Min = 1.119 FS Ave = 1.489
Standard Deviation = 0.180 Coefficient of Variation = 12.06 %

Critical Surface is Sequence Number 240 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

BACK-CALCULATED CIRCULAR SURFACE PARAMETERS:

Circle Center At X = 132.967935(ft) ; Y = 296.832627(ft); and Radius = 193.211444(ft)

Circular Trial Failure Surface Generated With 66 Coordinate Points

Point No.	X-Coord. (ft)	Y-Coord. (ft)
1	28.967	134.000
2	33.215	131.363
3	37.530	128.838
4	41.909	126.424
5	46.349	124.125
6	50.847	121.942
7	55.401	119.875
8	60.005	117.927
9	64.659	116.099
10	69.359	114.392
11	74.101	112.807
12	78.883	111.346
13	83.700	110.008
14	88.551	108.796
15	93.432	107.710
16	98.339	106.750
17	103.269	105.917
18	108.219	105.213
19	113.186	104.637
20	118.166	104.189
21	123.156	103.871
22	128.152	103.681
23	133.152	103.621
24	138.151	103.691
25	143.147	103.890
26	148.136	104.218
27	153.116	104.675
28	158.081	105.260
29	163.030	105.974
30	167.959	106.816
31	172.864	107.785
32	177.742	108.881
33	182.591	110.102
34	187.406	111.449
35	192.185	112.920
36	196.924	114.513
37	201.620	116.229
38	206.271	118.066
39	210.872	120.023
40	215.421	122.098
41	219.915	124.290
42	224.350	126.598
43	228.725	129.019
44	233.035	131.553
45	237.278	134.198
46	241.452	136.952
47	245.553	139.812
48	249.578	142.778
49	253.525	145.847
50	257.392	149.017
51	261.175	152.287
52	264.873	155.652
53	268.482	159.113
54	272.000	162.666
55	275.425	166.308
56	278.755	170.038
57	281.987	173.853
58	285.119	177.750
59	288.150	181.727
60	291.076	185.781
61	293.897	189.910
62	296.610	194.110
63	299.213	198.379
64	301.705	202.713
65	304.084	207.111
66	305.424	209.749

Factor Of Safety For The Critical or Specified Surface = 1.119

Table 1 - Geometry Data on the 72 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	4.25	1.32	31.09	132.68	134.00	-31.82	0.00	5.00
2	4.32	3.90	35.37	130.10	134.00	-30.34	0.00	5.00
3	4.38	6.37	39.72	127.63	134.00	-28.86	0.00	5.00
4	4.44	8.73	44.13	125.27	134.00	-27.38	0.00	5.00
5	4.50	10.97	48.60	123.03	134.00	-25.89	0.00	5.00
6	4.55	13.09	53.12	120.91	134.00	-24.41	0.00	5.00
7	4.60	15.10	57.70	118.90	134.00	-22.93	0.00	5.00
8	4.65	16.99	62.33	117.01	134.00	-21.45	0.00	5.00
9	4.70	18.75	67.01	115.25	134.00	-19.96	0.00	5.00
10	4.74	20.40	71.73	113.60	134.00	-18.48	0.00	5.00
11	4.78	21.92	76.49	112.08	134.00	-17.00	0.00	5.00
12	4.82	23.32	81.29	110.68	134.00	-15.51	0.00	5.00
13	2.80	24.34	85.10	109.66	134.00	-14.03	0.00	2.89
14	2.05	25.63	87.53	109.05	134.68	-14.03	33.72	2.11
15	4.88	28.74	90.99	108.25	137.00	-12.55	33.72	5.00
16	4.91	33.03	95.89	107.23	140.26	-11.07	33.72	5.00
17	3.16	36.47	99.92	106.48	142.95	-9.58	33.72	3.21
18	1.77	38.53	102.38	106.07	144.60	-9.58	33.72	1.79
19	4.95	41.28	105.74	105.57	146.84	-8.10	33.72	5.00
20	4.97	45.23	110.70	104.92	150.15	-6.62	33.72	5.00
21	4.98	49.06	115.68	104.41	153.47	-5.14	33.72	5.00
22	4.99	52.77	120.66	104.03	156.80	-3.65	33.72	5.00
23	5.00	56.35	125.65	103.78	160.13	-2.17	33.72	5.00
24	5.00	59.81	130.65	103.65	163.46	-0.69	33.72	5.00
25	5.00	63.14	135.65	103.66	166.80	0.80	33.72	5.00
26	5.00	66.34	140.65	103.79	170.13	2.28	33.72	5.00
27	4.99	69.41	145.64	104.05	173.47	3.76	33.72	5.00
28	4.98	72.35	150.63	104.45	176.79	5.24	33.72	5.00
29	4.97	75.14	155.60	104.97	180.11	6.73	33.72	5.00
30	4.95	77.80	160.56	105.62	183.42	8.21	33.72	5.00
31	4.93	80.32	165.49	106.40	186.71	9.69	33.72	5.00
32	4.91	82.69	170.41	107.30	189.99	11.18	33.72	5.00
33	4.88	84.93	175.30	108.33	193.26	12.66	33.72	5.00
34	4.85	87.01	180.17	109.49	196.50	14.14	33.72	5.00
35	4.82	88.95	185.00	110.78	199.73	15.62	33.72	5.00
36	3.99	90.60	189.40	112.06	202.67	17.11	33.72	4.18
37	0.78	91.25	191.79	112.80	204.05	17.11	6.58	0.82
38	4.74	90.65	194.55	113.72	204.36	18.59	6.58	5.00
39	4.70	89.54	199.27	115.37	204.91	20.07	6.58	5.00
40	4.65	88.30	203.95	117.15	205.45	21.55	6.58	5.00
41	4.60	86.94	208.57	119.04	205.98	23.04	6.58	5.00
42	1.33	86.00	211.54	120.33	206.32	24.52	6.58	1.46
43	3.22	85.19	213.81	121.36	206.55	24.52	5.34	3.54
44	4.49	83.72	217.67	123.19	206.91	26.00	5.34	5.00
45	4.44	81.89	222.13	125.44	207.33	27.49	5.34	5.00
46	4.37	79.93	226.54	127.81	207.74	28.97	5.34	5.00
47	4.31	77.86	230.88	130.29	208.15	30.45	5.34	5.00
48	4.24	75.67	235.16	132.88	208.55	31.93	5.34	5.00
49	2.72	73.78	238.64	135.10	208.87	33.42	5.34	3.26
50	1.45	72.54	240.73	136.47	209.01	33.42	0.67	1.74
51	4.10	70.66	243.50	138.38	209.04	34.90	0.67	5.00

52	4.03	67.79	247.57	141.30	209.09	36.38	0.67	5.00
53	3.95	64.82	251.55	144.31	209.13	37.86	0.67	5.00
54	2.69	62.22	254.87	146.95	209.17	39.35	0.67	3.48
55	1.17	60.66	256.80	148.54	209.20	39.35	0.67	1.52
56	3.78	58.57	259.28	150.65	209.22	40.83	0.67	5.00
57	3.70	55.30	263.02	153.97	209.27	42.31	0.67	5.00
58	3.61	51.93	266.68	157.38	209.31	43.80	0.67	5.00
59	3.52	48.46	270.24	160.89	209.35	45.28	0.67	5.00
60	3.43	44.91	273.71	164.49	209.39	46.76	0.67	5.00
61	3.33	41.26	277.09	168.17	209.43	48.24	0.67	5.00
62	3.23	37.53	280.37	171.95	209.47	49.73	0.67	5.00
63	3.13	33.71	283.55	175.80	209.51	51.21	0.67	5.00
64	3.03	29.81	286.63	179.74	209.54	52.69	0.67	5.00
65	2.93	25.82	289.61	183.75	209.58	54.18	0.67	5.00
66	2.82	21.77	292.49	187.85	209.61	55.66	0.67	5.00
67	2.71	17.63	295.25	192.01	209.64	57.14	0.67	5.00
68	2.60	13.43	297.91	196.24	209.68	58.62	0.67	5.00
69	0.79	10.63	299.61	199.06	209.70	60.11	0.67	1.58
70	1.71	8.48	300.85	201.23	209.71	60.11	0.52	3.42
71	2.38	4.81	302.89	204.91	209.73	61.59	0.52	5.00
72	1.34	1.31	304.75	208.43	209.74	63.07	0.52	2.96

Table 2 - Force Data On The 72 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	672.1	0.0	411.3	100.8	0.0	0.0
2	2019.2	0.0	1216.7	302.9	0.0	0.0
3	3346.9	0.0	1987.2	502.0	0.0	0.0
4	4648.9	0.0	2722.3	697.3	0.0	0.0
5	5919.4	0.0	3421.6	887.9	0.0	0.0
6	7152.8	0.0	4084.6	1072.9	0.0	0.0
7	8343.5	0.0	4710.8	1251.5	0.0	0.0
8	9486.4	0.0	5299.9	1423.0	0.0	0.0
9	10576.5	0.0	5851.4	1586.5	0.0	0.0
10	11609.0	0.0	6364.9	1741.4	0.0	0.0
11	12579.6	0.0	6840.2	1886.9	0.0	0.0
12	13484.0	0.0	7276.8	2022.6	0.0	0.0
13	8177.5	0.0	4383.1	1226.6	0.0	0.0
14	6309.4	0.0	3381.7	946.4	0.0	0.0
15	16834.7	0.0	8967.4	2525.2	0.0	0.0
16	19451.4	0.0	10304.5	2917.7	0.0	0.0
17	13835.2	0.0	7294.4	2075.3	0.0	0.0
18	8180.1	0.0	4248.8	1227.0	0.0	0.0
19	24518.8	0.0	12020.4	3677.8	0.0	0.0
20	26954.6	0.0	12253.8	4043.2	0.0	0.0
21	29315.6	0.0	12447.1	4397.3	0.0	0.0
22	31595.1	0.0	12600.3	4739.3	0.0	0.0
23	33786.7	0.0	12713.3	5068.0	0.0	0.0
24	35884.3	0.0	12786.0	5382.6	0.0	0.0
25	37882.1	0.0	12818.3	5682.3	0.0	0.0
26	39774.8	0.0	12810.3	5966.2	0.0	0.0
27	41557.5	0.0	12761.9	6233.6	0.0	0.0
28	43225.6	0.0	12673.1	6483.8	0.0	0.0
29	44774.9	0.0	12544.1	6716.2	0.0	0.0
30	46201.7	0.0	12374.9	6930.3	0.0	0.0
31	47502.9	0.0	12165.6	7125.4	0.0	0.0
32	48675.4	0.0	11916.4	7301.3	0.0	0.0
33	49716.9	0.0	11627.4	7457.5	0.0	0.0
34	50625.5	0.0	11298.8	7593.8	0.0	0.0
35	51399.6	0.0	10930.8	7709.9	0.0	0.0
36	43425.3	0.0	8824.9	6513.8	0.0	0.0
37	8592.6	0.0	1698.9	1288.9	0.0	0.0
38	51551.0	0.0	10077.9	7732.7	0.0	0.0
39	50459.2	0.0	9593.5	7568.9	0.0	0.0
40	49274.8	0.0	9070.8	7391.2	0.0	0.0
41	48002.1	0.0	8510.3	7200.3	0.0	0.0
42	13706.6	0.0	2373.9	2056.0	0.0	0.0
43	32925.3	0.0	5544.1	4938.8	0.0	0.0
44	45145.7	0.0	7304.4	6771.9	0.0	0.0
45	43585.4	0.0	6654.8	6537.8	0.0	0.0
46	41959.1	0.0	5968.7	6293.9	0.0	0.0
47	40272.4	0.0	5246.5	6040.9	0.0	0.0
48	38531.5	0.0	4488.8	5779.7	0.0	0.0
49	24094.8	0.0	2502.1	3614.2	0.0	0.0
50	12637.3	0.0	1193.9	1895.6	0.0	0.0
51	34770.8	0.0	2868.7	5215.6	0.0	0.0
52	32747.2	0.0	2007.4	4912.1	0.0	0.0
53	30704.6	0.0	1112.7	4605.7	0.0	0.0
54	20100.5	0.0	228.7	3015.1	0.0	0.0
55	8549.8	0.0	0.0	1282.5	0.0	0.0
56	26591.5	0.0	0.0	3988.7	0.0	0.0
57	24535.4	0.0	0.0	3680.3	0.0	0.0
58	22489.5	0.0	0.0	3373.4	0.0	0.0
59	20461.1	0.0	0.0	3069.2	0.0	0.0
60	18457.5	0.0	0.0	2768.6	0.0	0.0
61	16486.2	0.0	0.0	2472.9	0.0	0.0
62	14554.5	0.0	0.0	2183.2	0.0	0.0
63	12669.7	0.0	0.0	1900.5	0.0	0.0
64	10838.9	0.0	0.0	1625.8	0.0	0.0
65	9069.2	0.0	0.0	1360.4	0.0	0.0
66	7367.6	0.0	0.0	1105.1	0.0	0.0
67	5741.0	0.0	0.0	861.1	0.0	0.0
68	4195.9	0.0	0.0	629.4	0.0	0.0
69	1004.0	0.0	0.0	150.6	0.0	0.0
70	1734.5	0.0	0.0	260.2	0.0	0.0
71	1374.2	0.0	0.0	206.1	0.0	0.0
72	211.1	0.0	0.0	31.7	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 1714836.35(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 1337392.21(lbs)

TOTAL AREA OF SLIDING MASS = 14290.30(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 72 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	500.00	24.00	
2	1	500.00	24.00	
3	1	500.00	24.00	
4	1	500.00	24.00	
5	1	500.00	24.00	
6	1	500.00	24.00	
7	1	500.00	24.00	
8	1	500.00	24.00	
9	1	500.00	24.00	
10	1	500.00	24.00	
11	1	500.00	24.00	
12	1	500.00	24.00	
13	1	500.00	24.00	
14	1	500.00	24.00	
15	1	500.00	24.00	
16	1	500.00	24.00	
17	1	500.00	24.00	
18	1	500.00	24.00	
19	1	500.00	24.00	
20	1	500.00	24.00	
21	1	500.00	24.00	
22	1	500.00	24.00	
23	1	500.00	24.00	
24	1	500.00	24.00	
25	1	500.00	24.00	
26	1	500.00	24.00	
27	1	500.00	24.00	
28	1	500.00	24.00	
29	1	500.00	24.00	

30	1	500.00	24.00
31	1	500.00	24.00
32	1	500.00	24.00
33	1	500.00	24.00
34	1	500.00	24.00
35	1	500.00	24.00
36	1	500.00	24.00
37	1	500.00	24.00
38	1	500.00	24.00
39	1	500.00	24.00
40	1	500.00	24.00
41	1	500.00	24.00
42	1	500.00	24.00
43	1	500.00	24.00
44	1	500.00	24.00
45	1	500.00	24.00
46	1	500.00	24.00
47	1	500.00	24.00
48	1	500.00	24.00
49	1	500.00	24.00
50	1	500.00	24.00
51	1	500.00	24.00
52	1	500.00	24.00
53	1	500.00	24.00
54	1	500.00	24.00
55	1	500.00	24.00
56	1	500.00	24.00
57	1	500.00	24.00
58	1	500.00	24.00
59	1	500.00	24.00
60	1	500.00	24.00
61	1	500.00	24.00
62	1	500.00	24.00
63	1	500.00	24.00
64	1	500.00	24.00
65	1	500.00	24.00
66	1	500.00	24.00
67	1	500.00	24.00
68	1	500.00	24.00
69	1	500.00	24.00
70	1	500.00	24.00
71	1	500.00	24.00
72	1	500.00	24.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 72 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-31.82	31.09	5.00	459.25	704.47	629.73
1	-31.82	31.09	5.00	459.25	704.47	629.73
2	-30.34	35.37	5.00	623.71	777.69	695.19
2	-30.34	35.37	5.00	623.71	777.69	695.19
3	-28.86	39.72	5.00	775.20	845.14	755.48
3	-28.86	39.72	5.00	775.20	845.14	755.48
4	-27.38	44.13	5.00	914.40	907.12	810.88
4	-27.38	44.13	5.00	914.40	907.12	810.88
5	-25.89	48.60	5.00	1041.91	963.89	861.63
5	-25.89	48.60	5.00	1041.91	963.89	861.63
6	-24.41	53.12	5.00	1158.22	1015.67	907.92
6	-24.41	53.12	5.00	1158.22	1015.67	907.92
7	-22.93	57.70	5.00	1263.78	1062.67	949.93
7	-22.93	57.70	5.00	1263.78	1062.67	949.93
8	-21.45	62.33	5.00	1359.01	1105.07	987.83
8	-21.45	62.33	5.00	1359.01	1105.07	987.83
9	-19.96	67.01	5.00	1444.25	1143.02	1021.76
9	-19.96	67.01	5.00	1444.25	1143.02	1021.76
10	-18.48	71.73	5.00	1519.83	1176.67	1051.84
10	-18.48	71.73	5.00	1519.83	1176.67	1051.84
11	-17.00	76.49	5.00	1586.04	1206.15	1078.19
11	-17.00	76.49	5.00	1586.04	1206.15	1078.19
12	-15.51	81.29	5.00	1643.14	1231.58	1100.92
12	-15.51	81.29	5.00	1643.14	1231.58	1100.92
13	-14.03	85.10	2.89	1675.04	1245.77	1113.61
13	-14.03	85.10	2.89	1675.04	1245.77	1113.61
14	-14.03	87.53	2.11	1757.45	1282.47	1146.41
14	-14.03	87.53	2.11	1757.45	1282.47	1146.41
15	-12.55	90.99	5.00	1920.28	1354.97	1211.22
15	-12.55	90.99	5.00	1920.28	1354.97	1211.22
16	-11.07	95.89	5.00	2153.20	1458.67	1303.92
16	-11.07	95.89	5.00	2153.20	1458.67	1303.92
17	-9.58	99.92	3.21	2328.81	1536.85	1373.81
17	-9.58	99.92	3.21	2328.81	1536.85	1373.81
18	-9.58	102.38	1.79	2494.12	1610.45	1439.60
18	-9.58	102.38	1.79	2494.12	1610.45	1439.60
19	-8.10	105.74	5.00	2765.12	1731.11	1547.46
19	-8.10	105.74	5.00	2765.12	1731.11	1547.46
20	-6.62	110.70	5.00	3170.79	1911.73	1708.91
20	-6.62	110.70	5.00	3170.79	1911.73	1708.91
21	-5.14	115.68	5.00	3561.67	2085.76	1864.48
21	-5.14	115.68	5.00	3561.67	2085.76	1864.48
22	-3.65	120.66	5.00	3937.93	2253.28	2014.23
22	-3.65	120.66	5.00	3937.93	2253.28	2014.23
23	-2.17	125.65	5.00	4299.72	2414.36	2158.22
23	-2.17	125.65	5.00	4299.72	2414.36	2158.22
24	-0.69	130.65	5.00	4647.17	2569.05	2296.50
24	-0.69	130.65	5.00	4647.17	2569.05	2296.50
25	0.80	135.65	5.00	4980.38	2717.41	2429.12
25	0.80	135.65	5.00	4980.38	2717.41	2429.12
26	2.28	140.65	5.00	5299.44	2859.46	2556.11
26	2.28	140.65	5.00	5299.44	2859.46	2556.11
27	3.76	145.64	5.00	5604.42	2995.25	2677.48
27	3.76	145.64	5.00	5604.42	2995.25	2677.48
28	5.24	150.63	5.00	5895.37	3124.79	2793.28
28	5.24	150.63	5.00	5895.37	3124.79	2793.28
29	6.73	155.60	5.00	6172.35	3248.11	2903.52
29	6.73	155.60	5.00	6172.35	3248.11	2903.52
30	8.21	160.56	5.00	6435.39	3365.22	3008.20
30	8.21	160.56	5.00	6435.39	3365.22	3008.20
31	9.69	165.49	5.00	6684.51	3476.14	3107.36
31	9.69	165.49	5.00	6684.51	3476.14	3107.36
32	11.18	170.41	5.00	6919.75	3580.87	3200.98
32	11.18	170.41	5.00	6919.75	3580.87	3200.98
33	12.66	175.30	5.00	7141.11	3679.43	3289.08
33	12.66	175.30	5.00	7141.11	3679.43	3289.08
34	14.14	180.17	5.00	7348.62	3771.81	3371.67
34	14.14	180.17	5.00	7348.62	3771.81	3371.67
35	15.62	185.00	5.00	7542.27	3858.04	3448.74
35	15.62	185.00	5.00	7542.27	3858.04	3448.74
36	17.11	189.40	4.18	7700.72	3928.58	3511.80
36	17.11	189.40	4.18	7700.72	3928.58	3511.80
37	17.11	191.79	0.82	7807.63	3976.18	3554.35
37	17.11	191.79	0.82	7807.63	3976.18	3554.35
38	18.59	194.55	5.00	7703.39	3929.77	3512.86
38	18.59	194.55	5.00	7703.39	3929.77	3512.86
39	20.07	199.27	5.00	7583.91	3876.57	3465.31
39	20.07	199.27	5.00	7583.91	3876.57	3465.31
40	21.55	203.95	5.00	7458.61	3820.79	3415.44
40	21.55	203.95	5.00	7458.61	3820.79	3415.44
41	23.04	208.57	5.00	7327.62	3762.47	3363.31
41	23.04	208.57	5.00	7327.62	3762.47	3363.31
42	24.52	211.54	1.46	7209.88	3710.04	3316.45
42	24.52	211.54	1.46	7209.88	3710.04	3316.45
43	24.52	213.81	3.54	7178.33	3696.00	3303.89
43	24.52	213.81	3.54	7178.33	3696.00	3303.89

44	26.00	217.67	5.00	7032.38	3631.02	3245.80
44	26.00	217.67	5.00	7032.38	3631.02	3245.80
45	27.49	222.13	5.00	6871.73	3559.49	3181.87
45	27.49	222.13	5.00	6871.73	3559.49	3181.87
46	28.97	226.54	5.00	6706.34	3485.85	3116.04
46	28.97	226.54	5.00	6706.34	3485.85	3116.04
47	30.45	230.88	5.00	6536.32	3410.16	3048.38
47	30.45	230.88	5.00	6536.32	3410.16	3048.38
48	31.93	235.16	5.00	6361.85	3332.48	2978.94
48	31.93	235.16	5.00	6361.85	3332.48	2978.94
49	33.42	238.64	3.26	6199.87	3260.36	2914.47
49	33.42	238.64	3.26	6199.87	3260.36	2914.47
50	33.42	240.73	1.74	6145.87	3236.32	2892.98
50	33.42	240.73	1.74	6145.87	3236.32	2892.98
51	34.90	243.50	5.00	5973.07	3159.38	2824.21
51	34.90	243.50	5.00	5973.07	3159.38	2824.21
52	36.38	247.57	5.00	5755.46	3062.50	2737.60
52	36.38	247.57	5.00	5755.46	3062.50	2737.60
53	37.86	251.55	5.00	5535.37	2964.51	2650.00
53	37.86	251.55	5.00	5535.37	2964.51	2650.00
54	39.35	254.87	3.48	5334.43	2875.04	2570.03
54	39.35	254.87	3.48	5334.43	2875.04	2570.03
55	39.35	256.80	1.52	5242.16	2833.96	2533.31
55	39.35	256.80	1.52	5242.16	2833.96	2533.31
56	40.83	259.28	5.00	4972.71	2713.99	2426.07
56	40.83	259.28	5.00	4972.71	2713.99	2426.07
57	42.31	263.02	5.00	4601.66	2548.79	2278.39
57	42.31	263.02	5.00	4601.66	2548.79	2278.39
58	43.80	266.68	5.00	4228.52	2382.66	2129.88
58	43.80	266.68	5.00	4228.52	2382.66	2129.88
59	45.28	270.24	5.00	3853.94	2215.88	1980.80
59	45.28	270.24	5.00	3853.94	2215.88	1980.80
60	46.76	273.71	5.00	3478.60	2048.77	1831.42
60	46.76	273.71	5.00	3478.60	2048.77	1831.42
61	48.24	277.09	5.00	3103.23	1881.65	1682.02
61	48.24	277.09	5.00	3103.23	1881.65	1682.02
62	49.73	280.37	5.00	2728.58	1714.84	1532.92
62	49.73	280.37	5.00	2728.58	1714.84	1532.92
63	51.21	283.55	5.00	2355.45	1548.72	1384.41
63	51.21	283.55	5.00	2355.45	1548.72	1384.41
64	52.69	286.63	5.00	1984.70	1383.65	1236.86
64	52.69	286.63	5.00	1984.70	1383.65	1236.86
65	54.18	289.61	5.00	1617.23	1220.04	1090.60
65	54.18	289.61	5.00	1617.23	1220.04	1090.60
66	55.66	292.49	5.00	1254.00	1058.32	946.04
66	55.66	292.49	5.00	1254.00	1058.32	946.04
67	57.14	295.25	5.00	896.04	898.94	803.58
67	57.14	295.25	5.00	896.04	898.94	803.58
68	58.62	297.91	5.00	544.47	742.41	663.65
68	58.62	297.91	5.00	544.47	742.41	663.65
69	60.11	299.61	1.58	305.76	636.13	568.65
69	60.11	299.61	1.58	305.76	636.13	568.65
70	60.11	300.85	3.42	151.73	567.56	507.34
70	60.11	300.85	3.42	151.73	567.56	507.34
71	61.59	302.89	5.00	335.54	149.39	133.54
71	61.59	302.89	5.00	335.54	149.39	133.54
72	63.07	304.75	2.96	89.08	39.66	35.45
72	63.07	304.75	2.96	89.08	39.66	35.45

Table 4 - Base Force Data on the 72 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-31.82	31.09	5.00	2296.23	3522.35	3148.66
1	-31.82	31.09	5.00	2296.23	3522.35	3148.66
2	-30.34	35.37	5.00	3118.53	3888.46	3475.93
2	-30.34	35.37	5.00	3118.53	3888.46	3475.93
3	-28.86	39.72	5.00	3876.00	4225.71	3777.40
3	-28.86	39.72	5.00	3876.00	4225.71	3777.40
4	-27.38	44.13	5.00	4572.02	4535.59	4054.42
4	-27.38	44.13	5.00	4572.02	4535.59	4054.42
5	-25.89	48.60	5.00	5209.53	4819.43	4308.14
5	-25.89	48.60	5.00	5209.53	4819.43	4308.14
6	-24.41	53.12	5.00	5791.08	5078.35	4539.59
6	-24.41	53.12	5.00	5791.08	5078.35	4539.59
7	-22.93	57.70	5.00	6318.92	5313.36	4749.67
7	-22.93	57.70	5.00	6318.92	5313.36	4749.67
8	-21.45	62.33	5.00	6795.05	5525.35	4939.17
8	-21.45	62.33	5.00	6795.05	5525.35	4939.17
9	-19.96	67.01	5.00	7221.26	5715.11	5108.80
9	-19.96	67.01	5.00	7221.26	5715.11	5108.80
10	-18.48	71.73	5.00	7599.15	5883.36	5259.20
10	-18.48	71.73	5.00	7599.15	5883.36	5259.20
11	-17.00	76.49	5.00	7930.19	6030.75	5390.95
11	-17.00	76.49	5.00	7930.19	6030.75	5390.95
12	-15.51	81.29	5.00	8215.72	6157.88	5504.59
12	-15.51	81.29	5.00	8215.72	6157.88	5504.59
13	-14.03	85.10	2.89	4833.58	3594.87	3213.50
13	-14.03	85.10	2.89	4833.58	3594.87	3213.50
14	-14.03	87.53	2.11	3715.86	2711.58	2423.91
14	-14.03	87.53	2.11	3715.86	2711.58	2423.91
15	-12.55	90.99	5.00	9601.42	6774.83	6056.09
15	-12.55	90.99	5.00	9601.42	6774.83	6056.09
16	-11.07	95.89	5.00	10766.00	7293.33	6519.59
16	-11.07	95.89	5.00	10766.00	7293.33	6519.59
17	-9.58	99.92	3.21	7465.93	4927.00	4404.30
17	-9.58	99.92	3.21	7465.93	4927.00	4404.30
18	-9.58	102.38	1.79	4474.69	2889.31	2582.79
18	-9.58	102.38	1.79	4474.69	2889.31	2582.79
19	-8.10	105.74	5.00	13825.62	8655.56	7737.30
19	-8.10	105.74	5.00	13825.62	8655.56	7737.30
20	-6.62	110.70	5.00	15853.96	9558.64	8544.57
20	-6.62	110.70	5.00	15853.96	9558.64	8544.57
21	-5.14	115.68	5.00	17808.34	10428.78	9322.40
21	-5.14	115.68	5.00	17808.34	10428.78	9322.40
22	-3.65	120.66	5.00	19689.63	11266.39	10071.15
22	-3.65	120.66	5.00	19689.63	11266.39	10071.15
23	-2.17	125.65	5.00	21498.60	12071.79	10791.11
23	-2.17	125.65	5.00	21498.60	12071.79	10791.11
24	-0.69	130.65	5.00	23235.85	12845.27	11482.52
24	-0.69	130.65	5.00	23235.85	12845.27	11482.52
25	0.80	135.65	5.00	24901.91	13587.04	12145.61
25	0.80	135.65	5.00	24901.91	13587.04	12145.61
26	2.28	140.65	5.00	26497.21	14297.32	12780.53
26	2.28	140.65	5.00	26497.21	14297.32	12780.53
27	3.76	145.64	5.00	28022.10	14976.24	13387.42
27	3.76	145.64	5.00	28022.10	14976.24	13387.42
28	5.24	150.63	5.00	29476.87	15623.95	13966.41
28	5.24	150.63	5.00	29476.87	15623.95	13966.41
29	6.73	155.60	5.00	30861.75	16240.54	14517.59
29	6.73	155.60	5.00	30861.75	16240.54	14517.59
30	8.21	160.56	5.00	32176.93	16826.09	15041.02
30	8.21	160.56	5.00	32176.93	16826.09	15041.02
31	9.69	165.49	5.00	33422.55	17380.68	15536.78
31	9.69	165.49	5.00	33422.55	17380.68	15536.78
32	11.18	170.41	5.00	34598.73	17904.35	16004.89
32	11.18	170.41	5.00	34598.73	17904.35	16004.89
33	12.66	175.30	5.00	35705.55	18397.14	16445.40
33	12.66	175.30	5.00	35705.55	18397.14	16445.40
34	14.14	180.17	5.00	36743.08	18859.07	16858.33
34	14.14	180.17	5.00	36743.08	18859.07	16858.33
35	15.62	185.00	5.00	37711.36	19290.18	17243.70
35	15.62	185.00	5.00	37711.36	19290.18	17243.70
36	17.11	189.40	4.18	32180.76	16417.26	14675.57
36	17.11	189.40	4.18	32180.76	16417.26	14675.57
37	17.11	191.79	0.82	6410.60	3264.72	2918.37
37	17.11	191.79	0.82	6410.60	3264.72	2918.37
38	18.59	194.55	5.00	38516.94	19648.85	17564.32
38	18.59	194.55	5.00	38516.94	19648.85	17564.32
39	20.07	199.27	5.00	37919.53	19382.86	17326.55

39	20.07	199.27	5.00	37919.53	19382.86	17326.55
40	21.55	203.95	5.00	37293.07	19103.94	17077.22
40	21.55	203.95	5.00	37293.07	19103.94	17077.22
41	23.04	208.57	5.00	36638.10	18812.33	16816.55
41	23.04	208.57	5.00	36638.10	18812.33	16816.55
42	24.52	211.54	1.46	10525.38	5416.13	4841.54
42	24.52	211.54	1.46	10525.38	5416.13	4841.54
43	24.52	213.81	3.54	25412.32	13084.36	11696.25
43	24.52	213.81	3.54	25412.32	13084.36	11696.25
44	26.00	217.67	5.00	35161.89	18155.08	16229.02
44	26.00	217.67	5.00	35161.89	18155.08	16229.02
45	27.49	222.13	5.00	34358.67	17797.46	15909.34
45	27.49	222.13	5.00	34358.67	17797.46	15909.34
46	28.97	226.54	5.00	33531.68	17429.26	15580.21
46	28.97	226.54	5.00	33531.68	17429.26	15580.21
47	30.45	230.88	5.00	32681.62	17050.80	15241.89
47	30.45	230.88	5.00	32681.62	17050.80	15241.89
48	31.93	235.16	5.00	31809.24	16662.39	14894.69
48	31.93	235.16	5.00	31809.24	16662.39	14894.69
49	33.42	238.64	3.26	20215.34	10630.75	9502.94
49	33.42	238.64	3.26	20215.34	10630.75	9502.94
50	33.42	240.73	1.74	10690.09	5629.23	5032.03
50	33.42	240.73	1.74	10690.09	5629.23	5032.03
51	34.90	243.50	5.00	29865.36	15796.92	14121.03
51	34.90	243.50	5.00	29865.36	15796.92	14121.03
52	36.38	247.57	5.00	28777.31	15312.48	13687.99
52	36.38	247.57	5.00	28777.31	15312.48	13687.99
53	37.86	251.55	5.00	27676.86	14822.53	13250.02
53	37.86	251.55	5.00	27676.86	14822.53	13250.02
54	39.35	254.87	3.48	18569.96	10008.46	8946.67
54	39.35	254.87	3.48	18569.96	10008.46	8946.67
55	39.35	256.80	1.52	7962.04	4304.35	3847.71
55	39.35	256.80	1.52	7962.04	4304.35	3847.71
56	40.83	259.28	5.00	24863.57	13569.97	12130.35
56	40.83	259.28	5.00	24863.57	13569.97	12130.35
57	42.31	263.02	5.00	23008.30	12743.96	11391.96
57	42.31	263.02	5.00	23008.30	12743.96	11391.96
58	43.80	266.68	5.00	21142.59	11913.29	10649.42
58	43.80	266.68	5.00	21142.59	11913.29	10649.42
59	45.28	270.24	5.00	19269.68	11079.42	9904.01
59	45.28	270.24	5.00	19269.68	11079.42	9904.01
60	46.76	273.71	5.00	17393.01	10243.86	9157.10
60	46.76	273.71	5.00	17393.01	10243.86	9157.10
61	48.24	277.09	5.00	15516.15	9408.23	8410.12
61	48.24	277.09	5.00	15516.15	9408.23	8410.12
62	49.73	280.37	5.00	13642.90	8574.21	7664.58
62	49.73	280.37	5.00	13642.90	8574.21	7664.58
63	51.21	283.55	5.00	11777.27	7743.58	6922.07
63	51.21	283.55	5.00	11777.27	7743.58	6922.07
64	52.69	286.63	5.00	9923.52	6918.23	6184.28
64	52.69	286.63	5.00	9923.52	6918.23	6184.28
65	54.18	289.61	5.00	8086.15	6100.19	5453.02
65	54.18	289.61	5.00	8086.15	6100.19	5453.02
66	55.66	292.49	5.00	6270.00	5291.58	4730.20
66	55.66	292.49	5.00	6270.00	5291.58	4730.20
67	57.14	295.25	5.00	4480.22	4494.72	4017.88
67	57.14	295.25	5.00	4480.22	4494.72	4017.88
68	58.62	297.91	5.00	2722.36	3712.07	3318.26
68	58.62	297.91	5.00	2722.36	3712.07	3318.26
69	60.11	299.61	1.58	482.77	1004.39	897.84
69	60.11	299.61	1.58	482.77	1004.39	897.84
70	60.11	300.85	3.42	519.09	1941.66	1735.67
70	60.11	300.85	3.42	519.09	1941.66	1735.67
71	61.59	302.89	5.00	1677.71	746.96	667.72
71	61.59	302.89	5.00	1677.71	746.96	667.72
72	63.07	304.75	2.96	263.55	117.34	104.89
72	63.07	304.75	2.96	263.55	117.34	104.89

SUM OF MOMENTS = 0.101698E+01 (ft/lbs);Imbalance (Fraction of Total Weight) = 0.5930501E-06

Sum of the Resisting Forces = 731429.49 (lbs)

Average Available Shear Strength = 2264.78(psf)

Sum of the Driving Forces = 653832.70 (lbs)

Average Mobilized Shear Stress = 2024.51(psf)

Total length of the failure surface = 322.96(ft)

Factor of Safety Balance Check: FS = 1.11868

CAUTION - Factor Of Safety Is Calculated By The Simplified Bishop Method. This Method Is Valid Only If The Failure Surface Approximates A Circular Arc.

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.21726(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

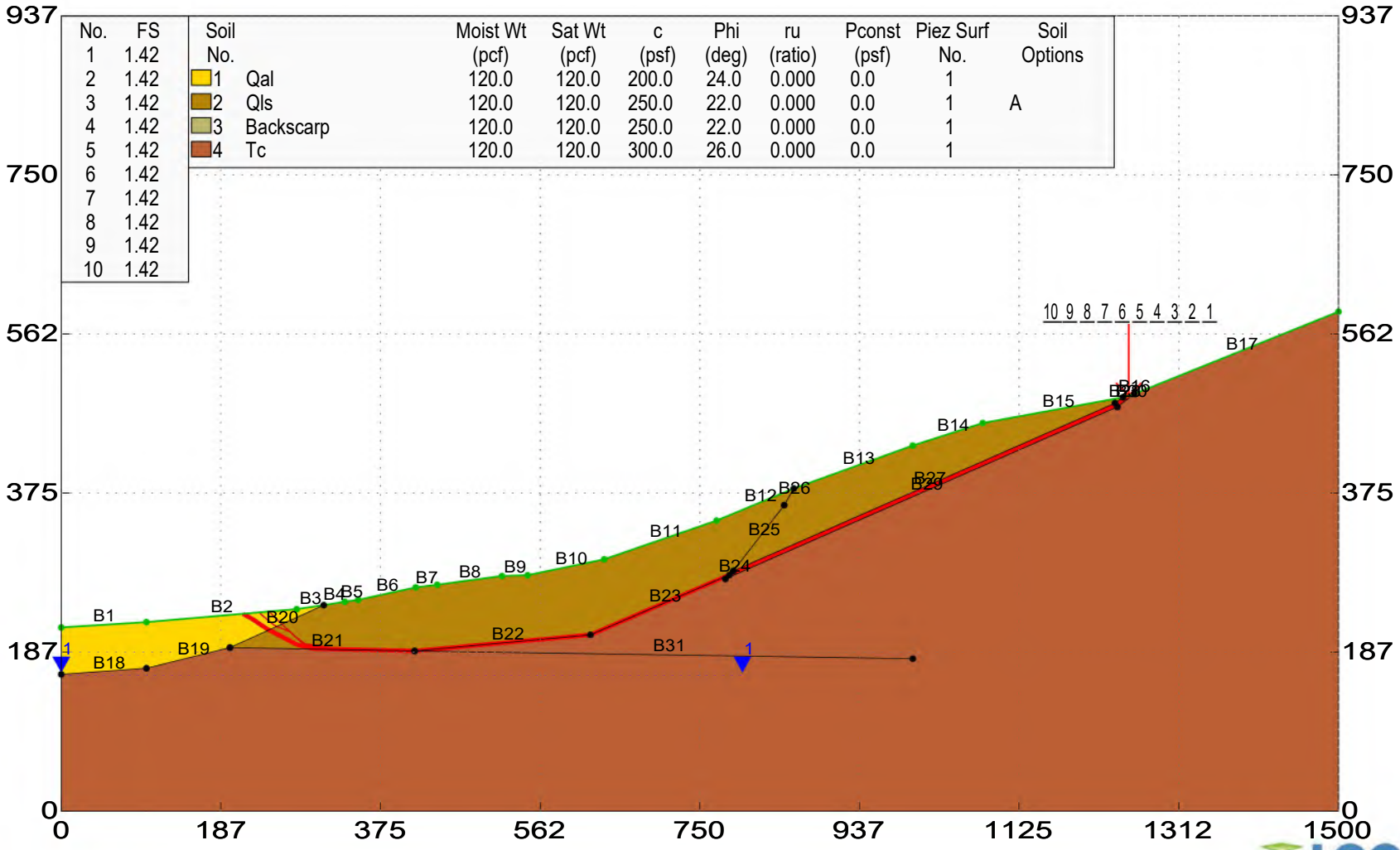
Average Elevation of Point of Application of kh on Sliding Mass = 156.956(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Existing - Larger Qls - Static

LGC Geotechnical, Inc. \xhLRG.gsd



GEOSTASE FS = 1.42

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 10/ 27/ 2023
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2023_10_27\xhLRG.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2023_10_27\xhLRG.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Existing - Larger Qls - Static

BOUNDARY DATA

17 Surface Boundaries
31 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	216.400	100.000	222.900	1
2	100.000	222.900	276.400	238.000	1
3	276.400	238.000	308.300	242.900	1
4	308.300	242.900	332.700	247.000	2
5	332.700	247.000	348.800	249.000	2
6	348.800	249.000	416.400	263.600	2
7	416.400	263.600	441.400	267.000	2
8	441.400	267.000	517.400	277.100	2
9	517.400	277.100	547.500	278.000	2
10	547.500	278.000	637.700	297.000	2
11	637.700	297.000	769.500	342.600	2
12	769.500	342.600	860.200	380.200	2
13	860.200	380.200	1000.000	430.900	2
14	1000.000	430.900	1082.100	457.600	2
15	1082.100	457.600	1247.000	487.900	2
16	1247.000	487.900	1260.400	491.900	3
17	1260.400	491.900	1500.000	588.800	4
18	0.000	161.100	100.000	168.300	4
19	100.000	168.300	198.100	192.800	4
20	198.100	192.800	308.300	242.900	2
21	198.100	192.800	414.900	188.600	4
22	414.900	188.600	621.400	207.800	4
23	621.400	207.800	784.600	278.400	4
24	779.900	273.600	789.300	283.200	3
25	789.300	283.200	849.000	360.500	2
26	849.000	360.500	860.200	380.200	2
27	789.300	283.200	1237.700	480.800	3
28	1237.700	480.800	1247.000	487.900	3
29	779.900	273.600	1240.300	476.500	4
30	1240.300	476.500	1260.400	491.900	4
31	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	24.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	354.70	189.70	5.00
2	414.90	188.60	414.90	188.60	0.00
3	621.40	207.80	621.40	207.80	0.00
4	784.60	278.40	784.60	278.40	0.00
5	1239.00	478.60	1239.00	478.60	0.00
6	1253.70	489.90	1253.70	489.90	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.713 FS Min = 1.416 FS Ave = 1.517
Standard Deviation = 0.093 Coefficient of Variation = 6.11 %

Critical Surface is Sequence Number 126 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.416

Table 1 - Geometry Data on the 209 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.55	1.87	216.38	230.99	232.86	-30.48	4.89	6.44
2	5.55	5.61	221.93	227.72	233.34	-30.48	4.89	6.44
3	5.56	9.56	227.49	224.25	233.81	-33.45	4.89	6.67
4	5.56	13.71	233.05	220.58	234.29	-33.45	4.89	6.67
5	5.56	17.86	238.61	216.90	234.77	-33.45	4.89	6.67
6	2.60	20.75	242.69	214.36	235.11	-28.32	4.89	2.95
7	5.00	23.12	246.49	212.32	235.44	-28.32	4.89	5.68
8	5.00	26.25	251.50	209.62	235.87	-28.32	4.89	5.68
9	5.00	29.37	256.50	206.93	236.30	-28.32	4.89	5.68
10	5.80	32.73	261.90	204.03	236.76	-28.12	4.89	6.58
11	5.80	36.33	267.70	200.93	237.26	-28.12	4.89	6.58
12	5.80	39.92	273.50	197.83	237.75	-28.12	4.89	6.58
13	0.24	41.80	276.52	196.22	238.02	-28.12	8.73	0.27
14	4.87	42.83	279.07	195.58	238.41	-13.12	8.73	5.00
15	4.87	44.71	283.94	194.45	239.16	-13.12	8.73	5.00
16	4.87	46.59	288.81	193.31	239.91	-13.12	8.73	5.00
17	4.87	48.47	293.68	192.18	240.65	-13.12	8.73	5.00
18	6.09	49.96	299.16	191.54	241.50	-1.45	8.73	6.09
19	6.09	51.05	305.25	191.38	242.43	-1.45	8.73	6.09
20	4.88	52.07	310.74	191.24	243.31	-1.45	9.54	4.88
21	4.88	53.01	315.62	191.12	244.13	-1.45	9.54	4.88
22	4.88	53.96	320.50	190.99	244.95	-1.45	9.54	4.88
23	4.88	54.90	325.38	190.87	245.77	-1.45	9.54	4.88
24	4.88	55.84	330.26	190.75	246.59	-1.45	9.54	4.88
25	5.37	56.72	335.38	190.62	247.33	-1.45	7.08	5.37
26	5.37	57.52	340.75	190.48	248.00	-1.45	7.08	5.37
27	5.37	58.32	346.12	190.34	248.67	-1.45	7.08	5.37
28	5.08	59.34	351.34	190.21	249.55	-1.45	12.19	5.09
29	5.08	60.56	356.43	190.08	250.65	-1.45	12.19	5.09
30	5.08	61.79	361.51	189.95	251.75	-1.45	12.19	5.09
31	5.08	63.02	366.60	189.83	252.84	-1.45	12.19	5.09
32	5.08	64.25	371.68	189.70	253.94	-1.45	12.19	5.09
33	5.08	65.47	376.77	189.57	255.04	-1.45	12.19	5.09
34	5.08	66.70	381.85	189.44	256.14	-1.45	12.19	5.09
35	5.08	67.93	386.93	189.31	257.24	-1.45	12.19	5.09
36	5.08	69.15	392.02	189.18	258.33	-1.45	12.19	5.09
37	5.08	70.38	397.10	189.05	259.43	-1.45	12.19	5.09
38	5.08	71.61	402.19	188.92	260.53	-1.45	12.19	5.09
39	5.08	72.84	407.27	188.79	261.63	-1.45	12.19	5.09
40	5.08	74.06	412.36	188.66	262.73	-1.45	12.19	5.09
41	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
42	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
43	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
44	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
45	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
46	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02

47	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
48	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
49	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
50	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
51	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
52	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
53	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
54	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
55	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
56	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
57	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
58	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
59	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
60	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
61	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
62	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
63	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
64	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
65	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
66	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
67	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
68	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
69	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
70	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
71	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
72	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
73	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
74	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
75	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
76	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
77	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
78	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
79	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
80	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
81	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
82	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
83	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
84	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
85	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
86	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
87	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
88	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
89	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
90	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
91	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
92	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
93	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
94	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
95	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
96	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
97	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
98	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
99	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
100	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
101	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
102	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
103	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
104	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
105	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
106	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
107	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
108	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
109	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
110	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
111	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
112	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
113	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
114	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
115	4.70	70.40	786.95	279.44	349.83	23.78	22.52	5.14
116	4.98	70.27	791.79	281.57	351.84	23.78	22.52	5.44
117	4.98	70.14	796.76	283.76	353.90	23.78	22.52	5.44
118	4.97	70.01	801.74	285.95	355.96	23.78	22.52	5.44
119	4.98	69.88	806.71	288.14	358.03	23.78	22.52	5.44
120	4.98	69.75	811.69	290.33	360.09	23.78	22.52	5.44
121	4.98	69.63	816.66	292.53	362.15	23.78	22.52	5.44
122	4.98	69.50	821.64	294.72	364.21	23.78	22.52	5.44
123	4.98	69.37	826.61	296.91	366.28	23.78	22.52	5.44
124	4.98	69.24	831.59	299.10	368.34	23.78	22.52	5.44
125	4.97	69.11	836.56	301.29	370.40	23.78	22.52	5.44
126	4.98	68.98	841.54	303.49	372.46	23.78	22.52	5.44
127	4.98	68.85	846.51	305.68	374.53	23.78	22.52	5.44
128	5.60	68.71	851.80	308.01	376.72	23.78	22.52	6.12
129	5.60	68.56	857.40	310.47	379.04	23.78	22.52	6.12
130	4.99	68.30	862.70	312.81	381.11	23.78	19.93	5.46
131	4.99	67.91	867.69	315.01	382.92	23.78	19.93	5.46
132	4.99	67.52	872.68	317.21	384.73	23.78	19.93	5.46
133	4.99	67.13	877.67	319.41	386.54	23.78	19.93	5.46
134	4.99	66.74	882.67	321.61	388.35	23.78	19.93	5.46
135	4.99	66.35	887.66	323.81	390.16	23.78	19.93	5.46
136	4.99	65.96	892.65	326.01	391.97	23.78	19.93	5.46
137	4.99	65.57	897.65	328.21	393.78	23.78	19.93	5.46
138	4.99	65.19	902.64	330.41	395.59	23.78	19.93	5.46
139	4.99	64.80	907.63	332.61	397.40	23.78	19.93	5.46
140	4.99	64.41	912.62	334.81	399.21	23.78	19.93	5.46
141	4.99	64.02	917.62	337.01	401.02	23.78	19.93	5.46
142	4.99	63.63	922.61	339.20	402.83	23.78	19.93	5.46
143	4.99	63.24	927.60	341.40	404.64	23.78	19.93	5.46
144	4.99	62.85	932.60	343.60	406.46	23.78	19.93	5.46
145	4.99	62.46	937.59	345.80	408.27	23.78	19.93	5.46
146	4.99	62.07	942.58	348.00	410.08	23.78	19.93	5.46
147	4.99	61.68	947.58	350.20	411.89	23.78	19.93	5.46
148	4.99	61.29	952.57	352.40	413.70	23.78	19.93	5.46
149	4.99	60.91	957.56	354.60	415.51	23.78	19.93	5.46
150	4.99	60.52	962.55	356.80	417.32	23.78	19.93	5.46
151	4.99	60.13	967.55	359.00	419.13	23.78	19.93	5.46
152	4.99	59.74	972.54	361.20	420.94	23.78	19.93	5.46
153	4.99	59.35	977.53	363.40	422.75	23.78	19.93	5.46
154	4.99	58.96	982.53	365.60	424.56	23.78	19.93	5.46
155	4.99	58.57	987.52	367.80	426.37	23.78	19.93	5.46
156	4.99	58.18	992.51	370.00	428.18	23.78	19.93	5.46
157	4.99	57.79	997.50	372.20	429.99	23.78	19.93	5.46
158	5.13	57.30	1002.57	374.43	431.73	23.78	18.02	5.61
159	5.13	56.71	1007.70	376.69	433.40	23.78	18.02	5.61
160	5.13	56.12	1012.83	378.95	435.07	23.78	18.02	5.61
161	5.13	55.53	1017.96	381.21	436.74	23.78	18.02	5.61
162	5.13	54.93	1023.09	383.47	438.41	23.78	18.02	5.61
163	5.13	54.34	1028.22	385.74	440.08	23.78	18.02	5.61
164	5.13	53.75	1033.35	388.00	441.75	23.78	18.02	5.61
165	5.13	53.16	1038.48	390.26	443.42	23.78	18.02	5.61
166	5.13	52.57	1043.62	392.52	445.08	23.78	18.02	5.61

167	5.13	51.98	1048.75	394.78	446.75	23.78	18.02	5.61
168	5.13	51.38	1053.88	397.04	448.42	23.78	18.02	5.61
169	5.13	50.79	1059.01	399.30	450.09	23.78	18.02	5.61
170	5.13	50.20	1064.14	401.56	451.76	23.78	18.02	5.61
171	5.13	49.61	1069.27	403.82	453.43	23.78	18.02	5.61
172	5.13	49.02	1074.40	406.08	455.10	23.78	18.02	5.61
173	5.13	48.42	1079.53	408.34	456.77	23.78	18.02	5.61
174	5.02	47.48	1084.61	410.58	458.06	23.78	10.41	5.48
175	5.02	46.19	1089.63	412.79	458.98	23.78	10.41	5.48
176	5.02	44.90	1094.65	415.00	459.91	23.78	10.41	5.48
177	5.02	43.62	1099.67	417.21	460.83	23.78	10.41	5.48
178	5.02	42.33	1104.69	419.42	461.75	23.78	10.41	5.48
179	5.02	41.04	1109.71	421.64	462.67	23.78	10.41	5.48
180	5.02	39.75	1114.73	423.85	463.59	23.78	10.41	5.48
181	5.02	38.46	1119.75	426.06	464.52	23.78	10.41	5.48
182	5.02	37.17	1124.76	428.27	465.44	23.78	10.41	5.48
183	5.02	35.88	1129.78	430.48	466.36	23.78	10.41	5.48
184	5.02	34.59	1134.80	432.69	467.28	23.78	10.41	5.48
185	5.02	33.30	1139.82	434.90	468.21	23.78	10.41	5.48
186	5.02	32.01	1144.84	437.12	469.13	23.78	10.41	5.48
187	5.02	30.72	1149.86	439.33	470.05	23.78	10.41	5.48
188	5.02	29.43	1154.88	441.54	470.97	23.78	10.41	5.48
189	5.02	28.15	1159.90	443.75	471.90	23.78	10.41	5.48
190	5.02	26.86	1164.92	445.96	472.82	23.78	10.41	5.48
191	5.02	25.57	1169.94	448.17	473.74	23.78	10.41	5.48
192	5.02	24.28	1174.96	450.38	474.66	23.78	10.41	5.48
193	5.02	22.99	1179.98	452.60	475.58	23.78	10.41	5.48
194	5.02	21.70	1185.00	454.81	476.51	23.78	10.41	5.48
195	5.02	20.41	1190.02	457.02	477.43	23.78	10.41	5.48
196	5.02	19.12	1195.04	459.23	478.35	23.78	10.41	5.48
197	5.02	17.83	1200.05	461.44	479.27	23.78	10.41	5.48
198	5.02	16.54	1205.07	463.65	480.20	23.78	10.41	5.48
199	5.02	15.25	1210.09	465.86	481.12	23.78	10.41	5.48
200	5.02	13.97	1215.11	468.08	482.04	23.78	10.41	5.48
201	5.02	12.68	1220.13	470.29	482.96	23.78	10.41	5.48
202	5.02	11.39	1225.15	472.50	483.89	23.78	10.41	5.48
203	5.02	10.10	1230.17	474.71	484.81	23.78	10.41	5.48
204	5.02	8.81	1235.19	476.92	485.73	23.78	10.41	5.48
205	1.30	8.00	1238.35	478.31	486.31	23.78	10.41	1.42
206	4.00	6.66	1241.00	480.14	486.80	37.55	10.41	5.05
207	4.00	4.32	1245.00	483.21	487.53	37.55	10.41	5.05
208	3.35	2.36	1248.67	486.04	488.40	37.55	16.62	4.23
209	3.35	0.79	1252.03	488.61	489.40	37.55	16.62	4.23

Table 2 - Force Data On The 209 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1246.4	0.0	0.0	0.0	0.0	0.0
2	3739.1	0.0	0.0	0.0	0.0	0.0
3	6381.1	0.0	0.0	0.0	0.0	0.0
4	9151.9	0.0	0.0	0.0	0.0	0.0
5	11922.7	0.0	0.0	0.0	0.0	0.0
6	6471.6	0.0	0.0	0.0	0.0	0.0
7	13880.8	0.0	0.0	0.0	0.0	0.0
8	15756.0	0.0	0.0	0.0	0.0	0.0
9	17631.3	0.0	0.0	0.0	0.0	0.0
10	22780.0	0.0	0.0	0.0	0.0	0.0
11	25282.5	0.0	0.0	0.0	0.0	0.0
12	27785.0	0.0	0.0	0.0	0.0	0.0
13	1204.8	0.0	0.0	0.0	0.0	0.0
14	25025.8	0.0	0.0	0.0	0.0	0.0
15	26125.9	0.0	0.0	0.0	0.0	0.0
16	27226.0	0.0	0.0	0.0	0.0	0.0
17	28326.2	0.0	0.0	0.0	0.0	0.0
18	36516.6	0.0	0.0	0.0	0.0	0.0
19	37313.3	0.0	0.0	0.0	0.0	0.0
20	30491.2	0.0	0.0	0.0	0.0	0.0
21	31043.9	0.0	0.0	0.0	0.0	0.0
22	31596.5	0.0	0.0	0.0	0.0	0.0
23	32149.2	0.0	0.0	0.0	0.0	0.0
24	32701.9	0.0	0.0	0.0	0.0	0.0
25	36525.5	0.0	0.0	0.0	0.0	0.0
26	37042.5	0.0	0.0	0.0	0.0	0.0
27	37559.5	0.0	0.0	0.0	0.0	0.0
28	36204.8	0.0	0.0	0.0	0.0	0.0
29	36953.5	0.0	0.0	0.0	0.0	0.0
30	37702.2	0.0	0.0	0.0	0.0	0.0
31	38451.0	0.0	0.0	0.0	0.0	0.0
32	39199.7	0.0	0.0	0.0	0.0	0.0
33	39948.4	0.0	0.0	0.0	0.0	0.0
34	40697.1	0.0	0.0	0.0	0.0	0.0
35	41445.9	0.0	0.0	0.0	0.0	0.0
36	42194.6	0.0	0.0	0.0	0.0	0.0
37	42943.3	0.0	0.0	0.0	0.0	0.0
38	43692.1	0.0	0.0	0.0	0.0	0.0
39	44440.8	0.0	0.0	0.0	0.0	0.0
40	45189.5	0.0	0.0	0.0	0.0	0.0
41	13458.3	0.0	0.0	0.0	0.0	0.0
42	44980.9	0.0	0.0	0.0	0.0	0.0
43	45109.9	0.0	0.0	0.0	0.0	0.0
44	45239.0	0.0	0.0	0.0	0.0	0.0
45	45368.0	0.0	0.0	0.0	0.0	0.0
46	45497.1	0.0	0.0	0.0	0.0	0.0
47	46230.6	0.0	0.0	0.0	0.0	0.0
48	46353.6	0.0	0.0	0.0	0.0	0.0
49	46476.5	0.0	0.0	0.0	0.0	0.0
50	46599.5	0.0	0.0	0.0	0.0	0.0
51	46722.5	0.0	0.0	0.0	0.0	0.0
52	46845.4	0.0	0.0	0.0	0.0	0.0
53	46968.4	0.0	0.0	0.0	0.0	0.0
54	47091.4	0.0	0.0	0.0	0.0	0.0
55	47214.3	0.0	0.0	0.0	0.0	0.0
56	47337.3	0.0	0.0	0.0	0.0	0.0
57	47460.3	0.0	0.0	0.0	0.0	0.0
58	47583.2	0.0	0.0	0.0	0.0	0.0
59	47706.2	0.0	0.0	0.0	0.0	0.0
60	47829.2	0.0	0.0	0.0	0.0	0.0
61	47952.1	0.0	0.0	0.0	0.0	0.0
62	47444.5	0.0	0.0	0.0	0.0	0.0
63	47254.0	0.0	0.0	0.0	0.0	0.0
64	47063.5	0.0	0.0	0.0	0.0	0.0
65	46873.0	0.0	0.0	0.0	0.0	0.0
66	46682.5	0.0	0.0	0.0	0.0	0.0
67	46492.0	0.0	0.0	0.0	0.0	0.0

68	45735.8	0.0	0.0	0.0	0.0	0.0
69	46078.5	0.0	0.0	0.0	0.0	0.0
70	46421.2	0.0	0.0	0.0	0.0	0.0
71	46763.9	0.0	0.0	0.0	0.0	0.0
72	47106.6	0.0	0.0	0.0	0.0	0.0
73	47449.4	0.0	0.0	0.0	0.0	0.0
74	47792.1	0.0	0.0	0.0	0.0	0.0
75	48134.8	0.0	0.0	0.0	0.0	0.0
76	48477.5	0.0	0.0	0.0	0.0	0.0
77	48820.2	0.0	0.0	0.0	0.0	0.0
78	49162.9	0.0	0.0	0.0	0.0	0.0
79	49505.7	0.0	0.0	0.0	0.0	0.0
80	49848.4	0.0	0.0	0.0	0.0	0.0
81	50191.1	0.0	0.0	0.0	0.0	0.0
82	50533.8	0.0	0.0	0.0	0.0	0.0
83	55526.6	0.0	0.0	0.0	0.0	0.0
84	54740.3	0.0	0.0	0.0	0.0	0.0
85	53954.1	0.0	0.0	0.0	0.0	0.0
86	49838.1	0.0	0.0	0.0	0.0	0.0
87	49571.0	0.0	0.0	0.0	0.0	0.0
88	49303.9	0.0	0.0	0.0	0.0	0.0
89	49036.8	0.0	0.0	0.0	0.0	0.0
90	48769.7	0.0	0.0	0.0	0.0	0.0
91	48502.6	0.0	0.0	0.0	0.0	0.0
92	48235.5	0.0	0.0	0.0	0.0	0.0
93	47968.4	0.0	0.0	0.0	0.0	0.0
94	47701.3	0.0	0.0	0.0	0.0	0.0
95	47434.2	0.0	0.0	0.0	0.0	0.0
96	47167.1	0.0	0.0	0.0	0.0	0.0
97	46900.0	0.0	0.0	0.0	0.0	0.0
98	46632.9	0.0	0.0	0.0	0.0	0.0
99	46365.8	0.0	0.0	0.0	0.0	0.0
100	46098.7	0.0	0.0	0.0	0.0	0.0
101	45831.5	0.0	0.0	0.0	0.0	0.0
102	45564.4	0.0	0.0	0.0	0.0	0.0
103	45297.3	0.0	0.0	0.0	0.0	0.0
104	45030.2	0.0	0.0	0.0	0.0	0.0
105	44763.1	0.0	0.0	0.0	0.0	0.0
106	44496.0	0.0	0.0	0.0	0.0	0.0
107	44228.9	0.0	0.0	0.0	0.0	0.0
108	43961.8	0.0	0.0	0.0	0.0	0.0
109	43694.7	0.0	0.0	0.0	0.0	0.0
110	43427.6	0.0	0.0	0.0	0.0	0.0
111	43160.5	0.0	0.0	0.0	0.0	0.0
112	42694.8	0.0	0.0	0.0	0.0	0.0
113	42640.0	0.0	0.0	0.0	0.0	0.0
114	42585.1	0.0	0.0	0.0	0.0	0.0
115	39704.8	0.0	0.0	0.0	0.0	0.0
116	41952.8	0.0	0.0	0.0	0.0	0.0
117	41875.5	0.0	0.0	0.0	0.0	0.0
118	41798.2	0.0	0.0	0.0	0.0	0.0
119	41720.9	0.0	0.0	0.0	0.0	0.0
120	41643.6	0.0	0.0	0.0	0.0	0.0
121	41566.3	0.0	0.0	0.0	0.0	0.0
122	41489.0	0.0	0.0	0.0	0.0	0.0
123	41411.7	0.0	0.0	0.0	0.0	0.0
124	41334.4	0.0	0.0	0.0	0.0	0.0
125	41257.1	0.0	0.0	0.0	0.0	0.0
126	41179.8	0.0	0.0	0.0	0.0	0.0
127	41102.5	0.0	0.0	0.0	0.0	0.0
128	46173.6	0.0	0.0	0.0	0.0	0.0
129	46075.6	0.0	0.0	0.0	0.0	0.0
130	40920.0	0.0	0.0	0.0	0.0	0.0
131	40686.9	0.0	0.0	0.0	0.0	0.0
132	40453.8	0.0	0.0	0.0	0.0	0.0
133	40220.7	0.0	0.0	0.0	0.0	0.0
134	39987.6	0.0	0.0	0.0	0.0	0.0
135	39754.5	0.0	0.0	0.0	0.0	0.0
136	39521.4	0.0	0.0	0.0	0.0	0.0
137	39288.3	0.0	0.0	0.0	0.0	0.0
138	39055.3	0.0	0.0	0.0	0.0	0.0
139	38822.2	0.0	0.0	0.0	0.0	0.0
140	38589.1	0.0	0.0	0.0	0.0	0.0
141	38356.0	0.0	0.0	0.0	0.0	0.0
142	38122.9	0.0	0.0	0.0	0.0	0.0
143	37889.8	0.0	0.0	0.0	0.0	0.0
144	37656.7	0.0	0.0	0.0	0.0	0.0
145	37423.6	0.0	0.0	0.0	0.0	0.0
146	37190.5	0.0	0.0	0.0	0.0	0.0
147	36957.4	0.0	0.0	0.0	0.0	0.0
148	36724.3	0.0	0.0	0.0	0.0	0.0
149	36491.2	0.0	0.0	0.0	0.0	0.0
150	36258.1	0.0	0.0	0.0	0.0	0.0
151	36025.0	0.0	0.0	0.0	0.0	0.0
152	35792.0	0.0	0.0	0.0	0.0	0.0
153	35558.9	0.0	0.0	0.0	0.0	0.0
154	35325.8	0.0	0.0	0.0	0.0	0.0
155	35092.7	0.0	0.0	0.0	0.0	0.0
156	34859.6	0.0	0.0	0.0	0.0	0.0
157	34626.5	0.0	0.0	0.0	0.0	0.0
158	35284.2	0.0	0.0	0.0	0.0	0.0
159	34919.7	0.0	0.0	0.0	0.0	0.0
160	34555.2	0.0	0.0	0.0	0.0	0.0
161	34190.7	0.0	0.0	0.0	0.0	0.0
162	33826.2	0.0	0.0	0.0	0.0	0.0
163	33461.7	0.0	0.0	0.0	0.0	0.0
164	33097.2	0.0	0.0	0.0	0.0	0.0
165	32732.7	0.0	0.0	0.0	0.0	0.0
166	32368.1	0.0	0.0	0.0	0.0	0.0
167	32003.6	0.0	0.0	0.0	0.0	0.0
168	31639.1	0.0	0.0	0.0	0.0	0.0
169	31274.6	0.0	0.0	0.0	0.0	0.0
170	30910.1	0.0	0.0	0.0	0.0	0.0
171	30545.6	0.0	0.0	0.0	0.0	0.0
172	30181.1	0.0	0.0	0.0	0.0	0.0
173	29816.6	0.0	0.0	0.0	0.0	0.0
174	28599.8	0.0	0.0	0.0	0.0	0.0
175	27823.4	0.0	0.0	0.0	0.0	0.0
176	27046.9	0.0	0.0	0.0	0.0	0.0
177	26270.4	0.0	0.0	0.0	0.0	0.0
178	25493.9	0.0	0.0	0.0	0.0	0.0
179	24717.5	0.0	0.0	0.0	0.0	0.0
180	23941.0	0.0	0.0	0.0	0.0	0.0
181	23164.5	0.0	0.0	0.0	0.0	0.0
182	22388.0	0.0	0.0	0.0	0.0	0.0
183	21611.5	0.0	0.0	0.0	0.0	0.0
184	20835.1	0.0	0.0	0.0	0.0	0.0
185	20058.6	0.0	0.0	0.0	0.0	0.0
186	19282.1	0.0	0.0	0.0	0.0	0.0
187	18505.6	0.0	0.0	0.0	0.0	0.0

188	17729.2	0.0	0.0	0.0	0.0	0.0
189	16952.7	0.0	0.0	0.0	0.0	0.0
190	16176.2	0.0	0.0	0.0	0.0	0.0
191	15399.7	0.0	0.0	0.0	0.0	0.0
192	14623.3	0.0	0.0	0.0	0.0	0.0
193	13846.8	0.0	0.0	0.0	0.0	0.0
194	13070.3	0.0	0.0	0.0	0.0	0.0
195	12293.8	0.0	0.0	0.0	0.0	0.0
196	11517.4	0.0	0.0	0.0	0.0	0.0
197	10740.9	0.0	0.0	0.0	0.0	0.0
198	9964.4	0.0	0.0	0.0	0.0	0.0
199	9187.9	0.0	0.0	0.0	0.0	0.0
200	8411.4	0.0	0.0	0.0	0.0	0.0
201	7635.0	0.0	0.0	0.0	0.0	0.0
202	6858.5	0.0	0.0	0.0	0.0	0.0
203	6082.0	0.0	0.0	0.0	0.0	0.0
204	5305.5	0.0	0.0	0.0	0.0	0.0
205	1247.5	0.0	0.0	0.0	0.0	0.0
206	3196.8	0.0	0.0	0.0	0.0	0.0
207	2073.7	0.0	0.0	0.0	0.0	0.0
208	949.8	0.0	0.0	0.0	0.0	0.0
209	316.6	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 7334979.18(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 7334979.18(lbs)

TOTAL AREA OF SLIDING MASS = 61124.83(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 209 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	2	250.00	22.00	A
8	2	250.00	22.00	A
9	2	250.00	22.00	A
10	2	250.00	22.00	A
11	2	250.00	22.00	A
12	2	250.00	22.00	A
13	2	250.00	22.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	2	0.00	14.00	A
33	2	0.00	14.00	A
34	2	0.00	14.00	A
35	2	0.00	14.00	A
36	2	0.00	14.00	A
37	2	0.00	14.00	A
38	2	0.00	14.00	A
39	2	0.00	14.00	A
40	2	0.00	14.00	A
41	2	0.00	14.00	A
42	2	0.00	14.00	A
43	2	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A
57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A
69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A
72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	2	0.00	14.00	A
76	2	0.00	14.00	A
77	2	0.00	14.00	A
78	2	0.00	14.00	A
79	2	0.00	14.00	A
80	2	0.00	14.00	A
81	2	0.00	14.00	A
82	2	0.00	14.00	A
83	2	0.00	14.00	A
84	2	0.00	14.00	A
85	2	0.00	14.00	A
86	2	0.00	14.00	A

87	2	0.00	14.00	A
88	2	0.00	14.00	A
89	2	0.00	14.00	A
90	2	0.00	14.00	A
91	2	0.00	14.00	A
92	2	0.00	14.00	A
93	2	0.00	14.00	A
94	2	0.00	14.00	A
95	2	0.00	14.00	A
96	2	0.00	14.00	A
97	2	0.00	14.00	A
98	2	0.00	14.00	A
99	2	0.00	14.00	A
100	2	0.00	14.00	A
101	2	0.00	14.00	A
102	2	0.00	14.00	A
103	2	0.00	14.00	A
104	2	0.00	14.00	A
105	2	0.00	14.00	A
106	2	0.00	14.00	A
107	2	0.00	14.00	A
108	2	0.00	14.00	A
109	2	0.00	14.00	A
110	2	0.00	14.00	A
111	2	0.00	14.00	A
112	2	0.00	14.00	A
113	2	0.00	14.00	A
114	2	0.00	14.00	A
115	3	250.00	22.00	
116	3	250.00	22.00	
117	3	250.00	22.00	
118	3	250.00	22.00	
119	3	250.00	22.00	
120	3	250.00	22.00	
121	3	250.00	22.00	
122	3	250.00	22.00	
123	3	250.00	22.00	
124	3	250.00	22.00	
125	3	250.00	22.00	
126	3	250.00	22.00	
127	3	250.00	22.00	
128	3	250.00	22.00	
129	3	250.00	22.00	
130	3	250.00	22.00	
131	3	250.00	22.00	
132	3	250.00	22.00	
133	3	250.00	22.00	
134	3	250.00	22.00	
135	3	250.00	22.00	
136	3	250.00	22.00	
137	3	250.00	22.00	
138	3	250.00	22.00	
139	3	250.00	22.00	
140	3	250.00	22.00	
141	3	250.00	22.00	
142	3	250.00	22.00	
143	3	250.00	22.00	
144	3	250.00	22.00	
145	3	250.00	22.00	
146	3	250.00	22.00	
147	3	250.00	22.00	
148	3	250.00	22.00	
149	3	250.00	22.00	
150	3	250.00	22.00	
151	3	250.00	22.00	
152	3	250.00	22.00	
153	3	250.00	22.00	
154	3	250.00	22.00	
155	3	250.00	22.00	
156	3	250.00	22.00	
157	3	250.00	22.00	
158	3	250.00	22.00	
159	3	250.00	22.00	
160	3	250.00	22.00	
161	3	250.00	22.00	
162	3	250.00	22.00	
163	3	250.00	22.00	
164	3	250.00	22.00	
165	3	250.00	22.00	
166	3	250.00	22.00	
167	3	250.00	22.00	
168	3	250.00	22.00	
169	3	250.00	22.00	
170	3	250.00	22.00	
171	3	250.00	22.00	
172	3	250.00	22.00	
173	3	250.00	22.00	
174	3	250.00	22.00	
175	3	250.00	22.00	
176	3	250.00	22.00	
177	3	250.00	22.00	
178	3	250.00	22.00	
179	3	250.00	22.00	
180	3	250.00	22.00	
181	3	250.00	22.00	
182	3	250.00	22.00	
183	3	250.00	22.00	
184	3	250.00	22.00	
185	3	250.00	22.00	
186	3	250.00	22.00	
187	3	250.00	22.00	
188	3	250.00	22.00	
189	3	250.00	22.00	
190	3	250.00	22.00	
191	3	250.00	22.00	
192	3	250.00	22.00	
193	3	250.00	22.00	
194	3	250.00	22.00	
195	3	250.00	22.00	
196	3	250.00	22.00	
197	3	250.00	22.00	
198	3	250.00	22.00	
199	3	250.00	22.00	
200	3	250.00	22.00	
201	3	250.00	22.00	
202	3	250.00	22.00	
203	3	250.00	22.00	
204	3	250.00	22.00	
205	3	250.00	22.00	
206	3	250.00	22.00	

207	3	250.00	22.00
208	3	250.00	22.00
209	3	250.00	22.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 209 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-30.48	216.38	6.44	387.02	372.31	263.02
1	-30.48	216.38	6.44	387.02	372.31	263.02
2	-30.48	221.93	6.44	944.40	620.47	438.33
2	-30.48	221.93	6.44	944.40	620.47	438.33
3	-33.45	227.49	6.67	1592.59	909.07	642.20
3	-33.45	227.49	6.67	1592.59	909.07	642.20
4	-33.45	233.05	6.67	2229.71	1192.73	842.60
4	-33.45	233.05	6.67	2229.71	1192.73	842.60
5	-33.45	238.61	6.67	2866.83	1476.40	1042.99
5	-33.45	238.61	6.67	2866.83	1476.40	1042.99
6	-28.32	242.69	2.95	3126.02	1591.79	1124.51
6	-28.32	242.69	2.95	3126.02	1591.79	1124.51
7	-28.32	246.49	5.68	3428.13	1635.05	1155.07
7	-28.32	246.49	5.68	3428.13	1635.05	1155.07
8	-28.32	251.50	5.68	3875.17	1815.67	1282.67
8	-28.32	251.50	5.68	3875.17	1815.67	1282.67
9	-28.32	256.50	5.68	4322.22	1996.29	1410.27
9	-28.32	256.50	5.68	4322.22	1996.29	1410.27
10	-28.12	261.90	6.58	4794.27	2187.01	1545.00
10	-28.12	261.90	6.58	4794.27	2187.01	1545.00
11	-28.12	267.70	6.58	5307.98	2394.56	1691.62
11	-28.12	267.70	6.58	5307.98	2394.56	1691.62
12	-28.12	273.50	6.58	5821.70	2602.12	1838.25
12	-28.12	273.50	6.58	5821.70	2602.12	1838.25
13	-28.12	276.52	0.27	6090.36	2710.67	1914.93
13	-28.12	276.52	0.27	6090.36	2710.67	1914.93
14	-13.12	279.07	5.00	5370.59	1339.04	945.95
14	-13.12	279.07	5.00	5370.59	1339.04	945.95
15	-13.12	283.94	5.00	5606.67	1397.90	987.54
15	-13.12	283.94	5.00	5606.67	1397.90	987.54
16	-13.12	288.81	5.00	5842.76	1456.76	1029.12
16	-13.12	288.81	5.00	5842.76	1456.76	1029.12
17	-13.12	293.68	5.00	6078.85	1515.63	1070.70
17	-13.12	293.68	5.00	6078.85	1515.63	1070.70
18	-1.45	299.16	6.09	6023.60	1501.85	1060.97
18	-1.45	299.16	6.09	6023.60	1501.85	1060.97
19	-1.45	305.25	6.09	6155.03	1534.62	1084.12
19	-1.45	305.25	6.09	6155.03	1534.62	1084.12
20	-1.45	310.74	4.88	6277.63	1565.19	1105.72
20	-1.45	310.74	4.88	6277.63	1565.19	1105.72
21	-1.45	315.62	4.88	6391.41	1593.56	1125.76
21	-1.45	315.62	4.88	6391.41	1593.56	1125.76
22	-1.45	320.50	4.88	6505.20	1621.93	1145.80
22	-1.45	320.50	4.88	6505.20	1621.93	1145.80
23	-1.45	325.38	4.88	6618.99	1650.30	1165.84
23	-1.45	325.38	4.88	6618.99	1650.30	1165.84
24	-1.45	330.26	4.88	6732.77	1678.67	1185.88
24	-1.45	330.26	4.88	6732.77	1678.67	1185.88
25	-1.45	335.38	5.37	6838.06	1704.92	1204.43
25	-1.45	335.38	5.37	6838.06	1704.92	1204.43
26	-1.45	340.75	5.37	6934.84	1729.05	1221.48
26	-1.45	340.75	5.37	6934.84	1729.05	1221.48
27	-1.45	346.12	5.37	7031.63	1753.18	1238.52
27	-1.45	346.12	5.37	7031.63	1753.18	1238.52
28	-1.45	351.34	5.09	7154.00	1783.69	1260.08
28	-1.45	351.34	5.09	7154.00	1783.69	1260.08
29	-1.45	356.43	5.09	7301.94	1820.58	1286.14
29	-1.45	356.43	5.09	7301.94	1820.58	1286.14
30	-1.45	361.51	5.09	7449.89	1857.47	1312.19
30	-1.45	361.51	5.09	7449.89	1857.47	1312.19
31	-1.45	366.60	5.09	7597.84	1894.35	1338.25
31	-1.45	366.60	5.09	7597.84	1894.35	1338.25
32	-1.45	371.68	5.09	7745.79	1931.24	1364.31
32	-1.45	371.68	5.09	7745.79	1931.24	1364.31
33	-1.45	376.77	5.09	7893.73	1968.13	1390.37
33	-1.45	376.77	5.09	7893.73	1968.13	1390.37
34	-1.45	381.85	5.09	8041.68	2005.02	1416.43
34	-1.45	381.85	5.09	8041.68	2005.02	1416.43
35	-1.45	386.93	5.09	8189.63	2041.90	1442.49
35	-1.45	386.93	5.09	8189.63	2041.90	1442.49
36	-1.45	392.02	5.09	8337.57	2078.79	1468.55
36	-1.45	392.02	5.09	8337.57	2078.79	1468.55
37	-1.45	397.10	5.09	8485.52	2115.68	1494.61
37	-1.45	397.10	5.09	8485.52	2115.68	1494.61
38	-1.45	402.19	5.09	8633.47	2152.57	1520.67
38	-1.45	402.19	5.09	8633.47	2152.57	1520.67
39	-1.45	407.27	5.09	8781.42	2189.45	1546.72
39	-1.45	407.27	5.09	8781.42	2189.45	1546.72
40	-1.45	412.36	5.09	8929.36	2226.34	1572.78
40	-1.45	412.36	5.09	8929.36	2226.34	1572.78
41	5.31	415.65	1.51	8820.58	2199.22	1553.62
41	5.31	415.65	1.51	8820.58	2199.22	1553.62
42	5.31	418.90	5.02	8844.15	2205.09	1557.77
42	5.31	418.90	5.02	8844.15	2205.09	1557.77
43	5.31	423.90	5.02	8869.53	2211.42	1562.24
43	5.31	423.90	5.02	8869.53	2211.42	1562.24
44	5.31	428.90	5.02	8894.91	2217.75	1566.71
44	5.31	428.90	5.02	8894.91	2217.75	1566.71
45	5.31	433.90	5.02	8920.28	2224.08	1571.18
45	5.31	433.90	5.02	8920.28	2224.08	1571.18
46	5.31	438.90	5.02	8945.66	2230.40	1575.65
46	5.31	438.90	5.02	8945.66	2230.40	1575.65
47	5.31	443.93	5.09	8970.28	2236.54	1579.99
47	5.31	443.93	5.09	8970.28	2236.54	1579.99
48	5.31	449.00	5.09	8994.14	2242.49	1584.19
48	5.31	449.00	5.09	8994.14	2242.49	1584.19
49	5.31	454.07	5.09	9018.00	2248.44	1588.39
49	5.31	454.07	5.09	9018.00	2248.44	1588.39
50	5.31	459.13	5.09	9041.86	2254.39	1592.60
50	5.31	459.13	5.09	9041.86	2254.39	1592.60
51	5.31	464.20	5.09	9065.72	2260.34	1596.80
51	5.31	464.20	5.09	9065.72	2260.34	1596.80

52	5.31	469.27	5.09	9089.57	2266.29	1601.00
52	5.31	469.27	5.09	9089.57	2266.29	1601.00
53	5.31	474.33	5.09	9113.43	2272.23	1605.20
53	5.31	474.33	5.09	9113.43	2272.23	1605.20
54	5.31	479.40	5.09	9137.29	2278.18	1609.41
54	5.31	479.40	5.09	9137.29	2278.18	1609.41
55	5.31	484.47	5.09	9161.15	2284.13	1613.61
55	5.31	484.47	5.09	9161.15	2284.13	1613.61
56	5.31	489.53	5.09	9185.01	2290.08	1617.81
56	5.31	489.53	5.09	9185.01	2290.08	1617.81
57	5.31	494.60	5.09	9208.87	2296.03	1622.01
57	5.31	494.60	5.09	9208.87	2296.03	1622.01
58	5.31	499.67	5.09	9232.73	2301.98	1626.22
58	5.31	499.67	5.09	9232.73	2301.98	1626.22
59	5.31	504.73	5.09	9256.59	2307.93	1630.42
59	5.31	504.73	5.09	9256.59	2307.93	1630.42
60	5.31	509.80	5.09	9280.45	2313.88	1634.62
60	5.31	509.80	5.09	9280.45	2313.88	1634.62
61	5.31	514.87	5.09	9304.31	2319.82	1638.82
61	5.31	514.87	5.09	9304.31	2319.82	1638.82
62	5.31	519.91	5.04	9297.57	2318.14	1637.64
62	5.31	519.91	5.04	9297.57	2318.14	1637.64
63	5.31	524.92	5.04	9260.24	2308.84	1631.06
63	5.31	524.92	5.04	9260.24	2308.84	1631.06
64	5.31	529.94	5.04	9222.91	2299.53	1624.49
64	5.31	529.94	5.04	9222.91	2299.53	1624.49
65	5.31	534.96	5.04	9185.58	2290.22	1617.91
65	5.31	534.96	5.04	9185.58	2290.22	1617.91
66	5.31	539.98	5.04	9148.25	2280.91	1611.34
66	5.31	539.98	5.04	9148.25	2280.91	1611.34
67	5.31	544.99	5.04	9110.91	2271.61	1604.76
67	5.31	544.99	5.04	9110.91	2271.61	1604.76
68	5.31	549.96	4.95	9126.44	2275.48	1607.50
68	5.31	549.96	4.95	9126.44	2275.48	1607.50
69	5.31	554.89	4.95	9194.83	2292.53	1619.54
69	5.31	554.89	4.95	9194.83	2292.53	1619.54
70	5.31	559.82	4.95	9263.22	2309.58	1631.59
70	5.31	559.82	4.95	9263.22	2309.58	1631.59
71	5.31	564.74	4.95	9331.61	2326.63	1643.63
71	5.31	564.74	4.95	9331.61	2326.63	1643.63
72	5.31	569.67	4.95	9399.99	2343.68	1655.68
72	5.31	569.67	4.95	9399.99	2343.68	1655.68
73	5.31	574.60	4.95	9468.38	2360.73	1667.72
73	5.31	574.60	4.95	9468.38	2360.73	1667.72
74	5.31	579.52	4.95	9536.77	2377.78	1679.77
74	5.31	579.52	4.95	9536.77	2377.78	1679.77
75	5.31	584.45	4.95	9605.16	2394.83	1691.81
75	5.31	584.45	4.95	9605.16	2394.83	1691.81
76	5.31	589.38	4.95	9673.55	2411.89	1703.86
76	5.31	589.38	4.95	9673.55	2411.89	1703.86
77	5.31	594.30	4.95	9741.93	2428.94	1715.91
77	5.31	594.30	4.95	9741.93	2428.94	1715.91
78	5.31	599.23	4.95	9810.32	2445.99	1727.95
78	5.31	599.23	4.95	9810.32	2445.99	1727.95
79	5.31	604.16	4.95	9878.71	2463.04	1740.00
79	5.31	604.16	4.95	9878.71	2463.04	1740.00
80	5.31	609.08	4.95	9947.10	2480.09	1752.04
80	5.31	609.08	4.95	9947.10	2480.09	1752.04
81	5.31	614.01	4.95	10015.49	2497.14	1764.09
81	5.31	614.01	4.95	10015.49	2497.14	1764.09
82	5.31	618.94	4.95	10083.87	2514.19	1776.13
82	5.31	618.94	4.95	10083.87	2514.19	1776.13
83	23.39	624.12	5.92	9462.86	2359.36	1666.75
83	23.39	624.12	5.92	9462.86	2359.36	1666.75
84	23.39	629.55	5.92	9328.86	2325.95	1643.15
84	23.39	629.55	5.92	9328.86	2325.95	1643.15
85	23.39	634.98	5.92	9194.86	2292.54	1619.55
85	23.39	634.98	5.92	9194.86	2292.54	1619.55
86	23.39	640.23	5.52	9103.47	2269.75	1603.45
86	23.39	640.23	5.52	9103.47	2269.75	1603.45
87	23.39	645.30	5.52	9054.68	2257.58	1594.85
87	23.39	645.30	5.52	9054.68	2257.58	1594.85
88	23.39	650.37	5.52	9005.89	2245.42	1586.26
88	23.39	650.37	5.52	9005.89	2245.42	1586.26
89	23.39	655.44	5.52	8957.10	2233.26	1577.67
89	23.39	655.44	5.52	8957.10	2233.26	1577.67
90	23.39	660.51	5.52	8908.31	2221.09	1569.07
90	23.39	660.51	5.52	8908.31	2221.09	1569.07
91	23.39	665.58	5.52	8859.52	2208.93	1560.48
91	23.39	665.58	5.52	8859.52	2208.93	1560.48
92	23.39	670.65	5.52	8810.73	2196.76	1551.89
92	23.39	670.65	5.52	8810.73	2196.76	1551.89
93	23.39	675.72	5.52	8761.94	2184.60	1543.29
93	23.39	675.72	5.52	8761.94	2184.60	1543.29
94	23.39	680.79	5.52	8713.15	2172.43	1534.70
94	23.39	680.79	5.52	8713.15	2172.43	1534.70
95	23.39	685.86	5.52	8664.36	2160.27	1526.11
95	23.39	685.86	5.52	8664.36	2160.27	1526.11
96	23.39	690.93	5.52	8615.57	2148.10	1517.51
96	23.39	690.93	5.52	8615.57	2148.10	1517.51
97	23.39	696.00	5.52	8566.78	2135.94	1508.92
97	23.39	696.00	5.52	8566.78	2135.94	1508.92
98	23.39	701.07	5.52	8517.99	2123.77	1500.33
98	23.39	701.07	5.52	8517.99	2123.77	1500.33
99	23.39	706.13	5.52	8469.20	2111.61	1491.73
99	23.39	706.13	5.52	8469.20	2111.61	1491.73
100	23.39	711.20	5.52	8420.41	2099.45	1483.14
100	23.39	711.20	5.52	8420.41	2099.45	1483.14
101	23.39	716.27	5.52	8371.62	2087.28	1474.55
101	23.39	716.27	5.52	8371.62	2087.28	1474.55
102	23.39	721.34	5.52	8322.84	2075.12	1465.95
102	23.39	721.34	5.52	8322.84	2075.12	1465.95
103	23.39	726.41	5.52	8274.05	2062.95	1457.36
103	23.39	726.41	5.52	8274.05	2062.95	1457.36
104	23.39	731.48	5.52	8225.26	2050.79	1448.76
104	23.39	731.48	5.52	8225.26	2050.79	1448.76
105	23.39	736.55	5.52	8176.47	2038.62	1440.17
105	23.39	736.55	5.52	8176.47	2038.62	1440.17
106	23.39	741.62	5.52	8127.68	2026.46	1431.58
106	23.39	741.62	5.52	8127.68	2026.46	1431.58
107	23.39	746.69	5.52	8078.89	2014.29	1422.98
107	23.39	746.69	5.52	8078.89	2014.29	1422.98
108	23.39	751.76	5.52	8030.10	2002.13	1414.39
108	23.39	751.76	5.52	8030.10	2002.13	1414.39
109	23.39	756.83	5.52	7981.31	1989.96	1405.80
109	23.39	756.83	5.52	7981.31	1989.96	1405.80
110	23.39	761.90	5.52	7932.52	1977.80	1397.20
110	23.39	761.90	5.52	7932.52	1977.80	1397.20
111	23.39	766.97	5.52	7883.73	1965.63	1388.61
111	23.39	766.97	5.52	7883.73	1965.63	1388.61

112	23.39	772.02	5.48	7854.29	1958.29	1383.42
112	23.39	772.02	5.48	7854.29	1958.29	1383.42
113	23.39	777.05	5.48	7844.20	1955.78	1381.65
113	23.39	777.05	5.48	7844.20	1955.78	1381.65
114	23.39	782.08	5.48	7834.11	1953.26	1379.87
114	23.39	782.08	5.48	7834.11	1953.26	1379.87
115	23.78	786.95	5.14	7390.71	3236.04	2286.08
115	23.78	786.95	5.14	7390.71	3236.04	2286.08
116	23.78	791.79	5.44	7377.36	3230.65	2282.27
116	23.78	791.79	5.44	7377.36	3230.65	2282.27
117	23.78	796.76	5.44	7363.64	3225.10	2278.35
117	23.78	796.76	5.44	7363.64	3225.10	2278.35
118	23.78	801.74	5.44	7349.91	3219.56	2274.43
118	23.78	801.74	5.44	7349.91	3219.56	2274.43
119	23.78	806.71	5.44	7336.18	3214.01	2270.52
119	23.78	806.71	5.44	7336.18	3214.01	2270.52
120	23.78	811.69	5.44	7322.46	3208.46	2266.60
120	23.78	811.69	5.44	7322.46	3208.46	2266.60
121	23.78	816.66	5.44	7308.73	3202.92	2262.68
121	23.78	816.66	5.44	7308.73	3202.92	2262.68
122	23.78	821.64	5.44	7295.00	3197.37	2258.76
122	23.78	821.64	5.44	7295.00	3197.37	2258.76
123	23.78	826.61	5.44	7281.28	3191.83	2254.84
123	23.78	826.61	5.44	7281.28	3191.83	2254.84
124	23.78	831.59	5.44	7267.55	3186.28	2250.93
124	23.78	831.59	5.44	7267.55	3186.28	2250.93
125	23.78	836.56	5.44	7253.82	3180.73	2247.01
125	23.78	836.56	5.44	7253.82	3180.73	2247.01
126	23.78	841.54	5.44	7240.10	3175.19	2243.09
126	23.78	841.54	5.44	7240.10	3175.19	2243.09
127	23.78	846.51	5.44	7226.37	3169.64	2239.17
127	23.78	846.51	5.44	7226.37	3169.64	2239.17
128	23.78	851.80	6.12	7211.78	3163.75	2235.01
128	23.78	851.80	6.12	7211.78	3163.75	2235.01
129	23.78	857.40	6.12	7196.33	3157.51	2230.60
129	23.78	857.40	6.12	7196.33	3157.51	2230.60
130	23.78	862.70	5.46	7167.98	3146.05	2222.51
130	23.78	862.70	5.46	7167.98	3146.05	2222.51
131	23.78	867.69	5.46	7126.74	3129.39	2210.74
131	23.78	867.69	5.46	7126.74	3129.39	2210.74
132	23.78	872.68	5.46	7085.50	3112.73	2198.96
132	23.78	872.68	5.46	7085.50	3112.73	2198.96
133	23.78	877.67	5.46	7044.26	3096.06	2187.19
133	23.78	877.67	5.46	7044.26	3096.06	2187.19
134	23.78	882.67	5.46	7003.01	3079.40	2175.42
134	23.78	882.67	5.46	7003.01	3079.40	2175.42
135	23.78	887.66	5.46	6961.77	3062.74	2163.65
135	23.78	887.66	5.46	6961.77	3062.74	2163.65
136	23.78	892.65	5.46	6920.53	3046.08	2151.88
136	23.78	892.65	5.46	6920.53	3046.08	2151.88
137	23.78	897.65	5.46	6879.29	3029.41	2140.11
137	23.78	897.65	5.46	6879.29	3029.41	2140.11
138	23.78	902.64	5.46	6838.05	3012.75	2128.34
138	23.78	902.64	5.46	6838.05	3012.75	2128.34
139	23.78	907.63	5.46	6796.80	2996.09	2116.57
139	23.78	907.63	5.46	6796.80	2996.09	2116.57
140	23.78	912.62	5.46	6755.56	2979.42	2104.79
140	23.78	912.62	5.46	6755.56	2979.42	2104.79
141	23.78	917.62	5.46	6714.32	2962.76	2093.02
141	23.78	917.62	5.46	6714.32	2962.76	2093.02
142	23.78	922.61	5.46	6673.08	2946.10	2081.25
142	23.78	922.61	5.46	6673.08	2946.10	2081.25
143	23.78	927.60	5.46	6631.84	2929.44	2069.48
143	23.78	927.60	5.46	6631.84	2929.44	2069.48
144	23.78	932.60	5.46	6590.59	2912.77	2057.71
144	23.78	932.60	5.46	6590.59	2912.77	2057.71
145	23.78	937.59	5.46	6549.35	2896.11	2045.94
145	23.78	937.59	5.46	6549.35	2896.11	2045.94
146	23.78	942.58	5.46	6508.11	2879.45	2034.17
146	23.78	942.58	5.46	6508.11	2879.45	2034.17
147	23.78	947.58	5.46	6466.87	2862.78	2022.39
147	23.78	947.58	5.46	6466.87	2862.78	2022.39
148	23.78	952.57	5.46	6425.63	2846.12	2010.62
148	23.78	952.57	5.46	6425.63	2846.12	2010.62
149	23.78	957.56	5.46	6384.38	2829.46	1998.85
149	23.78	957.56	5.46	6384.38	2829.46	1998.85
150	23.78	962.55	5.46	6343.14	2812.80	1987.08
150	23.78	962.55	5.46	6343.14	2812.80	1987.08
151	23.78	967.55	5.46	6301.90	2796.13	1975.31
151	23.78	967.55	5.46	6301.90	2796.13	1975.31
152	23.78	972.54	5.46	6260.66	2779.47	1963.54
152	23.78	972.54	5.46	6260.66	2779.47	1963.54
153	23.78	977.53	5.46	6219.42	2762.81	1951.77
153	23.78	977.53	5.46	6219.42	2762.81	1951.77
154	23.78	982.53	5.46	6178.17	2746.14	1939.99
154	23.78	982.53	5.46	6178.17	2746.14	1939.99
155	23.78	987.52	5.46	6136.93	2729.48	1928.22
155	23.78	987.52	5.46	6136.93	2729.48	1928.22
156	23.78	992.51	5.46	6095.69	2712.82	1916.45
156	23.78	992.51	5.46	6095.69	2712.82	1916.45
157	23.78	997.50	5.46	6054.45	2696.16	1904.68
157	23.78	997.50	5.46	6054.45	2696.16	1904.68
158	23.78	1002.57	5.61	6002.45	2675.15	1889.84
158	23.78	1002.57	5.61	6002.45	2675.15	1889.84
159	23.78	1007.70	5.61	5939.69	2649.79	1871.93
159	23.78	1007.70	5.61	5939.69	2649.79	1871.93
160	23.78	1012.83	5.61	5876.94	2624.44	1854.02
160	23.78	1012.83	5.61	5876.94	2624.44	1854.02
161	23.78	1017.96	5.61	5814.18	2599.08	1836.10
161	23.78	1017.96	5.61	5814.18	2599.08	1836.10
162	23.78	1023.09	5.61	5751.43	2573.73	1818.19
162	23.78	1023.09	5.61	5751.43	2573.73	1818.19
163	23.78	1028.22	5.61	5688.67	2548.37	1800.28
163	23.78	1028.22	5.61	5688.67	2548.37	1800.28
164	23.78	1033.35	5.61	5625.92	2523.02	1782.37
164	23.78	1033.35	5.61	5625.92	2523.02	1782.37
165	23.78	1038.48	5.61	5563.16	2497.66	1764.46
165	23.78	1038.48	5.61	5563.16	2497.66	1764.46
166	23.78	1043.62	5.61	5500.41	2472.31	1746.55
166	23.78	1043.62	5.61	5500.41	2472.31	1746.55
167	23.78	1048.75	5.61	5437.65	2446.95	1728.63
167	23.78	1048.75	5.61	5437.65	2446.95	1728.63
168	23.78	1053.88	5.61	5374.90	2421.60	1710.72
168	23.78	1053.88	5.61	5374.90	2421.60	1710.72
169	23.78	1059.01	5.61	5312.14	2396.25	1692.81
169	23.78	1059.01	5.61	5312.14	2396.25	1692.81
170	23.78	1064.14	5.61	5249.39	2370.89	1674.90
170	23.78	1064.14	5.61	5249.39	2370.89	1674.90
171	23.78	1069.27	5.61	5186.63	2345.54	1656.99
171	23.78	1069.27	5.61	5186.63	2345.54	1656.99

172	23.78	1074.40	5.61	5123.88	2320.18	1639.08
172	23.78	1074.40	5.61	5123.88	2320.18	1639.08
173	23.78	1079.53	5.61	5061.12	2294.83	1621.16
173	23.78	1079.53	5.61	5061.12	2294.83	1621.16
174	23.78	1084.61	5.48	4961.42	2254.54	1592.71
174	23.78	1084.61	5.48	4961.42	2254.54	1592.71
175	23.78	1089.63	5.48	4824.76	2199.33	1553.70
175	23.78	1089.63	5.48	4824.76	2199.33	1553.70
176	23.78	1094.65	5.48	4688.10	2144.11	1514.69
176	23.78	1094.65	5.48	4688.10	2144.11	1514.69
177	23.78	1099.67	5.48	4551.44	2088.90	1475.69
177	23.78	1099.67	5.48	4551.44	2088.90	1475.69
178	23.78	1104.69	5.48	4414.78	2033.69	1436.68
178	23.78	1104.69	5.48	4414.78	2033.69	1436.68
179	23.78	1109.71	5.48	4278.12	1978.47	1397.68
179	23.78	1109.71	5.48	4278.12	1978.47	1397.68
180	23.78	1114.73	5.48	4141.46	1923.26	1358.67
180	23.78	1114.73	5.48	4141.46	1923.26	1358.67
181	23.78	1119.75	5.48	4004.80	1868.04	1319.67
181	23.78	1119.75	5.48	4004.80	1868.04	1319.67
182	23.78	1124.76	5.48	3868.14	1812.83	1280.66
182	23.78	1124.76	5.48	3868.14	1812.83	1280.66
183	23.78	1129.78	5.48	3731.48	1757.62	1241.66
183	23.78	1129.78	5.48	3731.48	1757.62	1241.66
184	23.78	1134.80	5.48	3594.82	1702.40	1202.65
184	23.78	1134.80	5.48	3594.82	1702.40	1202.65
185	23.78	1139.82	5.48	3458.16	1647.19	1163.64
185	23.78	1139.82	5.48	3458.16	1647.19	1163.64
186	23.78	1144.84	5.48	3321.50	1591.97	1124.64
186	23.78	1144.84	5.48	3321.50	1591.97	1124.64
187	23.78	1149.86	5.48	3184.84	1536.76	1085.63
187	23.78	1149.86	5.48	3184.84	1536.76	1085.63
188	23.78	1154.88	5.48	3048.18	1481.55	1046.63
188	23.78	1154.88	5.48	3048.18	1481.55	1046.63
189	23.78	1159.90	5.48	2911.52	1426.33	1007.62
189	23.78	1159.90	5.48	2911.52	1426.33	1007.62
190	23.78	1164.92	5.48	2774.86	1371.12	968.62
190	23.78	1164.92	5.48	2774.86	1371.12	968.62
191	23.78	1169.94	5.48	2638.20	1315.90	929.61
191	23.78	1169.94	5.48	2638.20	1315.90	929.61
192	23.78	1174.96	5.48	2501.54	1260.69	890.61
192	23.78	1174.96	5.48	2501.54	1260.69	890.61
193	23.78	1179.98	5.48	2364.88	1205.47	851.60
193	23.78	1179.98	5.48	2364.88	1205.47	851.60
194	23.78	1185.00	5.48	2228.22	1150.26	812.59
194	23.78	1185.00	5.48	2228.22	1150.26	812.59
195	23.78	1190.02	5.48	2091.56	1095.05	773.59
195	23.78	1190.02	5.48	2091.56	1095.05	773.59
196	23.78	1195.04	5.48	1954.90	1039.83	734.58
196	23.78	1195.04	5.48	1954.90	1039.83	734.58
197	23.78	1200.05	5.48	1818.25	984.62	695.58
197	23.78	1200.05	5.48	1818.25	984.62	695.58
198	23.78	1205.07	5.48	1681.59	929.40	656.57
198	23.78	1205.07	5.48	1681.59	929.40	656.57
199	23.78	1210.09	5.48	1544.93	874.19	617.57
199	23.78	1210.09	5.48	1544.93	874.19	617.57
200	23.78	1215.11	5.48	1408.27	818.98	578.56
200	23.78	1215.11	5.48	1408.27	818.98	578.56
201	23.78	1220.13	5.48	1271.61	763.76	539.55
201	23.78	1220.13	5.48	1271.61	763.76	539.55
202	23.78	1225.15	5.48	1134.95	708.55	500.55
202	23.78	1225.15	5.48	1134.95	708.55	500.55
203	23.78	1230.17	5.48	998.29	653.33	461.54
203	23.78	1230.17	5.48	998.29	653.33	461.54
204	23.78	1235.19	5.48	861.63	598.12	422.54
204	23.78	1235.19	5.48	861.63	598.12	422.54
205	23.78	1238.35	1.42	775.60	563.36	397.98
205	23.78	1238.35	1.42	775.60	563.36	397.98
206	37.55	1241.00	5.05	533.80	465.67	328.97
206	37.55	1241.00	5.05	533.80	465.67	328.97
207	37.55	1245.00	5.05	305.57	373.46	263.83
207	37.55	1245.00	5.05	305.57	373.46	263.83
208	37.55	1248.67	4.23	114.64	296.32	209.33
208	37.55	1248.67	4.23	114.64	296.32	209.33
209	37.55	1252.03	4.23	76.82	31.04	21.93
209	37.55	1252.03	4.23	76.82	31.04	21.93

Table 4 - Base Force Data on the 209 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-30.48	216.38	6.44	2492.79	2398.06	1694.09
1	-30.48	216.38	6.44	2492.79	2398.06	1694.09
2	-30.48	221.93	6.44	6082.86	3996.46	2823.27
2	-30.48	221.93	6.44	6082.86	3996.46	2823.27
3	-33.45	227.49	6.67	10617.27	6060.45	4281.36
3	-33.45	227.49	6.67	10617.27	6060.45	4281.36
4	-33.45	233.05	6.67	14864.74	7951.54	5617.31
4	-33.45	233.05	6.67	14864.74	7951.54	5617.31
5	-33.45	238.61	6.67	19112.21	9842.64	6953.26
5	-33.45	238.61	6.67	19112.21	9842.64	6953.26
6	-28.32	242.69	2.95	9229.30	4699.63	3320.02
6	-28.32	242.69	2.95	9229.30	4699.63	3320.02
7	-28.32	246.49	5.68	19480.45	9291.24	6563.74
7	-28.32	246.49	5.68	19480.45	9291.24	6563.74
8	-28.32	251.50	5.68	22020.79	10317.61	7288.81
8	-28.32	251.50	5.68	22020.79	10317.61	7288.81
9	-28.32	256.50	5.68	24561.14	11343.98	8013.87
9	-28.32	256.50	5.68	24561.14	11343.98	8013.87
10	-28.12	261.90	6.58	31526.60	14381.55	10159.75
10	-28.12	261.90	6.58	31526.60	14381.55	10159.75
11	-28.12	267.70	6.58	34904.75	15746.41	11123.94
11	-28.12	267.70	6.58	34904.75	15746.41	11123.94
12	-28.12	273.50	6.58	38282.90	17111.27	12088.14
12	-28.12	273.50	6.58	38282.90	17111.27	12088.14
13	-28.12	276.52	0.27	1658.46	738.14	521.45
13	-28.12	276.52	0.27	1658.46	738.14	521.45
14	-13.12	279.07	5.00	26852.93	6695.19	4729.77
14	-13.12	279.07	5.00	26852.93	6695.19	4729.77
15	-13.12	283.94	5.00	28033.37	6989.50	4937.69
15	-13.12	283.94	5.00	28033.37	6989.50	4937.69
16	-13.12	288.81	5.00	29213.81	7283.82	5145.61
16	-13.12	288.81	5.00	29213.81	7283.82	5145.61
17	-13.12	293.68	5.00	30394.26	7578.14	5353.52
17	-13.12	293.68	5.00	30394.26	7578.14	5353.52
18	-1.45	299.16	6.09	36700.44	9150.45	6464.27

18	-1.45	299.16	6.09	36700.44	9150.45	6464.27
19	-1.45	305.25	6.09	37501.17	9350.09	6605.31
19	-1.45	305.25	6.09	37501.17	9350.09	6605.31
20	-1.45	310.74	4.88	30644.68	7640.58	5397.63
20	-1.45	310.74	4.88	30644.68	7640.58	5397.63
21	-1.45	315.62	4.88	31200.13	7779.07	5495.47
21	-1.45	315.62	4.88	31200.13	7779.07	5495.47
22	-1.45	320.50	4.88	31755.58	7917.56	5593.30
22	-1.45	320.50	4.88	31755.58	7917.56	5593.30
23	-1.45	325.38	4.88	32311.04	8056.05	5691.14
23	-1.45	325.38	4.88	32311.04	8056.05	5691.14
24	-1.45	330.26	4.88	32866.49	8194.54	5788.97
24	-1.45	330.26	4.88	32866.49	8194.54	5788.97
25	-1.45	335.38	5.37	36709.37	9152.67	6465.84
25	-1.45	335.38	5.37	36709.37	9152.67	6465.84
26	-1.45	340.75	5.37	37228.96	9282.22	6557.36
26	-1.45	340.75	5.37	37228.96	9282.22	6557.36
27	-1.45	346.12	5.37	37748.55	9411.77	6648.88
27	-1.45	346.12	5.37	37748.55	9411.77	6648.88
28	-1.45	351.34	5.09	36387.02	9072.30	6409.07
28	-1.45	351.34	5.09	36387.02	9072.30	6409.07
29	-1.45	356.43	5.09	37139.52	9259.92	6541.61
29	-1.45	356.43	5.09	37139.52	9259.92	6541.61
30	-1.45	361.51	5.09	37892.02	9447.54	6674.15
30	-1.45	361.51	5.09	37892.02	9447.54	6674.15
31	-1.45	366.60	5.09	38644.51	9635.16	6806.69
31	-1.45	366.60	5.09	38644.51	9635.16	6806.69
32	-1.45	371.68	5.09	39397.01	9822.78	6939.23
32	-1.45	371.68	5.09	39397.01	9822.78	6939.23
33	-1.45	376.77	5.09	40149.50	10010.40	7071.78
33	-1.45	376.77	5.09	40149.50	10010.40	7071.78
34	-1.45	381.85	5.09	40902.00	10198.01	7204.32
34	-1.45	381.85	5.09	40902.00	10198.01	7204.32
35	-1.45	386.93	5.09	41654.50	10385.63	7336.86
35	-1.45	386.93	5.09	41654.50	10385.63	7336.86
36	-1.45	392.02	5.09	42406.99	10573.25	7469.40
36	-1.45	392.02	5.09	42406.99	10573.25	7469.40
37	-1.45	397.10	5.09	43159.49	10760.87	7601.94
37	-1.45	397.10	5.09	43159.49	10760.87	7601.94
38	-1.45	402.19	5.09	43911.99	10948.49	7734.48
38	-1.45	402.19	5.09	43911.99	10948.49	7734.48
39	-1.45	407.27	5.09	44664.48	11136.11	7867.03
39	-1.45	407.27	5.09	44664.48	11136.11	7867.03
40	-1.45	412.36	5.09	45416.98	11323.72	7999.57
40	-1.45	412.36	5.09	45416.98	11323.72	7999.57
41	5.31	415.65	1.51	13287.94	3313.06	2340.49
41	5.31	415.65	1.51	13287.94	3313.06	2340.49
42	5.31	418.90	5.02	44411.50	11073.03	7822.47
42	5.31	418.90	5.02	44411.50	11073.03	7822.47
43	5.31	423.90	5.02	44538.93	11104.80	7844.91
43	5.31	423.90	5.02	44538.93	11104.80	7844.91
44	5.31	428.90	5.02	44666.36	11136.57	7867.36
44	5.31	428.90	5.02	44666.36	11136.57	7867.36
45	5.31	433.90	5.02	44793.79	11168.35	7889.80
45	5.31	433.90	5.02	44793.79	11168.35	7889.80
46	5.31	438.90	5.02	44921.22	11200.12	7912.25
46	5.31	438.90	5.02	44921.22	11200.12	7912.25
47	5.31	443.93	5.09	45645.44	11380.69	8039.81
47	5.31	443.93	5.09	45645.44	11380.69	8039.81
48	5.31	449.00	5.09	45766.85	11410.96	8061.19
48	5.31	449.00	5.09	45766.85	11410.96	8061.19
49	5.31	454.07	5.09	45888.26	11441.23	8082.58
49	5.31	454.07	5.09	45888.26	11441.23	8082.58
50	5.31	459.13	5.09	46009.67	11471.50	8103.96
50	5.31	459.13	5.09	46009.67	11471.50	8103.96
51	5.31	464.20	5.09	46131.07	11501.77	8125.35
51	5.31	464.20	5.09	46131.07	11501.77	8125.35
52	5.31	469.27	5.09	46252.48	11532.04	8146.73
52	5.31	469.27	5.09	46252.48	11532.04	8146.73
53	5.31	474.33	5.09	46373.89	11562.31	8168.11
53	5.31	474.33	5.09	46373.89	11562.31	8168.11
54	5.31	479.40	5.09	46495.30	11592.58	8189.50
54	5.31	479.40	5.09	46495.30	11592.58	8189.50
55	5.31	484.47	5.09	46616.70	11622.85	8210.88
55	5.31	484.47	5.09	46616.70	11622.85	8210.88
56	5.31	489.53	5.09	46738.11	11653.12	8232.27
56	5.31	489.53	5.09	46738.11	11653.12	8232.27
57	5.31	494.60	5.09	46859.52	11683.39	8253.65
57	5.31	494.60	5.09	46859.52	11683.39	8253.65
58	5.31	499.67	5.09	46980.93	11713.66	8275.04
58	5.31	499.67	5.09	46980.93	11713.66	8275.04
59	5.31	504.73	5.09	47102.34	11743.93	8296.42
59	5.31	504.73	5.09	47102.34	11743.93	8296.42
60	5.31	509.80	5.09	47223.74	11774.20	8317.80
60	5.31	509.80	5.09	47223.74	11774.20	8317.80
61	5.31	514.87	5.09	47345.15	11804.47	8339.19
61	5.31	514.87	5.09	47345.15	11804.47	8339.19
62	5.31	519.91	5.04	46843.99	11679.52	8250.92
62	5.31	519.91	5.04	46843.99	11679.52	8250.92
63	5.31	524.92	5.04	46655.90	11632.62	8217.79
63	5.31	524.92	5.04	46655.90	11632.62	8217.79
64	5.31	529.94	5.04	46467.82	11585.73	8184.66
64	5.31	529.94	5.04	46467.82	11585.73	8184.66
65	5.31	534.96	5.04	46279.73	11538.83	8151.53
65	5.31	534.96	5.04	46279.73	11538.83	8151.53
66	5.31	539.98	5.04	46091.65	11491.94	8118.40
66	5.31	539.98	5.04	46091.65	11491.94	8118.40
67	5.31	544.99	5.04	45903.56	11445.04	8085.27
67	5.31	544.99	5.04	45903.56	11445.04	8085.27
68	5.31	549.96	4.95	45156.87	11258.87	7953.75
68	5.31	549.96	4.95	45156.87	11258.87	7953.75
69	5.31	554.89	4.95	45495.25	11343.24	8013.35
69	5.31	554.89	4.95	45495.25	11343.24	8013.35
70	5.31	559.82	4.95	45833.63	11427.61	8072.95
70	5.31	559.82	4.95	45833.63	11427.61	8072.95
71	5.31	564.74	4.95	46172.01	11511.97	8132.56
71	5.31	564.74	4.95	46172.01	11511.97	8132.56
72	5.31	569.67	4.95	46510.39	11596.34	8192.16
72	5.31	569.67	4.95	46510.39	11596.34	8192.16
73	5.31	574.60	4.95	46848.76	11680.71	8251.76
73	5.31	574.60	4.95	46848.76	11680.71	8251.76
74	5.31	579.52	4.95	47187.14	11765.08	8311.36
74	5.31	579.52	4.95	47187.14	11765.08	8311.36
75	5.31	584.45	4.95	47525.52	11849.44	8370.96
75	5.31	584.45	4.95	47525.52	11849.44	8370.96
76	5.31	589.38	4.95	47863.90	11933.81	8430.56
76	5.31	589.38	4.95	47863.90	11933.81	8430.56
77	5.31	594.30	4.95	48202.27	12018.18	8490.16
77	5.31	594.30	4.95	48202.27	12018.18	8490.16
78	5.31	599.23	4.95	48540.65	12102.54	8549.76

78	5.31	599.23	4.95	48540.65	12102.54	8549.76
79	5.31	604.16	4.95	48879.03	12186.91	8609.36
79	5.31	604.16	4.95	48879.03	12186.91	8609.36
80	5.31	609.08	4.95	49217.41	12271.28	8668.96
80	5.31	609.08	4.95	49217.41	12271.28	8668.96
81	5.31	614.01	4.95	49555.79	12355.64	8728.56
81	5.31	614.01	4.95	49555.79	12355.64	8728.56
82	5.31	618.94	4.95	49894.16	12440.01	8788.16
82	5.31	618.94	4.95	49894.16	12440.01	8788.16
83	23.39	624.12	5.92	56019.57	13967.25	9867.07
83	23.39	624.12	5.92	56019.57	13967.25	9867.07
84	23.39	629.55	5.92	55226.31	13769.46	9727.34
84	23.39	629.55	5.92	55226.31	13769.46	9727.34
85	23.39	634.98	5.92	54433.04	13571.68	9587.62
85	23.39	634.98	5.92	54433.04	13571.68	9587.62
86	23.39	640.23	5.52	50280.54	12536.35	8856.22
86	23.39	640.23	5.52	50280.54	12536.35	8856.22
87	23.39	645.30	5.52	50011.07	12469.16	8808.75
87	23.39	645.30	5.52	50011.07	12469.16	8808.75
88	23.39	650.37	5.52	49741.60	12401.97	8761.29
88	23.39	650.37	5.52	49741.60	12401.97	8761.29
89	23.39	655.44	5.52	49472.12	12334.78	8713.82
89	23.39	655.44	5.52	49472.12	12334.78	8713.82
90	23.39	660.51	5.52	49202.65	12267.60	8666.36
90	23.39	660.51	5.52	49202.65	12267.60	8666.36
91	23.39	665.58	5.52	48933.17	12200.41	8618.90
91	23.39	665.58	5.52	48933.17	12200.41	8618.90
92	23.39	670.65	5.52	48663.70	12133.22	8571.43
92	23.39	670.65	5.52	48663.70	12133.22	8571.43
93	23.39	675.72	5.52	48394.22	12066.03	8523.97
93	23.39	675.72	5.52	48394.22	12066.03	8523.97
94	23.39	680.79	5.52	48124.75	11998.85	8476.50
94	23.39	680.79	5.52	48124.75	11998.85	8476.50
95	23.39	685.86	5.52	47855.27	11931.66	8429.04
95	23.39	685.86	5.52	47855.27	11931.66	8429.04
96	23.39	690.93	5.52	47585.80	11864.47	8381.57
96	23.39	690.93	5.52	47585.80	11864.47	8381.57
97	23.39	696.00	5.52	47316.32	11797.28	8334.11
97	23.39	696.00	5.52	47316.32	11797.28	8334.11
98	23.39	701.07	5.52	47046.85	11730.10	8286.65
98	23.39	701.07	5.52	47046.85	11730.10	8286.65
99	23.39	706.13	5.52	46777.37	11662.91	8239.18
99	23.39	706.13	5.52	46777.37	11662.91	8239.18
100	23.39	711.20	5.52	46507.90	11595.72	8191.72
100	23.39	711.20	5.52	46507.90	11595.72	8191.72
101	23.39	716.27	5.52	46238.42	11528.53	8144.25
101	23.39	716.27	5.52	46238.42	11528.53	8144.25
102	23.39	721.34	5.52	45968.95	11461.35	8096.79
102	23.39	721.34	5.52	45968.95	11461.35	8096.79
103	23.39	726.41	5.52	45699.47	11394.16	8049.32
103	23.39	726.41	5.52	45699.47	11394.16	8049.32
104	23.39	731.48	5.52	45430.00	11326.97	8001.86
104	23.39	731.48	5.52	45430.00	11326.97	8001.86
105	23.39	736.55	5.52	45160.52	11259.78	7954.40
105	23.39	736.55	5.52	45160.52	11259.78	7954.40
106	23.39	741.62	5.52	44891.05	11192.59	7906.93
106	23.39	741.62	5.52	44891.05	11192.59	7906.93
107	23.39	746.69	5.52	44621.57	11125.41	7859.47
107	23.39	746.69	5.52	44621.57	11125.41	7859.47
108	23.39	751.76	5.52	44352.10	11058.22	7812.00
108	23.39	751.76	5.52	44352.10	11058.22	7812.00
109	23.39	756.83	5.52	44082.62	10991.03	7764.54
109	23.39	756.83	5.52	44082.62	10991.03	7764.54
110	23.39	761.90	5.52	43813.15	10923.84	7717.07
110	23.39	761.90	5.52	43813.15	10923.84	7717.07
111	23.39	766.97	5.52	43543.67	10856.66	7669.61
111	23.39	766.97	5.52	43543.67	10856.66	7669.61
112	23.39	772.02	5.48	43073.86	10739.52	7586.86
112	23.39	772.02	5.48	43073.86	10739.52	7586.86
113	23.39	777.05	5.48	43018.52	10725.72	7577.11
113	23.39	777.05	5.48	43018.52	10725.72	7577.11
114	23.39	782.08	5.48	42963.17	10711.92	7567.36
114	23.39	782.08	5.48	42963.17	10711.92	7567.36
115	23.78	786.95	5.14	37958.27	16620.12	11741.17
115	23.78	786.95	5.14	37958.27	16620.12	11741.17
116	23.78	791.79	5.44	40106.67	17563.26	12407.45
116	23.78	791.79	5.44	40106.67	17563.26	12407.45
117	23.78	796.76	5.44	40032.05	17533.11	12386.15
117	23.78	796.76	5.44	40032.05	17533.11	12386.15
118	23.78	801.74	5.44	39957.43	17502.96	12364.85
118	23.78	801.74	5.44	39957.43	17502.96	12364.85
119	23.78	806.71	5.44	39882.80	17472.81	12343.55
119	23.78	806.71	5.44	39882.80	17472.81	12343.55
120	23.78	811.69	5.44	39808.18	17442.66	12322.25
120	23.78	811.69	5.44	39808.18	17442.66	12322.25
121	23.78	816.66	5.44	39733.55	17412.51	12300.95
121	23.78	816.66	5.44	39733.55	17412.51	12300.95
122	23.78	821.64	5.44	39658.93	17382.36	12279.65
122	23.78	821.64	5.44	39658.93	17382.36	12279.65
123	23.78	826.61	5.44	39584.30	17352.21	12258.35
123	23.78	826.61	5.44	39584.30	17352.21	12258.35
124	23.78	831.59	5.44	39509.68	17322.06	12237.05
124	23.78	831.59	5.44	39509.68	17322.06	12237.05
125	23.78	836.56	5.44	39435.05	17291.91	12215.75
125	23.78	836.56	5.44	39435.05	17291.91	12215.75
126	23.78	841.54	5.44	39360.43	17261.76	12194.45
126	23.78	841.54	5.44	39360.43	17261.76	12194.45
127	23.78	846.51	5.44	39285.80	17231.61	12173.15
127	23.78	846.51	5.44	39285.80	17231.61	12173.15
128	23.78	851.80	6.12	44131.93	19360.31	13676.96
128	23.78	851.80	6.12	44131.93	19360.31	13676.96
129	23.78	857.40	6.12	44037.38	19322.11	13649.97
129	23.78	857.40	6.12	44037.38	19322.11	13649.97
130	23.78	862.70	5.46	39108.26	17164.75	12125.92
130	23.78	862.70	5.46	39108.26	17164.75	12125.92
131	23.78	867.69	5.46	38883.24	17073.84	12061.70
131	23.78	867.69	5.46	38883.24	17073.84	12061.70
132	23.78	872.68	5.46	38658.23	16982.93	11997.47
132	23.78	872.68	5.46	38658.23	16982.93	11997.47
133	23.78	877.67	5.46	38433.21	16892.02	11933.25
133	23.78	877.67	5.46	38433.21	16892.02	11933.25
134	23.78	882.67	5.46	38208.20	16801.11	11869.03
134	23.78	882.67	5.46	38208.20	16801.11	11869.03
135	23.78	887.66	5.46	37983.19	16710.19	11804.80
135	23.78	887.66	5.46	37983.19	16710.19	11804.80
136	23.78	892.65	5.46	37758.17	16619.28	11740.58
136	23.78	892.65	5.46	37758.17	16619.28	11740.58
137	23.78	897.65	5.46	37533.16	16528.37	11676.35
137	23.78	897.65	5.46	37533.16	16528.37	11676.35
138	23.78	902.64	5.46	37308.14	16437.46	11612.13

138	23.78	902.64	5.46	37308.14	16437.46	11612.13
139	23.78	907.63	5.46	37083.13	16346.55	11547.91
139	23.78	907.63	5.46	37083.13	16346.55	11547.91
140	23.78	912.62	5.46	36858.11	16255.63	11483.68
140	23.78	912.62	5.46	36858.11	16255.63	11483.68
141	23.78	917.62	5.46	36633.10	16164.72	11419.46
141	23.78	917.62	5.46	36633.10	16164.72	11419.46
142	23.78	922.61	5.46	36408.08	16073.81	11355.23
142	23.78	922.61	5.46	36408.08	16073.81	11355.23
143	23.78	927.60	5.46	36183.07	15982.90	11291.01
143	23.78	927.60	5.46	36183.07	15982.90	11291.01
144	23.78	932.60	5.46	35958.05	15891.99	11226.79
144	23.78	932.60	5.46	35958.05	15891.99	11226.79
145	23.78	937.59	5.46	35733.04	15801.08	11162.56
145	23.78	937.59	5.46	35733.04	15801.08	11162.56
146	23.78	942.58	5.46	35508.02	15710.16	11098.34
146	23.78	942.58	5.46	35508.02	15710.16	11098.34
147	23.78	947.58	5.46	35283.01	15619.25	11034.11
147	23.78	947.58	5.46	35283.01	15619.25	11034.11
148	23.78	952.57	5.46	35057.99	15528.34	10969.89
148	23.78	952.57	5.46	35057.99	15528.34	10969.89
149	23.78	957.56	5.46	34832.98	15437.43	10905.67
149	23.78	957.56	5.46	34832.98	15437.43	10905.67
150	23.78	962.55	5.46	34607.96	15346.52	10841.44
150	23.78	962.55	5.46	34607.96	15346.52	10841.44
151	23.78	967.55	5.46	34382.95	15255.60	10777.22
151	23.78	967.55	5.46	34382.95	15255.60	10777.22
152	23.78	972.54	5.46	34157.93	15164.69	10712.99
152	23.78	972.54	5.46	34157.93	15164.69	10712.99
153	23.78	977.53	5.46	33932.92	15073.78	10648.77
153	23.78	977.53	5.46	33932.92	15073.78	10648.77
154	23.78	982.53	5.46	33707.91	14982.87	10584.55
154	23.78	982.53	5.46	33707.91	14982.87	10584.55
155	23.78	987.52	5.46	33482.89	14891.96	10520.32
155	23.78	987.52	5.46	33482.89	14891.96	10520.32
156	23.78	992.51	5.46	33257.88	14801.04	10456.10
156	23.78	992.51	5.46	33257.88	14801.04	10456.10
157	23.78	997.50	5.46	33032.86	14710.13	10391.87
157	23.78	997.50	5.46	33032.86	14710.13	10391.87
158	23.78	1002.57	5.61	33656.91	15000.07	10596.70
158	23.78	1002.57	5.61	33656.91	15000.07	10596.70
159	23.78	1007.70	5.61	33305.03	14857.90	10496.26
159	23.78	1007.70	5.61	33305.03	14857.90	10496.26
160	23.78	1012.83	5.61	32953.15	14715.73	10395.83
160	23.78	1012.83	5.61	32953.15	14715.73	10395.83
161	23.78	1017.96	5.61	32601.27	14573.56	10295.39
161	23.78	1017.96	5.61	32601.27	14573.56	10295.39
162	23.78	1023.09	5.61	32249.39	14431.40	10194.96
162	23.78	1023.09	5.61	32249.39	14431.40	10194.96
163	23.78	1028.22	5.61	31897.51	14289.23	10094.53
163	23.78	1028.22	5.61	31897.51	14289.23	10094.53
164	23.78	1033.35	5.61	31545.63	14147.06	9994.09
164	23.78	1033.35	5.61	31545.63	14147.06	9994.09
165	23.78	1038.48	5.61	31193.75	14004.89	9893.66
165	23.78	1038.48	5.61	31193.75	14004.89	9893.66
166	23.78	1043.62	5.61	30841.87	13862.72	9793.22
166	23.78	1043.62	5.61	30841.87	13862.72	9793.22
167	23.78	1048.75	5.61	30489.99	13720.55	9692.79
167	23.78	1048.75	5.61	30489.99	13720.55	9692.79
168	23.78	1053.88	5.61	30138.11	13578.38	9592.36
168	23.78	1053.88	5.61	30138.11	13578.38	9592.36
169	23.78	1059.01	5.61	29786.23	13436.21	9491.92
169	23.78	1059.01	5.61	29786.23	13436.21	9491.92
170	23.78	1064.14	5.61	29434.35	13294.05	9391.49
170	23.78	1064.14	5.61	29434.35	13294.05	9391.49
171	23.78	1069.27	5.61	29082.47	13151.88	9291.05
171	23.78	1069.27	5.61	29082.47	13151.88	9291.05
172	23.78	1074.40	5.61	28730.59	13009.71	9190.62
172	23.78	1074.40	5.61	28730.59	13009.71	9190.62
173	23.78	1079.53	5.61	28378.71	12867.54	9090.19
173	23.78	1079.53	5.61	28378.71	12867.54	9090.19
174	23.78	1084.61	5.48	27212.98	12365.99	8735.87
174	23.78	1084.61	5.48	27212.98	12365.99	8735.87
175	23.78	1089.63	5.48	26463.41	12063.14	8521.92
175	23.78	1089.63	5.48	26463.41	12063.14	8521.92
176	23.78	1094.65	5.48	25713.84	11760.30	8307.98
176	23.78	1094.65	5.48	25713.84	11760.30	8307.98
177	23.78	1099.67	5.48	24964.27	11457.45	8094.04
177	23.78	1099.67	5.48	24964.27	11457.45	8094.04
178	23.78	1104.69	5.48	24214.71	11154.61	7880.10
178	23.78	1104.69	5.48	24214.71	11154.61	7880.10
179	23.78	1109.71	5.48	23465.14	10851.76	7666.15
179	23.78	1109.71	5.48	23465.14	10851.76	7666.15
180	23.78	1114.73	5.48	22715.57	10548.92	7452.21
180	23.78	1114.73	5.48	22715.57	10548.92	7452.21
181	23.78	1119.75	5.48	21966.01	10246.07	7238.27
181	23.78	1119.75	5.48	21966.01	10246.07	7238.27
182	23.78	1124.76	5.48	21216.44	9943.23	7024.32
182	23.78	1124.76	5.48	21216.44	9943.23	7024.32
183	23.78	1129.78	5.48	20466.87	9640.38	6810.38
183	23.78	1129.78	5.48	20466.87	9640.38	6810.38
184	23.78	1134.80	5.48	19717.30	9337.54	6596.44
184	23.78	1134.80	5.48	19717.30	9337.54	6596.44
185	23.78	1139.82	5.48	18967.74	9034.69	6382.50
185	23.78	1139.82	5.48	18967.74	9034.69	6382.50
186	23.78	1144.84	5.48	18218.17	8731.85	6168.55
186	23.78	1144.84	5.48	18218.17	8731.85	6168.55
187	23.78	1149.86	5.48	17468.60	8429.00	5954.61
187	23.78	1149.86	5.48	17468.60	8429.00	5954.61
188	23.78	1154.88	5.48	16719.03	8126.16	5740.67
188	23.78	1154.88	5.48	16719.03	8126.16	5740.67
189	23.78	1159.90	5.48	15969.47	7823.31	5526.73
189	23.78	1159.90	5.48	15969.47	7823.31	5526.73
190	23.78	1164.92	5.48	15219.90	7520.47	5312.78
190	23.78	1164.92	5.48	15219.90	7520.47	5312.78
191	23.78	1169.94	5.48	14470.33	7217.62	5098.84
191	23.78	1169.94	5.48	14470.33	7217.62	5098.84
192	23.78	1174.96	5.48	13720.77	6914.78	4884.90
192	23.78	1174.96	5.48	13720.77	6914.78	4884.90
193	23.78	1179.98	5.48	12971.20	6611.93	4670.96
193	23.78	1179.98	5.48	12971.20	6611.93	4670.96
194	23.78	1185.00	5.48	12221.63	6309.09	4457.01
194	23.78	1185.00	5.48	12221.63	6309.09	4457.01
195	23.78	1190.02	5.48	11472.06	6006.24	4243.07
195	23.78	1190.02	5.48	11472.06	6006.24	4243.07
196	23.78	1195.04	5.48	10722.50	5703.40	4029.13
196	23.78	1195.04	5.48	10722.50	5703.40	4029.13
197	23.78	1200.05	5.48	9972.93	5400.56	3815.19
197	23.78	1200.05	5.48	9972.93	5400.56	3815.19
198	23.78	1205.07	5.48	9223.36	5097.71	3601.24

198	23.78	1205.07	5.48	9223.36	5097.71	3601.24
199	23.78	1210.09	5.48	8473.80	4794.87	3387.30
199	23.78	1210.09	5.48	8473.80	4794.87	3387.30
200	23.78	1215.11	5.48	7724.23	4492.02	3173.36
200	23.78	1215.11	5.48	7724.23	4492.02	3173.36
201	23.78	1220.13	5.48	6974.66	4189.18	2959.41
201	23.78	1220.13	5.48	6974.66	4189.18	2959.41
202	23.78	1225.15	5.48	6225.09	3886.33	2745.47
202	23.78	1225.15	5.48	6225.09	3886.33	2745.47
203	23.78	1230.17	5.48	5475.53	3583.49	2531.53
203	23.78	1230.17	5.48	5475.53	3583.49	2531.53
204	23.78	1235.19	5.48	4725.96	3280.64	2317.59
204	23.78	1235.19	5.48	4725.96	3280.64	2317.59
205	23.78	1238.35	1.42	1101.80	800.30	565.37
205	23.78	1238.35	1.42	1101.80	800.30	565.37
206	37.55	1241.00	5.05	2693.15	2349.42	1659.73
206	37.55	1241.00	5.05	2693.15	2349.42	1659.73
207	37.55	1245.00	5.05	1541.69	1884.20	1331.08
207	37.55	1245.00	5.05	1541.69	1884.20	1331.08
208	37.55	1248.67	4.23	484.40	1252.06	884.51
208	37.55	1248.67	4.23	484.40	1252.06	884.51
209	37.55	1252.03	4.23	324.60	131.15	92.65
209	37.55	1252.03	4.23	324.60	131.15	92.65

Sum of the Resisting Forces = 2251017.20 (lbs)

Average Available Shear Strength = 2024.30(psf)

Sum of the Driving Forces = 1669866.35 (lbs)

Average Mobilized Shear Stress = 1501.68(psf)

Total length of the failure surface = 1112.00(ft)

Factor of Safety Balance Check: FS = 1.34802

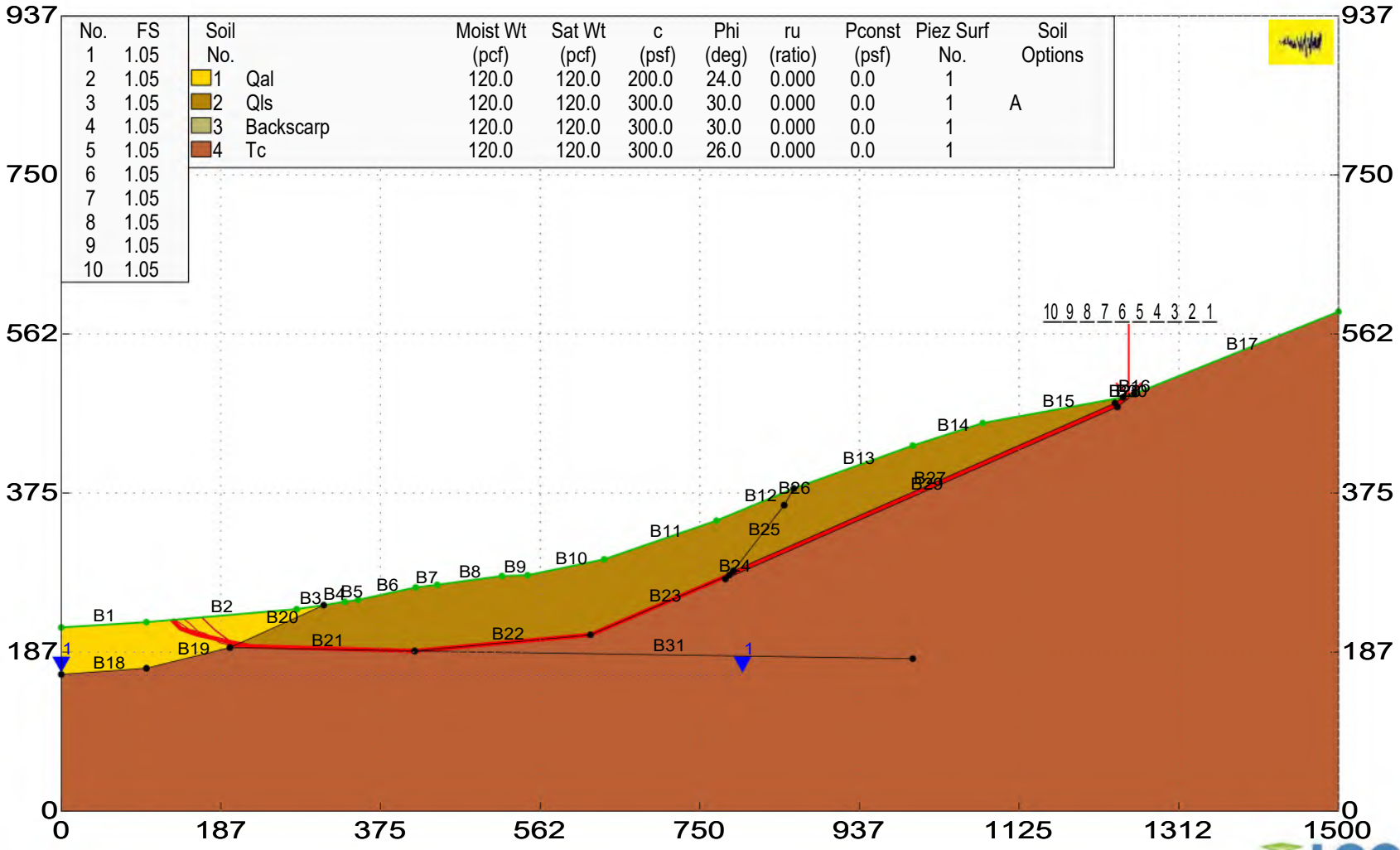
Janbu's Correction Factor (fo) = 1.0505

Janub's FS Corrected = 1.41609

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Existing - Larger Qls - Seismic

LGC Geotechnical, Inc. \xhLRGe.gsd



GEOSTASE FS = 1.05

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 4/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhLRGe.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhLRGe.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Existing - Larger Qls - Seismic

BOUNDARY DATA

17 Surface Boundaries
31 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	216.400	100.000	222.900	1
2	100.000	222.900	276.400	238.000	1
3	276.400	238.000	308.300	242.900	1
4	308.300	242.900	332.700	247.000	2
5	332.700	247.000	348.800	249.000	2
6	348.800	249.000	416.400	263.600	2
7	416.400	263.600	441.400	267.000	2
8	441.400	267.000	517.400	277.100	2
9	517.400	277.100	547.500	278.000	2
10	547.500	278.000	637.700	297.000	2
11	637.700	297.000	769.500	342.600	2
12	769.500	342.600	860.200	380.200	2
13	860.200	380.200	1000.000	430.900	2
14	1000.000	430.900	1082.100	457.600	2
15	1082.100	457.600	1247.000	487.900	2
16	1247.000	487.900	1260.400	491.900	3
17	1260.400	491.900	1500.000	588.800	4
18	0.000	161.100	100.000	168.300	4
19	100.000	168.300	198.100	192.800	4
20	198.100	192.800	308.300	242.900	2
21	198.100	192.800	414.900	188.600	4
22	414.900	188.600	621.400	207.800	4
23	621.400	207.800	784.600	278.400	4
24	779.900	273.600	789.300	283.200	3
25	789.300	283.200	849.000	360.500	2
26	849.000	360.500	860.200	380.200	2
27	789.300	283.200	1237.700	480.800	3
28	1237.700	480.800	1247.000	487.900	3
29	779.900	273.600	1240.300	476.500	4
30	1240.300	476.500	1260.400	491.900	4
31	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

1 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	24.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	354.70	189.70	5.00
2	414.90	188.60	414.90	188.60	0.00
3	621.40	207.80	621.40	207.80	0.00
4	784.60	278.40	784.60	278.40	0.00
5	1239.00	478.60	1239.00	478.60	0.00
6	1253.70	489.90	1253.70	489.90	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.221 FS Min = 1.046 FS Ave = 1.144
Standard Deviation = 0.055 Coefficient of Variation = 4.80 %

Critical Surface is Sequence Number 161 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.046

Table 1 - Geometry Data on the 226 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.12	2.76	132.37	222.91	225.67	-44.77	4.89	7.21
2	5.12	8.27	137.49	217.83	226.11	-44.77	4.89	7.21
3	4.69	12.09	142.39	214.44	226.53	-20.12	4.89	5.00
4	4.69	14.22	147.09	212.72	226.93	-20.12	4.89	5.00
5	4.69	16.34	151.78	211.00	227.33	-20.12	4.89	5.00
6	4.69	18.46	156.48	209.28	227.73	-20.12	4.89	5.00
7	4.88	20.27	161.27	207.87	228.14	-12.58	4.89	5.00
8	4.88	21.78	166.15	206.78	228.56	-12.58	4.89	5.00
9	4.88	23.29	171.03	205.69	228.98	-12.58	4.89	5.00
10	4.88	24.79	175.91	204.60	229.40	-12.58	4.89	5.00
11	4.86	26.34	180.78	203.47	229.81	-13.56	4.89	5.00
12	4.86	27.93	185.64	202.30	230.23	-13.56	4.89	5.00
13	4.86	29.52	190.50	201.13	230.65	-13.56	4.89	5.00
14	4.86	31.11	195.36	199.96	231.06	-13.56	4.89	5.00
15	4.73	32.70	200.15	198.77	231.47	-14.31	4.89	4.88
16	4.73	34.32	204.88	197.56	231.88	-14.31	4.89	4.88
17	4.96	35.97	209.73	196.33	232.29	-14.31	4.89	5.12
18	4.96	37.66	214.69	195.06	232.72	-14.31	4.89	5.12
19	4.94	38.78	219.64	194.36	233.14	-1.69	4.89	4.94
20	4.94	39.35	224.57	194.21	233.56	-1.69	4.89	4.94
21	4.94	39.92	229.51	194.07	233.99	-1.69	4.89	4.94
22	4.94	40.49	234.44	193.92	234.41	-1.69	4.89	4.94
23	4.94	41.06	239.38	193.77	234.83	-1.69	4.89	4.94
24	4.94	41.62	244.32	193.63	235.25	-1.69	4.89	4.94
25	4.94	42.19	249.25	193.48	235.68	-1.69	4.89	4.94
26	4.94	42.76	254.19	193.34	236.10	-1.69	4.89	4.94
27	4.94	43.33	259.12	193.19	236.52	-1.69	4.89	4.94
28	4.94	43.90	264.06	193.05	236.94	-1.69	4.89	4.94
29	4.94	44.47	269.00	192.90	237.37	-1.69	4.89	4.94
30	4.94	45.03	273.93	192.76	237.79	-1.69	4.89	4.94
31	5.32	45.80	279.06	192.60	238.41	-1.69	8.73	5.32
32	5.32	46.78	284.38	192.45	239.22	-1.69	8.73	5.32
33	5.32	47.75	289.69	192.29	240.04	-1.69	8.73	5.32
34	5.32	48.72	295.01	192.13	240.86	-1.69	8.73	5.32
35	5.32	49.70	300.33	191.98	241.68	-1.69	8.73	5.32

36	5.32	50.67	305.64	191.82	242.49	-1.69	8.73	5.32
37	4.88	51.64	310.74	191.67	243.31	-1.69	9.54	4.88
38	4.88	52.60	315.62	191.53	244.13	-1.69	9.54	4.88
39	4.88	53.57	320.50	191.38	244.95	-1.69	9.54	4.88
40	4.88	54.53	325.38	191.24	245.77	-1.69	9.54	4.88
41	4.88	55.49	330.26	191.10	246.59	-1.69	9.54	4.88
42	5.37	56.39	335.38	190.94	247.33	-1.69	7.08	5.37
43	5.37	57.21	340.75	190.79	248.00	-1.69	7.08	5.37
44	5.37	58.04	346.12	190.63	248.67	-1.69	7.08	5.37
45	5.08	59.08	351.34	190.47	249.55	-1.69	12.19	5.09
46	5.08	60.32	356.43	190.32	250.65	-1.69	12.19	5.09
47	5.08	61.57	361.51	190.17	251.75	-1.69	12.19	5.09
48	5.08	62.82	366.60	190.02	252.84	-1.69	12.19	5.09
49	5.08	64.07	371.68	189.87	253.94	-1.69	12.19	5.09
50	5.08	65.32	376.77	189.72	255.04	-1.69	12.19	5.09
51	5.08	66.56	381.85	189.57	256.14	-1.69	12.19	5.09
52	5.08	67.81	386.93	189.42	257.24	-1.69	12.19	5.09
53	5.08	69.06	392.02	189.27	258.33	-1.69	12.19	5.09
54	5.08	70.31	397.10	189.12	259.43	-1.69	12.19	5.09
55	5.08	71.56	402.19	188.97	260.53	-1.69	12.19	5.09
56	5.08	72.80	407.27	188.82	261.63	-1.69	12.19	5.09
57	5.08	74.05	412.36	188.67	262.73	-1.69	12.19	5.09
58	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
59	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
60	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
61	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
62	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
63	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
64	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
65	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
66	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
67	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
68	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
69	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
70	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
71	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
72	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
73	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
74	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
75	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
76	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
77	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
78	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
79	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
80	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
81	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
82	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
83	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
84	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
85	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
86	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
87	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
88	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
89	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
90	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
91	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
92	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
93	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
94	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
95	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
96	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
97	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
98	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
99	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
100	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
101	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
102	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
103	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
104	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
105	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
106	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
107	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
108	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
109	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
110	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
111	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
112	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
113	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
114	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
115	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
116	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
117	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
118	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
119	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
120	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
121	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
122	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
123	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
124	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
125	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
126	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
127	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
128	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
129	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
130	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
131	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
132	4.70	70.40	786.95	279.44	349.83	23.78	22.52	5.14
133	4.98	70.27	791.79	281.57	351.84	23.78	22.52	5.44
134	4.98	70.14	796.76	283.76	353.90	23.78	22.52	5.44
135	4.97	70.01	801.74	285.95	355.96	23.78	22.52	5.44
136	4.98	69.88	806.71	288.14	358.03	23.78	22.52	5.44
137	4.98	69.75	811.69	290.33	360.09	23.78	22.52	5.44
138	4.98	69.63	816.66	292.53	362.15	23.78	22.52	5.44
139	4.98	69.50	821.64	294.72	364.21	23.78	22.52	5.44
140	4.98	69.37	826.61	296.91	366.28	23.78	22.52	5.44
141	4.98	69.24	831.59	299.10	368.34	23.78	22.52	5.44
142	4.97	69.11	836.56	301.29	370.40	23.78	22.52	5.44
143	4.98	68.98	841.54	303.49	372.46	23.78	22.52	5.44
144	4.98	68.85	846.51	305.68	374.53	23.78	22.52	5.44
145	5.60	68.71	851.80	308.01	376.72	23.78	22.52	6.12
146	5.60	68.56	857.40	310.47	379.04	23.78	22.52	6.12
147	4.99	68.30	862.70	312.81	381.11	23.78	19.93	5.46
148	4.99	67.91	867.69	315.01	382.92	23.78	19.93	5.46
149	4.99	67.52	872.68	317.21	384.73	23.78	19.93	5.46
150	4.99	67.13	877.67	319.41	386.54	23.78	19.93	5.46
151	4.99	66.74	882.67	321.61	388.35	23.78	19.93	5.46
152	4.99	66.35	887.66	323.81	390.16	23.78	19.93	5.46
153	4.99	65.96	892.65	326.01	391.97	23.78	19.93	5.46
154	4.99	65.57	897.65	328.21	393.78	23.78	19.93	5.46
155	4.99	65.19	902.64	330.41	395.59	23.78	19.93	5.46

156	4.99	64.80	907.63	332.61	397.40	23.78	19.93	5.46
157	4.99	64.41	912.62	334.81	399.21	23.78	19.93	5.46
158	4.99	64.02	917.62	337.01	401.02	23.78	19.93	5.46
159	4.99	63.63	922.61	339.20	402.83	23.78	19.93	5.46
160	4.99	63.24	927.60	341.40	404.64	23.78	19.93	5.46
161	4.99	62.85	932.60	343.60	406.46	23.78	19.93	5.46
162	4.99	62.46	937.59	345.80	408.27	23.78	19.93	5.46
163	4.99	62.07	942.58	348.00	410.08	23.78	19.93	5.46
164	4.99	61.68	947.58	350.20	411.89	23.78	19.93	5.46
165	4.99	61.29	952.57	352.40	413.70	23.78	19.93	5.46
166	4.99	60.91	957.56	354.60	415.51	23.78	19.93	5.46
167	4.99	60.52	962.55	356.80	417.32	23.78	19.93	5.46
168	4.99	60.13	967.55	359.00	419.13	23.78	19.93	5.46
169	4.99	59.74	972.54	361.20	420.94	23.78	19.93	5.46
170	4.99	59.35	977.53	363.40	422.75	23.78	19.93	5.46
171	4.99	58.96	982.53	365.60	424.56	23.78	19.93	5.46
172	4.99	58.57	987.52	367.80	426.37	23.78	19.93	5.46
173	4.99	58.18	992.51	370.00	428.18	23.78	19.93	5.46
174	4.99	57.79	997.50	372.20	429.99	23.78	19.93	5.46
175	5.13	57.30	1002.57	374.43	431.73	23.78	18.02	5.61
176	5.13	56.71	1007.70	376.69	433.40	23.78	18.02	5.61
177	5.13	56.12	1012.83	378.95	435.07	23.78	18.02	5.61
178	5.13	55.53	1017.96	381.21	436.74	23.78	18.02	5.61
179	5.13	54.93	1023.09	383.47	438.41	23.78	18.02	5.61
180	5.13	54.34	1028.22	385.74	440.08	23.78	18.02	5.61
181	5.13	53.75	1033.35	388.00	441.75	23.78	18.02	5.61
182	5.13	53.16	1038.48	390.26	443.42	23.78	18.02	5.61
183	5.13	52.57	1043.62	392.52	445.08	23.78	18.02	5.61
184	5.13	51.98	1048.75	394.78	446.75	23.78	18.02	5.61
185	5.13	51.38	1053.88	397.04	448.42	23.78	18.02	5.61
186	5.13	50.79	1059.01	399.30	450.09	23.78	18.02	5.61
187	5.13	50.20	1064.14	401.56	451.76	23.78	18.02	5.61
188	5.13	49.61	1069.27	403.82	453.43	23.78	18.02	5.61
189	5.13	49.02	1074.40	406.08	455.10	23.78	18.02	5.61
190	5.13	48.42	1079.53	408.34	456.77	23.78	18.02	5.61
191	5.02	47.48	1084.61	410.58	458.06	23.78	10.41	5.48
192	5.02	46.19	1089.63	412.79	458.98	23.78	10.41	5.48
193	5.02	44.90	1094.65	415.00	459.91	23.78	10.41	5.48
194	5.02	43.62	1099.67	417.21	460.83	23.78	10.41	5.48
195	5.02	42.33	1104.69	419.42	461.75	23.78	10.41	5.48
196	5.02	41.04	1109.71	421.64	462.67	23.78	10.41	5.48
197	5.02	39.75	1114.73	423.85	463.59	23.78	10.41	5.48
198	5.02	38.46	1119.75	426.06	464.52	23.78	10.41	5.48
199	5.02	37.17	1124.76	428.27	465.44	23.78	10.41	5.48
200	5.02	35.88	1129.78	430.48	466.36	23.78	10.41	5.48
201	5.02	34.59	1134.80	432.69	467.28	23.78	10.41	5.48
202	5.02	33.30	1139.82	434.90	468.21	23.78	10.41	5.48
203	5.02	32.01	1144.84	437.12	469.13	23.78	10.41	5.48
204	5.02	30.72	1149.86	439.33	470.05	23.78	10.41	5.48
205	5.02	29.43	1154.88	441.54	470.97	23.78	10.41	5.48
206	5.02	28.15	1159.90	443.75	471.90	23.78	10.41	5.48
207	5.02	26.86	1164.92	445.96	472.82	23.78	10.41	5.48
208	5.02	25.57	1169.94	448.17	473.74	23.78	10.41	5.48
209	5.02	24.28	1174.96	450.38	474.66	23.78	10.41	5.48
210	5.02	22.99	1179.98	452.60	475.58	23.78	10.41	5.48
211	5.02	21.70	1185.00	454.81	476.51	23.78	10.41	5.48
212	5.02	20.41	1190.02	457.02	477.43	23.78	10.41	5.48
213	5.02	19.12	1195.04	459.23	478.35	23.78	10.41	5.48
214	5.02	17.83	1200.05	461.44	479.27	23.78	10.41	5.48
215	5.02	16.54	1205.07	463.65	480.20	23.78	10.41	5.48
216	5.02	15.25	1210.09	465.86	481.12	23.78	10.41	5.48
217	5.02	13.97	1215.11	468.08	482.04	23.78	10.41	5.48
218	5.02	12.68	1220.13	470.29	482.96	23.78	10.41	5.48
219	5.02	11.39	1225.15	472.50	483.89	23.78	10.41	5.48
220	5.02	10.10	1230.17	474.71	484.81	23.78	10.41	5.48
221	5.02	8.81	1235.19	476.92	485.73	23.78	10.41	5.48
222	1.30	8.00	1238.35	478.31	486.31	23.78	10.41	1.42
223	4.00	6.66	1241.00	480.14	486.80	37.55	10.41	5.05
224	4.00	4.32	1245.00	483.21	487.53	37.55	10.41	5.05
225	3.35	2.36	1248.67	486.04	488.40	37.55	16.62	4.23
226	3.35	0.79	1252.03	488.61	489.40	37.55	16.62	4.23

Table 2 - Force Data On The 226 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1694.2	0.0	0.0	254.1	0.0	0.0
2	5082.7	0.0	0.0	762.4	0.0	0.0
3	6813.5	0.0	0.0	1022.0	0.0	0.0
4	8008.9	0.0	0.0	1201.3	0.0	0.0
5	9204.2	0.0	0.0	1380.6	0.0	0.0
6	10399.6	0.0	0.0	1559.9	0.0	0.0
7	11871.9	0.0	0.0	1780.8	0.0	0.0
8	12754.1	0.0	0.0	1913.1	0.0	0.0
9	13636.4	0.0	0.0	2045.5	0.0	0.0
10	14518.6	0.0	0.0	2177.8	0.0	0.0
11	15363.6	0.0	0.0	2304.5	0.0	0.0
12	16290.0	0.0	0.0	2443.5	0.0	0.0
13	17216.5	0.0	0.0	2582.5	0.0	0.0
14	18142.9	0.0	0.0	2721.4	0.0	0.0
15	18562.3	0.0	0.0	2784.3	0.0	0.0
16	19476.7	0.0	0.0	2921.5	0.0	0.0
17	21407.5	0.0	0.0	3211.1	0.0	0.0
18	22413.1	0.0	0.0	3362.0	0.0	0.0
19	22972.8	0.0	0.0	3445.9	0.0	0.0
20	23309.2	0.0	0.0	3496.4	0.0	0.0
21	23645.7	0.0	0.0	3546.9	0.0	0.0
22	23982.1	0.0	0.0	3597.3	0.0	0.0
23	24318.6	0.0	0.0	3647.8	0.0	0.0
24	24655.1	0.0	0.0	3698.3	0.0	0.0
25	24991.5	0.0	0.0	3748.7	0.0	0.0
26	25328.0	0.0	0.0	3799.2	0.0	0.0
27	25664.4	0.0	0.0	3849.7	0.0	0.0
28	26000.9	0.0	0.0	3900.1	0.0	0.0
29	26337.3	0.0	0.0	3950.6	0.0	0.0
30	26673.8	0.0	0.0	4001.1	0.0	0.0
31	29222.8	0.0	0.0	4383.4	0.0	0.0
32	29843.8	0.0	0.0	4476.6	0.0	0.0
33	30464.9	0.0	0.0	4569.7	0.0	0.0
34	31085.9	0.0	0.0	4662.9	0.0	0.0
35	31706.9	0.0	0.0	4756.0	0.0	0.0
36	32328.0	0.0	0.0	4849.2	0.0	0.0
37	30240.0	0.0	0.0	4536.0	0.0	0.0
38	30804.5	0.0	0.0	4620.7	0.0	0.0
39	31368.9	0.0	0.0	4705.3	0.0	0.0

40	31933.3	0.0	0.0	4790.0	0.0	0.0
41	32497.8	0.0	0.0	4874.7	0.0	0.0
42	36314.7	0.0	0.0	5447.2	0.0	0.0
43	36845.9	0.0	0.0	5526.9	0.0	0.0
44	37377.1	0.0	0.0	5606.6	0.0	0.0
45	36045.1	0.0	0.0	5406.8	0.0	0.0
46	36806.6	0.0	0.0	5521.0	0.0	0.0
47	37568.1	0.0	0.0	5635.2	0.0	0.0
48	38329.6	0.0	0.0	5749.4	0.0	0.0
49	39091.1	0.0	0.0	5863.7	0.0	0.0
50	39852.6	0.0	0.0	5977.9	0.0	0.0
51	40614.1	0.0	0.0	6092.1	0.0	0.0
52	41375.6	0.0	0.0	6206.3	0.0	0.0
53	42137.1	0.0	0.0	6320.6	0.0	0.0
54	42898.6	0.0	0.0	6434.8	0.0	0.0
55	43660.1	0.0	0.0	6549.0	0.0	0.0
56	44421.6	0.0	0.0	6663.2	0.0	0.0
57	45183.1	0.0	0.0	6777.5	0.0	0.0
58	13458.3	0.0	0.0	2018.7	0.0	0.0
59	44980.9	0.0	0.0	6747.1	0.0	0.0
60	45109.9	0.0	0.0	6766.5	0.0	0.0
61	45239.0	0.0	0.0	6785.8	0.0	0.0
62	45368.0	0.0	0.0	6805.2	0.0	0.0
63	45497.1	0.0	0.0	6824.6	0.0	0.0
64	46230.6	0.0	0.0	6934.6	0.0	0.0
65	46353.6	0.0	0.0	6953.0	0.0	0.0
66	46476.5	0.0	0.0	6971.5	0.0	0.0
67	46599.5	0.0	0.0	6989.9	0.0	0.0
68	46722.5	0.0	0.0	7008.4	0.0	0.0
69	46845.4	0.0	0.0	7026.8	0.0	0.0
70	46968.4	0.0	0.0	7045.3	0.0	0.0
71	47091.4	0.0	0.0	7063.7	0.0	0.0
72	47214.3	0.0	0.0	7082.1	0.0	0.0
73	47337.3	0.0	0.0	7100.6	0.0	0.0
74	47460.3	0.0	0.0	7119.0	0.0	0.0
75	47583.2	0.0	0.0	7137.5	0.0	0.0
76	47706.2	0.0	0.0	7155.9	0.0	0.0
77	47829.2	0.0	0.0	7174.4	0.0	0.0
78	47952.1	0.0	0.0	7192.8	0.0	0.0
79	47444.5	0.0	0.0	7116.7	0.0	0.0
80	47254.0	0.0	0.0	7088.1	0.0	0.0
81	47063.5	0.0	0.0	7059.5	0.0	0.0
82	46873.0	0.0	0.0	7031.0	0.0	0.0
83	46682.5	0.0	0.0	7002.4	0.0	0.0
84	46492.0	0.0	0.0	6973.8	0.0	0.0
85	45735.8	0.0	0.0	6860.4	0.0	0.0
86	46078.5	0.0	0.0	6911.8	0.0	0.0
87	46421.2	0.0	0.0	6963.2	0.0	0.0
88	46763.9	0.0	0.0	7014.6	0.0	0.0
89	47106.6	0.0	0.0	7066.0	0.0	0.0
90	47449.4	0.0	0.0	7117.4	0.0	0.0
91	47792.1	0.0	0.0	7168.8	0.0	0.0
92	48134.8	0.0	0.0	7220.2	0.0	0.0
93	48477.5	0.0	0.0	7271.6	0.0	0.0
94	48820.2	0.0	0.0	7323.0	0.0	0.0
95	49162.9	0.0	0.0	7374.4	0.0	0.0
96	49505.7	0.0	0.0	7425.8	0.0	0.0
97	49848.4	0.0	0.0	7477.3	0.0	0.0
98	50191.1	0.0	0.0	7528.7	0.0	0.0
99	50533.8	0.0	0.0	7580.1	0.0	0.0
100	55526.6	0.0	0.0	8329.0	0.0	0.0
101	54740.3	0.0	0.0	8211.1	0.0	0.0
102	53954.1	0.0	0.0	8093.1	0.0	0.0
103	49838.1	0.0	0.0	7475.7	0.0	0.0
104	49571.0	0.0	0.0	7435.7	0.0	0.0
105	49303.9	0.0	0.0	7395.6	0.0	0.0
106	49036.8	0.0	0.0	7355.5	0.0	0.0
107	48769.7	0.0	0.0	7315.5	0.0	0.0
108	48502.6	0.0	0.0	7275.4	0.0	0.0
109	48235.5	0.0	0.0	7235.3	0.0	0.0
110	47968.4	0.0	0.0	7195.3	0.0	0.0
111	47701.3	0.0	0.0	7155.2	0.0	0.0
112	47434.2	0.0	0.0	7115.1	0.0	0.0
113	47167.1	0.0	0.0	7075.1	0.0	0.0
114	46900.0	0.0	0.0	7035.0	0.0	0.0
115	46632.9	0.0	0.0	6994.9	0.0	0.0
116	46365.8	0.0	0.0	6954.9	0.0	0.0
117	46098.7	0.0	0.0	6914.8	0.0	0.0
118	45831.5	0.0	0.0	6874.7	0.0	0.0
119	45564.4	0.0	0.0	6834.7	0.0	0.0
120	45297.3	0.0	0.0	6794.6	0.0	0.0
121	45030.2	0.0	0.0	6754.5	0.0	0.0
122	44763.1	0.0	0.0	6714.5	0.0	0.0
123	44496.0	0.0	0.0	6674.4	0.0	0.0
124	44228.9	0.0	0.0	6634.3	0.0	0.0
125	43961.8	0.0	0.0	6594.3	0.0	0.0
126	43694.7	0.0	0.0	6554.2	0.0	0.0
127	43427.6	0.0	0.0	6514.1	0.0	0.0
128	43160.5	0.0	0.0	6474.1	0.0	0.0
129	42694.8	0.0	0.0	6404.2	0.0	0.0
130	42640.0	0.0	0.0	6396.0	0.0	0.0
131	42585.1	0.0	0.0	6387.8	0.0	0.0
132	39704.8	0.0	0.0	5955.7	0.0	0.0
133	41952.8	0.0	0.0	6292.9	0.0	0.0
134	41875.5	0.0	0.0	6281.3	0.0	0.0
135	41798.2	0.0	0.0	6269.7	0.0	0.0
136	41720.9	0.0	0.0	6258.1	0.0	0.0
137	41643.6	0.0	0.0	6246.5	0.0	0.0
138	41566.3	0.0	0.0	6234.9	0.0	0.0
139	41489.0	0.0	0.0	6223.3	0.0	0.0
140	41411.7	0.0	0.0	6211.8	0.0	0.0
141	41334.4	0.0	0.0	6200.2	0.0	0.0
142	41257.1	0.0	0.0	6188.6	0.0	0.0
143	41179.8	0.0	0.0	6177.0	0.0	0.0
144	41102.5	0.0	0.0	6165.4	0.0	0.0
145	46173.6	0.0	0.0	6926.0	0.0	0.0
146	46075.6	0.0	0.0	6911.3	0.0	0.0
147	40920.0	0.0	0.0	6138.0	0.0	0.0
148	40686.9	0.0	0.0	6103.0	0.0	0.0
149	40453.8	0.0	0.0	6068.1	0.0	0.0
150	40220.7	0.0	0.0	6033.1	0.0	0.0
151	39987.6	0.0	0.0	5998.1	0.0	0.0
152	39754.5	0.0	0.0	5963.2	0.0	0.0
153	39521.4	0.0	0.0	5928.2	0.0	0.0
154	39288.3	0.0	0.0	5893.3	0.0	0.0
155	39055.3	0.0	0.0	5858.3	0.0	0.0
156	38822.2	0.0	0.0	5823.3	0.0	0.0
157	38589.1	0.0	0.0	5788.4	0.0	0.0
158	38356.0	0.0	0.0	5753.4	0.0	0.0
159	38122.9	0.0	0.0	5718.4	0.0	0.0

160	37889.8	0.0	0.0	5683.5	0.0	0.0
161	37656.7	0.0	0.0	5648.5	0.0	0.0
162	37423.6	0.0	0.0	5613.5	0.0	0.0
163	37190.5	0.0	0.0	5578.6	0.0	0.0
164	36957.4	0.0	0.0	5543.6	0.0	0.0
165	36724.3	0.0	0.0	5508.6	0.0	0.0
166	36491.2	0.0	0.0	5473.7	0.0	0.0
167	36258.1	0.0	0.0	5438.7	0.0	0.0
168	36025.0	0.0	0.0	5403.8	0.0	0.0
169	35792.0	0.0	0.0	5368.8	0.0	0.0
170	35558.9	0.0	0.0	5333.8	0.0	0.0
171	35325.8	0.0	0.0	5298.9	0.0	0.0
172	35092.7	0.0	0.0	5263.9	0.0	0.0
173	34859.6	0.0	0.0	5228.9	0.0	0.0
174	34626.5	0.0	0.0	5194.0	0.0	0.0
175	35284.2	0.0	0.0	5292.6	0.0	0.0
176	34919.7	0.0	0.0	5238.0	0.0	0.0
177	34555.2	0.0	0.0	5183.3	0.0	0.0
178	34190.7	0.0	0.0	5128.6	0.0	0.0
179	33826.2	0.0	0.0	5073.9	0.0	0.0
180	33461.7	0.0	0.0	5019.3	0.0	0.0
181	33097.2	0.0	0.0	4964.6	0.0	0.0
182	32732.7	0.0	0.0	4909.9	0.0	0.0
183	32368.1	0.0	0.0	4855.2	0.0	0.0
184	32003.6	0.0	0.0	4800.5	0.0	0.0
185	31639.1	0.0	0.0	4745.9	0.0	0.0
186	31274.6	0.0	0.0	4691.2	0.0	0.0
187	30910.1	0.0	0.0	4636.5	0.0	0.0
188	30545.6	0.0	0.0	4581.8	0.0	0.0
189	30181.1	0.0	0.0	4527.2	0.0	0.0
190	29816.6	0.0	0.0	4472.5	0.0	0.0
191	28599.8	0.0	0.0	4290.0	0.0	0.0
192	27823.4	0.0	0.0	4173.5	0.0	0.0
193	27046.9	0.0	0.0	4057.0	0.0	0.0
194	26270.4	0.0	0.0	3940.6	0.0	0.0
195	25493.9	0.0	0.0	3824.1	0.0	0.0
196	24717.5	0.0	0.0	3707.6	0.0	0.0
197	23941.0	0.0	0.0	3591.1	0.0	0.0
198	23164.5	0.0	0.0	3474.7	0.0	0.0
199	22388.0	0.0	0.0	3358.2	0.0	0.0
200	21611.5	0.0	0.0	3241.7	0.0	0.0
201	20835.1	0.0	0.0	3125.3	0.0	0.0
202	20058.6	0.0	0.0	3008.8	0.0	0.0
203	19282.1	0.0	0.0	2892.3	0.0	0.0
204	18505.6	0.0	0.0	2775.8	0.0	0.0
205	17729.2	0.0	0.0	2659.4	0.0	0.0
206	16952.7	0.0	0.0	2542.9	0.0	0.0
207	16176.2	0.0	0.0	2426.4	0.0	0.0
208	15399.7	0.0	0.0	2310.0	0.0	0.0
209	14623.3	0.0	0.0	2193.5	0.0	0.0
210	13846.8	0.0	0.0	2077.0	0.0	0.0
211	13070.3	0.0	0.0	1960.5	0.0	0.0
212	12293.8	0.0	0.0	1844.1	0.0	0.0
213	11517.4	0.0	0.0	1727.6	0.0	0.0
214	10740.9	0.0	0.0	1611.1	0.0	0.0
215	9964.4	0.0	0.0	1494.7	0.0	0.0
216	9187.9	0.0	0.0	1378.2	0.0	0.0
217	8411.4	0.0	0.0	1261.7	0.0	0.0
218	7635.0	0.0	0.0	1145.2	0.0	0.0
219	6858.5	0.0	0.0	1028.8	0.0	0.0
220	6082.0	0.0	0.0	912.3	0.0	0.0
221	5305.5	0.0	0.0	795.8	0.0	0.0
222	1247.5	0.0	0.0	187.1	0.0	0.0
223	3196.8	0.0	0.0	479.5	0.0	0.0
224	2073.7	0.0	0.0	311.1	0.0	0.0
225	949.8	0.0	0.0	142.5	0.0	0.0
226	316.6	0.0	0.0	47.5	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 7713792.75(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 7713792.75(lbs)

TOTAL AREA OF SLIDING MASS = 64281.61(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 226 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	1	200.00	24.00	
8	1	200.00	24.00	
9	1	200.00	24.00	
10	1	200.00	24.00	
11	1	200.00	24.00	
12	1	200.00	24.00	
13	1	200.00	24.00	
14	1	200.00	24.00	
15	1	200.00	24.00	
16	1	200.00	24.00	
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	2	0.00	15.00	A
23	2	0.00	15.00	A
24	2	0.00	15.00	A
25	2	0.00	15.00	A
26	2	0.00	15.00	A
27	2	0.00	15.00	A
28	2	0.00	15.00	A
29	2	0.00	15.00	A
30	2	0.00	15.00	A
31	2	0.00	15.00	A
32	2	0.00	15.00	A
33	2	0.00	15.00	A
34	2	0.00	15.00	A
35	2	0.00	15.00	A
36	2	0.00	15.00	A
37	2	0.00	15.00	A
38	2	0.00	15.00	A
39	2	0.00	15.00	A
40	2	0.00	15.00	A
41	2	0.00	15.00	A

42	2	0.00	15.00	A
43	2	0.00	15.00	A
44	2	0.00	15.00	A
45	2	0.00	15.00	A
46	2	0.00	15.00	A
47	2	0.00	15.00	A
48	2	0.00	15.00	A
49	2	0.00	15.00	A
50	2	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A
77	2	0.00	15.00	A
78	2	0.00	15.00	A
79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	2	0.00	15.00	A
88	2	0.00	15.00	A
89	2	0.00	15.00	A
90	2	0.00	15.00	A
91	2	0.00	15.00	A
92	2	0.00	15.00	A
93	2	0.00	15.00	A
94	2	0.00	15.00	A
95	2	0.00	15.00	A
96	2	0.00	15.00	A
97	2	0.00	15.00	A
98	2	0.00	15.00	A
99	2	0.00	15.00	A
100	2	0.00	15.00	A
101	2	0.00	15.00	A
102	2	0.00	15.00	A
103	2	0.00	15.00	A
104	2	0.00	15.00	A
105	2	0.00	15.00	A
106	2	0.00	15.00	A
107	2	0.00	15.00	A
108	2	0.00	15.00	A
109	2	0.00	15.00	A
110	2	0.00	15.00	A
111	2	0.00	15.00	A
112	2	0.00	15.00	A
113	2	0.00	15.00	A
114	2	0.00	15.00	A
115	2	0.00	15.00	A
116	2	0.00	15.00	A
117	2	0.00	15.00	A
118	2	0.00	15.00	A
119	2	0.00	15.00	A
120	2	0.00	15.00	A
121	2	0.00	15.00	A
122	2	0.00	15.00	A
123	2	0.00	15.00	A
124	2	0.00	15.00	A
125	2	0.00	15.00	A
126	2	0.00	15.00	A
127	2	0.00	15.00	A
128	2	0.00	15.00	A
129	2	0.00	15.00	A
130	2	0.00	15.00	A
131	2	0.00	15.00	A
132	3	300.00	30.00	
133	3	300.00	30.00	
134	3	300.00	30.00	
135	3	300.00	30.00	
136	3	300.00	30.00	
137	3	300.00	30.00	
138	3	300.00	30.00	
139	3	300.00	30.00	
140	3	300.00	30.00	
141	3	300.00	30.00	
142	3	300.00	30.00	
143	3	300.00	30.00	
144	3	300.00	30.00	
145	3	300.00	30.00	
146	3	300.00	30.00	
147	3	300.00	30.00	
148	3	300.00	30.00	
149	3	300.00	30.00	
150	3	300.00	30.00	
151	3	300.00	30.00	
152	3	300.00	30.00	
153	3	300.00	30.00	
154	3	300.00	30.00	
155	3	300.00	30.00	
156	3	300.00	30.00	
157	3	300.00	30.00	
158	3	300.00	30.00	
159	3	300.00	30.00	
160	3	300.00	30.00	
161	3	300.00	30.00	

162	3	300.00	30.00
163	3	300.00	30.00
164	3	300.00	30.00
165	3	300.00	30.00
166	3	300.00	30.00
167	3	300.00	30.00
168	3	300.00	30.00
169	3	300.00	30.00
170	3	300.00	30.00
171	3	300.00	30.00
172	3	300.00	30.00
173	3	300.00	30.00
174	3	300.00	30.00
175	3	300.00	30.00
176	3	300.00	30.00
177	3	300.00	30.00
178	3	300.00	30.00
179	3	300.00	30.00
180	3	300.00	30.00
181	3	300.00	30.00
182	3	300.00	30.00
183	3	300.00	30.00
184	3	300.00	30.00
185	3	300.00	30.00
186	3	300.00	30.00
187	3	300.00	30.00
188	3	300.00	30.00
189	3	300.00	30.00
190	3	300.00	30.00
191	3	300.00	30.00
192	3	300.00	30.00
193	3	300.00	30.00
194	3	300.00	30.00
195	3	300.00	30.00
196	3	300.00	30.00
197	3	300.00	30.00
198	3	300.00	30.00
199	3	300.00	30.00
200	3	300.00	30.00
201	3	300.00	30.00
202	3	300.00	30.00
203	3	300.00	30.00
204	3	300.00	30.00
205	3	300.00	30.00
206	3	300.00	30.00
207	3	300.00	30.00
208	3	300.00	30.00
209	3	300.00	30.00
210	3	300.00	30.00
211	3	300.00	30.00
212	3	300.00	30.00
213	3	300.00	30.00
214	3	300.00	30.00
215	3	300.00	30.00
216	3	300.00	30.00
217	3	300.00	30.00
218	3	300.00	30.00
219	3	300.00	30.00
220	3	300.00	30.00
221	3	300.00	30.00
222	3	300.00	30.00
223	3	300.00	30.00
224	3	300.00	30.00
225	3	300.00	30.00
226	3	300.00	30.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 226 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-44.77	132.37	7.21	953.04	624.32	597.09
1	-44.77	132.37	7.21	953.04	624.32	597.09
2	-44.77	137.49	7.21	2142.82	1154.05	1103.71
2	-44.77	137.49	7.21	2142.82	1154.05	1103.71
3	-20.12	142.39	5.00	1823.51	1011.88	967.74
3	-20.12	142.39	5.00	1823.51	1011.88	967.74
4	-20.12	147.09	5.00	2127.98	1147.44	1097.39
4	-20.12	147.09	5.00	2127.98	1147.44	1097.39
5	-20.12	151.78	5.00	2432.45	1283.00	1227.03
5	-20.12	151.78	5.00	2432.45	1283.00	1227.03
6	-20.12	156.48	5.00	2736.92	1418.56	1356.68
6	-20.12	156.48	5.00	2736.92	1418.56	1356.68
7	-12.58	161.27	5.00	2752.15	1425.34	1363.17
7	-12.58	161.27	5.00	2752.15	1425.34	1363.17
8	-12.58	166.15	5.00	2952.97	1514.75	1448.68
8	-12.58	166.15	5.00	2952.97	1514.75	1448.68
9	-12.58	171.03	5.00	3153.80	1604.16	1534.19
9	-12.58	171.03	5.00	3153.80	1604.16	1534.19
10	-12.58	175.91	5.00	3354.62	1693.57	1619.70
10	-12.58	175.91	5.00	3354.62	1693.57	1619.70
11	-13.56	180.78	5.00	3597.16	1801.56	1722.98
11	-13.56	180.78	5.00	3597.16	1801.56	1722.98
12	-13.56	185.64	5.00	3810.79	1896.67	1813.95
12	-13.56	185.64	5.00	3810.79	1896.67	1813.95
13	-13.56	190.50	5.00	4024.43	1991.79	1904.91
13	-13.56	190.50	5.00	4024.43	1991.79	1904.91
14	-13.56	195.36	5.00	4238.06	2086.91	1995.88
14	-13.56	195.36	5.00	4238.06	2086.91	1995.88
15	-14.31	200.15	4.88	4487.54	2197.98	2102.11
15	-14.31	200.15	4.88	4487.54	2197.98	2102.11
16	-14.31	204.88	4.88	4705.76	2295.14	2195.03
16	-14.31	204.88	4.88	4705.76	2295.14	2195.03
17	-14.31	209.73	5.12	4633.98	1241.67	1187.51
17	-14.31	209.73	5.12	4633.98	1241.67	1187.51
18	-14.31	214.69	5.12	4851.67	1300.00	1243.30
18	-14.31	214.69	5.12	4851.67	1300.00	1243.30
19	-1.69	219.64	4.94	4691.38	1257.05	1202.22
19	-1.69	219.64	4.94	4691.38	1257.05	1202.22
20	-1.69	224.57	4.94	4760.09	1275.46	1219.83
20	-1.69	224.57	4.94	4760.09	1275.46	1219.83

21	-1.69	229.51	4.94	4828.80	1293.87	1237.44
21	-1.69	229.51	4.94	4828.80	1293.87	1237.44
22	-1.69	234.44	4.94	4897.51	1312.28	1255.04
22	-1.69	234.44	4.94	4897.51	1312.28	1255.04
23	-1.69	239.38	4.94	4966.21	1330.69	1272.65
23	-1.69	239.38	4.94	4966.21	1330.69	1272.65
24	-1.69	244.32	4.94	5034.92	1349.10	1290.26
24	-1.69	244.32	4.94	5034.92	1349.10	1290.26
25	-1.69	249.25	4.94	5103.63	1367.51	1307.87
25	-1.69	249.25	4.94	5103.63	1367.51	1307.87
26	-1.69	254.19	4.94	5172.34	1385.92	1325.47
26	-1.69	254.19	4.94	5172.34	1385.92	1325.47
27	-1.69	259.12	4.94	5241.05	1404.34	1343.08
27	-1.69	259.12	4.94	5241.05	1404.34	1343.08
28	-1.69	264.06	4.94	5309.76	1422.75	1360.69
28	-1.69	264.06	4.94	5309.76	1422.75	1360.69
29	-1.69	269.00	4.94	5378.47	1441.16	1378.30
29	-1.69	269.00	4.94	5378.47	1441.16	1378.30
30	-1.69	273.93	4.94	5447.18	1459.57	1395.90
30	-1.69	273.93	4.94	5447.18	1459.57	1395.90
31	-1.69	279.06	5.32	5540.40	1484.55	1419.79
31	-1.69	279.06	5.32	5540.40	1484.55	1419.79
32	-1.69	284.38	5.32	5658.15	1516.10	1449.97
32	-1.69	284.38	5.32	5658.15	1516.10	1449.97
33	-1.69	289.69	5.32	5775.89	1547.64	1480.14
33	-1.69	289.69	5.32	5775.89	1547.64	1480.14
34	-1.69	295.01	5.32	5893.63	1579.19	1510.31
34	-1.69	295.01	5.32	5893.63	1579.19	1510.31
35	-1.69	300.33	5.32	6011.37	1610.74	1540.49
35	-1.69	300.33	5.32	6011.37	1610.74	1540.49
36	-1.69	305.64	5.32	6129.11	1642.29	1570.66
36	-1.69	305.64	5.32	6129.11	1642.29	1570.66
37	-1.69	310.74	4.88	6246.28	1673.69	1600.68
37	-1.69	310.74	4.88	6246.28	1673.69	1600.68
38	-1.69	315.62	4.88	6362.87	1704.93	1630.56
38	-1.69	315.62	4.88	6362.87	1704.93	1630.56
39	-1.69	320.50	4.88	6479.46	1736.16	1660.44
39	-1.69	320.50	4.88	6479.46	1736.16	1660.44
40	-1.69	325.38	4.88	6596.04	1767.40	1690.31
40	-1.69	325.38	4.88	6596.04	1767.40	1690.31
41	-1.69	330.26	4.88	6712.63	1798.64	1720.19
41	-1.69	330.26	4.88	6712.63	1798.64	1720.19
42	-1.69	335.38	5.37	6820.81	1827.63	1747.91
42	-1.69	335.38	5.37	6820.81	1827.63	1747.91
43	-1.69	340.75	5.37	6920.59	1854.37	1773.48
43	-1.69	340.75	5.37	6920.59	1854.37	1773.48
44	-1.69	346.12	5.37	7020.37	1881.10	1799.05
44	-1.69	346.12	5.37	7020.37	1881.10	1799.05
45	-1.69	351.34	5.09	7145.74	1914.69	1831.18
45	-1.69	351.34	5.09	7145.74	1914.69	1831.18
46	-1.69	356.43	5.09	7296.70	1955.14	1869.87
46	-1.69	356.43	5.09	7296.70	1955.14	1869.87
47	-1.69	361.51	5.09	7447.66	1995.60	1908.55
47	-1.69	361.51	5.09	7447.66	1995.60	1908.55
48	-1.69	366.60	5.09	7598.63	2036.05	1947.24
48	-1.69	366.60	5.09	7598.63	2036.05	1947.24
49	-1.69	371.68	5.09	7749.59	2076.50	1985.92
49	-1.69	371.68	5.09	7749.59	2076.50	1985.92
50	-1.69	376.77	5.09	7900.55	2116.95	2024.61
50	-1.69	376.77	5.09	7900.55	2116.95	2024.61
51	-1.69	381.85	5.09	8051.52	2157.40	2063.30
51	-1.69	381.85	5.09	8051.52	2157.40	2063.30
52	-1.69	386.93	5.09	8202.48	2197.85	2101.98
52	-1.69	386.93	5.09	8202.48	2197.85	2101.98
53	-1.69	392.02	5.09	8353.44	2238.30	2140.67
53	-1.69	392.02	5.09	8353.44	2238.30	2140.67
54	-1.69	397.10	5.09	8504.41	2278.75	2179.36
54	-1.69	397.10	5.09	8504.41	2278.75	2179.36
55	-1.69	402.19	5.09	8655.37	2319.20	2218.04
55	-1.69	402.19	5.09	8655.37	2319.20	2218.04
56	-1.69	407.27	5.09	8806.34	2359.65	2256.73
56	-1.69	407.27	5.09	8806.34	2359.65	2256.73
57	-1.69	412.36	5.09	8957.30	2400.10	2295.41
57	-1.69	412.36	5.09	8957.30	2400.10	2295.41
58	5.31	415.65	1.51	8753.19	2345.41	2243.11
58	5.31	415.65	1.51	8753.19	2345.41	2243.11
59	5.31	418.90	5.02	8776.58	2351.68	2249.10
59	5.31	418.90	5.02	8776.58	2351.68	2249.10
60	5.31	423.90	5.02	8801.76	2358.42	2255.56
60	5.31	423.90	5.02	8801.76	2358.42	2255.56
61	5.31	428.90	5.02	8826.94	2365.17	2262.01
61	5.31	428.90	5.02	8826.94	2365.17	2262.01
62	5.31	433.90	5.02	8852.13	2371.92	2268.46
62	5.31	433.90	5.02	8852.13	2371.92	2268.46
63	5.31	438.90	5.02	8877.31	2378.67	2274.92
63	5.31	438.90	5.02	8877.31	2378.67	2274.92
64	5.31	443.93	5.09	8901.74	2385.21	2281.18
64	5.31	443.93	5.09	8901.74	2385.21	2281.18
65	5.31	449.00	5.09	8925.42	2391.56	2287.24
65	5.31	449.00	5.09	8925.42	2391.56	2287.24
66	5.31	454.07	5.09	8949.09	2397.90	2293.31
66	5.31	454.07	5.09	8949.09	2397.90	2293.31
67	5.31	459.13	5.09	8972.77	2404.25	2299.38
67	5.31	459.13	5.09	8972.77	2404.25	2299.38
68	5.31	464.20	5.09	8996.45	2410.59	2305.45
68	5.31	464.20	5.09	8996.45	2410.59	2305.45
69	5.31	469.27	5.09	9020.12	2416.94	2311.51
69	5.31	469.27	5.09	9020.12	2416.94	2311.51
70	5.31	474.33	5.09	9043.80	2423.28	2317.58
70	5.31	474.33	5.09	9043.80	2423.28	2317.58
71	5.31	479.40	5.09	9067.48	2429.62	2323.65
71	5.31	479.40	5.09	9067.48	2429.62	2323.65
72	5.31	484.47	5.09	9091.16	2435.97	2329.72
72	5.31	484.47	5.09	9091.16	2435.97	2329.72
73	5.31	489.53	5.09	9114.83	2442.31	2335.78
73	5.31	489.53	5.09	9114.83	2442.31	2335.78
74	5.31	494.60	5.09	9138.51	2448.66	2341.85
74	5.31	494.60	5.09	9138.51	2448.66	2341.85
75	5.31	499.67	5.09	9162.19	2455.00	2347.92
75	5.31	499.67	5.09	9162.19	2455.00	2347.92
76	5.31	504.73	5.09	9185.86	2461.34	2353.99
76	5.31	504.73	5.09	9185.86	2461.34	2353.99
77	5.31	509.80	5.09	9209.54	2467.69	2360.05
77	5.31	509.80	5.09	9209.54	2467.69	2360.05
78	5.31	514.87	5.09	9233.22	2474.03	2366.12
78	5.31	514.87	5.09	9233.22	2474.03	2366.12
79	5.31	519.91	5.04	9226.53	2472.24	2364.41
79	5.31	519.91	5.04	9226.53	2472.24	2364.41
80	5.31	524.92	5.04	9189.49	2462.32	2354.91
80	5.31	524.92	5.04	9189.49	2462.32	2354.91

81	5.31	529.94	5.04	9152.44	2452.39	2345.42
81	5.31	529.94	5.04	9152.44	2452.39	2345.42
82	5.31	534.96	5.04	9115.39	2442.46	2335.93
82	5.31	534.96	5.04	9115.39	2442.46	2335.93
83	5.31	539.98	5.04	9078.35	2432.54	2326.43
83	5.31	539.98	5.04	9078.35	2432.54	2326.43
84	5.31	544.99	5.04	9041.30	2422.61	2316.94
84	5.31	544.99	5.04	9041.30	2422.61	2316.94
85	5.31	549.96	4.95	9056.71	2426.74	2320.89
85	5.31	549.96	4.95	9056.71	2426.74	2320.89
86	5.31	554.89	4.95	9124.58	2444.92	2338.28
86	5.31	554.89	4.95	9124.58	2444.92	2338.28
87	5.31	559.82	4.95	9192.44	2463.11	2355.67
87	5.31	559.82	4.95	9192.44	2463.11	2355.67
88	5.31	564.74	4.95	9260.31	2481.29	2373.06
88	5.31	564.74	4.95	9260.31	2481.29	2373.06
89	5.31	569.67	4.95	9328.17	2499.48	2390.46
89	5.31	569.67	4.95	9328.17	2499.48	2390.46
90	5.31	574.60	4.95	9396.04	2517.66	2407.85
90	5.31	574.60	4.95	9396.04	2517.66	2407.85
91	5.31	579.52	4.95	9463.90	2535.85	2425.24
91	5.31	579.52	4.95	9463.90	2535.85	2425.24
92	5.31	584.45	4.95	9531.77	2554.03	2442.63
92	5.31	584.45	4.95	9531.77	2554.03	2442.63
93	5.31	589.38	4.95	9599.63	2572.21	2460.02
93	5.31	589.38	4.95	9599.63	2572.21	2460.02
94	5.31	594.30	4.95	9667.50	2590.40	2477.41
94	5.31	594.30	4.95	9667.50	2590.40	2477.41
95	5.31	599.23	4.95	9735.37	2608.58	2494.80
95	5.31	599.23	4.95	9735.37	2608.58	2494.80
96	5.31	604.16	4.95	9803.23	2626.77	2512.19
96	5.31	604.16	4.95	9803.23	2626.77	2512.19
97	5.31	609.08	4.95	9871.10	2644.95	2529.59
97	5.31	609.08	4.95	9871.10	2644.95	2529.59
98	5.31	614.01	4.95	9938.96	2663.14	2546.98
98	5.31	614.01	4.95	9938.96	2663.14	2546.98
99	5.31	618.94	4.95	10006.83	2681.32	2564.37
99	5.31	618.94	4.95	10006.83	2681.32	2564.37
100	23.39	624.12	5.92	9154.00	2452.81	2345.82
100	23.39	624.12	5.92	9154.00	2452.81	2345.82
101	23.39	629.55	5.92	9024.37	2418.07	2312.60
101	23.39	629.55	5.92	9024.37	2418.07	2312.60
102	23.39	634.98	5.92	8894.75	2383.34	2279.38
102	23.39	634.98	5.92	8894.75	2383.34	2279.38
103	23.39	640.23	5.52	8806.34	2359.65	2256.73
103	23.39	640.23	5.52	8806.34	2359.65	2256.73
104	23.39	645.30	5.52	8759.14	2347.00	2244.63
104	23.39	645.30	5.52	8759.14	2347.00	2244.63
105	23.39	650.37	5.52	8711.94	2334.36	2232.54
105	23.39	650.37	5.52	8711.94	2334.36	2232.54
106	23.39	655.44	5.52	8664.75	2321.71	2220.44
106	23.39	655.44	5.52	8664.75	2321.71	2220.44
107	23.39	660.51	5.52	8617.55	2309.07	2208.35
107	23.39	660.51	5.52	8617.55	2309.07	2208.35
108	23.39	665.58	5.52	8570.35	2296.42	2196.25
108	23.39	665.58	5.52	8570.35	2296.42	2196.25
109	23.39	670.65	5.52	8523.16	2283.77	2184.16
109	23.39	670.65	5.52	8523.16	2283.77	2184.16
110	23.39	675.72	5.52	8475.96	2271.13	2172.07
110	23.39	675.72	5.52	8475.96	2271.13	2172.07
111	23.39	680.79	5.52	8428.76	2258.48	2159.97
111	23.39	680.79	5.52	8428.76	2258.48	2159.97
112	23.39	685.86	5.52	8381.56	2245.83	2147.88
112	23.39	685.86	5.52	8381.56	2245.83	2147.88
113	23.39	690.93	5.52	8334.37	2233.19	2135.78
113	23.39	690.93	5.52	8334.37	2233.19	2135.78
114	23.39	696.00	5.52	8287.17	2220.54	2123.69
114	23.39	696.00	5.52	8287.17	2220.54	2123.69
115	23.39	701.07	5.52	8239.97	2207.89	2111.59
115	23.39	701.07	5.52	8239.97	2207.89	2111.59
116	23.39	706.13	5.52	8192.78	2195.25	2099.50
116	23.39	706.13	5.52	8192.78	2195.25	2099.50
117	23.39	711.20	5.52	8145.58	2182.60	2087.40
117	23.39	711.20	5.52	8145.58	2182.60	2087.40
118	23.39	716.27	5.52	8098.38	2169.96	2075.31
118	23.39	716.27	5.52	8098.38	2169.96	2075.31
119	23.39	721.34	5.52	8051.19	2157.31	2063.21
119	23.39	721.34	5.52	8051.19	2157.31	2063.21
120	23.39	726.41	5.52	8003.99	2144.66	2051.12
120	23.39	726.41	5.52	8003.99	2144.66	2051.12
121	23.39	731.48	5.52	7956.79	2132.02	2039.02
121	23.39	731.48	5.52	7956.79	2132.02	2039.02
122	23.39	736.55	5.52	7909.60	2119.37	2026.93
122	23.39	736.55	5.52	7909.60	2119.37	2026.93
123	23.39	741.62	5.52	7862.40	2106.72	2014.83
123	23.39	741.62	5.52	7862.40	2106.72	2014.83
124	23.39	746.69	5.52	7815.20	2094.08	2002.74
124	23.39	746.69	5.52	7815.20	2094.08	2002.74
125	23.39	751.76	5.52	7768.00	2081.43	1990.64
125	23.39	751.76	5.52	7768.00	2081.43	1990.64
126	23.39	756.83	5.52	7720.81	2068.78	1978.55
126	23.39	756.83	5.52	7720.81	2068.78	1978.55
127	23.39	761.90	5.52	7673.61	2056.14	1966.45
127	23.39	761.90	5.52	7673.61	2056.14	1966.45
128	23.39	766.97	5.52	7626.41	2043.49	1954.36
128	23.39	766.97	5.52	7626.41	2043.49	1954.36
129	23.39	772.02	5.48	7597.93	2035.86	1947.06
129	23.39	772.02	5.48	7597.93	2035.86	1947.06
130	23.39	777.05	5.48	7588.17	2033.24	1944.56
130	23.39	777.05	5.48	7588.17	2033.24	1944.56
131	23.39	782.08	5.48	7578.41	2030.63	1942.06
131	23.39	782.08	5.48	7578.41	2030.63	1942.06
132	23.78	786.95	5.14	6623.14	4123.87	3944.00
132	23.78	786.95	5.14	6623.14	4123.87	3944.00
133	23.78	791.79	5.44	6611.11	4116.93	3937.35
133	23.78	791.79	5.44	6611.11	4116.93	3937.35
134	23.78	796.76	5.44	6598.73	4109.78	3930.52
134	23.78	796.76	5.44	6598.73	4109.78	3930.52
135	23.78	801.74	5.44	6586.36	4102.63	3923.69
135	23.78	801.74	5.44	6586.36	4102.63	3923.69
136	23.78	806.71	5.44	6573.98	4095.49	3916.85
136	23.78	806.71	5.44	6573.98	4095.49	3916.85
137	23.78	811.69	5.44	6561.60	4088.34	3910.02
137	23.78	811.69	5.44	6561.60	4088.34	3910.02
138	23.78	816.66	5.44	6549.23	4081.20	3903.18
138	23.78	816.66	5.44	6549.23	4081.20	3903.18
139	23.78	821.64	5.44	6536.85	4074.05	3896.35
139	23.78	821.64	5.44	6536.85	4074.05	3896.35
140	23.78	826.61	5.44	6524.47	4066.91	3889.52
140	23.78	826.61	5.44	6524.47	4066.91	3889.52

141	23.78	831.59	5.44	6512.10	4059.76	3882.68
141	23.78	831.59	5.44	6512.10	4059.76	3882.68
142	23.78	836.56	5.44	6499.72	4052.61	3875.85
142	23.78	836.56	5.44	6499.72	4052.61	3875.85
143	23.78	841.54	5.44	6487.34	4045.47	3869.01
143	23.78	841.54	5.44	6487.34	4045.47	3869.01
144	23.78	846.51	5.44	6474.97	4038.32	3862.18
144	23.78	846.51	5.44	6474.97	4038.32	3862.18
145	23.78	851.80	6.12	6461.81	4030.73	3854.92
145	23.78	851.80	6.12	6461.81	4030.73	3854.92
146	23.78	857.40	6.12	6447.88	4022.68	3847.23
146	23.78	857.40	6.12	6447.88	4022.68	3847.23
147	23.78	862.70	5.46	6422.32	4007.93	3833.11
147	23.78	862.70	5.46	6422.32	4007.93	3833.11
148	23.78	867.69	5.46	6385.14	3986.46	3812.58
148	23.78	867.69	5.46	6385.14	3986.46	3812.58
149	23.78	872.68	5.46	6347.95	3964.99	3792.05
149	23.78	872.68	5.46	6347.95	3964.99	3792.05
150	23.78	877.67	5.46	6310.76	3943.52	3771.51
150	23.78	877.67	5.46	6310.76	3943.52	3771.51
151	23.78	882.67	5.46	6273.58	3922.05	3750.98
151	23.78	882.67	5.46	6273.58	3922.05	3750.98
152	23.78	887.66	5.46	6236.39	3900.58	3730.45
152	23.78	887.66	5.46	6236.39	3900.58	3730.45
153	23.78	892.65	5.46	6199.21	3879.11	3709.92
153	23.78	892.65	5.46	6199.21	3879.11	3709.92
154	23.78	897.65	5.46	6162.02	3857.64	3689.38
154	23.78	897.65	5.46	6162.02	3857.64	3689.38
155	23.78	902.64	5.46	6124.83	3836.17	3668.85
155	23.78	902.64	5.46	6124.83	3836.17	3668.85
156	23.78	907.63	5.46	6087.65	3814.71	3648.32
156	23.78	907.63	5.46	6087.65	3814.71	3648.32
157	23.78	912.62	5.46	6050.46	3793.24	3627.78
157	23.78	912.62	5.46	6050.46	3793.24	3627.78
158	23.78	917.62	5.46	6013.28	3771.77	3607.25
158	23.78	917.62	5.46	6013.28	3771.77	3607.25
159	23.78	922.61	5.46	5976.09	3750.30	3586.72
159	23.78	922.61	5.46	5976.09	3750.30	3586.72
160	23.78	927.60	5.46	5938.91	3728.83	3566.19
160	23.78	927.60	5.46	5938.91	3728.83	3566.19
161	23.78	932.60	5.46	5901.72	3707.36	3545.65
161	23.78	932.60	5.46	5901.72	3707.36	3545.65
162	23.78	937.59	5.46	5864.53	3685.89	3525.12
162	23.78	937.59	5.46	5864.53	3685.89	3525.12
163	23.78	942.58	5.46	5827.35	3664.42	3504.59
163	23.78	942.58	5.46	5827.35	3664.42	3504.59
164	23.78	947.58	5.46	5790.16	3642.95	3484.06
164	23.78	947.58	5.46	5790.16	3642.95	3484.06
165	23.78	952.57	5.46	5752.98	3621.48	3463.52
165	23.78	952.57	5.46	5752.98	3621.48	3463.52
166	23.78	957.56	5.46	5715.79	3600.01	3442.99
166	23.78	957.56	5.46	5715.79	3600.01	3442.99
167	23.78	962.55	5.46	5678.61	3578.54	3422.46
167	23.78	962.55	5.46	5678.61	3578.54	3422.46
168	23.78	967.55	5.46	5641.42	3557.08	3401.92
168	23.78	967.55	5.46	5641.42	3557.08	3401.92
169	23.78	972.54	5.46	5604.23	3535.61	3381.39
169	23.78	972.54	5.46	5604.23	3535.61	3381.39
170	23.78	977.53	5.46	5567.05	3514.14	3360.86
170	23.78	977.53	5.46	5567.05	3514.14	3360.86
171	23.78	982.53	5.46	5529.86	3492.67	3340.33
171	23.78	982.53	5.46	5529.86	3492.67	3340.33
172	23.78	987.52	5.46	5492.68	3471.20	3319.79
172	23.78	987.52	5.46	5492.68	3471.20	3319.79
173	23.78	992.51	5.46	5455.49	3449.73	3299.26
173	23.78	992.51	5.46	5455.49	3449.73	3299.26
174	23.78	997.50	5.46	5418.31	3428.26	3278.73
174	23.78	997.50	5.46	5418.31	3428.26	3278.73
175	23.78	1002.57	5.61	5371.42	3401.19	3252.84
175	23.78	1002.57	5.61	5371.42	3401.19	3252.84
176	23.78	1007.70	5.61	5314.84	3368.52	3221.60
176	23.78	1007.70	5.61	5314.84	3368.52	3221.60
177	23.78	1012.83	5.61	5258.25	3335.85	3190.35
177	23.78	1012.83	5.61	5258.25	3335.85	3190.35
178	23.78	1017.96	5.61	5201.67	3303.19	3159.11
178	23.78	1017.96	5.61	5201.67	3303.19	3159.11
179	23.78	1023.09	5.61	5145.09	3270.52	3127.87
179	23.78	1023.09	5.61	5145.09	3270.52	3127.87
180	23.78	1028.22	5.61	5088.51	3237.85	3096.62
180	23.78	1028.22	5.61	5088.51	3237.85	3096.62
181	23.78	1033.35	5.61	5031.92	3205.18	3065.38
181	23.78	1033.35	5.61	5031.92	3205.18	3065.38
182	23.78	1038.48	5.61	4975.34	3172.51	3034.14
182	23.78	1038.48	5.61	4975.34	3172.51	3034.14
183	23.78	1043.62	5.61	4918.76	3139.85	3002.89
183	23.78	1043.62	5.61	4918.76	3139.85	3002.89
184	23.78	1048.75	5.61	4862.17	3107.18	2971.65
184	23.78	1048.75	5.61	4862.17	3107.18	2971.65
185	23.78	1053.88	5.61	4805.59	3074.51	2940.41
185	23.78	1053.88	5.61	4805.59	3074.51	2940.41
186	23.78	1059.01	5.61	4749.01	3041.84	2909.16
186	23.78	1059.01	5.61	4749.01	3041.84	2909.16
187	23.78	1064.14	5.61	4692.42	3009.17	2877.92
187	23.78	1064.14	5.61	4692.42	3009.17	2877.92
188	23.78	1069.27	5.61	4635.84	2976.50	2846.68
188	23.78	1069.27	5.61	4635.84	2976.50	2846.68
189	23.78	1074.40	5.61	4579.26	2943.84	2815.43
189	23.78	1074.40	5.61	4579.26	2943.84	2815.43
190	23.78	1079.53	5.61	4522.68	2911.17	2784.19
190	23.78	1079.53	5.61	4522.68	2911.17	2784.19
191	23.78	1084.61	5.48	4432.77	2859.26	2734.55
191	23.78	1084.61	5.48	4432.77	2859.26	2734.55
192	23.78	1089.63	5.48	4309.56	2788.12	2666.51
192	23.78	1089.63	5.48	4309.56	2788.12	2666.51
193	23.78	1094.65	5.48	4186.34	2716.98	2598.47
193	23.78	1094.65	5.48	4186.34	2716.98	2598.47
194	23.78	1099.67	5.48	4063.12	2645.84	2530.44
194	23.78	1099.67	5.48	4063.12	2645.84	2530.44
195	23.78	1104.69	5.48	3939.90	2574.70	2462.40
195	23.78	1104.69	5.48	3939.90	2574.70	2462.40
196	23.78	1109.71	5.48	3816.68	2503.56	2394.36
196	23.78	1109.71	5.48	3816.68	2503.56	2394.36
197	23.78	1114.73	5.48	3693.46	2432.42	2326.32
197	23.78	1114.73	5.48	3693.46	2432.42	2326.32
198	23.78	1119.75	5.48	3570.24	2361.28	2258.29
198	23.78	1119.75	5.48	3570.24	2361.28	2258.29
199	23.78	1124.76	5.48	3447.02	2290.14	2190.25
199	23.78	1124.76	5.48	3447.02	2290.14	2190.25
200	23.78	1129.78	5.48	3323.80	2219.00	2122.21
200	23.78	1129.78	5.48	3323.80	2219.00	2122.21

201	23.78	1134.80	5.48	3200.58	2147.86	2054.17
201	23.78	1134.80	5.48	3200.58	2147.86	2054.17
202	23.78	1139.82	5.48	3077.37	2076.72	1986.14
202	23.78	1139.82	5.48	3077.37	2076.72	1986.14
203	23.78	1144.84	5.48	2954.15	2005.58	1918.10
203	23.78	1144.84	5.48	2954.15	2005.58	1918.10
204	23.78	1149.86	5.48	2830.93	1934.44	1850.06
204	23.78	1149.86	5.48	2830.93	1934.44	1850.06
205	23.78	1154.88	5.48	2707.71	1863.30	1782.02
205	23.78	1154.88	5.48	2707.71	1863.30	1782.02
206	23.78	1159.90	5.48	2584.49	1792.16	1713.99
206	23.78	1159.90	5.48	2584.49	1792.16	1713.99
207	23.78	1164.92	5.48	2461.27	1721.02	1645.95
207	23.78	1164.92	5.48	2461.27	1721.02	1645.95
208	23.78	1169.94	5.48	2338.05	1649.87	1577.91
208	23.78	1169.94	5.48	2338.05	1649.87	1577.91
209	23.78	1174.96	5.48	2214.83	1578.73	1509.87
209	23.78	1174.96	5.48	2214.83	1578.73	1509.87
210	23.78	1179.98	5.48	2091.61	1507.59	1441.84
210	23.78	1179.98	5.48	2091.61	1507.59	1441.84
211	23.78	1185.00	5.48	1968.39	1436.45	1373.80
211	23.78	1185.00	5.48	1968.39	1436.45	1373.80
212	23.78	1190.02	5.48	1845.18	1365.31	1305.76
212	23.78	1190.02	5.48	1845.18	1365.31	1305.76
213	23.78	1195.04	5.48	1721.96	1294.17	1237.72
213	23.78	1195.04	5.48	1721.96	1294.17	1237.72
214	23.78	1200.05	5.48	1598.74	1223.03	1169.69
214	23.78	1200.05	5.48	1598.74	1223.03	1169.69
215	23.78	1205.07	5.48	1475.52	1151.89	1101.65
215	23.78	1205.07	5.48	1475.52	1151.89	1101.65
216	23.78	1210.09	5.48	1352.30	1080.75	1033.61
216	23.78	1210.09	5.48	1352.30	1080.75	1033.61
217	23.78	1215.11	5.48	1229.08	1009.61	965.57
217	23.78	1215.11	5.48	1229.08	1009.61	965.57
218	23.78	1220.13	5.48	1105.86	938.47	897.54
218	23.78	1220.13	5.48	1105.86	938.47	897.54
219	23.78	1225.15	5.48	982.64	867.33	829.50
219	23.78	1225.15	5.48	982.64	867.33	829.50
220	23.78	1230.17	5.48	859.42	796.19	761.46
220	23.78	1230.17	5.48	859.42	796.19	761.46
221	23.78	1235.19	5.48	736.20	725.05	693.42
221	23.78	1235.19	5.48	736.20	725.05	693.42
222	23.78	1238.35	1.42	658.64	680.27	650.59
222	23.78	1238.35	1.42	658.64	680.27	650.59
223	37.55	1241.00	5.05	392.62	526.68	503.70
223	37.55	1241.00	5.05	392.62	526.68	503.70
224	37.55	1245.00	5.05	198.40	414.55	396.46
224	37.55	1245.00	5.05	198.40	414.55	396.46
225	37.55	1248.67	4.23	35.92	320.74	306.75
225	37.55	1248.67	4.23	35.92	320.74	306.75
226	37.55	1252.03	4.23	65.37	37.74	36.10
226	37.55	1252.03	4.23	65.37	37.74	36.10

Table 4 - Base Force Data on the 226 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-44.77	132.37	7.21	6871.86	4501.63	4305.28
1	-44.77	132.37	7.21	6871.86	4501.63	4305.28
2	-44.77	137.49	7.21	15450.66	8321.16	7958.21
2	-44.77	137.49	7.21	15450.66	8321.16	7958.21
3	-20.12	142.39	5.00	9117.53	5059.39	4838.71
3	-20.12	142.39	5.00	9117.53	5059.39	4838.71
4	-20.12	147.09	5.00	10639.89	5737.18	5486.94
4	-20.12	147.09	5.00	10639.89	5737.18	5486.94
5	-20.12	151.78	5.00	12162.24	6414.98	6135.17
5	-20.12	151.78	5.00	12162.24	6414.98	6135.17
6	-20.12	156.48	5.00	13684.60	7092.78	6783.41
6	-20.12	156.48	5.00	13684.60	7092.78	6783.41
7	-12.58	161.27	5.00	13760.74	7126.68	6815.83
7	-12.58	161.27	5.00	13760.74	7126.68	6815.83
8	-12.58	166.15	5.00	14764.86	7573.74	7243.39
8	-12.58	166.15	5.00	14764.86	7573.74	7243.39
9	-12.58	171.03	5.00	15768.99	8020.81	7670.96
9	-12.58	171.03	5.00	15768.99	8020.81	7670.96
10	-12.58	175.91	5.00	16773.11	8467.87	8098.52
10	-12.58	175.91	5.00	16773.11	8467.87	8098.52
11	-13.56	180.78	5.00	17985.80	9007.79	8614.89
11	-13.56	180.78	5.00	17985.80	9007.79	8614.89
12	-13.56	185.64	5.00	19053.97	9483.37	9069.73
12	-13.56	185.64	5.00	19053.97	9483.37	9069.73
13	-13.56	190.50	5.00	20122.14	9958.95	9524.57
13	-13.56	190.50	5.00	20122.14	9958.95	9524.57
14	-13.56	195.36	5.00	21190.31	10434.53	9979.40
14	-13.56	195.36	5.00	21190.31	10434.53	9979.40
15	-14.31	200.15	4.88	21904.38	10728.69	10260.73
15	-14.31	200.15	4.88	21904.38	10728.69	10260.73
16	-14.31	204.88	4.88	22969.55	11202.93	10714.29
16	-14.31	204.88	4.88	22969.55	11202.93	10714.29
17	-14.31	209.73	5.12	23720.65	6355.93	6078.70
17	-14.31	209.73	5.12	23720.65	6355.93	6078.70
18	-14.31	214.69	5.12	24834.97	6654.51	6364.26
18	-14.31	214.69	5.12	24834.97	6654.51	6364.26
19	-1.69	219.64	4.94	23166.54	6207.45	5936.70
19	-1.69	219.64	4.94	23166.54	6207.45	5936.70
20	-1.69	224.57	4.94	23505.83	6298.37	6023.65
20	-1.69	224.57	4.94	23505.83	6298.37	6023.65
21	-1.69	229.51	4.94	23845.12	6389.28	6110.60
21	-1.69	229.51	4.94	23845.12	6389.28	6110.60
22	-1.69	234.44	4.94	24184.42	6480.19	6197.54
22	-1.69	234.44	4.94	24184.42	6480.19	6197.54
23	-1.69	239.38	4.94	24523.71	6571.11	6284.49
23	-1.69	239.38	4.94	24523.71	6571.11	6284.49
24	-1.69	244.32	4.94	24863.00	6662.02	6371.44
24	-1.69	244.32	4.94	24863.00	6662.02	6371.44
25	-1.69	249.25	4.94	25202.30	6752.93	6458.39
25	-1.69	249.25	4.94	25202.30	6752.93	6458.39
26	-1.69	254.19	4.94	25541.59	6843.85	6545.34
26	-1.69	254.19	4.94	25541.59	6843.85	6545.34
27	-1.69	259.12	4.94	25880.88	6934.76	6632.28
27	-1.69	259.12	4.94	25880.88	6934.76	6632.28
28	-1.69	264.06	4.94	26220.17	7025.67	6719.23
28	-1.69	264.06	4.94	26220.17	7025.67	6719.23
29	-1.69	269.00	4.94	26559.47	7116.59	6806.18
29	-1.69	269.00	4.94	26559.47	7116.59	6806.18
30	-1.69	273.93	4.94	26898.76	7207.50	6893.13

30	-1.69	273.93	4.94	26898.76	7207.50	6893.13
31	-1.69	279.06	5.32	29469.28	7896.27	7551.85
31	-1.69	279.06	5.32	29469.28	7896.27	7551.85
32	-1.69	284.38	5.32	30095.54	8064.08	7712.34
32	-1.69	284.38	5.32	30095.54	8064.08	7712.34
33	-1.69	289.69	5.32	30721.81	8231.88	7872.83
33	-1.69	289.69	5.32	30721.81	8231.88	7872.83
34	-1.69	295.01	5.32	31348.08	8399.69	8033.32
34	-1.69	295.01	5.32	31348.08	8399.69	8033.32
35	-1.69	300.33	5.32	31974.35	8567.50	8193.81
35	-1.69	300.33	5.32	31974.35	8567.50	8193.81
36	-1.69	305.64	5.32	32600.61	8735.31	8354.29
36	-1.69	305.64	5.32	32600.61	8735.31	8354.29
37	-1.69	310.74	4.88	30495.08	8171.13	7814.73
37	-1.69	310.74	4.88	30495.08	8171.13	7814.73
38	-1.69	315.62	4.88	31064.28	8323.65	7960.59
38	-1.69	315.62	4.88	31064.28	8323.65	7960.59
39	-1.69	320.50	4.88	31633.48	8476.16	8106.45
39	-1.69	320.50	4.88	31633.48	8476.16	8106.45
40	-1.69	325.38	4.88	32202.68	8628.68	8252.32
40	-1.69	325.38	4.88	32202.68	8628.68	8252.32
41	-1.69	330.26	4.88	32771.87	8781.20	8398.18
41	-1.69	330.26	4.88	32771.87	8781.20	8398.18
42	-1.69	335.38	5.37	36620.94	9812.55	9384.55
42	-1.69	335.38	5.37	36620.94	9812.55	9384.55
43	-1.69	340.75	5.37	37156.64	9956.09	9521.83
43	-1.69	340.75	5.37	37156.64	9956.09	9521.83
44	-1.69	346.12	5.37	37692.34	10099.63	9659.11
44	-1.69	346.12	5.37	37692.34	10099.63	9659.11
45	-1.69	351.34	5.09	36349.11	9739.71	9314.89
45	-1.69	351.34	5.09	36349.11	9739.71	9314.89
46	-1.69	356.43	5.09	37117.03	9945.48	9511.68
46	-1.69	356.43	5.09	37117.03	9945.48	9511.68
47	-1.69	361.51	5.09	37884.96	10151.24	9708.47
47	-1.69	361.51	5.09	37884.96	10151.24	9708.47
48	-1.69	366.60	5.09	38652.88	10357.01	9905.26
48	-1.69	366.60	5.09	38652.88	10357.01	9905.26
49	-1.69	371.68	5.09	39420.81	10562.77	10102.05
49	-1.69	371.68	5.09	39420.81	10562.77	10102.05
50	-1.69	376.77	5.09	40188.73	10768.54	10298.84
50	-1.69	376.77	5.09	40188.73	10768.54	10298.84
51	-1.69	381.85	5.09	40956.66	10974.30	10495.63
51	-1.69	381.85	5.09	40956.66	10974.30	10495.63
52	-1.69	386.93	5.09	41724.58	11180.07	10692.42
52	-1.69	386.93	5.09	41724.58	11180.07	10692.42
53	-1.69	392.02	5.09	42492.51	11385.83	10889.21
53	-1.69	392.02	5.09	42492.51	11385.83	10889.21
54	-1.69	397.10	5.09	43260.43	11591.60	11086.00
54	-1.69	397.10	5.09	43260.43	11591.60	11086.00
55	-1.69	402.19	5.09	44028.36	11797.36	11282.79
55	-1.69	402.19	5.09	44028.36	11797.36	11282.79
56	-1.69	407.27	5.09	44796.28	12003.13	11479.58
56	-1.69	407.27	5.09	44796.28	12003.13	11479.58
57	-1.69	412.36	5.09	45564.20	12208.89	11676.37
57	-1.69	412.36	5.09	45564.20	12208.89	11676.37
58	5.31	415.65	1.51	13186.41	3533.29	3379.17
58	5.31	415.65	1.51	13186.41	3533.29	3379.17
59	5.31	418.90	5.02	44072.17	11809.10	11294.02
59	5.31	418.90	5.02	44072.17	11809.10	11294.02
60	5.31	423.90	5.02	44198.63	11842.99	11326.42
60	5.31	423.90	5.02	44198.63	11842.99	11326.42
61	5.31	428.90	5.02	44325.08	11876.87	11358.83
61	5.31	428.90	5.02	44325.08	11876.87	11358.83
62	5.31	433.90	5.02	44451.54	11910.75	11391.24
62	5.31	433.90	5.02	44451.54	11910.75	11391.24
63	5.31	438.90	5.02	44578.00	11944.64	11423.64
63	5.31	438.90	5.02	44578.00	11944.64	11423.64
64	5.31	443.93	5.09	45296.68	12137.21	11607.81
64	5.31	443.93	5.09	45296.68	12137.21	11607.81
65	5.31	449.00	5.09	45417.17	12169.49	11638.69
65	5.31	449.00	5.09	45417.17	12169.49	11638.69
66	5.31	454.07	5.09	45537.65	12201.77	11669.56
66	5.31	454.07	5.09	45537.65	12201.77	11669.56
67	5.31	459.13	5.09	45658.13	12234.06	11700.44
67	5.31	459.13	5.09	45658.13	12234.06	11700.44
68	5.31	464.20	5.09	45778.61	12266.34	11731.31
68	5.31	464.20	5.09	45778.61	12266.34	11731.31
69	5.31	469.27	5.09	45899.09	12298.62	11762.19
69	5.31	469.27	5.09	45899.09	12298.62	11762.19
70	5.31	474.33	5.09	46019.57	12330.91	11793.06
70	5.31	474.33	5.09	46019.57	12330.91	11793.06
71	5.31	479.40	5.09	46140.05	12363.19	11823.94
71	5.31	479.40	5.09	46140.05	12363.19	11823.94
72	5.31	484.47	5.09	46260.53	12395.47	11854.81
72	5.31	484.47	5.09	46260.53	12395.47	11854.81
73	5.31	489.53	5.09	46381.01	12427.75	11885.68
73	5.31	489.53	5.09	46381.01	12427.75	11885.68
74	5.31	494.60	5.09	46501.49	12460.04	11916.56
74	5.31	494.60	5.09	46501.49	12460.04	11916.56
75	5.31	499.67	5.09	46621.97	12492.32	11947.43
75	5.31	499.67	5.09	46621.97	12492.32	11947.43
76	5.31	504.73	5.09	46742.45	12524.60	11978.31
76	5.31	504.73	5.09	46742.45	12524.60	11978.31
77	5.31	509.80	5.09	46862.93	12556.88	12009.18
77	5.31	509.80	5.09	46862.93	12556.88	12009.18
78	5.31	514.87	5.09	46983.41	12589.17	12040.06
78	5.31	514.87	5.09	46983.41	12589.17	12040.06
79	5.31	519.91	5.04	46486.08	12455.91	11912.61
79	5.31	519.91	5.04	46486.08	12455.91	11912.61
80	5.31	524.92	5.04	46299.43	12405.89	11864.78
80	5.31	524.92	5.04	46299.43	12405.89	11864.78
81	5.31	529.94	5.04	46112.78	12355.88	11816.95
81	5.31	529.94	5.04	46112.78	12355.88	11816.95
82	5.31	534.96	5.04	45926.13	12305.87	11769.12
82	5.31	534.96	5.04	45926.13	12305.87	11769.12
83	5.31	539.98	5.04	45739.48	12255.86	11721.29
83	5.31	539.98	5.04	45739.48	12255.86	11721.29
84	5.31	544.99	5.04	45552.83	12205.84	11673.45
84	5.31	544.99	5.04	45552.83	12205.84	11673.45
85	5.31	549.96	4.95	44811.85	12007.30	11483.57
85	5.31	549.96	4.95	44811.85	12007.30	11483.57
86	5.31	554.89	4.95	45147.64	12097.27	11569.62
86	5.31	554.89	4.95	45147.64	12097.27	11569.62
87	5.31	559.82	4.95	45483.44	12187.25	11655.67
87	5.31	559.82	4.95	45483.44	12187.25	11655.67
88	5.31	564.74	4.95	45819.23	12277.22	11741.72
88	5.31	564.74	4.95	45819.23	12277.22	11741.72
89	5.31	569.67	4.95	46155.02	12367.20	11827.77
89	5.31	569.67	4.95	46155.02	12367.20	11827.77
90	5.31	574.60	4.95	46490.81	12457.18	11913.82

90	5.31	574.60	4.95	46490.81	12457.18	11913.82
91	5.31	579.52	4.95	46826.60	12547.15	11999.87
91	5.31	579.52	4.95	46826.60	12547.15	11999.87
92	5.31	584.45	4.95	47162.40	12637.13	12085.92
92	5.31	584.45	4.95	47162.40	12637.13	12085.92
93	5.31	589.38	4.95	47498.19	12727.10	12171.98
93	5.31	589.38	4.95	47498.19	12727.10	12171.98
94	5.31	594.30	4.95	47833.98	12817.08	12258.03
94	5.31	594.30	4.95	47833.98	12817.08	12258.03
95	5.31	599.23	4.95	48169.77	12907.05	12344.08
95	5.31	599.23	4.95	48169.77	12907.05	12344.08
96	5.31	604.16	4.95	48505.57	12997.03	12430.13
96	5.31	604.16	4.95	48505.57	12997.03	12430.13
97	5.31	609.08	4.95	48841.36	13087.00	12516.18
97	5.31	609.08	4.95	48841.36	13087.00	12516.18
98	5.31	614.01	4.95	49177.15	13176.98	12602.23
98	5.31	614.01	4.95	49177.15	13176.98	12602.23
99	5.31	618.94	4.95	49512.94	13266.95	12688.28
99	5.31	618.94	4.95	49512.94	13266.95	12688.28
100	23.39	624.12	5.92	54191.14	14520.47	13887.12
100	23.39	624.12	5.92	54191.14	14520.47	13887.12
101	23.39	629.55	5.92	53423.77	14314.86	13690.48
101	23.39	629.55	5.92	53423.77	14314.86	13690.48
102	23.39	634.98	5.92	52656.40	14109.24	13493.83
102	23.39	634.98	5.92	52656.40	14109.24	13493.83
103	23.39	640.23	5.52	48639.44	13032.90	12464.43
103	23.39	640.23	5.52	48639.44	13032.90	12464.43
104	23.39	645.30	5.52	48378.76	12963.05	12397.63
104	23.39	645.30	5.52	48378.76	12963.05	12397.63
105	23.39	650.37	5.52	48118.08	12893.20	12330.83
105	23.39	650.37	5.52	48118.08	12893.20	12330.83
106	23.39	655.44	5.52	47857.40	12823.35	12264.03
106	23.39	655.44	5.52	47857.40	12823.35	12264.03
107	23.39	660.51	5.52	47596.72	12753.50	12197.22
107	23.39	660.51	5.52	47596.72	12753.50	12197.22
108	23.39	665.58	5.52	47336.04	12683.65	12130.42
108	23.39	665.58	5.52	47336.04	12683.65	12130.42
109	23.39	670.65	5.52	47075.36	12613.80	12063.62
109	23.39	670.65	5.52	47075.36	12613.80	12063.62
110	23.39	675.72	5.52	46814.68	12543.96	11996.82
110	23.39	675.72	5.52	46814.68	12543.96	11996.82
111	23.39	680.79	5.52	46554.00	12474.11	11930.02
111	23.39	680.79	5.52	46554.00	12474.11	11930.02
112	23.39	685.86	5.52	46293.32	12404.26	11863.21
112	23.39	685.86	5.52	46293.32	12404.26	11863.21
113	23.39	690.93	5.52	46032.64	12334.41	11796.41
113	23.39	690.93	5.52	46032.64	12334.41	11796.41
114	23.39	696.00	5.52	45771.96	12264.56	11729.61
114	23.39	696.00	5.52	45771.96	12264.56	11729.61
115	23.39	701.07	5.52	45511.28	12194.71	11662.81
115	23.39	701.07	5.52	45511.28	12194.71	11662.81
116	23.39	706.13	5.52	45250.60	12124.86	11596.00
116	23.39	706.13	5.52	45250.60	12124.86	11596.00
117	23.39	711.20	5.52	44989.92	12055.01	11529.20
117	23.39	711.20	5.52	44989.92	12055.01	11529.20
118	23.39	716.27	5.52	44729.24	11985.16	11462.40
118	23.39	716.27	5.52	44729.24	11985.16	11462.40
119	23.39	721.34	5.52	44468.56	11915.32	11395.60
119	23.39	721.34	5.52	44468.56	11915.32	11395.60
120	23.39	726.41	5.52	44207.88	11845.47	11328.80
120	23.39	726.41	5.52	44207.88	11845.47	11328.80
121	23.39	731.48	5.52	43947.20	11775.62	11261.99
121	23.39	731.48	5.52	43947.20	11775.62	11261.99
122	23.39	736.55	5.52	43686.52	11705.77	11195.19
122	23.39	736.55	5.52	43686.52	11705.77	11195.19
123	23.39	741.62	5.52	43425.85	11635.92	11128.39
123	23.39	741.62	5.52	43425.85	11635.92	11128.39
124	23.39	746.69	5.52	43165.17	11566.07	11061.59
124	23.39	746.69	5.52	43165.17	11566.07	11061.59
125	23.39	751.76	5.52	42904.49	11496.22	10994.78
125	23.39	751.76	5.52	42904.49	11496.22	10994.78
126	23.39	756.83	5.52	42643.81	11426.37	10927.98
126	23.39	756.83	5.52	42643.81	11426.37	10927.98
127	23.39	761.90	5.52	42383.13	11356.52	10861.18
127	23.39	761.90	5.52	42383.13	11356.52	10861.18
128	23.39	766.97	5.52	42122.45	11286.68	10794.38
128	23.39	766.97	5.52	42122.45	11286.68	10794.38
129	23.39	772.02	5.48	41667.97	11164.90	10677.91
129	23.39	772.02	5.48	41667.97	11164.90	10677.91
130	23.39	777.05	5.48	41614.44	11150.55	10664.19
130	23.39	777.05	5.48	41614.44	11150.55	10664.19
131	23.39	782.08	5.48	41560.90	11136.21	10650.47
131	23.39	782.08	5.48	41560.90	11136.21	10650.47
132	23.78	786.95	5.14	34016.10	21179.99	20256.17
132	23.78	786.95	5.14	34016.10	21179.99	20256.17
133	23.78	791.79	5.44	35940.97	22381.47	21405.24
133	23.78	791.79	5.44	35940.97	22381.47	21405.24
134	23.78	796.76	5.44	35873.69	22342.62	21368.09
134	23.78	796.76	5.44	35873.69	22342.62	21368.09
135	23.78	801.74	5.44	35806.40	22303.77	21330.94
135	23.78	801.74	5.44	35806.40	22303.77	21330.94
136	23.78	806.71	5.44	35739.12	22264.92	21293.78
136	23.78	806.71	5.44	35739.12	22264.92	21293.78
137	23.78	811.69	5.44	35671.83	22226.08	21256.63
137	23.78	811.69	5.44	35671.83	22226.08	21256.63
138	23.78	816.66	5.44	35604.55	22187.23	21219.48
138	23.78	816.66	5.44	35604.55	22187.23	21219.48
139	23.78	821.64	5.44	35537.26	22148.38	21182.32
139	23.78	821.64	5.44	35537.26	22148.38	21182.32
140	23.78	826.61	5.44	35469.98	22109.54	21145.17
140	23.78	826.61	5.44	35469.98	22109.54	21145.17
141	23.78	831.59	5.44	35402.69	22070.69	21108.02
141	23.78	831.59	5.44	35402.69	22070.69	21108.02
142	23.78	836.56	5.44	35335.41	22031.84	21070.87
142	23.78	836.56	5.44	35335.41	22031.84	21070.87
143	23.78	841.54	5.44	35268.12	21992.99	21033.71
143	23.78	841.54	5.44	35268.12	21992.99	21033.71
144	23.78	846.51	5.44	35200.84	21954.15	20996.56
144	23.78	846.51	5.44	35200.84	21954.15	20996.56
145	23.78	851.80	6.12	39542.56	24665.73	23589.87
145	23.78	851.80	6.12	39542.56	24665.73	23589.87
146	23.78	857.40	6.12	39457.30	24616.51	23542.80
146	23.78	857.40	6.12	39457.30	24616.51	23542.80
147	23.78	862.70	5.46	35039.96	21867.12	20913.33
147	23.78	862.70	5.46	35039.96	21867.12	20913.33
148	23.78	867.69	5.46	34837.08	21749.98	20801.30
148	23.78	867.69	5.46	34837.08	21749.98	20801.30
149	23.78	872.68	5.46	34634.19	21632.85	20689.28
149	23.78	872.68	5.46	34634.19	21632.85	20689.28
150	23.78	877.67	5.46	34431.31	21515.71	20577.25

150	23.78	877.67	5.46	34431.31	21515.71	20577.25
151	23.78	882.67	5.46	34228.42	21398.58	20465.22
151	23.78	882.67	5.46	34228.42	21398.58	20465.22
152	23.78	887.66	5.46	34025.54	21281.44	20353.20
152	23.78	887.66	5.46	34025.54	21281.44	20353.20
153	23.78	892.65	5.46	33822.66	21164.31	20241.17
153	23.78	892.65	5.46	33822.66	21164.31	20241.17
154	23.78	897.65	5.46	33619.77	21047.17	20129.15
154	23.78	897.65	5.46	33619.77	21047.17	20129.15
155	23.78	902.64	5.46	33416.89	20930.04	20017.12
155	23.78	902.64	5.46	33416.89	20930.04	20017.12
156	23.78	907.63	5.46	33214.00	20812.90	19905.09
156	23.78	907.63	5.46	33214.00	20812.90	19905.09
157	23.78	912.62	5.46	33011.12	20695.77	19793.07
157	23.78	912.62	5.46	33011.12	20695.77	19793.07
158	23.78	917.62	5.46	32808.23	20578.63	19681.04
158	23.78	917.62	5.46	32808.23	20578.63	19681.04
159	23.78	922.61	5.46	32605.35	20461.50	19569.02
159	23.78	922.61	5.46	32605.35	20461.50	19569.02
160	23.78	927.60	5.46	32402.47	20344.36	19456.99
160	23.78	927.60	5.46	32402.47	20344.36	19456.99
161	23.78	932.60	5.46	32199.58	20227.23	19344.96
161	23.78	932.60	5.46	32199.58	20227.23	19344.96
162	23.78	937.59	5.46	31996.70	20110.09	19232.94
162	23.78	937.59	5.46	31996.70	20110.09	19232.94
163	23.78	942.58	5.46	31793.81	19992.96	19120.91
163	23.78	942.58	5.46	31793.81	19992.96	19120.91
164	23.78	947.58	5.46	31590.93	19875.82	19008.88
164	23.78	947.58	5.46	31590.93	19875.82	19008.88
165	23.78	952.57	5.46	31388.04	19758.68	18896.86
165	23.78	952.57	5.46	31388.04	19758.68	18896.86
166	23.78	957.56	5.46	31185.16	19641.55	18784.83
166	23.78	957.56	5.46	31185.16	19641.55	18784.83
167	23.78	962.55	5.46	30982.28	19524.41	18672.81
167	23.78	962.55	5.46	30982.28	19524.41	18672.81
168	23.78	967.55	5.46	30779.39	19407.28	18560.78
168	23.78	967.55	5.46	30779.39	19407.28	18560.78
169	23.78	972.54	5.46	30576.51	19290.14	18448.75
169	23.78	972.54	5.46	30576.51	19290.14	18448.75
170	23.78	977.53	5.46	30373.62	19173.01	18336.73
170	23.78	977.53	5.46	30373.62	19173.01	18336.73
171	23.78	982.53	5.46	30170.74	19055.87	18224.70
171	23.78	982.53	5.46	30170.74	19055.87	18224.70
172	23.78	987.52	5.46	29967.85	18938.74	18112.68
172	23.78	987.52	5.46	29967.85	18938.74	18112.68
173	23.78	992.51	5.46	29764.97	18821.60	18000.65
173	23.78	992.51	5.46	29764.97	18821.60	18000.65
174	23.78	997.50	5.46	29562.09	18704.47	17888.62
174	23.78	997.50	5.46	29562.09	18704.47	17888.62
175	23.78	1002.57	5.61	30118.60	19071.14	18239.30
175	23.78	1002.57	5.61	30118.60	19071.14	18239.30
176	23.78	1007.70	5.61	29801.33	18887.96	18064.12
176	23.78	1007.70	5.61	29801.33	18887.96	18064.12
177	23.78	1012.83	5.61	29484.06	18704.79	17888.93
177	23.78	1012.83	5.61	29484.06	18704.79	17888.93
178	23.78	1017.96	5.61	29166.79	18521.61	17713.74
178	23.78	1017.96	5.61	29166.79	18521.61	17713.74
179	23.78	1023.09	5.61	28849.51	18338.43	17538.55
179	23.78	1023.09	5.61	28849.51	18338.43	17538.55
180	23.78	1028.22	5.61	28532.24	18155.26	17363.37
180	23.78	1028.22	5.61	28532.24	18155.26	17363.37
181	23.78	1033.35	5.61	28214.97	17972.08	17188.18
181	23.78	1033.35	5.61	28214.97	17972.08	17188.18
182	23.78	1038.48	5.61	27897.70	17788.90	17012.99
182	23.78	1038.48	5.61	27897.70	17788.90	17012.99
183	23.78	1043.62	5.61	27580.43	17605.72	16837.80
183	23.78	1043.62	5.61	27580.43	17605.72	16837.80
184	23.78	1048.75	5.61	27263.15	17422.55	16662.62
184	23.78	1048.75	5.61	27263.15	17422.55	16662.62
185	23.78	1053.88	5.61	26945.88	17239.37	16487.43
185	23.78	1053.88	5.61	26945.88	17239.37	16487.43
186	23.78	1059.01	5.61	26628.61	17056.19	16312.24
186	23.78	1059.01	5.61	26628.61	17056.19	16312.24
187	23.78	1064.14	5.61	26311.34	16873.02	16137.05
187	23.78	1064.14	5.61	26311.34	16873.02	16137.05
188	23.78	1069.27	5.61	25994.06	16689.84	15961.87
188	23.78	1069.27	5.61	25994.06	16689.84	15961.87
189	23.78	1074.40	5.61	25676.79	16506.66	15786.68
189	23.78	1074.40	5.61	25676.79	16506.66	15786.68
190	23.78	1079.53	5.61	25359.52	16323.48	15611.49
190	23.78	1079.53	5.61	25359.52	16323.48	15611.49
191	23.78	1084.61	5.48	24313.42	15682.83	14998.79
191	23.78	1084.61	5.48	24313.42	15682.83	14998.79
192	23.78	1089.63	5.48	23637.57	15292.63	14625.60
192	23.78	1089.63	5.48	23637.57	15292.63	14625.60
193	23.78	1094.65	5.48	22961.72	14902.43	14252.42
193	23.78	1094.65	5.48	22961.72	14902.43	14252.42
194	23.78	1099.67	5.48	22285.88	14512.23	13879.24
194	23.78	1099.67	5.48	22285.88	14512.23	13879.24
195	23.78	1104.69	5.48	21610.03	14122.03	13506.06
195	23.78	1104.69	5.48	21610.03	14122.03	13506.06
196	23.78	1109.71	5.48	20934.18	13731.83	13132.88
196	23.78	1109.71	5.48	20934.18	13731.83	13132.88
197	23.78	1114.73	5.48	20258.34	13341.63	12759.70
197	23.78	1114.73	5.48	20258.34	13341.63	12759.70
198	23.78	1119.75	5.48	19582.49	12951.43	12386.52
198	23.78	1119.75	5.48	19582.49	12951.43	12386.52
199	23.78	1124.76	5.48	18906.64	12561.23	12013.34
199	23.78	1124.76	5.48	18906.64	12561.23	12013.34
200	23.78	1129.78	5.48	18230.80	12171.03	11640.16
200	23.78	1129.78	5.48	18230.80	12171.03	11640.16
201	23.78	1134.80	5.48	17554.95	11780.83	11266.98
201	23.78	1134.80	5.48	17554.95	11780.83	11266.98
202	23.78	1139.82	5.48	16879.11	11390.63	10893.80
202	23.78	1139.82	5.48	16879.11	11390.63	10893.80
203	23.78	1144.84	5.48	16203.26	11000.43	10520.62
203	23.78	1144.84	5.48	16203.26	11000.43	10520.62
204	23.78	1149.86	5.48	15527.41	10610.23	10147.44
204	23.78	1149.86	5.48	15527.41	10610.23	10147.44
205	23.78	1154.88	5.48	14851.57	10220.03	9774.26
205	23.78	1154.88	5.48	14851.57	10220.03	9774.26
206	23.78	1159.90	5.48	14175.72	9829.83	9401.08
206	23.78	1159.90	5.48	14175.72	9829.83	9401.08
207	23.78	1164.92	5.48	13499.87	9439.63	9027.90
207	23.78	1164.92	5.48	13499.87	9439.63	9027.90
208	23.78	1169.94	5.48	12824.03	9049.43	8654.72
208	23.78	1169.94	5.48	12824.03	9049.43	8654.72
209	23.78	1174.96	5.48	12148.18	8659.23	8281.54
209	23.78	1174.96	5.48	12148.18	8659.23	8281.54
210	23.78	1179.98	5.48	11472.33	8269.03	7908.36

210	23.78	1179.98	5.48	11472.33	8269.03	7908.36
211	23.78	1185.00	5.48	10796.49	7878.83	7535.18
211	23.78	1185.00	5.48	10796.49	7878.83	7535.18
212	23.78	1190.02	5.48	10120.64	7488.63	7162.00
212	23.78	1190.02	5.48	10120.64	7488.63	7162.00
213	23.78	1195.04	5.48	9444.80	7098.43	6788.82
213	23.78	1195.04	5.48	9444.80	7098.43	6788.82
214	23.78	1200.05	5.48	8768.95	6708.23	6415.63
214	23.78	1200.05	5.48	8768.95	6708.23	6415.63
215	23.78	1205.07	5.48	8093.10	6318.03	6042.45
215	23.78	1205.07	5.48	8093.10	6318.03	6042.45
216	23.78	1210.09	5.48	7417.26	5927.83	5669.27
216	23.78	1210.09	5.48	7417.26	5927.83	5669.27
217	23.78	1215.11	5.48	6741.41	5537.63	5296.09
217	23.78	1215.11	5.48	6741.41	5537.63	5296.09
218	23.78	1220.13	5.48	6065.56	5147.43	4922.91
218	23.78	1220.13	5.48	6065.56	5147.43	4922.91
219	23.78	1225.15	5.48	5389.72	4757.23	4549.73
219	23.78	1225.15	5.48	5389.72	4757.23	4549.73
220	23.78	1230.17	5.48	4713.87	4367.03	4176.55
220	23.78	1230.17	5.48	4713.87	4367.03	4176.55
221	23.78	1235.19	5.48	4038.03	3976.83	3803.37
221	23.78	1235.19	5.48	4038.03	3976.83	3803.37
222	23.78	1238.35	1.42	935.65	966.37	924.22
222	23.78	1238.35	1.42	935.65	966.37	924.22
223	37.55	1241.00	5.05	1980.85	2657.22	2541.32
223	37.55	1241.00	5.05	1980.85	2657.22	2541.32
224	37.55	1245.00	5.05	1000.98	2091.49	2000.27
224	37.55	1245.00	5.05	1000.98	2091.49	2000.27
225	37.55	1248.67	4.23	151.78	1355.25	1296.14
225	37.55	1248.67	4.23	151.78	1355.25	1296.14
226	37.55	1252.03	4.23	276.23	159.48	152.52
226	37.55	1252.03	4.23	276.23	159.48	152.52

Sum of the Resisting Forces = 2720703.33 (lbs)

Average Available Shear Strength = 2281.45(psf)

Sum of the Driving Forces = 2732363.30 (lbs)

Average Mobilized Shear Stress = 2291.22(psf)

Total length of the failure surface = 1192.53(ft)

Factor of Safety Balance Check: FS = 0.99573

Janbu's Correction Factor (fo) = 1.0500

Janub's FS Corrected = 1.04555

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.16609(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

Average Elevation of Point of Application of kh on Sliding Mass = 281.992(ft)

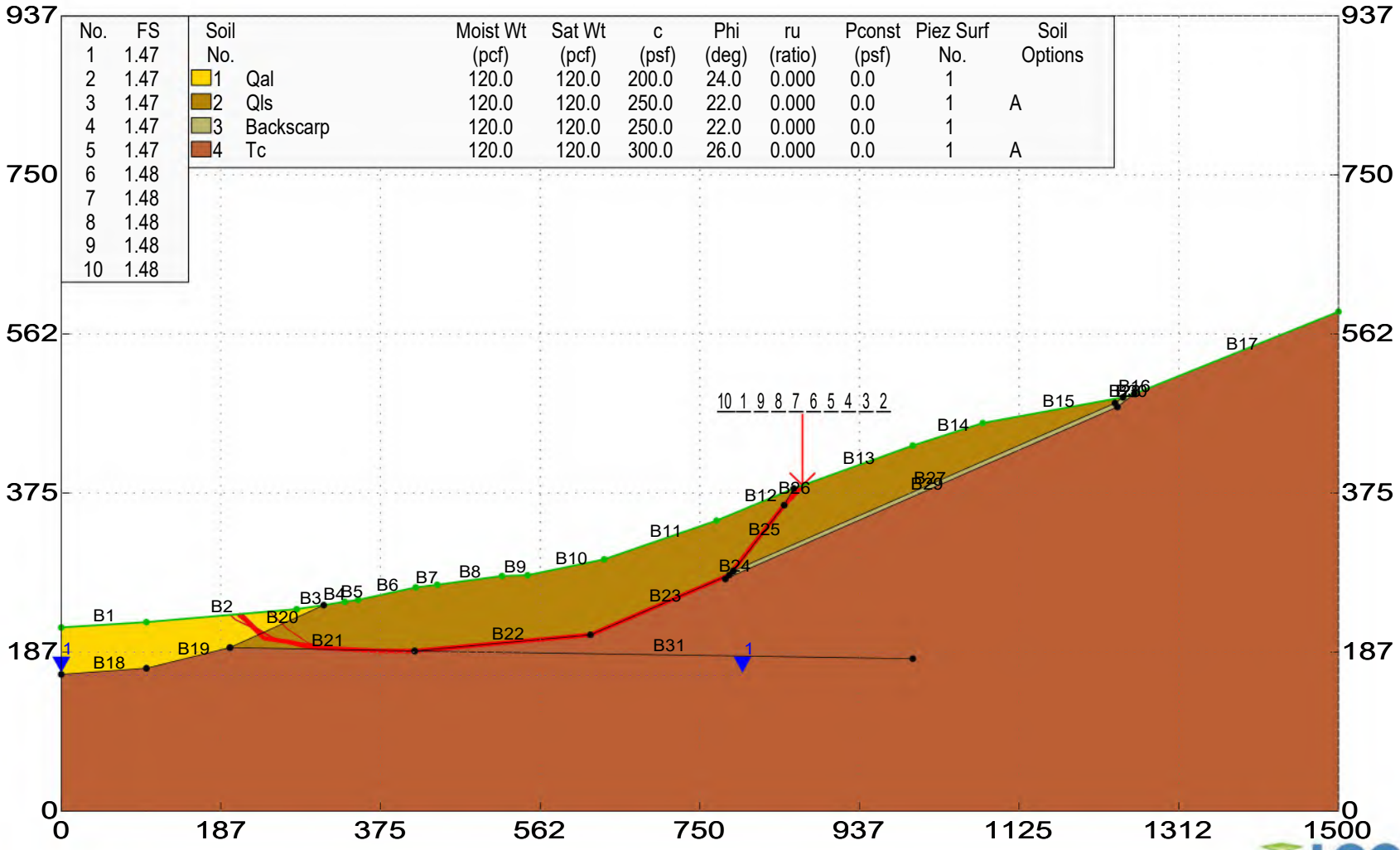
Non-Symmetrical Sliding Resistance Has Been Specified

for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Existing - Smaller Qls - Static

LGC Geotechnical, Inc. \xh.gsd



GEOSTASE FS = 1.47

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****

SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.

****

Analysis Date: 3/ 29/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xh.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xh.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Existing - Smaller Qls - Static

BOUNDARY DATA

17 Surface Boundaries
31 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	216.400	100.000	222.900	1
2	100.000	222.900	276.400	238.000	1
3	276.400	238.000	308.300	242.900	1
4	308.300	242.900	332.700	247.000	2
5	332.700	247.000	348.800	249.000	2
6	348.800	249.000	416.400	263.600	2
7	416.400	263.600	441.400	267.000	2
8	441.400	267.000	517.400	277.100	2
9	517.400	277.100	547.500	278.000	2
10	547.500	278.000	637.700	297.000	2
11	637.700	297.000	769.500	342.600	2
12	769.500	342.600	860.200	380.200	2
13	860.200	380.200	1000.000	430.900	2
14	1000.000	430.900	1082.100	457.600	2
15	1082.100	457.600	1247.000	487.900	2
16	1247.000	487.900	1260.400	491.900	3
17	1260.400	491.900	1500.000	588.800	4
18	0.000	161.100	100.000	168.300	4
19	100.000	168.300	198.100	192.800	4
20	198.100	192.800	308.300	242.900	2
21	198.100	192.800	414.900	188.600	4
22	414.900	188.600	621.400	207.800	4
23	621.400	207.800	784.600	278.400	4
24	779.900	273.600	789.300	283.200	3
25	789.300	283.200	849.000	360.500	2
26	849.000	360.500	860.200	380.200	2
27	789.300	283.200	1237.700	480.800	3
28	1237.700	480.800	1247.000	487.900	3
29	779.900	273.600	1240.300	476.500	4
30	1240.300	476.500	1260.400	491.900	4
31	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 30.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	369.00	189.70	5.00
2	370.40	189.00	370.40	189.00	0.00
3	414.90	188.60	414.90	188.60	0.00
4	621.40	207.80	621.40	207.80	0.00
5	784.60	278.40	784.60	278.40	0.00
6	849.00	360.50	849.00	360.50	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.574 FS Min = 1.474 FS Ave = 1.523
Standard Deviation = 0.017 Coefficient of Variation = 1.12 %

Critical Surface is Sequence Number 2 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.474

Table 1 - Geometry Data on the 135 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	4.54	2.05	210.15	230.28	232.33	-39.24	4.89	5.86
2	4.54	6.14	214.69	226.58	232.72	-39.24	4.89	5.86
3	5.39	11.08	219.65	222.06	233.14	-44.66	4.89	7.58
4	5.39	16.88	225.05	216.73	233.60	-44.66	4.89	7.58
5	5.39	22.67	230.44	211.40	234.07	-44.66	4.89	7.58
6	2.58	26.95	234.43	207.46	234.41	-44.66	4.89	3.62
7	2.58	29.72	237.00	204.91	234.63	-44.66	4.89	3.62
8	4.95	31.66	240.77	203.29	234.95	-8.03	4.89	5.00
9	4.95	32.78	245.72	202.59	235.37	-8.03	4.89	5.00
10	4.95	33.91	250.67	201.89	235.80	-8.03	4.89	5.00
11	4.95	35.03	255.62	201.19	236.22	-8.03	4.89	5.00
12	4.95	36.15	260.57	200.50	236.65	-8.03	4.89	5.00
13	4.95	37.27	265.52	199.80	237.07	-8.03	4.89	5.00
14	4.20	38.50	270.10	198.96	237.46	-13.04	4.89	4.31
15	4.20	39.83	274.30	197.99	237.82	-13.04	4.89	4.31
16	5.21	41.50	279.00	196.90	238.40	-13.04	8.73	5.34
17	5.21	43.51	284.21	195.69	239.20	-13.04	8.73	5.34
18	5.21	45.51	289.42	194.49	240.00	-13.04	8.73	5.34
19	5.21	47.52	294.62	193.28	240.80	-13.04	8.73	5.34
20	5.54	49.09	299.99	192.54	241.62	-2.88	8.73	5.54
21	5.54	50.21	305.53	192.26	242.47	-2.88	8.73	5.54
22	4.88	51.31	310.74	192.00	243.31	-2.88	9.54	4.89
23	4.88	52.38	315.62	191.75	244.13	-2.88	9.54	4.89
24	4.88	53.44	320.50	191.51	244.95	-2.88	9.54	4.89
25	4.88	54.51	325.38	191.26	245.77	-2.88	9.54	4.89
26	4.88	55.57	330.26	191.02	246.59	-2.88	9.54	4.89
27	5.37	56.57	335.38	190.76	247.33	-2.88	7.08	5.37
28	5.37	57.51	340.75	190.49	248.00	-2.88	7.08	5.37
29	5.37	58.45	346.12	190.22	248.67	-2.88	7.08	5.37
30	3.32	59.36	350.46	190.00	249.36	-2.88	12.19	3.32
31	3.32	60.24	353.78	189.84	250.08	-2.88	12.19	3.32
32	4.99	61.35	357.93	189.63	250.97	-2.88	12.19	4.99
33	4.99	62.67	362.92	189.38	252.05	-2.88	12.19	4.99

34	4.99	64.00	367.91	189.13	253.13	-2.88	12.19	4.99
35	4.94	65.22	372.87	188.98	254.20	-0.52	12.19	4.94
36	4.94	66.33	377.82	188.93	255.27	-0.52	12.19	4.94
37	4.94	67.45	382.76	188.89	256.33	-0.52	12.19	4.94
38	4.94	68.56	387.71	188.84	257.40	-0.52	12.19	4.94
39	4.94	69.67	392.65	188.80	258.47	-0.52	12.19	4.94
40	4.94	70.78	397.59	188.76	259.54	-0.52	12.19	4.94
41	4.94	71.90	402.54	188.71	260.61	-0.52	12.19	4.94
42	4.94	73.01	407.48	188.67	261.67	-0.52	12.19	4.94
43	4.94	74.12	412.43	188.62	262.74	-0.52	12.19	4.94
44	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
45	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
46	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
47	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
48	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
49	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
50	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
51	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
52	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
53	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
54	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
55	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
56	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
57	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
58	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
59	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
60	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
61	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
62	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
63	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
64	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
65	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
66	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
67	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
68	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
69	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
70	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
71	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
72	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
73	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
74	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
75	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
76	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
77	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
78	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
79	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
80	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
81	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
82	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
83	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
84	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
85	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
86	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
87	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
88	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
89	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
90	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
91	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
92	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
93	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
94	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
95	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
96	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
97	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
98	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
99	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
100	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
101	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
102	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
103	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
104	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
105	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
106	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
107	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
108	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
109	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
110	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
111	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
112	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
113	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
114	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
115	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
116	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
117	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
118	4.95	68.33	787.08	281.56	349.89	51.89	22.52	8.03
119	4.95	64.07	792.03	287.87	351.94	51.89	22.52	8.03
120	4.95	59.81	796.98	294.19	353.99	51.89	22.52	8.03
121	4.95	55.54	801.94	300.50	356.05	51.89	22.52	8.03
122	4.95	51.28	806.89	306.82	358.10	51.89	22.52	8.03
123	4.95	47.02	811.85	313.13	360.15	51.89	22.52	8.03
124	4.95	42.76	816.80	319.45	362.21	51.89	22.52	8.03
125	4.95	38.50	821.75	325.77	364.26	51.89	22.52	8.03
126	4.95	34.23	826.71	332.08	366.32	51.89	22.52	8.03
127	4.95	29.97	831.66	338.40	368.37	51.89	22.52	8.03
128	4.95	25.71	836.62	344.71	370.42	51.89	22.52	8.03
129	4.95	21.45	841.57	351.03	372.48	51.89	22.52	8.03
130	4.95	17.19	846.52	357.34	374.53	51.89	22.52	8.03
131	5.60	13.25	851.80	363.46	376.72	46.63	22.52	8.16
132	5.60	9.65	857.40	369.39	379.04	46.63	22.52	8.16
133	4.70	6.21	862.55	374.85	381.05	46.63	19.93	6.84
134	4.70	2.93	867.25	379.82	382.76	46.63	19.93	6.84
135	0.83	0.65	870.02	383.11	383.76	62.55	19.93	1.80

Table 2 - Force Data On The 135 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1113.7	0.0	0.0	0.0	0.0	0.0
2	3341.2	0.0	0.0	0.0	0.0	0.0
3	7174.5	0.0	0.0	0.0	0.0	0.0
4	10925.1	0.0	0.0	0.0	0.0	0.0
5	14675.8	0.0	0.0	0.0	0.0	0.0
6	8332.4	0.0	0.0	0.0	0.0	0.0
7	9187.9	0.0	0.0	0.0	0.0	0.0
8	18811.0	0.0	0.0	0.0	0.0	0.0

9	19477.6	0.0	0.0	0.0	0.0	0.0
10	20144.2	0.0	0.0	0.0	0.0	0.0
11	20810.8	0.0	0.0	0.0	0.0	0.0
12	21477.4	0.0	0.0	0.0	0.0	0.0
13	22144.0	0.0	0.0	0.0	0.0	0.0
14	19406.3	0.0	0.0	0.0	0.0	0.0
15	20078.0	0.0	0.0	0.0	0.0	0.0
16	25927.7	0.0	0.0	0.0	0.0	0.0
17	27180.8	0.0	0.0	0.0	0.0	0.0
18	28433.9	0.0	0.0	0.0	0.0	0.0
19	29686.9	0.0	0.0	0.0	0.0	0.0
20	32617.6	0.0	0.0	0.0	0.0	0.0
21	33367.8	0.0	0.0	0.0	0.0	0.0
22	30048.1	0.0	0.0	0.0	0.0	0.0
23	30671.9	0.0	0.0	0.0	0.0	0.0
24	31295.7	0.0	0.0	0.0	0.0	0.0
25	31919.5	0.0	0.0	0.0	0.0	0.0
26	32543.3	0.0	0.0	0.0	0.0	0.0
27	36433.3	0.0	0.0	0.0	0.0	0.0
28	37036.3	0.0	0.0	0.0	0.0	0.0
29	37639.4	0.0	0.0	0.0	0.0	0.0
30	23643.7	0.0	0.0	0.0	0.0	0.0
31	23995.7	0.0	0.0	0.0	0.0	0.0
32	36712.0	0.0	0.0	0.0	0.0	0.0
33	37506.6	0.0	0.0	0.0	0.0	0.0
34	38301.1	0.0	0.0	0.0	0.0	0.0
35	38697.9	0.0	0.0	0.0	0.0	0.0
36	39357.9	0.0	0.0	0.0	0.0	0.0
37	40017.9	0.0	0.0	0.0	0.0	0.0
38	40677.9	0.0	0.0	0.0	0.0	0.0
39	41337.9	0.0	0.0	0.0	0.0	0.0
40	41997.8	0.0	0.0	0.0	0.0	0.0
41	42657.8	0.0	0.0	0.0	0.0	0.0
42	43317.8	0.0	0.0	0.0	0.0	0.0
43	43977.8	0.0	0.0	0.0	0.0	0.0
44	13458.3	0.0	0.0	0.0	0.0	0.0
45	44980.9	0.0	0.0	0.0	0.0	0.0
46	45109.9	0.0	0.0	0.0	0.0	0.0
47	45239.0	0.0	0.0	0.0	0.0	0.0
48	45368.0	0.0	0.0	0.0	0.0	0.0
49	45497.1	0.0	0.0	0.0	0.0	0.0
50	46230.6	0.0	0.0	0.0	0.0	0.0
51	46353.6	0.0	0.0	0.0	0.0	0.0
52	46476.5	0.0	0.0	0.0	0.0	0.0
53	46599.5	0.0	0.0	0.0	0.0	0.0
54	46722.5	0.0	0.0	0.0	0.0	0.0
55	46845.4	0.0	0.0	0.0	0.0	0.0
56	46968.4	0.0	0.0	0.0	0.0	0.0
57	47091.4	0.0	0.0	0.0	0.0	0.0
58	47214.3	0.0	0.0	0.0	0.0	0.0
59	47337.3	0.0	0.0	0.0	0.0	0.0
60	47460.3	0.0	0.0	0.0	0.0	0.0
61	47583.2	0.0	0.0	0.0	0.0	0.0
62	47706.2	0.0	0.0	0.0	0.0	0.0
63	47829.2	0.0	0.0	0.0	0.0	0.0
64	47952.1	0.0	0.0	0.0	0.0	0.0
65	47444.5	0.0	0.0	0.0	0.0	0.0
66	47254.0	0.0	0.0	0.0	0.0	0.0
67	47063.5	0.0	0.0	0.0	0.0	0.0
68	46873.0	0.0	0.0	0.0	0.0	0.0
69	46682.5	0.0	0.0	0.0	0.0	0.0
70	46492.0	0.0	0.0	0.0	0.0	0.0
71	45735.8	0.0	0.0	0.0	0.0	0.0
72	46078.5	0.0	0.0	0.0	0.0	0.0
73	46421.2	0.0	0.0	0.0	0.0	0.0
74	46763.9	0.0	0.0	0.0	0.0	0.0
75	47106.6	0.0	0.0	0.0	0.0	0.0
76	47449.4	0.0	0.0	0.0	0.0	0.0
77	47792.1	0.0	0.0	0.0	0.0	0.0
78	48134.8	0.0	0.0	0.0	0.0	0.0
79	48477.5	0.0	0.0	0.0	0.0	0.0
80	48820.2	0.0	0.0	0.0	0.0	0.0
81	49162.9	0.0	0.0	0.0	0.0	0.0
82	49505.7	0.0	0.0	0.0	0.0	0.0
83	49848.4	0.0	0.0	0.0	0.0	0.0
84	50191.1	0.0	0.0	0.0	0.0	0.0
85	50533.8	0.0	0.0	0.0	0.0	0.0
86	55526.6	0.0	0.0	0.0	0.0	0.0
87	54740.3	0.0	0.0	0.0	0.0	0.0
88	53954.1	0.0	0.0	0.0	0.0	0.0
89	49838.1	0.0	0.0	0.0	0.0	0.0
90	49571.0	0.0	0.0	0.0	0.0	0.0
91	49303.9	0.0	0.0	0.0	0.0	0.0
92	49036.8	0.0	0.0	0.0	0.0	0.0
93	48769.7	0.0	0.0	0.0	0.0	0.0
94	48502.6	0.0	0.0	0.0	0.0	0.0
95	48235.5	0.0	0.0	0.0	0.0	0.0
96	47968.4	0.0	0.0	0.0	0.0	0.0
97	47701.3	0.0	0.0	0.0	0.0	0.0
98	47434.2	0.0	0.0	0.0	0.0	0.0
99	47167.1	0.0	0.0	0.0	0.0	0.0
100	46900.0	0.0	0.0	0.0	0.0	0.0
101	46632.9	0.0	0.0	0.0	0.0	0.0
102	46365.8	0.0	0.0	0.0	0.0	0.0
103	46098.7	0.0	0.0	0.0	0.0	0.0
104	45831.5	0.0	0.0	0.0	0.0	0.0
105	45564.4	0.0	0.0	0.0	0.0	0.0
106	45297.3	0.0	0.0	0.0	0.0	0.0
107	45030.2	0.0	0.0	0.0	0.0	0.0
108	44763.1	0.0	0.0	0.0	0.0	0.0
109	44496.0	0.0	0.0	0.0	0.0	0.0
110	44228.9	0.0	0.0	0.0	0.0	0.0
111	43961.8	0.0	0.0	0.0	0.0	0.0
112	43694.7	0.0	0.0	0.0	0.0	0.0
113	43427.6	0.0	0.0	0.0	0.0	0.0
114	43160.5	0.0	0.0	0.0	0.0	0.0
115	42694.8	0.0	0.0	0.0	0.0	0.0
116	42640.0	0.0	0.0	0.0	0.0	0.0
117	42585.1	0.0	0.0	0.0	0.0	0.0
118	40618.9	0.0	0.0	0.0	0.0	0.0
119	38085.4	0.0	0.0	0.0	0.0	0.0
120	35552.0	0.0	0.0	0.0	0.0	0.0
121	33018.6	0.0	0.0	0.0	0.0	0.0
122	30485.1	0.0	0.0	0.0	0.0	0.0
123	27951.7	0.0	0.0	0.0	0.0	0.0
124	25418.2	0.0	0.0	0.0	0.0	0.0
125	22884.8	0.0	0.0	0.0	0.0	0.0
126	20351.3	0.0	0.0	0.0	0.0	0.0
127	17817.9	0.0	0.0	0.0	0.0	0.0
128	15284.4	0.0	0.0	0.0	0.0	0.0

129	12751.0	0.0	0.0	0.0	0.0	0.0
130	10217.5	0.0	0.0	0.0	0.0	0.0
131	8906.2	0.0	0.0	0.0	0.0	0.0
132	6481.9	0.0	0.0	0.0	0.0	0.0
133	3500.0	0.0	0.0	0.0	0.0	0.0
134	1655.0	0.0	0.0	0.0	0.0	0.0
135	64.8	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 4996124.99(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 4996124.99(lbs)

TOTAL AREA OF SLIDING MASS = 41634.37(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 135 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	2	250.00	22.00	A
7	2	250.00	22.00	A
8	2	0.00	14.00	A
9	2	0.00	14.00	A
10	2	0.00	14.00	A
11	2	0.00	14.00	A
12	2	0.00	14.00	A
13	2	0.00	14.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	4	0.00	14.00	A
33	4	0.00	14.00	A
34	4	0.00	14.00	A
35	4	0.00	14.00	A
36	4	0.00	14.00	A
37	4	0.00	14.00	A
38	4	0.00	14.00	A
39	4	0.00	14.00	A
40	4	0.00	14.00	A
41	4	0.00	14.00	A
42	4	0.00	14.00	A
43	4	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A
57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A
69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A
72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	2	0.00	14.00	A
76	2	0.00	14.00	A
77	2	0.00	14.00	A
78	2	0.00	14.00	A
79	2	0.00	14.00	A
80	2	0.00	14.00	A
81	2	0.00	14.00	A
82	2	0.00	14.00	A
83	2	0.00	14.00	A
84	2	0.00	14.00	A
85	2	0.00	14.00	A
86	2	0.00	14.00	A
87	2	0.00	14.00	A
88	2	0.00	14.00	A
89	2	0.00	14.00	A
90	2	0.00	14.00	A
91	2	0.00	14.00	A
92	2	0.00	14.00	A
93	2	0.00	14.00	A
94	2	0.00	14.00	A
95	2	0.00	14.00	A
96	2	0.00	14.00	A
97	2	0.00	14.00	A
98	2	0.00	14.00	A
99	2	0.00	14.00	A
100	2	0.00	14.00	A
101	2	0.00	14.00	A

102	2	0.00	14.00	A
103	2	0.00	14.00	A
104	2	0.00	14.00	A
105	2	0.00	14.00	A
106	2	0.00	14.00	A
107	2	0.00	14.00	A
108	2	0.00	14.00	A
109	2	0.00	14.00	A
110	2	0.00	14.00	A
111	2	0.00	14.00	A
112	2	0.00	14.00	A
113	2	0.00	14.00	A
114	2	0.00	14.00	A
115	2	0.00	14.00	A
116	2	0.00	14.00	A
117	2	0.00	14.00	A
118	2	250.00	22.00	A
119	2	250.00	22.00	A
120	2	250.00	22.00	A
121	2	250.00	22.00	A
122	2	250.00	22.00	A
123	2	250.00	22.00	A
124	2	250.00	22.00	A
125	2	250.00	22.00	A
126	2	250.00	22.00	A
127	2	250.00	22.00	A
128	2	250.00	22.00	A
129	2	250.00	22.00	A
130	2	250.00	22.00	A
131	2	250.00	22.00	A
132	2	250.00	22.00	A
133	2	250.00	22.00	A
134	2	250.00	22.00	A
135	2	250.00	22.00	A

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 135 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-39.24	210.15	5.86	493.57	419.75	284.57
1	-39.24	210.15	5.86	493.57	419.75	284.57
2	-39.24	214.69	5.86	1160.04	716.48	485.73
2	-39.24	214.69	5.86	1160.04	716.48	485.73
3	-44.66	219.65	7.58	2160.53	1161.93	787.71
3	-44.66	219.65	7.58	2160.53	1161.93	787.71
4	-44.66	225.05	7.58	3180.36	1615.99	1095.54
4	-44.66	225.05	7.58	3180.36	1615.99	1095.54
5	-44.66	230.44	7.58	4200.19	2070.05	1403.36
5	-44.66	230.44	7.58	4200.19	2070.05	1403.36
6	-44.66	234.43	3.62	4798.74	2188.81	1483.87
6	-44.66	234.43	3.62	4798.74	2188.81	1483.87
7	-44.66	237.00	3.62	5265.62	2377.45	1611.76
7	-44.66	237.00	3.62	5265.62	2377.45	1611.76
8	-8.03	240.77	5.00	3898.57	972.02	658.97
8	-8.03	240.77	5.00	3898.57	972.02	658.97
9	-8.03	245.72	5.00	4036.72	1006.47	682.32
9	-8.03	245.72	5.00	4036.72	1006.47	682.32
10	-8.03	250.67	5.00	4174.88	1040.91	705.67
10	-8.03	250.67	5.00	4174.88	1040.91	705.67
11	-8.03	255.62	5.00	4313.03	1075.36	729.02
11	-8.03	255.62	5.00	4313.03	1075.36	729.02
12	-8.03	260.57	5.00	4451.19	1109.81	752.38
12	-8.03	260.57	5.00	4451.19	1109.81	752.38
13	-8.03	265.52	5.00	4589.34	1144.25	775.73
13	-8.03	265.52	5.00	4589.34	1144.25	775.73
14	-13.04	270.10	4.31	4821.32	1202.09	814.94
14	-13.04	270.10	4.31	4821.32	1202.09	814.94
15	-13.04	274.30	4.31	4988.21	1243.70	843.15
15	-13.04	274.30	4.31	4988.21	1243.70	843.15
16	-13.04	279.00	5.34	5197.24	1295.82	878.48
16	-13.04	279.00	5.34	5197.24	1295.82	878.48
17	-13.04	284.21	5.34	5448.42	1358.44	920.94
17	-13.04	284.21	5.34	5448.42	1358.44	920.94
18	-13.04	289.42	5.34	5699.61	1421.07	963.39
18	-13.04	289.42	5.34	5699.61	1421.07	963.39
19	-13.04	294.62	5.34	5950.79	1483.70	1005.85
19	-13.04	294.62	5.34	5950.79	1483.70	1005.85
20	-2.88	299.99	5.54	5944.15	1482.04	1004.73
20	-2.88	299.99	5.54	5944.15	1482.04	1004.73
21	-2.88	305.53	5.54	6080.85	1516.13	1027.84
21	-2.88	305.53	5.54	6080.85	1516.13	1027.84
22	-2.88	310.74	4.89	6213.71	1549.25	1050.29
22	-2.88	310.74	4.89	6213.71	1549.25	1050.29
23	-2.88	315.62	4.89	6342.71	1581.41	1072.10
23	-2.88	315.62	4.89	6342.71	1581.41	1072.10
24	-2.88	320.50	4.89	6471.71	1613.58	1093.90
24	-2.88	320.50	4.89	6471.71	1613.58	1093.90
25	-2.88	325.38	4.89	6600.71	1645.74	1115.71
25	-2.88	325.38	4.89	6600.71	1645.74	1115.71
26	-2.88	330.26	4.89	6729.71	1677.90	1137.51
26	-2.88	330.26	4.89	6729.71	1677.90	1137.51
27	-2.88	335.38	5.37	6850.91	1708.12	1158.00
27	-2.88	335.38	5.37	6850.91	1708.12	1158.00
28	-2.88	340.75	5.37	6964.30	1736.40	1177.16
28	-2.88	340.75	5.37	6964.30	1736.40	1177.16
29	-2.88	346.12	5.37	7077.69	1764.67	1196.33
29	-2.88	346.12	5.37	7077.69	1764.67	1196.33
30	-2.88	350.46	3.32	7187.90	1792.15	1214.96
30	-2.88	350.46	3.32	7187.90	1792.15	1214.96
31	-2.88	353.78	3.32	7294.92	1818.83	1233.05
31	-2.88	353.78	3.32	7294.92	1818.83	1233.05
32	-2.88	357.93	4.99	7428.82	1852.21	1255.68
32	-2.88	357.93	4.99	7428.82	1852.21	1255.68
33	-2.88	362.92	4.99	7589.61	1892.30	1282.86
33	-2.88	362.92	4.99	7589.61	1892.30	1282.86
34	-2.88	367.91	4.99	7750.39	1932.39	1310.03
34	-2.88	367.91	4.99	7750.39	1932.39	1310.03
35	-0.52	372.87	4.94	7839.26	1954.55	1325.06
35	-0.52	372.87	4.94	7839.26	1954.55	1325.06
36	-0.52	377.82	4.94	7972.95	1987.88	1347.65

36	-0.52	377.82	4.94	7972.95	1987.88	1347.65
37	-0.52	382.76	4.94	8106.65	2021.21	1370.25
37	-0.52	382.76	4.94	8106.65	2021.21	1370.25
38	-0.52	387.71	4.94	8240.35	2054.55	1392.85
38	-0.52	387.71	4.94	8240.35	2054.55	1392.85
39	-0.52	392.65	4.94	8374.04	2087.88	1415.45
39	-0.52	392.65	4.94	8374.04	2087.88	1415.45
40	-0.52	397.59	4.94	8507.74	2121.22	1438.05
40	-0.52	397.59	4.94	8507.74	2121.22	1438.05
41	-0.52	402.54	4.94	8641.43	2154.55	1460.65
41	-0.52	402.54	4.94	8641.43	2154.55	1460.65
42	-0.52	407.48	4.94	8775.13	2187.89	1483.24
42	-0.52	407.48	4.94	8775.13	2187.89	1483.24
43	-0.52	412.43	4.94	8908.83	2221.22	1505.84
43	-0.52	412.43	4.94	8908.83	2221.22	1505.84
44	5.31	415.65	1.51	8824.24	2200.13	1491.54
44	5.31	415.65	1.51	8824.24	2200.13	1491.54
45	5.31	418.90	5.02	8847.82	2206.01	1495.53
45	5.31	418.90	5.02	8847.82	2206.01	1495.53
46	5.31	423.90	5.02	8873.20	2212.34	1499.82
46	5.31	423.90	5.02	8873.20	2212.34	1499.82
47	5.31	428.90	5.02	8898.59	2218.67	1504.11
47	5.31	428.90	5.02	8898.59	2218.67	1504.11
48	5.31	433.90	5.02	8923.98	2225.00	1508.40
48	5.31	433.90	5.02	8923.98	2225.00	1508.40
49	5.31	438.90	5.02	8949.37	2231.33	1512.70
49	5.31	438.90	5.02	8949.37	2231.33	1512.70
50	5.31	443.93	5.09	8973.99	2237.47	1516.86
50	5.31	443.93	5.09	8973.99	2237.47	1516.86
51	5.31	449.00	5.09	8997.86	2243.42	1520.89
51	5.31	449.00	5.09	8997.86	2243.42	1520.89
52	5.31	454.07	5.09	9021.73	2249.37	1524.93
52	5.31	454.07	5.09	9021.73	2249.37	1524.93
53	5.31	459.13	5.09	9045.60	2255.32	1528.96
53	5.31	459.13	5.09	9045.60	2255.32	1528.96
54	5.31	464.20	5.09	9069.47	2261.27	1533.00
54	5.31	464.20	5.09	9069.47	2261.27	1533.00
55	5.31	469.27	5.09	9093.34	2267.22	1537.03
55	5.31	469.27	5.09	9093.34	2267.22	1537.03
56	5.31	474.33	5.09	9117.21	2273.18	1541.07
56	5.31	474.33	5.09	9117.21	2273.18	1541.07
57	5.31	479.40	5.09	9141.08	2279.13	1545.10
57	5.31	479.40	5.09	9141.08	2279.13	1545.10
58	5.31	484.47	5.09	9164.95	2285.08	1549.13
58	5.31	484.47	5.09	9164.95	2285.08	1549.13
59	5.31	489.53	5.09	9188.82	2291.03	1553.17
59	5.31	489.53	5.09	9188.82	2291.03	1553.17
60	5.31	494.60	5.09	9212.68	2296.98	1557.20
60	5.31	494.60	5.09	9212.68	2296.98	1557.20
61	5.31	499.67	5.09	9236.55	2302.93	1561.24
61	5.31	499.67	5.09	9236.55	2302.93	1561.24
62	5.31	504.73	5.09	9260.42	2308.88	1565.27
62	5.31	504.73	5.09	9260.42	2308.88	1565.27
63	5.31	509.80	5.09	9284.29	2314.83	1569.31
63	5.31	509.80	5.09	9284.29	2314.83	1569.31
64	5.31	514.87	5.09	9308.16	2320.79	1573.34
64	5.31	514.87	5.09	9308.16	2320.79	1573.34
65	5.31	519.91	5.04	9301.42	2319.10	1572.20
65	5.31	519.91	5.04	9301.42	2319.10	1572.20
66	5.31	524.92	5.04	9264.08	2309.79	1565.89
66	5.31	524.92	5.04	9264.08	2309.79	1565.89
67	5.31	529.94	5.04	9226.73	2300.48	1559.58
67	5.31	529.94	5.04	9226.73	2300.48	1559.58
68	5.31	534.96	5.04	9189.38	2291.17	1553.26
68	5.31	534.96	5.04	9189.38	2291.17	1553.26
69	5.31	539.98	5.04	9152.04	2281.86	1546.95
69	5.31	539.98	5.04	9152.04	2281.86	1546.95
70	5.31	544.99	5.04	9114.69	2272.55	1540.64
70	5.31	544.99	5.04	9114.69	2272.55	1540.64
71	5.31	549.96	4.95	9130.22	2276.42	1543.27
71	5.31	549.96	4.95	9130.22	2276.42	1543.27
72	5.31	554.89	4.95	9198.64	2293.48	1554.83
72	5.31	554.89	4.95	9198.64	2293.48	1554.83
73	5.31	559.82	4.95	9267.06	2310.54	1566.39
73	5.31	559.82	4.95	9267.06	2310.54	1566.39
74	5.31	564.74	4.95	9335.47	2327.59	1577.96
74	5.31	564.74	4.95	9335.47	2327.59	1577.96
75	5.31	569.67	4.95	9403.89	2344.65	1589.52
75	5.31	569.67	4.95	9403.89	2344.65	1589.52
76	5.31	574.60	4.95	9472.31	2361.71	1601.09
76	5.31	574.60	4.95	9472.31	2361.71	1601.09
77	5.31	579.52	4.95	9540.72	2378.77	1612.65
77	5.31	579.52	4.95	9540.72	2378.77	1612.65
78	5.31	584.45	4.95	9609.14	2395.83	1624.22
78	5.31	584.45	4.95	9609.14	2395.83	1624.22
79	5.31	589.38	4.95	9677.55	2412.89	1635.78
79	5.31	589.38	4.95	9677.55	2412.89	1635.78
80	5.31	594.30	4.95	9745.97	2429.94	1647.34
80	5.31	594.30	4.95	9745.97	2429.94	1647.34
81	5.31	599.23	4.95	9814.39	2447.00	1658.91
81	5.31	599.23	4.95	9814.39	2447.00	1658.91
82	5.31	604.16	4.95	9882.80	2464.06	1670.47
82	5.31	604.16	4.95	9882.80	2464.06	1670.47
83	5.31	609.08	4.95	9951.22	2481.12	1682.04
83	5.31	609.08	4.95	9951.22	2481.12	1682.04
84	5.31	614.01	4.95	10019.64	2498.18	1693.60
84	5.31	614.01	4.95	10019.64	2498.18	1693.60
85	5.31	618.94	4.95	10088.05	2515.23	1705.17
85	5.31	618.94	4.95	10088.05	2515.23	1705.17
86	23.39	624.12	5.92	9480.06	2363.64	1602.40
86	23.39	624.12	5.92	9480.06	2363.64	1602.40
87	23.39	629.55	5.92	9345.82	2330.17	1579.71
87	23.39	629.55	5.92	9345.82	2330.17	1579.71
88	23.39	634.98	5.92	9211.58	2296.70	1557.02
88	23.39	634.98	5.92	9211.58	2296.70	1557.02
89	23.39	640.23	5.52	9120.02	2273.88	1541.54
89	23.39	640.23	5.52	9120.02	2273.88	1541.54
90	23.39	645.30	5.52	9071.14	2261.69	1533.28
90	23.39	645.30	5.52	9071.14	2261.69	1533.28
91	23.39	650.37	5.52	9022.26	2249.50	1525.02
91	23.39	650.37	5.52	9022.26	2249.50	1525.02
92	23.39	655.44	5.52	8973.38	2237.32	1516.75
92	23.39	655.44	5.52	8973.38	2237.32	1516.75
93	23.39	660.51	5.52	8924.50	2225.13	1508.49
93	23.39	660.51	5.52	8924.50	2225.13	1508.49
94	23.39	665.58	5.52	8875.62	2212.94	1500.23
94	23.39	665.58	5.52	8875.62	2212.94	1500.23
95	23.39	670.65	5.52	8826.75	2200.76	1491.97
95	23.39	670.65	5.52	8826.75	2200.76	1491.97
96	23.39	675.72	5.52	8777.87	2188.57	1483.71

96	23.39	675.72	5.52	8777.87	2188.57	1483.71
97	23.39	680.79	5.52	8728.99	2176.38	1475.45
97	23.39	680.79	5.52	8728.99	2176.38	1475.45
98	23.39	685.86	5.52	8680.11	2164.20	1467.18
98	23.39	685.86	5.52	8680.11	2164.20	1467.18
99	23.39	690.93	5.52	8631.23	2152.01	1458.92
99	23.39	690.93	5.52	8631.23	2152.01	1458.92
100	23.39	696.00	5.52	8582.36	2139.82	1450.66
100	23.39	696.00	5.52	8582.36	2139.82	1450.66
101	23.39	701.07	5.52	8533.48	2127.64	1442.40
101	23.39	701.07	5.52	8533.48	2127.64	1442.40
102	23.39	706.13	5.52	8484.60	2115.45	1434.14
102	23.39	706.13	5.52	8484.60	2115.45	1434.14
103	23.39	711.20	5.52	8435.72	2103.26	1425.87
103	23.39	711.20	5.52	8435.72	2103.26	1425.87
104	23.39	716.27	5.52	8386.84	2091.08	1417.61
104	23.39	716.27	5.52	8386.84	2091.08	1417.61
105	23.39	721.34	5.52	8337.97	2078.89	1409.35
105	23.39	721.34	5.52	8337.97	2078.89	1409.35
106	23.39	726.41	5.52	8289.09	2066.70	1401.09
106	23.39	726.41	5.52	8289.09	2066.70	1401.09
107	23.39	731.48	5.52	8240.21	2054.52	1392.83
107	23.39	731.48	5.52	8240.21	2054.52	1392.83
108	23.39	736.55	5.52	8191.33	2042.33	1384.57
108	23.39	736.55	5.52	8191.33	2042.33	1384.57
109	23.39	741.62	5.52	8142.45	2030.14	1376.30
109	23.39	741.62	5.52	8142.45	2030.14	1376.30
110	23.39	746.69	5.52	8093.58	2017.96	1368.04
110	23.39	746.69	5.52	8093.58	2017.96	1368.04
111	23.39	751.76	5.52	8044.70	2005.77	1359.78
111	23.39	751.76	5.52	8044.70	2005.77	1359.78
112	23.39	756.83	5.52	7995.82	1993.58	1351.52
112	23.39	756.83	5.52	7995.82	1993.58	1351.52
113	23.39	761.90	5.52	7946.94	1981.40	1343.26
113	23.39	761.90	5.52	7946.94	1981.40	1343.26
114	23.39	766.97	5.52	7898.06	1969.21	1335.00
114	23.39	766.97	5.52	7898.06	1969.21	1335.00
115	23.39	772.02	5.48	7868.57	1961.85	1330.01
115	23.39	772.02	5.48	7868.57	1961.85	1330.01
116	23.39	777.05	5.48	7858.46	1959.33	1328.30
116	23.39	777.05	5.48	7858.46	1959.33	1328.30
117	23.39	782.08	5.48	7848.35	1956.81	1326.59
117	23.39	782.08	5.48	7848.35	1956.81	1326.59
118	51.89	787.08	8.03	5805.97	2595.76	1759.76
118	51.89	787.08	8.03	5805.97	2595.76	1759.76
119	51.89	792.03	8.03	5433.37	2445.22	1657.70
119	51.89	792.03	8.03	5433.37	2445.22	1657.70
120	51.89	796.98	8.03	5060.77	2294.68	1555.65
120	51.89	796.98	8.03	5060.77	2294.68	1555.65
121	51.89	801.94	8.03	4688.17	2144.14	1453.59
121	51.89	801.94	8.03	4688.17	2144.14	1453.59
122	51.89	806.89	8.03	4315.57	1993.60	1351.53
122	51.89	806.89	8.03	4315.57	1993.60	1351.53
123	51.89	811.85	8.03	3942.97	1843.06	1249.48
123	51.89	811.85	8.03	3942.97	1843.06	1249.48
124	51.89	816.80	8.03	3570.37	1692.52	1147.42
124	51.89	816.80	8.03	3570.37	1692.52	1147.42
125	51.89	821.75	8.03	3197.77	1541.98	1045.36
125	51.89	821.75	8.03	3197.77	1541.98	1045.36
126	51.89	826.71	8.03	2825.17	1391.44	943.31
126	51.89	826.71	8.03	2825.17	1391.44	943.31
127	51.89	831.66	8.03	2452.57	1240.90	841.25
127	51.89	831.66	8.03	2452.57	1240.90	841.25
128	51.89	836.62	8.03	2079.97	1090.36	739.19
128	51.89	836.62	8.03	2079.97	1090.36	739.19
129	51.89	841.57	8.03	1707.37	939.82	637.14
129	51.89	841.57	8.03	1707.37	939.82	637.14
130	51.89	846.52	8.03	1334.77	789.28	535.08
130	51.89	846.52	8.03	1334.77	789.28	535.08
131	46.63	851.80	8.16	1068.38	681.65	462.12
131	46.63	851.80	8.16	1068.38	681.65	462.12
132	46.63	857.40	8.16	737.76	548.08	371.56
132	46.63	857.40	8.16	737.76	548.08	371.56
133	46.63	862.55	6.84	422.55	420.72	285.22
133	46.63	862.55	6.84	422.55	420.72	285.22
134	46.63	867.25	6.84	122.74	299.59	203.10
134	46.63	867.25	6.84	122.74	299.59	203.10
135	62.55	870.02	1.80	49.88	20.15	13.66
135	62.55	870.02	1.80	49.88	20.15	13.66

Table 4 - Base Force Data on the 135 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-39.24	210.15	5.86	2890.39	2458.09	1666.42
1	-39.24	210.15	5.86	2890.39	2458.09	1666.42
2	-39.24	214.69	5.86	6793.20	4195.73	2844.43
2	-39.24	214.69	5.86	6793.20	4195.73	2844.43
3	-44.66	219.65	7.58	16387.61	8813.23	5974.80
3	-44.66	219.65	7.58	16387.61	8813.23	5974.80
4	-44.66	225.05	7.58	24122.99	12257.24	8309.62
4	-44.66	225.05	7.58	24122.99	12257.24	8309.62
5	-44.66	230.44	7.58	31858.37	15701.25	10644.43
5	-44.66	230.44	7.58	31858.37	15701.25	10644.43
6	-44.66	234.43	3.62	17383.55	7929.04	5375.38
6	-44.66	234.43	3.62	17383.55	7929.04	5375.38
7	-44.66	237.00	3.62	19074.87	8612.38	5838.63
7	-44.66	237.00	3.62	19074.87	8612.38	5838.63
8	-8.03	240.77	5.00	19492.83	4860.11	3294.84
8	-8.03	240.77	5.00	19492.83	4860.11	3294.84
9	-8.03	245.72	5.00	20183.61	5032.34	3411.60
9	-8.03	245.72	5.00	20183.61	5032.34	3411.60
10	-8.03	250.67	5.00	20874.38	5204.57	3528.36
10	-8.03	250.67	5.00	20874.38	5204.57	3528.36
11	-8.03	255.62	5.00	21565.16	5376.80	3645.12
11	-8.03	255.62	5.00	21565.16	5376.80	3645.12
12	-8.03	260.57	5.00	22255.94	5549.03	3761.88
12	-8.03	260.57	5.00	22255.94	5549.03	3761.88
13	-8.03	265.52	5.00	22946.71	5721.26	3878.64
13	-8.03	265.52	5.00	22946.71	5721.26	3878.64
14	-13.04	270.10	4.31	20788.62	5183.18	3513.86
14	-13.04	270.10	4.31	20788.62	5183.18	3513.86
15	-13.04	274.30	4.31	21508.21	5362.60	3635.49
15	-13.04	274.30	4.31	21508.21	5362.60	3635.49
16	-13.04	279.00	5.34	27774.56	6924.98	4694.68
16	-13.04	279.00	5.34	27774.56	6924.98	4694.68

17	-13.04	284.21	5.34	29116.90	7259.66	4921.58
17	-13.04	284.21	5.34	29116.90	7259.66	4921.58
18	-13.04	289.42	5.34	30459.23	7594.34	5148.47
18	-13.04	289.42	5.34	30459.23	7594.34	5148.47
19	-13.04	294.62	5.34	31801.57	7929.02	5375.36
19	-13.04	294.62	5.34	31801.57	7929.02	5375.36
20	-2.88	299.99	5.54	32957.49	8217.22	5570.74
20	-2.88	299.99	5.54	32957.49	8217.22	5570.74
21	-2.88	305.53	5.54	33715.46	8406.21	5698.86
21	-2.88	305.53	5.54	33715.46	8406.21	5698.86
22	-2.88	310.74	4.89	30361.16	7569.89	5131.89
22	-2.88	310.74	4.89	30361.16	7569.89	5131.89
23	-2.88	315.62	4.89	30991.48	7727.04	5238.43
23	-2.88	315.62	4.89	30991.48	7727.04	5238.43
24	-2.88	320.50	4.89	31621.80	7884.20	5344.98
24	-2.88	320.50	4.89	31621.80	7884.20	5344.98
25	-2.88	325.38	4.89	32252.11	8041.35	5451.52
25	-2.88	325.38	4.89	32252.11	8041.35	5451.52
26	-2.88	330.26	4.89	32882.43	8198.51	5558.06
26	-2.88	330.26	4.89	32882.43	8198.51	5558.06
27	-2.88	335.38	5.37	36812.94	9178.50	6222.42
27	-2.88	335.38	5.37	36812.94	9178.50	6222.42
28	-2.88	340.75	5.37	37422.25	9330.42	6325.42
28	-2.88	340.75	5.37	37422.25	9330.42	6325.42
29	-2.88	346.12	5.37	38031.57	9482.33	6428.41
29	-2.88	346.12	5.37	38031.57	9482.33	6428.41
30	-2.88	350.46	3.32	23890.03	5956.45	4038.09
30	-2.88	350.46	3.32	23890.03	5956.45	4038.09
31	-2.88	353.78	3.32	24245.72	6045.14	4098.21
31	-2.88	353.78	3.32	24245.72	6045.14	4098.21
32	-2.88	357.93	4.99	37094.54	9248.71	6270.02
32	-2.88	357.93	4.99	37094.54	9248.71	6270.02
33	-2.88	362.92	4.99	37897.38	9448.88	6405.73
33	-2.88	362.92	4.99	37897.38	9448.88	6405.73
34	-2.88	367.91	4.99	38700.23	9649.05	6541.43
34	-2.88	367.91	4.99	38700.23	9649.05	6541.43
35	-0.52	372.87	4.94	38762.34	9664.54	6551.93
35	-0.52	372.87	4.94	38762.34	9664.54	6551.93
36	-0.52	377.82	4.94	39423.42	9829.36	6663.67
36	-0.52	377.82	4.94	39423.42	9829.36	6663.67
37	-0.52	382.76	4.94	40084.50	9994.19	6775.41
37	-0.52	382.76	4.94	40084.50	9994.19	6775.41
38	-0.52	387.71	4.94	40745.58	10159.01	6887.15
38	-0.52	387.71	4.94	40745.58	10159.01	6887.15
39	-0.52	392.65	4.94	41406.66	10323.84	6998.89
39	-0.52	392.65	4.94	41406.66	10323.84	6998.89
40	-0.52	397.59	4.94	42067.74	10488.66	7110.63
40	-0.52	397.59	4.94	42067.74	10488.66	7110.63
41	-0.52	402.54	4.94	42728.82	10653.49	7222.37
41	-0.52	402.54	4.94	42728.82	10653.49	7222.37
42	-0.52	407.48	4.94	43389.89	10818.32	7334.12
42	-0.52	407.48	4.94	43389.89	10818.32	7334.12
43	-0.52	412.43	4.94	44050.97	10983.14	7445.86
43	-0.52	412.43	4.94	44050.97	10983.14	7445.86
44	5.31	415.65	1.51	13293.44	3314.43	2246.97
44	5.31	415.65	1.51	13293.44	3314.43	2246.97
45	5.31	418.90	5.02	44429.89	11077.62	7509.91
45	5.31	418.90	5.02	44429.89	11077.62	7509.91
46	5.31	423.90	5.02	44557.38	11109.40	7531.45
46	5.31	423.90	5.02	44557.38	11109.40	7531.45
47	5.31	428.90	5.02	44684.86	11141.19	7553.00
47	5.31	428.90	5.02	44684.86	11141.19	7553.00
48	5.31	433.90	5.02	44812.35	11172.97	7574.55
48	5.31	433.90	5.02	44812.35	11172.97	7574.55
49	5.31	438.90	5.02	44939.83	11204.76	7596.10
49	5.31	438.90	5.02	44939.83	11204.76	7596.10
50	5.31	443.93	5.09	45664.35	11385.40	7718.56
50	5.31	443.93	5.09	45664.35	11385.40	7718.56
51	5.31	449.00	5.09	45785.81	11415.68	7739.09
51	5.31	449.00	5.09	45785.81	11415.68	7739.09
52	5.31	454.07	5.09	45907.27	11445.97	7759.62
52	5.31	454.07	5.09	45907.27	11445.97	7759.62
53	5.31	459.13	5.09	46028.73	11476.25	7780.15
53	5.31	459.13	5.09	46028.73	11476.25	7780.15
54	5.31	464.20	5.09	46150.18	11506.53	7800.68
54	5.31	464.20	5.09	46150.18	11506.53	7800.68
55	5.31	469.27	5.09	46271.64	11536.82	7821.21
55	5.31	469.27	5.09	46271.64	11536.82	7821.21
56	5.31	474.33	5.09	46393.10	11567.10	7841.74
56	5.31	474.33	5.09	46393.10	11567.10	7841.74
57	5.31	479.40	5.09	46514.56	11597.38	7862.27
57	5.31	479.40	5.09	46514.56	11597.38	7862.27
58	5.31	484.47	5.09	46636.02	11627.66	7882.80
58	5.31	484.47	5.09	46636.02	11627.66	7882.80
59	5.31	489.53	5.09	46757.47	11657.95	7903.33
59	5.31	489.53	5.09	46757.47	11657.95	7903.33
60	5.31	494.60	5.09	46878.93	11688.23	7923.86
60	5.31	494.60	5.09	46878.93	11688.23	7923.86
61	5.31	499.67	5.09	47000.39	11718.51	7944.39
61	5.31	499.67	5.09	47000.39	11718.51	7944.39
62	5.31	504.73	5.09	47121.85	11748.80	7964.92
62	5.31	504.73	5.09	47121.85	11748.80	7964.92
63	5.31	509.80	5.09	47243.31	11779.08	7985.45
63	5.31	509.80	5.09	47243.31	11779.08	7985.45
64	5.31	514.87	5.09	47364.76	11809.36	8005.98
64	5.31	514.87	5.09	47364.76	11809.36	8005.98
65	5.31	519.91	5.04	46863.40	11684.36	7921.24
65	5.31	519.91	5.04	46863.40	11684.36	7921.24
66	5.31	524.92	5.04	46675.23	11637.44	7889.43
66	5.31	524.92	5.04	46675.23	11637.44	7889.43
67	5.31	529.94	5.04	46487.07	11590.53	7857.63
67	5.31	529.94	5.04	46487.07	11590.53	7857.63
68	5.31	534.96	5.04	46298.90	11543.61	7825.82
68	5.31	534.96	5.04	46298.90	11543.61	7825.82
69	5.31	539.98	5.04	46110.74	11496.70	7794.02
69	5.31	539.98	5.04	46110.74	11496.70	7794.02
70	5.31	544.99	5.04	45922.58	11449.78	7762.21
70	5.31	544.99	5.04	45922.58	11449.78	7762.21
71	5.31	549.96	4.95	45175.58	11263.54	7635.95
71	5.31	549.96	4.95	45175.58	11263.54	7635.95
72	5.31	554.89	4.95	45514.10	11347.94	7693.17
72	5.31	554.89	4.95	45514.10	11347.94	7693.17
73	5.31	559.82	4.95	45852.62	11432.34	7750.39
73	5.31	559.82	4.95	45852.62	11432.34	7750.39
74	5.31	564.74	4.95	46191.14	11516.74	7807.60
74	5.31	564.74	4.95	46191.14	11516.74	7807.60
75	5.31	569.67	4.95	46529.65	11601.15	7864.82
75	5.31	569.67	4.95	46529.65	11601.15	7864.82
76	5.31	574.60	4.95	46868.17	11685.55	7922.04
76	5.31	574.60	4.95	46868.17	11685.55	7922.04

77	5.31	579.52	4.95	47206.69	11769.95	7979.26
77	5.31	579.52	4.95	47206.69	11769.95	7979.26
78	5.31	584.45	4.95	47545.21	11854.35	8036.48
78	5.31	584.45	4.95	47545.21	11854.35	8036.48
79	5.31	589.38	4.95	47883.73	11938.75	8093.70
79	5.31	589.38	4.95	47883.73	11938.75	8093.70
80	5.31	594.30	4.95	48222.24	12023.16	8150.92
80	5.31	594.30	4.95	48222.24	12023.16	8150.92
81	5.31	599.23	4.95	48560.76	12107.56	8208.14
81	5.31	599.23	4.95	48560.76	12107.56	8208.14
82	5.31	604.16	4.95	48899.28	12191.96	8265.36
82	5.31	604.16	4.95	48899.28	12191.96	8265.36
83	5.31	609.08	4.95	49237.80	12276.36	8322.58
83	5.31	609.08	4.95	49237.80	12276.36	8322.58
84	5.31	614.01	4.95	49576.32	12360.76	8379.80
84	5.31	614.01	4.95	49576.32	12360.76	8379.80
85	5.31	618.94	4.95	49914.83	12445.17	8437.01
85	5.31	618.94	4.95	49914.83	12445.17	8437.01
86	23.39	624.12	5.92	56121.41	13992.64	9486.10
86	23.39	624.12	5.92	56121.41	13992.64	9486.10
87	23.39	629.55	5.92	55326.70	13794.50	9351.77
87	23.39	629.55	5.92	55326.70	13794.50	9351.77
88	23.39	634.98	5.92	54532.00	13596.35	9217.45
88	23.39	634.98	5.92	54532.00	13596.35	9217.45
89	23.39	640.23	5.52	50371.95	12559.14	8514.28
89	23.39	640.23	5.52	50371.95	12559.14	8514.28
90	23.39	645.30	5.52	50101.99	12491.83	8468.65
90	23.39	645.30	5.52	50101.99	12491.83	8468.65
91	23.39	650.37	5.52	49832.02	12424.52	8423.02
91	23.39	650.37	5.52	49832.02	12424.52	8423.02
92	23.39	655.44	5.52	49562.06	12357.21	8377.39
92	23.39	655.44	5.52	49562.06	12357.21	8377.39
93	23.39	660.51	5.52	49292.09	12289.90	8331.75
93	23.39	660.51	5.52	49292.09	12289.90	8331.75
94	23.39	665.58	5.52	49022.13	12222.59	8286.12
94	23.39	665.58	5.52	49022.13	12222.59	8286.12
95	23.39	670.65	5.52	48752.16	12155.28	8240.49
95	23.39	670.65	5.52	48752.16	12155.28	8240.49
96	23.39	675.72	5.52	48482.20	12087.97	8194.86
96	23.39	675.72	5.52	48482.20	12087.97	8194.86
97	23.39	680.79	5.52	48212.23	12020.66	8149.23
97	23.39	680.79	5.52	48212.23	12020.66	8149.23
98	23.39	685.86	5.52	47942.27	11953.35	8103.60
98	23.39	685.86	5.52	47942.27	11953.35	8103.60
99	23.39	690.93	5.52	47672.30	11886.04	8057.96
99	23.39	690.93	5.52	47672.30	11886.04	8057.96
100	23.39	696.00	5.52	47402.34	11818.73	8012.33
100	23.39	696.00	5.52	47402.34	11818.73	8012.33
101	23.39	701.07	5.52	47132.37	11751.42	7966.70
101	23.39	701.07	5.52	47132.37	11751.42	7966.70
102	23.39	706.13	5.52	46862.41	11684.11	7921.07
102	23.39	706.13	5.52	46862.41	11684.11	7921.07
103	23.39	711.20	5.52	46592.45	11616.80	7875.44
103	23.39	711.20	5.52	46592.45	11616.80	7875.44
104	23.39	716.27	5.52	46322.48	11549.49	7829.81
104	23.39	716.27	5.52	46322.48	11549.49	7829.81
105	23.39	721.34	5.52	46052.52	11482.18	7784.17
105	23.39	721.34	5.52	46052.52	11482.18	7784.17
106	23.39	726.41	5.52	45782.55	11414.87	7738.54
106	23.39	726.41	5.52	45782.55	11414.87	7738.54
107	23.39	731.48	5.52	45512.59	11347.56	7692.91
107	23.39	731.48	5.52	45512.59	11347.56	7692.91
108	23.39	736.55	5.52	45242.62	11280.25	7647.28
108	23.39	736.55	5.52	45242.62	11280.25	7647.28
109	23.39	741.62	5.52	44972.66	11212.94	7601.65
109	23.39	741.62	5.52	44972.66	11212.94	7601.65
110	23.39	746.69	5.52	44702.69	11145.63	7556.02
110	23.39	746.69	5.52	44702.69	11145.63	7556.02
111	23.39	751.76	5.52	44432.73	11078.32	7510.38
111	23.39	751.76	5.52	44432.73	11078.32	7510.38
112	23.39	756.83	5.52	44162.76	11011.01	7464.75
112	23.39	756.83	5.52	44162.76	11011.01	7464.75
113	23.39	761.90	5.52	43892.80	10943.70	7419.12
113	23.39	761.90	5.52	43892.80	10943.70	7419.12
114	23.39	766.97	5.52	43622.83	10876.39	7373.49
114	23.39	766.97	5.52	43622.83	10876.39	7373.49
115	23.39	772.02	5.48	43152.17	10759.04	7293.93
115	23.39	772.02	5.48	43152.17	10759.04	7293.93
116	23.39	777.05	5.48	43096.72	10745.22	7284.56
116	23.39	777.05	5.48	43096.72	10745.22	7284.56
117	23.39	782.08	5.48	43041.28	10731.40	7275.19
117	23.39	782.08	5.48	43041.28	10731.40	7275.19
118	51.89	787.08	8.03	46601.62	20834.90	14124.71
118	51.89	787.08	8.03	46601.62	20834.90	14124.71
119	51.89	792.03	8.03	43610.94	19626.59	13305.55
119	51.89	792.03	8.03	43610.94	19626.59	13305.55
120	51.89	796.98	8.03	40620.26	18418.28	12486.40
120	51.89	796.98	8.03	40620.26	18418.28	12486.40
121	51.89	801.94	8.03	37629.59	17209.96	11667.24
121	51.89	801.94	8.03	37629.59	17209.96	11667.24
122	51.89	806.89	8.03	34638.91	16001.65	10848.08
122	51.89	806.89	8.03	34638.91	16001.65	10848.08
123	51.89	811.85	8.03	31648.24	14793.34	10028.93
123	51.89	811.85	8.03	31648.24	14793.34	10028.93
124	51.89	816.80	8.03	28657.56	13585.03	9209.77
124	51.89	816.80	8.03	28657.56	13585.03	9209.77
125	51.89	821.75	8.03	25666.89	12376.72	8390.61
125	51.89	821.75	8.03	25666.89	12376.72	8390.61
126	51.89	826.71	8.03	22676.21	11168.41	7571.46
126	51.89	826.71	8.03	22676.21	11168.41	7571.46
127	51.89	831.66	8.03	19685.53	9960.10	6752.30
127	51.89	831.66	8.03	19685.53	9960.10	6752.30
128	51.89	836.62	8.03	16694.86	8751.78	5933.14
128	51.89	836.62	8.03	16694.86	8751.78	5933.14
129	51.89	841.57	8.03	13704.18	7543.47	5113.99
129	51.89	841.57	8.03	13704.18	7543.47	5113.99
130	51.89	846.52	8.03	10713.51	6335.16	4294.83
130	51.89	846.52	8.03	10713.51	6335.16	4294.83
131	46.63	851.80	8.16	8713.31	5559.31	3768.85
131	46.63	851.80	8.16	8713.31	5559.31	3768.85
132	46.63	857.40	8.16	6016.92	4469.90	3030.30
132	46.63	857.40	8.16	6016.92	4469.90	3030.30
133	46.63	862.55	6.84	2892.09	2879.58	1952.17
133	46.63	862.55	6.84	2892.09	2879.58	1952.17
134	46.63	867.25	6.84	840.06	2050.50	1390.11
134	46.63	867.25	6.84	840.06	2050.50	1390.11
135	62.55	870.02	1.80	89.96	36.35	24.64
135	62.55	870.02	1.80	89.96	36.35	24.64

Sum of the Resisting Forces = 1275468.08 (lbs)

Average Available Shear Strength = 1721.66(psf)

Sum of the Driving Forces = 922091.09 (lbs)

Average Mobilized Shear Stress = 1244.66(psf)

Total length of the failure surface = 740.84(ft)

Factor of Safety Balance Check: FS = 1.38323

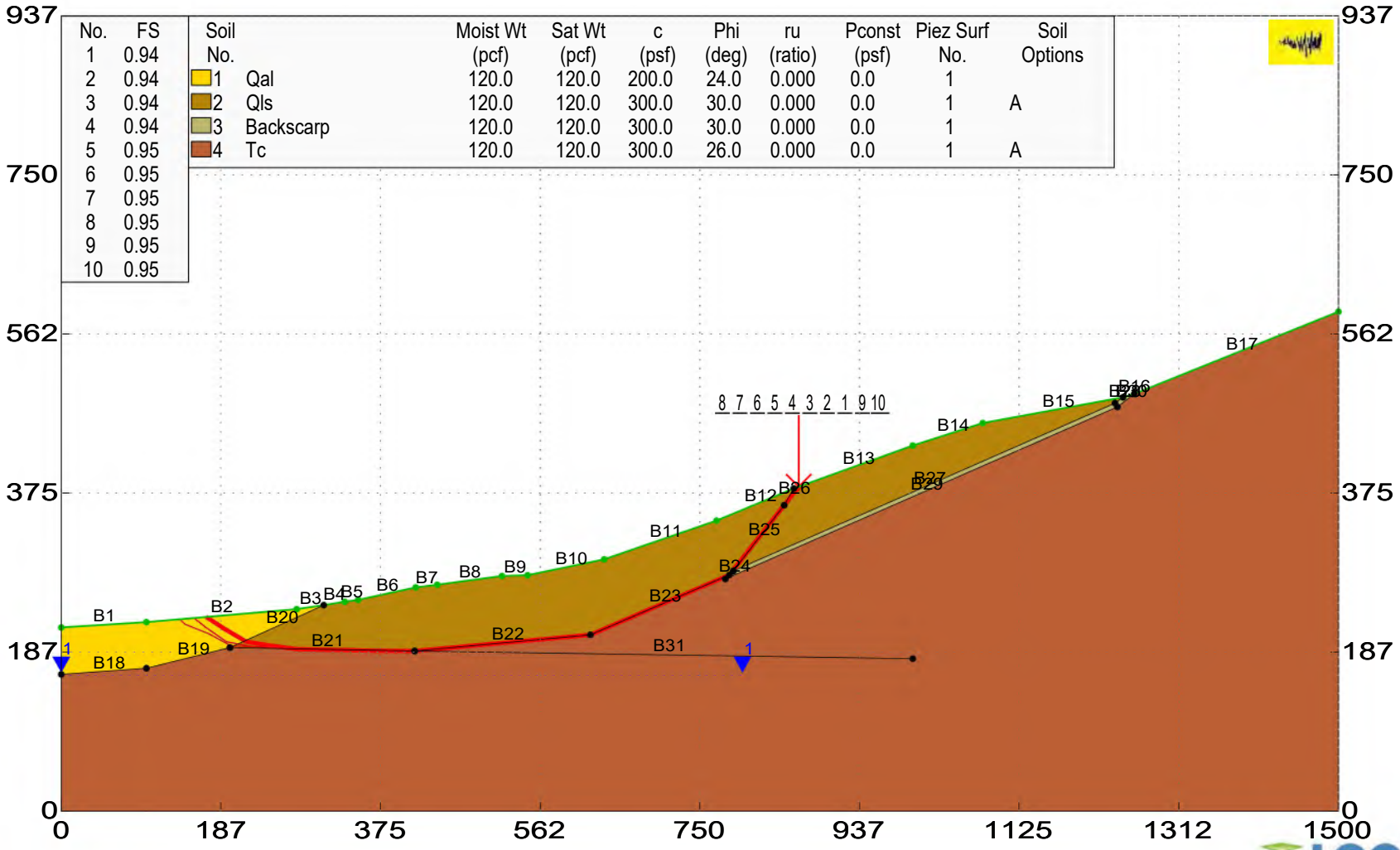
Janbu's Correction Factor (fo) = 1.0655

Janub's FS Corrected = 1.47377

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Existing - Smaller Qls - Seismic

LGC Geotechnical, Inc. \xhe.gsd



GEOSTASE FS = 0.94

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

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** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 3/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhe.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhe.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Existing - Smaller Qls - Seismic

BOUNDARY DATA

17 Surface Boundaries
31 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	216.400	100.000	222.900	1
2	100.000	222.900	276.400	238.000	1
3	276.400	238.000	308.300	242.900	1
4	308.300	242.900	332.700	247.000	2
5	332.700	247.000	348.800	249.000	2
6	348.800	249.000	416.400	263.600	2
7	416.400	263.600	441.400	267.000	2
8	441.400	267.000	517.400	277.100	2
9	517.400	277.100	547.500	278.000	2
10	547.500	278.000	637.700	297.000	2
11	637.700	297.000	769.500	342.600	2
12	769.500	342.600	860.200	380.200	2
13	860.200	380.200	1000.000	430.900	2
14	1000.000	430.900	1082.100	457.600	2
15	1082.100	457.600	1247.000	487.900	2
16	1247.000	487.900	1260.400	491.900	3
17	1260.400	491.900	1500.000	588.800	4
18	0.000	161.100	100.000	168.300	4
19	100.000	168.300	198.100	192.800	4
20	198.100	192.800	308.300	242.900	2
21	198.100	192.800	414.900	188.600	4
22	414.900	188.600	621.400	207.800	4
23	621.400	207.800	784.600	278.400	4
24	779.900	273.600	789.300	283.200	3
25	789.300	283.200	849.000	360.500	2
26	849.000	360.500	860.200	380.200	2
27	789.300	283.200	1237.700	480.800	3
28	1237.700	480.800	1247.000	487.900	3
29	779.900	273.600	1240.300	476.500	4
30	1240.300	476.500	1260.400	491.900	4
31	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 30.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	369.00	189.70	5.00
2	370.40	189.00	370.40	189.00	0.00
3	414.90	188.60	414.90	188.60	0.00
4	621.40	207.80	621.40	207.80	0.00
5	784.60	278.40	784.60	278.40	0.00
6	849.00	360.50	849.00	360.50	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.201 FS Min = 0.944 FS Ave = 1.042
Standard Deviation = 0.056 Coefficient of Variation = 5.40 %

Critical Surface is Sequence Number 233 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 0.944

Table 1 - Geometry Data on the 141 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.35	1.97	172.74	227.16	229.13	-33.05	4.89	6.38
2	5.35	5.90	178.08	223.68	229.58	-33.05	4.89	6.38
3	5.35	9.84	183.43	220.20	230.04	-33.05	4.89	6.38
4	5.35	13.77	188.77	216.73	230.50	-33.05	4.89	6.38
5	4.78	17.38	193.84	213.55	230.93	-30.94	4.89	5.58
6	4.78	20.66	198.62	210.69	231.34	-30.94	4.89	5.58
7	4.78	23.93	203.40	207.82	231.75	-30.94	4.89	5.58
8	4.78	27.21	208.19	204.95	232.16	-30.94	4.89	5.58
9	4.78	30.49	212.97	202.08	232.57	-30.94	4.89	5.58
10	1.81	32.75	216.27	200.11	232.85	-30.94	4.89	2.11
11	4.94	33.97	219.64	199.17	233.14	-8.98	4.89	5.00
12	4.94	35.17	224.58	198.39	233.56	-8.98	4.89	5.00
13	4.94	36.37	229.52	197.61	233.99	-8.98	4.89	5.00
14	4.94	37.58	234.46	196.83	234.41	-8.98	4.89	5.00
15	4.94	38.78	239.40	196.05	234.83	-8.98	4.89	5.00
16	4.94	39.98	244.34	195.27	235.26	-8.98	4.89	5.00
17	5.14	41.16	249.38	194.53	235.69	-7.81	4.89	5.19
18	5.14	42.30	254.52	193.83	236.13	-7.81	4.89	5.19
19	5.14	43.45	259.66	193.12	236.57	-7.81	4.89	5.19
20	5.14	44.59	264.80	192.42	237.01	-7.81	4.89	5.19
21	5.14	45.74	269.94	191.71	237.45	-7.81	4.89	5.19
22	3.89	46.74	274.45	191.09	237.83	-7.81	4.89	3.93

23	0.13	47.19	276.46	190.82	238.01	-7.81	8.73	0.13
24	5.30	47.67	279.18	190.76	238.43	-1.10	8.73	5.30
25	5.30	48.59	284.47	190.65	239.24	-1.10	8.73	5.30
26	5.30	49.50	289.77	190.55	240.05	-1.10	8.73	5.30
27	5.30	50.42	295.06	190.45	240.87	-1.10	8.73	5.30
28	5.30	51.33	300.36	190.35	241.68	-1.10	8.73	5.30
29	5.30	52.25	305.65	190.25	242.49	-1.10	8.73	5.30
30	4.88	53.16	310.74	190.15	243.31	-1.10	9.54	4.88
31	4.88	54.08	315.62	190.05	244.13	-1.10	9.54	4.88
32	4.88	54.99	320.50	189.96	244.95	-1.10	9.54	4.88
33	4.88	55.90	325.38	189.87	245.77	-1.10	9.54	4.88
34	4.88	56.82	330.26	189.77	246.59	-1.10	9.54	4.88
35	5.37	57.66	335.38	189.67	247.33	-1.10	7.08	5.37
36	5.37	58.43	340.75	189.57	248.00	-1.10	7.08	5.37
37	5.37	59.20	346.12	189.47	248.67	-1.10	7.08	5.37
38	5.40	60.22	351.50	189.36	249.58	-1.10	12.19	5.40
39	5.40	61.49	356.90	189.26	250.75	-1.10	12.19	5.40
40	5.40	62.76	362.30	189.16	251.92	-1.10	12.19	5.40
41	5.40	64.03	367.70	189.05	253.08	-1.10	12.19	5.40
42	4.94	65.22	372.87	188.98	254.20	-0.52	12.19	4.94
43	4.94	66.33	377.82	188.93	255.27	-0.52	12.19	4.94
44	4.94	67.45	382.76	188.89	256.33	-0.52	12.19	4.94
45	4.94	68.56	387.71	188.84	257.40	-0.52	12.19	4.94
46	4.94	69.67	392.65	188.80	258.47	-0.52	12.19	4.94
47	4.94	70.78	397.59	188.76	259.54	-0.52	12.19	4.94
48	4.94	71.90	402.54	188.71	260.61	-0.52	12.19	4.94
49	4.94	73.01	407.48	188.67	261.67	-0.52	12.19	4.94
50	4.94	74.12	412.43	188.62	262.74	-0.52	12.19	4.94
51	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
52	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
53	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
54	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
55	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
56	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
57	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
58	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
59	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
60	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
61	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
62	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
63	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
64	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
65	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
66	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
67	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
68	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
69	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
70	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
71	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
72	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
73	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
74	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
75	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
76	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
77	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
78	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
79	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
80	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
81	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
82	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
83	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
84	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
85	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
86	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
87	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
88	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
89	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
90	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
91	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
92	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
93	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
94	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
95	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
96	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
97	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
98	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
99	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
100	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
101	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
102	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
103	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
104	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
105	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
106	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
107	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
108	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
109	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
110	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
111	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
112	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
113	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
114	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
115	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
116	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
117	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
118	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
119	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
120	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
121	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
122	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
123	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
124	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
125	4.95	68.33	787.08	281.56	349.89	51.89	22.52	8.03
126	4.95	64.07	792.03	287.87	351.94	51.89	22.52	8.03
127	4.95	59.81	796.98	294.19	353.99	51.89	22.52	8.03
128	4.95	55.54	801.94	300.50	356.05	51.89	22.52	8.03
129	4.95	51.28	806.89	306.82	358.10	51.89	22.52	8.03
130	4.95	47.02	811.85	313.13	360.15	51.89	22.52	8.03
131	4.95	42.76	816.80	319.45	362.21	51.89	22.52	8.03
132	4.95	38.50	821.75	325.77	364.26	51.89	22.52	8.03
133	4.95	34.23	826.71	332.08	366.32	51.89	22.52	8.03
134	4.95	29.97	831.66	338.40	368.37	51.89	22.52	8.03
135	4.95	25.71	836.62	344.71	370.42	51.89	22.52	8.03
136	4.95	21.45	841.57	351.03	372.48	51.89	22.52	8.03
137	4.95	17.19	846.52	357.34	374.53	51.89	22.52	8.03
138	5.60	12.64	851.80	364.08	376.72	51.99	22.52	9.09
139	5.60	7.79	857.40	371.25	379.04	51.99	22.52	9.09
140	2.93	4.03	861.66	376.70	380.73	51.99	19.93	4.76
141	2.93	1.34	864.59	380.45	381.79	51.99	19.93	4.76

Table 2 - Force Data On The 141 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1262.1	0.0	0.0	189.3	0.0	0.0
2	3786.2	0.0	0.0	567.9	0.0	0.0
3	6310.3	0.0	0.0	946.5	0.0	0.0
4	8834.4	0.0	0.0	1325.2	0.0	0.0
5	9977.7	0.0	0.0	1496.7	0.0	0.0
6	11859.1	0.0	0.0	1778.9	0.0	0.0
7	13740.4	0.0	0.0	2061.1	0.0	0.0
8	15621.8	0.0	0.0	2343.3	0.0	0.0
9	17503.1	0.0	0.0	2625.5	0.0	0.0
10	7116.6	0.0	0.0	1067.5	0.0	0.0
11	20131.4	0.0	0.0	3019.7	0.0	0.0
12	20844.3	0.0	0.0	3126.6	0.0	0.0
13	21557.2	0.0	0.0	3233.6	0.0	0.0
14	22270.1	0.0	0.0	3340.5	0.0	0.0
15	22983.1	0.0	0.0	3447.5	0.0	0.0
16	23696.0	0.0	0.0	3554.4	0.0	0.0
17	25385.0	0.0	0.0	3807.7	0.0	0.0
18	26091.0	0.0	0.0	3913.7	0.0	0.0
19	26797.1	0.0	0.0	4019.6	0.0	0.0
20	27503.2	0.0	0.0	4125.5	0.0	0.0
21	28209.2	0.0	0.0	4231.4	0.0	0.0
22	21833.1	0.0	0.0	3275.0	0.0	0.0
23	736.2	0.0	0.0	110.4	0.0	0.0
24	30289.9	0.0	0.0	4543.5	0.0	0.0
25	30871.5	0.0	0.0	4630.7	0.0	0.0
26	31453.0	0.0	0.0	4718.0	0.0	0.0
27	32034.6	0.0	0.0	4805.2	0.0	0.0
28	32616.2	0.0	0.0	4892.4	0.0	0.0
29	33197.7	0.0	0.0	4979.7	0.0	0.0
30	31131.4	0.0	0.0	4669.7	0.0	0.0
31	31666.6	0.0	0.0	4750.0	0.0	0.0
32	32201.8	0.0	0.0	4830.3	0.0	0.0
33	32737.0	0.0	0.0	4910.6	0.0	0.0
34	33272.2	0.0	0.0	4990.8	0.0	0.0
35	37132.6	0.0	0.0	5569.9	0.0	0.0
36	37628.4	0.0	0.0	5644.3	0.0	0.0
37	38124.3	0.0	0.0	5718.6	0.0	0.0
38	39022.1	0.0	0.0	5853.3	0.0	0.0
39	39845.2	0.0	0.0	5976.8	0.0	0.0
40	40668.3	0.0	0.0	6100.2	0.0	0.0
41	41491.4	0.0	0.0	6223.7	0.0	0.0
42	38697.9	0.0	0.0	5804.7	0.0	0.0
43	39357.9	0.0	0.0	5903.7	0.0	0.0
44	40017.9	0.0	0.0	6002.7	0.0	0.0
45	40677.9	0.0	0.0	6101.7	0.0	0.0
46	41337.9	0.0	0.0	6200.7	0.0	0.0
47	41997.8	0.0	0.0	6299.7	0.0	0.0
48	42657.8	0.0	0.0	6398.7	0.0	0.0
49	43317.8	0.0	0.0	6497.7	0.0	0.0
50	43977.8	0.0	0.0	6596.7	0.0	0.0
51	13458.3	0.0	0.0	2018.7	0.0	0.0
52	44980.9	0.0	0.0	6747.1	0.0	0.0
53	45109.9	0.0	0.0	6766.5	0.0	0.0
54	45239.0	0.0	0.0	6785.8	0.0	0.0
55	45368.0	0.0	0.0	6805.2	0.0	0.0
56	45497.1	0.0	0.0	6824.6	0.0	0.0
57	46230.6	0.0	0.0	6934.6	0.0	0.0
58	46353.6	0.0	0.0	6953.0	0.0	0.0
59	46476.5	0.0	0.0	6971.5	0.0	0.0
60	46599.5	0.0	0.0	6989.9	0.0	0.0
61	46722.5	0.0	0.0	7008.4	0.0	0.0
62	46845.4	0.0	0.0	7026.8	0.0	0.0
63	46968.4	0.0	0.0	7045.3	0.0	0.0
64	47091.4	0.0	0.0	7063.7	0.0	0.0
65	47214.3	0.0	0.0	7082.1	0.0	0.0
66	47337.3	0.0	0.0	7100.6	0.0	0.0
67	47460.3	0.0	0.0	7119.0	0.0	0.0
68	47583.2	0.0	0.0	7137.5	0.0	0.0
69	47706.2	0.0	0.0	7155.9	0.0	0.0
70	47829.2	0.0	0.0	7174.4	0.0	0.0
71	47952.1	0.0	0.0	7192.8	0.0	0.0
72	47444.5	0.0	0.0	7116.7	0.0	0.0
73	47254.0	0.0	0.0	7088.1	0.0	0.0
74	47063.5	0.0	0.0	7059.5	0.0	0.0
75	46873.0	0.0	0.0	7031.0	0.0	0.0
76	46682.5	0.0	0.0	7002.4	0.0	0.0
77	46492.0	0.0	0.0	6973.8	0.0	0.0
78	45735.8	0.0	0.0	6860.4	0.0	0.0
79	46078.5	0.0	0.0	6911.8	0.0	0.0
80	46421.2	0.0	0.0	6963.2	0.0	0.0
81	46763.9	0.0	0.0	7014.6	0.0	0.0
82	47106.6	0.0	0.0	7066.0	0.0	0.0
83	47449.4	0.0	0.0	7117.4	0.0	0.0
84	47792.1	0.0	0.0	7168.8	0.0	0.0
85	48134.8	0.0	0.0	7220.2	0.0	0.0
86	48477.5	0.0	0.0	7271.6	0.0	0.0
87	48820.2	0.0	0.0	7323.0	0.0	0.0
88	49162.9	0.0	0.0	7374.4	0.0	0.0
89	49505.7	0.0	0.0	7425.8	0.0	0.0
90	49848.4	0.0	0.0	7477.3	0.0	0.0
91	50191.1	0.0	0.0	7528.7	0.0	0.0
92	50533.8	0.0	0.0	7580.1	0.0	0.0
93	55526.6	0.0	0.0	8329.0	0.0	0.0
94	54740.3	0.0	0.0	8211.1	0.0	0.0
95	53954.1	0.0	0.0	8093.1	0.0	0.0
96	49838.1	0.0	0.0	7475.7	0.0	0.0
97	49571.0	0.0	0.0	7435.7	0.0	0.0
98	49303.9	0.0	0.0	7395.6	0.0	0.0
99	49036.8	0.0	0.0	7355.5	0.0	0.0
100	48769.7	0.0	0.0	7315.5	0.0	0.0
101	48502.6	0.0	0.0	7275.4	0.0	0.0
102	48235.5	0.0	0.0	7235.3	0.0	0.0
103	47968.4	0.0	0.0	7195.3	0.0	0.0
104	47701.3	0.0	0.0	7155.2	0.0	0.0
105	47434.2	0.0	0.0	7115.1	0.0	0.0
106	47167.1	0.0	0.0	7075.1	0.0	0.0
107	46900.0	0.0	0.0	7035.0	0.0	0.0
108	46632.9	0.0	0.0	6994.9	0.0	0.0
109	46365.8	0.0	0.0	6954.9	0.0	0.0
110	46098.7	0.0	0.0	6914.8	0.0	0.0
111	45831.5	0.0	0.0	6874.7	0.0	0.0

112	45564.4	0.0	0.0	6834.7	0.0	0.0
113	45297.3	0.0	0.0	6794.6	0.0	0.0
114	45030.2	0.0	0.0	6754.5	0.0	0.0
115	44763.1	0.0	0.0	6714.5	0.0	0.0
116	44496.0	0.0	0.0	6674.4	0.0	0.0
117	44228.9	0.0	0.0	6634.3	0.0	0.0
118	43961.8	0.0	0.0	6594.3	0.0	0.0
119	43694.7	0.0	0.0	6554.2	0.0	0.0
120	43427.6	0.0	0.0	6514.1	0.0	0.0
121	43160.5	0.0	0.0	6474.1	0.0	0.0
122	42694.8	0.0	0.0	6404.2	0.0	0.0
123	42640.0	0.0	0.0	6396.0	0.0	0.0
124	42585.1	0.0	0.0	6387.8	0.0	0.0
125	40618.9	0.0	0.0	6092.8	0.0	0.0
126	38085.4	0.0	0.0	5712.8	0.0	0.0
127	35552.0	0.0	0.0	5332.8	0.0	0.0
128	33018.6	0.0	0.0	4952.8	0.0	0.0
129	30485.1	0.0	0.0	4572.8	0.0	0.0
130	27951.7	0.0	0.0	4192.7	0.0	0.0
131	25418.2	0.0	0.0	3812.7	0.0	0.0
132	22884.8	0.0	0.0	3432.7	0.0	0.0
133	20351.3	0.0	0.0	3052.7	0.0	0.0
134	17817.9	0.0	0.0	2672.7	0.0	0.0
135	15284.4	0.0	0.0	2292.7	0.0	0.0
136	12751.0	0.0	0.0	1912.6	0.0	0.0
137	10217.5	0.0	0.0	1532.6	0.0	0.0
138	8491.1	0.0	0.0	1273.7	0.0	0.0
139	5236.7	0.0	0.0	785.5	0.0	0.0
140	1416.2	0.0	0.0	212.4	0.0	0.0
141	472.1	0.0	0.0	70.8	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 5178504.91(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 5178504.91(lbs)

TOTAL AREA OF SLIDING MASS = 43154.21(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 141 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	1	200.00	24.00	
8	1	200.00	24.00	
9	1	200.00	24.00	
10	2	300.00	30.00	A
11	2	0.00	15.00	A
12	2	0.00	15.00	A
13	2	0.00	15.00	A
14	2	0.00	15.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	4	0.00	15.00	A
23	4	0.00	15.00	A
24	4	0.00	15.00	A
25	4	0.00	15.00	A
26	4	0.00	15.00	A
27	4	0.00	15.00	A
28	4	0.00	15.00	A
29	4	0.00	15.00	A
30	4	0.00	15.00	A
31	4	0.00	15.00	A
32	4	0.00	15.00	A
33	4	0.00	15.00	A
34	4	0.00	15.00	A
35	4	0.00	15.00	A
36	4	0.00	15.00	A
37	4	0.00	15.00	A
38	4	0.00	15.00	A
39	4	0.00	15.00	A
40	4	0.00	15.00	A
41	4	0.00	15.00	A
42	4	0.00	15.00	A
43	4	0.00	15.00	A
44	4	0.00	15.00	A
45	4	0.00	15.00	A
46	4	0.00	15.00	A
47	4	0.00	15.00	A
48	4	0.00	15.00	A
49	4	0.00	15.00	A
50	4	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A
77	2	0.00	15.00	A
78	2	0.00	15.00	A

79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	2	0.00	15.00	A
88	2	0.00	15.00	A
89	2	0.00	15.00	A
90	2	0.00	15.00	A
91	2	0.00	15.00	A
92	2	0.00	15.00	A
93	2	0.00	15.00	A
94	2	0.00	15.00	A
95	2	0.00	15.00	A
96	2	0.00	15.00	A
97	2	0.00	15.00	A
98	2	0.00	15.00	A
99	2	0.00	15.00	A
100	2	0.00	15.00	A
101	2	0.00	15.00	A
102	2	0.00	15.00	A
103	2	0.00	15.00	A
104	2	0.00	15.00	A
105	2	0.00	15.00	A
106	2	0.00	15.00	A
107	2	0.00	15.00	A
108	2	0.00	15.00	A
109	2	0.00	15.00	A
110	2	0.00	15.00	A
111	2	0.00	15.00	A
112	2	0.00	15.00	A
113	2	0.00	15.00	A
114	2	0.00	15.00	A
115	2	0.00	15.00	A
116	2	0.00	15.00	A
117	2	0.00	15.00	A
118	2	0.00	15.00	A
119	2	0.00	15.00	A
120	2	0.00	15.00	A
121	2	0.00	15.00	A
122	2	0.00	15.00	A
123	2	0.00	15.00	A
124	2	0.00	15.00	A
125	2	300.00	30.00	A
126	2	300.00	30.00	A
127	2	300.00	30.00	A
128	2	300.00	30.00	A
129	2	300.00	30.00	A
130	2	300.00	30.00	A
131	2	300.00	30.00	A
132	2	300.00	30.00	A
133	2	300.00	30.00	A
134	2	300.00	30.00	A
135	2	300.00	30.00	A
136	2	300.00	30.00	A
137	2	300.00	30.00	A
138	2	300.00	30.00	A
139	2	300.00	30.00	A
140	2	300.00	30.00	A
141	2	300.00	30.00	A

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 141 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-33.05	172.74	6.38	568.86	453.27	479.32
1	-33.05	172.74	6.38	568.86	453.27	479.32
2	-33.05	178.08	6.38	1270.38	765.61	809.61
2	-33.05	178.08	6.38	1270.38	765.61	809.61
3	-33.05	183.43	6.38	1971.90	1077.94	1139.89
3	-33.05	183.43	6.38	1971.90	1077.94	1139.89
4	-33.05	188.77	6.38	2673.41	1390.28	1470.18
4	-33.05	188.77	6.38	2673.41	1390.28	1470.18
5	-30.94	193.84	5.58	3177.49	1614.71	1707.51
5	-30.94	193.84	5.58	3177.49	1614.71	1707.51
6	-30.94	198.62	5.58	3740.13	1865.21	1972.41
6	-30.94	198.62	5.58	3740.13	1865.21	1972.41
7	-30.94	203.40	5.58	4302.78	2115.72	2237.31
7	-30.94	203.40	5.58	4302.78	2115.72	2237.31
8	-30.94	208.19	5.58	4865.42	2366.22	2502.21
8	-30.94	208.19	5.58	4865.42	2366.22	2502.21
9	-30.94	212.97	5.58	5428.06	2616.73	2767.11
9	-30.94	212.97	5.58	5428.06	2616.73	2767.11
10	-30.94	216.27	2.11	6779.24	4214.00	4456.18
10	-30.94	216.27	2.11	6779.24	4214.00	4456.18
11	-8.98	219.64	5.00	4280.63	1146.99	1212.91
11	-8.98	219.64	5.00	4280.63	1146.99	1212.91
12	-8.98	224.58	5.00	4432.22	1187.61	1255.86
12	-8.98	224.58	5.00	4432.22	1187.61	1255.86
13	-8.98	229.52	5.00	4583.81	1228.23	1298.82
13	-8.98	229.52	5.00	4583.81	1228.23	1298.82
14	-8.98	234.46	5.00	4735.40	1268.85	1341.77
14	-8.98	234.46	5.00	4735.40	1268.85	1341.77
15	-8.98	239.40	5.00	4887.00	1309.47	1384.72
15	-8.98	239.40	5.00	4887.00	1309.47	1384.72
16	-8.98	244.34	5.00	5038.59	1350.09	1427.68
16	-8.98	244.34	5.00	5038.59	1350.09	1427.68
17	-7.81	249.38	5.19	5152.41	1380.58	1459.93
17	-7.81	249.38	5.19	5152.41	1380.58	1459.93
18	-7.81	254.52	5.19	5295.72	1418.98	1500.53
18	-7.81	254.52	5.19	5295.72	1418.98	1500.53
19	-7.81	259.66	5.19	5439.03	1457.38	1541.14
19	-7.81	259.66	5.19	5439.03	1457.38	1541.14
20	-7.81	264.80	5.19	5582.34	1495.78	1581.75
20	-7.81	264.80	5.19	5582.34	1495.78	1581.75
21	-7.81	269.94	5.19	5725.65	1534.18	1622.35
21	-7.81	269.94	5.19	5725.65	1534.18	1622.35

22	-7.81	274.45	3.93	5851.57	1567.92	1658.03
22	-7.81	274.45	3.93	5851.57	1567.92	1658.03
23	-7.81	276.46	0.13	5908.20	1583.10	1674.08
23	-7.81	276.46	0.13	5908.20	1583.10	1674.08
24	-1.10	279.18	5.30	5753.96	1541.77	1630.37
24	-1.10	279.18	5.30	5753.96	1541.77	1630.37
25	-1.10	284.47	5.30	5864.44	1571.37	1661.68
25	-1.10	284.47	5.30	5864.44	1571.37	1661.68
26	-1.10	289.77	5.30	5974.91	1600.97	1692.98
26	-1.10	289.77	5.30	5974.91	1600.97	1692.98
27	-1.10	295.06	5.30	6085.39	1630.57	1724.28
27	-1.10	295.06	5.30	6085.39	1630.57	1724.28
28	-1.10	300.36	5.30	6195.86	1660.18	1755.59
28	-1.10	300.36	5.30	6195.86	1660.18	1755.59
29	-1.10	305.65	5.30	6306.33	1689.78	1786.89
29	-1.10	305.65	5.30	6306.33	1689.78	1786.89
30	-1.10	310.74	4.88	6416.73	1719.36	1818.17
30	-1.10	310.74	4.88	6416.73	1719.36	1818.17
31	-1.10	315.62	4.88	6527.04	1748.92	1849.43
31	-1.10	315.62	4.88	6527.04	1748.92	1849.43
32	-1.10	320.50	4.88	6637.36	1778.47	1880.68
32	-1.10	320.50	4.88	6637.36	1778.47	1880.68
33	-1.10	325.38	4.88	6747.67	1808.03	1911.94
33	-1.10	325.38	4.88	6747.67	1808.03	1911.94
34	-1.10	330.26	4.88	6857.99	1837.59	1943.20
34	-1.10	330.26	4.88	6857.99	1837.59	1943.20
35	-1.10	335.38	5.37	6959.61	1864.82	1971.99
35	-1.10	335.38	5.37	6959.61	1864.82	1971.99
36	-1.10	340.75	5.37	7052.55	1889.73	1998.33
36	-1.10	340.75	5.37	7052.55	1889.73	1998.33
37	-1.10	346.12	5.37	7145.49	1914.63	2024.66
37	-1.10	346.12	5.37	7145.49	1914.63	2024.66
38	-1.10	351.50	5.40	7268.62	1947.62	2059.55
38	-1.10	351.50	5.40	7268.62	1947.62	2059.55
39	-1.10	356.90	5.40	7421.94	1988.70	2102.99
39	-1.10	356.90	5.40	7421.94	1988.70	2102.99
40	-1.10	362.30	5.40	7575.25	2029.78	2146.44
40	-1.10	362.30	5.40	7575.25	2029.78	2146.44
41	-1.10	367.70	5.40	7728.57	2070.86	2189.88
41	-1.10	367.70	5.40	7728.57	2070.86	2189.88
42	-0.52	372.87	4.94	7847.88	2102.83	2223.68
42	-0.52	372.87	4.94	7847.88	2102.83	2223.68
43	-0.52	377.82	4.94	7981.72	2138.70	2261.61
43	-0.52	377.82	4.94	7981.72	2138.70	2261.61
44	-0.52	382.76	4.94	8115.56	2174.56	2299.53
44	-0.52	382.76	4.94	8115.56	2174.56	2299.53
45	-0.52	387.71	4.94	8249.41	2210.42	2337.45
45	-0.52	387.71	4.94	8249.41	2210.42	2337.45
46	-0.52	392.65	4.94	8383.25	2246.28	2375.38
46	-0.52	392.65	4.94	8383.25	2246.28	2375.38
47	-0.52	397.59	4.94	8517.09	2282.15	2413.30
47	-0.52	397.59	4.94	8517.09	2282.15	2413.30
48	-0.52	402.54	4.94	8650.93	2318.01	2451.23
48	-0.52	402.54	4.94	8650.93	2318.01	2451.23
49	-0.52	407.48	4.94	8784.78	2353.87	2489.15
49	-0.52	407.48	4.94	8784.78	2353.87	2489.15
50	-0.52	412.43	4.94	8918.62	2389.74	2527.08
50	-0.52	412.43	4.94	8918.62	2389.74	2527.08
51	5.31	415.65	1.51	8726.90	2338.36	2472.75
51	5.31	415.65	1.51	8726.90	2338.36	2472.75
52	5.31	418.90	5.02	8750.22	2344.61	2479.36
52	5.31	418.90	5.02	8750.22	2344.61	2479.36
53	5.31	423.90	5.02	8775.32	2351.34	2486.47
53	5.31	423.90	5.02	8775.32	2351.34	2486.47
54	5.31	428.90	5.02	8800.43	2358.07	2493.59
54	5.31	428.90	5.02	8800.43	2358.07	2493.59
55	5.31	433.90	5.02	8825.54	2364.80	2500.70
55	5.31	433.90	5.02	8825.54	2364.80	2500.70
56	5.31	438.90	5.02	8850.65	2371.52	2507.82
56	5.31	438.90	5.02	8850.65	2371.52	2507.82
57	5.31	443.93	5.09	8875.00	2378.05	2514.72
57	5.31	443.93	5.09	8875.00	2378.05	2514.72
58	5.31	449.00	5.09	8898.61	2384.37	2521.41
58	5.31	449.00	5.09	8898.61	2384.37	2521.41
59	5.31	454.07	5.09	8922.21	2390.70	2528.09
59	5.31	454.07	5.09	8922.21	2390.70	2528.09
60	5.31	459.13	5.09	8945.82	2397.03	2534.78
60	5.31	459.13	5.09	8945.82	2397.03	2534.78
61	5.31	464.20	5.09	8969.43	2403.35	2541.47
61	5.31	464.20	5.09	8969.43	2403.35	2541.47
62	5.31	469.27	5.09	8993.03	2409.68	2548.16
62	5.31	469.27	5.09	8993.03	2409.68	2548.16
63	5.31	474.33	5.09	9016.64	2416.00	2554.85
63	5.31	474.33	5.09	9016.64	2416.00	2554.85
64	5.31	479.40	5.09	9040.24	2422.33	2561.54
64	5.31	479.40	5.09	9040.24	2422.33	2561.54
65	5.31	484.47	5.09	9063.85	2428.65	2568.23
65	5.31	484.47	5.09	9063.85	2428.65	2568.23
66	5.31	489.53	5.09	9087.45	2434.98	2574.91
66	5.31	489.53	5.09	9087.45	2434.98	2574.91
67	5.31	494.60	5.09	9111.06	2441.30	2581.60
67	5.31	494.60	5.09	9111.06	2441.30	2581.60
68	5.31	499.67	5.09	9134.67	2447.63	2588.29
68	5.31	499.67	5.09	9134.67	2447.63	2588.29
69	5.31	504.73	5.09	9158.27	2453.95	2594.98
69	5.31	504.73	5.09	9158.27	2453.95	2594.98
70	5.31	509.80	5.09	9181.88	2460.28	2601.67
70	5.31	509.80	5.09	9181.88	2460.28	2601.67
71	5.31	514.87	5.09	9205.48	2466.60	2608.36
71	5.31	514.87	5.09	9205.48	2466.60	2608.36
72	5.31	519.91	5.04	9198.82	2464.82	2606.47
72	5.31	519.91	5.04	9198.82	2464.82	2606.47
73	5.31	524.92	5.04	9161.88	2454.92	2596.00
73	5.31	524.92	5.04	9161.88	2454.92	2596.00
74	5.31	529.94	5.04	9124.95	2445.02	2585.54
74	5.31	529.94	5.04	9124.95	2445.02	2585.54
75	5.31	534.96	5.04	9088.01	2435.13	2575.07
75	5.31	534.96	5.04	9088.01	2435.13	2575.07
76	5.31	539.98	5.04	9051.08	2425.23	2564.61
76	5.31	539.98	5.04	9051.08	2425.23	2564.61
77	5.31	544.99	5.04	9014.15	2415.33	2554.14
77	5.31	544.99	5.04	9014.15	2415.33	2554.14
78	5.31	549.96	4.95	9029.51	2419.45	2558.50
78	5.31	549.96	4.95	9029.51	2419.45	2558.50
79	5.31	554.89	4.95	9097.17	2437.58	2577.67
79	5.31	554.89	4.95	9097.17	2437.58	2577.67
80	5.31	559.82	4.95	9164.83	2455.71	2596.84
80	5.31	559.82	4.95	9164.83	2455.71	2596.84
81	5.31	564.74	4.95	9232.49	2473.84	2616.01
81	5.31	564.74	4.95	9232.49	2473.84	2616.01

82	5.31	569.67	4.95	9300.15	2491.97	2635.18
82	5.31	569.67	4.95	9300.15	2491.97	2635.18
83	5.31	574.60	4.95	9367.82	2510.10	2654.35
83	5.31	574.60	4.95	9367.82	2510.10	2654.35
84	5.31	579.52	4.95	9435.48	2528.23	2673.53
84	5.31	579.52	4.95	9435.48	2528.23	2673.53
85	5.31	584.45	4.95	9503.14	2546.36	2692.70
85	5.31	584.45	4.95	9503.14	2546.36	2692.70
86	5.31	589.38	4.95	9570.80	2564.49	2711.87
86	5.31	589.38	4.95	9570.80	2564.49	2711.87
87	5.31	594.30	4.95	9638.46	2582.62	2731.04
87	5.31	594.30	4.95	9638.46	2582.62	2731.04
88	5.31	599.23	4.95	9706.12	2600.75	2750.21
88	5.31	599.23	4.95	9706.12	2600.75	2750.21
89	5.31	604.16	4.95	9773.79	2618.88	2769.39
89	5.31	604.16	4.95	9773.79	2618.88	2769.39
90	5.31	609.08	4.95	9841.45	2637.01	2788.56
90	5.31	609.08	4.95	9841.45	2637.01	2788.56
91	5.31	614.01	4.95	9909.11	2655.14	2807.73
91	5.31	614.01	4.95	9909.11	2655.14	2807.73
92	5.31	618.94	4.95	9976.77	2673.27	2826.90
92	5.31	618.94	4.95	9976.77	2673.27	2826.90
93	23.39	624.12	5.92	9037.69	2421.64	2560.81
93	23.39	624.12	5.92	9037.69	2421.64	2560.81
94	23.39	629.55	5.92	8909.71	2387.35	2524.55
94	23.39	629.55	5.92	8909.71	2387.35	2524.55
95	23.39	634.98	5.92	8781.73	2353.06	2488.29
95	23.39	634.98	5.92	8781.73	2353.06	2488.29
96	23.39	640.23	5.52	8694.44	2329.67	2463.56
96	23.39	640.23	5.52	8694.44	2329.67	2463.56
97	23.39	645.30	5.52	8647.85	2317.18	2450.35
97	23.39	645.30	5.52	8647.85	2317.18	2450.35
98	23.39	650.37	5.52	8601.25	2304.70	2437.15
98	23.39	650.37	5.52	8601.25	2304.70	2437.15
99	23.39	655.44	5.52	8554.65	2292.21	2423.95
99	23.39	655.44	5.52	8554.65	2292.21	2423.95
100	23.39	660.51	5.52	8508.05	2279.73	2410.74
100	23.39	660.51	5.52	8508.05	2279.73	2410.74
101	23.39	665.58	5.52	8461.46	2267.24	2397.54
101	23.39	665.58	5.52	8461.46	2267.24	2397.54
102	23.39	670.65	5.52	8414.86	2254.75	2384.34
102	23.39	670.65	5.52	8414.86	2254.75	2384.34
103	23.39	675.72	5.52	8368.26	2242.27	2371.13
103	23.39	675.72	5.52	8368.26	2242.27	2371.13
104	23.39	680.79	5.52	8321.66	2229.78	2357.93
104	23.39	680.79	5.52	8321.66	2229.78	2357.93
105	23.39	685.86	5.52	8275.07	2217.30	2344.73
105	23.39	685.86	5.52	8275.07	2217.30	2344.73
106	23.39	690.93	5.52	8228.47	2204.81	2331.52
106	23.39	690.93	5.52	8228.47	2204.81	2331.52
107	23.39	696.00	5.52	8181.87	2192.33	2318.32
107	23.39	696.00	5.52	8181.87	2192.33	2318.32
108	23.39	701.07	5.52	8135.28	2179.84	2305.12
108	23.39	701.07	5.52	8135.28	2179.84	2305.12
109	23.39	706.13	5.52	8088.68	2167.35	2291.91
109	23.39	706.13	5.52	8088.68	2167.35	2291.91
110	23.39	711.20	5.52	8042.08	2154.87	2278.71
110	23.39	711.20	5.52	8042.08	2154.87	2278.71
111	23.39	716.27	5.52	7995.48	2142.38	2265.51
111	23.39	716.27	5.52	7995.48	2142.38	2265.51
112	23.39	721.34	5.52	7948.89	2129.90	2252.30
112	23.39	721.34	5.52	7948.89	2129.90	2252.30
113	23.39	726.41	5.52	7902.29	2117.41	2239.10
113	23.39	726.41	5.52	7902.29	2117.41	2239.10
114	23.39	731.48	5.52	7855.69	2104.93	2225.90
114	23.39	731.48	5.52	7855.69	2104.93	2225.90
115	23.39	736.55	5.52	7809.10	2092.44	2212.69
115	23.39	736.55	5.52	7809.10	2092.44	2212.69
116	23.39	741.62	5.52	7762.50	2079.96	2199.49
116	23.39	741.62	5.52	7762.50	2079.96	2199.49
117	23.39	746.69	5.52	7715.90	2067.47	2186.29
117	23.39	746.69	5.52	7715.90	2067.47	2186.29
118	23.39	751.76	5.52	7669.30	2054.98	2173.08
118	23.39	751.76	5.52	7669.30	2054.98	2173.08
119	23.39	756.83	5.52	7622.71	2042.50	2159.88
119	23.39	756.83	5.52	7622.71	2042.50	2159.88
120	23.39	761.90	5.52	7576.11	2030.01	2146.68
120	23.39	761.90	5.52	7576.11	2030.01	2146.68
121	23.39	766.97	5.52	7529.51	2017.53	2133.47
121	23.39	766.97	5.52	7529.51	2017.53	2133.47
122	23.39	772.02	5.48	7501.39	2009.99	2125.51
122	23.39	772.02	5.48	7501.39	2009.99	2125.51
123	23.39	777.05	5.48	7491.76	2007.41	2122.78
123	23.39	777.05	5.48	7491.76	2007.41	2122.78
124	23.39	782.08	5.48	7482.12	2004.83	2120.05
124	23.39	782.08	5.48	7482.12	2004.83	2120.05
125	51.89	787.08	8.03	4243.82	2750.17	2908.22
125	51.89	787.08	8.03	4243.82	2750.17	2908.22
126	51.89	792.03	8.03	3964.42	2588.86	2737.64
126	51.89	792.03	8.03	3964.42	2588.86	2737.64
127	51.89	796.98	8.03	3685.03	2427.55	2567.06
127	51.89	796.98	8.03	3685.03	2427.55	2567.06
128	51.89	801.94	8.03	3405.63	2266.24	2396.48
128	51.89	801.94	8.03	3405.63	2266.24	2396.48
129	51.89	806.89	8.03	3126.24	2104.93	2225.91
129	51.89	806.89	8.03	3126.24	2104.93	2225.91
130	51.89	811.85	8.03	2846.84	1943.63	2055.33
130	51.89	811.85	8.03	2846.84	1943.63	2055.33
131	51.89	816.80	8.03	2567.45	1782.32	1884.75
131	51.89	816.80	8.03	2567.45	1782.32	1884.75
132	51.89	821.75	8.03	2288.05	1621.01	1714.17
132	51.89	821.75	8.03	2288.05	1621.01	1714.17
133	51.89	826.71	8.03	2008.66	1459.70	1543.59
133	51.89	826.71	8.03	2008.66	1459.70	1543.59
134	51.89	831.66	8.03	1729.26	1298.39	1373.01
134	51.89	831.66	8.03	1729.26	1298.39	1373.01
135	51.89	836.62	8.03	1449.87	1137.08	1202.43
135	51.89	836.62	8.03	1449.87	1137.08	1202.43
136	51.89	841.57	8.03	1170.47	975.77	1031.85
136	51.89	841.57	8.03	1170.47	975.77	1031.85
137	51.89	846.52	8.03	891.08	814.46	861.27
137	51.89	846.52	8.03	891.08	814.46	861.27
138	51.99	851.80	9.09	590.85	641.13	677.97
138	51.99	851.80	9.09	590.85	641.13	677.97
139	51.99	857.40	9.09	273.87	458.12	484.45
139	51.99	857.40	9.09	273.87	458.12	484.45
140	51.99	861.66	4.76	27.48	315.87	334.02
140	51.99	861.66	4.76	27.48	315.87	334.02
141	51.99	864.59	4.76	87.89	50.74	53.66
141	51.99	864.59	4.76	87.89	50.74	53.66

Table 4 - Base Force Data on the 141 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-33.05	172.74	6.38	3627.54	2890.46	3056.57
1	-33.05	172.74	6.38	3627.54	2890.46	3056.57
2	-33.05	178.08	6.38	8101.02	4882.18	5162.76
2	-33.05	178.08	6.38	8101.02	4882.18	5162.76
3	-33.05	183.43	6.38	12574.50	6873.90	7268.95
3	-33.05	183.43	6.38	12574.50	6873.90	7268.95
4	-33.05	188.77	6.38	17047.99	8865.62	9375.13
4	-33.05	188.77	6.38	17047.99	8865.62	9375.13
5	-30.94	193.84	5.58	17723.13	9006.39	9523.99
5	-30.94	193.84	5.58	17723.13	9006.39	9523.99
6	-30.94	198.62	5.58	20861.40	10403.64	11001.54
6	-30.94	198.62	5.58	20861.40	10403.64	11001.54
7	-30.94	203.40	5.58	23999.67	11800.89	12479.09
7	-30.94	203.40	5.58	23999.67	11800.89	12479.09
8	-30.94	208.19	5.58	27137.95	13198.14	13956.64
8	-30.94	208.19	5.58	27137.95	13198.14	13956.64
9	-30.94	212.97	5.58	30276.22	14595.38	15434.18
9	-30.94	212.97	5.58	30276.22	14595.38	15434.18
10	-30.94	216.27	2.11	14313.72	8897.45	9408.79
10	-30.94	216.27	2.11	14313.72	8897.45	9408.79
11	-8.98	219.64	5.00	21403.13	5734.95	6064.54
11	-8.98	219.64	5.00	21403.13	5734.95	6064.54
12	-8.98	224.58	5.00	22161.09	5938.05	6279.31
12	-8.98	224.58	5.00	22161.09	5938.05	6279.31
13	-8.98	229.52	5.00	22919.06	6141.14	6494.08
13	-8.98	229.52	5.00	22919.06	6141.14	6494.08
14	-8.98	234.46	5.00	23677.02	6344.24	6708.84
14	-8.98	234.46	5.00	23677.02	6344.24	6708.84
15	-8.98	239.40	5.00	24434.98	6547.33	6923.61
15	-8.98	239.40	5.00	24434.98	6547.33	6923.61
16	-8.98	244.34	5.00	25192.94	6750.43	7138.38
16	-8.98	244.34	5.00	25192.94	6750.43	7138.38
17	-7.81	249.38	5.19	26730.53	7162.42	7574.05
17	-7.81	249.38	5.19	26730.53	7162.42	7574.05
18	-7.81	254.52	5.19	27474.02	7361.64	7784.72
18	-7.81	254.52	5.19	27474.02	7361.64	7784.72
19	-7.81	259.66	5.19	28217.51	7560.86	7995.38
19	-7.81	259.66	5.19	28217.51	7560.86	7995.38
20	-7.81	264.80	5.19	28961.01	7760.08	8206.05
20	-7.81	264.80	5.19	28961.01	7760.08	8206.05
21	-7.81	269.94	5.19	29704.50	7959.30	8416.72
21	-7.81	269.94	5.19	29704.50	7959.30	8416.72
22	-7.81	274.45	3.93	22990.44	6160.27	6514.30
22	-7.81	274.45	3.93	22990.44	6160.27	6514.30
23	-7.81	276.46	0.13	775.25	207.73	219.66
23	-7.81	276.46	0.13	775.25	207.73	219.66
24	-1.10	279.18	5.30	30472.87	8165.18	8634.43
24	-1.10	279.18	5.30	30472.87	8165.18	8634.43
25	-1.10	284.47	5.30	31057.94	8321.95	8800.21
25	-1.10	284.47	5.30	31057.94	8321.95	8800.21
26	-1.10	289.77	5.30	31643.01	8478.72	8965.99
26	-1.10	289.77	5.30	31643.01	8478.72	8965.99
27	-1.10	295.06	5.30	32228.08	8635.49	9131.77
27	-1.10	295.06	5.30	32228.08	8635.49	9131.77
28	-1.10	300.36	5.30	32813.16	8792.26	9297.55
28	-1.10	300.36	5.30	32813.16	8792.26	9297.55
29	-1.10	305.65	5.30	33398.23	8949.03	9463.33
29	-1.10	305.65	5.30	33398.23	8949.03	9463.33
30	-1.10	310.74	4.88	31319.44	8392.02	8874.31
30	-1.10	310.74	4.88	31319.44	8392.02	8874.31
31	-1.10	315.62	4.88	31857.87	8536.29	9026.87
31	-1.10	315.62	4.88	31857.87	8536.29	9026.87
32	-1.10	320.50	4.88	32396.31	8680.56	9179.44
32	-1.10	320.50	4.88	32396.31	8680.56	9179.44
33	-1.10	325.38	4.88	32934.74	8824.84	9332.00
33	-1.10	325.38	4.88	32934.74	8824.84	9332.00
34	-1.10	330.26	4.88	33473.18	8969.11	9484.57
34	-1.10	330.26	4.88	33473.18	8969.11	9484.57
35	-1.10	335.38	5.37	37356.85	10009.74	10585.00
35	-1.10	335.38	5.37	37356.85	10009.74	10585.00
36	-1.10	340.75	5.37	37855.70	10143.40	10726.35
36	-1.10	340.75	5.37	37855.70	10143.40	10726.35
37	-1.10	346.12	5.37	38354.56	10277.07	10867.70
37	-1.10	346.12	5.37	38354.56	10277.07	10867.70
38	-1.10	351.50	5.40	39257.80	10519.10	11123.63
38	-1.10	351.50	5.40	39257.80	10519.10	11123.63
39	-1.10	356.90	5.40	40085.88	10740.98	11358.26
39	-1.10	356.90	5.40	40085.88	10740.98	11358.26
40	-1.10	362.30	5.40	40913.95	10962.86	11592.90
40	-1.10	362.30	5.40	40913.95	10962.86	11592.90
41	-1.10	367.70	5.40	41742.02	11184.74	11827.53
41	-1.10	367.70	5.40	41742.02	11184.74	11827.53
42	-0.52	372.87	4.94	38804.95	10397.76	10995.32
42	-0.52	372.87	4.94	38804.95	10397.76	10995.32
43	-0.52	377.82	4.94	39466.76	10575.09	11182.84
43	-0.52	377.82	4.94	39466.76	10575.09	11182.84
44	-0.52	382.76	4.94	40128.57	10752.42	11370.36
44	-0.52	382.76	4.94	40128.57	10752.42	11370.36
45	-0.52	387.71	4.94	40790.37	10929.75	11557.88
45	-0.52	387.71	4.94	40790.37	10929.75	11557.88
46	-0.52	392.65	4.94	41452.18	11107.08	11745.40
46	-0.52	392.65	4.94	41452.18	11107.08	11745.40
47	-0.52	397.59	4.94	42113.98	11284.41	11932.93
47	-0.52	397.59	4.94	42113.98	11284.41	11932.93
48	-0.52	402.54	4.94	42775.79	11461.74	12120.45
48	-0.52	402.54	4.94	42775.79	11461.74	12120.45
49	-0.52	407.48	4.94	43437.60	11639.07	12307.97
49	-0.52	407.48	4.94	43437.60	11639.07	12307.97
50	-0.52	412.43	4.94	44099.40	11816.40	12495.49
50	-0.52	412.43	4.94	44099.40	11816.40	12495.49
51	5.31	415.65	1.51	13146.80	3522.68	3725.12
51	5.31	415.65	1.51	13146.80	3522.68	3725.12
52	5.31	418.90	5.02	43939.79	11773.63	12450.26
52	5.31	418.90	5.02	43939.79	11773.63	12450.26
53	5.31	423.90	5.02	44065.87	11807.41	12485.99
53	5.31	423.90	5.02	44065.87	11807.41	12485.99
54	5.31	428.90	5.02	44191.95	11841.20	12521.71
54	5.31	428.90	5.02	44191.95	11841.20	12521.71
55	5.31	433.90	5.02	44318.02	11874.98	12557.44
55	5.31	433.90	5.02	44318.02	11874.98	12557.44
56	5.31	438.90	5.02	44444.10	11908.76	12593.16

56	5.31	438.90	5.02	44444.10	11908.76	12593.16
57	5.31	443.93	5.09	45160.63	12100.75	12796.19
57	5.31	443.93	5.09	45160.63	12100.75	12796.19
58	5.31	449.00	5.09	45280.75	12132.94	12830.22
58	5.31	449.00	5.09	45280.75	12132.94	12830.22
59	5.31	454.07	5.09	45400.87	12165.13	12864.26
59	5.31	454.07	5.09	45400.87	12165.13	12864.26
60	5.31	459.13	5.09	45520.98	12197.31	12898.29
60	5.31	459.13	5.09	45520.98	12197.31	12898.29
61	5.31	464.20	5.09	45641.10	12229.50	12932.33
61	5.31	464.20	5.09	45641.10	12229.50	12932.33
62	5.31	469.27	5.09	45761.22	12261.68	12966.36
62	5.31	469.27	5.09	45761.22	12261.68	12966.36
63	5.31	474.33	5.09	45881.34	12293.87	13000.40
63	5.31	474.33	5.09	45881.34	12293.87	13000.40
64	5.31	479.40	5.09	46001.46	12326.05	13034.43
64	5.31	479.40	5.09	46001.46	12326.05	13034.43
65	5.31	484.47	5.09	46121.58	12358.24	13068.47
65	5.31	484.47	5.09	46121.58	12358.24	13068.47
66	5.31	489.53	5.09	46241.69	12390.42	13102.50
66	5.31	489.53	5.09	46241.69	12390.42	13102.50
67	5.31	494.60	5.09	46361.81	12422.61	13136.54
67	5.31	494.60	5.09	46361.81	12422.61	13136.54
68	5.31	499.67	5.09	46481.93	12454.80	13170.58
68	5.31	499.67	5.09	46481.93	12454.80	13170.58
69	5.31	504.73	5.09	46602.05	12486.98	13204.61
69	5.31	504.73	5.09	46602.05	12486.98	13204.61
70	5.31	509.80	5.09	46722.17	12519.17	13238.65
70	5.31	509.80	5.09	46722.17	12519.17	13238.65
71	5.31	514.87	5.09	46842.29	12551.35	13272.68
71	5.31	514.87	5.09	46842.29	12551.35	13272.68
72	5.31	519.91	5.04	46346.45	12418.49	13132.19
72	5.31	519.91	5.04	46346.45	12418.49	13132.19
73	5.31	524.92	5.04	46160.36	12368.63	13079.46
73	5.31	524.92	5.04	46160.36	12368.63	13079.46
74	5.31	529.94	5.04	45974.27	12318.77	13026.73
74	5.31	529.94	5.04	45974.27	12318.77	13026.73
75	5.31	534.96	5.04	45788.18	12268.91	12974.00
75	5.31	534.96	5.04	45788.18	12268.91	12974.00
76	5.31	539.98	5.04	45602.10	12219.04	12921.28
76	5.31	539.98	5.04	45602.10	12219.04	12921.28
77	5.31	544.99	5.04	45416.01	12169.18	12868.55
77	5.31	544.99	5.04	45416.01	12169.18	12868.55
78	5.31	549.96	4.95	44677.25	11971.23	12659.22
78	5.31	549.96	4.95	44677.25	11971.23	12659.22
79	5.31	554.89	4.95	45012.04	12060.94	12754.08
79	5.31	554.89	4.95	45012.04	12060.94	12754.08
80	5.31	559.82	4.95	45346.82	12150.64	12848.94
80	5.31	559.82	4.95	45346.82	12150.64	12848.94
81	5.31	564.74	4.95	45681.60	12240.35	12943.80
81	5.31	564.74	4.95	45681.60	12240.35	12943.80
82	5.31	569.67	4.95	46016.39	12330.05	13038.66
82	5.31	569.67	4.95	46016.39	12330.05	13038.66
83	5.31	574.60	4.95	46351.17	12419.76	13133.52
83	5.31	574.60	4.95	46351.17	12419.76	13133.52
84	5.31	579.52	4.95	46685.95	12509.46	13228.39
84	5.31	579.52	4.95	46685.95	12509.46	13228.39
85	5.31	584.45	4.95	47020.74	12599.17	13323.25
85	5.31	584.45	4.95	47020.74	12599.17	13323.25
86	5.31	589.38	4.95	47355.52	12688.87	13418.11
86	5.31	589.38	4.95	47355.52	12688.87	13418.11
87	5.31	594.30	4.95	47690.31	12778.58	13512.97
87	5.31	594.30	4.95	47690.31	12778.58	13512.97
88	5.31	599.23	4.95	48025.09	12868.28	13607.83
88	5.31	599.23	4.95	48025.09	12868.28	13607.83
89	5.31	604.16	4.95	48359.87	12957.99	13702.69
89	5.31	604.16	4.95	48359.87	12957.99	13702.69
90	5.31	609.08	4.95	48694.66	13047.69	13797.55
90	5.31	609.08	4.95	48694.66	13047.69	13797.55
91	5.31	614.01	4.95	49029.44	13137.40	13892.41
91	5.31	614.01	4.95	49029.44	13137.40	13892.41
92	5.31	618.94	4.95	49364.23	13227.10	13987.27
92	5.31	618.94	4.95	49364.23	13227.10	13987.27
93	23.39	624.12	5.92	53502.59	14335.97	15159.87
93	23.39	624.12	5.92	53502.59	14335.97	15159.87
94	23.39	629.55	5.92	52744.96	14132.97	14945.20
94	23.39	629.55	5.92	52744.96	14132.97	14945.20
95	23.39	634.98	5.92	51987.34	13929.97	14730.52
95	23.39	634.98	5.92	51987.34	13929.97	14730.52
96	23.39	640.23	5.52	48021.42	12867.30	13606.79
96	23.39	640.23	5.52	48021.42	12867.30	13606.79
97	23.39	645.30	5.52	47764.05	12798.34	13533.86
97	23.39	645.30	5.52	47764.05	12798.34	13533.86
98	23.39	650.37	5.52	47506.68	12729.38	13460.94
98	23.39	650.37	5.52	47506.68	12729.38	13460.94
99	23.39	655.44	5.52	47249.32	12660.42	13388.01
99	23.39	655.44	5.52	47249.32	12660.42	13388.01
100	23.39	660.51	5.52	46991.95	12591.45	13315.09
100	23.39	660.51	5.52	46991.95	12591.45	13315.09
101	23.39	665.58	5.52	46734.58	12522.49	13242.16
101	23.39	665.58	5.52	46734.58	12522.49	13242.16
102	23.39	670.65	5.52	46477.21	12453.53	13169.24
102	23.39	670.65	5.52	46477.21	12453.53	13169.24
103	23.39	675.72	5.52	46219.85	12384.57	13096.31
103	23.39	675.72	5.52	46219.85	12384.57	13096.31
104	23.39	680.79	5.52	45962.48	12315.61	13023.39
104	23.39	680.79	5.52	45962.48	12315.61	13023.39
105	23.39	685.86	5.52	45705.11	12246.65	12950.47
105	23.39	685.86	5.52	45705.11	12246.65	12950.47
106	23.39	690.93	5.52	45447.75	12177.69	12877.54
106	23.39	690.93	5.52	45447.75	12177.69	12877.54
107	23.39	696.00	5.52	45190.38	12108.72	12804.62
107	23.39	696.00	5.52	45190.38	12108.72	12804.62
108	23.39	701.07	5.52	44933.01	12039.76	12731.69
108	23.39	701.07	5.52	44933.01	12039.76	12731.69
109	23.39	706.13	5.52	44675.64	11970.80	12658.77
109	23.39	706.13	5.52	44675.64	11970.80	12658.77
110	23.39	711.20	5.52	44418.28	11901.84	12585.84
110	23.39	711.20	5.52	44418.28	11901.84	12585.84
111	23.39	716.27	5.52	44160.91	11832.88	12512.92
111	23.39	716.27	5.52	44160.91	11832.88	12512.92
112	23.39	721.34	5.52	43903.54	11763.92	12439.99
112	23.39	721.34	5.52	43903.54	11763.92	12439.99
113	23.39	726.41	5.52	43646.17	11694.96	12367.07
113	23.39	726.41	5.52	43646.17	11694.96	12367.07
114	23.39	731.48	5.52	43388.81	11626.00	12294.14
114	23.39	731.48	5.52	43388.81	11626.00	12294.14
115	23.39	736.55	5.52	43131.44	11557.03	12221.22
115	23.39	736.55	5.52	43131.44	11557.03	12221.22
116	23.39	741.62	5.52	42874.07	11488.07	12148.29

116	23.39	741.62	5.52	42874.07	11488.07	12148.29
117	23.39	746.69	5.52	42616.70	11419.11	12075.37
117	23.39	746.69	5.52	42616.70	11419.11	12075.37
118	23.39	751.76	5.52	42359.34	11350.15	12002.45
118	23.39	751.76	5.52	42359.34	11350.15	12002.45
119	23.39	756.83	5.52	42101.97	11281.19	11929.52
119	23.39	756.83	5.52	42101.97	11281.19	11929.52
120	23.39	761.90	5.52	41844.60	11212.23	11856.60
120	23.39	761.90	5.52	41844.60	11212.23	11856.60
121	23.39	766.97	5.52	41587.24	11143.27	11783.67
121	23.39	766.97	5.52	41587.24	11143.27	11783.67
122	23.39	772.02	5.48	41138.54	11023.04	11656.53
122	23.39	772.02	5.48	41138.54	11023.04	11656.53
123	23.39	777.05	5.48	41085.68	11008.87	11641.56
123	23.39	777.05	5.48	41085.68	11008.87	11641.56
124	23.39	782.08	5.48	41032.82	10994.71	11626.58
124	23.39	782.08	5.48	41032.82	10994.71	11626.58
125	51.89	787.08	8.03	34063.00	22074.23	23342.84
125	51.89	787.08	8.03	34063.00	22074.23	23342.84
126	51.89	792.03	8.03	31820.44	20779.49	21973.69
126	51.89	792.03	8.03	31820.44	20779.49	21973.69
127	51.89	796.98	8.03	29577.88	19484.74	20604.54
127	51.89	796.98	8.03	29577.88	19484.74	20604.54
128	51.89	801.94	8.03	27335.31	18190.00	19235.38
128	51.89	801.94	8.03	27335.31	18190.00	19235.38
129	51.89	806.89	8.03	25092.75	16895.25	17866.23
129	51.89	806.89	8.03	25092.75	16895.25	17866.23
130	51.89	811.85	8.03	22850.19	15600.51	16497.07
130	51.89	811.85	8.03	22850.19	15600.51	16497.07
131	51.89	816.80	8.03	20607.62	14305.76	15127.92
131	51.89	816.80	8.03	20607.62	14305.76	15127.92
132	51.89	821.75	8.03	18365.06	13011.02	13758.77
132	51.89	821.75	8.03	18365.06	13011.02	13758.77
133	51.89	826.71	8.03	16122.49	11716.28	12389.61
133	51.89	826.71	8.03	16122.49	11716.28	12389.61
134	51.89	831.66	8.03	13879.93	10421.53	11020.46
134	51.89	831.66	8.03	13879.93	10421.53	11020.46
135	51.89	836.62	8.03	11637.37	9126.79	9651.30
135	51.89	836.62	8.03	11637.37	9126.79	9651.30
136	51.89	841.57	8.03	9394.80	7832.04	8282.15
136	51.89	841.57	8.03	9394.80	7832.04	8282.15
137	51.89	846.52	8.03	7152.24	6537.30	6913.00
137	51.89	846.52	8.03	7152.24	6537.30	6913.00
138	51.99	851.80	9.09	5372.80	5829.98	6165.03
138	51.99	851.80	9.09	5372.80	5829.98	6165.03
139	51.99	857.40	9.09	2490.36	4165.81	4405.22
139	51.99	857.40	9.09	2490.36	4165.81	4405.22
140	51.99	861.66	4.76	130.74	1502.66	1589.01
140	51.99	861.66	4.76	130.74	1502.66	1589.01
141	51.99	864.59	4.76	418.12	241.40	255.28
141	51.99	864.59	4.76	418.12	241.40	255.28

Sum of the Resisting Forces = 1413116.27 (lbs)

Average Available Shear Strength = 1832.48(psf)

Sum of the Driving Forces = 1593537.03 (lbs)

Average Mobilized Shear Stress = 2066.44(psf)

Total length of the failure surface = 771.15(ft)

Factor of Safety Balance Check: FS = 0.88678

Janbu's Correction Factor (fo) = 1.0642

Janub's FS Corrected = 0.94372

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.13150(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

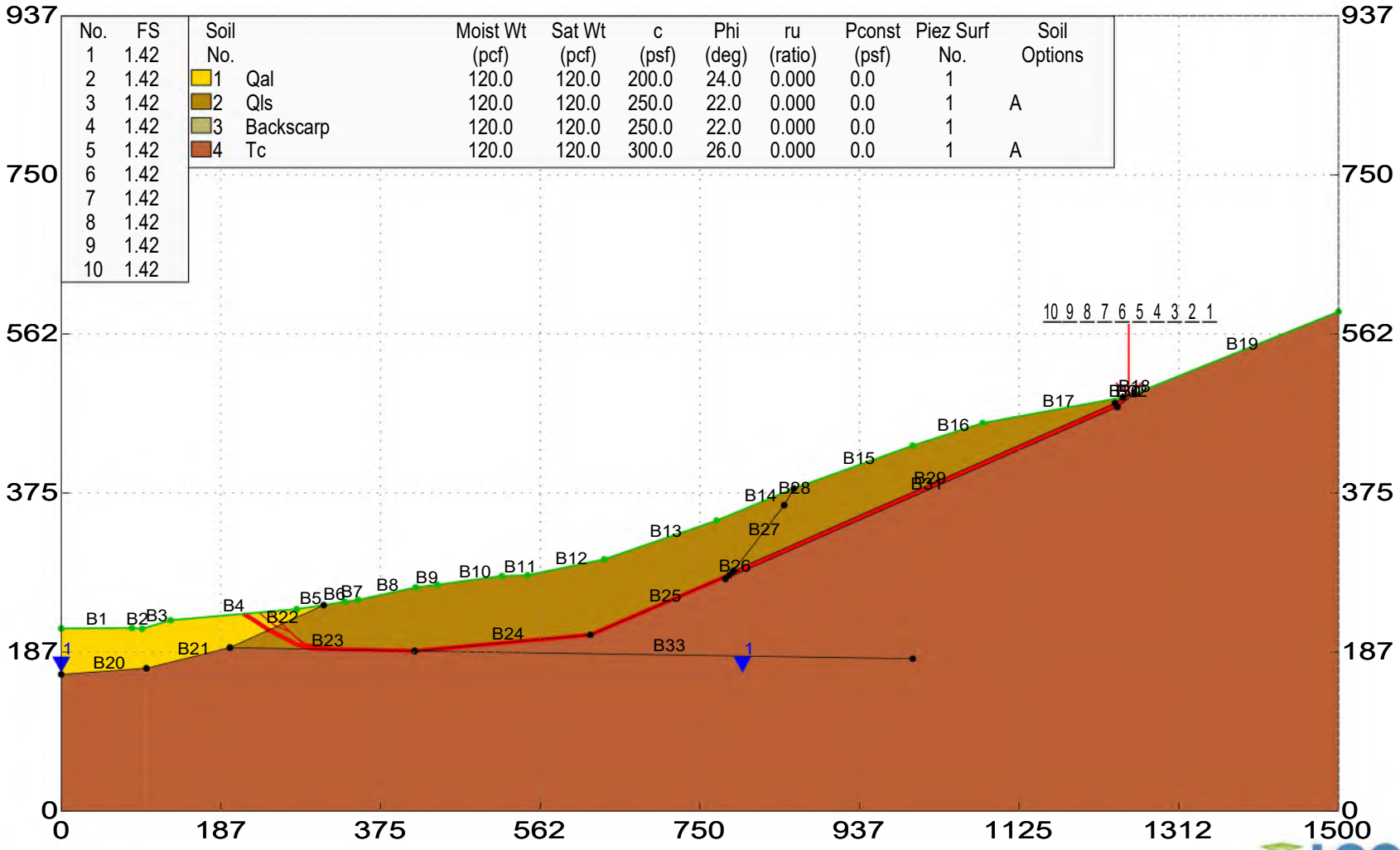
Average Elevation of Point of Application of kh on Sliding Mass = 223.597(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Design - Larger Qls - Static

LGC Geotechnical, Inc. \xhLRGd.gsd



GEOSTASE FS = 1.42

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 3/ 29/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xhLRGd.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xhLRGd.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Design - Larger Qls - Static

BOUNDARY DATA

19 Surface Boundaries
33 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.200	82.800	216.000	1
2	82.800	216.000	95.100	215.000	1
3	95.100	215.000	128.300	225.100	1
4	128.300	225.100	276.400	238.000	1
5	276.400	238.000	308.300	242.900	1
6	308.300	242.900	332.700	247.000	2
7	332.700	247.000	348.800	249.000	2
8	348.800	249.000	416.400	263.600	2
9	416.400	263.600	441.400	267.000	2
10	441.400	267.000	517.400	277.100	2
11	517.400	277.100	547.500	278.000	2
12	547.500	278.000	637.700	297.000	2
13	637.700	297.000	769.500	342.600	2
14	769.500	342.600	860.200	380.200	2
15	860.200	380.200	1000.000	430.900	2
16	1000.000	430.900	1082.100	457.600	2
17	1082.100	457.600	1247.000	487.900	2
18	1247.000	487.900	1260.400	491.900	3
19	1260.400	491.900	1500.000	588.800	4
20	0.000	161.100	100.000	168.300	4
21	100.000	168.300	198.100	192.800	4
22	198.100	192.800	308.300	242.900	2
23	198.100	192.800	414.900	188.600	4
24	414.900	188.600	621.400	207.800	4
25	621.400	207.800	784.600	278.400	4
26	779.900	273.600	789.300	283.200	3
27	789.300	283.200	849.000	360.500	2
28	849.000	360.500	860.200	380.200	2
29	789.300	283.200	1237.700	480.800	3
30	1237.700	480.800	1247.000	487.900	3
31	779.900	273.600	1240.300	476.500	4
32	1240.300	476.500	1260.400	491.900	4
33	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search =   20.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	354.70	189.70	5.00
2	414.90	188.60	414.90	188.60	0.00
3	621.40	207.80	621.40	207.80	0.00
4	784.60	278.40	784.60	278.40	0.00
5	1239.00	478.60	1239.00	478.60	0.00
6	1253.70	489.90	1253.70	489.90	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
   FS Max =   1.465   FS Min =   1.416   FS Ave =   1.437
   Standard Deviation =   0.008   Coefficient of Variation =   0.58 %

Critical Surface is Sequence Number   126 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface =   1.416

Table 1 - Geometry Data on the 209 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.48	1.85	216.49	230.93	232.78	-30.48	4.98	6.36
2	5.48	5.56	221.97	227.70	233.26	-30.48	4.98	6.36
3	5.56	9.49	227.49	224.25	233.74	-33.45	4.98	6.67
4	5.56	13.65	233.05	220.58	234.22	-33.45	4.98	6.67
5	5.56	17.81	238.61	216.90	234.71	-33.45	4.98	6.67
6	2.60	20.70	242.69	214.36	235.06	-28.32	4.98	2.95
7	5.00	23.08	246.49	212.32	235.40	-28.32	4.98	5.68
8	5.00	26.21	251.50	209.62	235.83	-28.32	4.98	5.68
9	5.00	29.34	256.50	206.93	236.27	-28.32	4.98	5.68
10	5.80	32.71	261.90	204.03	236.74	-28.12	4.98	6.58
11	5.80	36.31	267.70	200.93	237.24	-28.12	4.98	6.58
12	5.80	39.92	273.50	197.83	237.75	-28.12	4.98	6.58
13	0.24	41.80	276.52	196.22	238.02	-28.12	8.73	0.27
14	4.87	42.83	279.07	195.58	238.41	-13.12	8.73	5.00
15	4.87	44.71	283.94	194.45	239.16	-13.12	8.73	5.00
16	4.87	46.59	288.81	193.31	239.91	-13.12	8.73	5.00
17	4.87	48.47	293.68	192.18	240.65	-13.12	8.73	5.00
18	6.09	49.96	299.16	191.54	241.50	-1.45	8.73	6.09
19	6.09	51.05	305.25	191.38	242.43	-1.45	8.73	6.09
20	4.88	52.07	310.74	191.24	243.31	-1.45	9.54	4.88
21	4.88	53.01	315.62	191.12	244.13	-1.45	9.54	4.88
22	4.88	53.96	320.50	190.99	244.95	-1.45	9.54	4.88
23	4.88	54.90	325.38	190.87	245.77	-1.45	9.54	4.88
24	4.88	55.84	330.26	190.75	246.59	-1.45	9.54	4.88
25	5.37	56.72	335.38	190.62	247.33	-1.45	7.08	5.37
26	5.37	57.52	340.75	190.48	248.00	-1.45	7.08	5.37
27	5.37	58.32	346.12	190.34	248.67	-1.45	7.08	5.37
28	5.08	59.34	351.34	190.21	249.55	-1.45	12.19	5.09
29	5.08	60.56	356.43	190.08	250.65	-1.45	12.19	5.09
30	5.08	61.79	361.51	189.95	251.75	-1.45	12.19	5.09
31	5.08	63.02	366.60	189.83	252.84	-1.45	12.19	5.09

32	5.08	64.25	371.68	189.70	253.94	-1.45	12.19	5.09
33	5.08	65.47	376.77	189.57	255.04	-1.45	12.19	5.09
34	5.08	66.70	381.85	189.44	256.14	-1.45	12.19	5.09
35	5.08	67.93	386.93	189.31	257.24	-1.45	12.19	5.09
36	5.08	69.15	392.02	189.18	258.33	-1.45	12.19	5.09
37	5.08	70.38	397.10	189.05	259.43	-1.45	12.19	5.09
38	5.08	71.61	402.19	188.92	260.53	-1.45	12.19	5.09
39	5.08	72.84	407.27	188.79	261.63	-1.45	12.19	5.09
40	5.08	74.06	412.36	188.66	262.73	-1.45	12.19	5.09
41	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
42	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
43	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
44	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
45	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
46	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
47	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
48	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
49	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
50	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
51	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
52	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
53	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
54	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
55	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
56	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
57	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
58	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
59	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
60	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
61	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
62	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
63	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
64	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
65	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
66	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
67	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
68	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
69	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
70	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
71	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
72	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
73	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
74	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
75	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
76	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
77	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
78	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
79	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
80	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
81	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
82	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
83	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
84	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
85	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
86	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
87	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
88	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
89	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
90	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
91	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
92	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
93	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
94	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
95	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
96	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
97	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
98	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
99	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
100	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
101	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
102	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
103	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
104	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
105	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
106	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
107	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
108	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
109	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
110	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
111	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
112	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
113	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
114	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
115	4.70	70.40	786.95	279.44	349.83	23.78	22.52	5.14
116	4.98	70.27	791.79	281.57	351.84	23.78	22.52	5.44
117	4.98	70.14	796.76	283.76	353.90	23.78	22.52	5.44
118	4.97	70.01	801.74	285.95	355.96	23.78	22.52	5.44
119	4.98	69.88	806.71	288.14	358.03	23.78	22.52	5.44
120	4.98	69.75	811.69	290.33	360.09	23.78	22.52	5.44
121	4.98	69.63	816.66	292.53	362.15	23.78	22.52	5.44
122	4.98	69.50	821.64	294.72	364.21	23.78	22.52	5.44
123	4.98	69.37	826.61	296.91	366.28	23.78	22.52	5.44
124	4.98	69.24	831.59	299.10	368.34	23.78	22.52	5.44
125	4.97	69.11	836.56	301.29	370.40	23.78	22.52	5.44
126	4.98	68.98	841.54	303.49	372.46	23.78	22.52	5.44
127	4.98	68.85	846.51	305.68	374.53	23.78	22.52	5.44
128	5.60	68.71	851.80	308.01	376.72	23.78	22.52	6.12
129	5.60	68.56	857.40	310.47	379.04	23.78	22.52	6.12
130	4.99	68.30	862.70	312.81	381.11	23.78	19.93	5.46
131	4.99	67.91	867.69	315.01	382.92	23.78	19.93	5.46
132	4.99	67.52	872.68	317.21	384.73	23.78	19.93	5.46
133	4.99	67.13	877.67	319.41	386.54	23.78	19.93	5.46
134	4.99	66.74	882.67	321.61	388.35	23.78	19.93	5.46
135	4.99	66.35	887.66	323.81	390.16	23.78	19.93	5.46
136	4.99	65.96	892.65	326.01	391.97	23.78	19.93	5.46
137	4.99	65.57	897.65	328.21	393.78	23.78	19.93	5.46
138	4.99	65.19	902.64	330.41	395.59	23.78	19.93	5.46
139	4.99	64.80	907.63	332.61	397.40	23.78	19.93	5.46
140	4.99	64.41	912.62	334.81	399.21	23.78	19.93	5.46
141	4.99	64.02	917.62	337.01	401.02	23.78	19.93	5.46
142	4.99	63.63	922.61	339.20	402.83	23.78	19.93	5.46
143	4.99	63.24	927.60	341.40	404.64	23.78	19.93	5.46
144	4.99	62.85	932.60	343.60	406.46	23.78	19.93	5.46
145	4.99	62.46	937.59	345.80	408.27	23.78	19.93	5.46
146	4.99	62.07	942.58	348.00	410.08	23.78	19.93	5.46
147	4.99	61.68	947.58	350.20	411.89	23.78	19.93	5.46
148	4.99	61.29	952.57	352.40	413.70	23.78	19.93	5.46
149	4.99	60.91	957.56	354.60	415.51	23.78	19.93	5.46
150	4.99	60.52	962.55	356.80	417.32	23.78	19.93	5.46
151	4.99	60.13	967.55	359.00	419.13	23.78	19.93	5.46

152	4.99	59.74	972.54	361.20	420.94	23.78	19.93	5.46
153	4.99	59.35	977.53	363.40	422.75	23.78	19.93	5.46
154	4.99	58.96	982.53	365.60	424.56	23.78	19.93	5.46
155	4.99	58.57	987.52	367.80	426.37	23.78	19.93	5.46
156	4.99	58.18	992.51	370.00	428.18	23.78	19.93	5.46
157	4.99	57.79	997.50	372.20	429.99	23.78	19.93	5.46
158	5.13	57.30	1002.57	374.43	431.73	23.78	18.02	5.61
159	5.13	56.71	1007.70	376.69	433.40	23.78	18.02	5.61
160	5.13	56.12	1012.83	378.95	435.07	23.78	18.02	5.61
161	5.13	55.53	1017.96	381.21	436.74	23.78	18.02	5.61
162	5.13	54.93	1023.09	383.47	438.41	23.78	18.02	5.61
163	5.13	54.34	1028.22	385.74	440.08	23.78	18.02	5.61
164	5.13	53.75	1033.35	388.00	441.75	23.78	18.02	5.61
165	5.13	53.16	1038.48	390.26	443.42	23.78	18.02	5.61
166	5.13	52.57	1043.62	392.52	445.08	23.78	18.02	5.61
167	5.13	51.98	1048.75	394.78	446.75	23.78	18.02	5.61
168	5.13	51.38	1053.88	397.04	448.42	23.78	18.02	5.61
169	5.13	50.79	1059.01	399.30	450.09	23.78	18.02	5.61
170	5.13	50.20	1064.14	401.56	451.76	23.78	18.02	5.61
171	5.13	49.61	1069.27	403.82	453.43	23.78	18.02	5.61
172	5.13	49.02	1074.40	406.08	455.10	23.78	18.02	5.61
173	5.13	48.42	1079.53	408.34	456.77	23.78	18.02	5.61
174	5.02	47.48	1084.61	410.58	458.06	23.78	10.41	5.48
175	5.02	46.19	1089.63	412.79	458.98	23.78	10.41	5.48
176	5.02	44.90	1094.65	415.00	459.91	23.78	10.41	5.48
177	5.02	43.62	1099.67	417.21	460.83	23.78	10.41	5.48
178	5.02	42.33	1104.69	419.42	461.75	23.78	10.41	5.48
179	5.02	41.04	1109.71	421.64	462.67	23.78	10.41	5.48
180	5.02	39.75	1114.73	423.85	463.59	23.78	10.41	5.48
181	5.02	38.46	1119.75	426.06	464.52	23.78	10.41	5.48
182	5.02	37.17	1124.76	428.27	465.44	23.78	10.41	5.48
183	5.02	35.88	1129.78	430.48	466.36	23.78	10.41	5.48
184	5.02	34.59	1134.80	432.69	467.28	23.78	10.41	5.48
185	5.02	33.30	1139.82	434.90	468.21	23.78	10.41	5.48
186	5.02	32.01	1144.84	437.12	469.13	23.78	10.41	5.48
187	5.02	30.72	1149.86	439.33	470.05	23.78	10.41	5.48
188	5.02	29.43	1154.88	441.54	470.97	23.78	10.41	5.48
189	5.02	28.15	1159.90	443.75	471.90	23.78	10.41	5.48
190	5.02	26.86	1164.92	445.96	472.82	23.78	10.41	5.48
191	5.02	25.57	1169.94	448.17	473.74	23.78	10.41	5.48
192	5.02	24.28	1174.96	450.38	474.66	23.78	10.41	5.48
193	5.02	22.99	1179.98	452.60	475.58	23.78	10.41	5.48
194	5.02	21.70	1185.00	454.81	476.51	23.78	10.41	5.48
195	5.02	20.41	1190.02	457.02	477.43	23.78	10.41	5.48
196	5.02	19.12	1195.04	459.23	478.35	23.78	10.41	5.48
197	5.02	17.83	1200.05	461.44	479.27	23.78	10.41	5.48
198	5.02	16.54	1205.07	463.65	480.20	23.78	10.41	5.48
199	5.02	15.25	1210.09	465.86	481.12	23.78	10.41	5.48
200	5.02	13.97	1215.11	468.08	482.04	23.78	10.41	5.48
201	5.02	12.68	1220.13	470.29	482.96	23.78	10.41	5.48
202	5.02	11.39	1225.15	472.50	483.89	23.78	10.41	5.48
203	5.02	10.10	1230.17	474.71	484.81	23.78	10.41	5.48
204	5.02	8.81	1235.19	476.92	485.73	23.78	10.41	5.48
205	1.30	8.00	1238.35	478.31	486.31	23.78	10.41	1.42
206	4.00	6.66	1241.00	480.14	486.80	37.55	10.41	5.05
207	4.00	4.32	1245.00	483.21	487.53	37.55	10.41	5.05
208	3.35	2.36	1248.67	486.04	488.40	37.55	16.62	4.23
209	3.35	0.79	1252.03	488.61	489.40	37.55	16.62	4.23

Table 2 - Force Data On The 209 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1217.9	0.0	0.0	0.0	0.0	0.0
2	3653.8	0.0	0.0	0.0	0.0	0.0
3	6332.1	0.0	0.0	0.0	0.0	0.0
4	9108.4	0.0	0.0	0.0	0.0	0.0
5	11884.8	0.0	0.0	0.0	0.0	0.0
6	6455.8	0.0	0.0	0.0	0.0	0.0
7	13853.8	0.0	0.0	0.0	0.0	0.0
8	15733.6	0.0	0.0	0.0	0.0	0.0
9	17613.4	0.0	0.0	0.0	0.0	0.0
10	22764.9	0.0	0.0	0.0	0.0	0.0
11	25273.4	0.0	0.0	0.0	0.0	0.0
12	27782.0	0.0	0.0	0.0	0.0	0.0
13	1204.8	0.0	0.0	0.0	0.0	0.0
14	25025.8	0.0	0.0	0.0	0.0	0.0
15	26125.9	0.0	0.0	0.0	0.0	0.0
16	27226.0	0.0	0.0	0.0	0.0	0.0
17	28326.2	0.0	0.0	0.0	0.0	0.0
18	36516.6	0.0	0.0	0.0	0.0	0.0
19	37313.3	0.0	0.0	0.0	0.0	0.0
20	30491.2	0.0	0.0	0.0	0.0	0.0
21	31043.9	0.0	0.0	0.0	0.0	0.0
22	31596.5	0.0	0.0	0.0	0.0	0.0
23	32149.2	0.0	0.0	0.0	0.0	0.0
24	32701.9	0.0	0.0	0.0	0.0	0.0
25	36525.5	0.0	0.0	0.0	0.0	0.0
26	37042.5	0.0	0.0	0.0	0.0	0.0
27	37559.5	0.0	0.0	0.0	0.0	0.0
28	36204.8	0.0	0.0	0.0	0.0	0.0
29	36953.5	0.0	0.0	0.0	0.0	0.0
30	37702.2	0.0	0.0	0.0	0.0	0.0
31	38451.0	0.0	0.0	0.0	0.0	0.0
32	39199.7	0.0	0.0	0.0	0.0	0.0
33	39948.4	0.0	0.0	0.0	0.0	0.0
34	40697.1	0.0	0.0	0.0	0.0	0.0
35	41445.9	0.0	0.0	0.0	0.0	0.0
36	42194.6	0.0	0.0	0.0	0.0	0.0
37	42943.3	0.0	0.0	0.0	0.0	0.0
38	43692.1	0.0	0.0	0.0	0.0	0.0
39	44440.8	0.0	0.0	0.0	0.0	0.0
40	45189.5	0.0	0.0	0.0	0.0	0.0
41	13458.3	0.0	0.0	0.0	0.0	0.0
42	44980.9	0.0	0.0	0.0	0.0	0.0
43	45109.9	0.0	0.0	0.0	0.0	0.0
44	45239.0	0.0	0.0	0.0	0.0	0.0
45	45368.0	0.0	0.0	0.0	0.0	0.0
46	45497.1	0.0	0.0	0.0	0.0	0.0
47	46230.6	0.0	0.0	0.0	0.0	0.0
48	46353.6	0.0	0.0	0.0	0.0	0.0
49	46476.5	0.0	0.0	0.0	0.0	0.0
50	46599.5	0.0	0.0	0.0	0.0	0.0
51	46722.5	0.0	0.0	0.0	0.0	0.0
52	46845.4	0.0	0.0	0.0	0.0	0.0

53	46968.4	0.0	0.0	0.0	0.0	0.0
54	47091.4	0.0	0.0	0.0	0.0	0.0
55	47214.3	0.0	0.0	0.0	0.0	0.0
56	47337.3	0.0	0.0	0.0	0.0	0.0
57	47460.3	0.0	0.0	0.0	0.0	0.0
58	47583.2	0.0	0.0	0.0	0.0	0.0
59	47706.2	0.0	0.0	0.0	0.0	0.0
60	47829.2	0.0	0.0	0.0	0.0	0.0
61	47952.1	0.0	0.0	0.0	0.0	0.0
62	47444.5	0.0	0.0	0.0	0.0	0.0
63	47254.0	0.0	0.0	0.0	0.0	0.0
64	47063.5	0.0	0.0	0.0	0.0	0.0
65	46873.0	0.0	0.0	0.0	0.0	0.0
66	46682.5	0.0	0.0	0.0	0.0	0.0
67	46492.0	0.0	0.0	0.0	0.0	0.0
68	45735.8	0.0	0.0	0.0	0.0	0.0
69	46078.5	0.0	0.0	0.0	0.0	0.0
70	46421.2	0.0	0.0	0.0	0.0	0.0
71	46763.9	0.0	0.0	0.0	0.0	0.0
72	47106.6	0.0	0.0	0.0	0.0	0.0
73	47449.4	0.0	0.0	0.0	0.0	0.0
74	47792.1	0.0	0.0	0.0	0.0	0.0
75	48134.8	0.0	0.0	0.0	0.0	0.0
76	48477.5	0.0	0.0	0.0	0.0	0.0
77	48820.2	0.0	0.0	0.0	0.0	0.0
78	49162.9	0.0	0.0	0.0	0.0	0.0
79	49505.7	0.0	0.0	0.0	0.0	0.0
80	49848.4	0.0	0.0	0.0	0.0	0.0
81	50191.1	0.0	0.0	0.0	0.0	0.0
82	50533.8	0.0	0.0	0.0	0.0	0.0
83	55526.6	0.0	0.0	0.0	0.0	0.0
84	54740.3	0.0	0.0	0.0	0.0	0.0
85	53954.1	0.0	0.0	0.0	0.0	0.0
86	49838.1	0.0	0.0	0.0	0.0	0.0
87	49571.0	0.0	0.0	0.0	0.0	0.0
88	49303.9	0.0	0.0	0.0	0.0	0.0
89	49036.8	0.0	0.0	0.0	0.0	0.0
90	48769.7	0.0	0.0	0.0	0.0	0.0
91	48502.6	0.0	0.0	0.0	0.0	0.0
92	48235.5	0.0	0.0	0.0	0.0	0.0
93	47968.4	0.0	0.0	0.0	0.0	0.0
94	47701.3	0.0	0.0	0.0	0.0	0.0
95	47434.2	0.0	0.0	0.0	0.0	0.0
96	47167.1	0.0	0.0	0.0	0.0	0.0
97	46900.0	0.0	0.0	0.0	0.0	0.0
98	46632.9	0.0	0.0	0.0	0.0	0.0
99	46365.8	0.0	0.0	0.0	0.0	0.0
100	46098.7	0.0	0.0	0.0	0.0	0.0
101	45831.5	0.0	0.0	0.0	0.0	0.0
102	45564.4	0.0	0.0	0.0	0.0	0.0
103	45297.3	0.0	0.0	0.0	0.0	0.0
104	45030.2	0.0	0.0	0.0	0.0	0.0
105	44763.1	0.0	0.0	0.0	0.0	0.0
106	44496.0	0.0	0.0	0.0	0.0	0.0
107	44228.9	0.0	0.0	0.0	0.0	0.0
108	43961.8	0.0	0.0	0.0	0.0	0.0
109	43694.7	0.0	0.0	0.0	0.0	0.0
110	43427.6	0.0	0.0	0.0	0.0	0.0
111	43160.5	0.0	0.0	0.0	0.0	0.0
112	42694.8	0.0	0.0	0.0	0.0	0.0
113	42640.0	0.0	0.0	0.0	0.0	0.0
114	42585.1	0.0	0.0	0.0	0.0	0.0
115	39704.8	0.0	0.0	0.0	0.0	0.0
116	41952.8	0.0	0.0	0.0	0.0	0.0
117	41875.5	0.0	0.0	0.0	0.0	0.0
118	41798.2	0.0	0.0	0.0	0.0	0.0
119	41720.9	0.0	0.0	0.0	0.0	0.0
120	41643.6	0.0	0.0	0.0	0.0	0.0
121	41566.3	0.0	0.0	0.0	0.0	0.0
122	41489.0	0.0	0.0	0.0	0.0	0.0
123	41411.7	0.0	0.0	0.0	0.0	0.0
124	41334.4	0.0	0.0	0.0	0.0	0.0
125	41257.1	0.0	0.0	0.0	0.0	0.0
126	41179.8	0.0	0.0	0.0	0.0	0.0
127	41102.5	0.0	0.0	0.0	0.0	0.0
128	46173.6	0.0	0.0	0.0	0.0	0.0
129	46075.6	0.0	0.0	0.0	0.0	0.0
130	40920.0	0.0	0.0	0.0	0.0	0.0
131	40686.9	0.0	0.0	0.0	0.0	0.0
132	40453.8	0.0	0.0	0.0	0.0	0.0
133	40220.7	0.0	0.0	0.0	0.0	0.0
134	39987.6	0.0	0.0	0.0	0.0	0.0
135	39754.5	0.0	0.0	0.0	0.0	0.0
136	39521.4	0.0	0.0	0.0	0.0	0.0
137	39288.3	0.0	0.0	0.0	0.0	0.0
138	39055.3	0.0	0.0	0.0	0.0	0.0
139	38822.2	0.0	0.0	0.0	0.0	0.0
140	38589.1	0.0	0.0	0.0	0.0	0.0
141	38356.0	0.0	0.0	0.0	0.0	0.0
142	38122.9	0.0	0.0	0.0	0.0	0.0
143	37889.8	0.0	0.0	0.0	0.0	0.0
144	37656.7	0.0	0.0	0.0	0.0	0.0
145	37423.6	0.0	0.0	0.0	0.0	0.0
146	37190.5	0.0	0.0	0.0	0.0	0.0
147	36957.4	0.0	0.0	0.0	0.0	0.0
148	36724.3	0.0	0.0	0.0	0.0	0.0
149	36491.2	0.0	0.0	0.0	0.0	0.0
150	36258.1	0.0	0.0	0.0	0.0	0.0
151	36025.0	0.0	0.0	0.0	0.0	0.0
152	35792.0	0.0	0.0	0.0	0.0	0.0
153	35558.9	0.0	0.0	0.0	0.0	0.0
154	35325.8	0.0	0.0	0.0	0.0	0.0
155	35092.7	0.0	0.0	0.0	0.0	0.0
156	34859.6	0.0	0.0	0.0	0.0	0.0
157	34626.5	0.0	0.0	0.0	0.0	0.0
158	35284.2	0.0	0.0	0.0	0.0	0.0
159	34919.7	0.0	0.0	0.0	0.0	0.0
160	34555.2	0.0	0.0	0.0	0.0	0.0
161	34190.7	0.0	0.0	0.0	0.0	0.0
162	33826.2	0.0	0.0	0.0	0.0	0.0
163	33461.7	0.0	0.0	0.0	0.0	0.0
164	33097.2	0.0	0.0	0.0	0.0	0.0
165	32732.7	0.0	0.0	0.0	0.0	0.0
166	32368.1	0.0	0.0	0.0	0.0	0.0
167	32003.6	0.0	0.0	0.0	0.0	0.0
168	31639.1	0.0	0.0	0.0	0.0	0.0
169	31274.6	0.0	0.0	0.0	0.0	0.0
170	30910.1	0.0	0.0	0.0	0.0	0.0
171	30545.6	0.0	0.0	0.0	0.0	0.0
172	30181.1	0.0	0.0	0.0	0.0	0.0

173	29816.6	0.0	0.0	0.0	0.0	0.0
174	28599.8	0.0	0.0	0.0	0.0	0.0
175	27823.4	0.0	0.0	0.0	0.0	0.0
176	27046.9	0.0	0.0	0.0	0.0	0.0
177	26270.4	0.0	0.0	0.0	0.0	0.0
178	25493.9	0.0	0.0	0.0	0.0	0.0
179	24717.5	0.0	0.0	0.0	0.0	0.0
180	23941.0	0.0	0.0	0.0	0.0	0.0
181	23164.5	0.0	0.0	0.0	0.0	0.0
182	22388.0	0.0	0.0	0.0	0.0	0.0
183	21611.5	0.0	0.0	0.0	0.0	0.0
184	20835.1	0.0	0.0	0.0	0.0	0.0
185	20058.6	0.0	0.0	0.0	0.0	0.0
186	19282.1	0.0	0.0	0.0	0.0	0.0
187	18505.6	0.0	0.0	0.0	0.0	0.0
188	17729.2	0.0	0.0	0.0	0.0	0.0
189	16952.7	0.0	0.0	0.0	0.0	0.0
190	16176.2	0.0	0.0	0.0	0.0	0.0
191	15399.7	0.0	0.0	0.0	0.0	0.0
192	14623.3	0.0	0.0	0.0	0.0	0.0
193	13846.8	0.0	0.0	0.0	0.0	0.0
194	13070.3	0.0	0.0	0.0	0.0	0.0
195	12293.8	0.0	0.0	0.0	0.0	0.0
196	11517.4	0.0	0.0	0.0	0.0	0.0
197	10740.9	0.0	0.0	0.0	0.0	0.0
198	9964.4	0.0	0.0	0.0	0.0	0.0
199	9187.9	0.0	0.0	0.0	0.0	0.0
200	8411.4	0.0	0.0	0.0	0.0	0.0
201	7635.0	0.0	0.0	0.0	0.0	0.0
202	6858.5	0.0	0.0	0.0	0.0	0.0
203	6082.0	0.0	0.0	0.0	0.0	0.0
204	5305.5	0.0	0.0	0.0	0.0	0.0
205	1247.5	0.0	0.0	0.0	0.0	0.0
206	3196.8	0.0	0.0	0.0	0.0	0.0
207	2073.7	0.0	0.0	0.0	0.0	0.0
208	949.8	0.0	0.0	0.0	0.0	0.0
209	316.6	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 7334624.52(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 7334624.52(lbs)

TOTAL AREA OF SLIDING MASS = 61121.87(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 209 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	2	250.00	22.00	A
8	2	250.00	22.00	A
9	2	250.00	22.00	A
10	2	250.00	22.00	A
11	2	250.00	22.00	A
12	2	250.00	22.00	A
13	2	250.00	22.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	2	0.00	14.00	A
33	2	0.00	14.00	A
34	2	0.00	14.00	A
35	2	0.00	14.00	A
36	2	0.00	14.00	A
37	2	0.00	14.00	A
38	2	0.00	14.00	A
39	2	0.00	14.00	A
40	2	0.00	14.00	A
41	2	0.00	14.00	A
42	2	0.00	14.00	A
43	2	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A
57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A
69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A

72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	2	0.00	14.00	A
76	2	0.00	14.00	A
77	2	0.00	14.00	A
78	2	0.00	14.00	A
79	2	0.00	14.00	A
80	2	0.00	14.00	A
81	2	0.00	14.00	A
82	2	0.00	14.00	A
83	2	0.00	14.00	A
84	2	0.00	14.00	A
85	2	0.00	14.00	A
86	2	0.00	14.00	A
87	2	0.00	14.00	A
88	2	0.00	14.00	A
89	2	0.00	14.00	A
90	2	0.00	14.00	A
91	2	0.00	14.00	A
92	2	0.00	14.00	A
93	2	0.00	14.00	A
94	2	0.00	14.00	A
95	2	0.00	14.00	A
96	2	0.00	14.00	A
97	2	0.00	14.00	A
98	2	0.00	14.00	A
99	2	0.00	14.00	A
100	2	0.00	14.00	A
101	2	0.00	14.00	A
102	2	0.00	14.00	A
103	2	0.00	14.00	A
104	2	0.00	14.00	A
105	2	0.00	14.00	A
106	2	0.00	14.00	A
107	2	0.00	14.00	A
108	2	0.00	14.00	A
109	2	0.00	14.00	A
110	2	0.00	14.00	A
111	2	0.00	14.00	A
112	2	0.00	14.00	A
113	2	0.00	14.00	A
114	2	0.00	14.00	A
115	3	250.00	22.00	
116	3	250.00	22.00	
117	3	250.00	22.00	
118	3	250.00	22.00	
119	3	250.00	22.00	
120	3	250.00	22.00	
121	3	250.00	22.00	
122	3	250.00	22.00	
123	3	250.00	22.00	
124	3	250.00	22.00	
125	3	250.00	22.00	
126	3	250.00	22.00	
127	3	250.00	22.00	
128	3	250.00	22.00	
129	3	250.00	22.00	
130	3	250.00	22.00	
131	3	250.00	22.00	
132	3	250.00	22.00	
133	3	250.00	22.00	
134	3	250.00	22.00	
135	3	250.00	22.00	
136	3	250.00	22.00	
137	3	250.00	22.00	
138	3	250.00	22.00	
139	3	250.00	22.00	
140	3	250.00	22.00	
141	3	250.00	22.00	
142	3	250.00	22.00	
143	3	250.00	22.00	
144	3	250.00	22.00	
145	3	250.00	22.00	
146	3	250.00	22.00	
147	3	250.00	22.00	
148	3	250.00	22.00	
149	3	250.00	22.00	
150	3	250.00	22.00	
151	3	250.00	22.00	
152	3	250.00	22.00	
153	3	250.00	22.00	
154	3	250.00	22.00	
155	3	250.00	22.00	
156	3	250.00	22.00	
157	3	250.00	22.00	
158	3	250.00	22.00	
159	3	250.00	22.00	
160	3	250.00	22.00	
161	3	250.00	22.00	
162	3	250.00	22.00	
163	3	250.00	22.00	
164	3	250.00	22.00	
165	3	250.00	22.00	
166	3	250.00	22.00	
167	3	250.00	22.00	
168	3	250.00	22.00	
169	3	250.00	22.00	
170	3	250.00	22.00	
171	3	250.00	22.00	
172	3	250.00	22.00	
173	3	250.00	22.00	
174	3	250.00	22.00	
175	3	250.00	22.00	
176	3	250.00	22.00	
177	3	250.00	22.00	
178	3	250.00	22.00	
179	3	250.00	22.00	
180	3	250.00	22.00	
181	3	250.00	22.00	
182	3	250.00	22.00	
183	3	250.00	22.00	
184	3	250.00	22.00	
185	3	250.00	22.00	
186	3	250.00	22.00	
187	3	250.00	22.00	
188	3	250.00	22.00	
189	3	250.00	22.00	
190	3	250.00	22.00	
191	3	250.00	22.00	

192	3	250.00	22.00
193	3	250.00	22.00
194	3	250.00	22.00
195	3	250.00	22.00
196	3	250.00	22.00
197	3	250.00	22.00
198	3	250.00	22.00
199	3	250.00	22.00
200	3	250.00	22.00
201	3	250.00	22.00
202	3	250.00	22.00
203	3	250.00	22.00
204	3	250.00	22.00
205	3	250.00	22.00
206	3	250.00	22.00
207	3	250.00	22.00
208	3	250.00	22.00
209	3	250.00	22.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 209 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-30.48	216.49	6.36	384.18	371.05	262.20
1	-30.48	216.49	6.36	384.18	371.05	262.20
2	-30.48	221.97	6.36	935.81	616.65	435.75
2	-30.48	221.97	6.36	935.81	616.65	435.75
3	-33.45	227.49	6.67	1581.45	904.11	638.88
3	-33.45	227.49	6.67	1581.45	904.11	638.88
4	-33.45	233.05	6.67	2219.90	1188.36	839.74
4	-33.45	233.05	6.67	2219.90	1188.36	839.74
5	-33.45	238.61	6.67	2858.35	1472.62	1040.61
5	-33.45	238.61	6.67	2858.35	1472.62	1040.61
6	-28.32	242.69	2.95	3118.82	1588.59	1122.56
6	-28.32	242.69	2.95	3118.82	1588.59	1122.56
7	-28.32	246.49	5.68	3421.89	1632.53	1153.61
7	-28.32	246.49	5.68	3421.89	1632.53	1153.61
8	-28.32	251.50	5.68	3870.03	1813.60	1281.56
8	-28.32	251.50	5.68	3870.03	1813.60	1281.56
9	-28.32	256.50	5.68	4318.18	1994.66	1409.50
9	-28.32	256.50	5.68	4318.18	1994.66	1409.50
10	-28.12	261.90	6.58	4791.41	2185.85	1544.61
10	-28.12	261.90	6.58	4791.41	2185.85	1544.61
11	-28.12	267.70	6.58	5306.40	2393.92	1691.64
11	-28.12	267.70	6.58	5306.40	2393.92	1691.64
12	-28.12	273.50	6.58	5821.38	2601.99	1838.67
12	-28.12	273.50	6.58	5821.38	2601.99	1838.67
13	-28.12	276.52	0.27	6090.68	2710.79	1915.55
13	-28.12	276.52	0.27	6090.68	2710.79	1915.55
14	-13.12	279.07	5.00	5370.64	1339.05	946.23
14	-13.12	279.07	5.00	5370.64	1339.05	946.23
15	-13.12	283.94	5.00	5606.74	1397.92	987.82
15	-13.12	283.94	5.00	5606.74	1397.92	987.82
16	-13.12	288.81	5.00	5842.83	1456.78	1029.42
16	-13.12	288.81	5.00	5842.83	1456.78	1029.42
17	-13.12	293.68	5.00	6078.92	1515.64	1071.01
17	-13.12	293.68	5.00	6078.92	1515.64	1071.01
18	-1.45	299.16	6.09	6023.61	1501.85	1061.27
18	-1.45	299.16	6.09	6023.61	1501.85	1061.27
19	-1.45	305.25	6.09	6155.03	1534.62	1084.42
19	-1.45	305.25	6.09	6155.03	1534.62	1084.42
20	-1.45	310.74	4.88	6277.64	1565.19	1106.03
20	-1.45	310.74	4.88	6277.64	1565.19	1106.03
21	-1.45	315.62	4.88	6391.42	1593.56	1126.07
21	-1.45	315.62	4.88	6391.42	1593.56	1126.07
22	-1.45	320.50	4.88	6505.21	1621.93	1146.12
22	-1.45	320.50	4.88	6505.21	1621.93	1146.12
23	-1.45	325.38	4.88	6618.99	1650.30	1166.17
23	-1.45	325.38	4.88	6618.99	1650.30	1166.17
24	-1.45	330.26	4.88	6732.78	1678.67	1186.21
24	-1.45	330.26	4.88	6732.78	1678.67	1186.21
25	-1.45	335.38	5.37	6838.07	1704.92	1204.76
25	-1.45	335.38	5.37	6838.07	1704.92	1204.76
26	-1.45	340.75	5.37	6934.85	1729.05	1221.82
26	-1.45	340.75	5.37	6934.85	1729.05	1221.82
27	-1.45	346.12	5.37	7031.64	1753.18	1238.87
27	-1.45	346.12	5.37	7031.64	1753.18	1238.87
28	-1.45	351.34	5.09	7154.01	1783.69	1260.43
28	-1.45	351.34	5.09	7154.01	1783.69	1260.43
29	-1.45	356.43	5.09	7301.95	1820.58	1286.49
29	-1.45	356.43	5.09	7301.95	1820.58	1286.49
30	-1.45	361.51	5.09	7449.90	1857.47	1312.56
30	-1.45	361.51	5.09	7449.90	1857.47	1312.56
31	-1.45	366.60	5.09	7597.85	1894.36	1338.63
31	-1.45	366.60	5.09	7597.85	1894.36	1338.63
32	-1.45	371.68	5.09	7745.80	1931.24	1364.69
32	-1.45	371.68	5.09	7745.80	1931.24	1364.69
33	-1.45	376.77	5.09	7893.74	1968.13	1390.76
33	-1.45	376.77	5.09	7893.74	1968.13	1390.76
34	-1.45	381.85	5.09	8041.69	2005.02	1416.83
34	-1.45	381.85	5.09	8041.69	2005.02	1416.83
35	-1.45	386.93	5.09	8189.64	2041.91	1442.89
35	-1.45	386.93	5.09	8189.64	2041.91	1442.89
36	-1.45	392.02	5.09	8337.58	2078.79	1468.96
36	-1.45	392.02	5.09	8337.58	2078.79	1468.96
37	-1.45	397.10	5.09	8485.53	2115.68	1495.02
37	-1.45	397.10	5.09	8485.53	2115.68	1495.02
38	-1.45	402.19	5.09	8633.48	2152.57	1521.09
38	-1.45	402.19	5.09	8633.48	2152.57	1521.09
39	-1.45	407.27	5.09	8781.43	2189.46	1547.16
39	-1.45	407.27	5.09	8781.43	2189.46	1547.16
40	-1.45	412.36	5.09	8929.37	2226.34	1573.22
40	-1.45	412.36	5.09	8929.37	2226.34	1573.22
41	5.31	415.65	1.51	8820.54	2199.21	1554.05
41	5.31	415.65	1.51	8820.54	2199.21	1554.05
42	5.31	418.90	5.02	8844.12	2205.09	1558.20
42	5.31	418.90	5.02	8844.12	2205.09	1558.20
43	5.31	423.90	5.02	8869.49	2211.41	1562.67
43	5.31	423.90	5.02	8869.49	2211.41	1562.67
44	5.31	428.90	5.02	8894.87	2217.74	1567.14

44	5.31	428.90	5.02	8894.87	2217.74	1567.14
45	5.31	433.90	5.02	8920.25	2224.07	1571.61
45	5.31	433.90	5.02	8920.25	2224.07	1571.61
46	5.31	438.90	5.02	8945.62	2230.39	1576.09
46	5.31	438.90	5.02	8945.62	2230.39	1576.09
47	5.31	443.93	5.09	8970.24	2236.53	1580.42
47	5.31	443.93	5.09	8970.24	2236.53	1580.42
48	5.31	449.00	5.09	8994.10	2242.48	1584.63
48	5.31	449.00	5.09	8994.10	2242.48	1584.63
49	5.31	454.07	5.09	9017.96	2248.43	1588.83
49	5.31	454.07	5.09	9017.96	2248.43	1588.83
50	5.31	459.13	5.09	9041.82	2254.38	1593.03
50	5.31	459.13	5.09	9041.82	2254.38	1593.03
51	5.31	464.20	5.09	9065.68	2260.33	1597.24
51	5.31	464.20	5.09	9065.68	2260.33	1597.24
52	5.31	469.27	5.09	9089.54	2266.28	1601.44
52	5.31	469.27	5.09	9089.54	2266.28	1601.44
53	5.31	474.33	5.09	9113.40	2272.22	1605.64
53	5.31	474.33	5.09	9113.40	2272.22	1605.64
54	5.31	479.40	5.09	9137.25	2278.17	1609.85
54	5.31	479.40	5.09	9137.25	2278.17	1609.85
55	5.31	484.47	5.09	9161.11	2284.12	1614.05
55	5.31	484.47	5.09	9161.11	2284.12	1614.05
56	5.31	489.53	5.09	9184.97	2290.07	1618.25
56	5.31	489.53	5.09	9184.97	2290.07	1618.25
57	5.31	494.60	5.09	9208.83	2296.02	1622.46
57	5.31	494.60	5.09	9208.83	2296.02	1622.46
58	5.31	499.67	5.09	9232.69	2301.97	1626.66
58	5.31	499.67	5.09	9232.69	2301.97	1626.66
59	5.31	504.73	5.09	9256.55	2307.92	1630.87
59	5.31	504.73	5.09	9256.55	2307.92	1630.87
60	5.31	509.80	5.09	9280.41	2313.87	1635.07
60	5.31	509.80	5.09	9280.41	2313.87	1635.07
61	5.31	514.87	5.09	9304.27	2319.81	1639.27
61	5.31	514.87	5.09	9304.27	2319.81	1639.27
62	5.31	519.91	5.04	9297.53	2318.13	1638.09
62	5.31	519.91	5.04	9297.53	2318.13	1638.09
63	5.31	524.92	5.04	9260.20	2308.83	1631.51
63	5.31	524.92	5.04	9260.20	2308.83	1631.51
64	5.31	529.94	5.04	9222.87	2299.52	1624.93
64	5.31	529.94	5.04	9222.87	2299.52	1624.93
65	5.31	534.96	5.04	9185.54	2290.21	1618.35
65	5.31	534.96	5.04	9185.54	2290.21	1618.35
66	5.31	539.98	5.04	9148.21	2280.90	1611.78
66	5.31	539.98	5.04	9148.21	2280.90	1611.78
67	5.31	544.99	5.04	9110.88	2271.60	1605.20
67	5.31	544.99	5.04	9110.88	2271.60	1605.20
68	5.31	549.96	4.95	9126.40	2275.47	1607.94
68	5.31	549.96	4.95	9126.40	2275.47	1607.94
69	5.31	554.89	4.95	9194.79	2292.52	1619.98
69	5.31	554.89	4.95	9194.79	2292.52	1619.98
70	5.31	559.82	4.95	9263.18	2309.57	1632.03
70	5.31	559.82	4.95	9263.18	2309.57	1632.03
71	5.31	564.74	4.95	9331.57	2326.62	1644.08
71	5.31	564.74	4.95	9331.57	2326.62	1644.08
72	5.31	569.67	4.95	9399.96	2343.67	1656.13
72	5.31	569.67	4.95	9399.96	2343.67	1656.13
73	5.31	574.60	4.95	9468.34	2360.72	1668.18
73	5.31	574.60	4.95	9468.34	2360.72	1668.18
74	5.31	579.52	4.95	9536.73	2377.77	1680.23
74	5.31	579.52	4.95	9536.73	2377.77	1680.23
75	5.31	584.45	4.95	9605.12	2394.82	1692.28
75	5.31	584.45	4.95	9605.12	2394.82	1692.28
76	5.31	589.38	4.95	9673.51	2411.88	1704.33
76	5.31	589.38	4.95	9673.51	2411.88	1704.33
77	5.31	594.30	4.95	9741.89	2428.93	1716.38
77	5.31	594.30	4.95	9741.89	2428.93	1716.38
78	5.31	599.23	4.95	9810.28	2445.98	1728.42
78	5.31	599.23	4.95	9810.28	2445.98	1728.42
79	5.31	604.16	4.95	9878.67	2463.03	1740.47
79	5.31	604.16	4.95	9878.67	2463.03	1740.47
80	5.31	609.08	4.95	9947.06	2480.08	1752.52
80	5.31	609.08	4.95	9947.06	2480.08	1752.52
81	5.31	614.01	4.95	10015.44	2497.13	1764.57
81	5.31	614.01	4.95	10015.44	2497.13	1764.57
82	5.31	618.94	4.95	10083.83	2514.18	1776.62
82	5.31	618.94	4.95	10083.83	2514.18	1776.62
83	23.39	624.12	5.92	9462.68	2359.31	1667.18
83	23.39	624.12	5.92	9462.68	2359.31	1667.18
84	23.39	629.55	5.92	9328.69	2325.90	1643.58
84	23.39	629.55	5.92	9328.69	2325.90	1643.58
85	23.39	634.98	5.92	9194.69	2292.49	1619.97
85	23.39	634.98	5.92	9194.69	2292.49	1619.97
86	23.39	640.23	5.52	9103.30	2269.71	1603.87
86	23.39	640.23	5.52	9103.30	2269.71	1603.87
87	23.39	645.30	5.52	9054.51	2257.54	1595.27
87	23.39	645.30	5.52	9054.51	2257.54	1595.27
88	23.39	650.37	5.52	9005.72	2245.38	1586.67
88	23.39	650.37	5.52	9005.72	2245.38	1586.67
89	23.39	655.44	5.52	8956.93	2233.21	1578.08
89	23.39	655.44	5.52	8956.93	2233.21	1578.08
90	23.39	660.51	5.52	8908.14	2221.05	1569.48
90	23.39	660.51	5.52	8908.14	2221.05	1569.48
91	23.39	665.58	5.52	8859.36	2208.89	1560.89
91	23.39	665.58	5.52	8859.36	2208.89	1560.89
92	23.39	670.65	5.52	8810.57	2196.72	1552.29
92	23.39	670.65	5.52	8810.57	2196.72	1552.29
93	23.39	675.72	5.52	8761.78	2184.56	1543.69
93	23.39	675.72	5.52	8761.78	2184.56	1543.69
94	23.39	680.79	5.52	8712.99	2172.39	1535.10
94	23.39	680.79	5.52	8712.99	2172.39	1535.10
95	23.39	685.86	5.52	8664.20	2160.23	1526.50
95	23.39	685.86	5.52	8664.20	2160.23	1526.50
96	23.39	690.93	5.52	8615.41	2148.06	1517.91
96	23.39	690.93	5.52	8615.41	2148.06	1517.91
97	23.39	696.00	5.52	8566.63	2135.90	1509.31
97	23.39	696.00	5.52	8566.63	2135.90	1509.31
98	23.39	701.07	5.52	8517.84	2123.74	1500.72
98	23.39	701.07	5.52	8517.84	2123.74	1500.72
99	23.39	706.13	5.52	8469.05	2111.57	1492.12
99	23.39	706.13	5.52	8469.05	2111.57	1492.12
100	23.39	711.20	5.52	8420.26	2099.41	1483.52
100	23.39	711.20	5.52	8420.26	2099.41	1483.52
101	23.39	716.27	5.52	8371.47	2087.24	1474.93
101	23.39	716.27	5.52	8371.47	2087.24	1474.93
102	23.39	721.34	5.52	8322.68	2075.08	1466.33
102	23.39	721.34	5.52	8322.68	2075.08	1466.33
103	23.39	726.41	5.52	8273.89	2062.91	1457.74
103	23.39	726.41	5.52	8273.89	2062.91	1457.74
104	23.39	731.48	5.52	8225.11	2050.75	1449.14

104	23.39	731.48	5.52	8225.11	2050.75	1449.14
105	23.39	736.55	5.52	8176.32	2038.58	1440.54
105	23.39	736.55	5.52	8176.32	2038.58	1440.54
106	23.39	741.62	5.52	8127.53	2026.42	1431.95
106	23.39	741.62	5.52	8127.53	2026.42	1431.95
107	23.39	746.69	5.52	8078.74	2014.26	1423.35
107	23.39	746.69	5.52	8078.74	2014.26	1423.35
108	23.39	751.76	5.52	8029.95	2002.09	1414.76
108	23.39	751.76	5.52	8029.95	2002.09	1414.76
109	23.39	756.83	5.52	7981.16	1989.93	1406.16
109	23.39	756.83	5.52	7981.16	1989.93	1406.16
110	23.39	761.90	5.52	7932.38	1977.76	1397.57
110	23.39	761.90	5.52	7932.38	1977.76	1397.57
111	23.39	766.97	5.52	7883.59	1965.60	1388.97
111	23.39	766.97	5.52	7883.59	1965.60	1388.97
112	23.39	772.02	5.48	7854.15	1958.26	1383.78
112	23.39	772.02	5.48	7854.15	1958.26	1383.78
113	23.39	777.05	5.48	7844.06	1955.74	1382.01
113	23.39	777.05	5.48	7844.06	1955.74	1382.01
114	23.39	782.08	5.48	7833.96	1953.23	1380.23
114	23.39	782.08	5.48	7833.96	1953.23	1380.23
115	23.78	786.95	5.14	7390.48	3235.95	2286.65
115	23.78	786.95	5.14	7390.48	3235.95	2286.65
116	23.78	791.79	5.44	7377.13	3230.55	2282.84
116	23.78	791.79	5.44	7377.13	3230.55	2282.84
117	23.78	796.76	5.44	7363.41	3225.01	2278.92
117	23.78	796.76	5.44	7363.41	3225.01	2278.92
118	23.78	801.74	5.44	7349.68	3219.46	2275.00
118	23.78	801.74	5.44	7349.68	3219.46	2275.00
119	23.78	806.71	5.44	7335.95	3213.92	2271.08
119	23.78	806.71	5.44	7335.95	3213.92	2271.08
120	23.78	811.69	5.44	7322.23	3208.37	2267.16
120	23.78	811.69	5.44	7322.23	3208.37	2267.16
121	23.78	816.66	5.44	7308.50	3202.83	2263.24
121	23.78	816.66	5.44	7308.50	3202.83	2263.24
122	23.78	821.64	5.44	7294.77	3197.28	2259.32
122	23.78	821.64	5.44	7294.77	3197.28	2259.32
123	23.78	826.61	5.44	7281.05	3191.73	2255.41
123	23.78	826.61	5.44	7281.05	3191.73	2255.41
124	23.78	831.59	5.44	7267.32	3186.19	2251.49
124	23.78	831.59	5.44	7267.32	3186.19	2251.49
125	23.78	836.56	5.44	7253.59	3180.64	2247.57
125	23.78	836.56	5.44	7253.59	3180.64	2247.57
126	23.78	841.54	5.44	7239.87	3175.10	2243.65
126	23.78	841.54	5.44	7239.87	3175.10	2243.65
127	23.78	846.51	5.44	7226.14	3169.55	2239.73
127	23.78	846.51	5.44	7226.14	3169.55	2239.73
128	23.78	851.80	6.12	7211.55	3163.66	2235.57
128	23.78	851.80	6.12	7211.55	3163.66	2235.57
129	23.78	857.40	6.12	7196.10	3157.41	2231.15
129	23.78	857.40	6.12	7196.10	3157.41	2231.15
130	23.78	862.70	5.46	7167.76	3145.96	2223.06
130	23.78	862.70	5.46	7167.76	3145.96	2223.06
131	23.78	867.69	5.46	7126.52	3129.30	2211.29
131	23.78	867.69	5.46	7126.52	3129.30	2211.29
132	23.78	872.68	5.46	7085.28	3112.64	2199.51
132	23.78	872.68	5.46	7085.28	3112.64	2199.51
133	23.78	877.67	5.46	7044.03	3095.97	2187.74
133	23.78	877.67	5.46	7044.03	3095.97	2187.74
134	23.78	882.67	5.46	7002.79	3079.31	2175.96
134	23.78	882.67	5.46	7002.79	3079.31	2175.96
135	23.78	887.66	5.46	6961.55	3062.65	2164.19
135	23.78	887.66	5.46	6961.55	3062.65	2164.19
136	23.78	892.65	5.46	6920.31	3045.99	2152.42
136	23.78	892.65	5.46	6920.31	3045.99	2152.42
137	23.78	897.65	5.46	6879.07	3029.33	2140.64
137	23.78	897.65	5.46	6879.07	3029.33	2140.64
138	23.78	902.64	5.46	6837.83	3012.66	2128.87
138	23.78	902.64	5.46	6837.83	3012.66	2128.87
139	23.78	907.63	5.46	6796.59	2996.00	2117.09
139	23.78	907.63	5.46	6796.59	2996.00	2117.09
140	23.78	912.62	5.46	6755.35	2979.34	2105.32
140	23.78	912.62	5.46	6755.35	2979.34	2105.32
141	23.78	917.62	5.46	6714.11	2962.68	2093.54
141	23.78	917.62	5.46	6714.11	2962.68	2093.54
142	23.78	922.61	5.46	6672.87	2946.01	2081.77
142	23.78	922.61	5.46	6672.87	2946.01	2081.77
143	23.78	927.60	5.46	6631.63	2929.35	2070.00
143	23.78	927.60	5.46	6631.63	2929.35	2070.00
144	23.78	932.60	5.46	6590.39	2912.69	2058.22
144	23.78	932.60	5.46	6590.39	2912.69	2058.22
145	23.78	937.59	5.46	6549.15	2896.03	2046.45
145	23.78	937.59	5.46	6549.15	2896.03	2046.45
146	23.78	942.58	5.46	6507.90	2879.36	2034.67
146	23.78	942.58	5.46	6507.90	2879.36	2034.67
147	23.78	947.58	5.46	6466.66	2862.70	2022.90
147	23.78	947.58	5.46	6466.66	2862.70	2022.90
148	23.78	952.57	5.46	6425.42	2846.04	2011.12
148	23.78	952.57	5.46	6425.42	2846.04	2011.12
149	23.78	957.56	5.46	6384.18	2829.38	1999.35
149	23.78	957.56	5.46	6384.18	2829.38	1999.35
150	23.78	962.55	5.46	6342.94	2812.71	1987.58
150	23.78	962.55	5.46	6342.94	2812.71	1987.58
151	23.78	967.55	5.46	6301.70	2796.05	1975.80
151	23.78	967.55	5.46	6301.70	2796.05	1975.80
152	23.78	972.54	5.46	6260.46	2779.39	1964.03
152	23.78	972.54	5.46	6260.46	2779.39	1964.03
153	23.78	977.53	5.46	6219.22	2762.73	1952.25
153	23.78	977.53	5.46	6219.22	2762.73	1952.25
154	23.78	982.53	5.46	6177.98	2746.07	1940.48
154	23.78	982.53	5.46	6177.98	2746.07	1940.48
155	23.78	987.52	5.46	6136.74	2729.40	1928.70
155	23.78	987.52	5.46	6136.74	2729.40	1928.70
156	23.78	992.51	5.46	6095.50	2712.74	1916.93
156	23.78	992.51	5.46	6095.50	2712.74	1916.93
157	23.78	997.50	5.46	6054.26	2696.08	1905.16
157	23.78	997.50	5.46	6054.26	2696.08	1905.16
158	23.78	1002.57	5.61	6002.26	2675.07	1890.31
158	23.78	1002.57	5.61	6002.26	2675.07	1890.31
159	23.78	1007.70	5.61	5939.51	2649.72	1872.39
159	23.78	1007.70	5.61	5939.51	2649.72	1872.39
160	23.78	1012.83	5.61	5876.75	2624.36	1854.48
160	23.78	1012.83	5.61	5876.75	2624.36	1854.48
161	23.78	1017.96	5.61	5814.00	2599.01	1836.56
161	23.78	1017.96	5.61	5814.00	2599.01	1836.56
162	23.78	1023.09	5.61	5751.25	2573.65	1818.65
162	23.78	1023.09	5.61	5751.25	2573.65	1818.65
163	23.78	1028.22	5.61	5688.49	2548.30	1800.73
163	23.78	1028.22	5.61	5688.49	2548.30	1800.73
164	23.78	1033.35	5.61	5625.74	2522.95	1782.81

164	23.78	1033.35	5.61	5625.74	2522.95	1782.81
165	23.78	1038.48	5.61	5562.99	2497.59	1764.90
165	23.78	1038.48	5.61	5562.99	2497.59	1764.90
166	23.78	1043.62	5.61	5500.23	2472.24	1746.98
166	23.78	1043.62	5.61	5500.23	2472.24	1746.98
167	23.78	1048.75	5.61	5437.48	2446.88	1729.07
167	23.78	1048.75	5.61	5437.48	2446.88	1729.07
168	23.78	1053.88	5.61	5374.73	2421.53	1711.15
168	23.78	1053.88	5.61	5374.73	2421.53	1711.15
169	23.78	1059.01	5.61	5311.97	2396.18	1693.23
169	23.78	1059.01	5.61	5311.97	2396.18	1693.23
170	23.78	1064.14	5.61	5249.22	2370.82	1675.32
170	23.78	1064.14	5.61	5249.22	2370.82	1675.32
171	23.78	1069.27	5.61	5186.47	2345.47	1657.40
171	23.78	1069.27	5.61	5186.47	2345.47	1657.40
172	23.78	1074.40	5.61	5123.71	2320.11	1639.48
172	23.78	1074.40	5.61	5123.71	2320.11	1639.48
173	23.78	1079.53	5.61	5060.96	2294.76	1621.57
173	23.78	1079.53	5.61	5060.96	2294.76	1621.57
174	23.78	1084.61	5.48	4961.26	2254.48	1593.10
174	23.78	1084.61	5.48	4961.26	2254.48	1593.10
175	23.78	1089.63	5.48	4824.60	2199.26	1554.09
175	23.78	1089.63	5.48	4824.60	2199.26	1554.09
176	23.78	1094.65	5.48	4687.94	2144.05	1515.07
176	23.78	1094.65	5.48	4687.94	2144.05	1515.07
177	23.78	1099.67	5.48	4551.29	2088.84	1476.06
177	23.78	1099.67	5.48	4551.29	2088.84	1476.06
178	23.78	1104.69	5.48	4414.63	2033.63	1437.04
178	23.78	1104.69	5.48	4414.63	2033.63	1437.04
179	23.78	1109.71	5.48	4277.98	1978.41	1398.03
179	23.78	1109.71	5.48	4277.98	1978.41	1398.03
180	23.78	1114.73	5.48	4141.32	1923.20	1359.01
180	23.78	1114.73	5.48	4141.32	1923.20	1359.01
181	23.78	1119.75	5.48	4004.67	1867.99	1320.00
181	23.78	1119.75	5.48	4004.67	1867.99	1320.00
182	23.78	1124.76	5.48	3868.01	1812.78	1280.98
182	23.78	1124.76	5.48	3868.01	1812.78	1280.98
183	23.78	1129.78	5.48	3731.35	1757.56	1241.97
183	23.78	1129.78	5.48	3731.35	1757.56	1241.97
184	23.78	1134.80	5.48	3594.70	1702.35	1202.95
184	23.78	1134.80	5.48	3594.70	1702.35	1202.95
185	23.78	1139.82	5.48	3458.04	1647.14	1163.93
185	23.78	1139.82	5.48	3458.04	1647.14	1163.93
186	23.78	1144.84	5.48	3321.39	1591.93	1124.92
186	23.78	1144.84	5.48	3321.39	1591.93	1124.92
187	23.78	1149.86	5.48	3184.73	1536.72	1085.90
187	23.78	1149.86	5.48	3184.73	1536.72	1085.90
188	23.78	1154.88	5.48	3048.08	1481.50	1046.89
188	23.78	1154.88	5.48	3048.08	1481.50	1046.89
189	23.78	1159.90	5.48	2911.42	1426.29	1007.87
189	23.78	1159.90	5.48	2911.42	1426.29	1007.87
190	23.78	1164.92	5.48	2774.76	1371.08	968.86
190	23.78	1164.92	5.48	2774.76	1371.08	968.86
191	23.78	1169.94	5.48	2638.11	1315.87	929.84
191	23.78	1169.94	5.48	2638.11	1315.87	929.84
192	23.78	1174.96	5.48	2501.45	1260.65	890.83
192	23.78	1174.96	5.48	2501.45	1260.65	890.83
193	23.78	1179.98	5.48	2364.80	1205.44	851.81
193	23.78	1179.98	5.48	2364.80	1205.44	851.81
194	23.78	1185.00	5.48	2228.14	1150.23	812.80
194	23.78	1185.00	5.48	2228.14	1150.23	812.80
195	23.78	1190.02	5.48	2091.49	1095.02	773.78
195	23.78	1190.02	5.48	2091.49	1095.02	773.78
196	23.78	1195.04	5.48	1954.83	1039.80	734.77
196	23.78	1195.04	5.48	1954.83	1039.80	734.77
197	23.78	1200.05	5.48	1818.17	984.59	695.75
197	23.78	1200.05	5.48	1818.17	984.59	695.75
198	23.78	1205.07	5.48	1681.52	929.38	656.74
198	23.78	1205.07	5.48	1681.52	929.38	656.74
199	23.78	1210.09	5.48	1544.86	874.17	617.72
199	23.78	1210.09	5.48	1544.86	874.17	617.72
200	23.78	1215.11	5.48	1408.21	818.95	578.70
200	23.78	1215.11	5.48	1408.21	818.95	578.70
201	23.78	1220.13	5.48	1271.55	763.74	539.69
201	23.78	1220.13	5.48	1271.55	763.74	539.69
202	23.78	1225.15	5.48	1134.90	708.53	500.67
202	23.78	1225.15	5.48	1134.90	708.53	500.67
203	23.78	1230.17	5.48	998.24	653.32	461.66
203	23.78	1230.17	5.48	998.24	653.32	461.66
204	23.78	1235.19	5.48	861.59	598.10	422.64
204	23.78	1235.19	5.48	861.59	598.10	422.64
205	23.78	1238.35	1.42	775.56	563.35	398.08
205	23.78	1238.35	1.42	775.56	563.35	398.08
206	37.55	1241.00	5.05	533.74	465.65	329.04
206	37.55	1241.00	5.05	533.74	465.65	329.04
207	37.55	1245.00	5.05	305.53	373.44	263.89
207	37.55	1245.00	5.05	305.53	373.44	263.89
208	37.55	1248.67	4.23	114.61	296.30	209.38
208	37.55	1248.67	4.23	114.61	296.30	209.38
209	37.55	1252.03	4.23	76.82	31.04	21.93
209	37.55	1252.03	4.23	76.82	31.04	21.93

Table 4 - Base Force Data on the 209 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-30.48	216.49	6.36	2443.37	2359.85	1667.56
1	-30.48	216.49	6.36	2443.37	2359.85	1667.56
2	-30.48	221.97	6.36	5951.71	3921.87	2771.35
2	-30.48	221.97	6.36	5951.71	3921.87	2771.35
3	-33.45	227.49	6.67	10543.01	6027.39	4259.19
3	-33.45	227.49	6.67	10543.01	6027.39	4259.19
4	-33.45	233.05	6.67	14799.33	7922.42	5598.29
4	-33.45	233.05	6.67	14799.33	7922.42	5598.29
5	-33.45	238.61	6.67	19055.64	9817.45	6937.40
5	-33.45	238.61	6.67	19055.64	9817.45	6937.40
6	-28.32	242.69	2.95	9208.04	4690.17	3314.26
6	-28.32	242.69	2.95	9208.04	4690.17	3314.26
7	-28.32	246.49	5.68	19445.01	9276.92	6555.44
7	-28.32	246.49	5.68	19445.01	9276.92	6555.44
8	-28.32	251.50	5.68	21991.58	10305.81	7282.49
8	-28.32	251.50	5.68	21991.58	10305.81	7282.49
9	-28.32	256.50	5.68	24538.16	11334.69	8009.54
9	-28.32	256.50	5.68	24538.16	11334.69	8009.54
10	-28.12	261.90	6.58	31507.81	14373.96	10157.21
10	-28.12	261.90	6.58	31507.81	14373.96	10157.21

11	-28.12	267.70	6.58	34894.31	15742.19	11124.06
11	-28.12	267.70	6.58	34894.31	15742.19	11124.06
12	-28.12	273.50	6.58	38280.80	17110.42	12090.90
12	-28.12	273.50	6.58	38280.80	17110.42	12090.90
13	-28.12	276.52	0.27	1658.54	738.17	521.62
13	-28.12	276.52	0.27	1658.54	738.17	521.62
14	-13.12	279.07	5.00	26853.22	6695.26	4731.14
14	-13.12	279.07	5.00	26853.22	6695.26	4731.14
15	-13.12	283.94	5.00	28033.68	6989.58	4939.12
15	-13.12	283.94	5.00	28033.68	6989.58	4939.12
16	-13.12	288.81	5.00	29214.14	7283.90	5147.09
16	-13.12	288.81	5.00	29214.14	7283.90	5147.09
17	-13.12	293.68	5.00	30394.60	7578.22	5355.07
17	-13.12	293.68	5.00	30394.60	7578.22	5355.07
18	-1.45	299.16	6.09	36700.48	9150.46	6466.08
18	-1.45	299.16	6.09	36700.48	9150.46	6466.08
19	-1.45	305.25	6.09	37501.21	9350.10	6607.15
19	-1.45	305.25	6.09	37501.21	9350.10	6607.15
20	-1.45	310.74	4.88	30644.72	7640.59	5399.14
20	-1.45	310.74	4.88	30644.72	7640.59	5399.14
21	-1.45	315.62	4.88	31200.17	7779.08	5497.00
21	-1.45	315.62	4.88	31200.17	7779.08	5497.00
22	-1.45	320.50	4.88	31755.62	7917.57	5594.87
22	-1.45	320.50	4.88	31755.62	7917.57	5594.87
23	-1.45	325.38	4.88	32311.07	8056.06	5692.73
23	-1.45	325.38	4.88	32311.07	8056.06	5692.73
24	-1.45	330.26	4.88	32866.53	8194.54	5790.59
24	-1.45	330.26	4.88	32866.53	8194.54	5790.59
25	-1.45	335.38	5.37	36709.42	9152.69	6467.65
25	-1.45	335.38	5.37	36709.42	9152.69	6467.65
26	-1.45	340.75	5.37	37229.01	9282.23	6559.19
26	-1.45	340.75	5.37	37229.01	9282.23	6559.19
27	-1.45	346.12	5.37	37748.60	9411.78	6650.74
27	-1.45	346.12	5.37	37748.60	9411.78	6650.74
28	-1.45	351.34	5.09	36387.07	9072.31	6410.86
28	-1.45	351.34	5.09	36387.07	9072.31	6410.86
29	-1.45	356.43	5.09	37139.56	9259.93	6543.44
29	-1.45	356.43	5.09	37139.56	9259.93	6543.44
30	-1.45	361.51	5.09	37892.06	9447.55	6676.01
30	-1.45	361.51	5.09	37892.06	9447.55	6676.01
31	-1.45	366.60	5.09	38644.56	9635.17	6808.59
31	-1.45	366.60	5.09	38644.56	9635.17	6808.59
32	-1.45	371.68	5.09	39397.05	9822.79	6941.17
32	-1.45	371.68	5.09	39397.05	9822.79	6941.17
33	-1.45	376.77	5.09	40149.55	10010.41	7073.75
33	-1.45	376.77	5.09	40149.55	10010.41	7073.75
34	-1.45	381.85	5.09	40902.05	10198.03	7206.33
34	-1.45	381.85	5.09	40902.05	10198.03	7206.33
35	-1.45	386.93	5.09	41654.55	10385.64	7338.91
35	-1.45	386.93	5.09	41654.55	10385.64	7338.91
36	-1.45	392.02	5.09	42407.04	10573.26	7471.49
36	-1.45	392.02	5.09	42407.04	10573.26	7471.49
37	-1.45	397.10	5.09	43159.54	10760.88	7604.07
37	-1.45	397.10	5.09	43159.54	10760.88	7604.07
38	-1.45	402.19	5.09	43912.04	10948.50	7736.64
38	-1.45	402.19	5.09	43912.04	10948.50	7736.64
39	-1.45	407.27	5.09	44664.53	11136.12	7869.22
39	-1.45	407.27	5.09	44664.53	11136.12	7869.22
40	-1.45	412.36	5.09	45417.03	11323.74	8001.80
40	-1.45	412.36	5.09	45417.03	11323.74	8001.80
41	5.31	415.65	1.51	13287.88	3313.04	2341.13
41	5.31	415.65	1.51	13287.88	3313.04	2341.13
42	5.31	418.90	5.02	44411.31	11072.98	7824.61
42	5.31	418.90	5.02	44411.31	11072.98	7824.61
43	5.31	423.90	5.02	44538.74	11104.76	7847.06
43	5.31	423.90	5.02	44538.74	11104.76	7847.06
44	5.31	428.90	5.02	44666.17	11136.53	7869.51
44	5.31	428.90	5.02	44666.17	11136.53	7869.51
45	5.31	433.90	5.02	44793.60	11168.30	7891.96
45	5.31	433.90	5.02	44793.60	11168.30	7891.96
46	5.31	438.90	5.02	44921.04	11200.07	7914.41
46	5.31	438.90	5.02	44921.04	11200.07	7914.41
47	5.31	443.93	5.09	45645.25	11380.64	8042.01
47	5.31	443.93	5.09	45645.25	11380.64	8042.01
48	5.31	449.00	5.09	45766.66	11410.91	8063.40
48	5.31	449.00	5.09	45766.66	11410.91	8063.40
49	5.31	454.07	5.09	45888.07	11441.18	8084.79
49	5.31	454.07	5.09	45888.07	11441.18	8084.79
50	5.31	459.13	5.09	46009.47	11471.45	8106.18
50	5.31	459.13	5.09	46009.47	11471.45	8106.18
51	5.31	464.20	5.09	46130.88	11501.72	8127.57
51	5.31	464.20	5.09	46130.88	11501.72	8127.57
52	5.31	469.27	5.09	46252.29	11531.99	8148.96
52	5.31	469.27	5.09	46252.29	11531.99	8148.96
53	5.31	474.33	5.09	46373.69	11562.26	8170.35
53	5.31	474.33	5.09	46373.69	11562.26	8170.35
54	5.31	479.40	5.09	46495.10	11592.53	8191.74
54	5.31	479.40	5.09	46495.10	11592.53	8191.74
55	5.31	484.47	5.09	46616.51	11622.80	8213.13
55	5.31	484.47	5.09	46616.51	11622.80	8213.13
56	5.31	489.53	5.09	46737.92	11653.07	8234.52
56	5.31	489.53	5.09	46737.92	11653.07	8234.52
57	5.31	494.60	5.09	46859.32	11683.34	8255.91
57	5.31	494.60	5.09	46859.32	11683.34	8255.91
58	5.31	499.67	5.09	46980.73	11713.61	8277.30
58	5.31	499.67	5.09	46980.73	11713.61	8277.30
59	5.31	504.73	5.09	47102.14	11743.88	8298.69
59	5.31	504.73	5.09	47102.14	11743.88	8298.69
60	5.31	509.80	5.09	47223.55	11774.15	8320.08
60	5.31	509.80	5.09	47223.55	11774.15	8320.08
61	5.31	514.87	5.09	47344.95	11804.42	8341.47
61	5.31	514.87	5.09	47344.95	11804.42	8341.47
62	5.31	519.91	5.04	46843.79	11679.47	8253.18
62	5.31	519.91	5.04	46843.79	11679.47	8253.18
63	5.31	524.92	5.04	46655.71	11632.57	8220.04
63	5.31	524.92	5.04	46655.71	11632.57	8220.04
64	5.31	529.94	5.04	46467.62	11585.68	8186.90
64	5.31	529.94	5.04	46467.62	11585.68	8186.90
65	5.31	534.96	5.04	46279.54	11538.78	8153.76
65	5.31	534.96	5.04	46279.54	11538.78	8153.76
66	5.31	539.98	5.04	46091.45	11491.89	8120.62
66	5.31	539.98	5.04	46091.45	11491.89	8120.62
67	5.31	544.99	5.04	45903.37	11444.99	8087.49
67	5.31	544.99	5.04	45903.37	11444.99	8087.49
68	5.31	549.96	4.95	45156.69	11258.83	7955.93
68	5.31	549.96	4.95	45156.69	11258.83	7955.93
69	5.31	554.89	4.95	45495.06	11343.19	8015.55
69	5.31	554.89	4.95	45495.06	11343.19	8015.55
70	5.31	559.82	4.95	45833.44	11427.56	8075.17
70	5.31	559.82	4.95	45833.44	11427.56	8075.17

71	5.31	564.74	4.95	46171.82	11511.93	8134.78
71	5.31	564.74	4.95	46171.82	11511.93	8134.78
72	5.31	569.67	4.95	46510.19	11596.29	8194.40
72	5.31	569.67	4.95	46510.19	11596.29	8194.40
73	5.31	574.60	4.95	46848.57	11680.66	8254.02
73	5.31	574.60	4.95	46848.57	11680.66	8254.02
74	5.31	579.52	4.95	47186.94	11765.03	8313.63
74	5.31	579.52	4.95	47186.94	11765.03	8313.63
75	5.31	584.45	4.95	47525.32	11849.39	8373.25
75	5.31	584.45	4.95	47525.32	11849.39	8373.25
76	5.31	589.38	4.95	47863.70	11933.76	8432.87
76	5.31	589.38	4.95	47863.70	11933.76	8432.87
77	5.31	594.30	4.95	48202.07	12018.13	8492.48
77	5.31	594.30	4.95	48202.07	12018.13	8492.48
78	5.31	599.23	4.95	48540.45	12102.49	8552.10
78	5.31	599.23	4.95	48540.45	12102.49	8552.10
79	5.31	604.16	4.95	48878.83	12186.86	8611.72
79	5.31	604.16	4.95	48878.83	12186.86	8611.72
80	5.31	609.08	4.95	49217.20	12271.23	8671.34
80	5.31	609.08	4.95	49217.20	12271.23	8671.34
81	5.31	614.01	4.95	49555.58	12355.59	8730.95
81	5.31	614.01	4.95	49555.58	12355.59	8730.95
82	5.31	618.94	4.95	49893.96	12439.96	8790.57
82	5.31	618.94	4.95	49893.96	12439.96	8790.57
83	23.39	624.12	5.92	56018.54	13966.99	9869.63
83	23.39	624.12	5.92	56018.54	13966.99	9869.63
84	23.39	629.55	5.92	55225.29	13769.21	9729.87
84	23.39	629.55	5.92	55225.29	13769.21	9729.87
85	23.39	634.98	5.92	54432.05	13571.43	9590.11
85	23.39	634.98	5.92	54432.05	13571.43	9590.11
86	23.39	640.23	5.52	50279.62	12536.12	8858.52
86	23.39	640.23	5.52	50279.62	12536.12	8858.52
87	23.39	645.30	5.52	50010.15	12468.93	8811.04
87	23.39	645.30	5.52	50010.15	12468.93	8811.04
88	23.39	650.37	5.52	49740.68	12401.75	8763.56
88	23.39	650.37	5.52	49740.68	12401.75	8763.56
89	23.39	655.44	5.52	49471.21	12334.56	8716.09
89	23.39	655.44	5.52	49471.21	12334.56	8716.09
90	23.39	660.51	5.52	49201.74	12267.37	8668.61
90	23.39	660.51	5.52	49201.74	12267.37	8668.61
91	23.39	665.58	5.52	48932.27	12200.19	8621.14
91	23.39	665.58	5.52	48932.27	12200.19	8621.14
92	23.39	670.65	5.52	48662.80	12133.00	8573.66
92	23.39	670.65	5.52	48662.80	12133.00	8573.66
93	23.39	675.72	5.52	48393.33	12065.81	8526.18
93	23.39	675.72	5.52	48393.33	12065.81	8526.18
94	23.39	680.79	5.52	48123.86	11998.63	8478.71
94	23.39	680.79	5.52	48123.86	11998.63	8478.71
95	23.39	685.86	5.52	47854.39	11931.44	8431.23
95	23.39	685.86	5.52	47854.39	11931.44	8431.23
96	23.39	690.93	5.52	47584.92	11864.25	8383.75
96	23.39	690.93	5.52	47584.92	11864.25	8383.75
97	23.39	696.00	5.52	47315.45	11797.07	8336.28
97	23.39	696.00	5.52	47315.45	11797.07	8336.28
98	23.39	701.07	5.52	47045.98	11729.88	8288.80
98	23.39	701.07	5.52	47045.98	11729.88	8288.80
99	23.39	706.13	5.52	46776.51	11662.69	8241.32
99	23.39	706.13	5.52	46776.51	11662.69	8241.32
100	23.39	711.20	5.52	46507.04	11595.51	8193.85
100	23.39	711.20	5.52	46507.04	11595.51	8193.85

101	23.39	716.27	5.52	46237.57	11528.32	8146.37
101	23.39	716.27	5.52	46237.57	11528.32	8146.37
102	23.39	721.34	5.52	45968.10	11461.14	8098.89
102	23.39	721.34	5.52	45968.10	11461.14	8098.89
103	23.39	726.41	5.52	45698.63	11393.95	8051.42
103	23.39	726.41	5.52	45698.63	11393.95	8051.42
104	23.39	731.48	5.52	45429.16	11326.76	8003.94
104	23.39	731.48	5.52	45429.16	11326.76	8003.94
105	23.39	736.55	5.52	45159.69	11259.58	7956.46
105	23.39	736.55	5.52	45159.69	11259.58	7956.46
106	23.39	741.62	5.52	44890.22	11192.39	7908.99
106	23.39	741.62	5.52	44890.22	11192.39	7908.99
107	23.39	746.69	5.52	44620.75	11125.20	7861.51
107	23.39	746.69	5.52	44620.75	11125.20	7861.51
108	23.39	751.76	5.52	44351.28	11058.02	7814.03
108	23.39	751.76	5.52	44351.28	11058.02	7814.03
109	23.39	756.83	5.52	44081.81	10990.83	7766.56
109	23.39	756.83	5.52	44081.81	10990.83	7766.56
110	23.39	761.90	5.52	43812.34	10923.64	7719.08
110	23.39	761.90	5.52	43812.34	10923.64	7719.08
111	23.39	766.97	5.52	43542.87	10856.46	7671.60
111	23.39	766.97	5.52	43542.87	10856.46	7671.60
112	23.39	772.02	5.48	43073.08	10739.32	7588.83
112	23.39	772.02	5.48	43073.08	10739.32	7588.83
113	23.39	777.05	5.48	43017.73	10725.52	7579.08
113	23.39	777.05	5.48	43017.73	10725.52	7579.08
114	23.39	782.08	5.48	42962.39	10711.73	7569.33
114	23.39	782.08	5.48	42962.39	10711.73	7569.33
115	23.78	786.95	5.14	37957.09	16619.64	11744.10
115	23.78	786.95	5.14	37957.09	16619.64	11744.10
116	23.78	791.79	5.44	40105.42	17562.75	12410.54
116	23.78	791.79	5.44	40105.42	17562.75	12410.54
117	23.78	796.76	5.44	40030.80	17532.61	12389.23
117	23.78	796.76	5.44	40030.80	17532.61	12389.23
118	23.78	801.74	5.44	39956.18	17502.46	12367.93
118	23.78	801.74	5.44	39956.18	17502.46	12367.93
119	23.78	806.71	5.44	39881.55	17472.31	12346.62
119	23.78	806.71	5.44	39881.55	17472.31	12346.62
120	23.78	811.69	5.44	39806.93	17442.16	12325.32
120	23.78	811.69	5.44	39806.93	17442.16	12325.32
121	23.78	816.66	5.44	39732.31	17412.01	12304.01
121	23.78	816.66	5.44	39732.31	17412.01	12304.01
122	23.78	821.64	5.44	39657.69	17381.86	12282.71
122	23.78	821.64	5.44	39657.69	17381.86	12282.71
123	23.78	826.61	5.44	39583.06	17351.71	12261.41
123	23.78	826.61	5.44	39583.06	17351.71	12261.41
124	23.78	831.59	5.44	39508.44	17321.56	12240.10
124	23.78	831.59	5.44	39508.44	17321.56	12240.10
125	23.78	836.56	5.44	39433.82	17291.41	12218.80
125	23.78	836.56	5.44	39433.82	17291.41	12218.80
126	23.78	841.54	5.44	39359.20	17261.26	12197.49
126	23.78	841.54	5.44	39359.20	17261.26	12197.49
127	23.78	846.51	5.44	39284.57	17231.11	12176.19
127	23.78	846.51	5.44	39284.57	17231.11	12176.19
128	23.78	851.80	6.12	44130.55	19359.75	13680.37
128	23.78	851.80	6.12	44130.55	19359.75	13680.37
129	23.78	857.40	6.12	44036.00	19321.55	13653.38
129	23.78	857.40	6.12	44036.00	19321.55	13653.38
130	23.78	862.70	5.46	39107.03	17164.26	12128.95
130	23.78	862.70	5.46	39107.03	17164.26	12128.95

131	23.78	867.69	5.46	38882.03	17073.35	12064.71
131	23.78	867.69	5.46	38882.03	17073.35	12064.71
132	23.78	872.68	5.46	38657.02	16982.44	12000.47
132	23.78	872.68	5.46	38657.02	16982.44	12000.47
133	23.78	877.67	5.46	38432.01	16891.53	11936.23
133	23.78	877.67	5.46	38432.01	16891.53	11936.23
134	23.78	882.67	5.46	38207.00	16800.62	11871.99
134	23.78	882.67	5.46	38207.00	16800.62	11871.99
135	23.78	887.66	5.46	37981.99	16709.71	11807.75
135	23.78	887.66	5.46	37981.99	16709.71	11807.75
136	23.78	892.65	5.46	37756.99	16618.80	11743.51
136	23.78	892.65	5.46	37756.99	16618.80	11743.51
137	23.78	897.65	5.46	37531.98	16527.89	11679.26
137	23.78	897.65	5.46	37531.98	16527.89	11679.26
138	23.78	902.64	5.46	37306.97	16436.98	11615.02
138	23.78	902.64	5.46	37306.97	16436.98	11615.02
139	23.78	907.63	5.46	37081.96	16346.08	11550.78
139	23.78	907.63	5.46	37081.96	16346.08	11550.78
140	23.78	912.62	5.46	36856.95	16255.17	11486.54
140	23.78	912.62	5.46	36856.95	16255.17	11486.54
141	23.78	917.62	5.46	36631.94	16164.26	11422.30
141	23.78	917.62	5.46	36631.94	16164.26	11422.30
142	23.78	922.61	5.46	36406.94	16073.35	11358.06
142	23.78	922.61	5.46	36406.94	16073.35	11358.06
143	23.78	927.60	5.46	36181.93	15982.44	11293.82
143	23.78	927.60	5.46	36181.93	15982.44	11293.82
144	23.78	932.60	5.46	35956.92	15891.53	11229.58
144	23.78	932.60	5.46	35956.92	15891.53	11229.58
145	23.78	937.59	5.46	35731.91	15800.62	11165.34
145	23.78	937.59	5.46	35731.91	15800.62	11165.34
146	23.78	942.58	5.46	35506.90	15709.71	11101.10
146	23.78	942.58	5.46	35506.90	15709.71	11101.10
147	23.78	947.58	5.46	35281.89	15618.80	11036.86
147	23.78	947.58	5.46	35281.89	15618.80	11036.86
148	23.78	952.57	5.46	35056.89	15527.89	10972.62
148	23.78	952.57	5.46	35056.89	15527.89	10972.62
149	23.78	957.56	5.46	34831.88	15436.98	10908.38
149	23.78	957.56	5.46	34831.88	15436.98	10908.38
150	23.78	962.55	5.46	34606.87	15346.07	10844.14
150	23.78	962.55	5.46	34606.87	15346.07	10844.14
151	23.78	967.55	5.46	34381.86	15255.16	10779.90
151	23.78	967.55	5.46	34381.86	15255.16	10779.90
152	23.78	972.54	5.46	34156.85	15164.26	10715.66
152	23.78	972.54	5.46	34156.85	15164.26	10715.66
153	23.78	977.53	5.46	33931.84	15073.35	10651.42
153	23.78	977.53	5.46	33931.84	15073.35	10651.42
154	23.78	982.53	5.46	33706.84	14982.44	10587.18
154	23.78	982.53	5.46	33706.84	14982.44	10587.18
155	23.78	987.52	5.46	33481.83	14891.53	10522.94
155	23.78	987.52	5.46	33481.83	14891.53	10522.94
156	23.78	992.51	5.46	33256.82	14800.62	10458.70
156	23.78	992.51	5.46	33256.82	14800.62	10458.70
157	23.78	997.50	5.46	33031.81	14709.71	10394.46
157	23.78	997.50	5.46	33031.81	14709.71	10394.46
158	23.78	1002.57	5.61	33655.84	14999.64	10599.34
158	23.78	1002.57	5.61	33655.84	14999.64	10599.34
159	23.78	1007.70	5.61	33303.97	14857.47	10498.88
159	23.78	1007.70	5.61	33303.97	14857.47	10498.88
160	23.78	1012.83	5.61	32952.10	14715.31	10398.42
160	23.78	1012.83	5.61	32952.10	14715.31	10398.42
161	23.78	1017.96	5.61	32600.23	14573.14	10297.96
161	23.78	1017.96	5.61	32600.23	14573.14	10297.96
162	23.78	1023.09	5.61	32248.36	14430.98	10197.50
162	23.78	1023.09	5.61	32248.36	14430.98	10197.50
163	23.78	1028.22	5.61	31896.49	14288.82	10097.04
163	23.78	1028.22	5.61	31896.49	14288.82	10097.04
164	23.78	1033.35	5.61	31544.62	14146.65	9996.58
164	23.78	1033.35	5.61	31544.62	14146.65	9996.58
165	23.78	1038.48	5.61	31192.75	14004.49	9896.12
165	23.78	1038.48	5.61	31192.75	14004.49	9896.12
166	23.78	1043.62	5.61	30840.88	13862.32	9795.67
166	23.78	1043.62	5.61	30840.88	13862.32	9795.67
167	23.78	1048.75	5.61	30489.01	13720.16	9695.21
167	23.78	1048.75	5.61	30489.01	13720.16	9695.21
168	23.78	1053.88	5.61	30137.14	13577.99	9594.75
168	23.78	1053.88	5.61	30137.14	13577.99	9594.75
169	23.78	1059.01	5.61	29785.27	13435.83	9494.29
169	23.78	1059.01	5.61	29785.27	13435.83	9494.29
170	23.78	1064.14	5.61	29433.40	13293.66	9393.83
170	23.78	1064.14	5.61	29433.40	13293.66	9393.83
171	23.78	1069.27	5.61	29081.53	13151.50	9293.37
171	23.78	1069.27	5.61	29081.53	13151.50	9293.37
172	23.78	1074.40	5.61	28729.66	13009.33	9192.91
172	23.78	1074.40	5.61	28729.66	13009.33	9192.91
173	23.78	1079.53	5.61	28377.79	12867.17	9092.45
173	23.78	1079.53	5.61	28377.79	12867.17	9092.45
174	23.78	1084.61	5.48	27212.09	12365.63	8738.04
174	23.78	1084.61	5.48	27212.09	12365.63	8738.04
175	23.78	1089.63	5.48	26462.55	12062.79	8524.05
175	23.78	1089.63	5.48	26462.55	12062.79	8524.05
176	23.78	1094.65	5.48	25713.00	11759.96	8310.05
176	23.78	1094.65	5.48	25713.00	11759.96	8310.05
177	23.78	1099.67	5.48	24963.46	11457.12	8096.06
177	23.78	1099.67	5.48	24963.46	11457.12	8096.06
178	23.78	1104.69	5.48	24213.91	11154.28	7882.06
178	23.78	1104.69	5.48	24213.91	11154.28	7882.06
179	23.78	1109.71	5.48	23464.37	10851.45	7668.06
179	23.78	1109.71	5.48	23464.37	10851.45	7668.06
180	23.78	1114.73	5.48	22714.82	10548.61	7454.07
180	23.78	1114.73	5.48	22714.82	10548.61	7454.07
181	23.78	1119.75	5.48	21965.27	10245.78	7240.07
181	23.78	1119.75	5.48	21965.27	10245.78	7240.07
182	23.78	1124.76	5.48	21215.73	9942.94	7026.08
182	23.78	1124.76	5.48	21215.73	9942.94	7026.08
183	23.78	1129.78	5.48	20466.18	9640.10	6812.08
183	23.78	1129.78	5.48	20466.18	9640.10	6812.08
184	23.78	1134.80	5.48	19716.64	9337.27	6598.08
184	23.78	1134.80	5.48	19716.64	9337.27	6598.08
185	23.78	1139.82	5.48	18967.09	9034.43	6384.09
185	23.78	1139.82	5.48	18967.09	9034.43	6384.09
186	23.78	1144.84	5.48	18217.55	8731.60	6170.09
186	23.78	1144.84	5.48	18217.55	8731.60	6170.09
187	23.78	1149.86	5.48	17468.00	8428.76	5956.10
187	23.78	1149.86	5.48	17468.00	8428.76	5956.10
188	23.78	1154.88	5.48	16718.46	8125.92	5742.10
188	23.78	1154.88	5.48	16718.46	8125.92	5742.10
189	23.78	1159.90	5.48	15968.91	7823.09	5528.10
189	23.78	1159.90	5.48	15968.91	7823.09	5528.10
190	23.78	1164.92	5.48	15219.36	7520.25	5314.11
190	23.78	1164.92	5.48	15219.36	7520.25	5314.11

191	23.78	1169.94	5.48	14469.82	7217.42	5100.11
191	23.78	1169.94	5.48	14469.82	7217.42	5100.11
192	23.78	1174.96	5.48	13720.27	6914.58	4886.12
192	23.78	1174.96	5.48	13720.27	6914.58	4886.12
193	23.78	1179.98	5.48	12970.73	6611.74	4672.12
193	23.78	1179.98	5.48	12970.73	6611.74	4672.12
194	23.78	1185.00	5.48	12221.18	6308.91	4458.12
194	23.78	1185.00	5.48	12221.18	6308.91	4458.12
195	23.78	1190.02	5.48	11471.64	6006.07	4244.13
195	23.78	1190.02	5.48	11471.64	6006.07	4244.13
196	23.78	1195.04	5.48	10722.09	5703.24	4030.13
196	23.78	1195.04	5.48	10722.09	5703.24	4030.13
197	23.78	1200.05	5.48	9972.54	5400.40	3816.14
197	23.78	1200.05	5.48	9972.54	5400.40	3816.14
198	23.78	1205.07	5.48	9223.00	5097.56	3602.14
198	23.78	1205.07	5.48	9223.00	5097.56	3602.14
199	23.78	1210.09	5.48	8473.45	4794.73	3388.14
199	23.78	1210.09	5.48	8473.45	4794.73	3388.14
200	23.78	1215.11	5.48	7723.91	4491.89	3174.15
200	23.78	1215.11	5.48	7723.91	4491.89	3174.15
201	23.78	1220.13	5.48	6974.36	4189.06	2960.15
201	23.78	1220.13	5.48	6974.36	4189.06	2960.15
202	23.78	1225.15	5.48	6224.82	3886.22	2746.16
202	23.78	1225.15	5.48	6224.82	3886.22	2746.16
203	23.78	1230.17	5.48	5475.27	3583.38	2532.16
203	23.78	1230.17	5.48	5475.27	3583.38	2532.16
204	23.78	1235.19	5.48	4725.73	3280.55	2318.16
204	23.78	1235.19	5.48	4725.73	3280.55	2318.16
205	23.78	1238.35	1.42	1101.75	800.28	565.51
205	23.78	1238.35	1.42	1101.75	800.28	565.51
206	37.55	1241.00	5.05	2692.88	2349.31	1660.11
206	37.55	1241.00	5.05	2692.88	2349.31	1660.11
207	37.55	1245.00	5.05	1541.48	1884.11	1331.39
207	37.55	1245.00	5.05	1541.48	1884.11	1331.39
208	37.55	1248.67	4.23	484.26	1252.00	884.72
208	37.55	1248.67	4.23	484.26	1252.00	884.72
209	37.55	1252.03	4.23	324.58	131.14	92.67
209	37.55	1252.03	4.23	324.58	131.14	92.67

Sum of the Resisting Forces = 2250757.45 (lbs)

Average Available Shear Strength = 2024.36(psf)

Sum of the Driving Forces = 1670086.22 (lbs)

Average Mobilized Shear Stress = 1502.10(psf)

Total length of the failure surface = 1111.84(ft)

Factor of Safety Balance Check: FS = 1.34769

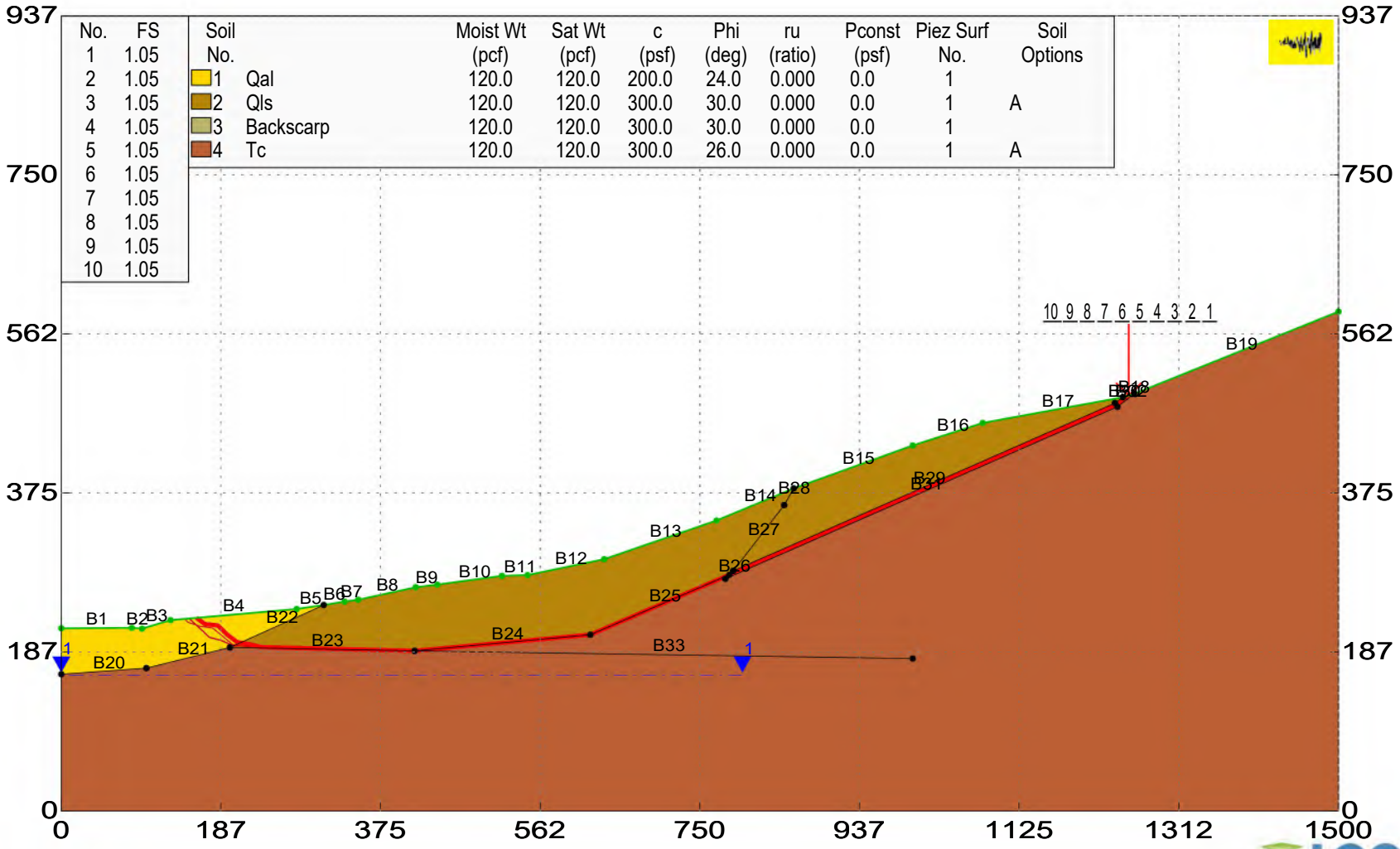
Janbu's Correction Factor (fo) = 1.0505

Janub's FS Corrected = 1.41571

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Design - Larger Qls - Seismic

LGC Geotechnical, Inc. \xhLRGde.gsd



GEOSTASE FS = 1.05

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

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** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 4/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_04\xhLRGde.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_04\xhLRGde.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Design - Larger Qls - Seismic

BOUNDARY DATA

19 Surface Boundaries
33 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.200	82.800	216.000	1
2	82.800	216.000	95.100	215.000	1
3	95.100	215.000	128.300	225.100	1
4	128.300	225.100	276.400	238.000	1
5	276.400	238.000	308.300	242.900	1
6	308.300	242.900	332.700	247.000	2
7	332.700	247.000	348.800	249.000	2
8	348.800	249.000	416.400	263.600	2
9	416.400	263.600	441.400	267.000	2
10	441.400	267.000	517.400	277.100	2
11	517.400	277.100	547.500	278.000	2
12	547.500	278.000	637.700	297.000	2
13	637.700	297.000	769.500	342.600	2
14	769.500	342.600	860.200	380.200	2
15	860.200	380.200	1000.000	430.900	2
16	1000.000	430.900	1082.100	457.600	2
17	1082.100	457.600	1247.000	487.900	2
18	1247.000	487.900	1260.400	491.900	3
19	1260.400	491.900	1500.000	588.800	4
20	0.000	161.100	100.000	168.300	4
21	100.000	168.300	198.100	192.800	4
22	198.100	192.800	308.300	242.900	2
23	198.100	192.800	414.900	188.600	4
24	414.900	188.600	621.400	207.800	4
25	621.400	207.800	784.600	278.400	4
26	779.900	273.600	789.300	283.200	3
27	789.300	283.200	849.000	360.500	2
28	849.000	360.500	860.200	380.200	2
29	789.300	283.200	1237.700	480.800	3
30	1237.700	480.800	1247.000	487.900	3
31	779.900	273.600	1240.300	476.500	4
32	1240.300	476.500	1260.400	491.900	4
33	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 15.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	354.70	189.70	5.00
2	414.90	188.60	414.90	188.60	0.00
3	621.40	207.80	621.40	207.80	0.00
4	784.60	278.40	784.60	278.40	0.00
5	1239.00	478.60	1239.00	478.60	0.00
6	1253.70	489.90	1253.70	489.90	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.160 FS Min = 1.047 FS Ave = 1.095
Standard Deviation = 0.027 Coefficient of Variation = 2.51 %

Critical Surface is Sequence Number 121 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 1.047

Table 1 - Geometry Data on the 219 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.12	2.07	161.10	225.88	227.96	-35.85	4.98	6.32
2	5.12	6.22	166.22	222.18	228.40	-35.85	4.98	6.32
3	4.97	8.80	171.26	220.05	228.84	-6.56	4.98	5.00
4	4.97	9.80	176.23	219.47	229.27	-6.56	4.98	5.00
5	4.97	10.80	181.20	218.90	229.71	-6.56	4.98	5.00
6	5.41	14.14	186.38	216.02	230.16	-43.87	4.98	7.50
7	5.41	19.81	191.79	210.82	230.63	-43.87	4.98	7.50
8	5.97	25.17	197.48	205.95	231.13	-37.25	4.98	7.50
9	5.97	30.23	203.45	201.41	231.65	-37.25	4.98	7.50
10	4.01	33.30	208.44	198.78	232.08	-10.34	4.98	4.08
11	5.37	34.57	213.13	197.92	232.49	-10.34	4.98	5.46
12	5.37	36.02	218.50	196.94	232.96	-10.34	4.98	5.46
13	4.87	37.53	223.62	195.88	233.40	-13.30	4.98	5.00
14	4.87	39.10	228.49	194.73	233.83	-13.30	4.98	5.00
15	4.87	40.68	233.35	193.57	234.25	-13.30	4.98	5.00
16	5.08	41.75	238.33	192.94	234.68	-1.41	4.98	5.08
17	5.08	42.31	243.40	192.81	235.13	-1.41	4.98	5.08
18	5.08	42.88	248.48	192.69	235.57	-1.41	4.98	5.08
19	5.08	43.45	253.56	192.56	236.01	-1.41	4.98	5.08
20	5.08	44.01	258.63	192.44	236.45	-1.41	4.98	5.08

21	5.08	44.58	263.71	192.31	236.89	-1.41	4.98	5.08
22	5.08	45.15	268.79	192.19	237.34	-1.41	4.98	5.08
23	5.08	45.71	273.86	192.06	237.78	-1.41	4.98	5.08
24	5.32	46.47	279.06	191.94	238.41	-1.41	8.73	5.32
25	5.32	47.42	284.38	191.81	239.22	-1.41	8.73	5.32
26	5.32	48.37	289.69	191.68	240.04	-1.41	8.73	5.32
27	5.32	49.31	295.01	191.55	240.86	-1.41	8.73	5.32
28	5.32	50.26	300.33	191.41	241.68	-1.41	8.73	5.32
29	5.32	51.21	305.64	191.28	242.49	-1.41	8.73	5.32
30	4.88	52.15	310.74	191.16	243.31	-1.41	9.54	4.88
31	4.88	53.09	315.62	191.04	244.13	-1.41	9.54	4.88
32	4.88	54.03	320.50	190.92	244.95	-1.41	9.54	4.88
33	4.88	54.97	325.38	190.80	245.77	-1.41	9.54	4.88
34	4.88	55.91	330.26	190.68	246.59	-1.41	9.54	4.88
35	5.37	56.78	335.38	190.55	247.33	-1.41	7.08	5.37
36	5.37	57.58	340.75	190.42	248.00	-1.41	7.08	5.37
37	5.37	58.38	346.12	190.29	248.67	-1.41	7.08	5.37
38	5.08	59.39	351.34	190.16	249.55	-1.41	12.19	5.09
39	5.08	60.61	356.43	190.04	250.65	-1.41	12.19	5.09
40	5.08	61.83	361.51	189.91	251.75	-1.41	12.19	5.09
41	5.08	63.06	366.60	189.79	252.84	-1.41	12.19	5.09
42	5.08	64.28	371.68	189.66	253.94	-1.41	12.19	5.09
43	5.08	65.50	376.77	189.54	255.04	-1.41	12.19	5.09
44	5.08	66.73	381.85	189.41	256.14	-1.41	12.19	5.09
45	5.08	67.95	386.93	189.29	257.24	-1.41	12.19	5.09
46	5.08	69.17	392.02	189.16	258.33	-1.41	12.19	5.09
47	5.08	70.40	397.10	189.04	259.43	-1.41	12.19	5.09
48	5.08	71.62	402.19	188.91	260.53	-1.41	12.19	5.09
49	5.08	72.84	407.27	188.79	261.63	-1.41	12.19	5.09
50	5.08	74.06	412.36	188.66	262.73	-1.41	12.19	5.09
51	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
52	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
53	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
54	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
55	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
56	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
57	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
58	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
59	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
60	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
61	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
62	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
63	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
64	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
65	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
66	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
67	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
68	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
69	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
70	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
71	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
72	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
73	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
74	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
75	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
76	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
77	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
78	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
79	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
80	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
81	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
82	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
83	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
84	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
85	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
86	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
87	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
88	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
89	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
90	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
91	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
92	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
93	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
94	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
95	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
96	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
97	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
98	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
99	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
100	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
101	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
102	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
103	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
104	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
105	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
106	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
107	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
108	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
109	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
110	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
111	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
112	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
113	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
114	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
115	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
116	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
117	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
118	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
119	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
120	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
121	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
122	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
123	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
124	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
125	4.70	70.40	786.95	279.44	349.83	23.78	22.52	5.14
126	4.98	70.27	791.79	281.57	351.84	23.78	22.52	5.44
127	4.98	70.14	796.76	283.76	353.90	23.78	22.52	5.44
128	4.97	70.01	801.74	285.95	355.96	23.78	22.52	5.44
129	4.98	69.88	806.71	288.14	358.03	23.78	22.52	5.44
130	4.98	69.75	811.69	290.33	360.09	23.78	22.52	5.44
131	4.98	69.63	816.66	292.53	362.15	23.78	22.52	5.44
132	4.98	69.50	821.64	294.72	364.21	23.78	22.52	5.44
133	4.98	69.37	826.61	296.91	366.28	23.78	22.52	5.44
134	4.98	69.24	831.59	299.10	368.34	23.78	22.52	5.44
135	4.97	69.11	836.56	301.29	370.40	23.78	22.52	5.44
136	4.98	68.98	841.54	303.49	372.46	23.78	22.52	5.44
137	4.98	68.85	846.51	305.68	374.53	23.78	22.52	5.44
138	5.60	68.71	851.80	308.01	376.72	23.78	22.52	6.12
139	5.60	68.56	857.40	310.47	379.04	23.78	22.52	6.12
140	4.99	68.30	862.70	312.81	381.11	23.78	19.93	5.46

141	4.99	67.91	867.69	315.01	382.92	23.78	19.93	5.46
142	4.99	67.52	872.68	317.21	384.73	23.78	19.93	5.46
143	4.99	67.13	877.67	319.41	386.54	23.78	19.93	5.46
144	4.99	66.74	882.67	321.61	388.35	23.78	19.93	5.46
145	4.99	66.35	887.66	323.81	390.16	23.78	19.93	5.46
146	4.99	65.96	892.65	326.01	391.97	23.78	19.93	5.46
147	4.99	65.57	897.65	328.21	393.78	23.78	19.93	5.46
148	4.99	65.19	902.64	330.41	395.59	23.78	19.93	5.46
149	4.99	64.80	907.63	332.61	397.40	23.78	19.93	5.46
150	4.99	64.41	912.62	334.81	399.21	23.78	19.93	5.46
151	4.99	64.02	917.62	337.01	401.02	23.78	19.93	5.46
152	4.99	63.63	922.61	339.20	402.83	23.78	19.93	5.46
153	4.99	63.24	927.60	341.40	404.64	23.78	19.93	5.46
154	4.99	62.85	932.60	343.60	406.46	23.78	19.93	5.46
155	4.99	62.46	937.59	345.80	408.27	23.78	19.93	5.46
156	4.99	62.07	942.58	348.00	410.08	23.78	19.93	5.46
157	4.99	61.68	947.58	350.20	411.89	23.78	19.93	5.46
158	4.99	61.29	952.57	352.40	413.70	23.78	19.93	5.46
159	4.99	60.91	957.56	354.60	415.51	23.78	19.93	5.46
160	4.99	60.52	962.55	356.80	417.32	23.78	19.93	5.46
161	4.99	60.13	967.55	359.00	419.13	23.78	19.93	5.46
162	4.99	59.74	972.54	361.20	420.94	23.78	19.93	5.46
163	4.99	59.35	977.53	363.40	422.75	23.78	19.93	5.46
164	4.99	58.96	982.53	365.60	424.56	23.78	19.93	5.46
165	4.99	58.57	987.52	367.80	426.37	23.78	19.93	5.46
166	4.99	58.18	992.51	370.00	428.18	23.78	19.93	5.46
167	4.99	57.79	997.50	372.20	429.99	23.78	19.93	5.46
168	5.13	57.30	1002.57	374.43	431.73	23.78	18.02	5.61
169	5.13	56.71	1007.70	376.69	433.40	23.78	18.02	5.61
170	5.13	56.12	1012.83	378.95	435.07	23.78	18.02	5.61
171	5.13	55.53	1017.96	381.21	436.74	23.78	18.02	5.61
172	5.13	54.93	1023.09	383.47	438.41	23.78	18.02	5.61
173	5.13	54.34	1028.22	385.74	440.08	23.78	18.02	5.61
174	5.13	53.75	1033.35	388.00	441.75	23.78	18.02	5.61
175	5.13	53.16	1038.48	390.26	443.42	23.78	18.02	5.61
176	5.13	52.57	1043.62	392.52	445.08	23.78	18.02	5.61
177	5.13	51.98	1048.75	394.78	446.75	23.78	18.02	5.61
178	5.13	51.38	1053.88	397.04	448.42	23.78	18.02	5.61
179	5.13	50.79	1059.01	399.30	450.09	23.78	18.02	5.61
180	5.13	50.20	1064.14	401.56	451.76	23.78	18.02	5.61
181	5.13	49.61	1069.27	403.82	453.43	23.78	18.02	5.61
182	5.13	49.02	1074.40	406.08	455.10	23.78	18.02	5.61
183	5.13	48.42	1079.53	408.34	456.77	23.78	18.02	5.61
184	5.02	47.48	1084.61	410.58	458.06	23.78	10.41	5.48
185	5.02	46.19	1089.63	412.79	458.98	23.78	10.41	5.48
186	5.02	44.90	1094.65	415.00	459.91	23.78	10.41	5.48
187	5.02	43.62	1099.67	417.21	460.83	23.78	10.41	5.48
188	5.02	42.33	1104.69	419.42	461.75	23.78	10.41	5.48
189	5.02	41.04	1109.71	421.64	462.67	23.78	10.41	5.48
190	5.02	39.75	1114.73	423.85	463.59	23.78	10.41	5.48
191	5.02	38.46	1119.75	426.06	464.52	23.78	10.41	5.48
192	5.02	37.17	1124.76	428.27	465.44	23.78	10.41	5.48
193	5.02	35.88	1129.78	430.48	466.36	23.78	10.41	5.48
194	5.02	34.59	1134.80	432.69	467.28	23.78	10.41	5.48
195	5.02	33.30	1139.82	434.90	468.21	23.78	10.41	5.48
196	5.02	32.01	1144.84	437.12	469.13	23.78	10.41	5.48
197	5.02	30.72	1149.86	439.33	470.05	23.78	10.41	5.48
198	5.02	29.43	1154.88	441.54	470.97	23.78	10.41	5.48
199	5.02	28.15	1159.90	443.75	471.90	23.78	10.41	5.48
200	5.02	26.86	1164.92	445.96	472.82	23.78	10.41	5.48
201	5.02	25.57	1169.94	448.17	473.74	23.78	10.41	5.48
202	5.02	24.28	1174.96	450.38	474.66	23.78	10.41	5.48
203	5.02	22.99	1179.98	452.60	475.58	23.78	10.41	5.48
204	5.02	21.70	1185.00	454.81	476.51	23.78	10.41	5.48
205	5.02	20.41	1190.02	457.02	477.43	23.78	10.41	5.48
206	5.02	19.12	1195.04	459.23	478.35	23.78	10.41	5.48
207	5.02	17.83	1200.05	461.44	479.27	23.78	10.41	5.48
208	5.02	16.54	1205.07	463.65	480.20	23.78	10.41	5.48
209	5.02	15.25	1210.09	465.86	481.12	23.78	10.41	5.48
210	5.02	13.97	1215.11	468.08	482.04	23.78	10.41	5.48
211	5.02	12.68	1220.13	470.29	482.96	23.78	10.41	5.48
212	5.02	11.39	1225.15	472.50	483.89	23.78	10.41	5.48
213	5.02	10.10	1230.17	474.71	484.81	23.78	10.41	5.48
214	5.02	8.81	1235.19	476.92	485.73	23.78	10.41	5.48
215	1.30	8.00	1238.35	478.31	486.31	23.78	10.41	1.42
216	4.00	6.66	1241.00	480.14	486.80	37.55	10.41	5.05
217	4.00	4.32	1245.00	483.21	487.53	37.55	10.41	5.05
218	3.35	2.36	1248.67	486.04	488.40	37.55	16.62	4.23
219	3.35	0.79	1252.03	488.61	489.40	37.55	16.62	4.23

Table 2 - Force Data On The 219 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1274.4	0.0	0.0	191.2	0.0	0.0
2	3823.2	0.0	0.0	573.5	0.0	0.0
3	5243.1	0.0	0.0	786.5	0.0	0.0
4	5841.5	0.0	0.0	876.2	0.0	0.0
5	6439.8	0.0	0.0	966.0	0.0	0.0
6	9174.2	0.0	0.0	1376.1	0.0	0.0
7	12852.1	0.0	0.0	1927.8	0.0	0.0
8	18033.8	0.0	0.0	2705.1	0.0	0.0
9	21658.6	0.0	0.0	3248.8	0.0	0.0
10	16023.6	0.0	0.0	2403.5	0.0	0.0
11	22289.6	0.0	0.0	3343.4	0.0	0.0
12	23223.6	0.0	0.0	3483.5	0.0	0.0
13	21912.4	0.0	0.0	3286.9	0.0	0.0
14	22831.6	0.0	0.0	3424.7	0.0	0.0
15	23750.7	0.0	0.0	3562.6	0.0	0.0
16	25431.2	0.0	0.0	3814.7	0.0	0.0
17	25776.6	0.0	0.0	3866.5	0.0	0.0
18	26121.9	0.0	0.0	3918.3	0.0	0.0
19	26467.3	0.0	0.0	3970.1	0.0	0.0
20	26812.6	0.0	0.0	4021.9	0.0	0.0
21	27157.9	0.0	0.0	4073.7	0.0	0.0
22	27503.3	0.0	0.0	4125.5	0.0	0.0
23	27848.6	0.0	0.0	4177.3	0.0	0.0
24	29648.8	0.0	0.0	4447.3	0.0	0.0
25	30253.2	0.0	0.0	4538.0	0.0	0.0
26	30857.6	0.0	0.0	4628.6	0.0	0.0
27	31461.9	0.0	0.0	4719.3	0.0	0.0
28	32066.3	0.0	0.0	4809.9	0.0	0.0
29	32670.6	0.0	0.0	4900.6	0.0	0.0
30	30539.9	0.0	0.0	4581.0	0.0	0.0
31	31090.3	0.0	0.0	4663.5	0.0	0.0

32	31640.7	0.0	0.0	4746.1	0.0	0.0
33	32191.0	0.0	0.0	4828.7	0.0	0.0
34	32741.4	0.0	0.0	4911.2	0.0	0.0
35	36566.4	0.0	0.0	5485.0	0.0	0.0
36	37080.6	0.0	0.0	5562.1	0.0	0.0
37	37594.8	0.0	0.0	5639.2	0.0	0.0
38	36235.7	0.0	0.0	5435.4	0.0	0.0
39	36982.0	0.0	0.0	5547.3	0.0	0.0
40	37728.2	0.0	0.0	5659.2	0.0	0.0
41	38474.5	0.0	0.0	5771.2	0.0	0.0
42	39220.7	0.0	0.0	5883.1	0.0	0.0
43	39967.0	0.0	0.0	5995.0	0.0	0.0
44	40713.2	0.0	0.0	6107.0	0.0	0.0
45	41459.5	0.0	0.0	6218.9	0.0	0.0
46	42205.7	0.0	0.0	6330.9	0.0	0.0
47	42952.0	0.0	0.0	6442.8	0.0	0.0
48	43698.2	0.0	0.0	6554.7	0.0	0.0
49	44444.5	0.0	0.0	6666.7	0.0	0.0
50	45190.7	0.0	0.0	6778.6	0.0	0.0
51	13458.3	0.0	0.0	2018.7	0.0	0.0
52	44980.9	0.0	0.0	6747.1	0.0	0.0
53	45109.9	0.0	0.0	6766.5	0.0	0.0
54	45239.0	0.0	0.0	6785.8	0.0	0.0
55	45368.0	0.0	0.0	6805.2	0.0	0.0
56	45497.1	0.0	0.0	6824.6	0.0	0.0
57	46230.6	0.0	0.0	6934.6	0.0	0.0
58	46353.6	0.0	0.0	6953.0	0.0	0.0
59	46476.5	0.0	0.0	6971.5	0.0	0.0
60	46599.5	0.0	0.0	6989.9	0.0	0.0
61	46722.5	0.0	0.0	7008.4	0.0	0.0
62	46845.4	0.0	0.0	7026.8	0.0	0.0
63	46968.4	0.0	0.0	7045.3	0.0	0.0
64	47091.4	0.0	0.0	7063.7	0.0	0.0
65	47214.3	0.0	0.0	7082.1	0.0	0.0
66	47337.3	0.0	0.0	7100.6	0.0	0.0
67	47460.3	0.0	0.0	7119.0	0.0	0.0
68	47583.2	0.0	0.0	7137.5	0.0	0.0
69	47706.2	0.0	0.0	7155.9	0.0	0.0
70	47829.2	0.0	0.0	7174.4	0.0	0.0
71	47952.1	0.0	0.0	7192.8	0.0	0.0
72	47444.5	0.0	0.0	7116.7	0.0	0.0
73	47254.0	0.0	0.0	7088.1	0.0	0.0
74	47063.5	0.0	0.0	7059.5	0.0	0.0
75	46873.0	0.0	0.0	7031.0	0.0	0.0
76	46682.5	0.0	0.0	7002.4	0.0	0.0
77	46492.0	0.0	0.0	6973.8	0.0	0.0
78	45735.8	0.0	0.0	6860.4	0.0	0.0
79	46078.5	0.0	0.0	6911.8	0.0	0.0
80	46421.2	0.0	0.0	6963.2	0.0	0.0
81	46763.9	0.0	0.0	7014.6	0.0	0.0
82	47106.6	0.0	0.0	7066.0	0.0	0.0
83	47449.4	0.0	0.0	7117.4	0.0	0.0
84	47792.1	0.0	0.0	7168.8	0.0	0.0
85	48134.8	0.0	0.0	7220.2	0.0	0.0
86	48477.5	0.0	0.0	7271.6	0.0	0.0
87	48820.2	0.0	0.0	7323.0	0.0	0.0
88	49162.9	0.0	0.0	7374.4	0.0	0.0
89	49505.7	0.0	0.0	7425.8	0.0	0.0
90	49848.4	0.0	0.0	7477.3	0.0	0.0
91	50191.1	0.0	0.0	7528.7	0.0	0.0
92	50533.8	0.0	0.0	7580.1	0.0	0.0
93	55526.6	0.0	0.0	8329.0	0.0	0.0
94	54740.3	0.0	0.0	8211.1	0.0	0.0
95	53954.1	0.0	0.0	8093.1	0.0	0.0
96	49838.1	0.0	0.0	7475.7	0.0	0.0
97	49571.0	0.0	0.0	7435.7	0.0	0.0
98	49303.9	0.0	0.0	7395.6	0.0	0.0
99	49036.8	0.0	0.0	7355.5	0.0	0.0
100	48769.7	0.0	0.0	7315.5	0.0	0.0
101	48502.6	0.0	0.0	7275.4	0.0	0.0
102	48235.5	0.0	0.0	7235.3	0.0	0.0
103	47968.4	0.0	0.0	7195.3	0.0	0.0
104	47701.3	0.0	0.0	7155.2	0.0	0.0
105	47434.2	0.0	0.0	7115.1	0.0	0.0
106	47167.1	0.0	0.0	7075.1	0.0	0.0
107	46900.0	0.0	0.0	7035.0	0.0	0.0
108	46632.9	0.0	0.0	6994.9	0.0	0.0
109	46365.8	0.0	0.0	6954.9	0.0	0.0
110	46098.7	0.0	0.0	6914.8	0.0	0.0
111	45831.5	0.0	0.0	6874.7	0.0	0.0
112	45564.4	0.0	0.0	6834.7	0.0	0.0
113	45297.3	0.0	0.0	6794.6	0.0	0.0
114	45030.2	0.0	0.0	6754.5	0.0	0.0
115	44763.1	0.0	0.0	6714.5	0.0	0.0
116	44496.0	0.0	0.0	6674.4	0.0	0.0
117	44228.9	0.0	0.0	6634.3	0.0	0.0
118	43961.8	0.0	0.0	6594.3	0.0	0.0
119	43694.7	0.0	0.0	6554.2	0.0	0.0
120	43427.6	0.0	0.0	6514.1	0.0	0.0
121	43160.5	0.0	0.0	6474.1	0.0	0.0
122	42694.8	0.0	0.0	6404.2	0.0	0.0
123	42640.0	0.0	0.0	6396.0	0.0	0.0
124	42585.1	0.0	0.0	6387.8	0.0	0.0
125	39704.8	0.0	0.0	5955.7	0.0	0.0
126	41952.8	0.0	0.0	6292.9	0.0	0.0
127	41875.5	0.0	0.0	6281.3	0.0	0.0
128	41798.2	0.0	0.0	6269.7	0.0	0.0
129	41720.9	0.0	0.0	6258.1	0.0	0.0
130	41643.6	0.0	0.0	6246.5	0.0	0.0
131	41566.3	0.0	0.0	6234.9	0.0	0.0
132	41489.0	0.0	0.0	6223.3	0.0	0.0
133	41411.7	0.0	0.0	6211.8	0.0	0.0
134	41334.4	0.0	0.0	6200.2	0.0	0.0
135	41257.1	0.0	0.0	6188.6	0.0	0.0
136	41179.8	0.0	0.0	6177.0	0.0	0.0
137	41102.5	0.0	0.0	6165.4	0.0	0.0
138	46173.6	0.0	0.0	6926.0	0.0	0.0
139	46075.6	0.0	0.0	6911.3	0.0	0.0
140	40920.0	0.0	0.0	6138.0	0.0	0.0
141	40686.9	0.0	0.0	6103.0	0.0	0.0
142	40453.8	0.0	0.0	6068.1	0.0	0.0
143	40220.7	0.0	0.0	6033.1	0.0	0.0
144	39987.6	0.0	0.0	5998.1	0.0	0.0
145	39754.5	0.0	0.0	5963.2	0.0	0.0
146	39521.4	0.0	0.0	5928.2	0.0	0.0
147	39288.3	0.0	0.0	5893.3	0.0	0.0
148	39055.3	0.0	0.0	5858.3	0.0	0.0
149	38822.2	0.0	0.0	5823.3	0.0	0.0
150	38589.1	0.0	0.0	5788.4	0.0	0.0
151	38356.0	0.0	0.0	5753.4	0.0	0.0

152	38122.9	0.0	0.0	5718.4	0.0	0.0
153	37889.8	0.0	0.0	5683.5	0.0	0.0
154	37656.7	0.0	0.0	5648.5	0.0	0.0
155	37423.6	0.0	0.0	5613.5	0.0	0.0
156	37190.5	0.0	0.0	5578.6	0.0	0.0
157	36957.4	0.0	0.0	5543.6	0.0	0.0
158	36724.3	0.0	0.0	5508.6	0.0	0.0
159	36491.2	0.0	0.0	5473.7	0.0	0.0
160	36258.1	0.0	0.0	5438.7	0.0	0.0
161	36025.0	0.0	0.0	5403.8	0.0	0.0
162	35792.0	0.0	0.0	5368.8	0.0	0.0
163	35558.9	0.0	0.0	5333.8	0.0	0.0
164	35325.8	0.0	0.0	5298.9	0.0	0.0
165	35092.7	0.0	0.0	5263.9	0.0	0.0
166	34859.6	0.0	0.0	5228.9	0.0	0.0
167	34626.5	0.0	0.0	5194.0	0.0	0.0
168	35284.2	0.0	0.0	5292.6	0.0	0.0
169	34919.7	0.0	0.0	5238.0	0.0	0.0
170	34555.2	0.0	0.0	5183.3	0.0	0.0
171	34190.7	0.0	0.0	5128.6	0.0	0.0
172	33826.2	0.0	0.0	5073.9	0.0	0.0
173	33461.7	0.0	0.0	5019.3	0.0	0.0
174	33097.2	0.0	0.0	4964.6	0.0	0.0
175	32732.7	0.0	0.0	4909.9	0.0	0.0
176	32368.1	0.0	0.0	4855.2	0.0	0.0
177	32003.6	0.0	0.0	4800.5	0.0	0.0
178	31639.1	0.0	0.0	4745.9	0.0	0.0
179	31274.6	0.0	0.0	4691.2	0.0	0.0
180	30910.1	0.0	0.0	4636.5	0.0	0.0
181	30545.6	0.0	0.0	4581.8	0.0	0.0
182	30181.1	0.0	0.0	4527.2	0.0	0.0
183	29816.6	0.0	0.0	4472.5	0.0	0.0
184	28599.8	0.0	0.0	4290.0	0.0	0.0
185	27823.4	0.0	0.0	4173.5	0.0	0.0
186	27046.9	0.0	0.0	4057.0	0.0	0.0
187	26270.4	0.0	0.0	3940.6	0.0	0.0
188	25493.9	0.0	0.0	3824.1	0.0	0.0
189	24717.5	0.0	0.0	3707.6	0.0	0.0
190	23941.0	0.0	0.0	3591.1	0.0	0.0
191	23164.5	0.0	0.0	3474.7	0.0	0.0
192	22388.0	0.0	0.0	3358.2	0.0	0.0
193	21611.5	0.0	0.0	3241.7	0.0	0.0
194	20835.1	0.0	0.0	3125.3	0.0	0.0
195	20058.6	0.0	0.0	3008.8	0.0	0.0
196	19282.1	0.0	0.0	2892.3	0.0	0.0
197	18505.6	0.0	0.0	2775.8	0.0	0.0
198	17729.2	0.0	0.0	2659.4	0.0	0.0
199	16952.7	0.0	0.0	2542.9	0.0	0.0
200	16176.2	0.0	0.0	2426.4	0.0	0.0
201	15399.7	0.0	0.0	2310.0	0.0	0.0
202	14623.3	0.0	0.0	2193.5	0.0	0.0
203	13846.8	0.0	0.0	2077.0	0.0	0.0
204	13070.3	0.0	0.0	1960.5	0.0	0.0
205	12293.8	0.0	0.0	1844.1	0.0	0.0
206	11517.4	0.0	0.0	1727.6	0.0	0.0
207	10740.9	0.0	0.0	1611.1	0.0	0.0
208	9964.4	0.0	0.0	1494.7	0.0	0.0
209	9187.9	0.0	0.0	1378.2	0.0	0.0
210	8411.4	0.0	0.0	1261.7	0.0	0.0
211	7635.0	0.0	0.0	1145.2	0.0	0.0
212	6858.5	0.0	0.0	1028.8	0.0	0.0
213	6082.0	0.0	0.0	912.3	0.0	0.0
214	5305.5	0.0	0.0	795.8	0.0	0.0
215	1247.5	0.0	0.0	187.1	0.0	0.0
216	3196.8	0.0	0.0	479.5	0.0	0.0
217	2073.7	0.0	0.0	311.1	0.0	0.0
218	949.8	0.0	0.0	142.5	0.0	0.0
219	316.6	0.0	0.0	47.5	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 7606205.88(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 7606205.88(lbs)

TOTAL AREA OF SLIDING MASS = 63385.05(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 219 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	1	200.00	24.00	
8	1	200.00	24.00	
9	1	200.00	24.00	
10	1	200.00	24.00	
11	2	0.00	15.00	A
12	2	0.00	15.00	A
13	2	0.00	15.00	A
14	2	0.00	15.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	2	0.00	15.00	A
23	2	0.00	15.00	A
24	2	0.00	15.00	A
25	2	0.00	15.00	A
26	2	0.00	15.00	A
27	2	0.00	15.00	A
28	2	0.00	15.00	A
29	2	0.00	15.00	A
30	2	0.00	15.00	A
31	2	0.00	15.00	A
32	2	0.00	15.00	A
33	2	0.00	15.00	A
34	2	0.00	15.00	A
35	2	0.00	15.00	A
36	2	0.00	15.00	A
37	2	0.00	15.00	A
38	2	0.00	15.00	A
39	2	0.00	15.00	A
40	2	0.00	15.00	A

41	2	0.00	15.00	A
42	2	0.00	15.00	A
43	2	0.00	15.00	A
44	2	0.00	15.00	A
45	2	0.00	15.00	A
46	2	0.00	15.00	A
47	2	0.00	15.00	A
48	2	0.00	15.00	A
49	2	0.00	15.00	A
50	2	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A
77	2	0.00	15.00	A
78	2	0.00	15.00	A
79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	2	0.00	15.00	A
88	2	0.00	15.00	A
89	2	0.00	15.00	A
90	2	0.00	15.00	A
91	2	0.00	15.00	A
92	2	0.00	15.00	A
93	2	0.00	15.00	A
94	2	0.00	15.00	A
95	2	0.00	15.00	A
96	2	0.00	15.00	A
97	2	0.00	15.00	A
98	2	0.00	15.00	A
99	2	0.00	15.00	A
100	2	0.00	15.00	A
101	2	0.00	15.00	A
102	2	0.00	15.00	A
103	2	0.00	15.00	A
104	2	0.00	15.00	A
105	2	0.00	15.00	A
106	2	0.00	15.00	A
107	2	0.00	15.00	A
108	2	0.00	15.00	A
109	2	0.00	15.00	A
110	2	0.00	15.00	A
111	2	0.00	15.00	A
112	2	0.00	15.00	A
113	2	0.00	15.00	A
114	2	0.00	15.00	A
115	2	0.00	15.00	A
116	2	0.00	15.00	A
117	2	0.00	15.00	A
118	2	0.00	15.00	A
119	2	0.00	15.00	A
120	2	0.00	15.00	A
121	2	0.00	15.00	A
122	2	0.00	15.00	A
123	2	0.00	15.00	A
124	2	0.00	15.00	A
125	3	300.00	30.00	
126	3	300.00	30.00	
127	3	300.00	30.00	
128	3	300.00	30.00	
129	3	300.00	30.00	
130	3	300.00	30.00	
131	3	300.00	30.00	
132	3	300.00	30.00	
133	3	300.00	30.00	
134	3	300.00	30.00	
135	3	300.00	30.00	
136	3	300.00	30.00	
137	3	300.00	30.00	
138	3	300.00	30.00	
139	3	300.00	30.00	
140	3	300.00	30.00	
141	3	300.00	30.00	
142	3	300.00	30.00	
143	3	300.00	30.00	
144	3	300.00	30.00	
145	3	300.00	30.00	
146	3	300.00	30.00	
147	3	300.00	30.00	
148	3	300.00	30.00	
149	3	300.00	30.00	
150	3	300.00	30.00	
151	3	300.00	30.00	
152	3	300.00	30.00	
153	3	300.00	30.00	
154	3	300.00	30.00	
155	3	300.00	30.00	
156	3	300.00	30.00	
157	3	300.00	30.00	
158	3	300.00	30.00	
159	3	300.00	30.00	
160	3	300.00	30.00	

161	3	300.00	30.00
162	3	300.00	30.00
163	3	300.00	30.00
164	3	300.00	30.00
165	3	300.00	30.00
166	3	300.00	30.00
167	3	300.00	30.00
168	3	300.00	30.00
169	3	300.00	30.00
170	3	300.00	30.00
171	3	300.00	30.00
172	3	300.00	30.00
173	3	300.00	30.00
174	3	300.00	30.00
175	3	300.00	30.00
176	3	300.00	30.00
177	3	300.00	30.00
178	3	300.00	30.00
179	3	300.00	30.00
180	3	300.00	30.00
181	3	300.00	30.00
182	3	300.00	30.00
183	3	300.00	30.00
184	3	300.00	30.00
185	3	300.00	30.00
186	3	300.00	30.00
187	3	300.00	30.00
188	3	300.00	30.00
189	3	300.00	30.00
190	3	300.00	30.00
191	3	300.00	30.00
192	3	300.00	30.00
193	3	300.00	30.00
194	3	300.00	30.00
195	3	300.00	30.00
196	3	300.00	30.00
197	3	300.00	30.00
198	3	300.00	30.00
199	3	300.00	30.00
200	3	300.00	30.00
201	3	300.00	30.00
202	3	300.00	30.00
203	3	300.00	30.00
204	3	300.00	30.00
205	3	300.00	30.00
206	3	300.00	30.00
207	3	300.00	30.00
208	3	300.00	30.00
209	3	300.00	30.00
210	3	300.00	30.00
211	3	300.00	30.00
212	3	300.00	30.00
213	3	300.00	30.00
214	3	300.00	30.00
215	3	300.00	30.00
216	3	300.00	30.00
217	3	300.00	30.00
218	3	300.00	30.00
219	3	300.00	30.00

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 219 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-35.85	161.10	6.32	581.49	458.89	438.37
1	-35.85	161.10	6.32	581.49	458.89	438.37
2	-35.85	166.22	6.32	1316.31	786.06	750.91
2	-35.85	166.22	6.32	1316.31	786.06	750.91
3	-6.56	171.26	5.00	1136.99	706.22	674.64
3	-6.56	171.26	5.00	1136.99	706.22	674.64
4	-6.56	176.23	5.00	1263.97	762.75	728.65
4	-6.56	176.23	5.00	1263.97	762.75	728.65
5	-6.56	181.20	5.00	1390.94	819.29	782.65
5	-6.56	181.20	5.00	1390.94	819.29	782.65
6	-43.87	186.38	7.50	3311.65	1674.44	1599.57
6	-43.87	186.38	7.50	3311.65	1674.44	1599.57
7	-43.87	191.79	7.50	4503.78	2205.21	2106.60
7	-43.87	191.79	7.50	4503.78	2205.21	2106.60
8	-37.25	197.48	7.50	4805.50	2339.55	2234.93
8	-37.25	197.48	7.50	4805.50	2339.55	2234.93
9	-37.25	203.45	7.50	5724.97	2748.92	2626.00
9	-37.25	203.45	7.50	5724.97	2748.92	2626.00
10	-10.34	208.44	4.08	4390.78	2154.90	2058.54
10	-10.34	208.44	4.08	4390.78	2154.90	2058.54
11	-10.34	213.13	5.46	4362.04	1168.81	1116.54
11	-10.34	213.13	5.46	4362.04	1168.81	1116.54
12	-10.34	218.50	5.46	4544.82	1217.78	1163.33
12	-10.34	218.50	5.46	4544.82	1217.78	1163.33
13	-13.30	223.62	5.00	4808.88	1288.54	1230.92
13	-13.30	223.62	5.00	4808.88	1288.54	1230.92
14	-13.30	228.49	5.00	5010.60	1342.59	1282.55
14	-13.30	228.49	5.00	5010.60	1342.59	1282.55
15	-13.30	233.35	5.00	5212.33	1396.64	1334.19
15	-13.30	233.35	5.00	5212.33	1396.64	1334.19
16	-1.41	238.33	5.08	5042.85	1351.23	1290.81
16	-1.41	238.33	5.08	5042.85	1351.23	1290.81
17	-1.41	243.40	5.08	5111.33	1369.58	1308.33
17	-1.41	243.40	5.08	5111.33	1369.58	1308.33
18	-1.41	248.48	5.08	5179.81	1387.93	1325.86
18	-1.41	248.48	5.08	5179.81	1387.93	1325.86
19	-1.41	253.56	5.08	5248.29	1406.27	1343.39
19	-1.41	253.56	5.08	5248.29	1406.27	1343.39
20	-1.41	258.63	5.08	5316.76	1424.62	1360.92
20	-1.41	258.63	5.08	5316.76	1424.62	1360.92
21	-1.41	263.71	5.08	5385.24	1442.97	1378.45
21	-1.41	263.71	5.08	5385.24	1442.97	1378.45
22	-1.41	268.79	5.08	5453.72	1461.32	1395.98
22	-1.41	268.79	5.08	5453.72	1461.32	1395.98
23	-1.41	273.86	5.08	5522.20	1479.67	1413.50
23	-1.41	273.86	5.08	5522.20	1479.67	1413.50

24	-1.41	279.06	5.32	5613.65	1504.17	1436.91
24	-1.41	279.06	5.32	5613.65	1504.17	1436.91
25	-1.41	284.38	5.32	5728.08	1534.83	1466.20
25	-1.41	284.38	5.32	5728.08	1534.83	1466.20
26	-1.41	289.69	5.32	5842.51	1565.49	1495.49
26	-1.41	289.69	5.32	5842.51	1565.49	1495.49
27	-1.41	295.01	5.32	5956.93	1596.16	1524.78
27	-1.41	295.01	5.32	5956.93	1596.16	1524.78
28	-1.41	300.33	5.32	6071.36	1626.82	1554.07
28	-1.41	300.33	5.32	6071.36	1626.82	1554.07
29	-1.41	305.64	5.32	6185.79	1657.48	1583.36
29	-1.41	305.64	5.32	6185.79	1657.48	1583.36
30	-1.41	310.74	4.88	6299.77	1688.02	1612.54
30	-1.41	310.74	4.88	6299.77	1688.02	1612.54
31	-1.41	315.62	4.88	6413.30	1718.44	1641.60
31	-1.41	315.62	4.88	6413.30	1718.44	1641.60
32	-1.41	320.50	4.88	6526.84	1748.86	1670.66
32	-1.41	320.50	4.88	6526.84	1748.86	1670.66
33	-1.41	325.38	4.88	6640.37	1779.28	1699.72
33	-1.41	325.38	4.88	6640.37	1779.28	1699.72
34	-1.41	330.26	4.88	6753.90	1809.70	1728.78
34	-1.41	330.26	4.88	6753.90	1809.70	1728.78
35	-1.41	335.38	5.37	6858.90	1837.84	1755.66
35	-1.41	335.38	5.37	6858.90	1837.84	1755.66
36	-1.41	340.75	5.37	6955.36	1863.68	1780.35
36	-1.41	340.75	5.37	6955.36	1863.68	1780.35
37	-1.41	346.12	5.37	7051.81	1889.53	1805.03
37	-1.41	346.12	5.37	7051.81	1889.53	1805.03
38	-1.41	351.34	5.09	7173.91	1922.24	1836.29
38	-1.41	351.34	5.09	7173.91	1922.24	1836.29
39	-1.41	356.43	5.09	7321.65	1961.83	1874.11
39	-1.41	356.43	5.09	7321.65	1961.83	1874.11
40	-1.41	361.51	5.09	7469.40	2001.42	1911.92
40	-1.41	361.51	5.09	7469.40	2001.42	1911.92
41	-1.41	366.60	5.09	7617.14	2041.01	1949.74
41	-1.41	366.60	5.09	7617.14	2041.01	1949.74
42	-1.41	371.68	5.09	7764.88	2080.59	1987.56
42	-1.41	371.68	5.09	7764.88	2080.59	1987.56
43	-1.41	376.77	5.09	7912.62	2120.18	2025.37
43	-1.41	376.77	5.09	7912.62	2120.18	2025.37
44	-1.41	381.85	5.09	8060.36	2159.77	2063.19
44	-1.41	381.85	5.09	8060.36	2159.77	2063.19
45	-1.41	386.93	5.09	8208.11	2199.36	2101.01
45	-1.41	386.93	5.09	8208.11	2199.36	2101.01
46	-1.41	392.02	5.09	8355.85	2238.94	2138.83
46	-1.41	392.02	5.09	8355.85	2238.94	2138.83
47	-1.41	397.10	5.09	8503.59	2278.53	2176.64
47	-1.41	397.10	5.09	8503.59	2278.53	2176.64
48	-1.41	402.19	5.09	8651.33	2318.12	2214.46
48	-1.41	402.19	5.09	8651.33	2318.12	2214.46
49	-1.41	407.27	5.09	8799.07	2357.70	2252.28
49	-1.41	407.27	5.09	8799.07	2357.70	2252.28
50	-1.41	412.36	5.09	8946.82	2397.29	2290.09
50	-1.41	412.36	5.09	8946.82	2397.29	2290.09
51	5.31	415.65	1.51	8753.42	2345.47	2240.59
51	5.31	415.65	1.51	8753.42	2345.47	2240.59
52	5.31	418.90	5.02	8776.81	2351.74	2246.58
52	5.31	418.90	5.02	8776.81	2351.74	2246.58
53	5.31	423.90	5.02	8802.00	2358.49	2253.03
53	5.31	423.90	5.02	8802.00	2358.49	2253.03
54	5.31	428.90	5.02	8827.18	2365.24	2259.47
54	5.31	428.90	5.02	8827.18	2365.24	2259.47
55	5.31	433.90	5.02	8852.36	2371.98	2265.92
55	5.31	433.90	5.02	8852.36	2371.98	2265.92
56	5.31	438.90	5.02	8877.55	2378.73	2272.36
56	5.31	438.90	5.02	8877.55	2378.73	2272.36
57	5.31	443.93	5.09	8901.98	2385.28	2278.62
57	5.31	443.93	5.09	8901.98	2385.28	2278.62
58	5.31	449.00	5.09	8925.66	2391.62	2284.68
58	5.31	449.00	5.09	8925.66	2391.62	2284.68
59	5.31	454.07	5.09	8949.33	2397.97	2290.74
59	5.31	454.07	5.09	8949.33	2397.97	2290.74
60	5.31	459.13	5.09	8973.01	2404.31	2296.80
60	5.31	459.13	5.09	8973.01	2404.31	2296.80
61	5.31	464.20	5.09	8996.69	2410.66	2302.86
61	5.31	464.20	5.09	8996.69	2410.66	2302.86
62	5.31	469.27	5.09	9020.37	2417.00	2308.92
62	5.31	469.27	5.09	9020.37	2417.00	2308.92
63	5.31	474.33	5.09	9044.04	2423.34	2314.98
63	5.31	474.33	5.09	9044.04	2423.34	2314.98
64	5.31	479.40	5.09	9067.72	2429.69	2321.04
64	5.31	479.40	5.09	9067.72	2429.69	2321.04
65	5.31	484.47	5.09	9091.40	2436.03	2327.10
65	5.31	484.47	5.09	9091.40	2436.03	2327.10
66	5.31	489.53	5.09	9115.08	2442.38	2333.16
66	5.31	489.53	5.09	9115.08	2442.38	2333.16
67	5.31	494.60	5.09	9138.75	2448.72	2339.22
67	5.31	494.60	5.09	9138.75	2448.72	2339.22
68	5.31	499.67	5.09	9162.43	2455.07	2345.28
68	5.31	499.67	5.09	9162.43	2455.07	2345.28
69	5.31	504.73	5.09	9186.11	2461.41	2351.35
69	5.31	504.73	5.09	9186.11	2461.41	2351.35
70	5.31	509.80	5.09	9209.79	2467.75	2357.41
70	5.31	509.80	5.09	9209.79	2467.75	2357.41
71	5.31	514.87	5.09	9233.46	2474.10	2363.47
71	5.31	514.87	5.09	9233.46	2474.10	2363.47
72	5.31	519.91	5.04	9226.78	2472.31	2361.76
72	5.31	519.91	5.04	9226.78	2472.31	2361.76
73	5.31	524.92	5.04	9189.73	2462.38	2352.27
73	5.31	524.92	5.04	9189.73	2462.38	2352.27
74	5.31	529.94	5.04	9152.68	2452.45	2342.79
74	5.31	529.94	5.04	9152.68	2452.45	2342.79
75	5.31	534.96	5.04	9115.64	2442.53	2333.31
75	5.31	534.96	5.04	9115.64	2442.53	2333.31
76	5.31	539.98	5.04	9078.59	2432.60	2323.82
76	5.31	539.98	5.04	9078.59	2432.60	2323.82
77	5.31	544.99	5.04	9041.54	2422.67	2314.34
77	5.31	544.99	5.04	9041.54	2422.67	2314.34
78	5.31	549.96	4.95	9056.95	2426.80	2318.29
78	5.31	549.96	4.95	9056.95	2426.80	2318.29
79	5.31	554.89	4.95	9124.82	2444.99	2335.66
79	5.31	554.89	4.95	9124.82	2444.99	2335.66
80	5.31	559.82	4.95	9192.69	2463.17	2353.03
80	5.31	559.82	4.95	9192.69	2463.17	2353.03
81	5.31	564.74	4.95	9260.56	2481.36	2370.40
81	5.31	564.74	4.95	9260.56	2481.36	2370.40
82	5.31	569.67	4.95	9328.42	2499.54	2387.77
82	5.31	569.67	4.95	9328.42	2499.54	2387.77
83	5.31	574.60	4.95	9396.29	2517.73	2405.14
83	5.31	574.60	4.95	9396.29	2517.73	2405.14

84	5.31	579.52	4.95	9464.16	2535.91	2422.52
84	5.31	579.52	4.95	9464.16	2535.91	2422.52
85	5.31	584.45	4.95	9532.02	2554.10	2439.89
85	5.31	584.45	4.95	9532.02	2554.10	2439.89
86	5.31	589.38	4.95	9599.89	2572.28	2457.26
86	5.31	589.38	4.95	9599.89	2572.28	2457.26
87	5.31	594.30	4.95	9667.76	2590.47	2474.63
87	5.31	594.30	4.95	9667.76	2590.47	2474.63
88	5.31	599.23	4.95	9735.63	2608.65	2492.00
88	5.31	599.23	4.95	9735.63	2608.65	2492.00
89	5.31	604.16	4.95	9803.49	2626.84	2509.38
89	5.31	604.16	4.95	9803.49	2626.84	2509.38
90	5.31	609.08	4.95	9871.36	2645.02	2526.75
90	5.31	609.08	4.95	9871.36	2645.02	2526.75
91	5.31	614.01	4.95	9939.23	2663.21	2544.12
91	5.31	614.01	4.95	9939.23	2663.21	2544.12
92	5.31	618.94	4.95	10007.09	2681.39	2561.49
92	5.31	618.94	4.95	10007.09	2681.39	2561.49
93	23.39	624.12	5.92	9155.04	2453.09	2343.39
93	23.39	624.12	5.92	9155.04	2453.09	2343.39
94	23.39	629.55	5.92	9025.40	2418.35	2310.21
94	23.39	629.55	5.92	9025.40	2418.35	2310.21
95	23.39	634.98	5.92	8895.76	2383.61	2277.03
95	23.39	634.98	5.92	8895.76	2383.61	2277.03
96	23.39	640.23	5.52	8807.34	2359.92	2254.39
96	23.39	640.23	5.52	8807.34	2359.92	2254.39
97	23.39	645.30	5.52	8760.14	2347.27	2242.31
97	23.39	645.30	5.52	8760.14	2347.27	2242.31
98	23.39	650.37	5.52	8712.94	2334.62	2230.23
98	23.39	650.37	5.52	8712.94	2334.62	2230.23
99	23.39	655.44	5.52	8665.74	2321.98	2218.15
99	23.39	655.44	5.52	8665.74	2321.98	2218.15
100	23.39	660.51	5.52	8618.53	2309.33	2206.06
100	23.39	660.51	5.52	8618.53	2309.33	2206.06
101	23.39	665.58	5.52	8571.33	2296.68	2193.98
101	23.39	665.58	5.52	8571.33	2296.68	2193.98
102	23.39	670.65	5.52	8524.13	2284.03	2181.90
102	23.39	670.65	5.52	8524.13	2284.03	2181.90
103	23.39	675.72	5.52	8476.93	2271.39	2169.82
103	23.39	675.72	5.52	8476.93	2271.39	2169.82
104	23.39	680.79	5.52	8429.72	2258.74	2157.74
104	23.39	680.79	5.52	8429.72	2258.74	2157.74
105	23.39	685.86	5.52	8382.52	2246.09	2145.65
105	23.39	685.86	5.52	8382.52	2246.09	2145.65
106	23.39	690.93	5.52	8335.32	2233.44	2133.57
106	23.39	690.93	5.52	8335.32	2233.44	2133.57
107	23.39	696.00	5.52	8288.12	2220.79	2121.49
107	23.39	696.00	5.52	8288.12	2220.79	2121.49
108	23.39	701.07	5.52	8240.91	2208.15	2109.41
108	23.39	701.07	5.52	8240.91	2208.15	2109.41
109	23.39	706.13	5.52	8193.71	2195.50	2097.32
109	23.39	706.13	5.52	8193.71	2195.50	2097.32
110	23.39	711.20	5.52	8146.51	2182.85	2085.24
110	23.39	711.20	5.52	8146.51	2182.85	2085.24
111	23.39	716.27	5.52	8099.31	2170.20	2073.16
111	23.39	716.27	5.52	8099.31	2170.20	2073.16
112	23.39	721.34	5.52	8052.11	2157.56	2061.08
112	23.39	721.34	5.52	8052.11	2157.56	2061.08
113	23.39	726.41	5.52	8004.90	2144.91	2049.00
113	23.39	726.41	5.52	8004.90	2144.91	2049.00
114	23.39	731.48	5.52	7957.70	2132.26	2036.91
114	23.39	731.48	5.52	7957.70	2132.26	2036.91
115	23.39	736.55	5.52	7910.50	2119.61	2024.83
115	23.39	736.55	5.52	7910.50	2119.61	2024.83
116	23.39	741.62	5.52	7863.30	2106.96	2012.75
116	23.39	741.62	5.52	7863.30	2106.96	2012.75
117	23.39	746.69	5.52	7816.09	2094.32	2000.67
117	23.39	746.69	5.52	7816.09	2094.32	2000.67
118	23.39	751.76	5.52	7768.89	2081.67	1988.58
118	23.39	751.76	5.52	7768.89	2081.67	1988.58
119	23.39	756.83	5.52	7721.69	2069.02	1976.50
119	23.39	756.83	5.52	7721.69	2069.02	1976.50
120	23.39	761.90	5.52	7674.49	2056.37	1964.42
120	23.39	761.90	5.52	7674.49	2056.37	1964.42
121	23.39	766.97	5.52	7627.28	2043.72	1952.34
121	23.39	766.97	5.52	7627.28	2043.72	1952.34
122	23.39	772.02	5.48	7598.80	2036.09	1945.05
122	23.39	772.02	5.48	7598.80	2036.09	1945.05
123	23.39	777.05	5.48	7589.04	2033.48	1942.55
123	23.39	777.05	5.48	7589.04	2033.48	1942.55
124	23.39	782.08	5.48	7579.27	2030.86	1940.05
124	23.39	782.08	5.48	7579.27	2030.86	1940.05
125	23.78	786.95	5.14	6624.73	4124.79	3940.35
125	23.78	786.95	5.14	6624.73	4124.79	3940.35
126	23.78	791.79	5.44	6612.70	4117.84	3933.71
126	23.78	791.79	5.44	6612.70	4117.84	3933.71
127	23.78	796.76	5.44	6600.32	4110.70	3926.88
127	23.78	796.76	5.44	6600.32	4110.70	3926.88
128	23.78	801.74	5.44	6587.94	4103.55	3920.05
128	23.78	801.74	5.44	6587.94	4103.55	3920.05
129	23.78	806.71	5.44	6575.56	4096.40	3913.23
129	23.78	806.71	5.44	6575.56	4096.40	3913.23
130	23.78	811.69	5.44	6563.18	4089.25	3906.40
130	23.78	811.69	5.44	6563.18	4089.25	3906.40
131	23.78	816.66	5.44	6550.80	4082.11	3899.57
131	23.78	816.66	5.44	6550.80	4082.11	3899.57
132	23.78	821.64	5.44	6538.42	4074.96	3892.74
132	23.78	821.64	5.44	6538.42	4074.96	3892.74
133	23.78	826.61	5.44	6526.04	4067.81	3885.91
133	23.78	826.61	5.44	6526.04	4067.81	3885.91
134	23.78	831.59	5.44	6513.66	4060.66	3879.09
134	23.78	831.59	5.44	6513.66	4060.66	3879.09
135	23.78	836.56	5.44	6501.28	4053.52	3872.26
135	23.78	836.56	5.44	6501.28	4053.52	3872.26
136	23.78	841.54	5.44	6488.90	4046.37	3865.43
136	23.78	841.54	5.44	6488.90	4046.37	3865.43
137	23.78	846.51	5.44	6476.52	4039.22	3858.60
137	23.78	846.51	5.44	6476.52	4039.22	3858.60
138	23.78	851.80	6.12	6463.37	4031.63	3851.35
138	23.78	851.80	6.12	6463.37	4031.63	3851.35
139	23.78	857.40	6.12	6449.43	4023.58	3843.66
139	23.78	857.40	6.12	6449.43	4023.58	3843.66
140	23.78	862.70	5.46	6423.87	4008.82	3829.56
140	23.78	862.70	5.46	6423.87	4008.82	3829.56
141	23.78	867.69	5.46	6386.67	3987.35	3809.05
141	23.78	867.69	5.46	6386.67	3987.35	3809.05
142	23.78	872.68	5.46	6349.48	3965.87	3788.53
142	23.78	872.68	5.46	6349.48	3965.87	3788.53
143	23.78	877.67	5.46	6312.29	3944.40	3768.02
143	23.78	877.67	5.46	6312.29	3944.40	3768.02

144	23.78	882.67	5.46	6275.09	3922.93	3747.51
144	23.78	882.67	5.46	6275.09	3922.93	3747.51
145	23.78	887.66	5.46	6237.90	3901.45	3726.99
145	23.78	887.66	5.46	6237.90	3901.45	3726.99
146	23.78	892.65	5.46	6200.70	3879.98	3706.48
146	23.78	892.65	5.46	6200.70	3879.98	3706.48
147	23.78	897.65	5.46	6163.51	3858.50	3685.97
147	23.78	897.65	5.46	6163.51	3858.50	3685.97
148	23.78	902.64	5.46	6126.32	3837.03	3665.45
148	23.78	902.64	5.46	6126.32	3837.03	3665.45
149	23.78	907.63	5.46	6089.12	3815.56	3644.94
149	23.78	907.63	5.46	6089.12	3815.56	3644.94
150	23.78	912.62	5.46	6051.93	3794.08	3624.42
150	23.78	912.62	5.46	6051.93	3794.08	3624.42
151	23.78	917.62	5.46	6014.73	3772.61	3603.91
151	23.78	917.62	5.46	6014.73	3772.61	3603.91
152	23.78	922.61	5.46	5977.54	3751.13	3583.40
152	23.78	922.61	5.46	5977.54	3751.13	3583.40
153	23.78	927.60	5.46	5940.35	3729.66	3562.88
153	23.78	927.60	5.46	5940.35	3729.66	3562.88
154	23.78	932.60	5.46	5903.15	3708.19	3542.37
154	23.78	932.60	5.46	5903.15	3708.19	3542.37
155	23.78	937.59	5.46	5865.96	3686.71	3521.86
155	23.78	937.59	5.46	5865.96	3686.71	3521.86
156	23.78	942.58	5.46	5828.76	3665.24	3501.34
156	23.78	942.58	5.46	5828.76	3665.24	3501.34
157	23.78	947.58	5.46	5791.57	3643.76	3480.83
157	23.78	947.58	5.46	5791.57	3643.76	3480.83
158	23.78	952.57	5.46	5754.37	3622.29	3460.31
158	23.78	952.57	5.46	5754.37	3622.29	3460.31
159	23.78	957.56	5.46	5717.18	3600.82	3439.80
159	23.78	957.56	5.46	5717.18	3600.82	3439.80
160	23.78	962.55	5.46	5679.99	3579.34	3419.29
160	23.78	962.55	5.46	5679.99	3579.34	3419.29
161	23.78	967.55	5.46	5642.79	3557.87	3398.77
161	23.78	967.55	5.46	5642.79	3557.87	3398.77
162	23.78	972.54	5.46	5605.60	3536.39	3378.26
162	23.78	972.54	5.46	5605.60	3536.39	3378.26
163	23.78	977.53	5.46	5568.40	3514.92	3357.75
163	23.78	977.53	5.46	5568.40	3514.92	3357.75
164	23.78	982.53	5.46	5531.21	3493.45	3337.23
164	23.78	982.53	5.46	5531.21	3493.45	3337.23
165	23.78	987.52	5.46	5494.02	3471.97	3316.72
165	23.78	987.52	5.46	5494.02	3471.97	3316.72
166	23.78	992.51	5.46	5456.82	3450.50	3296.20
166	23.78	992.51	5.46	5456.82	3450.50	3296.20
167	23.78	997.50	5.46	5419.63	3429.02	3275.69
167	23.78	997.50	5.46	5419.63	3429.02	3275.69
168	23.78	1002.57	5.61	5372.73	3401.95	3249.83
168	23.78	1002.57	5.61	5372.73	3401.95	3249.83
169	23.78	1007.70	5.61	5316.14	3369.27	3218.61
169	23.78	1007.70	5.61	5316.14	3369.27	3218.61
170	23.78	1012.83	5.61	5259.54	3336.60	3187.40
170	23.78	1012.83	5.61	5259.54	3336.60	3187.40
171	23.78	1017.96	5.61	5202.95	3303.92	3156.18
171	23.78	1017.96	5.61	5202.95	3303.92	3156.18
172	23.78	1023.09	5.61	5146.35	3271.25	3124.97
172	23.78	1023.09	5.61	5146.35	3271.25	3124.97
173	23.78	1028.22	5.61	5089.76	3238.57	3093.75
173	23.78	1028.22	5.61	5089.76	3238.57	3093.75
174	23.78	1033.35	5.61	5033.16	3205.90	3062.54
174	23.78	1033.35	5.61	5033.16	3205.90	3062.54
175	23.78	1038.48	5.61	4976.56	3173.22	3031.33
175	23.78	1038.48	5.61	4976.56	3173.22	3031.33
176	23.78	1043.62	5.61	4919.97	3140.54	3000.11
176	23.78	1043.62	5.61	4919.97	3140.54	3000.11
177	23.78	1048.75	5.61	4863.37	3107.87	2968.90
177	23.78	1048.75	5.61	4863.37	3107.87	2968.90
178	23.78	1053.88	5.61	4806.78	3075.19	2937.68
178	23.78	1053.88	5.61	4806.78	3075.19	2937.68
179	23.78	1059.01	5.61	4750.18	3042.52	2906.47
179	23.78	1059.01	5.61	4750.18	3042.52	2906.47
180	23.78	1064.14	5.61	4693.59	3009.84	2875.25
180	23.78	1064.14	5.61	4693.59	3009.84	2875.25
181	23.78	1069.27	5.61	4636.99	2977.17	2844.04
181	23.78	1069.27	5.61	4636.99	2977.17	2844.04
182	23.78	1074.40	5.61	4580.39	2944.49	2812.83
182	23.78	1074.40	5.61	4580.39	2944.49	2812.83
183	23.78	1079.53	5.61	4523.80	2911.82	2781.61
183	23.78	1079.53	5.61	4523.80	2911.82	2781.61
184	23.78	1084.61	5.48	4433.88	2859.90	2732.02
184	23.78	1084.61	5.48	4433.88	2859.90	2732.02
185	23.78	1089.63	5.48	4310.63	2788.74	2664.04
185	23.78	1089.63	5.48	4310.63	2788.74	2664.04
186	23.78	1094.65	5.48	4187.38	2717.59	2596.07
186	23.78	1094.65	5.48	4187.38	2717.59	2596.07
187	23.78	1099.67	5.48	4064.14	2646.43	2528.09
187	23.78	1099.67	5.48	4064.14	2646.43	2528.09
188	23.78	1104.69	5.48	3940.89	2575.27	2460.12
188	23.78	1104.69	5.48	3940.89	2575.27	2460.12
189	23.78	1109.71	5.48	3817.65	2504.12	2392.14
189	23.78	1109.71	5.48	3817.65	2504.12	2392.14
190	23.78	1114.73	5.48	3694.40	2432.96	2324.17
190	23.78	1114.73	5.48	3694.40	2432.96	2324.17
191	23.78	1119.75	5.48	3571.15	2361.81	2256.19
191	23.78	1119.75	5.48	3571.15	2361.81	2256.19
192	23.78	1124.76	5.48	3447.91	2290.65	2188.22
192	23.78	1124.76	5.48	3447.91	2290.65	2188.22
193	23.78	1129.78	5.48	3324.66	2219.49	2120.25
193	23.78	1129.78	5.48	3324.66	2219.49	2120.25
194	23.78	1134.80	5.48	3201.41	2148.34	2052.27
194	23.78	1134.80	5.48	3201.41	2148.34	2052.27
195	23.78	1139.82	5.48	3078.17	2077.18	1984.30
195	23.78	1139.82	5.48	3078.17	2077.18	1984.30
196	23.78	1144.84	5.48	2954.92	2006.02	1916.32
196	23.78	1144.84	5.48	2954.92	2006.02	1916.32
197	23.78	1149.86	5.48	2831.67	1934.87	1848.35
197	23.78	1149.86	5.48	2831.67	1934.87	1848.35
198	23.78	1154.88	5.48	2708.43	1863.71	1780.37
198	23.78	1154.88	5.48	2708.43	1863.71	1780.37
199	23.78	1159.90	5.48	2585.18	1792.55	1712.40
199	23.78	1159.90	5.48	2585.18	1792.55	1712.40
200	23.78	1164.92	5.48	2461.93	1721.40	1644.42
200	23.78	1164.92	5.48	2461.93	1721.40	1644.42
201	23.78	1169.94	5.48	2338.69	1650.24	1576.45
201	23.78	1169.94	5.48	2338.69	1650.24	1576.45
202	23.78	1174.96	5.48	2215.44	1579.09	1508.48
202	23.78	1174.96	5.48	2215.44	1579.09	1508.48
203	23.78	1179.98	5.48	2092.20	1507.93	1440.50
203	23.78	1179.98	5.48	2092.20	1507.93	1440.50

204	23.78	1185.00	5.48	1968.95	1436.77	1372.53
204	23.78	1185.00	5.48	1968.95	1436.77	1372.53
205	23.78	1190.02	5.48	1845.70	1365.62	1304.55
205	23.78	1190.02	5.48	1845.70	1365.62	1304.55
206	23.78	1195.04	5.48	1722.46	1294.46	1236.58
206	23.78	1195.04	5.48	1722.46	1294.46	1236.58
207	23.78	1200.05	5.48	1599.21	1223.30	1168.60
207	23.78	1200.05	5.48	1599.21	1223.30	1168.60
208	23.78	1205.07	5.48	1475.96	1152.15	1100.63
208	23.78	1205.07	5.48	1475.96	1152.15	1100.63
209	23.78	1210.09	5.48	1352.72	1080.99	1032.65
209	23.78	1210.09	5.48	1352.72	1080.99	1032.65
210	23.78	1215.11	5.48	1229.47	1009.84	964.68
210	23.78	1215.11	5.48	1229.47	1009.84	964.68
211	23.78	1220.13	5.48	1106.22	938.68	896.70
211	23.78	1220.13	5.48	1106.22	938.68	896.70
212	23.78	1225.15	5.48	982.98	867.52	828.73
212	23.78	1225.15	5.48	982.98	867.52	828.73
213	23.78	1230.17	5.48	859.73	796.37	760.76
213	23.78	1230.17	5.48	859.73	796.37	760.76
214	23.78	1235.19	5.48	736.48	725.21	692.78
214	23.78	1235.19	5.48	736.48	725.21	692.78
215	23.78	1238.35	1.42	658.90	680.42	649.99
215	23.78	1238.35	1.42	658.90	680.42	649.99
216	37.55	1241.00	5.05	392.92	526.85	503.30
216	37.55	1241.00	5.05	392.92	526.85	503.30
217	37.55	1245.00	5.05	198.64	414.69	396.14
217	37.55	1245.00	5.05	198.64	414.69	396.14
218	37.55	1248.67	4.23	36.11	320.85	306.50
218	37.55	1248.67	4.23	36.11	320.85	306.50
219	37.55	1252.03	4.23	65.39	37.76	36.07
219	37.55	1252.03	4.23	65.39	37.76	36.07

Table 4 - Base Force Data on the 219 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-35.85	161.10	6.32	3674.39	2899.73	2770.07
1	-35.85	161.10	6.32	3674.39	2899.73	2770.07
2	-35.85	166.22	6.32	8317.68	4967.06	4744.95
2	-35.85	166.22	6.32	8317.68	4967.06	4744.95
3	-6.56	171.26	5.00	5684.96	3531.11	3373.21
3	-6.56	171.26	5.00	5684.96	3531.11	3373.21
4	-6.56	176.23	5.00	6319.84	3813.77	3643.23
4	-6.56	176.23	5.00	6319.84	3813.77	3643.23
5	-6.56	181.20	5.00	6954.71	4096.44	3913.26
5	-6.56	181.20	5.00	6954.71	4096.44	3913.26
6	-43.87	186.38	7.50	24837.38	12558.31	11996.75
6	-43.87	186.38	7.50	24837.38	12558.31	11996.75
7	-43.87	191.79	7.50	33778.37	16539.10	15799.53
7	-43.87	191.79	7.50	33778.37	16539.10	15799.53
8	-37.25	197.48	7.50	36041.25	17546.60	16761.98
8	-37.25	197.48	7.50	36041.25	17546.60	16761.98
9	-37.25	203.45	7.50	42937.27	20616.90	19694.99
9	-37.25	203.45	7.50	42937.27	20616.90	19694.99
10	-10.34	208.44	4.08	17895.60	8782.78	8390.05
10	-10.34	208.44	4.08	17895.60	8782.78	8390.05
11	-10.34	213.13	5.46	23826.07	6384.18	6098.70
11	-10.34	213.13	5.46	23826.07	6384.18	6098.70
12	-10.34	218.50	5.46	24824.41	6651.68	6354.24
12	-10.34	218.50	5.46	24824.41	6651.68	6354.24
13	-13.30	223.62	5.00	24044.41	6442.68	6154.59
13	-13.30	223.62	5.00	24044.41	6442.68	6154.59
14	-13.30	228.49	5.00	25053.02	6712.94	6412.76
14	-13.30	228.49	5.00	25053.02	6712.94	6412.76
15	-13.30	233.35	5.00	26061.63	6983.19	6670.93
15	-13.30	233.35	5.00	26061.63	6983.19	6670.93
16	-1.41	238.33	5.08	25608.00	6861.64	6554.82
16	-1.41	238.33	5.08	25608.00	6861.64	6554.82
17	-1.41	243.40	5.08	25955.74	6954.82	6643.83
17	-1.41	243.40	5.08	25955.74	6954.82	6643.83
18	-1.41	248.48	5.08	26303.48	7047.99	6732.83
18	-1.41	248.48	5.08	26303.48	7047.99	6732.83
19	-1.41	253.56	5.08	26651.21	7141.17	6821.84
19	-1.41	253.56	5.08	26651.21	7141.17	6821.84
20	-1.41	258.63	5.08	26998.95	7234.35	6910.85
20	-1.41	258.63	5.08	26998.95	7234.35	6910.85
21	-1.41	263.71	5.08	27346.69	7327.52	6999.86
21	-1.41	263.71	5.08	27346.69	7327.52	6999.86
22	-1.41	268.79	5.08	27694.43	7420.70	7088.87
22	-1.41	268.79	5.08	27694.43	7420.70	7088.87
23	-1.41	273.86	5.08	28042.16	7513.87	7177.88
23	-1.41	273.86	5.08	28042.16	7513.87	7177.88
24	-1.41	279.06	5.32	29854.91	7999.60	7641.89
24	-1.41	279.06	5.32	29854.91	7999.60	7641.89
25	-1.41	284.38	5.32	30463.47	8162.66	7797.66
25	-1.41	284.38	5.32	30463.47	8162.66	7797.66
26	-1.41	289.69	5.32	31072.02	8325.72	7953.43
26	-1.41	289.69	5.32	31072.02	8325.72	7953.43
27	-1.41	295.01	5.32	31680.58	8488.79	8109.20
27	-1.41	295.01	5.32	31680.58	8488.79	8109.20
28	-1.41	300.33	5.32	32289.13	8651.85	8264.97
28	-1.41	300.33	5.32	32289.13	8651.85	8264.97
29	-1.41	305.64	5.32	32897.69	8814.91	8420.74
29	-1.41	305.64	5.32	32897.69	8814.91	8420.74
30	-1.41	310.74	4.88	30752.14	8240.01	7871.55
30	-1.41	310.74	4.88	30752.14	8240.01	7871.55
31	-1.41	315.62	4.88	31306.36	8388.51	8013.41
31	-1.41	315.62	4.88	31306.36	8388.51	8013.41
32	-1.41	320.50	4.88	31860.57	8537.01	8155.27
32	-1.41	320.50	4.88	31860.57	8537.01	8155.27
33	-1.41	325.38	4.88	32414.78	8685.51	8297.13
33	-1.41	325.38	4.88	32414.78	8685.51	8297.13
34	-1.41	330.26	4.88	32969.00	8834.02	8438.99
34	-1.41	330.26	4.88	32969.00	8834.02	8438.99
35	-1.41	335.38	5.37	36820.53	9866.03	9424.86
35	-1.41	335.38	5.37	36820.53	9866.03	9424.86
36	-1.41	340.75	5.37	37338.34	10004.78	9557.40
36	-1.41	340.75	5.37	37338.34	10004.78	9557.40
37	-1.41	346.12	5.37	37856.14	10143.52	9689.94
37	-1.41	346.12	5.37	37856.14	10143.52	9689.94
38	-1.41	351.34	5.09	36487.58	9776.82	9339.64
38	-1.41	351.34	5.09	36487.58	9776.82	9339.64
39	-1.41	356.43	5.09	37239.02	9978.16	9531.98
39	-1.41	356.43	5.09	37239.02	9978.16	9531.98
40	-1.41	361.51	5.09	37990.46	10179.51	9724.32

40	-1.41	361.51	5.09	37990.46	10179.51	9724.32
41	-1.41	366.60	5.09	38741.90	10380.86	9916.67
41	-1.41	366.60	5.09	38741.90	10380.86	9916.67
42	-1.41	371.68	5.09	39493.33	10582.21	10109.01
42	-1.41	371.68	5.09	39493.33	10582.21	10109.01
43	-1.41	376.77	5.09	40244.77	10783.55	10301.35
43	-1.41	376.77	5.09	40244.77	10783.55	10301.35
44	-1.41	381.85	5.09	40996.21	10984.90	10493.70
44	-1.41	381.85	5.09	40996.21	10984.90	10493.70
45	-1.41	386.93	5.09	41747.65	11186.25	10686.04
45	-1.41	386.93	5.09	41747.65	11186.25	10686.04
46	-1.41	392.02	5.09	42499.09	11387.60	10878.38
46	-1.41	392.02	5.09	42499.09	11387.60	10878.38
47	-1.41	397.10	5.09	43250.52	11588.94	11070.73
47	-1.41	397.10	5.09	43250.52	11588.94	11070.73
48	-1.41	402.19	5.09	44001.96	11790.29	11263.07
48	-1.41	402.19	5.09	44001.96	11790.29	11263.07
49	-1.41	407.27	5.09	44753.40	11991.64	11455.42
49	-1.41	407.27	5.09	44753.40	11991.64	11455.42
50	-1.41	412.36	5.09	45504.84	12192.98	11647.76
50	-1.41	412.36	5.09	45504.84	12192.98	11647.76
51	5.31	415.65	1.51	13186.76	3533.38	3375.38
51	5.31	415.65	1.51	13186.76	3533.38	3375.38
52	5.31	418.90	5.02	44073.35	11809.42	11281.34
52	5.31	418.90	5.02	44073.35	11809.42	11281.34
53	5.31	423.90	5.02	44199.81	11843.30	11313.71
53	5.31	423.90	5.02	44199.81	11843.30	11313.71
54	5.31	428.90	5.02	44326.27	11877.19	11346.08
54	5.31	428.90	5.02	44326.27	11877.19	11346.08
55	5.31	433.90	5.02	44452.73	11911.07	11378.45
55	5.31	433.90	5.02	44452.73	11911.07	11378.45
56	5.31	438.90	5.02	44579.19	11944.96	11410.82
56	5.31	438.90	5.02	44579.19	11944.96	11410.82
57	5.31	443.93	5.09	45297.90	12137.53	11594.79
57	5.31	443.93	5.09	45297.90	12137.53	11594.79
58	5.31	449.00	5.09	45418.38	12169.82	11625.63
58	5.31	449.00	5.09	45418.38	12169.82	11625.63
59	5.31	454.07	5.09	45538.86	12202.10	11656.47
59	5.31	454.07	5.09	45538.86	12202.10	11656.47
60	5.31	459.13	5.09	45659.35	12234.38	11687.31
60	5.31	459.13	5.09	45659.35	12234.38	11687.31
61	5.31	464.20	5.09	45779.83	12266.67	11718.15
61	5.31	464.20	5.09	45779.83	12266.67	11718.15
62	5.31	469.27	5.09	45900.31	12298.95	11748.99
62	5.31	469.27	5.09	45900.31	12298.95	11748.99
63	5.31	474.33	5.09	46020.80	12331.23	11779.83
63	5.31	474.33	5.09	46020.80	12331.23	11779.83
64	5.31	479.40	5.09	46141.28	12363.52	11810.67
64	5.31	479.40	5.09	46141.28	12363.52	11810.67
65	5.31	484.47	5.09	46261.76	12395.80	11841.51
65	5.31	484.47	5.09	46261.76	12395.80	11841.51
66	5.31	489.53	5.09	46382.25	12428.08	11872.35
66	5.31	489.53	5.09	46382.25	12428.08	11872.35
67	5.31	494.60	5.09	46502.73	12460.37	11903.19
67	5.31	494.60	5.09	46502.73	12460.37	11903.19
68	5.31	499.67	5.09	46623.21	12492.65	11934.03
68	5.31	499.67	5.09	46623.21	12492.65	11934.03
69	5.31	504.73	5.09	46743.70	12524.94	11964.87
69	5.31	504.73	5.09	46743.70	12524.94	11964.87
70	5.31	509.80	5.09	46864.18	12557.22	11995.71
70	5.31	509.80	5.09	46864.18	12557.22	11995.71
71	5.31	514.87	5.09	46984.66	12589.50	12026.55
71	5.31	514.87	5.09	46984.66	12589.50	12026.55
72	5.31	519.91	5.04	46487.32	12456.24	11899.24
72	5.31	519.91	5.04	46487.32	12456.24	11899.24
73	5.31	524.92	5.04	46300.66	12406.23	11851.47
73	5.31	524.92	5.04	46300.66	12406.23	11851.47
74	5.31	529.94	5.04	46114.01	12356.21	11803.69
74	5.31	529.94	5.04	46114.01	12356.21	11803.69
75	5.31	534.96	5.04	45927.36	12306.20	11755.91
75	5.31	534.96	5.04	45927.36	12306.20	11755.91
76	5.31	539.98	5.04	45740.70	12256.18	11708.13
76	5.31	539.98	5.04	45740.70	12256.18	11708.13
77	5.31	544.99	5.04	45554.05	12206.17	11660.36
77	5.31	544.99	5.04	45554.05	12206.17	11660.36
78	5.31	549.96	4.95	44813.05	12007.62	11470.68
78	5.31	549.96	4.95	44813.05	12007.62	11470.68
79	5.31	554.89	4.95	45148.85	12097.60	11556.64
79	5.31	554.89	4.95	45148.85	12097.60	11556.64
80	5.31	559.82	4.95	45484.65	12187.58	11642.59
80	5.31	559.82	4.95	45484.65	12187.58	11642.59
81	5.31	564.74	4.95	45820.45	12277.55	11728.55
81	5.31	564.74	4.95	45820.45	12277.55	11728.55
82	5.31	569.67	4.95	46156.25	12367.53	11814.50
82	5.31	569.67	4.95	46156.25	12367.53	11814.50
83	5.31	574.60	4.95	46492.05	12457.51	11900.46
83	5.31	574.60	4.95	46492.05	12457.51	11900.46
84	5.31	579.52	4.95	46827.86	12547.49	11986.41
84	5.31	579.52	4.95	46827.86	12547.49	11986.41
85	5.31	584.45	4.95	47163.66	12637.46	12072.36
85	5.31	584.45	4.95	47163.66	12637.46	12072.36
86	5.31	589.38	4.95	47499.46	12727.44	12158.32
86	5.31	589.38	4.95	47499.46	12727.44	12158.32
87	5.31	594.30	4.95	47835.26	12817.42	12244.27
87	5.31	594.30	4.95	47835.26	12817.42	12244.27
88	5.31	599.23	4.95	48171.06	12907.40	12330.23
88	5.31	599.23	4.95	48171.06	12907.40	12330.23
89	5.31	604.16	4.95	48506.86	12997.37	12416.18
89	5.31	604.16	4.95	48506.86	12997.37	12416.18
90	5.31	609.08	4.95	48842.66	13087.35	12502.14
90	5.31	609.08	4.95	48842.66	13087.35	12502.14
91	5.31	614.01	4.95	49178.47	13177.33	12588.09
91	5.31	614.01	4.95	49178.47	13177.33	12588.09
92	5.31	618.94	4.95	49514.27	13267.31	12674.04
92	5.31	618.94	4.95	49514.27	13267.31	12674.04
93	23.39	624.12	5.92	54197.33	14522.13	13872.76
93	23.39	624.12	5.92	54197.33	14522.13	13872.76
94	23.39	629.55	5.92	53429.87	14316.49	13676.31
94	23.39	629.55	5.92	53429.87	14316.49	13676.31
95	23.39	634.98	5.92	52662.41	14110.85	13479.87
95	23.39	634.98	5.92	52662.41	14110.85	13479.87
96	23.39	640.23	5.52	48644.99	13034.39	12451.54
96	23.39	640.23	5.52	48644.99	13034.39	12451.54
97	23.39	645.30	5.52	48384.28	12964.53	12384.80
97	23.39	645.30	5.52	48384.28	12964.53	12384.80
98	23.39	650.37	5.52	48123.57	12894.67	12318.07
98	23.39	650.37	5.52	48123.57	12894.67	12318.07
99	23.39	655.44	5.52	47862.86	12824.81	12251.34
99	23.39	655.44	5.52	47862.86	12824.81	12251.34
100	23.39	660.51	5.52	47602.15	12754.96	12184.60

100	23.39	660.51	5.52	47602.15	12754.96	12184.60
101	23.39	665.58	5.52	47341.44	12685.10	12117.87
101	23.39	665.58	5.52	47341.44	12685.10	12117.87
102	23.39	670.65	5.52	47080.73	12615.24	12051.14
102	23.39	670.65	5.52	47080.73	12615.24	12051.14
103	23.39	675.72	5.52	46820.02	12545.39	11984.40
103	23.39	675.72	5.52	46820.02	12545.39	11984.40
104	23.39	680.79	5.52	46559.32	12475.53	11917.67
104	23.39	680.79	5.52	46559.32	12475.53	11917.67
105	23.39	685.86	5.52	46298.61	12405.67	11850.94
105	23.39	685.86	5.52	46298.61	12405.67	11850.94
106	23.39	690.93	5.52	46037.90	12335.82	11784.21
106	23.39	690.93	5.52	46037.90	12335.82	11784.21
107	23.39	696.00	5.52	45777.19	12265.96	11717.47
107	23.39	696.00	5.52	45777.19	12265.96	11717.47
108	23.39	701.07	5.52	45516.48	12196.10	11650.74
108	23.39	701.07	5.52	45516.48	12196.10	11650.74
109	23.39	706.13	5.52	45255.77	12126.25	11584.01
109	23.39	706.13	5.52	45255.77	12126.25	11584.01
110	23.39	711.20	5.52	44995.06	12056.39	11517.27
110	23.39	711.20	5.52	44995.06	12056.39	11517.27
111	23.39	716.27	5.52	44734.35	11986.53	11450.54
111	23.39	716.27	5.52	44734.35	11986.53	11450.54
112	23.39	721.34	5.52	44473.64	11916.68	11383.81
112	23.39	721.34	5.52	44473.64	11916.68	11383.81
113	23.39	726.41	5.52	44212.93	11846.82	11317.07
113	23.39	726.41	5.52	44212.93	11846.82	11317.07
114	23.39	731.48	5.52	43952.22	11776.96	11250.34
114	23.39	731.48	5.52	43952.22	11776.96	11250.34
115	23.39	736.55	5.52	43691.51	11707.11	11183.61
115	23.39	736.55	5.52	43691.51	11707.11	11183.61
116	23.39	741.62	5.52	43430.80	11637.25	11116.87
116	23.39	741.62	5.52	43430.80	11637.25	11116.87
117	23.39	746.69	5.52	43170.09	11567.39	11050.14
117	23.39	746.69	5.52	43170.09	11567.39	11050.14
118	23.39	751.76	5.52	42909.38	11497.53	10983.41
118	23.39	751.76	5.52	42909.38	11497.53	10983.41
119	23.39	756.83	5.52	42648.68	11427.68	10916.68
119	23.39	756.83	5.52	42648.68	11427.68	10916.68
120	23.39	761.90	5.52	42387.97	11357.82	10849.94
120	23.39	761.90	5.52	42387.97	11357.82	10849.94
121	23.39	766.97	5.52	42127.26	11287.96	10783.21
121	23.39	766.97	5.52	42127.26	11287.96	10783.21
122	23.39	772.02	5.48	41672.73	11166.17	10666.87
122	23.39	772.02	5.48	41672.73	11166.17	10666.87
123	23.39	777.05	5.48	41619.19	11151.83	10653.16
123	23.39	777.05	5.48	41619.19	11151.83	10653.16
124	23.39	782.08	5.48	41565.64	11137.48	10639.45
124	23.39	782.08	5.48	41565.64	11137.48	10639.45
125	23.78	786.95	5.14	34024.27	21184.70	20237.40
125	23.78	786.95	5.14	34024.27	21184.70	20237.40
126	23.78	791.79	5.44	35949.61	22386.45	21385.42
126	23.78	791.79	5.44	35949.61	22386.45	21385.42
127	23.78	796.76	5.44	35882.31	22347.60	21348.30
127	23.78	796.76	5.44	35882.31	22347.60	21348.30
128	23.78	801.74	5.44	35815.01	22308.74	21311.18
128	23.78	801.74	5.44	35815.01	22308.74	21311.18
129	23.78	806.71	5.44	35747.71	22269.89	21274.06
129	23.78	806.71	5.44	35747.71	22269.89	21274.06
130	23.78	811.69	5.44	35680.41	22231.03	21236.94
130	23.78	811.69	5.44	35680.41	22231.03	21236.94
131	23.78	816.66	5.44	35613.11	22192.17	21199.82
131	23.78	816.66	5.44	35613.11	22192.17	21199.82
132	23.78	821.64	5.44	35545.81	22153.32	21162.71
132	23.78	821.64	5.44	35545.81	22153.32	21162.71
133	23.78	826.61	5.44	35478.51	22114.46	21125.59
133	23.78	826.61	5.44	35478.51	22114.46	21125.59
134	23.78	831.59	5.44	35411.21	22075.61	21088.47
134	23.78	831.59	5.44	35411.21	22075.61	21088.47
135	23.78	836.56	5.44	35343.91	22036.75	21051.35
135	23.78	836.56	5.44	35343.91	22036.75	21051.35
136	23.78	841.54	5.44	35276.61	21997.90	21014.23
136	23.78	841.54	5.44	35276.61	21997.90	21014.23
137	23.78	846.51	5.44	35209.31	21959.04	20977.11
137	23.78	846.51	5.44	35209.31	21959.04	20977.11
138	23.78	851.80	6.12	39552.08	24671.23	23568.02
138	23.78	851.80	6.12	39552.08	24671.23	23568.02
139	23.78	857.40	6.12	39466.80	24622.00	23520.99
139	23.78	857.40	6.12	39466.80	24622.00	23520.99
140	23.78	862.70	5.46	35048.40	21871.99	20893.96
140	23.78	862.70	5.46	35048.40	21871.99	20893.96
141	23.78	867.69	5.46	34845.47	21754.83	20782.04
141	23.78	867.69	5.46	34845.47	21754.83	20782.04
142	23.78	872.68	5.46	34642.54	21637.67	20670.11
142	23.78	872.68	5.46	34642.54	21637.67	20670.11
143	23.78	877.67	5.46	34439.61	21520.51	20558.19
143	23.78	877.67	5.46	34439.61	21520.51	20558.19
144	23.78	882.67	5.46	34236.68	21403.35	20446.27
144	23.78	882.67	5.46	34236.68	21403.35	20446.27
145	23.78	887.66	5.46	34033.75	21286.19	20334.35
145	23.78	887.66	5.46	34033.75	21286.19	20334.35
146	23.78	892.65	5.46	33830.82	21169.02	20222.42
146	23.78	892.65	5.46	33830.82	21169.02	20222.42
147	23.78	897.65	5.46	33627.89	21051.86	20110.50
147	23.78	897.65	5.46	33627.89	21051.86	20110.50
148	23.78	902.64	5.46	33424.96	20934.70	19998.58
148	23.78	902.64	5.46	33424.96	20934.70	19998.58
149	23.78	907.63	5.46	33222.03	20817.54	19886.66
149	23.78	907.63	5.46	33222.03	20817.54	19886.66
150	23.78	912.62	5.46	33019.11	20700.38	19774.74
150	23.78	912.62	5.46	33019.11	20700.38	19774.74
151	23.78	917.62	5.46	32816.18	20583.22	19662.81
151	23.78	917.62	5.46	32816.18	20583.22	19662.81
152	23.78	922.61	5.46	32613.25	20466.06	19550.89
152	23.78	922.61	5.46	32613.25	20466.06	19550.89
153	23.78	927.60	5.46	32410.32	20348.89	19438.97
153	23.78	927.60	5.46	32410.32	20348.89	19438.97
154	23.78	932.60	5.46	32207.39	20231.73	19327.05
154	23.78	932.60	5.46	32207.39	20231.73	19327.05
155	23.78	937.59	5.46	32004.46	20114.57	19215.12
155	23.78	937.59	5.46	32004.46	20114.57	19215.12
156	23.78	942.58	5.46	31801.53	19997.41	19103.20
156	23.78	942.58	5.46	31801.53	19997.41	19103.20
157	23.78	947.58	5.46	31598.60	19880.25	18991.28
157	23.78	947.58	5.46	31598.60	19880.25	18991.28
158	23.78	952.57	5.46	31395.67	19763.09	18879.36
158	23.78	952.57	5.46	31395.67	19763.09	18879.36
159	23.78	957.56	5.46	31192.74	19645.93	18767.43
159	23.78	957.56	5.46	31192.74	19645.93	18767.43
160	23.78	962.55	5.46	30989.81	19528.76	18655.51

160	23.78	962.55	5.46	30989.81	19528.76	18655.51
161	23.78	967.55	5.46	30786.88	19411.60	18543.59
161	23.78	967.55	5.46	30786.88	19411.60	18543.59
162	23.78	972.54	5.46	30583.95	19294.44	18431.67
162	23.78	972.54	5.46	30583.95	19294.44	18431.67
163	23.78	977.53	5.46	30381.02	19177.28	18319.74
163	23.78	977.53	5.46	30381.02	19177.28	18319.74
164	23.78	982.53	5.46	30178.09	19060.12	18207.82
164	23.78	982.53	5.46	30178.09	19060.12	18207.82
165	23.78	987.52	5.46	29975.16	18942.96	18095.90
165	23.78	987.52	5.46	29975.16	18942.96	18095.90
166	23.78	992.51	5.46	29772.23	18825.80	17983.98
166	23.78	992.51	5.46	29772.23	18825.80	17983.98
167	23.78	997.50	5.46	29569.30	18708.63	17872.06
167	23.78	997.50	5.46	29569.30	18708.63	17872.06
168	23.78	1002.57	5.61	30125.96	19075.39	18222.41
168	23.78	1002.57	5.61	30125.96	19075.39	18222.41
169	23.78	1007.70	5.61	29808.62	18892.17	18047.39
169	23.78	1007.70	5.61	29808.62	18892.17	18047.39
170	23.78	1012.83	5.61	29491.28	18708.95	17872.36
170	23.78	1012.83	5.61	29491.28	18708.95	17872.36
171	23.78	1017.96	5.61	29173.93	18525.74	17697.34
171	23.78	1017.96	5.61	29173.93	18525.74	17697.34
172	23.78	1023.09	5.61	28856.59	18342.52	17522.31
172	23.78	1023.09	5.61	28856.59	18342.52	17522.31
173	23.78	1028.22	5.61	28539.25	18159.30	17347.29
173	23.78	1028.22	5.61	28539.25	18159.30	17347.29
174	23.78	1033.35	5.61	28221.91	17976.08	17172.26
174	23.78	1033.35	5.61	28221.91	17976.08	17172.26
175	23.78	1038.48	5.61	27904.56	17792.86	16997.23
175	23.78	1038.48	5.61	27904.56	17792.86	16997.23
176	23.78	1043.62	5.61	27587.22	17609.65	16822.21
176	23.78	1043.62	5.61	27587.22	17609.65	16822.21
177	23.78	1048.75	5.61	27269.88	17426.43	16647.18
177	23.78	1048.75	5.61	27269.88	17426.43	16647.18
178	23.78	1053.88	5.61	26952.53	17243.21	16472.16
178	23.78	1053.88	5.61	26952.53	17243.21	16472.16
179	23.78	1059.01	5.61	26635.19	17059.99	16297.13
179	23.78	1059.01	5.61	26635.19	17059.99	16297.13
180	23.78	1064.14	5.61	26317.85	16876.77	16122.11
180	23.78	1064.14	5.61	26317.85	16876.77	16122.11
181	23.78	1069.27	5.61	26000.51	16693.56	15947.08
181	23.78	1069.27	5.61	26000.51	16693.56	15947.08
182	23.78	1074.40	5.61	25683.16	16510.34	15772.06
182	23.78	1074.40	5.61	25683.16	16510.34	15772.06
183	23.78	1079.53	5.61	25365.82	16327.12	15597.03
183	23.78	1079.53	5.61	25365.82	16327.12	15597.03
184	23.78	1084.61	5.48	24319.47	15686.33	14984.89
184	23.78	1084.61	5.48	24319.47	15686.33	14984.89
185	23.78	1089.63	5.48	23643.47	15296.04	14612.06
185	23.78	1089.63	5.48	23643.47	15296.04	14612.06
186	23.78	1094.65	5.48	22967.47	14905.75	14239.22
186	23.78	1094.65	5.48	22967.47	14905.75	14239.22
187	23.78	1099.67	5.48	22291.48	14515.47	13866.39
187	23.78	1099.67	5.48	22291.48	14515.47	13866.39
188	23.78	1104.69	5.48	21615.48	14125.18	13493.55
188	23.78	1104.69	5.48	21615.48	14125.18	13493.55
189	23.78	1109.71	5.48	20939.48	13734.89	13120.72
189	23.78	1109.71	5.48	20939.48	13734.89	13120.72
190	23.78	1114.73	5.48	20263.49	13344.60	12747.88
190	23.78	1114.73	5.48	20263.49	13344.60	12747.88
191	23.78	1119.75	5.48	19587.49	12954.32	12375.05
191	23.78	1119.75	5.48	19587.49	12954.32	12375.05
192	23.78	1124.76	5.48	18911.49	12564.03	12002.21
192	23.78	1124.76	5.48	18911.49	12564.03	12002.21
193	23.78	1129.78	5.48	18235.50	12173.74	11629.38
193	23.78	1129.78	5.48	18235.50	12173.74	11629.38
194	23.78	1134.80	5.48	17559.50	11783.46	11256.55
194	23.78	1134.80	5.48	17559.50	11783.46	11256.55
195	23.78	1139.82	5.48	16883.50	11393.17	10883.71
195	23.78	1139.82	5.48	16883.50	11393.17	10883.71
196	23.78	1144.84	5.48	16207.50	11002.88	10510.88
196	23.78	1144.84	5.48	16207.50	11002.88	10510.88
197	23.78	1149.86	5.48	15531.51	10612.60	10138.04
197	23.78	1149.86	5.48	15531.51	10612.60	10138.04
198	23.78	1154.88	5.48	14855.51	10222.31	9765.21
198	23.78	1154.88	5.48	14855.51	10222.31	9765.21
199	23.78	1159.90	5.48	14179.51	9832.02	9392.37
199	23.78	1159.90	5.48	14179.51	9832.02	9392.37
200	23.78	1164.92	5.48	13503.52	9441.74	9019.54
200	23.78	1164.92	5.48	13503.52	9441.74	9019.54
201	23.78	1169.94	5.48	12827.52	9051.45	8646.70
201	23.78	1169.94	5.48	12827.52	9051.45	8646.70
202	23.78	1174.96	5.48	12151.52	8661.16	8273.87
202	23.78	1174.96	5.48	12151.52	8661.16	8273.87
203	23.78	1179.98	5.48	11475.53	8270.87	7901.03
203	23.78	1179.98	5.48	11475.53	8270.87	7901.03
204	23.78	1185.00	5.48	10799.53	7880.59	7528.20
204	23.78	1185.00	5.48	10799.53	7880.59	7528.20
205	23.78	1190.02	5.48	10123.53	7490.30	7155.36
205	23.78	1190.02	5.48	10123.53	7490.30	7155.36
206	23.78	1195.04	5.48	9447.54	7100.01	6782.53
206	23.78	1195.04	5.48	9447.54	7100.01	6782.53
207	23.78	1200.05	5.48	8771.54	6709.73	6409.69
207	23.78	1200.05	5.48	8771.54	6709.73	6409.69
208	23.78	1205.07	5.48	8095.54	6319.44	6036.86
208	23.78	1205.07	5.48	8095.54	6319.44	6036.86
209	23.78	1210.09	5.48	7419.54	5929.15	5664.02
209	23.78	1210.09	5.48	7419.54	5929.15	5664.02
210	23.78	1215.11	5.48	6743.55	5538.87	5291.19
210	23.78	1215.11	5.48	6743.55	5538.87	5291.19
211	23.78	1220.13	5.48	6067.55	5148.58	4918.35
211	23.78	1220.13	5.48	6067.55	5148.58	4918.35
212	23.78	1225.15	5.48	5391.55	4758.29	4545.52
212	23.78	1225.15	5.48	5391.55	4758.29	4545.52
213	23.78	1230.17	5.48	4715.56	4368.00	4172.68
213	23.78	1230.17	5.48	4715.56	4368.00	4172.68
214	23.78	1235.19	5.48	4039.56	3977.72	3799.85
214	23.78	1235.19	5.48	4039.56	3977.72	3799.85
215	23.78	1238.35	1.42	936.02	966.59	923.36
215	23.78	1238.35	1.42	936.02	966.59	923.36
216	37.55	1241.00	5.05	1982.40	2658.12	2539.25
216	37.55	1241.00	5.05	1982.40	2658.12	2539.25
217	37.55	1245.00	5.05	1002.20	2092.20	1998.64
217	37.55	1245.00	5.05	1002.20	2092.20	1998.64
218	37.55	1248.67	4.23	152.57	1355.71	1295.08
218	37.55	1248.67	4.23	152.57	1355.71	1295.08
219	37.55	1252.03	4.23	276.32	159.53	152.40
219	37.55	1252.03	4.23	276.32	159.53	152.40

Sum of the Resisting Forces = 2675401.69 (lbs)

Average Available Shear Strength = 2292.35(psf)

Sum of the Driving Forces = 2684171.62 (lbs)

Average Mobilized Shear Stress = 2299.86(psf)

Total length of the failure surface = 1167.10(ft)

Factor of Safety Balance Check: FS = 0.99673

Janbu's Correction Factor (fo) = 1.0502

Janub's FS Corrected = 1.04676

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.16680(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

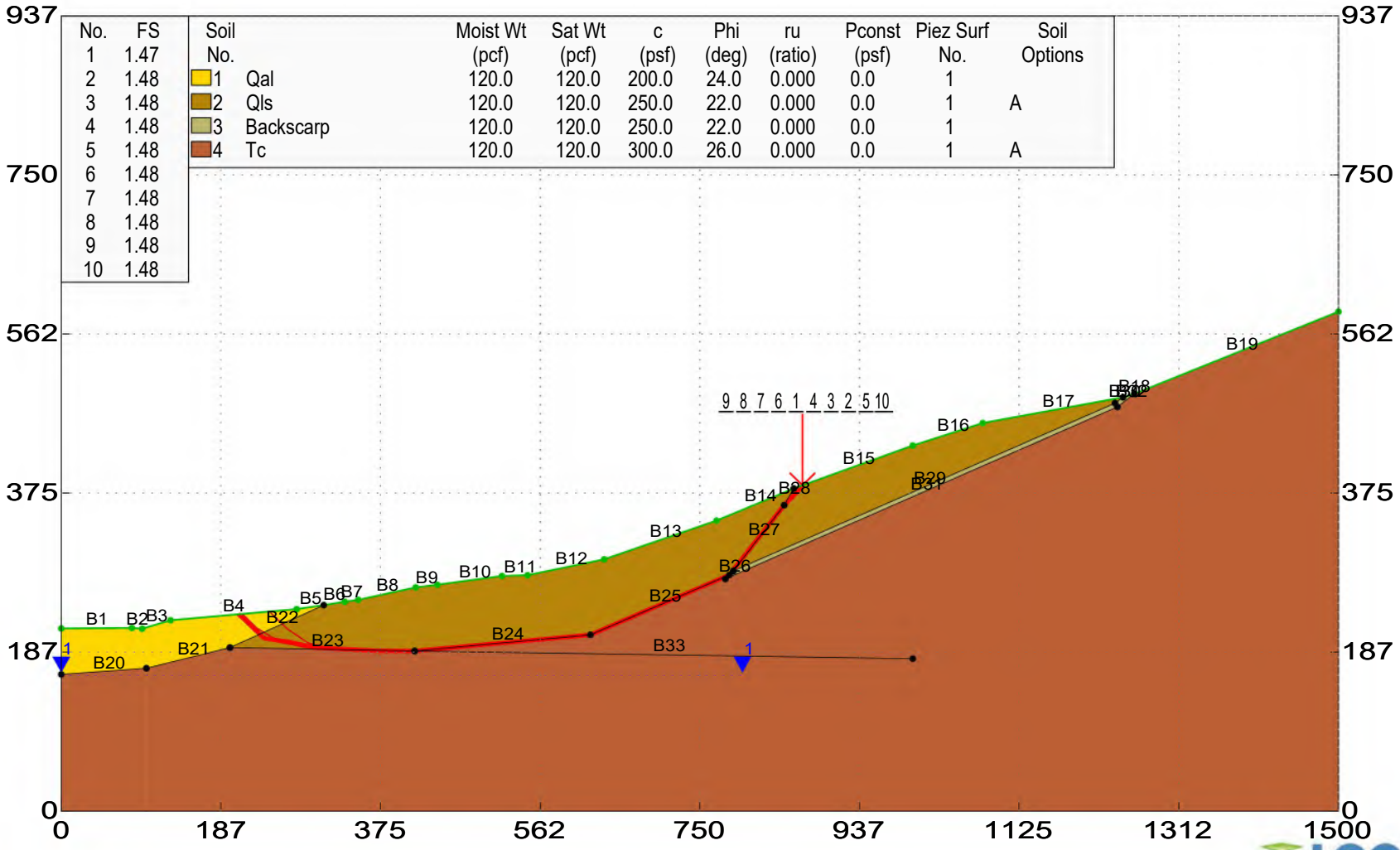
Average Elevation of Point of Application of kh on Sliding Mass = 284.699(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Design - Smaller Qls - Static

LGC Geotechnical, Inc. \xhd.gsd



GEOSTASE FS = 1.47

Simplified Janbu (Corrected) Method

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 3/ 29/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xhd.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_03_21\xhd.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Design - Smaller Qls - Static

BOUNDARY DATA

19 Surface Boundaries
33 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.200	82.800	216.000	1
2	82.800	216.000	95.100	215.000	1
3	95.100	215.000	128.300	225.100	1
4	128.300	225.100	276.400	238.000	1
5	276.400	238.000	308.300	242.900	1
6	308.300	242.900	332.700	247.000	2
7	332.700	247.000	348.800	249.000	2
8	348.800	249.000	416.400	263.600	2
9	416.400	263.600	441.400	267.000	2
10	441.400	267.000	517.400	277.100	2
11	517.400	277.100	547.500	278.000	2
12	547.500	278.000	637.700	297.000	2
13	637.700	297.000	769.500	342.600	2
14	769.500	342.600	860.200	380.200	2
15	860.200	380.200	1000.000	430.900	2
16	1000.000	430.900	1082.100	457.600	2
17	1082.100	457.600	1247.000	487.900	2
18	1247.000	487.900	1260.400	491.900	3
19	1260.400	491.900	1500.000	588.800	4
20	0.000	161.100	100.000	168.300	4
21	100.000	168.300	198.100	192.800	4
22	198.100	192.800	308.300	242.900	2
23	198.100	192.800	414.900	188.600	4
24	414.900	188.600	621.400	207.800	4
25	621.400	207.800	784.600	278.400	4
26	779.900	273.600	789.300	283.200	3
27	789.300	283.200	849.000	360.500	2
28	849.000	360.500	860.200	380.200	2
29	789.300	283.200	1237.700	480.800	3
30	1237.700	480.800	1247.000	487.900	3
31	779.900	273.600	1240.300	476.500	4
32	1240.300	476.500	1260.400	491.900	4
33	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	250.00	22.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	250.00	22.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	250.00	22.00
2	25.0	0.00	14.00
3	90.0	250.00	22.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search =   30.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	369.00	189.70	5.00
2	370.40	189.00	370.40	189.00	0.00
3	414.90	188.60	414.90	188.60	0.00
4	621.40	207.80	621.40	207.80	0.00
5	784.60	278.40	784.60	278.40	0.00
6	849.00	360.50	849.00	360.50	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
   FS Max =   1.574   FS Min =   1.473   FS Ave =   1.523
   Standard Deviation =   0.017   Coefficient of Variation =   1.12 %

Critical Surface is Sequence Number   2 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface =   1.473

Table 1 - Geometry Data on the 135 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	4.48	2.02	210.24	230.21	232.24	-39.24	4.98	5.78
2	4.48	6.07	214.72	226.55	232.63	-39.24	4.98	5.78
3	5.39	11.00	219.65	222.06	233.06	-44.66	4.98	7.58
4	5.39	16.80	225.05	216.73	233.53	-44.66	4.98	7.58
5	5.39	22.60	230.44	211.40	234.00	-44.66	4.98	7.58
6	2.58	26.89	234.43	207.46	234.34	-44.66	4.98	3.62
7	2.58	29.66	237.00	204.91	234.57	-44.66	4.98	3.62
8	4.95	31.61	240.77	203.29	234.90	-8.03	4.98	5.00
9	4.95	32.74	245.72	202.59	235.33	-8.03	4.98	5.00
10	4.95	33.87	250.67	201.89	235.76	-8.03	4.98	5.00
11	4.95	35.00	255.62	201.19	236.19	-8.03	4.98	5.00
12	4.95	36.13	260.57	200.50	236.62	-8.03	4.98	5.00
13	4.95	37.26	265.52	199.80	237.05	-8.03	4.98	5.00
14	4.20	38.49	270.10	198.96	237.45	-13.04	4.98	4.31
15	4.20	39.83	274.30	197.99	237.82	-13.04	4.98	4.31
16	5.21	41.50	279.00	196.90	238.40	-13.04	8.73	5.34
17	5.21	43.51	284.21	195.69	239.20	-13.04	8.73	5.34
18	5.21	45.51	289.42	194.49	240.00	-13.04	8.73	5.34
19	5.21	47.52	294.62	193.28	240.80	-13.04	8.73	5.34
20	5.54	49.09	299.99	192.54	241.62	-2.88	8.73	5.54
21	5.54	50.21	305.53	192.26	242.47	-2.88	8.73	5.54
22	4.88	51.31	310.74	192.00	243.31	-2.88	9.54	4.89
23	4.88	52.38	315.62	191.75	244.13	-2.88	9.54	4.89
24	4.88	53.44	320.50	191.51	244.95	-2.88	9.54	4.89
25	4.88	54.51	325.38	191.26	245.77	-2.88	9.54	4.89
26	4.88	55.57	330.26	191.02	246.59	-2.88	9.54	4.89
27	5.37	56.57	335.38	190.76	247.33	-2.88	7.08	5.37
28	5.37	57.51	340.75	190.49	248.00	-2.88	7.08	5.37
29	5.37	58.45	346.12	190.22	248.67	-2.88	7.08	5.37
30	3.32	59.36	350.46	190.00	249.36	-2.88	12.19	3.32
31	3.32	60.24	353.78	189.84	250.08	-2.88	12.19	3.32

32	4.99	61.35	357.93	189.63	250.97	-2.88	12.19	4.99
33	4.99	62.67	362.92	189.38	252.05	-2.88	12.19	4.99
34	4.99	64.00	367.91	189.13	253.13	-2.88	12.19	4.99
35	4.94	65.22	372.87	188.98	254.20	-0.52	12.19	4.94
36	4.94	66.33	377.82	188.93	255.27	-0.52	12.19	4.94
37	4.94	67.45	382.76	188.89	256.33	-0.52	12.19	4.94
38	4.94	68.56	387.71	188.84	257.40	-0.52	12.19	4.94
39	4.94	69.67	392.65	188.80	258.47	-0.52	12.19	4.94
40	4.94	70.78	397.59	188.76	259.54	-0.52	12.19	4.94
41	4.94	71.90	402.54	188.71	260.61	-0.52	12.19	4.94
42	4.94	73.01	407.48	188.67	261.67	-0.52	12.19	4.94
43	4.94	74.12	412.43	188.62	262.74	-0.52	12.19	4.94
44	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
45	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
46	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
47	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
48	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
49	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
50	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
51	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
52	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
53	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
54	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
55	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
56	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
57	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
58	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
59	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
60	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
61	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
62	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
63	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
64	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
65	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
66	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
67	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
68	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
69	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
70	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
71	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
72	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
73	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
74	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
75	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
76	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
77	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
78	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
79	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
80	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
81	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
82	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
83	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
84	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
85	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
86	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
87	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
88	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
89	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
90	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
91	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
92	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
93	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
94	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
95	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
96	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
97	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
98	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
99	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
100	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
101	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
102	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
103	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
104	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
105	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
106	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
107	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
108	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
109	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
110	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
111	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
112	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
113	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
114	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
115	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
116	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
117	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
118	4.95	68.33	787.08	281.56	349.89	51.89	22.52	8.03
119	4.95	64.07	792.03	287.87	351.94	51.89	22.52	8.03
120	4.95	59.81	796.98	294.19	353.99	51.89	22.52	8.03
121	4.95	55.54	801.94	300.50	356.05	51.89	22.52	8.03
122	4.95	51.28	806.89	306.82	358.10	51.89	22.52	8.03
123	4.95	47.02	811.85	313.13	360.15	51.89	22.52	8.03
124	4.95	42.76	816.80	319.45	362.21	51.89	22.52	8.03
125	4.95	38.50	821.75	325.77	364.26	51.89	22.52	8.03
126	4.95	34.23	826.71	332.08	366.32	51.89	22.52	8.03
127	4.95	29.97	831.66	338.40	368.37	51.89	22.52	8.03
128	4.95	25.71	836.62	344.71	370.42	51.89	22.52	8.03
129	4.95	21.45	841.57	351.03	372.48	51.89	22.52	8.03
130	4.95	17.19	846.52	357.34	374.53	51.89	22.52	8.03
131	5.60	13.25	851.80	363.46	376.72	46.63	22.52	8.16
132	5.60	9.65	857.40	369.39	379.04	46.63	22.52	8.16
133	4.70	6.21	862.55	374.85	381.05	46.63	19.93	6.84
134	4.70	2.93	867.25	379.82	382.76	46.63	19.93	6.84
135	0.83	0.65	870.02	383.11	383.76	62.55	19.93	1.80

Table 2 - Force Data On The 135 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1087.8	0.0	0.0	0.0	0.0	0.0
2	3263.3	0.0	0.0	0.0	0.0	0.0
3	7119.3	0.0	0.0	0.0	0.0	0.0
4	10875.2	0.0	0.0	0.0	0.0	0.0
5	14631.1	0.0	0.0	0.0	0.0	0.0
6	8312.9	0.0	0.0	0.0	0.0	0.0

7	9169.6	0.0	0.0	0.0	0.0	0.0
8	18779.2	0.0	0.0	0.0	0.0	0.0
9	19450.2	0.0	0.0	0.0	0.0	0.0
10	20121.2	0.0	0.0	0.0	0.0	0.0
11	20792.3	0.0	0.0	0.0	0.0	0.0
12	21463.3	0.0	0.0	0.0	0.0	0.0
13	22134.3	0.0	0.0	0.0	0.0	0.0
14	19401.5	0.0	0.0	0.0	0.0	0.0
15	20076.4	0.0	0.0	0.0	0.0	0.0
16	25927.7	0.0	0.0	0.0	0.0	0.0
17	27180.8	0.0	0.0	0.0	0.0	0.0
18	28433.9	0.0	0.0	0.0	0.0	0.0
19	29686.9	0.0	0.0	0.0	0.0	0.0
20	32617.6	0.0	0.0	0.0	0.0	0.0
21	33367.8	0.0	0.0	0.0	0.0	0.0
22	30048.1	0.0	0.0	0.0	0.0	0.0
23	30671.9	0.0	0.0	0.0	0.0	0.0
24	31295.7	0.0	0.0	0.0	0.0	0.0
25	31919.5	0.0	0.0	0.0	0.0	0.0
26	32543.3	0.0	0.0	0.0	0.0	0.0
27	36433.3	0.0	0.0	0.0	0.0	0.0
28	37036.3	0.0	0.0	0.0	0.0	0.0
29	37639.4	0.0	0.0	0.0	0.0	0.0
30	23643.7	0.0	0.0	0.0	0.0	0.0
31	23995.7	0.0	0.0	0.0	0.0	0.0
32	36712.0	0.0	0.0	0.0	0.0	0.0
33	37506.6	0.0	0.0	0.0	0.0	0.0
34	38301.1	0.0	0.0	0.0	0.0	0.0
35	38697.9	0.0	0.0	0.0	0.0	0.0
36	39357.9	0.0	0.0	0.0	0.0	0.0
37	40017.9	0.0	0.0	0.0	0.0	0.0
38	40677.9	0.0	0.0	0.0	0.0	0.0
39	41337.9	0.0	0.0	0.0	0.0	0.0
40	41997.8	0.0	0.0	0.0	0.0	0.0
41	42657.8	0.0	0.0	0.0	0.0	0.0
42	43317.8	0.0	0.0	0.0	0.0	0.0
43	43977.8	0.0	0.0	0.0	0.0	0.0
44	13458.3	0.0	0.0	0.0	0.0	0.0
45	44980.9	0.0	0.0	0.0	0.0	0.0
46	45109.9	0.0	0.0	0.0	0.0	0.0
47	45239.0	0.0	0.0	0.0	0.0	0.0
48	45368.0	0.0	0.0	0.0	0.0	0.0
49	45497.1	0.0	0.0	0.0	0.0	0.0
50	46230.6	0.0	0.0	0.0	0.0	0.0
51	46353.6	0.0	0.0	0.0	0.0	0.0
52	46476.5	0.0	0.0	0.0	0.0	0.0
53	46599.5	0.0	0.0	0.0	0.0	0.0
54	46722.5	0.0	0.0	0.0	0.0	0.0
55	46845.4	0.0	0.0	0.0	0.0	0.0
56	46968.4	0.0	0.0	0.0	0.0	0.0
57	47091.4	0.0	0.0	0.0	0.0	0.0
58	47214.3	0.0	0.0	0.0	0.0	0.0
59	47337.3	0.0	0.0	0.0	0.0	0.0
60	47460.3	0.0	0.0	0.0	0.0	0.0
61	47583.2	0.0	0.0	0.0	0.0	0.0
62	47706.2	0.0	0.0	0.0	0.0	0.0
63	47829.2	0.0	0.0	0.0	0.0	0.0
64	47952.1	0.0	0.0	0.0	0.0	0.0
65	47444.5	0.0	0.0	0.0	0.0	0.0
66	47254.0	0.0	0.0	0.0	0.0	0.0
67	47063.5	0.0	0.0	0.0	0.0	0.0
68	46873.0	0.0	0.0	0.0	0.0	0.0
69	46682.5	0.0	0.0	0.0	0.0	0.0
70	46492.0	0.0	0.0	0.0	0.0	0.0
71	45735.8	0.0	0.0	0.0	0.0	0.0
72	46078.5	0.0	0.0	0.0	0.0	0.0
73	46421.2	0.0	0.0	0.0	0.0	0.0
74	46763.9	0.0	0.0	0.0	0.0	0.0
75	47106.6	0.0	0.0	0.0	0.0	0.0
76	47449.4	0.0	0.0	0.0	0.0	0.0
77	47792.1	0.0	0.0	0.0	0.0	0.0
78	48134.8	0.0	0.0	0.0	0.0	0.0
79	48477.5	0.0	0.0	0.0	0.0	0.0
80	48820.2	0.0	0.0	0.0	0.0	0.0
81	49162.9	0.0	0.0	0.0	0.0	0.0
82	49505.7	0.0	0.0	0.0	0.0	0.0
83	49848.4	0.0	0.0	0.0	0.0	0.0
84	50191.1	0.0	0.0	0.0	0.0	0.0
85	50533.8	0.0	0.0	0.0	0.0	0.0
86	55526.6	0.0	0.0	0.0	0.0	0.0
87	54740.3	0.0	0.0	0.0	0.0	0.0
88	53954.1	0.0	0.0	0.0	0.0	0.0
89	49838.1	0.0	0.0	0.0	0.0	0.0
90	49571.0	0.0	0.0	0.0	0.0	0.0
91	49303.9	0.0	0.0	0.0	0.0	0.0
92	49036.8	0.0	0.0	0.0	0.0	0.0
93	48769.7	0.0	0.0	0.0	0.0	0.0
94	48502.6	0.0	0.0	0.0	0.0	0.0
95	48235.5	0.0	0.0	0.0	0.0	0.0
96	47968.4	0.0	0.0	0.0	0.0	0.0
97	47701.3	0.0	0.0	0.0	0.0	0.0
98	47434.2	0.0	0.0	0.0	0.0	0.0
99	47167.1	0.0	0.0	0.0	0.0	0.0
100	46900.0	0.0	0.0	0.0	0.0	0.0
101	46632.9	0.0	0.0	0.0	0.0	0.0
102	46365.8	0.0	0.0	0.0	0.0	0.0
103	46098.7	0.0	0.0	0.0	0.0	0.0
104	45831.5	0.0	0.0	0.0	0.0	0.0
105	45564.4	0.0	0.0	0.0	0.0	0.0
106	45297.3	0.0	0.0	0.0	0.0	0.0
107	45030.2	0.0	0.0	0.0	0.0	0.0
108	44763.1	0.0	0.0	0.0	0.0	0.0
109	44496.0	0.0	0.0	0.0	0.0	0.0
110	44228.9	0.0	0.0	0.0	0.0	0.0
111	43961.8	0.0	0.0	0.0	0.0	0.0
112	43694.7	0.0	0.0	0.0	0.0	0.0
113	43427.6	0.0	0.0	0.0	0.0	0.0
114	43160.5	0.0	0.0	0.0	0.0	0.0
115	42694.8	0.0	0.0	0.0	0.0	0.0
116	42640.0	0.0	0.0	0.0	0.0	0.0
117	42585.1	0.0	0.0	0.0	0.0	0.0
118	40618.9	0.0	0.0	0.0	0.0	0.0
119	38085.4	0.0	0.0	0.0	0.0	0.0
120	35552.0	0.0	0.0	0.0	0.0	0.0
121	33018.6	0.0	0.0	0.0	0.0	0.0
122	30485.1	0.0	0.0	0.0	0.0	0.0
123	27951.7	0.0	0.0	0.0	0.0	0.0
124	25418.2	0.0	0.0	0.0	0.0	0.0
125	22884.8	0.0	0.0	0.0	0.0	0.0
126	20351.3	0.0	0.0	0.0	0.0	0.0

127	17817.9	0.0	0.0	0.0	0.0	0.0
128	15284.4	0.0	0.0	0.0	0.0	0.0
129	12751.0	0.0	0.0	0.0	0.0	0.0
130	10217.5	0.0	0.0	0.0	0.0	0.0
131	8906.2	0.0	0.0	0.0	0.0	0.0
132	6481.9	0.0	0.0	0.0	0.0	0.0
133	3500.0	0.0	0.0	0.0	0.0	0.0
134	1655.0	0.0	0.0	0.0	0.0	0.0
135	64.8	0.0	0.0	0.0	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 4995702.53(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 4995702.53(lbs)

TOTAL AREA OF SLIDING MASS = 41630.85(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 135 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	2	250.00	22.00	A
7	2	250.00	22.00	A
8	2	0.00	14.00	A
9	2	0.00	14.00	A
10	2	0.00	14.00	A
11	2	0.00	14.00	A
12	2	0.00	14.00	A
13	2	0.00	14.00	A
14	2	0.00	14.00	A
15	2	0.00	14.00	A
16	2	0.00	14.00	A
17	2	0.00	14.00	A
18	2	0.00	14.00	A
19	2	0.00	14.00	A
20	2	0.00	14.00	A
21	2	0.00	14.00	A
22	2	0.00	14.00	A
23	2	0.00	14.00	A
24	2	0.00	14.00	A
25	2	0.00	14.00	A
26	2	0.00	14.00	A
27	2	0.00	14.00	A
28	2	0.00	14.00	A
29	2	0.00	14.00	A
30	2	0.00	14.00	A
31	2	0.00	14.00	A
32	4	0.00	14.00	A
33	4	0.00	14.00	A
34	4	0.00	14.00	A
35	4	0.00	14.00	A
36	4	0.00	14.00	A
37	4	0.00	14.00	A
38	4	0.00	14.00	A
39	4	0.00	14.00	A
40	4	0.00	14.00	A
41	4	0.00	14.00	A
42	4	0.00	14.00	A
43	4	0.00	14.00	A
44	2	0.00	14.00	A
45	2	0.00	14.00	A
46	2	0.00	14.00	A
47	2	0.00	14.00	A
48	2	0.00	14.00	A
49	2	0.00	14.00	A
50	2	0.00	14.00	A
51	2	0.00	14.00	A
52	2	0.00	14.00	A
53	2	0.00	14.00	A
54	2	0.00	14.00	A
55	2	0.00	14.00	A
56	2	0.00	14.00	A
57	2	0.00	14.00	A
58	2	0.00	14.00	A
59	2	0.00	14.00	A
60	2	0.00	14.00	A
61	2	0.00	14.00	A
62	2	0.00	14.00	A
63	2	0.00	14.00	A
64	2	0.00	14.00	A
65	2	0.00	14.00	A
66	2	0.00	14.00	A
67	2	0.00	14.00	A
68	2	0.00	14.00	A
69	2	0.00	14.00	A
70	2	0.00	14.00	A
71	2	0.00	14.00	A
72	2	0.00	14.00	A
73	2	0.00	14.00	A
74	2	0.00	14.00	A
75	2	0.00	14.00	A
76	2	0.00	14.00	A
77	2	0.00	14.00	A
78	2	0.00	14.00	A
79	2	0.00	14.00	A
80	2	0.00	14.00	A
81	2	0.00	14.00	A
82	2	0.00	14.00	A
83	2	0.00	14.00	A
84	2	0.00	14.00	A
85	2	0.00	14.00	A
86	2	0.00	14.00	A
87	2	0.00	14.00	A
88	2	0.00	14.00	A
89	2	0.00	14.00	A
90	2	0.00	14.00	A
91	2	0.00	14.00	A
92	2	0.00	14.00	A
93	2	0.00	14.00	A
94	2	0.00	14.00	A
95	2	0.00	14.00	A
96	2	0.00	14.00	A
97	2	0.00	14.00	A
98	2	0.00	14.00	A
99	2	0.00	14.00	A

100	2	0.00	14.00	A
101	2	0.00	14.00	A
102	2	0.00	14.00	A
103	2	0.00	14.00	A
104	2	0.00	14.00	A
105	2	0.00	14.00	A
106	2	0.00	14.00	A
107	2	0.00	14.00	A
108	2	0.00	14.00	A
109	2	0.00	14.00	A
110	2	0.00	14.00	A
111	2	0.00	14.00	A
112	2	0.00	14.00	A
113	2	0.00	14.00	A
114	2	0.00	14.00	A
115	2	0.00	14.00	A
116	2	0.00	14.00	A
117	2	0.00	14.00	A
118	2	250.00	22.00	A
119	2	250.00	22.00	A
120	2	250.00	22.00	A
121	2	250.00	22.00	A
122	2	250.00	22.00	A
123	2	250.00	22.00	A
124	2	250.00	22.00	A
125	2	250.00	22.00	A
126	2	250.00	22.00	A
127	2	250.00	22.00	A
128	2	250.00	22.00	A
129	2	250.00	22.00	A
130	2	250.00	22.00	A
131	2	250.00	22.00	A
132	2	250.00	22.00	A
133	2	250.00	22.00	A
134	2	250.00	22.00	A
135	2	250.00	22.00	A

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 135 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-39.24	210.24	5.78	490.12	418.22	283.68
1	-39.24	210.24	5.78	490.12	418.22	283.68
2	-39.24	214.72	5.78	1149.44	711.77	482.80
2	-39.24	214.72	5.78	1149.44	711.77	482.80
3	-44.66	219.65	7.58	2146.20	1155.55	783.82
3	-44.66	219.65	7.58	2146.20	1155.55	783.82
4	-44.66	225.05	7.58	3167.72	1610.36	1092.33
4	-44.66	225.05	7.58	3167.72	1610.36	1092.33
5	-44.66	230.44	7.58	4189.23	2065.17	1400.83
5	-44.66	230.44	7.58	4189.23	2065.17	1400.83
6	-44.66	234.43	3.62	4789.31	2185.01	1482.12
6	-44.66	234.43	3.62	4789.31	2185.01	1482.12
7	-44.66	237.00	3.62	5256.96	2373.95	1610.28
7	-44.66	237.00	3.62	5256.96	2373.95	1610.28
8	-8.03	240.77	5.00	3892.03	970.39	658.23
8	-8.03	240.77	5.00	3892.03	970.39	658.23
9	-8.03	245.72	5.00	4031.10	1005.07	681.75
9	-8.03	245.72	5.00	4031.10	1005.07	681.75
10	-8.03	250.67	5.00	4170.18	1039.74	705.27
10	-8.03	250.67	5.00	4170.18	1039.74	705.27
11	-8.03	255.62	5.00	4309.25	1074.42	728.79
11	-8.03	255.62	5.00	4309.25	1074.42	728.79
12	-8.03	260.57	5.00	4448.32	1109.09	752.31
12	-8.03	260.57	5.00	4448.32	1109.09	752.31
13	-8.03	265.52	5.00	4587.40	1143.77	775.83
13	-8.03	265.52	5.00	4587.40	1143.77	775.83
14	-13.04	270.10	4.31	4820.25	1201.82	815.21
14	-13.04	270.10	4.31	4820.25	1201.82	815.21
15	-13.04	274.30	4.31	4987.93	1243.63	843.57
15	-13.04	274.30	4.31	4987.93	1243.63	843.57
16	-13.04	279.00	5.34	5197.37	1295.85	878.99
16	-13.04	279.00	5.34	5197.37	1295.85	878.99
17	-13.04	284.21	5.34	5448.56	1358.48	921.47
17	-13.04	284.21	5.34	5448.56	1358.48	921.47
18	-13.04	289.42	5.34	5699.74	1421.11	963.95
18	-13.04	289.42	5.34	5699.74	1421.11	963.95
19	-13.04	294.62	5.34	5950.93	1483.73	1006.43
19	-13.04	294.62	5.34	5950.93	1483.73	1006.43
20	-2.88	299.99	5.54	5944.18	1482.05	1005.29
20	-2.88	299.99	5.54	5944.18	1482.05	1005.29
21	-2.88	305.53	5.54	6080.88	1516.13	1028.41
21	-2.88	305.53	5.54	6080.88	1516.13	1028.41
22	-2.88	310.74	4.89	6213.74	1549.26	1050.88
22	-2.88	310.74	4.89	6213.74	1549.26	1050.88
23	-2.88	315.62	4.89	6342.74	1581.42	1072.70
23	-2.88	315.62	4.89	6342.74	1581.42	1072.70
24	-2.88	320.50	4.89	6471.74	1613.59	1094.52
24	-2.88	320.50	4.89	6471.74	1613.59	1094.52
25	-2.88	325.38	4.89	6600.74	1645.75	1116.33
25	-2.88	325.38	4.89	6600.74	1645.75	1116.33
26	-2.88	330.26	4.89	6729.74	1677.91	1138.15
26	-2.88	330.26	4.89	6729.74	1677.91	1138.15
27	-2.88	335.38	5.37	6850.94	1708.13	1158.65
27	-2.88	335.38	5.37	6850.94	1708.13	1158.65
28	-2.88	340.75	5.37	6964.34	1736.40	1177.82
28	-2.88	340.75	5.37	6964.34	1736.40	1177.82
29	-2.88	346.12	5.37	7077.73	1764.68	1197.00
29	-2.88	346.12	5.37	7077.73	1764.68	1197.00
30	-2.88	350.46	3.32	7187.94	1792.15	1215.64
30	-2.88	350.46	3.32	7187.94	1792.15	1215.64
31	-2.88	353.78	3.32	7294.96	1818.84	1233.74
31	-2.88	353.78	3.32	7294.96	1818.84	1233.74
32	-2.88	357.93	4.99	7428.86	1852.22	1256.39
32	-2.88	357.93	4.99	7428.86	1852.22	1256.39
33	-2.88	362.92	4.99	7589.65	1892.31	1283.58
33	-2.88	362.92	4.99	7589.65	1892.31	1283.58
34	-2.88	367.91	4.99	7750.43	1932.40	1310.77
34	-2.88	367.91	4.99	7750.43	1932.40	1310.77
35	-0.52	372.87	4.94	7839.26	1954.55	1325.79

35	-0.52	372.87	4.94	7839.26	1954.55	1325.79
36	-0.52	377.82	4.94	7972.96	1987.88	1348.41
36	-0.52	377.82	4.94	7972.96	1987.88	1348.41
37	-0.52	382.76	4.94	8106.66	2021.22	1371.02
37	-0.52	382.76	4.94	8106.66	2021.22	1371.02
38	-0.52	387.71	4.94	8240.35	2054.55	1393.63
38	-0.52	387.71	4.94	8240.35	2054.55	1393.63
39	-0.52	392.65	4.94	8374.05	2087.88	1416.24
39	-0.52	392.65	4.94	8374.05	2087.88	1416.24
40	-0.52	397.59	4.94	8507.75	2121.22	1438.85
40	-0.52	397.59	4.94	8507.75	2121.22	1438.85
41	-0.52	402.54	4.94	8641.44	2154.55	1461.46
41	-0.52	402.54	4.94	8641.44	2154.55	1461.46
42	-0.52	407.48	4.94	8775.14	2187.89	1484.07
42	-0.52	407.48	4.94	8775.14	2187.89	1484.07
43	-0.52	412.43	4.94	8908.83	2221.22	1506.68
43	-0.52	412.43	4.94	8908.83	2221.22	1506.68
44	5.31	415.65	1.51	8824.16	2200.11	1492.36
44	5.31	415.65	1.51	8824.16	2200.11	1492.36
45	5.31	418.90	5.02	8847.74	2205.99	1496.35
45	5.31	418.90	5.02	8847.74	2205.99	1496.35
46	5.31	423.90	5.02	8873.12	2212.32	1500.64
46	5.31	423.90	5.02	8873.12	2212.32	1500.64
47	5.31	428.90	5.02	8898.51	2218.65	1504.94
47	5.31	428.90	5.02	8898.51	2218.65	1504.94
48	5.31	433.90	5.02	8923.90	2224.98	1509.23
48	5.31	433.90	5.02	8923.90	2224.98	1509.23
49	5.31	438.90	5.02	8949.28	2231.31	1513.52
49	5.31	438.90	5.02	8949.28	2231.31	1513.52
50	5.31	443.93	5.09	8973.91	2237.45	1517.69
50	5.31	443.93	5.09	8973.91	2237.45	1517.69
51	5.31	449.00	5.09	8997.78	2243.40	1521.73
51	5.31	449.00	5.09	8997.78	2243.40	1521.73
52	5.31	454.07	5.09	9021.65	2249.35	1525.76
52	5.31	454.07	5.09	9021.65	2249.35	1525.76
53	5.31	459.13	5.09	9045.52	2255.30	1529.80
53	5.31	459.13	5.09	9045.52	2255.30	1529.80
54	5.31	464.20	5.09	9069.39	2261.25	1533.84
54	5.31	464.20	5.09	9069.39	2261.25	1533.84
55	5.31	469.27	5.09	9093.26	2267.20	1537.87
55	5.31	469.27	5.09	9093.26	2267.20	1537.87
56	5.31	474.33	5.09	9117.13	2273.15	1541.91
56	5.31	474.33	5.09	9117.13	2273.15	1541.91
57	5.31	479.40	5.09	9140.99	2279.11	1545.95
57	5.31	479.40	5.09	9140.99	2279.11	1545.95
58	5.31	484.47	5.09	9164.86	2285.06	1549.98
58	5.31	484.47	5.09	9164.86	2285.06	1549.98
59	5.31	489.53	5.09	9188.73	2291.01	1554.02
59	5.31	489.53	5.09	9188.73	2291.01	1554.02
60	5.31	494.60	5.09	9212.60	2296.96	1558.06
60	5.31	494.60	5.09	9212.60	2296.96	1558.06
61	5.31	499.67	5.09	9236.47	2302.91	1562.09
61	5.31	499.67	5.09	9236.47	2302.91	1562.09
62	5.31	504.73	5.09	9260.34	2308.86	1566.13
62	5.31	504.73	5.09	9260.34	2308.86	1566.13
63	5.31	509.80	5.09	9284.21	2314.81	1570.17
63	5.31	509.80	5.09	9284.21	2314.81	1570.17
64	5.31	514.87	5.09	9308.08	2320.76	1574.20
64	5.31	514.87	5.09	9308.08	2320.76	1574.20
65	5.31	519.91	5.04	9301.34	2319.08	1573.06
65	5.31	519.91	5.04	9301.34	2319.08	1573.06
66	5.31	524.92	5.04	9263.99	2309.77	1566.75
66	5.31	524.92	5.04	9263.99	2309.77	1566.75
67	5.31	529.94	5.04	9226.64	2300.46	1560.43
67	5.31	529.94	5.04	9226.64	2300.46	1560.43
68	5.31	534.96	5.04	9189.30	2291.15	1554.11
68	5.31	534.96	5.04	9189.30	2291.15	1554.11
69	5.31	539.98	5.04	9151.95	2281.84	1547.80
69	5.31	539.98	5.04	9151.95	2281.84	1547.80
70	5.31	544.99	5.04	9114.61	2272.53	1541.48
70	5.31	544.99	5.04	9114.61	2272.53	1541.48
71	5.31	549.96	4.95	9130.14	2276.40	1544.11
71	5.31	549.96	4.95	9130.14	2276.40	1544.11
72	5.31	554.89	4.95	9198.56	2293.46	1555.68
72	5.31	554.89	4.95	9198.56	2293.46	1555.68
73	5.31	559.82	4.95	9266.97	2310.52	1567.25
73	5.31	559.82	4.95	9266.97	2310.52	1567.25
74	5.31	564.74	4.95	9335.39	2327.57	1578.82
74	5.31	564.74	4.95	9335.39	2327.57	1578.82
75	5.31	569.67	4.95	9403.80	2344.63	1590.39
75	5.31	569.67	4.95	9403.80	2344.63	1590.39
76	5.31	574.60	4.95	9472.22	2361.69	1601.96
76	5.31	574.60	4.95	9472.22	2361.69	1601.96
77	5.31	579.52	4.95	9540.63	2378.75	1613.53
77	5.31	579.52	4.95	9540.63	2378.75	1613.53
78	5.31	584.45	4.95	9609.05	2395.81	1625.10
78	5.31	584.45	4.95	9609.05	2395.81	1625.10
79	5.31	589.38	4.95	9677.47	2412.86	1636.67
79	5.31	589.38	4.95	9677.47	2412.86	1636.67
80	5.31	594.30	4.95	9745.88	2429.92	1648.25
80	5.31	594.30	4.95	9745.88	2429.92	1648.25
81	5.31	599.23	4.95	9814.30	2446.98	1659.82
81	5.31	599.23	4.95	9814.30	2446.98	1659.82
82	5.31	604.16	4.95	9882.71	2464.04	1671.39
82	5.31	604.16	4.95	9882.71	2464.04	1671.39
83	5.31	609.08	4.95	9951.13	2481.09	1682.96
83	5.31	609.08	4.95	9951.13	2481.09	1682.96
84	5.31	614.01	4.95	10019.54	2498.15	1694.53
84	5.31	614.01	4.95	10019.54	2498.15	1694.53
85	5.31	618.94	4.95	10087.96	2515.21	1706.10
85	5.31	618.94	4.95	10087.96	2515.21	1706.10
86	23.39	624.12	5.92	9479.68	2363.55	1603.22
86	23.39	624.12	5.92	9479.68	2363.55	1603.22
87	23.39	629.55	5.92	9345.44	2330.08	1580.52
87	23.39	629.55	5.92	9345.44	2330.08	1580.52
88	23.39	634.98	5.92	9211.21	2296.61	1557.82
88	23.39	634.98	5.92	9211.21	2296.61	1557.82
89	23.39	640.23	5.52	9119.65	2273.78	1542.34
89	23.39	640.23	5.52	9119.65	2273.78	1542.34
90	23.39	645.30	5.52	9070.77	2261.60	1534.07
90	23.39	645.30	5.52	9070.77	2261.60	1534.07
91	23.39	650.37	5.52	9021.90	2249.41	1525.80
91	23.39	650.37	5.52	9021.90	2249.41	1525.80
92	23.39	655.44	5.52	8973.02	2237.23	1517.54
92	23.39	655.44	5.52	8973.02	2237.23	1517.54
93	23.39	660.51	5.52	8924.15	2225.04	1509.27
93	23.39	660.51	5.52	8924.15	2225.04	1509.27
94	23.39	665.58	5.52	8875.27	2212.85	1501.01
94	23.39	665.58	5.52	8875.27	2212.85	1501.01
95	23.39	670.65	5.52	8826.39	2200.67	1492.74

95	23.39	670.65	5.52	8826.39	2200.67	1492.74
96	23.39	675.72	5.52	8777.52	2188.48	1484.47
96	23.39	675.72	5.52	8777.52	2188.48	1484.47
97	23.39	680.79	5.52	8728.64	2176.29	1476.21
97	23.39	680.79	5.52	8728.64	2176.29	1476.21
98	23.39	685.86	5.52	8679.77	2164.11	1467.94
98	23.39	685.86	5.52	8679.77	2164.11	1467.94
99	23.39	690.93	5.52	8630.89	2151.92	1459.68
99	23.39	690.93	5.52	8630.89	2151.92	1459.68
100	23.39	696.00	5.52	8582.01	2139.74	1451.41
100	23.39	696.00	5.52	8582.01	2139.74	1451.41
101	23.39	701.07	5.52	8533.14	2127.55	1443.14
101	23.39	701.07	5.52	8533.14	2127.55	1443.14
102	23.39	706.13	5.52	8484.26	2115.36	1434.88
102	23.39	706.13	5.52	8484.26	2115.36	1434.88
103	23.39	711.20	5.52	8435.38	2103.18	1426.61
103	23.39	711.20	5.52	8435.38	2103.18	1426.61
104	23.39	716.27	5.52	8386.51	2090.99	1418.35
104	23.39	716.27	5.52	8386.51	2090.99	1418.35
105	23.39	721.34	5.52	8337.63	2078.81	1410.08
105	23.39	721.34	5.52	8337.63	2078.81	1410.08
106	23.39	726.41	5.52	8288.76	2066.62	1401.81
106	23.39	726.41	5.52	8288.76	2066.62	1401.81
107	23.39	731.48	5.52	8239.88	2054.43	1393.55
107	23.39	731.48	5.52	8239.88	2054.43	1393.55
108	23.39	736.55	5.52	8191.00	2042.25	1385.28
108	23.39	736.55	5.52	8191.00	2042.25	1385.28
109	23.39	741.62	5.52	8142.13	2030.06	1377.01
109	23.39	741.62	5.52	8142.13	2030.06	1377.01
110	23.39	746.69	5.52	8093.25	2017.87	1368.75
110	23.39	746.69	5.52	8093.25	2017.87	1368.75
111	23.39	751.76	5.52	8044.38	2005.69	1360.48
111	23.39	751.76	5.52	8044.38	2005.69	1360.48
112	23.39	756.83	5.52	7995.50	1993.50	1352.22
112	23.39	756.83	5.52	7995.50	1993.50	1352.22
113	23.39	761.90	5.52	7946.62	1981.32	1343.95
113	23.39	761.90	5.52	7946.62	1981.32	1343.95
114	23.39	766.97	5.52	7897.75	1969.13	1335.68
114	23.39	766.97	5.52	7897.75	1969.13	1335.68
115	23.39	772.02	5.48	7868.25	1961.78	1330.70
115	23.39	772.02	5.48	7868.25	1961.78	1330.70
116	23.39	777.05	5.48	7858.14	1959.26	1328.99
116	23.39	777.05	5.48	7858.14	1959.26	1328.99
117	23.39	782.08	5.48	7848.03	1956.73	1327.28
117	23.39	782.08	5.48	7848.03	1956.73	1327.28
118	51.89	787.08	8.03	5805.01	2595.37	1760.47
118	51.89	787.08	8.03	5805.01	2595.37	1760.47
119	51.89	792.03	8.03	5432.46	2444.86	1658.38
119	51.89	792.03	8.03	5432.46	2444.86	1658.38
120	51.89	796.98	8.03	5059.92	2294.34	1556.28
120	51.89	796.98	8.03	5059.92	2294.34	1556.28
121	51.89	801.94	8.03	4687.37	2143.82	1454.18
121	51.89	801.94	8.03	4687.37	2143.82	1454.18
122	51.89	806.89	8.03	4314.83	1993.30	1352.08
122	51.89	806.89	8.03	4314.83	1993.30	1352.08
123	51.89	811.85	8.03	3942.28	1842.79	1249.98
123	51.89	811.85	8.03	3942.28	1842.79	1249.98
124	51.89	816.80	8.03	3569.74	1692.27	1147.89
124	51.89	816.80	8.03	3569.74	1692.27	1147.89
125	51.89	821.75	8.03	3197.20	1541.75	1045.79
125	51.89	821.75	8.03	3197.20	1541.75	1045.79
126	51.89	826.71	8.03	2824.65	1391.23	943.69
126	51.89	826.71	8.03	2824.65	1391.23	943.69
127	51.89	831.66	8.03	2452.11	1240.72	841.59
127	51.89	831.66	8.03	2452.11	1240.72	841.59
128	51.89	836.62	8.03	2079.56	1090.20	739.49
128	51.89	836.62	8.03	2079.56	1090.20	739.49
129	51.89	841.57	8.03	1707.02	939.68	637.40
129	51.89	841.57	8.03	1707.02	939.68	637.40
130	51.89	846.52	8.03	1334.47	789.16	535.30
130	51.89	846.52	8.03	1334.47	789.16	535.30
131	46.63	851.80	8.16	1068.16	681.56	462.31
131	46.63	851.80	8.16	1068.16	681.56	462.31
132	46.63	857.40	8.16	737.59	548.00	371.72
132	46.63	857.40	8.16	737.59	548.00	371.72
133	46.63	862.55	6.84	422.41	420.67	285.34
133	46.63	862.55	6.84	422.41	420.67	285.34
134	46.63	867.25	6.84	122.64	299.55	203.19
134	46.63	867.25	6.84	122.64	299.55	203.19
135	62.55	870.02	1.80	49.87	20.15	13.67
135	62.55	870.02	1.80	49.87	20.15	13.67

Table 4 - Base Force Data on the 135 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-39.24	210.24	5.78	2834.15	2418.35	1640.39
1	-39.24	210.24	5.78	2834.15	2418.35	1640.39
2	-39.24	214.72	5.78	6646.67	4115.79	2791.79
2	-39.24	214.72	5.78	6646.67	4115.79	2791.79
3	-44.66	219.65	7.58	16278.87	8764.81	5945.28
3	-44.66	219.65	7.58	16278.87	8764.81	5945.28
4	-44.66	225.05	7.58	24027.07	12214.54	8285.27
4	-44.66	225.05	7.58	24027.07	12214.54	8285.27
5	-44.66	230.44	7.58	31775.27	15664.26	10625.26
5	-44.66	230.44	7.58	31775.27	15664.26	10625.26
6	-44.66	234.43	3.62	17349.41	7915.25	5369.01
6	-44.66	234.43	3.62	17349.41	7915.25	5369.01
7	-44.66	237.00	3.62	19043.47	8599.69	5833.28
7	-44.66	237.00	3.62	19043.47	8599.69	5833.28
8	-8.03	240.77	5.00	19460.15	4851.96	3291.14
8	-8.03	240.77	5.00	19460.15	4851.96	3291.14
9	-8.03	245.72	5.00	20155.52	5025.34	3408.75
9	-8.03	245.72	5.00	20155.52	5025.34	3408.75
10	-8.03	250.67	5.00	20850.89	5198.71	3526.35
10	-8.03	250.67	5.00	20850.89	5198.71	3526.35
11	-8.03	255.62	5.00	21546.25	5372.08	3643.95
11	-8.03	255.62	5.00	21546.25	5372.08	3643.95
12	-8.03	260.57	5.00	22241.62	5545.46	3761.55
12	-8.03	260.57	5.00	22241.62	5545.46	3761.55
13	-8.03	265.52	5.00	22936.98	5718.83	3879.15
13	-8.03	265.52	5.00	22936.98	5718.83	3879.15
14	-13.04	270.10	4.31	20784.01	5182.04	3515.04
14	-13.04	270.10	4.31	20784.01	5182.04	3515.04
15	-13.04	274.30	4.31	21507.03	5362.30	3637.32
15	-13.04	274.30	4.31	21507.03	5362.30	3637.32

16	-13.04	279.00	5.34	27775.23	6925.14	4697.41
16	-13.04	279.00	5.34	27775.23	6925.14	4697.41
17	-13.04	284.21	5.34	29117.60	7259.83	4924.43
17	-13.04	284.21	5.34	29117.60	7259.83	4924.43
18	-13.04	289.42	5.34	30459.97	7594.52	5151.46
18	-13.04	289.42	5.34	30459.97	7594.52	5151.46
19	-13.04	294.62	5.34	31802.34	7929.21	5378.48
19	-13.04	294.62	5.34	31802.34	7929.21	5378.48
20	-2.88	299.99	5.54	32957.65	8217.27	5573.87
20	-2.88	299.99	5.54	32957.65	8217.27	5573.87
21	-2.88	305.53	5.54	33715.64	8406.25	5702.06
21	-2.88	305.53	5.54	33715.64	8406.25	5702.06
22	-2.88	310.74	4.89	30361.32	7569.93	5134.77
22	-2.88	310.74	4.89	30361.32	7569.93	5134.77
23	-2.88	315.62	4.89	30991.64	7727.08	5241.37
23	-2.88	315.62	4.89	30991.64	7727.08	5241.37
24	-2.88	320.50	4.89	31621.96	7884.24	5347.98
24	-2.88	320.50	4.89	31621.96	7884.24	5347.98
25	-2.88	325.38	4.89	32252.28	8041.40	5454.58
25	-2.88	325.38	4.89	32252.28	8041.40	5454.58
26	-2.88	330.26	4.89	32882.60	8198.55	5561.18
26	-2.88	330.26	4.89	32882.60	8198.55	5561.18
27	-2.88	335.38	5.37	36813.12	9178.54	6225.92
27	-2.88	335.38	5.37	36813.12	9178.54	6225.92
28	-2.88	340.75	5.37	37422.44	9330.46	6328.97
28	-2.88	340.75	5.37	37422.44	9330.46	6328.97
29	-2.88	346.12	5.37	38031.76	9482.38	6432.02
29	-2.88	346.12	5.37	38031.76	9482.38	6432.02
30	-2.88	350.46	3.32	23890.15	5956.48	4040.36
30	-2.88	350.46	3.32	23890.15	5956.48	4040.36
31	-2.88	353.78	3.32	24245.85	6045.17	4100.51
31	-2.88	353.78	3.32	24245.85	6045.17	4100.51
32	-2.88	357.93	4.99	37094.72	9248.75	6273.54
32	-2.88	357.93	4.99	37094.72	9248.75	6273.54
33	-2.88	362.92	4.99	37897.57	9448.93	6409.32
33	-2.88	362.92	4.99	37897.57	9448.93	6409.32
34	-2.88	367.91	4.99	38700.42	9649.10	6545.10
34	-2.88	367.91	4.99	38700.42	9649.10	6545.10
35	-0.52	372.87	4.94	38762.37	9664.55	6555.58
35	-0.52	372.87	4.94	38762.37	9664.55	6555.58
36	-0.52	377.82	4.94	39423.45	9829.37	6667.38
36	-0.52	377.82	4.94	39423.45	9829.37	6667.38
37	-0.52	382.76	4.94	40084.53	9994.20	6779.19
37	-0.52	382.76	4.94	40084.53	9994.20	6779.19
38	-0.52	387.71	4.94	40745.61	10159.02	6890.99
38	-0.52	387.71	4.94	40745.61	10159.02	6890.99
39	-0.52	392.65	4.94	41406.69	10323.85	7002.79
39	-0.52	392.65	4.94	41406.69	10323.85	7002.79
40	-0.52	397.59	4.94	42067.77	10488.67	7114.60
40	-0.52	397.59	4.94	42067.77	10488.67	7114.60
41	-0.52	402.54	4.94	42728.85	10653.50	7226.40
41	-0.52	402.54	4.94	42728.85	10653.50	7226.40
42	-0.52	407.48	4.94	43389.93	10818.33	7338.20
42	-0.52	407.48	4.94	43389.93	10818.33	7338.20
43	-0.52	412.43	4.94	44051.01	10983.15	7450.01
43	-0.52	412.43	4.94	44051.01	10983.15	7450.01
44	5.31	415.65	1.51	13293.32	3314.40	2248.20
44	5.31	415.65	1.51	13293.32	3314.40	2248.20
45	5.31	418.90	5.02	44429.49	11077.52	7514.01
45	5.31	418.90	5.02	44429.49	11077.52	7514.01
46	5.31	423.90	5.02	44556.97	11109.30	7535.58
46	5.31	423.90	5.02	44556.97	11109.30	7535.58
47	5.31	428.90	5.02	44684.46	11141.09	7557.14
47	5.31	428.90	5.02	44684.46	11141.09	7557.14
48	5.31	433.90	5.02	44811.94	11172.87	7578.70
48	5.31	433.90	5.02	44811.94	11172.87	7578.70
49	5.31	438.90	5.02	44939.42	11204.66	7600.26
49	5.31	438.90	5.02	44939.42	11204.66	7600.26
50	5.31	443.93	5.09	45663.93	11385.30	7722.79
50	5.31	443.93	5.09	45663.93	11385.30	7722.79
51	5.31	449.00	5.09	45785.39	11415.58	7743.33
51	5.31	449.00	5.09	45785.39	11415.58	7743.33
52	5.31	454.07	5.09	45906.85	11445.86	7763.87
52	5.31	454.07	5.09	45906.85	11445.86	7763.87
53	5.31	459.13	5.09	46028.31	11476.15	7784.41
53	5.31	459.13	5.09	46028.31	11476.15	7784.41
54	5.31	464.20	5.09	46149.76	11506.43	7804.95
54	5.31	464.20	5.09	46149.76	11506.43	7804.95
55	5.31	469.27	5.09	46271.22	11536.71	7825.49
55	5.31	469.27	5.09	46271.22	11536.71	7825.49
56	5.31	474.33	5.09	46392.68	11566.99	7846.03
56	5.31	474.33	5.09	46392.68	11566.99	7846.03
57	5.31	479.40	5.09	46514.13	11597.28	7866.57
57	5.31	479.40	5.09	46514.13	11597.28	7866.57
58	5.31	484.47	5.09	46635.59	11627.56	7887.12
58	5.31	484.47	5.09	46635.59	11627.56	7887.12
59	5.31	489.53	5.09	46757.05	11657.84	7907.66
59	5.31	489.53	5.09	46757.05	11657.84	7907.66
60	5.31	494.60	5.09	46878.50	11688.12	7928.20
60	5.31	494.60	5.09	46878.50	11688.12	7928.20
61	5.31	499.67	5.09	46999.96	11718.41	7948.74
61	5.31	499.67	5.09	46999.96	11718.41	7948.74
62	5.31	504.73	5.09	47121.42	11748.69	7969.28
62	5.31	504.73	5.09	47121.42	11748.69	7969.28
63	5.31	509.80	5.09	47242.88	11778.97	7989.82
63	5.31	509.80	5.09	47242.88	11778.97	7989.82
64	5.31	514.87	5.09	47364.33	11809.25	8010.36
64	5.31	514.87	5.09	47364.33	11809.25	8010.36
65	5.31	519.91	5.04	46862.97	11684.25	7925.57
65	5.31	519.91	5.04	46862.97	11684.25	7925.57
66	5.31	524.92	5.04	46674.81	11637.34	7893.75
66	5.31	524.92	5.04	46674.81	11637.34	7893.75
67	5.31	529.94	5.04	46486.64	11590.42	7861.93
67	5.31	529.94	5.04	46486.64	11590.42	7861.93
68	5.31	534.96	5.04	46298.48	11543.51	7830.10
68	5.31	534.96	5.04	46298.48	11543.51	7830.10
69	5.31	539.98	5.04	46110.32	11496.59	7798.28
69	5.31	539.98	5.04	46110.32	11496.59	7798.28
70	5.31	544.99	5.04	45922.16	11449.68	7766.46
70	5.31	544.99	5.04	45922.16	11449.68	7766.46
71	5.31	549.96	4.95	45175.17	11263.43	7640.13
71	5.31	549.96	4.95	45175.17	11263.43	7640.13
72	5.31	554.89	4.95	45513.68	11347.84	7697.38
72	5.31	554.89	4.95	45513.68	11347.84	7697.38
73	5.31	559.82	4.95	45852.20	11432.24	7754.63
73	5.31	559.82	4.95	45852.20	11432.24	7754.63
74	5.31	564.74	4.95	46190.71	11516.64	7811.88
74	5.31	564.74	4.95	46190.71	11516.64	7811.88
75	5.31	569.67	4.95	46529.23	11601.04	7869.13
75	5.31	569.67	4.95	46529.23	11601.04	7869.13

76	5.31	574.60	4.95	46867.74	11685.44	7926.38
76	5.31	574.60	4.95	46867.74	11685.44	7926.38
77	5.31	579.52	4.95	47206.26	11769.84	7983.63
77	5.31	579.52	4.95	47206.26	11769.84	7983.63
78	5.31	584.45	4.95	47544.77	11854.24	8040.88
78	5.31	584.45	4.95	47544.77	11854.24	8040.88
79	5.31	589.38	4.95	47883.29	11938.64	8098.13
79	5.31	589.38	4.95	47883.29	11938.64	8098.13
80	5.31	594.30	4.95	48221.80	12023.05	8155.38
80	5.31	594.30	4.95	48221.80	12023.05	8155.38
81	5.31	599.23	4.95	48560.32	12107.45	8212.63
81	5.31	599.23	4.95	48560.32	12107.45	8212.63
82	5.31	604.16	4.95	48898.83	12191.85	8269.88
82	5.31	604.16	4.95	48898.83	12191.85	8269.88
83	5.31	609.08	4.95	49237.35	12276.25	8327.13
83	5.31	609.08	4.95	49237.35	12276.25	8327.13
84	5.31	614.01	4.95	49575.86	12360.65	8384.38
84	5.31	614.01	4.95	49575.86	12360.65	8384.38
85	5.31	618.94	4.95	49914.38	12445.05	8441.63
85	5.31	618.94	4.95	49914.38	12445.05	8441.63
86	23.39	624.12	5.92	56119.16	13992.08	9491.00
86	23.39	624.12	5.92	56119.16	13992.08	9491.00
87	23.39	629.55	5.92	55324.49	13793.94	9356.60
87	23.39	629.55	5.92	55324.49	13793.94	9356.60
88	23.39	634.98	5.92	54529.82	13595.81	9222.20
88	23.39	634.98	5.92	54529.82	13595.81	9222.20
89	23.39	640.23	5.52	50369.94	12558.64	8518.68
89	23.39	640.23	5.52	50369.94	12558.64	8518.68
90	23.39	645.30	5.52	50099.98	12491.33	8473.02
90	23.39	645.30	5.52	50099.98	12491.33	8473.02
91	23.39	650.37	5.52	49830.03	12424.02	8427.37
91	23.39	650.37	5.52	49830.03	12424.02	8427.37
92	23.39	655.44	5.52	49560.07	12356.71	8381.71
92	23.39	655.44	5.52	49560.07	12356.71	8381.71
93	23.39	660.51	5.52	49290.12	12289.41	8336.06
93	23.39	660.51	5.52	49290.12	12289.41	8336.06
94	23.39	665.58	5.52	49020.17	12222.10	8290.40
94	23.39	665.58	5.52	49020.17	12222.10	8290.40
95	23.39	670.65	5.52	48750.21	12154.79	8244.75
95	23.39	670.65	5.52	48750.21	12154.79	8244.75
96	23.39	675.72	5.52	48480.26	12087.49	8199.09
96	23.39	675.72	5.52	48480.26	12087.49	8199.09
97	23.39	680.79	5.52	48210.30	12020.18	8153.43
97	23.39	680.79	5.52	48210.30	12020.18	8153.43
98	23.39	685.86	5.52	47940.35	11952.87	8107.78
98	23.39	685.86	5.52	47940.35	11952.87	8107.78
99	23.39	690.93	5.52	47670.40	11885.56	8062.12
99	23.39	690.93	5.52	47670.40	11885.56	8062.12
100	23.39	696.00	5.52	47400.44	11818.26	8016.47
100	23.39	696.00	5.52	47400.44	11818.26	8016.47
101	23.39	701.07	5.52	47130.49	11750.95	7970.81
101	23.39	701.07	5.52	47130.49	11750.95	7970.81
102	23.39	706.13	5.52	46860.53	11683.64	7925.16
102	23.39	706.13	5.52	46860.53	11683.64	7925.16
103	23.39	711.20	5.52	46590.58	11616.34	7879.50
103	23.39	711.20	5.52	46590.58	11616.34	7879.50
104	23.39	716.27	5.52	46320.63	11549.03	7833.85
104	23.39	716.27	5.52	46320.63	11549.03	7833.85
105	23.39	721.34	5.52	46050.67	11481.72	7788.19
105	23.39	721.34	5.52	46050.67	11481.72	7788.19
106	23.39	726.41	5.52	45780.72	11414.41	7742.54
106	23.39	726.41	5.52	45780.72	11414.41	7742.54
107	23.39	731.48	5.52	45510.76	11347.11	7696.88
107	23.39	731.48	5.52	45510.76	11347.11	7696.88
108	23.39	736.55	5.52	45240.81	11279.80	7651.23
108	23.39	736.55	5.52	45240.81	11279.80	7651.23
109	23.39	741.62	5.52	44970.86	11212.49	7605.57
109	23.39	741.62	5.52	44970.86	11212.49	7605.57
110	23.39	746.69	5.52	44700.90	11145.19	7559.92
110	23.39	746.69	5.52	44700.90	11145.19	7559.92
111	23.39	751.76	5.52	44430.95	11077.88	7514.26
111	23.39	751.76	5.52	44430.95	11077.88	7514.26
112	23.39	756.83	5.52	44160.99	11010.57	7468.61
112	23.39	756.83	5.52	44160.99	11010.57	7468.61
113	23.39	761.90	5.52	43891.04	10943.26	7422.95
113	23.39	761.90	5.52	43891.04	10943.26	7422.95
114	23.39	766.97	5.52	43621.09	10875.96	7377.30
114	23.39	766.97	5.52	43621.09	10875.96	7377.30
115	23.39	772.02	5.48	43150.44	10758.61	7297.70
115	23.39	772.02	5.48	43150.44	10758.61	7297.70
116	23.39	777.05	5.48	43095.00	10744.79	7288.32
116	23.39	777.05	5.48	43095.00	10744.79	7288.32
117	23.39	782.08	5.48	43039.56	10730.97	7278.95
117	23.39	782.08	5.48	43039.56	10730.97	7278.95
118	51.89	787.08	8.03	46593.87	20831.77	14130.45
118	51.89	787.08	8.03	46593.87	20831.77	14130.45
119	51.89	792.03	8.03	43603.64	19623.64	13310.96
119	51.89	792.03	8.03	43603.64	19623.64	13310.96
120	51.89	796.98	8.03	40613.42	18415.51	12491.47
120	51.89	796.98	8.03	40613.42	18415.51	12491.47
121	51.89	801.94	8.03	37623.19	17207.38	11671.98
121	51.89	801.94	8.03	37623.19	17207.38	11671.98
122	51.89	806.89	8.03	34632.97	15999.25	10852.49
122	51.89	806.89	8.03	34632.97	15999.25	10852.49
123	51.89	811.85	8.03	31642.74	14791.12	10033.00
123	51.89	811.85	8.03	31642.74	14791.12	10033.00
124	51.89	816.80	8.03	28652.51	13582.99	9213.51
124	51.89	816.80	8.03	28652.51	13582.99	9213.51
125	51.89	821.75	8.03	25662.29	12374.86	8394.02
125	51.89	821.75	8.03	25662.29	12374.86	8394.02
126	51.89	826.71	8.03	22672.06	11166.73	7574.53
126	51.89	826.71	8.03	22672.06	11166.73	7574.53
127	51.89	831.66	8.03	19681.83	9958.60	6755.04
127	51.89	831.66	8.03	19681.83	9958.60	6755.04
128	51.89	836.62	8.03	16691.61	8750.47	5935.55
128	51.89	836.62	8.03	16691.61	8750.47	5935.55
129	51.89	841.57	8.03	13701.38	7542.34	5116.06
129	51.89	841.57	8.03	13701.38	7542.34	5116.06
130	51.89	846.52	8.03	10711.15	6334.21	4296.57
130	51.89	846.52	8.03	10711.15	6334.21	4296.57
131	46.63	851.80	8.16	8711.51	5558.58	3770.45
131	46.63	851.80	8.16	8711.51	5558.58	3770.45
132	46.63	857.40	8.16	6015.47	4469.31	3031.59
132	46.63	857.40	8.16	6015.47	4469.31	3031.59
133	46.63	862.55	6.84	2891.16	2879.20	1953.00
133	46.63	862.55	6.84	2891.16	2879.20	1953.00
134	46.63	867.25	6.84	839.40	2050.23	1390.70
134	46.63	867.25	6.84	839.40	2050.23	1390.70
135	62.55	870.02	1.80	89.94	36.34	24.65
135	62.55	870.02	1.80	89.94	36.34	24.65

Sum of the Resisting Forces = 1275198.05 (lbs)

Average Available Shear Strength = 1721.64(psf)

Sum of the Driving Forces = 922405.09 (lbs)

Average Mobilized Shear Stress = 1245.33(psf)

Total length of the failure surface = 740.69(ft)

Factor of Safety Balance Check: FS = 1.38247

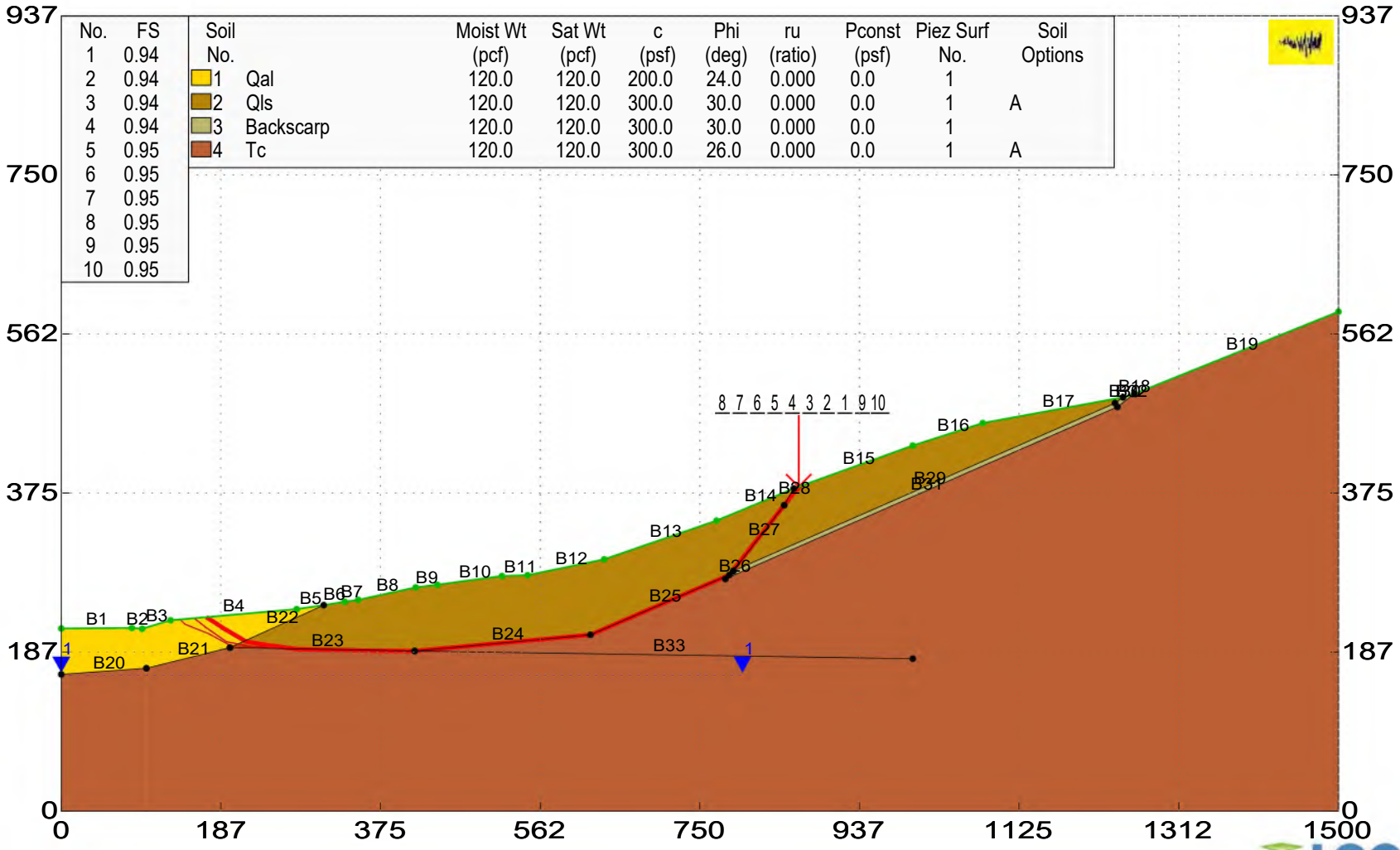
Janbu's Correction Factor (fo) = 1.0654

Janub's FS Corrected = 1.47294

**** END OF GEOSTASE OUTPUT ****

22011-01 - Compass Bess - SJC - Cross Section H-H'
Design - Smaller Qls - Seismic

LGC Geotechnical, Inc. \xhde.gsd



GEOSTASE FS = 0.94

Simplified Janbu (Corrected) Method

kh = 0.15000

GEOSTASE Slope Stability Analysis

GEOSTASE® by GREGORY GEOTECHNICAL SOFTWARE

PLATE C.1

*** GEOSTASE(R) ***

** GEOSTASE(R) (c)Copyright by Garry H. Gregory, Ph.D., P.E.,D.GE **

** Current Version 4.30.31-Double Precision, August 2019 **
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****
SLOPE STABILITY ANALYSIS SOFTWARE
Simplified Bishop, Simplified Janbu, or General Equilibrium (GE) Options.
(Spencer, Morgenstern-Price, USACE, and Lowe & Karafiath)
Including Pier/Pile, Planar Reinf, Nail, Tieback, Line Loads
Applied Forces, Fiber-Reinforced Soil (FRS), Distributed Loads
Nonlinear Undrained Shear Strength, Curved Strength Envelope,
Anisotropic Strengths, Water Surfaces, 3-Stage Rapid Drawdown
2- or 3-Stage Pseudo-Static & Simplified Newmark Seismic Analyses.
****

Analysis Date: 4/ 3/ 2024
Analysis Time:
Analysis By: LGC Geotechnical, Inc.

Input File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhde.gsd

Output File Name: Z:\2022\22011-01 Compass BESS - San Juan Capistrano\Engineering\Slope Stability\Sec H\2024_04_03\xhde.OUT

Unit System: English

PROJECT: 22011-01 - Compass Bess - SJC - Cross Section H-H'

DESCRIPTION: Design - Smaller Qls - Seismic

BOUNDARY DATA

19 Surface Boundaries
33 Total Boundaries

Boundary No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Soil Type Below Bnd
1	0.000	215.200	82.800	216.000	1
2	82.800	216.000	95.100	215.000	1
3	95.100	215.000	128.300	225.100	1
4	128.300	225.100	276.400	238.000	1
5	276.400	238.000	308.300	242.900	1
6	308.300	242.900	332.700	247.000	2
7	332.700	247.000	348.800	249.000	2
8	348.800	249.000	416.400	263.600	2
9	416.400	263.600	441.400	267.000	2
10	441.400	267.000	517.400	277.100	2
11	517.400	277.100	547.500	278.000	2
12	547.500	278.000	637.700	297.000	2
13	637.700	297.000	769.500	342.600	2
14	769.500	342.600	860.200	380.200	2
15	860.200	380.200	1000.000	430.900	2
16	1000.000	430.900	1082.100	457.600	2
17	1082.100	457.600	1247.000	487.900	2
18	1247.000	487.900	1260.400	491.900	3
19	1260.400	491.900	1500.000	588.800	4
20	0.000	161.100	100.000	168.300	4
21	100.000	168.300	198.100	192.800	4
22	198.100	192.800	308.300	242.900	2
23	198.100	192.800	414.900	188.600	4
24	414.900	188.600	621.400	207.800	4
25	621.400	207.800	784.600	278.400	4
26	779.900	273.600	789.300	283.200	3
27	789.300	283.200	849.000	360.500	2
28	849.000	360.500	860.200	380.200	2
29	789.300	283.200	1237.700	480.800	3
30	1237.700	480.800	1247.000	487.900	3
31	779.900	273.600	1240.300	476.500	4
32	1240.300	476.500	1260.400	491.900	4
33	414.900	188.600	1000.000	179.800	4

User Specified X-Origin = 0.000(ft)

User Specified Y-Origin = 0.000(ft)

MOHR-COULOMB SOIL PARAMETERS

4 Type(s) of Soil Defined

Soil Number and Description	Moist Unit Wt. (pcf)	Saturated Unit Wt. (pcf)	Cohesion Intercept (psf)	Friction Angle (deg)	Pore Pressure Ratio(ru)	Pressure Constant (psf)	Water Surface No.	Water Option
1 Qal	120.0	120.0	200.00	24.00	0.000	0.0	1	0
2 Qls	120.0	120.0	300.00	30.00	0.000	0.0	1	0
3 Backscarp	120.0	120.0	300.00	30.00	0.000	0.0	1	0
4 Tc	120.0	120.0	300.00	26.00	0.000	0.0	1	0

ANISOTROPIC STRENGTH PARAMETERS

2 soil type(s)

Soil Type 2 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

Soil Type 4 Is Anisotropic

Number Of Direction Ranges Specified = 3

Direction Range No.	Counterclockwise Direction Limit (deg)	Cohesion Intercept (psf)	Friction Angle (deg)
1	-15.0	300.00	30.00
2	25.0	0.00	15.00
3	90.0	300.00	30.00

WATER SURFACE DATA

1 Water Surface(s) Defined

Unit Weight of Water = 62.400 (pcf)

Water Surface No. 1 Specified by 2 Coordinate Points
Pore Pressure Inclination Factor = 1.00

Point No.	X-Water (ft)	Y-Water (ft)
1	0.00	160.00
2	800.00	160.00

Drained Shear Strength Reduction Factor applied after first stage = 1.0000

SEISMIC (EARTHQUAKE) DATA

Specified Peak Ground Acceleration Coefficient (PGA) = 0.000(g)
Default Velocity = 0.000(ft) per second
Specified Horizontal Earthquake Coefficient (kh) = 0.15000(g)
Specified Vertical Earthquake Coefficient (kv) = 0.000(g)
(NOTE:Input Velocity = 0.0 will result in default Peak
Velocity = 2 times(PGA) times 2.5 fps or 0.762 mps)
Specified Seismic Pore-Pressure Factor = 0.000
Horizontal Seismic Force is Applied at Center of Gravity of Slices

TRIAL FAILURE SURFACE DATA

Janbus Correction Factor is being used for the case of c & phi both > 0

A Non-Circular Zone Search Has Been Selected For Analysis
Using Random Generation Within Specified Zones.

6 Zones Defined For Generation Of Non-Circular Surfaces

1000 Trial Surfaces Have Been Generated.

Length Of Line Segments For Active And Passive Portions Of
Non-Circular Zone Search = 30.00(ft)

Zone No.	X - 1 (ft)	Y - 1 (ft)	X - 2 (ft)	Y - 2 (ft)	Height (ft)
1	198.10	192.80	369.00	189.70	5.00
2	370.40	189.00	370.40	189.00	0.00
3	414.90	188.60	414.90	188.60	0.00
4	621.40	207.80	621.40	207.80	0.00
5	784.60	278.40	784.60	278.40	0.00
6	849.00	360.50	849.00	360.50	0.00

The Simplified Janbu (Corrected) Method Was Selected for FS Analysis.

Total Number of Trial Surfaces Attempted = 1000

Number of Trial Surfaces With Valid FS = 1000

Statistical Data On All Valid FS Values:
FS Max = 1.201 FS Min = 0.943 FS Ave = 1.043
Standard Deviation = 0.058 Coefficient of Variation = 5.54 %

Critical Surface is Sequence Number 233 of Those Analyzed.

*****BEGINNING OF DETAILED GEOSTASE OUTPUT FOR CRITICAL SURFACE FROM A SEARCH*****

Factor Of Safety For The Critical or Specified Surface = 0.943

Table 1 - Geometry Data on the 141 Slices

Slice No.	Width (ft)	Height (ft)	X-Cntr (ft)	Y-Cntr-Base (ft)	Y-Cntr-Top (ft)	Alpha (deg)	Beta (deg)	Base Length (ft)
1	5.29	1.95	172.93	227.04	228.99	-33.05	4.98	6.31
2	5.29	5.86	178.22	223.59	229.45	-33.05	4.98	6.31
3	5.29	9.76	183.51	220.15	229.91	-33.05	4.98	6.31
4	5.29	13.66	188.80	216.71	230.37	-33.05	4.98	6.31
5	4.78	17.26	193.84	213.55	230.81	-30.94	4.98	5.58
6	4.78	20.54	198.62	210.69	231.23	-30.94	4.98	5.58
7	4.78	23.82	203.40	207.82	231.64	-30.94	4.98	5.58
8	4.78	27.11	208.19	204.95	232.06	-30.94	4.98	5.58
9	4.78	30.39	212.97	202.08	232.48	-30.94	4.98	5.58
10	1.81	32.66	216.27	200.11	232.76	-30.94	4.98	2.11
11	4.94	33.88	219.64	199.17	233.06	-8.98	4.98	5.00
12	4.94	35.09	224.58	198.39	233.49	-8.98	4.98	5.00
13	4.94	36.30	229.52	197.61	233.92	-8.98	4.98	5.00
14	4.94	37.51	234.46	196.83	234.35	-8.98	4.98	5.00
15	4.94	38.72	239.40	196.05	234.78	-8.98	4.98	5.00
16	4.94	39.93	244.34	195.27	235.21	-8.98	4.98	5.00
17	5.14	41.12	249.38	194.53	235.65	-7.81	4.98	5.19
18	5.14	42.27	254.52	193.83	236.09	-7.81	4.98	5.19
19	5.14	43.42	259.66	193.12	236.54	-7.81	4.98	5.19
20	5.14	44.57	264.80	192.42	236.99	-7.81	4.98	5.19

21	5.14	45.73	269.94	191.71	237.44	-7.81	4.98	5.19
22	3.89	46.74	274.45	191.09	237.83	-7.81	4.98	3.93
23	0.13	47.19	276.46	190.82	238.01	-7.81	8.73	0.13
24	5.30	47.67	279.18	190.76	238.43	-1.10	8.73	5.30
25	5.30	48.59	284.47	190.65	239.24	-1.10	8.73	5.30
26	5.30	49.50	289.77	190.55	240.05	-1.10	8.73	5.30
27	5.30	50.42	295.06	190.45	240.87	-1.10	8.73	5.30
28	5.30	51.33	300.36	190.35	241.68	-1.10	8.73	5.30
29	5.30	52.25	305.65	190.25	242.49	-1.10	8.73	5.30
30	4.88	53.16	310.74	190.15	243.31	-1.10	9.54	4.88
31	4.88	54.08	315.62	190.05	244.13	-1.10	9.54	4.88
32	4.88	54.99	320.50	189.96	244.95	-1.10	9.54	4.88
33	4.88	55.90	325.38	189.87	245.77	-1.10	9.54	4.88
34	4.88	56.82	330.26	189.77	246.59	-1.10	9.54	4.88
35	5.37	57.66	335.38	189.67	247.33	-1.10	7.08	5.37
36	5.37	58.43	340.75	189.57	248.00	-1.10	7.08	5.37
37	5.37	59.20	346.12	189.47	248.67	-1.10	7.08	5.37
38	5.40	60.22	351.50	189.36	249.58	-1.10	12.19	5.40
39	5.40	61.49	356.90	189.26	250.75	-1.10	12.19	5.40
40	5.40	62.76	362.30	189.16	251.92	-1.10	12.19	5.40
41	5.40	64.03	367.70	189.05	253.08	-1.10	12.19	5.40
42	4.94	65.22	372.87	188.98	254.20	-0.52	12.19	4.94
43	4.94	66.33	377.82	188.93	255.27	-0.52	12.19	4.94
44	4.94	67.45	382.76	188.89	256.33	-0.52	12.19	4.94
45	4.94	68.56	387.71	188.84	257.40	-0.52	12.19	4.94
46	4.94	69.67	392.65	188.80	258.47	-0.52	12.19	4.94
47	4.94	70.78	397.59	188.76	259.54	-0.52	12.19	4.94
48	4.94	71.90	402.54	188.71	260.61	-0.52	12.19	4.94
49	4.94	73.01	407.48	188.67	261.67	-0.52	12.19	4.94
50	4.94	74.12	412.43	188.62	262.74	-0.52	12.19	4.94
51	1.50	74.77	415.65	188.67	263.44	5.31	12.19	1.51
52	5.00	74.97	418.90	188.97	263.94	5.31	7.74	5.02
53	5.00	75.18	423.90	189.44	264.62	5.31	7.74	5.02
54	5.00	75.40	428.90	189.90	265.30	5.31	7.74	5.02
55	5.00	75.61	433.90	190.37	265.98	5.31	7.74	5.02
56	5.00	75.83	438.90	190.83	266.66	5.31	7.74	5.02
57	5.07	76.04	443.93	191.30	267.34	5.31	7.57	5.09
58	5.07	76.24	449.00	191.77	268.01	5.31	7.57	5.09
59	5.07	76.44	454.07	192.24	268.68	5.31	7.57	5.09
60	5.07	76.64	459.13	192.71	269.36	5.31	7.57	5.09
61	5.07	76.85	464.20	193.18	270.03	5.31	7.57	5.09
62	5.07	77.05	469.27	193.65	270.70	5.31	7.57	5.09
63	5.07	77.25	474.33	194.13	271.38	5.31	7.57	5.09
64	5.07	77.45	479.40	194.60	272.05	5.31	7.57	5.09
65	5.07	77.66	484.47	195.07	272.72	5.31	7.57	5.09
66	5.07	77.86	489.53	195.54	273.40	5.31	7.57	5.09
67	5.07	78.06	494.60	196.01	274.07	5.31	7.57	5.09
68	5.07	78.26	499.67	196.48	274.74	5.31	7.57	5.09
69	5.07	78.46	504.73	196.95	275.42	5.31	7.57	5.09
70	5.07	78.67	509.80	197.42	276.09	5.31	7.57	5.09
71	5.07	78.87	514.87	197.89	276.76	5.31	7.57	5.09
72	5.02	78.81	519.91	198.36	277.18	5.31	1.71	5.04
73	5.02	78.50	524.92	198.83	277.32	5.31	1.71	5.04
74	5.02	78.18	529.94	199.30	277.48	5.31	1.71	5.04
75	5.02	77.86	534.96	199.76	277.62	5.31	1.71	5.04
76	5.02	77.55	539.98	200.23	277.78	5.31	1.71	5.04
77	5.02	77.23	544.99	200.70	277.93	5.31	1.71	5.04
78	4.93	77.36	549.96	201.16	278.52	5.31	11.90	4.95
79	4.93	77.94	554.89	201.62	279.56	5.31	11.90	4.95
80	4.93	78.52	559.82	202.07	280.59	5.31	11.90	4.95
81	4.93	79.10	564.74	202.53	281.63	5.31	11.90	4.95
82	4.93	79.68	569.67	202.99	282.67	5.31	11.90	4.95
83	4.93	80.26	574.60	203.45	283.71	5.31	11.90	4.95
84	4.93	80.84	579.52	203.91	284.75	5.31	11.90	4.95
85	4.93	81.42	584.45	204.36	285.78	5.31	11.90	4.95
86	4.93	82.00	589.38	204.82	286.82	5.31	11.90	4.95
87	4.93	82.58	594.30	205.28	287.86	5.31	11.90	4.95
88	4.93	83.16	599.23	205.74	288.90	5.31	11.90	4.95
89	4.93	83.74	604.16	206.20	289.93	5.31	11.90	4.95
90	4.93	84.32	609.08	206.65	290.97	5.31	11.90	4.95
91	4.93	84.90	614.01	207.11	292.01	5.31	11.90	4.95
92	4.93	85.48	618.94	207.57	293.05	5.31	11.90	4.95
93	5.43	85.16	624.12	208.98	294.14	23.39	11.90	5.92
94	5.43	83.96	629.55	211.33	295.28	23.39	11.90	5.92
95	5.43	82.75	634.98	213.68	296.43	23.39	11.90	5.92
96	5.07	81.93	640.23	215.95	297.88	23.39	19.08	5.52
97	5.07	81.49	645.30	218.14	299.63	23.39	19.08	5.52
98	5.07	81.05	650.37	220.33	301.38	23.39	19.08	5.52
99	5.07	80.61	655.44	222.53	303.14	23.39	19.08	5.52
100	5.07	80.17	660.51	224.72	304.89	23.39	19.08	5.52
101	5.07	79.73	665.58	226.91	306.65	23.39	19.08	5.52
102	5.07	79.29	670.65	229.11	308.40	23.39	19.08	5.52
103	5.07	78.86	675.72	231.30	310.15	23.39	19.08	5.52
104	5.07	78.42	680.79	233.49	311.91	23.39	19.08	5.52
105	5.07	77.98	685.86	235.68	313.66	23.39	19.08	5.52
106	5.07	77.54	690.93	237.88	315.42	23.39	19.08	5.52
107	5.07	77.10	696.00	240.07	317.17	23.39	19.08	5.52
108	5.07	76.66	701.07	242.26	318.92	23.39	19.08	5.52
109	5.07	76.22	706.13	244.46	320.68	23.39	19.08	5.52
110	5.07	75.78	711.20	246.65	322.43	23.39	19.08	5.52
111	5.07	75.34	716.27	248.84	324.18	23.39	19.08	5.52
112	5.07	74.90	721.34	251.03	325.94	23.39	19.08	5.52
113	5.07	74.46	726.41	253.23	327.69	23.39	19.08	5.52
114	5.07	74.03	731.48	255.42	329.45	23.39	19.08	5.52
115	5.07	73.59	736.55	257.61	331.20	23.39	19.08	5.52
116	5.07	73.15	741.62	259.81	332.95	23.39	19.08	5.52
117	5.07	72.71	746.69	262.00	334.71	23.39	19.08	5.52
118	5.07	72.27	751.76	264.19	336.46	23.39	19.08	5.52
119	5.07	71.83	756.83	266.39	338.22	23.39	19.08	5.52
120	5.07	71.39	761.90	268.58	339.97	23.39	19.08	5.52
121	5.07	70.95	766.97	270.77	341.72	23.39	19.08	5.52
122	5.03	70.69	772.02	272.96	343.64	23.39	22.52	5.48
123	5.03	70.60	777.05	275.13	345.73	23.39	22.52	5.48
124	5.03	70.51	782.08	277.31	347.82	23.39	22.52	5.48
125	4.95	68.33	787.08	281.56	349.89	51.89	22.52	8.03
126	4.95	64.07	792.03	287.87	351.94	51.89	22.52	8.03
127	4.95	59.81	796.98	294.19	353.99	51.89	22.52	8.03
128	4.95	55.54	801.94	300.50	356.05	51.89	22.52	8.03
129	4.95	51.28	806.89	306.82	358.10	51.89	22.52	8.03
130	4.95	47.02	811.85	313.13	360.15	51.89	22.52	8.03
131	4.95	42.76	816.80	319.45	362.21	51.89	22.52	8.03
132	4.95	38.50	821.75	325.77	364.26	51.89	22.52	8.03
133	4.95	34.23	826.71	332.08	366.32	51.89	22.52	8.03
134	4.95	29.97	831.66	338.40	368.37	51.89	22.52	8.03
135	4.95	25.71	836.62	344.71	370.42	51.89	22.52	8.03
136	4.95	21.45	841.57	351.03	372.48	51.89	22.52	8.03
137	4.95	17.19	846.52	357.34	374.53	51.89	22.52	8.03
138	5.60	12.64	851.80	364.08	376.72	51.99	22.52	9.09
139	5.60	7.79	857.40	371.25	379.04	51.99	22.52	9.09
140	2.93	4.03	861.66	376.70	380.73	51.99	19.93	4.76

141 2.93 1.34 864.59 380.45 381.79 51.99 19.93 4.76

Table 2 - Force Data On The 141 Slices (Excluding Reinforcement)

Slice No.	Weight (lbs)	Ubeta Force Top (lbs)	Ualpha Force Bot (lbs)	Earthquake Force Hor (lbs)	Earthquake Force Ver (lbs)	Distributed Load (lbs)
1	1239.1	0.0	0.0	185.9	0.0	0.0
2	3717.4	0.0	0.0	557.6	0.0	0.0
3	6195.7	0.0	0.0	929.4	0.0	0.0
4	8674.0	0.0	0.0	1301.1	0.0	0.0
5	9906.5	0.0	0.0	1486.0	0.0	0.0
6	11792.0	0.0	0.0	1768.8	0.0	0.0
7	13677.5	0.0	0.0	2051.6	0.0	0.0
8	15562.9	0.0	0.0	2334.4	0.0	0.0
9	17448.4	0.0	0.0	2617.3	0.0	0.0
10	7096.9	0.0	0.0	1064.5	0.0	0.0
11	20080.8	0.0	0.0	3012.1	0.0	0.0
12	20798.1	0.0	0.0	3119.7	0.0	0.0
13	21515.5	0.0	0.0	3227.3	0.0	0.0
14	22232.8	0.0	0.0	3334.9	0.0	0.0
15	22950.1	0.0	0.0	3442.5	0.0	0.0
16	23667.4	0.0	0.0	3550.1	0.0	0.0
17	25359.9	0.0	0.0	3804.0	0.0	0.0
18	26070.7	0.0	0.0	3910.6	0.0	0.0
19	26781.6	0.0	0.0	4017.2	0.0	0.0
20	27492.4	0.0	0.0	4123.9	0.0	0.0
21	28203.2	0.0	0.0	4230.5	0.0	0.0
22	21831.8	0.0	0.0	3274.8	0.0	0.0
23	736.2	0.0	0.0	110.4	0.0	0.0
24	30289.9	0.0	0.0	4543.5	0.0	0.0
25	30871.5	0.0	0.0	4630.7	0.0	0.0
26	31453.0	0.0	0.0	4718.0	0.0	0.0
27	32034.6	0.0	0.0	4805.2	0.0	0.0
28	32616.2	0.0	0.0	4892.4	0.0	0.0
29	33197.7	0.0	0.0	4979.7	0.0	0.0
30	31131.4	0.0	0.0	4669.7	0.0	0.0
31	31666.6	0.0	0.0	4750.0	0.0	0.0
32	32201.8	0.0	0.0	4830.3	0.0	0.0
33	32737.0	0.0	0.0	4910.6	0.0	0.0
34	33272.2	0.0	0.0	4990.8	0.0	0.0
35	37132.6	0.0	0.0	5569.9	0.0	0.0
36	37628.4	0.0	0.0	5644.3	0.0	0.0
37	38124.3	0.0	0.0	5718.6	0.0	0.0
38	39022.1	0.0	0.0	5853.3	0.0	0.0
39	39845.2	0.0	0.0	5976.8	0.0	0.0
40	40668.3	0.0	0.0	6100.2	0.0	0.0
41	41491.4	0.0	0.0	6223.7	0.0	0.0
42	38697.9	0.0	0.0	5804.7	0.0	0.0
43	39357.9	0.0	0.0	5903.7	0.0	0.0
44	40017.9	0.0	0.0	6002.7	0.0	0.0
45	40677.9	0.0	0.0	6101.7	0.0	0.0
46	41337.9	0.0	0.0	6200.7	0.0	0.0
47	41997.8	0.0	0.0	6299.7	0.0	0.0
48	42657.8	0.0	0.0	6398.7	0.0	0.0
49	43317.8	0.0	0.0	6497.7	0.0	0.0
50	43977.8	0.0	0.0	6596.7	0.0	0.0
51	13458.3	0.0	0.0	2018.7	0.0	0.0
52	44980.9	0.0	0.0	6747.1	0.0	0.0
53	45109.9	0.0	0.0	6766.5	0.0	0.0
54	45239.0	0.0	0.0	6785.8	0.0	0.0
55	45368.0	0.0	0.0	6805.2	0.0	0.0
56	45497.1	0.0	0.0	6824.6	0.0	0.0
57	46230.6	0.0	0.0	6934.6	0.0	0.0
58	46353.6	0.0	0.0	6953.0	0.0	0.0
59	46476.5	0.0	0.0	6971.5	0.0	0.0
60	46599.5	0.0	0.0	6989.9	0.0	0.0
61	46722.5	0.0	0.0	7008.4	0.0	0.0
62	46845.4	0.0	0.0	7026.8	0.0	0.0
63	46968.4	0.0	0.0	7045.3	0.0	0.0
64	47091.4	0.0	0.0	7063.7	0.0	0.0
65	47214.3	0.0	0.0	7082.1	0.0	0.0
66	47337.3	0.0	0.0	7100.6	0.0	0.0
67	47460.3	0.0	0.0	7119.0	0.0	0.0
68	47583.2	0.0	0.0	7137.5	0.0	0.0
69	47706.2	0.0	0.0	7155.9	0.0	0.0
70	47829.2	0.0	0.0	7174.4	0.0	0.0
71	47952.1	0.0	0.0	7192.8	0.0	0.0
72	47444.5	0.0	0.0	7116.7	0.0	0.0
73	47254.0	0.0	0.0	7088.1	0.0	0.0
74	47063.5	0.0	0.0	7059.5	0.0	0.0
75	46873.0	0.0	0.0	7031.0	0.0	0.0
76	46682.5	0.0	0.0	7002.4	0.0	0.0
77	46492.0	0.0	0.0	6973.8	0.0	0.0
78	45735.8	0.0	0.0	6860.4	0.0	0.0
79	46078.5	0.0	0.0	6911.8	0.0	0.0
80	46421.2	0.0	0.0	6963.2	0.0	0.0
81	46763.9	0.0	0.0	7014.6	0.0	0.0
82	47106.6	0.0	0.0	7066.0	0.0	0.0
83	47449.4	0.0	0.0	7117.4	0.0	0.0
84	47792.1	0.0	0.0	7168.8	0.0	0.0
85	48134.8	0.0	0.0	7220.2	0.0	0.0
86	48477.5	0.0	0.0	7271.6	0.0	0.0
87	48820.2	0.0	0.0	7323.0	0.0	0.0
88	49162.9	0.0	0.0	7374.4	0.0	0.0
89	49505.7	0.0	0.0	7425.8	0.0	0.0
90	49848.4	0.0	0.0	7477.3	0.0	0.0
91	50191.1	0.0	0.0	7528.7	0.0	0.0
92	50533.8	0.0	0.0	7580.1	0.0	0.0
93	55526.6	0.0	0.0	8329.0	0.0	0.0
94	54740.3	0.0	0.0	8211.1	0.0	0.0
95	53954.1	0.0	0.0	8093.1	0.0	0.0
96	49838.1	0.0	0.0	7475.7	0.0	0.0
97	49571.0	0.0	0.0	7435.7	0.0	0.0
98	49303.9	0.0	0.0	7395.6	0.0	0.0
99	49036.8	0.0	0.0	7355.5	0.0	0.0
100	48769.7	0.0	0.0	7315.5	0.0	0.0
101	48502.6	0.0	0.0	7275.4	0.0	0.0
102	48235.5	0.0	0.0	7235.3	0.0	0.0
103	47968.4	0.0	0.0	7195.3	0.0	0.0
104	47701.3	0.0	0.0	7155.2	0.0	0.0
105	47434.2	0.0	0.0	7115.1	0.0	0.0
106	47167.1	0.0	0.0	7075.1	0.0	0.0
107	46900.0	0.0	0.0	7035.0	0.0	0.0
108	46632.9	0.0	0.0	6994.9	0.0	0.0
109	46365.8	0.0	0.0	6954.9	0.0	0.0

110	46098.7	0.0	0.0	6914.8	0.0	0.0
111	45831.5	0.0	0.0	6874.7	0.0	0.0
112	45564.4	0.0	0.0	6834.7	0.0	0.0
113	45297.3	0.0	0.0	6794.6	0.0	0.0
114	45030.2	0.0	0.0	6754.5	0.0	0.0
115	44763.1	0.0	0.0	6714.5	0.0	0.0
116	44496.0	0.0	0.0	6674.4	0.0	0.0
117	44228.9	0.0	0.0	6634.3	0.0	0.0
118	43961.8	0.0	0.0	6594.3	0.0	0.0
119	43694.7	0.0	0.0	6554.2	0.0	0.0
120	43427.6	0.0	0.0	6514.1	0.0	0.0
121	43160.5	0.0	0.0	6474.1	0.0	0.0
122	42694.8	0.0	0.0	6404.2	0.0	0.0
123	42640.0	0.0	0.0	6396.0	0.0	0.0
124	42585.1	0.0	0.0	6387.8	0.0	0.0
125	40618.9	0.0	0.0	6092.8	0.0	0.0
126	38085.4	0.0	0.0	5712.8	0.0	0.0
127	35552.0	0.0	0.0	5332.8	0.0	0.0
128	33018.6	0.0	0.0	4952.8	0.0	0.0
129	30485.1	0.0	0.0	4572.8	0.0	0.0
130	27951.7	0.0	0.0	4192.7	0.0	0.0
131	25418.2	0.0	0.0	3812.7	0.0	0.0
132	22884.8	0.0	0.0	3432.7	0.0	0.0
133	20351.3	0.0	0.0	3052.7	0.0	0.0
134	17817.9	0.0	0.0	2672.7	0.0	0.0
135	15284.4	0.0	0.0	2292.7	0.0	0.0
136	12751.0	0.0	0.0	1912.6	0.0	0.0
137	10217.5	0.0	0.0	1532.6	0.0	0.0
138	8491.1	0.0	0.0	1273.7	0.0	0.0
139	5236.7	0.0	0.0	785.5	0.0	0.0
140	1416.2	0.0	0.0	212.4	0.0	0.0
141	472.1	0.0	0.0	70.8	0.0	0.0

TOTAL WEIGHT OF SLIDING MASS = 5177487.69(lbs)

EFFECTIVE WEIGHT OF SLIDING MASS = 5177487.69(lbs)

TOTAL AREA OF SLIDING MASS = 43145.73(ft2)

TABLE 2A - SOIL STRENGTH & SOIL OPTIONS DATA ON THE 141 SLICES

Slice No.	Soil Type	Cohesion (psf)	Phi(Deg)	Options
1	1	200.00	24.00	
2	1	200.00	24.00	
3	1	200.00	24.00	
4	1	200.00	24.00	
5	1	200.00	24.00	
6	1	200.00	24.00	
7	1	200.00	24.00	
8	1	200.00	24.00	
9	1	200.00	24.00	
10	2	300.00	30.00	A
11	2	0.00	15.00	A
12	2	0.00	15.00	A
13	2	0.00	15.00	A
14	2	0.00	15.00	A
15	2	0.00	15.00	A
16	2	0.00	15.00	A
17	2	0.00	15.00	A
18	2	0.00	15.00	A
19	2	0.00	15.00	A
20	2	0.00	15.00	A
21	2	0.00	15.00	A
22	4	0.00	15.00	A
23	4	0.00	15.00	A
24	4	0.00	15.00	A
25	4	0.00	15.00	A
26	4	0.00	15.00	A
27	4	0.00	15.00	A
28	4	0.00	15.00	A
29	4	0.00	15.00	A
30	4	0.00	15.00	A
31	4	0.00	15.00	A
32	4	0.00	15.00	A
33	4	0.00	15.00	A
34	4	0.00	15.00	A
35	4	0.00	15.00	A
36	4	0.00	15.00	A
37	4	0.00	15.00	A
38	4	0.00	15.00	A
39	4	0.00	15.00	A
40	4	0.00	15.00	A
41	4	0.00	15.00	A
42	4	0.00	15.00	A
43	4	0.00	15.00	A
44	4	0.00	15.00	A
45	4	0.00	15.00	A
46	4	0.00	15.00	A
47	4	0.00	15.00	A
48	4	0.00	15.00	A
49	4	0.00	15.00	A
50	4	0.00	15.00	A
51	2	0.00	15.00	A
52	2	0.00	15.00	A
53	2	0.00	15.00	A
54	2	0.00	15.00	A
55	2	0.00	15.00	A
56	2	0.00	15.00	A
57	2	0.00	15.00	A
58	2	0.00	15.00	A
59	2	0.00	15.00	A
60	2	0.00	15.00	A
61	2	0.00	15.00	A
62	2	0.00	15.00	A
63	2	0.00	15.00	A
64	2	0.00	15.00	A
65	2	0.00	15.00	A
66	2	0.00	15.00	A
67	2	0.00	15.00	A
68	2	0.00	15.00	A
69	2	0.00	15.00	A
70	2	0.00	15.00	A
71	2	0.00	15.00	A
72	2	0.00	15.00	A
73	2	0.00	15.00	A
74	2	0.00	15.00	A
75	2	0.00	15.00	A
76	2	0.00	15.00	A

77	2	0.00	15.00	A
78	2	0.00	15.00	A
79	2	0.00	15.00	A
80	2	0.00	15.00	A
81	2	0.00	15.00	A
82	2	0.00	15.00	A
83	2	0.00	15.00	A
84	2	0.00	15.00	A
85	2	0.00	15.00	A
86	2	0.00	15.00	A
87	2	0.00	15.00	A
88	2	0.00	15.00	A
89	2	0.00	15.00	A
90	2	0.00	15.00	A
91	2	0.00	15.00	A
92	2	0.00	15.00	A
93	2	0.00	15.00	A
94	2	0.00	15.00	A
95	2	0.00	15.00	A
96	2	0.00	15.00	A
97	2	0.00	15.00	A
98	2	0.00	15.00	A
99	2	0.00	15.00	A
100	2	0.00	15.00	A
101	2	0.00	15.00	A
102	2	0.00	15.00	A
103	2	0.00	15.00	A
104	2	0.00	15.00	A
105	2	0.00	15.00	A
106	2	0.00	15.00	A
107	2	0.00	15.00	A
108	2	0.00	15.00	A
109	2	0.00	15.00	A
110	2	0.00	15.00	A
111	2	0.00	15.00	A
112	2	0.00	15.00	A
113	2	0.00	15.00	A
114	2	0.00	15.00	A
115	2	0.00	15.00	A
116	2	0.00	15.00	A
117	2	0.00	15.00	A
118	2	0.00	15.00	A
119	2	0.00	15.00	A
120	2	0.00	15.00	A
121	2	0.00	15.00	A
122	2	0.00	15.00	A
123	2	0.00	15.00	A
124	2	0.00	15.00	A
125	2	300.00	30.00	A
126	2	300.00	30.00	A
127	2	300.00	30.00	A
128	2	300.00	30.00	A
129	2	300.00	30.00	A
130	2	300.00	30.00	A
131	2	300.00	30.00	A
132	2	300.00	30.00	A
133	2	300.00	30.00	A
134	2	300.00	30.00	A
135	2	300.00	30.00	A
136	2	300.00	30.00	A
137	2	300.00	30.00	A
138	2	300.00	30.00	A
139	2	300.00	30.00	A
140	2	300.00	30.00	A
141	2	300.00	30.00	A

SOIL OPTIONS: A = ANISOTROPIC, C = CURVED STRENGTH ENVELOPE (TANGENT PHI & C),
F = FIBER-REINFORCED SOIL (FRS), N = NONLINEAR UNDRAINED SHEAR STRENGTH,
R = RAPID DRAWDOWN OR RAPID LOADING (SEISMIC) SHEAR STRENGTH
NOTE: Phi and C in Table 4 are modified values based on specified
Soil Options (if any).

TABLE 3 - Effective and Base Shear Stress Data on the 141 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Stress (psf)	Available Shear Strength (psf)	Mobilized Shear Stress (psf)
1	-33.05	172.93	6.31	566.37	452.16	478.50
1	-33.05	172.93	6.31	566.37	452.16	478.50
2	-33.05	178.22	6.31	1262.44	762.07	806.45
2	-33.05	178.22	6.31	1262.44	762.07	806.45
3	-33.05	183.51	6.31	1958.51	1071.99	1134.41
3	-33.05	183.51	6.31	1958.51	1071.99	1134.41
4	-33.05	188.80	6.31	2654.58	1381.90	1462.37
4	-33.05	188.80	6.31	2654.58	1381.90	1462.37
5	-30.94	193.84	5.58	3157.30	1605.72	1699.23
5	-30.94	193.84	5.58	3157.30	1605.72	1699.23
6	-30.94	198.62	5.58	3721.35	1856.85	1964.99
6	-30.94	198.62	5.58	3721.35	1856.85	1964.99
7	-30.94	203.40	5.58	4285.41	2107.99	2230.75
7	-30.94	203.40	5.58	4285.41	2107.99	2230.75
8	-30.94	208.19	5.58	4849.46	2359.12	2496.50
8	-30.94	208.19	5.58	4849.46	2359.12	2496.50
9	-30.94	212.97	5.58	5413.51	2610.25	2762.26
9	-30.94	212.97	5.58	5413.51	2610.25	2762.26
10	-30.94	216.27	2.11	6764.80	4205.66	4450.58
10	-30.94	216.27	2.11	6764.80	4205.66	4450.58
11	-8.98	219.64	5.00	4270.03	1144.15	1210.78
11	-8.98	219.64	5.00	4270.03	1144.15	1210.78
12	-8.98	224.58	5.00	4422.57	1185.02	1254.03
12	-8.98	224.58	5.00	4422.57	1185.02	1254.03
13	-8.98	229.52	5.00	4575.10	1225.89	1297.29
13	-8.98	229.52	5.00	4575.10	1225.89	1297.29
14	-8.98	234.46	5.00	4727.63	1266.77	1340.54
14	-8.98	234.46	5.00	4727.63	1266.77	1340.54
15	-8.98	239.40	5.00	4880.17	1307.64	1383.79
15	-8.98	239.40	5.00	4880.17	1307.64	1383.79
16	-8.98	244.34	5.00	5032.70	1348.51	1427.04
16	-8.98	244.34	5.00	5032.70	1348.51	1427.04
17	-7.81	249.38	5.19	5147.48	1379.26	1459.59
17	-7.81	249.38	5.19	5147.48	1379.26	1459.59
18	-7.81	254.52	5.19	5291.77	1417.92	1500.50
18	-7.81	254.52	5.19	5291.77	1417.92	1500.50
19	-7.81	259.66	5.19	5436.05	1456.58	1541.41
19	-7.81	259.66	5.19	5436.05	1456.58	1541.41
20	-7.81	264.80	5.19	5580.33	1495.24	1582.32
20	-7.81	264.80	5.19	5580.33	1495.24	1582.32

21	-7.81	269.94	5.19	5724.61	1533.90	1623.23
21	-7.81	269.94	5.19	5724.61	1533.90	1623.23
22	-7.81	274.45	3.93	5851.39	1567.87	1659.18
22	-7.81	274.45	3.93	5851.39	1567.87	1659.18
23	-7.81	276.46	0.13	5908.39	1583.15	1675.34
23	-7.81	276.46	0.13	5908.39	1583.15	1675.34
24	-1.10	279.18	5.30	5753.98	1541.78	1631.56
24	-1.10	279.18	5.30	5753.98	1541.78	1631.56
25	-1.10	284.47	5.30	5864.46	1571.38	1662.89
25	-1.10	284.47	5.30	5864.46	1571.38	1662.89
26	-1.10	289.77	5.30	5974.94	1600.98	1694.21
26	-1.10	289.77	5.30	5974.94	1600.98	1694.21
27	-1.10	295.06	5.30	6085.41	1630.58	1725.54
27	-1.10	295.06	5.30	6085.41	1630.58	1725.54
28	-1.10	300.36	5.30	6195.89	1660.18	1756.87
28	-1.10	300.36	5.30	6195.89	1660.18	1756.87
29	-1.10	305.65	5.30	6306.36	1689.78	1788.19
29	-1.10	305.65	5.30	6306.36	1689.78	1788.19
30	-1.10	310.74	4.88	6416.76	1719.36	1819.49
30	-1.10	310.74	4.88	6416.76	1719.36	1819.49
31	-1.10	315.62	4.88	6527.07	1748.92	1850.77
31	-1.10	315.62	4.88	6527.07	1748.92	1850.77
32	-1.10	320.50	4.88	6637.39	1778.48	1882.05
32	-1.10	320.50	4.88	6637.39	1778.48	1882.05
33	-1.10	325.38	4.88	6747.70	1808.04	1913.33
33	-1.10	325.38	4.88	6747.70	1808.04	1913.33
34	-1.10	330.26	4.88	6858.02	1837.60	1944.61
34	-1.10	330.26	4.88	6858.02	1837.60	1944.61
35	-1.10	335.38	5.37	6959.64	1864.83	1973.43
35	-1.10	335.38	5.37	6959.64	1864.83	1973.43
36	-1.10	340.75	5.37	7052.58	1889.73	1999.78
36	-1.10	340.75	5.37	7052.58	1889.73	1999.78
37	-1.10	346.12	5.37	7145.52	1914.64	2026.14
37	-1.10	346.12	5.37	7145.52	1914.64	2026.14
38	-1.10	351.50	5.40	7268.65	1947.63	2061.05
38	-1.10	351.50	5.40	7268.65	1947.63	2061.05
39	-1.10	356.90	5.40	7421.97	1988.71	2104.52
39	-1.10	356.90	5.40	7421.97	1988.71	2104.52
40	-1.10	362.30	5.40	7575.29	2029.79	2148.00
40	-1.10	362.30	5.40	7575.29	2029.79	2148.00
41	-1.10	367.70	5.40	7728.61	2070.87	2191.47
41	-1.10	367.70	5.40	7728.61	2070.87	2191.47
42	-0.52	372.87	4.94	7847.89	2102.84	2225.30
42	-0.52	372.87	4.94	7847.89	2102.84	2225.30
43	-0.52	377.82	4.94	7981.73	2138.70	2263.25
43	-0.52	377.82	4.94	7981.73	2138.70	2263.25
44	-0.52	382.76	4.94	8115.58	2174.56	2301.20
44	-0.52	382.76	4.94	8115.58	2174.56	2301.20
45	-0.52	387.71	4.94	8249.42	2210.43	2339.15
45	-0.52	387.71	4.94	8249.42	2210.43	2339.15
46	-0.52	392.65	4.94	8383.26	2246.29	2377.10
46	-0.52	392.65	4.94	8383.26	2246.29	2377.10
47	-0.52	397.59	4.94	8517.11	2282.15	2415.06
47	-0.52	397.59	4.94	8517.11	2282.15	2415.06
48	-0.52	402.54	4.94	8650.95	2318.02	2453.01
48	-0.52	402.54	4.94	8650.95	2318.02	2453.01
49	-0.52	407.48	4.94	8784.79	2353.88	2490.96
49	-0.52	407.48	4.94	8784.79	2353.88	2490.96
50	-0.52	412.43	4.94	8918.64	2389.74	2528.91
50	-0.52	412.43	4.94	8918.64	2389.74	2528.91

51	5.31	415.65	1.51	8726.73	2338.32	2474.49
51	5.31	415.65	1.51	8726.73	2338.32	2474.49
52	5.31	418.90	5.02	8750.05	2344.57	2481.11
52	5.31	418.90	5.02	8750.05	2344.57	2481.11
53	5.31	423.90	5.02	8775.15	2351.29	2488.23
53	5.31	423.90	5.02	8775.15	2351.29	2488.23
54	5.31	428.90	5.02	8800.26	2358.02	2495.34
54	5.31	428.90	5.02	8800.26	2358.02	2495.34
55	5.31	433.90	5.02	8825.37	2364.75	2502.46
55	5.31	433.90	5.02	8825.37	2364.75	2502.46
56	5.31	438.90	5.02	8850.47	2371.48	2509.58
56	5.31	438.90	5.02	8850.47	2371.48	2509.58
57	5.31	443.93	5.09	8874.83	2378.00	2516.49
57	5.31	443.93	5.09	8874.83	2378.00	2516.49
58	5.31	449.00	5.09	8898.43	2384.33	2523.18
58	5.31	449.00	5.09	8898.43	2384.33	2523.18
59	5.31	454.07	5.09	8922.04	2390.65	2529.88
59	5.31	454.07	5.09	8922.04	2390.65	2529.88
60	5.31	459.13	5.09	8945.65	2396.98	2536.57
60	5.31	459.13	5.09	8945.65	2396.98	2536.57
61	5.31	464.20	5.09	8969.25	2403.30	2543.26
61	5.31	464.20	5.09	8969.25	2403.30	2543.26
62	5.31	469.27	5.09	8992.86	2409.63	2549.96
62	5.31	469.27	5.09	8992.86	2409.63	2549.96
63	5.31	474.33	5.09	9016.46	2415.95	2556.65
63	5.31	474.33	5.09	9016.46	2415.95	2556.65
64	5.31	479.40	5.09	9040.07	2422.28	2563.34
64	5.31	479.40	5.09	9040.07	2422.28	2563.34
65	5.31	484.47	5.09	9063.67	2428.60	2570.04
65	5.31	484.47	5.09	9063.67	2428.60	2570.04
66	5.31	489.53	5.09	9087.28	2434.93	2576.73
66	5.31	489.53	5.09	9087.28	2434.93	2576.73
67	5.31	494.60	5.09	9110.88	2441.25	2583.42
67	5.31	494.60	5.09	9110.88	2441.25	2583.42
68	5.31	499.67	5.09	9134.49	2447.58	2590.12
68	5.31	499.67	5.09	9134.49	2447.58	2590.12
69	5.31	504.73	5.09	9158.09	2453.90	2596.81
69	5.31	504.73	5.09	9158.09	2453.90	2596.81
70	5.31	509.80	5.09	9181.70	2460.23	2603.50
70	5.31	509.80	5.09	9181.70	2460.23	2603.50
71	5.31	514.87	5.09	9205.30	2466.55	2610.20
71	5.31	514.87	5.09	9205.30	2466.55	2610.20
72	5.31	519.91	5.04	9198.64	2464.77	2608.31
72	5.31	519.91	5.04	9198.64	2464.77	2608.31
73	5.31	524.92	5.04	9161.70	2454.87	2597.83
73	5.31	524.92	5.04	9161.70	2454.87	2597.83
74	5.31	529.94	5.04	9124.77	2444.97	2587.36
74	5.31	529.94	5.04	9124.77	2444.97	2587.36
75	5.31	534.96	5.04	9087.84	2435.08	2576.89
75	5.31	534.96	5.04	9087.84	2435.08	2576.89
76	5.31	539.98	5.04	9050.90	2425.18	2566.42
76	5.31	539.98	5.04	9050.90	2425.18	2566.42
77	5.31	544.99	5.04	9013.97	2415.29	2555.94
77	5.31	544.99	5.04	9013.97	2415.29	2555.94
78	5.31	549.96	4.95	9029.33	2419.40	2560.30
78	5.31	549.96	4.95	9029.33	2419.40	2560.30
79	5.31	554.89	4.95	9096.99	2437.53	2579.48
79	5.31	554.89	4.95	9096.99	2437.53	2579.48
80	5.31	559.82	4.95	9164.65	2455.66	2598.67
80	5.31	559.82	4.95	9164.65	2455.66	2598.67

81	5.31	564.74	4.95	9232.31	2473.79	2617.85
81	5.31	564.74	4.95	9232.31	2473.79	2617.85
82	5.31	569.67	4.95	9299.97	2491.92	2637.04
82	5.31	569.67	4.95	9299.97	2491.92	2637.04
83	5.31	574.60	4.95	9367.63	2510.05	2656.23
83	5.31	574.60	4.95	9367.63	2510.05	2656.23
84	5.31	579.52	4.95	9435.29	2528.18	2675.41
84	5.31	579.52	4.95	9435.29	2528.18	2675.41
85	5.31	584.45	4.95	9502.95	2546.31	2694.60
85	5.31	584.45	4.95	9502.95	2546.31	2694.60
86	5.31	589.38	4.95	9570.61	2564.44	2713.78
86	5.31	589.38	4.95	9570.61	2564.44	2713.78
87	5.31	594.30	4.95	9638.27	2582.57	2732.97
87	5.31	594.30	4.95	9638.27	2582.57	2732.97
88	5.31	599.23	4.95	9705.93	2600.70	2752.15
88	5.31	599.23	4.95	9705.93	2600.70	2752.15
89	5.31	604.16	4.95	9773.59	2618.83	2771.34
89	5.31	604.16	4.95	9773.59	2618.83	2771.34
90	5.31	609.08	4.95	9841.25	2636.96	2790.52
90	5.31	609.08	4.95	9841.25	2636.96	2790.52
91	5.31	614.01	4.95	9908.92	2655.09	2809.71
91	5.31	614.01	4.95	9908.92	2655.09	2809.71
92	5.31	618.94	4.95	9976.58	2673.22	2828.89
92	5.31	618.94	4.95	9976.58	2673.22	2828.89
93	23.39	624.12	5.92	9036.94	2421.44	2562.46
93	23.39	624.12	5.92	9036.94	2421.44	2562.46
94	23.39	629.55	5.92	8908.97	2387.15	2526.17
94	23.39	629.55	5.92	8908.97	2387.15	2526.17
95	23.39	634.98	5.92	8781.00	2352.86	2489.88
95	23.39	634.98	5.92	8781.00	2352.86	2489.88
96	23.39	640.23	5.52	8693.72	2329.48	2465.14
96	23.39	640.23	5.52	8693.72	2329.48	2465.14
97	23.39	645.30	5.52	8647.13	2316.99	2451.92
97	23.39	645.30	5.52	8647.13	2316.99	2451.92
98	23.39	650.37	5.52	8600.54	2304.51	2438.71
98	23.39	650.37	5.52	8600.54	2304.51	2438.71
99	23.39	655.44	5.52	8553.94	2292.02	2425.50
99	23.39	655.44	5.52	8553.94	2292.02	2425.50
100	23.39	660.51	5.52	8507.35	2279.54	2412.29
100	23.39	660.51	5.52	8507.35	2279.54	2412.29
101	23.39	665.58	5.52	8460.76	2267.05	2399.08
101	23.39	665.58	5.52	8460.76	2267.05	2399.08
102	23.39	670.65	5.52	8414.16	2254.57	2385.87
102	23.39	670.65	5.52	8414.16	2254.57	2385.87
103	23.39	675.72	5.52	8367.57	2242.08	2372.65
103	23.39	675.72	5.52	8367.57	2242.08	2372.65
104	23.39	680.79	5.52	8320.98	2229.60	2359.44
104	23.39	680.79	5.52	8320.98	2229.60	2359.44
105	23.39	685.86	5.52	8274.38	2217.11	2346.23
105	23.39	685.86	5.52	8274.38	2217.11	2346.23
106	23.39	690.93	5.52	8227.79	2204.63	2333.02
106	23.39	690.93	5.52	8227.79	2204.63	2333.02
107	23.39	696.00	5.52	8181.20	2192.14	2319.81
107	23.39	696.00	5.52	8181.20	2192.14	2319.81
108	23.39	701.07	5.52	8134.60	2179.66	2306.60
108	23.39	701.07	5.52	8134.60	2179.66	2306.60
109	23.39	706.13	5.52	8088.01	2167.18	2293.38
109	23.39	706.13	5.52	8088.01	2167.18	2293.38
110	23.39	711.20	5.52	8041.42	2154.69	2280.17
110	23.39	711.20	5.52	8041.42	2154.69	2280.17
111	23.39	716.27	5.52	7994.82	2142.21	2266.96
111	23.39	716.27	5.52	7994.82	2142.21	2266.96
112	23.39	721.34	5.52	7948.23	2129.72	2253.75
112	23.39	721.34	5.52	7948.23	2129.72	2253.75
113	23.39	726.41	5.52	7901.64	2117.24	2240.54
113	23.39	726.41	5.52	7901.64	2117.24	2240.54
114	23.39	731.48	5.52	7855.04	2104.75	2227.33
114	23.39	731.48	5.52	7855.04	2104.75	2227.33
115	23.39	736.55	5.52	7808.45	2092.27	2214.11
115	23.39	736.55	5.52	7808.45	2092.27	2214.11
116	23.39	741.62	5.52	7761.86	2079.78	2200.90
116	23.39	741.62	5.52	7761.86	2079.78	2200.90
117	23.39	746.69	5.52	7715.26	2067.30	2187.69
117	23.39	746.69	5.52	7715.26	2067.30	2187.69
118	23.39	751.76	5.52	7668.67	2054.81	2174.48
118	23.39	751.76	5.52	7668.67	2054.81	2174.48
119	23.39	756.83	5.52	7622.08	2042.33	2161.27
119	23.39	756.83	5.52	7622.08	2042.33	2161.27
120	23.39	761.90	5.52	7575.48	2029.84	2148.05
120	23.39	761.90	5.52	7575.48	2029.84	2148.05
121	23.39	766.97	5.52	7528.89	2017.36	2134.84
121	23.39	766.97	5.52	7528.89	2017.36	2134.84
122	23.39	772.02	5.48	7500.77	2009.83	2126.87
122	23.39	772.02	5.48	7500.77	2009.83	2126.87
123	23.39	777.05	5.48	7491.14	2007.24	2124.14
123	23.39	777.05	5.48	7491.14	2007.24	2124.14
124	23.39	782.08	5.48	7481.50	2004.66	2121.41
124	23.39	782.08	5.48	7481.50	2004.66	2121.41
125	51.89	787.08	8.03	4242.27	2749.28	2909.38
125	51.89	787.08	8.03	4242.27	2749.28	2909.38
126	51.89	792.03	8.03	3962.97	2588.02	2738.74
126	51.89	792.03	8.03	3962.97	2588.02	2738.74
127	51.89	796.98	8.03	3683.66	2426.76	2568.09
127	51.89	796.98	8.03	3683.66	2426.76	2568.09
128	51.89	801.94	8.03	3404.36	2265.51	2397.44
128	51.89	801.94	8.03	3404.36	2265.51	2397.44
129	51.89	806.89	8.03	3125.06	2104.25	2226.80
129	51.89	806.89	8.03	3125.06	2104.25	2226.80
130	51.89	811.85	8.03	2845.75	1943.00	2056.15
130	51.89	811.85	8.03	2845.75	1943.00	2056.15
131	51.89	816.80	8.03	2566.45	1781.74	1885.50
131	51.89	816.80	8.03	2566.45	1781.74	1885.50
132	51.89	821.75	8.03	2287.14	1620.48	1714.85
132	51.89	821.75	8.03	2287.14	1620.48	1714.85
133	51.89	826.71	8.03	2007.84	1459.23	1544.21
133	51.89	826.71	8.03	2007.84	1459.23	1544.21
134	51.89	831.66	8.03	1728.53	1297.97	1373.56
134	51.89	831.66	8.03	1728.53	1297.97	1373.56
135	51.89	836.62	8.03	1449.23	1136.71	1202.91
135	51.89	836.62	8.03	1449.23	1136.71	1202.91
136	51.89	841.57	8.03	1169.92	975.46	1032.26
136	51.89	841.57	8.03	1169.92	975.46	1032.26
137	51.89	846.52	8.03	890.62	814.20	861.62
137	51.89	846.52	8.03	890.62	814.20	861.62
138	51.99	851.80	9.09	590.49	640.92	678.24
138	51.99	851.80	9.09	590.49	640.92	678.24
139	51.99	857.40	9.09	273.61	457.97	484.64
139	51.99	857.40	9.09	273.61	457.97	484.64
140	51.99	861.66	4.76	27.31	315.76	334.15
140	51.99	861.66	4.76	27.31	315.76	334.15

141	51.99	864.59	4.76	87.86	50.73	53.68
141	51.99	864.59	4.76	87.86	50.73	53.68

Table 4 - Base Force Data on the 141 Slices

Slice No. *	Alpha (deg)	X-Coord. Slice Cntr (ft)	Base Leng. (ft)	Effective Normal Force (lbs)	Available Shear Force (lbs)	Mobilized Shear Force (lbs)
1	-33.05	172.93	6.31	3575.07	2854.18	3020.40
1	-33.05	172.93	6.31	3575.07	2854.18	3020.40
2	-33.05	178.22	6.31	7968.87	4810.42	5090.56
2	-33.05	178.22	6.31	7968.87	4810.42	5090.56
3	-33.05	183.51	6.31	12362.66	6766.66	7160.73
3	-33.05	183.51	6.31	12362.66	6766.66	7160.73
4	-33.05	188.80	6.31	16756.45	8722.91	9230.90
4	-33.05	188.80	6.31	16756.45	8722.91	9230.90
5	-30.94	193.84	5.58	17610.53	8956.26	9477.84
5	-30.94	193.84	5.58	17610.53	8956.26	9477.84
6	-30.94	198.62	5.58	20756.66	10357.00	10960.16
6	-30.94	198.62	5.58	20756.66	10357.00	10960.16
7	-30.94	203.40	5.58	23902.79	11757.75	12442.48
7	-30.94	203.40	5.58	23902.79	11757.75	12442.48
8	-30.94	208.19	5.58	27048.91	13158.50	13924.80
8	-30.94	208.19	5.58	27048.91	13158.50	13924.80
9	-30.94	212.97	5.58	30195.04	14559.24	15407.12
9	-30.94	212.97	5.58	30195.04	14559.24	15407.12
10	-30.94	216.27	2.11	14283.22	8879.84	9396.97
10	-30.94	216.27	2.11	14283.22	8879.84	9396.97
11	-8.98	219.64	5.00	21350.17	5720.76	6053.92
11	-8.98	219.64	5.00	21350.17	5720.76	6053.92
12	-8.98	224.58	5.00	22112.83	5925.12	6270.17
12	-8.98	224.58	5.00	22112.83	5925.12	6270.17
13	-8.98	229.52	5.00	22875.50	6129.47	6486.43
13	-8.98	229.52	5.00	22875.50	6129.47	6486.43
14	-8.98	234.46	5.00	23638.16	6333.83	6702.68
14	-8.98	234.46	5.00	23638.16	6333.83	6702.68
15	-8.98	239.40	5.00	24400.83	6538.18	6918.94
15	-8.98	239.40	5.00	24400.83	6538.18	6918.94
16	-8.98	244.34	5.00	25163.49	6742.54	7135.20
16	-8.98	244.34	5.00	25163.49	6742.54	7135.20
17	-7.81	249.38	5.19	26704.99	7155.58	7572.29
17	-7.81	249.38	5.19	26704.99	7155.58	7572.29
18	-7.81	254.52	5.19	27453.52	7356.15	7784.54
18	-7.81	254.52	5.19	27453.52	7356.15	7784.54
19	-7.81	259.66	5.19	28202.05	7556.72	7996.79
19	-7.81	259.66	5.19	28202.05	7556.72	7996.79
20	-7.81	264.80	5.19	28950.58	7757.28	8209.04
20	-7.81	264.80	5.19	28950.58	7757.28	8209.04
21	-7.81	269.94	5.19	29699.11	7957.85	8421.29
21	-7.81	269.94	5.19	29699.11	7957.85	8421.29
22	-7.81	274.45	3.93	22989.71	6160.07	6518.81
22	-7.81	274.45	3.93	22989.71	6160.07	6518.81
23	-7.81	276.46	0.13	775.27	207.73	219.83
23	-7.81	276.46	0.13	775.27	207.73	219.83
24	-1.10	279.18	5.30	30473.00	8165.21	8640.73
24	-1.10	279.18	5.30	30473.00	8165.21	8640.73
25	-1.10	284.47	5.30	31058.07	8321.98	8806.63
25	-1.10	284.47	5.30	31058.07	8321.98	8806.63
26	-1.10	289.77	5.30	31643.15	8478.75	8972.53
26	-1.10	289.77	5.30	31643.15	8478.75	8972.53
27	-1.10	295.06	5.30	32228.22	8635.53	9138.43
27	-1.10	295.06	5.30	32228.22	8635.53	9138.43
28	-1.10	300.36	5.30	32813.29	8792.30	9304.33
28	-1.10	300.36	5.30	32813.29	8792.30	9304.33
29	-1.10	305.65	5.30	33398.37	8949.07	9470.23
29	-1.10	305.65	5.30	33398.37	8949.07	9470.23
30	-1.10	310.74	4.88	31319.57	8392.05	8880.77
30	-1.10	310.74	4.88	31319.57	8392.05	8880.77
31	-1.10	315.62	4.88	31858.01	8536.33	9033.45
31	-1.10	315.62	4.88	31858.01	8536.33	9033.45
32	-1.10	320.50	4.88	32396.45	8680.60	9186.13
32	-1.10	320.50	4.88	32396.45	8680.60	9186.13
33	-1.10	325.38	4.88	32934.88	8824.87	9338.80
33	-1.10	325.38	4.88	32934.88	8824.87	9338.80
34	-1.10	330.26	4.88	33473.32	8969.15	9491.48
34	-1.10	330.26	4.88	33473.32	8969.15	9491.48
35	-1.10	335.38	5.37	37357.00	10009.78	10592.71
35	-1.10	335.38	5.37	37357.00	10009.78	10592.71
36	-1.10	340.75	5.37	37855.86	10143.45	10734.16
36	-1.10	340.75	5.37	37855.86	10143.45	10734.16
37	-1.10	346.12	5.37	38354.72	10277.12	10875.62
37	-1.10	346.12	5.37	38354.72	10277.12	10875.62
38	-1.10	351.50	5.40	39257.97	10519.14	11131.73
38	-1.10	351.50	5.40	39257.97	10519.14	11131.73
39	-1.10	356.90	5.40	40086.04	10741.02	11366.54
39	-1.10	356.90	5.40	40086.04	10741.02	11366.54
40	-1.10	362.30	5.40	40914.12	10962.91	11601.34
40	-1.10	362.30	5.40	40914.12	10962.91	11601.34
41	-1.10	367.70	5.40	41742.20	11184.79	11836.15
41	-1.10	367.70	5.40	41742.20	11184.79	11836.15
42	-0.52	372.87	4.94	38805.03	10397.78	11003.30
42	-0.52	372.87	4.94	38805.03	10397.78	11003.30
43	-0.52	377.82	4.94	39466.84	10575.11	11190.96
43	-0.52	377.82	4.94	39466.84	10575.11	11190.96
44	-0.52	382.76	4.94	40128.65	10752.44	11378.62
44	-0.52	382.76	4.94	40128.65	10752.44	11378.62
45	-0.52	387.71	4.94	40790.45	10929.77	11566.28
45	-0.52	387.71	4.94	40790.45	10929.77	11566.28
46	-0.52	392.65	4.94	41452.26	11107.10	11753.93
46	-0.52	392.65	4.94	41452.26	11107.10	11753.93
47	-0.52	397.59	4.94	42114.07	11284.43	11941.59
47	-0.52	397.59	4.94	42114.07	11284.43	11941.59
48	-0.52	402.54	4.94	42775.87	11461.76	12129.25
48	-0.52	402.54	4.94	42775.87	11461.76	12129.25
49	-0.52	407.48	4.94	43437.68	11639.09	12316.91
49	-0.52	407.48	4.94	43437.68	11639.09	12316.91
50	-0.52	412.43	4.94	44099.49	11816.42	12504.57
50	-0.52	412.43	4.94	44099.49	11816.42	12504.57
51	5.31	415.65	1.51	13146.55	3522.61	3727.75
51	5.31	415.65	1.51	13146.55	3522.61	3727.75
52	5.31	418.90	5.02	43938.93	11773.40	12459.04
52	5.31	418.90	5.02	43938.93	11773.40	12459.04
53	5.31	423.90	5.02	44065.01	11807.18	12494.79
53	5.31	423.90	5.02	44065.01	11807.18	12494.79
54	5.31	428.90	5.02	44191.08	11840.96	12530.54
54	5.31	428.90	5.02	44191.08	11840.96	12530.54
55	5.31	433.90	5.02	44317.16	11874.75	12566.29

55	5.31	433.90	5.02	44317.16	11874.75	12566.29
56	5.31	438.90	5.02	44443.23	11908.53	12602.04
56	5.31	438.90	5.02	44443.23	11908.53	12602.04
57	5.31	443.93	5.09	45159.75	12100.52	12805.21
57	5.31	443.93	5.09	45159.75	12100.52	12805.21
58	5.31	449.00	5.09	45279.86	12132.70	12839.26
58	5.31	449.00	5.09	45279.86	12132.70	12839.26
59	5.31	454.07	5.09	45399.98	12164.89	12873.32
59	5.31	454.07	5.09	45399.98	12164.89	12873.32
60	5.31	459.13	5.09	45520.09	12197.07	12907.38
60	5.31	459.13	5.09	45520.09	12197.07	12907.38
61	5.31	464.20	5.09	45640.21	12229.26	12941.44
61	5.31	464.20	5.09	45640.21	12229.26	12941.44
62	5.31	469.27	5.09	45760.33	12261.44	12975.50
62	5.31	469.27	5.09	45760.33	12261.44	12975.50
63	5.31	474.33	5.09	45880.44	12293.63	13009.56
63	5.31	474.33	5.09	45880.44	12293.63	13009.56
64	5.31	479.40	5.09	46000.56	12325.81	13043.62
64	5.31	479.40	5.09	46000.56	12325.81	13043.62
65	5.31	484.47	5.09	46120.67	12358.00	13077.68
65	5.31	484.47	5.09	46120.67	12358.00	13077.68
66	5.31	489.53	5.09	46240.79	12390.18	13111.74
66	5.31	489.53	5.09	46240.79	12390.18	13111.74
67	5.31	494.60	5.09	46360.91	12422.37	13145.80
67	5.31	494.60	5.09	46360.91	12422.37	13145.80
68	5.31	499.67	5.09	46481.02	12454.55	13179.86
68	5.31	499.67	5.09	46481.02	12454.55	13179.86
69	5.31	504.73	5.09	46601.14	12486.74	13213.92
69	5.31	504.73	5.09	46601.14	12486.74	13213.92
70	5.31	509.80	5.09	46721.25	12518.92	13247.98
70	5.31	509.80	5.09	46721.25	12518.92	13247.98
71	5.31	514.87	5.09	46841.37	12551.11	13282.04
71	5.31	514.87	5.09	46841.37	12551.11	13282.04
72	5.31	519.91	5.04	46345.54	12418.25	13141.44
72	5.31	519.91	5.04	46345.54	12418.25	13141.44
73	5.31	524.92	5.04	46159.46	12368.39	13088.68
73	5.31	524.92	5.04	46159.46	12368.39	13088.68
74	5.31	529.94	5.04	45973.37	12318.53	13035.91
74	5.31	529.94	5.04	45973.37	12318.53	13035.91
75	5.31	534.96	5.04	45787.29	12268.67	12983.15
75	5.31	534.96	5.04	45787.29	12268.67	12983.15
76	5.31	539.98	5.04	45601.20	12218.81	12930.38
76	5.31	539.98	5.04	45601.20	12218.81	12930.38
77	5.31	544.99	5.04	45415.12	12168.94	12877.62
77	5.31	544.99	5.04	45415.12	12168.94	12877.62
78	5.31	549.96	4.95	44676.38	11971.00	12668.14
78	5.31	549.96	4.95	44676.38	11971.00	12668.14
79	5.31	554.89	4.95	45011.15	12060.70	12763.07
79	5.31	554.89	4.95	45011.15	12060.70	12763.07
80	5.31	559.82	4.95	45345.93	12150.41	12858.00
80	5.31	559.82	4.95	45345.93	12150.41	12858.00
81	5.31	564.74	4.95	45680.71	12240.11	12952.93
81	5.31	564.74	4.95	45680.71	12240.11	12952.93
82	5.31	569.67	4.95	46015.49	12329.81	13047.85
82	5.31	569.67	4.95	46015.49	12329.81	13047.85
83	5.31	574.60	4.95	46350.26	12419.52	13142.78
83	5.31	574.60	4.95	46350.26	12419.52	13142.78
84	5.31	579.52	4.95	46685.04	12509.22	13237.71
84	5.31	579.52	4.95	46685.04	12509.22	13237.71
85	5.31	584.45	4.95	47019.82	12598.92	13332.64
85	5.31	584.45	4.95	47019.82	12598.92	13332.64
86	5.31	589.38	4.95	47354.60	12688.63	13427.56
86	5.31	589.38	4.95	47354.60	12688.63	13427.56
87	5.31	594.30	4.95	47689.37	12778.33	13522.49
87	5.31	594.30	4.95	47689.37	12778.33	13522.49
88	5.31	599.23	4.95	48024.15	12868.03	13617.42
88	5.31	599.23	4.95	48024.15	12868.03	13617.42
89	5.31	604.16	4.95	48358.93	12957.74	13712.34
89	5.31	604.16	4.95	48358.93	12957.74	13712.34
90	5.31	609.08	4.95	48693.71	13047.44	13807.27
90	5.31	609.08	4.95	48693.71	13047.44	13807.27
91	5.31	614.01	4.95	49028.48	13137.14	13902.20
91	5.31	614.01	4.95	49028.48	13137.14	13902.20
92	5.31	618.94	4.95	49363.26	13226.85	13997.13
92	5.31	618.94	4.95	49363.26	13226.85	13997.13
93	23.39	624.12	5.92	53498.16	14334.79	15169.59
93	23.39	624.12	5.92	53498.16	14334.79	15169.59
94	23.39	629.55	5.92	52740.60	14131.80	14954.78
94	23.39	629.55	5.92	52740.60	14131.80	14954.78
95	23.39	634.98	5.92	51983.04	13928.81	14739.97
95	23.39	634.98	5.92	51983.04	13928.81	14739.97
96	23.39	640.23	5.52	48017.45	12866.24	13615.52
96	23.39	640.23	5.52	48017.45	12866.24	13615.52
97	23.39	645.30	5.52	47760.10	12797.28	13542.54
97	23.39	645.30	5.52	47760.10	12797.28	13542.54
98	23.39	650.37	5.52	47502.75	12728.32	13469.57
98	23.39	650.37	5.52	47502.75	12728.32	13469.57
99	23.39	655.44	5.52	47245.41	12659.37	13396.60
99	23.39	655.44	5.52	47245.41	12659.37	13396.60
100	23.39	660.51	5.52	46988.06	12590.41	13323.63
100	23.39	660.51	5.52	46988.06	12590.41	13323.63
101	23.39	665.58	5.52	46730.72	12521.46	13250.66
101	23.39	665.58	5.52	46730.72	12521.46	13250.66
102	23.39	670.65	5.52	46473.37	12452.50	13177.69
102	23.39	670.65	5.52	46473.37	12452.50	13177.69
103	23.39	675.72	5.52	46216.02	12383.55	13104.72
103	23.39	675.72	5.52	46216.02	12383.55	13104.72
104	23.39	680.79	5.52	45958.68	12314.59	13031.74
104	23.39	680.79	5.52	45958.68	12314.59	13031.74
105	23.39	685.86	5.52	45701.33	12245.63	12958.77
105	23.39	685.86	5.52	45701.33	12245.63	12958.77
106	23.39	690.93	5.52	45443.98	12176.68	12885.80
106	23.39	690.93	5.52	45443.98	12176.68	12885.80
107	23.39	696.00	5.52	45186.64	12107.72	12812.83
107	23.39	696.00	5.52	45186.64	12107.72	12812.83
108	23.39	701.07	5.52	44929.29	12038.77	12739.86
108	23.39	701.07	5.52	44929.29	12038.77	12739.86
109	23.39	706.13	5.52	44671.95	11969.81	12666.89
109	23.39	706.13	5.52	44671.95	11969.81	12666.89
110	23.39	711.20	5.52	44414.60	11900.86	12593.92
110	23.39	711.20	5.52	44414.60	11900.86	12593.92
111	23.39	716.27	5.52	44157.25	11831.90	12520.95
111	23.39	716.27	5.52	44157.25	11831.90	12520.95
112	23.39	721.34	5.52	43899.91	11762.94	12447.97
112	23.39	721.34	5.52	43899.91	11762.94	12447.97
113	23.39	726.41	5.52	43642.56	11693.99	12375.00
113	23.39	726.41	5.52	43642.56	11693.99	12375.00
114	23.39	731.48	5.52	43385.22	11625.03	12302.03
114	23.39	731.48	5.52	43385.22	11625.03	12302.03
115	23.39	736.55	5.52	43127.87	11556.08	12229.06

115	23.39	736.55	5.52	43127.87	11556.08	12229.06
116	23.39	741.62	5.52	42870.52	11487.12	12156.09
116	23.39	741.62	5.52	42870.52	11487.12	12156.09
117	23.39	746.69	5.52	42613.18	11418.17	12083.12
117	23.39	746.69	5.52	42613.18	11418.17	12083.12
118	23.39	751.76	5.52	42355.83	11349.21	12010.15
118	23.39	751.76	5.52	42355.83	11349.21	12010.15
119	23.39	756.83	5.52	42098.49	11280.26	11937.17
119	23.39	756.83	5.52	42098.49	11280.26	11937.17
120	23.39	761.90	5.52	41841.14	11211.30	11864.20
120	23.39	761.90	5.52	41841.14	11211.30	11864.20
121	23.39	766.97	5.52	41583.79	11142.34	11791.23
121	23.39	766.97	5.52	41583.79	11142.34	11791.23
122	23.39	772.02	5.48	41135.13	11022.13	11664.01
122	23.39	772.02	5.48	41135.13	11022.13	11664.01
123	23.39	777.05	5.48	41082.28	11007.96	11649.02
123	23.39	777.05	5.48	41082.28	11007.96	11649.02
124	23.39	782.08	5.48	41029.42	10993.80	11634.04
124	23.39	782.08	5.48	41029.42	10993.80	11634.04
125	51.89	787.08	8.03	34050.60	22067.07	23352.17
125	51.89	787.08	8.03	34050.60	22067.07	23352.17
126	51.89	792.03	8.03	31808.76	20772.75	21982.47
126	51.89	792.03	8.03	31808.76	20772.75	21982.47
127	51.89	796.98	8.03	29566.93	19478.42	20612.77
127	51.89	796.98	8.03	29566.93	19478.42	20612.77
128	51.89	801.94	8.03	27325.09	18184.10	19243.07
128	51.89	801.94	8.03	27325.09	18184.10	19243.07
129	51.89	806.89	8.03	25083.25	16889.77	17873.37
129	51.89	806.89	8.03	25083.25	16889.77	17873.37
130	51.89	811.85	8.03	22841.42	15595.45	16503.67
130	51.89	811.85	8.03	22841.42	15595.45	16503.67
131	51.89	816.80	8.03	20599.58	14301.12	15133.97
131	51.89	816.80	8.03	20599.58	14301.12	15133.97
132	51.89	821.75	8.03	18357.74	13006.80	13764.26
132	51.89	821.75	8.03	18357.74	13006.80	13764.26
133	51.89	826.71	8.03	16115.91	11712.47	12394.56
133	51.89	826.71	8.03	16115.91	11712.47	12394.56
134	51.89	831.66	8.03	13874.07	10418.15	11024.86
134	51.89	831.66	8.03	13874.07	10418.15	11024.86
135	51.89	836.62	8.03	11632.24	9123.82	9655.16
135	51.89	836.62	8.03	11632.24	9123.82	9655.16
136	51.89	841.57	8.03	9390.40	7829.50	8285.46
136	51.89	841.57	8.03	9390.40	7829.50	8285.46
137	51.89	846.52	8.03	7148.56	6535.17	6915.76
137	51.89	846.52	8.03	7148.56	6535.17	6915.76
138	51.99	851.80	9.09	5369.52	5828.09	6167.49
138	51.99	851.80	9.09	5369.52	5828.09	6167.49
139	51.99	857.40	9.09	2488.02	4164.45	4406.97
139	51.99	857.40	9.09	2488.02	4164.45	4406.97
140	51.99	861.66	4.76	129.90	1502.17	1589.65
140	51.99	861.66	4.76	129.90	1502.17	1589.65
141	51.99	864.59	4.76	417.99	241.32	255.38
141	51.99	864.59	4.76	417.99	241.32	255.38

Sum of the Resisting Forces = 1412451.89 (lbs)

Average Available Shear Strength = 1832.23(psf)

Sum of the Driving Forces = 1593935.10 (lbs)

Average Mobilized Shear Stress = 2067.65(psf)

Total length of the failure surface = 770.89(ft)

Factor of Safety Balance Check: FS = 0.88614

Janbu's Correction Factor (fo) = 1.0642

Janub's FS Corrected = 0.94303

*** SEISMIC SLOPE DISPLACEMENT DATA ***
(Note: kv is set = zero for displacement calculations)
Seismic Yield Coefficient (ky) = 0.13126(g)
Calculated Newmark Seismic Displacement = 0.000(ft)

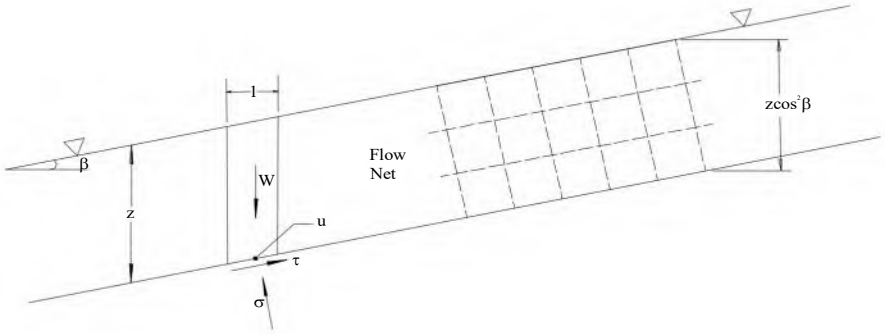
Average Elevation of Point of Application of kh on Sliding Mass = 223.595(ft)

Non-Symmetrical Sliding Resistance Has Been Specified
for Downhill Sliding.

**** END OF GEOSTASE OUTPUT ****

3H:1V SLOPE

INFINITE SLOPE CONDITION



ASSUMPTION

Depth of Saturation (ft), z (and steady seepage parallel to slope face)	4

SOIL PARAMETERS

Angle of Internal Friction, ϕ	24
Cohesion (psf), c	200
Saturated Unit Weight of Soil (pcf), γ_{sat}	120
Unit Weight of Water (pcf), γ_w	62.4
Slope Angle (3H:1V), β	18.43

CALCULATIONS

Normal Stress Along Failure Plane

$$\sigma = \gamma_{sat} * z * \cos^2 \beta \qquad \sigma = 432.025 \text{ lb/ft}^2$$

Shear Stress Along Failure Plane

$$\tau_d = \gamma_{sat} * z * \sin \beta * \cos \beta \qquad \tau_d = 143.967 \text{ lb/ft}^2$$

Pore Pressure Along Failure Plane

$$u = \gamma_w * z * \cos^2 \beta \qquad u = 224.653 \text{ lb/ft}^2$$

Resisting Shear Stress Along Failure Plane

$$\tau_r = c + (\sigma - u) \tan \phi \qquad \tau_r = 292.328 \text{ lb/ft}^2$$

FACTOR OF SAFETY

$$\textbf{FS} = \frac{\tau_r}{\tau_d}$$

FS = 2.03

LGC Geotechnical, Inc.	SURFICIAL STABILITY	Project Name : Project Number : Designed/Checked : Date:	Compass, San Juan Capistrano 22011-01 BTZ April, 2024

Appendix F
General Earthwork and Grading Specifications for Grading

General Earthwork and Grading Specifications for Rough Grading

1.0 General

1.1 Intent

These General Earthwork and Grading Specifications are for the grading and earthwork shown on the approved grading plan(s) and/or indicated in the geotechnical report(s). These Specifications are a part of the recommendations contained in the geotechnical report(s). In case of conflict, the specific recommendations in the geotechnical report shall supersede these more general Specifications. Observations of the earthwork by the project Geotechnical Consultant during the course of grading may result in new or revised recommendations that could supersede these specifications or the recommendations in the geotechnical report(s).

1.2 The Geotechnical Consultant of Record

Prior to commencement of work, the owner shall employ a qualified Geotechnical Consultant of Record (Geotechnical Consultant). The Geotechnical Consultant shall be responsible for reviewing the approved geotechnical report(s) and accepting the adequacy of the preliminary geotechnical findings, conclusions, and recommendations prior to the commencement of the grading.

Prior to commencement of grading, the Geotechnical Consultant shall review the "work plan" prepared by the Earthwork Contractor (Contractor) and schedule sufficient personnel to perform the appropriate level of observation, mapping, and compaction testing.

During the grading and earthwork operations, the Geotechnical Consultant shall observe, map, and document the subsurface exposures to verify the geotechnical design assumptions. If the observed conditions are found to be significantly different than the interpreted assumptions during the design phase, the Geotechnical Consultant shall inform the owner, recommend appropriate changes in design to accommodate the observed conditions, and notify the review agency where required.

The Geotechnical Consultant shall observe the moisture-conditioning and processing of the subgrade and fill materials and perform relative compaction testing of fill to confirm that the attained level of compaction is being accomplished as specified. The Geotechnical Consultant shall provide the test results to the owner and the Contractor on a routine and frequent basis.

1.3 The Earthwork Contractor

The Earthwork Contractor (Contractor) shall be qualified, experienced, and knowledgeable in earthwork logistics, preparation and processing of ground to receive fill, moisture-conditioning and processing of fill, and compacting fill. The Contractor shall review and accept the plans, geotechnical report(s), and these Specifications prior to commencement of grading. The Contractor shall be solely responsible for performing the grading in accordance with the project plans and specifications. The Contractor shall prepare and submit to the owner and the Geotechnical Consultant a work plan that indicates the sequence of earthwork grading, the number of “equipment” of work and the estimated quantities of daily earthwork

contemplated for the site prior to commencement of grading. The Contractor shall inform the owner and the
Geotechnical Consultant of changes in work schedules and updates to the work plan at least 24 hours in advance of such changes so that appropriate personnel will be available for observation and testing. The Contractor shall not assume that the Geotechnical Consultant is aware of all grading operations.

The Contractor shall have the sole responsibility to provide adequate equipment and methods to accomplish the earthwork in accordance with the applicable grading codes and agency ordinances, these Specifications, and the recommendations in the approved geotechnical report(s) and grading plan(s). If, in the opinion of the Geotechnical Consultant, unsatisfactory conditions, such as unsuitable soil, improper moisture condition, inadequate compaction, insufficient buttress key size, adverse weather, etc., are resulting in a quality of work less than required in these specifications, the Geotechnical Consultant shall reject the work and may recommend to the owner that construction be stopped until the conditions are rectified. It is the contractor's sole responsibility to provide proper fill compaction.

2.0 Preparation of Areas to be Filled

2.1 Clearing and Grubbing

Vegetation, such as brush, grass, roots, and other deleterious material shall be sufficiently removed and properly disposed of in a method acceptable to the owner, governing agencies, and the Geotechnical Consultant.

The Geotechnical Consultant shall evaluate the extent of these removals depending on specific site conditions. Earth fill material shall not contain more than 1 percent of organic materials (by volume). Nesting of the organic materials shall not be allowed.

If potentially hazardous materials are encountered, the Contractor shall stop work in the affected area, and a hazardous material specialist shall be informed immediately for proper evaluation and handling of these materials prior to continuing to work in that area.

As presently defined by the State of California, most refined petroleum products (gasoline, diesel fuel, motor oil, grease, coolant, etc.) have chemical constituents that are considered to be hazardous waste. As such, the indiscriminate dumping or spillage of these fluids onto the ground may constitute a misdemeanor, punishable by fines and/or imprisonment, and shall not be allowed. The contractor is responsible for all hazardous waste relating to his work. The Geotechnical Consultant does not have expertise in this area. If hazardous waste is a concern, then the Client should acquire the services of a qualified environmental assessor.

2.2 Processing

Existing ground that has been declared satisfactory for support of fill by the Geotechnical Consultant shall be scarified to a minimum depth of 6 inches. Existing ground that is not satisfactory shall be over-excavated as specified in the following section. Scarification shall continue until soils are broken down and free of oversize material and the working surface is reasonably uniform, flat, and free of uneven features that would inhibit uniform compaction.

2.3 Over-excavation

In addition to removals and over-excavations recommended in the approved geotechnical report(s) and the grading plan, soft, loose, dry, saturated, spongy, organic-rich, highly fractured or otherwise unsuitable ground shall be over-excavated to competent ground as evaluated by the Geotechnical Consultant during grading.

2.4 Benching

Where fills are to be placed on ground with slopes steeper than 5:1 (horizontal to vertical units), the ground shall be stepped or benched. Please see the Standard Details for a graphic illustration. The lowest bench or key shall be a minimum of 15 feet wide and at least 2 feet deep, into competent material as evaluated by the Geotechnical Consultant. Other benches shall be excavated a minimum height of 4 feet into competent material or as otherwise recommended by the Geotechnical Consultant. Fill placed on ground sloping flatter than 5:1 shall also be benched or otherwise over-excavated to provide a flat subgrade for the fill.

2.5 Evaluation/Acceptance of Fill Areas

All areas to receive fill, including removal and processed areas, key bottoms, and benches, shall be observed, mapped, elevations recorded, and/or tested prior to being accepted by the Geotechnical Consultant as suitable to receive fill. The Contractor shall obtain a written acceptance from the Geotechnical Consultant prior to fill placement. A licensed surveyor shall provide the survey control for determining elevations of processed areas, keys, and benches.

3.0 Fill Material

3.1 General

Material to be used as fill shall be essentially free of organic matter and other deleterious substances evaluated and accepted by the Geotechnical Consultant prior to placement. Soils of poor quality, such as those with unacceptable gradation, high expansion potential, or low strength shall be placed in areas acceptable to the Geotechnical Consultant or mixed with other soils to achieve satisfactory fill material.

3.2 Oversize

Oversize material defined as rock, or other irreducible material with a maximum dimension greater than 8 inches, shall not be buried or placed in fill unless location, materials, and placement methods are specifically accepted by the Geotechnical Consultant. Placement operations shall be such that nesting of oversized material does not occur and such that oversize material is completely surrounded by compacted or densified fill. Oversize material shall not be placed within 10 vertical feet of finish grade or within 2 feet of future utilities or underground construction.

3.3 Import

If importing of fill material is required for grading, proposed import material shall meet the requirements of the geotechnical consultant. The potential import source shall be given to the Geotechnical Consultant at least 48 hours (2 working days) before importing begins so that its suitability can be determined and appropriate tests performed.

4.0 Fill Placement and Compaction

4.1 Fill Layers

Approved fill material shall be placed in areas prepared to receive fill (per Section 3.0) in near-horizontal layers not exceeding 8 inches in loose thickness. The Geotechnical Consultant may accept thicker layers if testing indicates the grading procedures can adequately compact the thicker layers. Each layer shall be spread evenly and mixed thoroughly to attain relative uniformity of material and moisture throughout.

4.2 Fill Moisture Conditioning

Fill soils shall be watered, dried back, blended, and/or mixed, as necessary to attain a relatively uniform moisture content at or slightly over optimum. Maximum density and optimum soil moisture content tests shall be performed in accordance with the American Society of Testing and Materials (ASTM Test Method D1557).

4.3 Compaction of Fill

After each layer has been moisture-conditioned, mixed, and evenly spread, it shall be uniformly compacted to not less than 90 percent of maximum dry density (ASTM Test Method D1557). Compaction equipment shall be adequately sized and be either specifically designed for soil compaction or of proven reliability to efficiently achieve the specified level of compaction with uniformity.

4.4 Compaction of Fill Slopes

In addition to normal compaction procedures specified above, compaction of slopes shall be accomplished by backrolling of slopes with sheepsfoot rollers at increments of 3 to 4 feet in fill elevation, or by other methods producing satisfactory results acceptable to the Geotechnical Consultant. Upon completion of grading, relative compaction of the fill, out to the slope face, shall be at least 90 percent of maximum density per ASTM Test Method D1557.

4.5 Compaction Testing

Field tests for moisture content and relative compaction of the fill soils shall be performed by the Geotechnical Consultant. Location and frequency of tests shall be at the Consultant's discretion based on field conditions encountered. Compaction test locations will not necessarily be selected on a random basis. Test locations shall be selected to verify adequacy of compaction levels in areas that are judged to be prone to inadequate compaction (such as close to slope faces and at the fill/bedrock benches).

4.6 Frequency of Compaction Testing

Tests shall be taken at intervals not exceeding 2 feet in vertical rise and/or 1,000 cubic yards of compacted fill soils embankment. In addition, as a guideline, at least one test shall be taken on slope faces for each 5,000 square feet of slope face and/or each 10 feet of vertical height of slope. The Contractor shall assure that fill construction is such that the testing schedule can be accomplished by the Geotechnical Consultant. The Contractor shall stop or slow down the earthwork construction if these minimum standards are not met.

4.7 Compaction Test Locations

The Geotechnical Consultant shall document the approximate elevation and horizontal coordinates of each test location. The Contractor shall coordinate with the project surveyor to assure that sufficient grade stakes are established so that the Geotechnical Consultant can determine the test locations with sufficient accuracy. At a minimum, two grade stakes within a horizontal distance of 100 feet and vertically less than
5 feet apart from potential test locations shall be provided.

5.0 Subdrain Installation

Subdrain systems shall be installed in accordance with the approved geotechnical report(s), the grading plan, and the Standard Details. The Geotechnical Consultant may recommend additional subdrains and/or changes in subdrain extent, location, grade, or material depending on conditions encountered during grading. All subdrains shall be surveyed by a land surveyor/civil engineer for line and grade after installation and prior to burial. Sufficient time should be allowed by the Contractor for these surveys.

6.0 Excavation

Excavations, as well as over-excavation for remedial purposes, shall be evaluated by the Geotechnical Consultant during grading. Remedial removal depths shown on geotechnical plans are estimates only. The actual extent of removal shall be determined by the Geotechnical Consultant based on the field evaluation of exposed conditions during grading. Where fill-over-cut slopes are to be graded, the cut portion of the slope shall be made, evaluated, and accepted by the Geotechnical Consultant prior to placement of materials for construction of the fill portion of the slope, unless otherwise recommended by the Geotechnical Consultant.

7.0 Trench Backfills

7.1 The Contractor shall follow all OHSA and Cal/OSHA requirements for safety of trench excavations.

7.2 All bedding and backfill of utility trenches shall be done in accordance with the applicable provisions of Standard Specifications of Public Works Construction. Bedding material shall have a Sand Equivalent greater than 30 (SE>30). The bedding shall be placed to 1 foot over

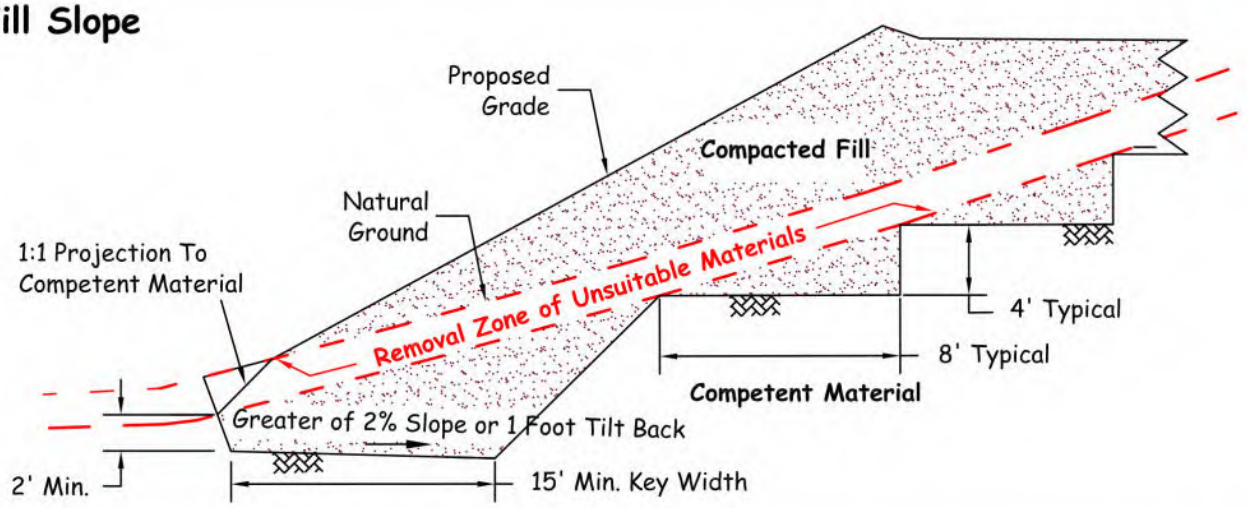
the top of the conduit and densified by jetting. Backfill shall be placed and densified to a minimum of 90 percent of maximum from 1 foot above the top of the conduit to the surface.

7.3 The jetting of the bedding around the conduits shall be observed by the Geotechnical Consultant.

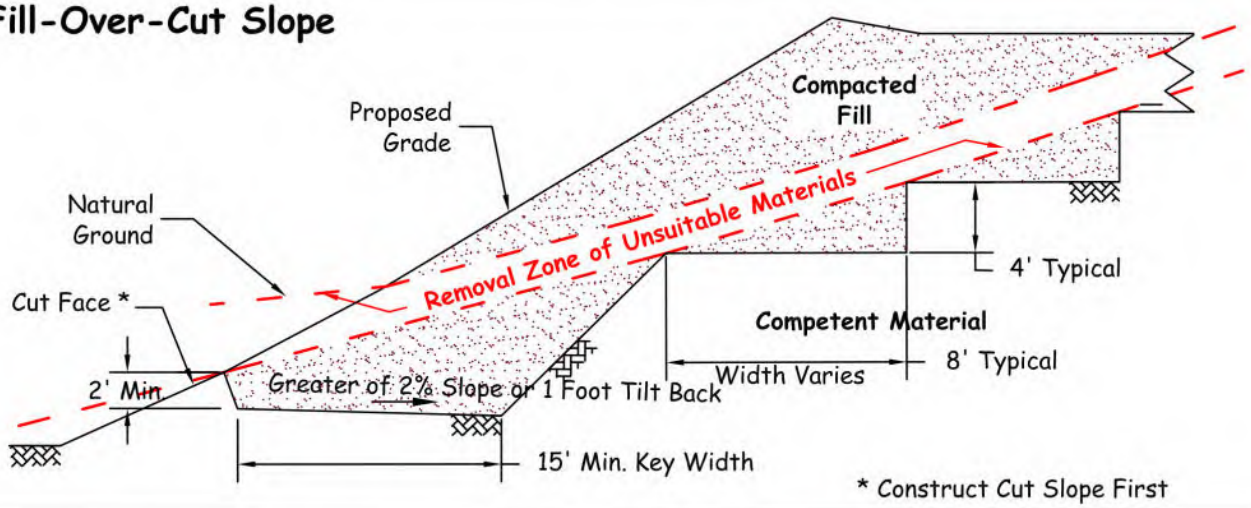
7.4 The Geotechnical Consultant shall test the trench backfill for relative compaction. At least one test should be made for every 300 feet of trench and 2 feet of fill.

7.5 Lift thickness of trench backfill shall not exceed those allowed in the Standard Specifications of Public Works Construction unless the Contractor can demonstrate to the Geotechnical Consultant that the fill lift can be compacted to the minimum relative compaction by his alternative equipment and method.

Fill Slope

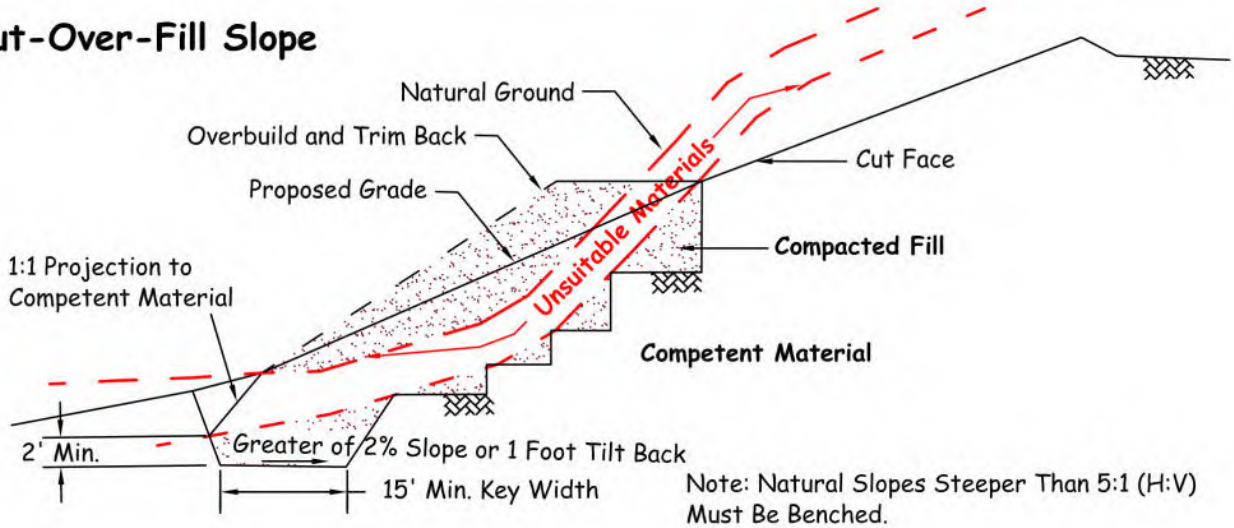


Fill-Over-Cut Slope



* Construct Cut Slope First

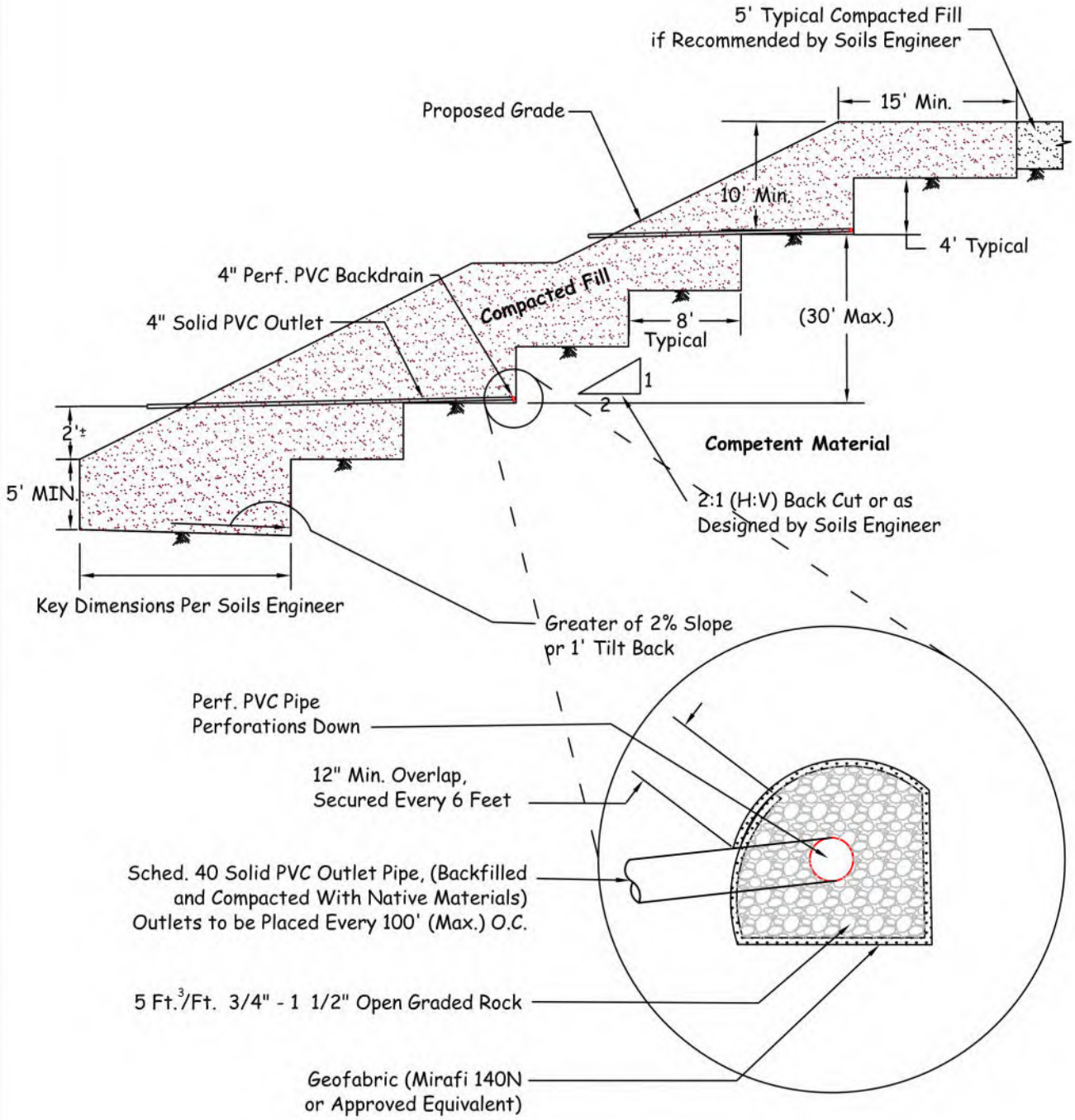
Cut-Over-Fill Slope



Note: Natural Slopes Steeper Than 5:1 (H:V) Must Be Benched.

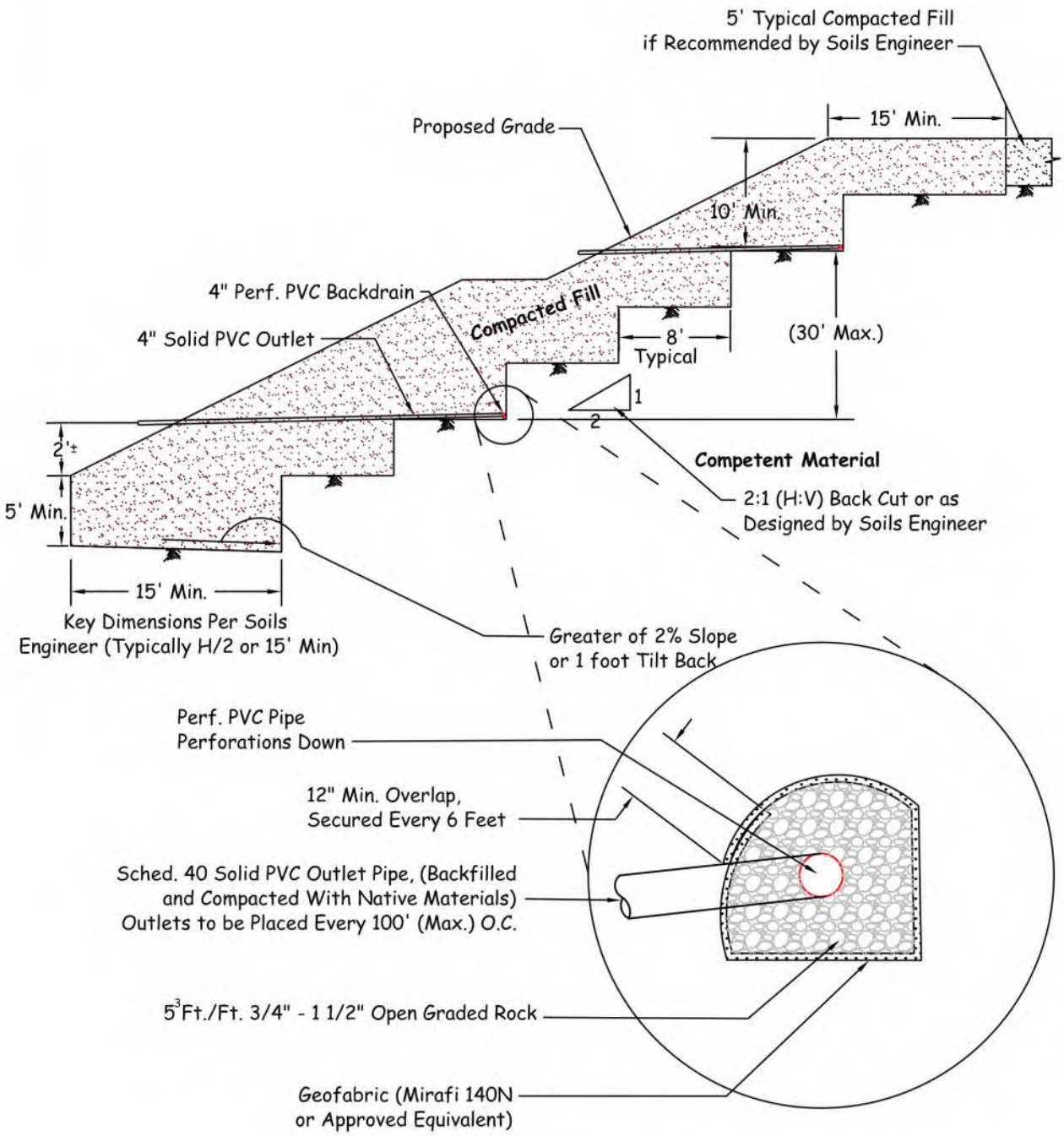
LGC Geotechnical, Inc.

KEYING AND BENCHING



LGC Geotechnical, Inc.

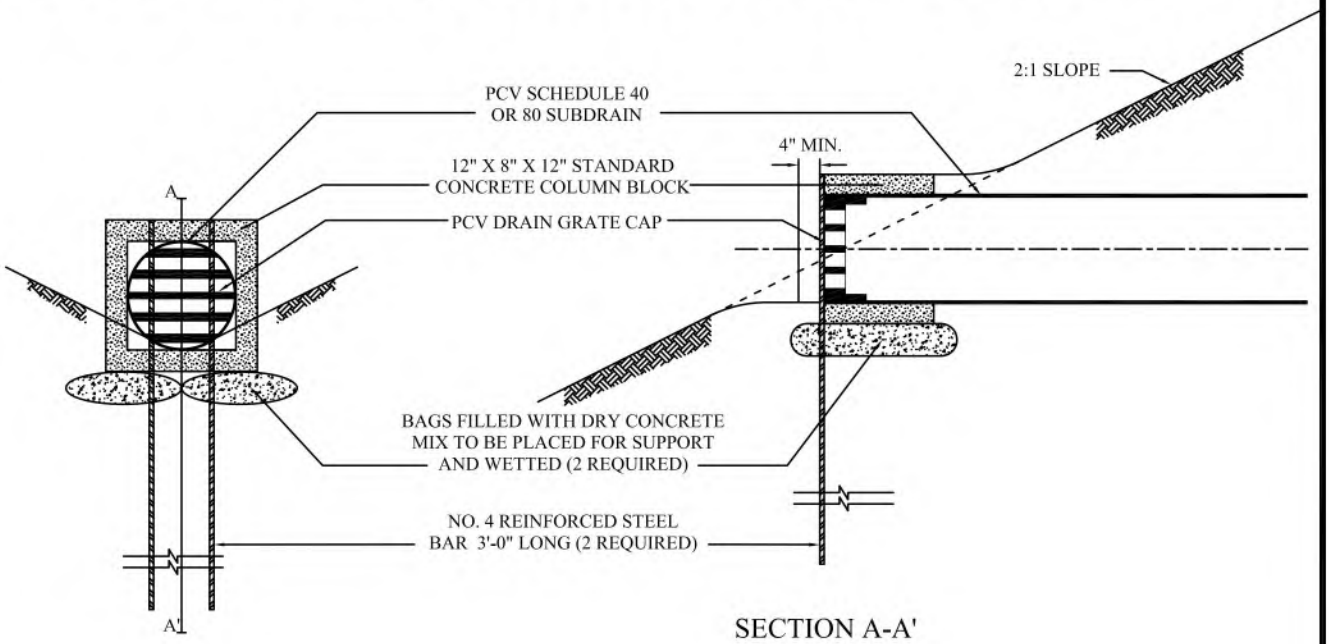
TYPICAL BUTTRESS DETAIL



LGC Geotechnical, Inc.

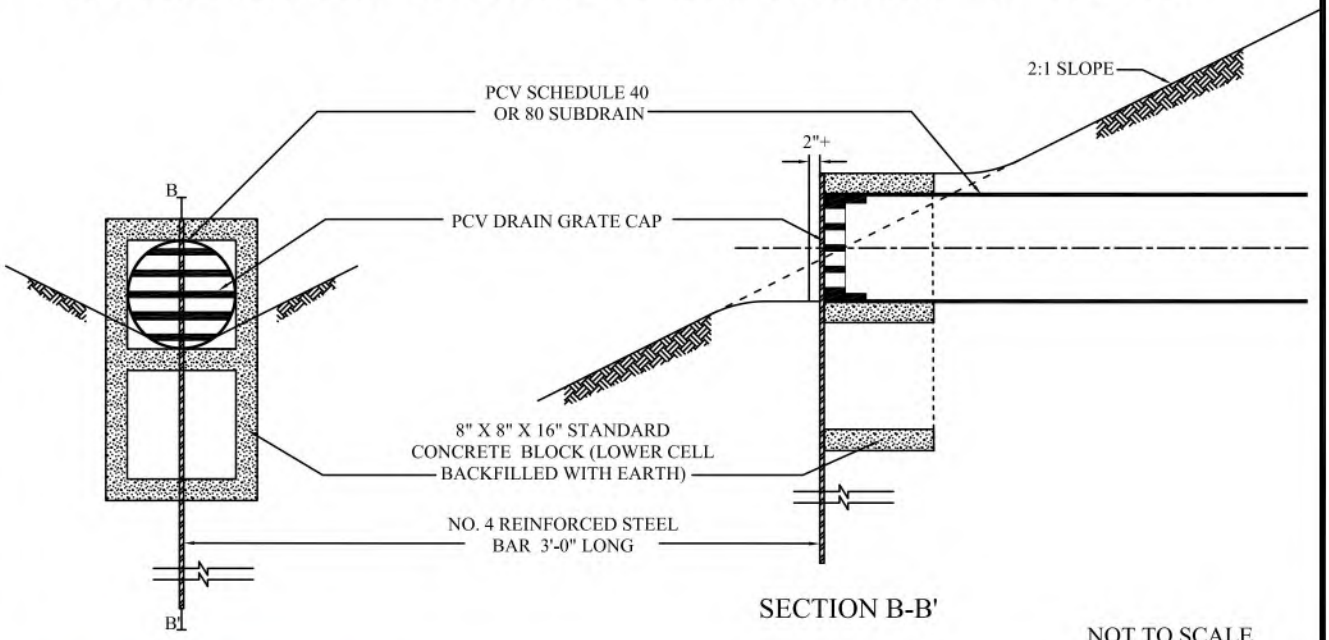
TYPICAL STABILIZATION FILL DETAIL

SUBDRAIN OUTLET MARKER -6" & 8" PIPE



SECTION A-A'

SUBDRAIN OUTLET MARKER -4" PIPE



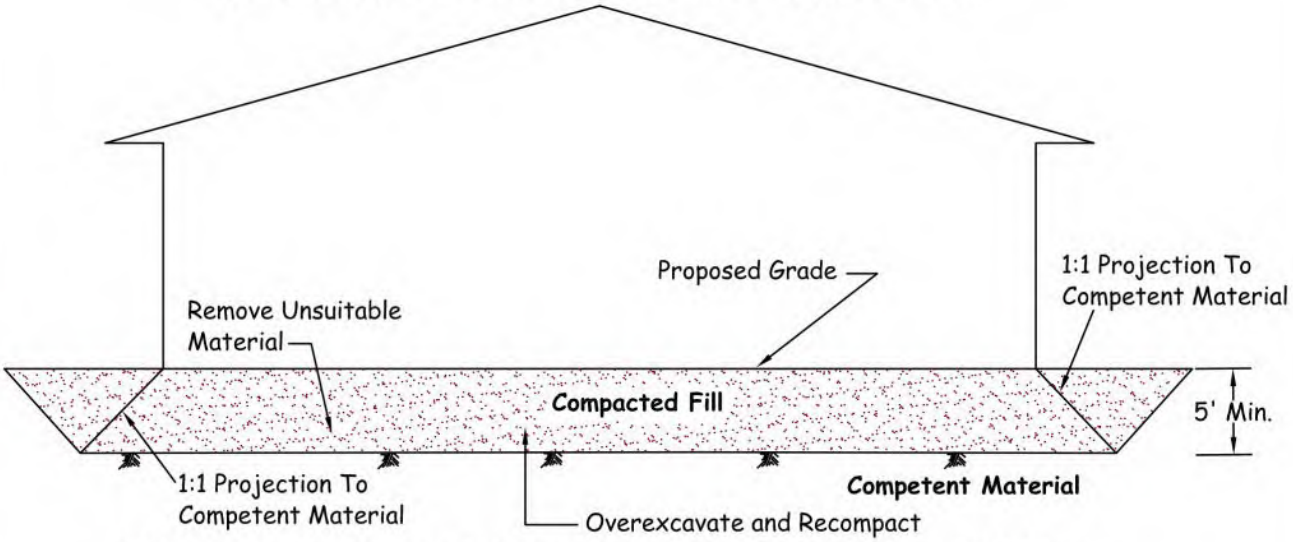
SECTION B-B'

NOT TO SCALE

LGC Geotechnical, Inc.

SUBDRAIN OUTLET MARKER DETAIL

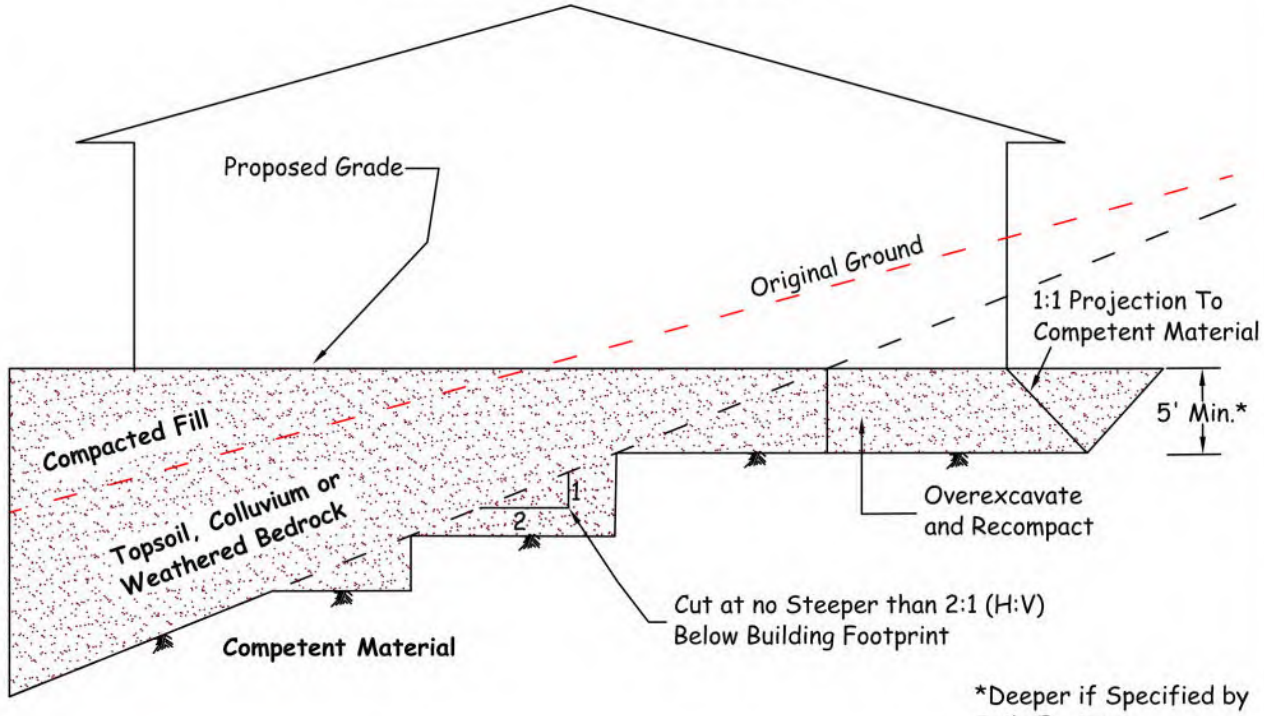
Cut Lot
(Exposing Unsuitable Soils at Design Grade)



Note 1: Removal Bottom Should be Graded With Minimum 2% Fall Towards Street or Other Suitable Area (as Determined by Soils Engineer) to Avoid Ponding Below Building

Note 2: Where Design Cut Lots are Excavated Entirely Into Competent Material, Overexcavation May Still be Required for Hard-Rock Conditions or for Materials With Variable Expansion Characteristics.

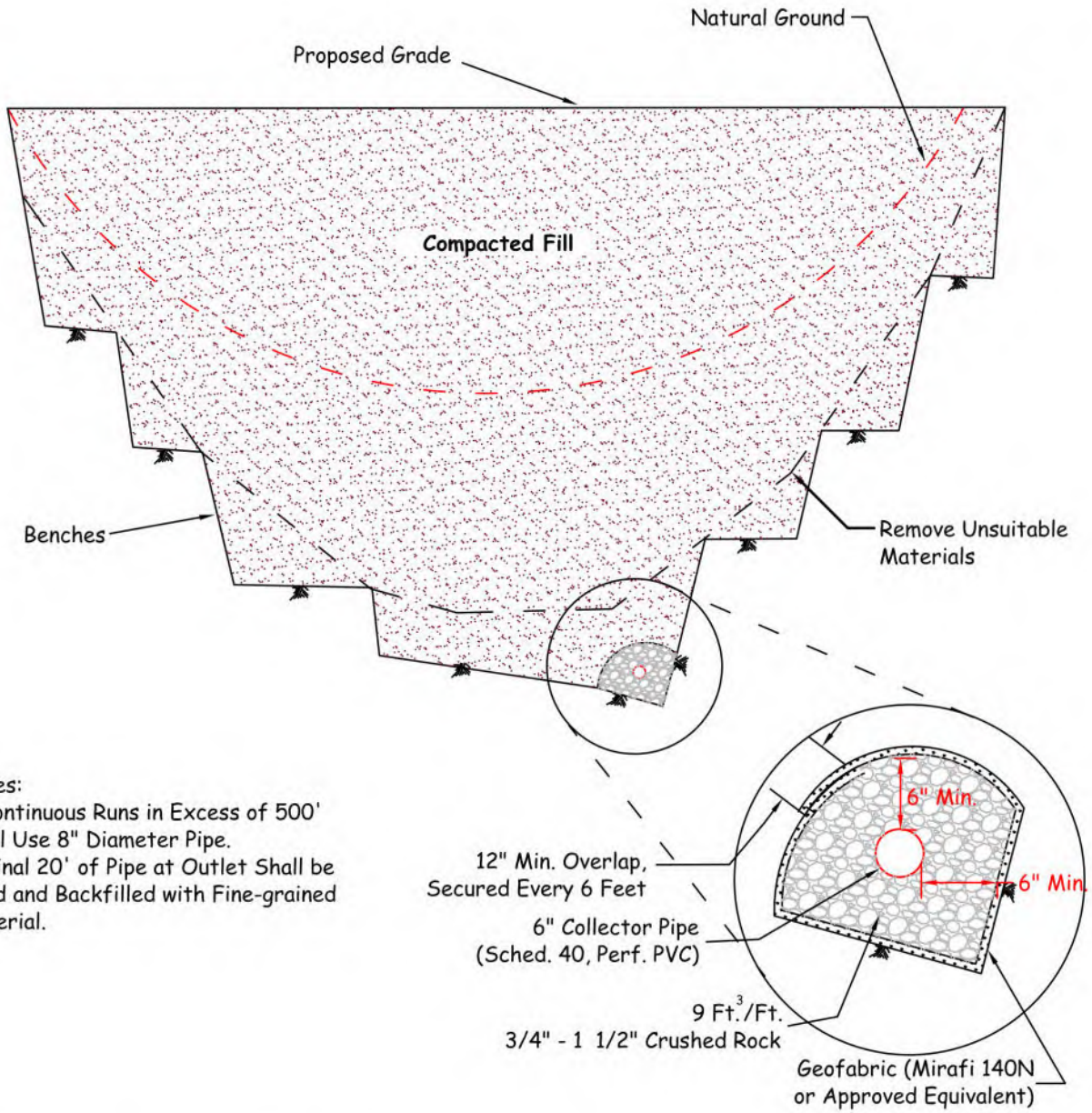
Cut/Fill Transition Lot



*Deeper if Specified by Soils Engineer

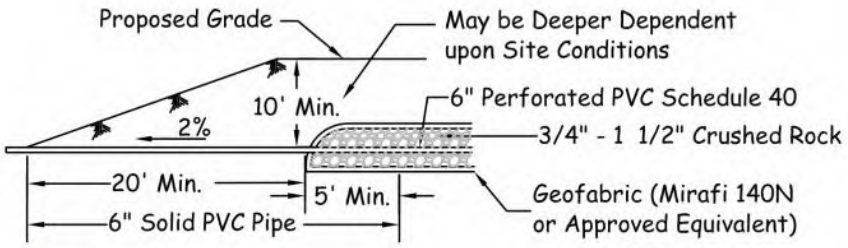
LGC Geotechnical, Inc.

CUT AND TRANSITION LOT OVEREXCAVATION DETAIL



Notes:
1) Continuous Runs in Excess of 500' Shall Use 8" Diameter Pipe.
2) Final 20' of Pipe at Outlet Shall be Solid and Backfilled with Fine-grained Material.

Proposed Outlet Detail



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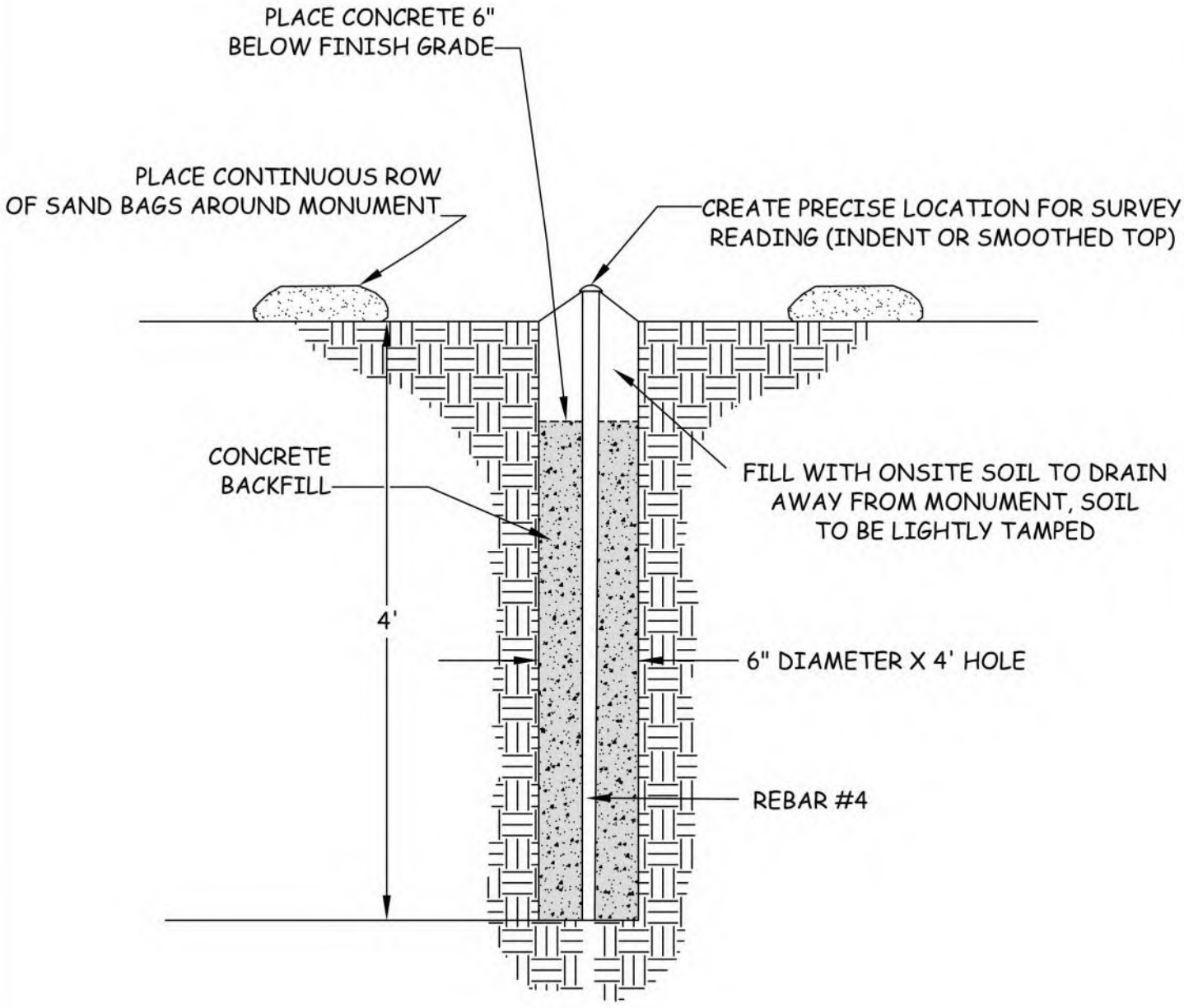
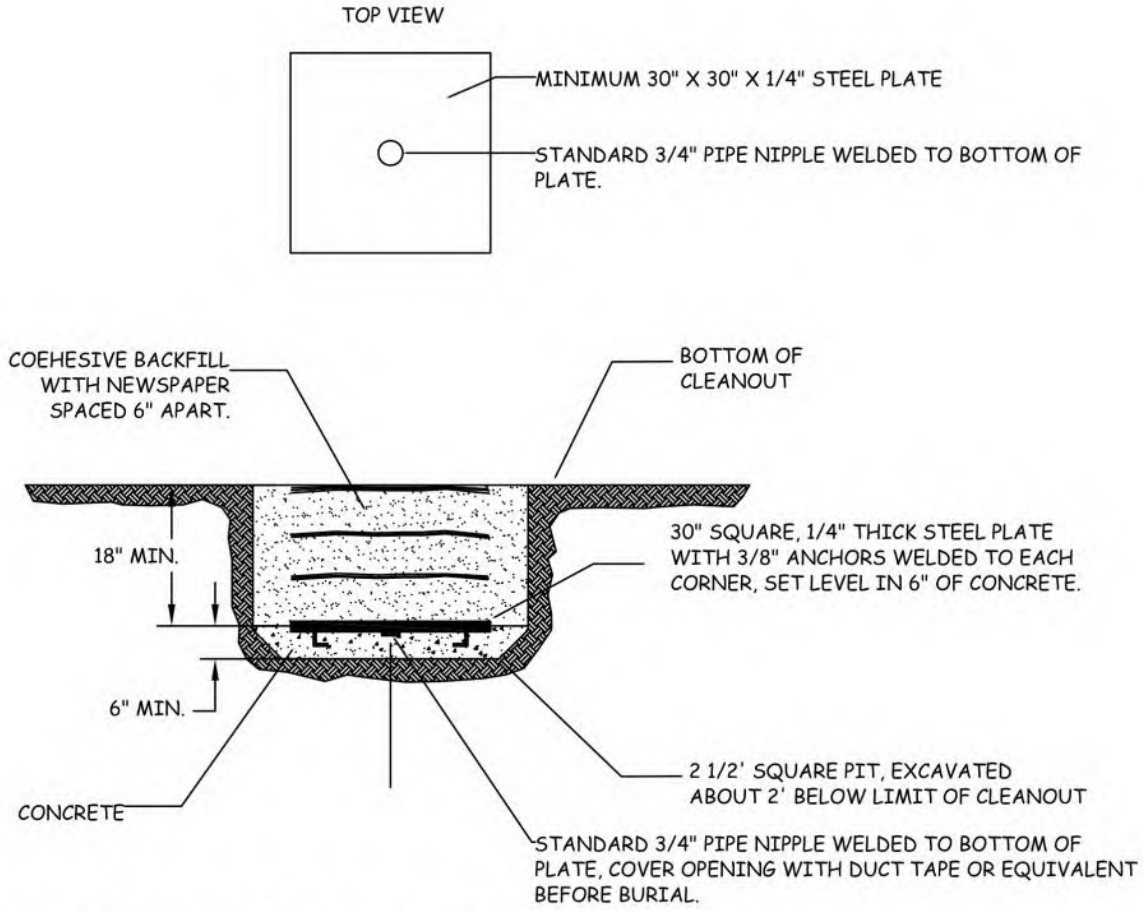
CANYON SUBDRAINS



NO CONSTRUCTION EQUIPMENT WITHIN 25 FEET
OF ANY INSTALLED SETTLEMENT MONUMENTS

LGC Geotechnical, Inc.

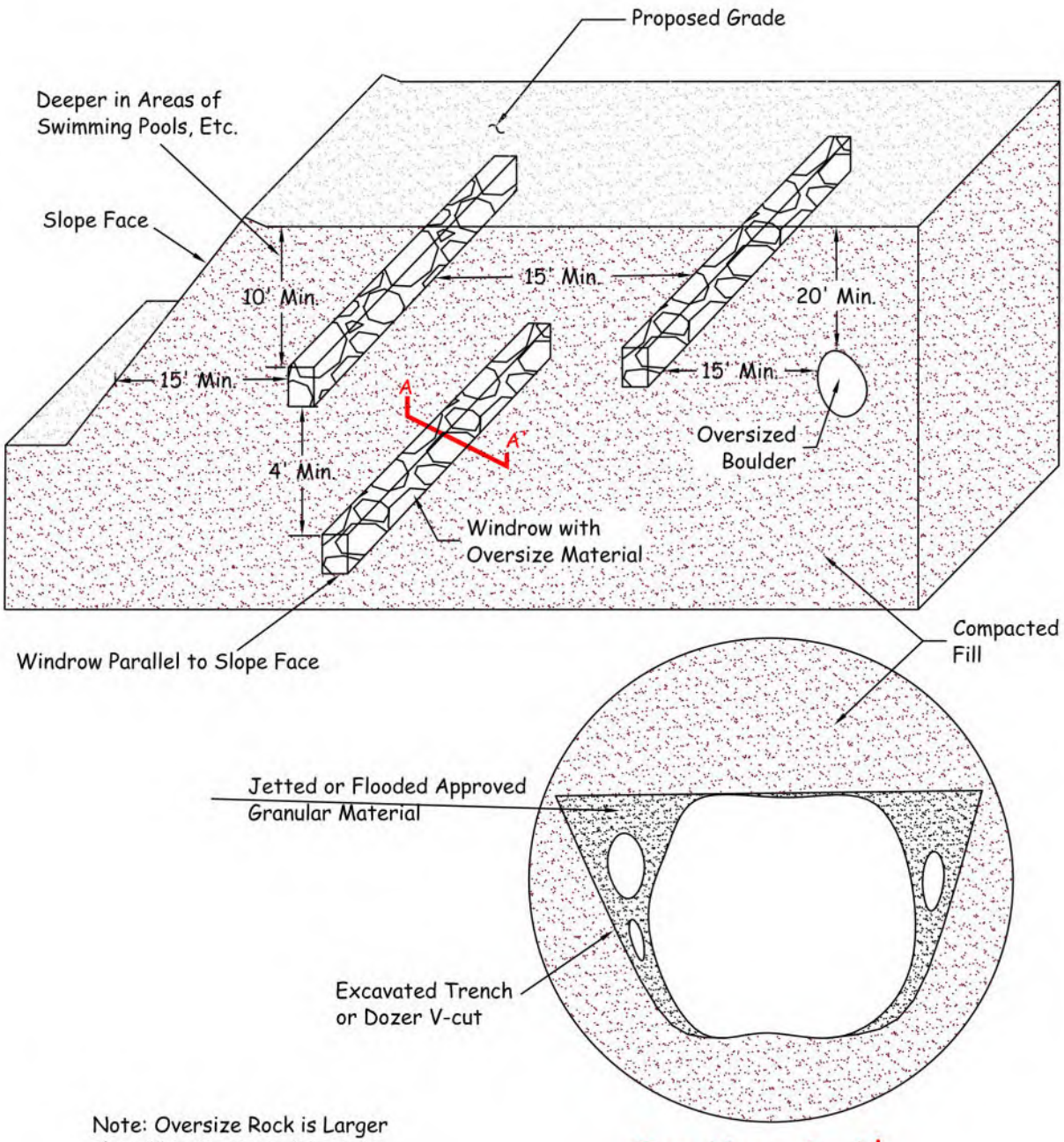
TYPICAL SURFACE SETTLEMENT MONUMENT



1. SURVEY FOR HORIZONTAL AND VERTICAL LOCATION TO NEAREST .01 INCH PRIOR TO BACKFILL USING KNOW LOCATIONS THAT WILL REMAIN INTACT DURING THE DURATION OF THE MONITORING PROGRAM. KNOW POINTS EXPLICITELY NOT ALLOWED ARE THOSE LOCATED ON FILL OR THAT WILL BE DESTROYED DURING GRADING.
2. IN THE EVENT OF DAMAGE TO SETTLEMENT PLATE DURING GRADING, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE GEOTECHNICAL ENGINEER AND SHALL BE RESPONSIBLE FOR RESTORING THE SETTLEMENT PLATES TO WORKING ORDER.
3. DRILL TO RECOVER AND ATTACH RISER PIPE.

LGC Geotechnical, Inc.

TYPICAL SETTLEMENT PLATE AND RISER

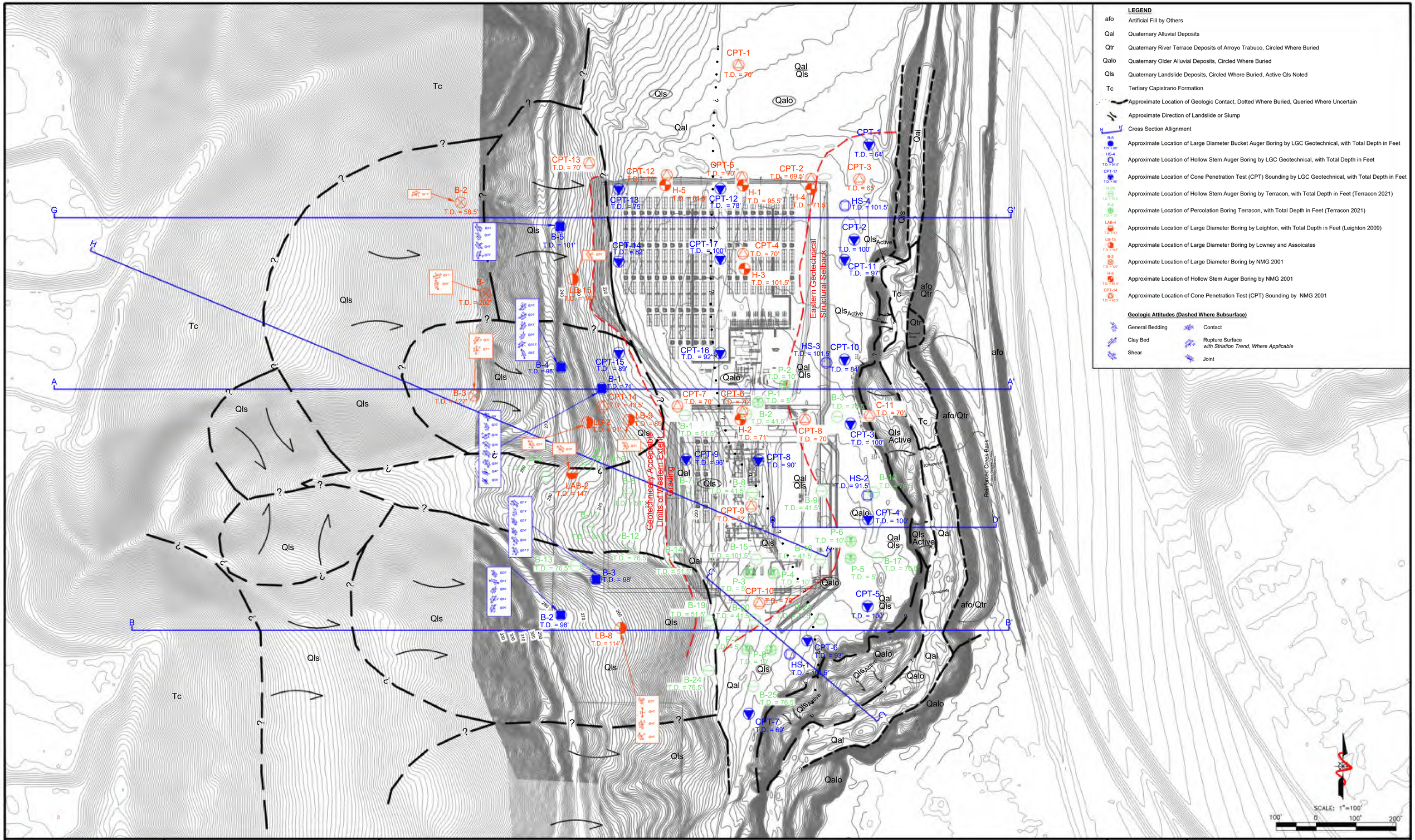


Note: Oversize Rock is Larger than 8" in Maximum Dimension.

Section A-A'

LGC Geotechnical, Inc.

OVERSIZE ROCK DISPOSAL DETAIL

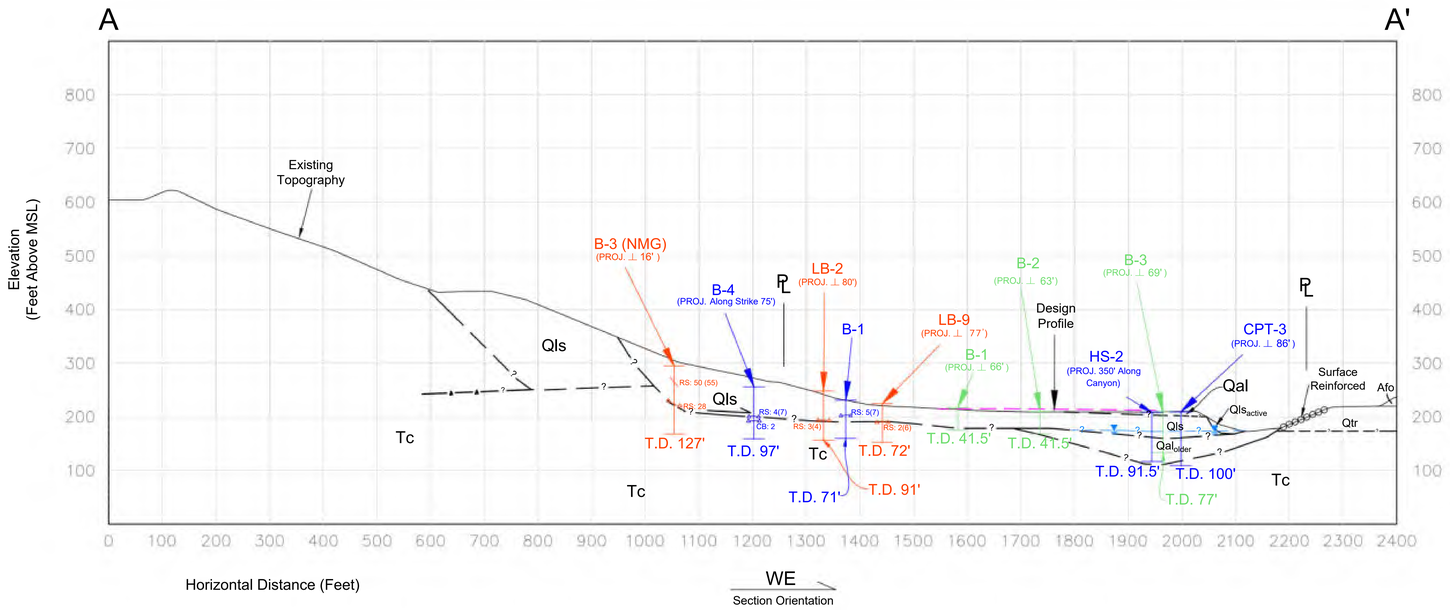


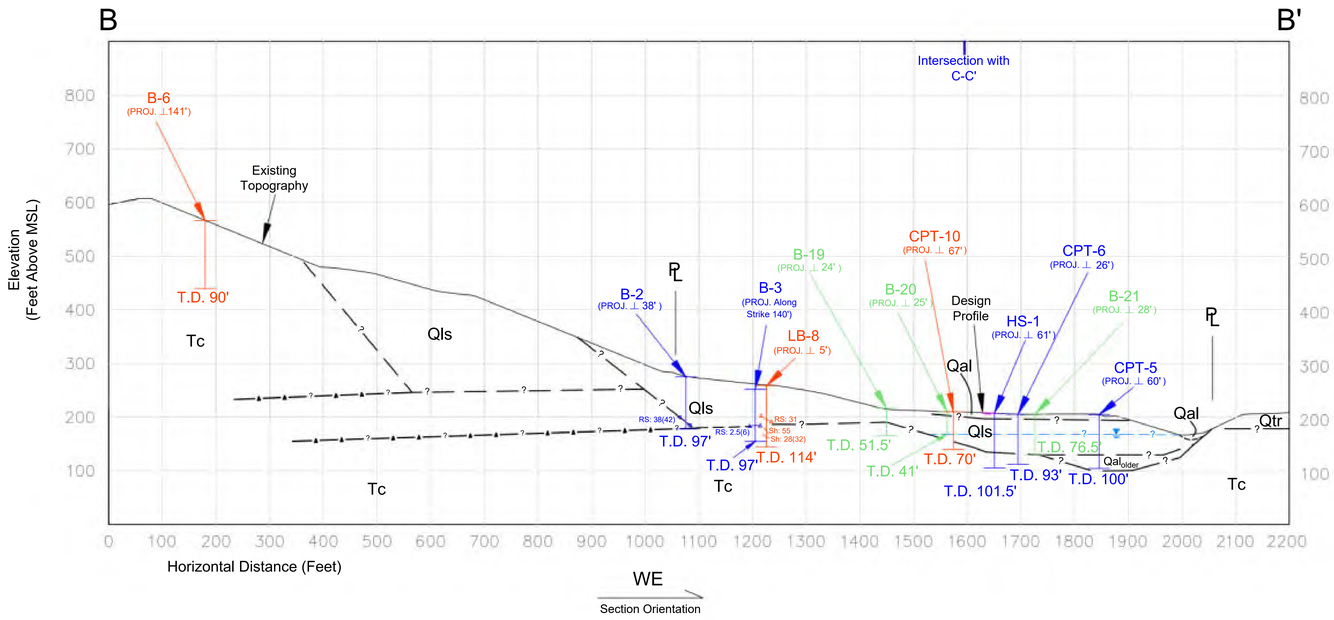
LGC Geotechnical, Inc.
131 Calle Iglesia, Ste. 200
San Clemente, CA 92672
TEL (949) 369-6141 FAX (949) 369-6142

Geotechnical Map

PROJECT NAME	Compass BESS - SJC
PROJECT NO.	22011-01
ENG. / GEOL.	BTZ / KBC
SCALE	1" = 100'
DATE	April 2024

SHEET 1 of 4





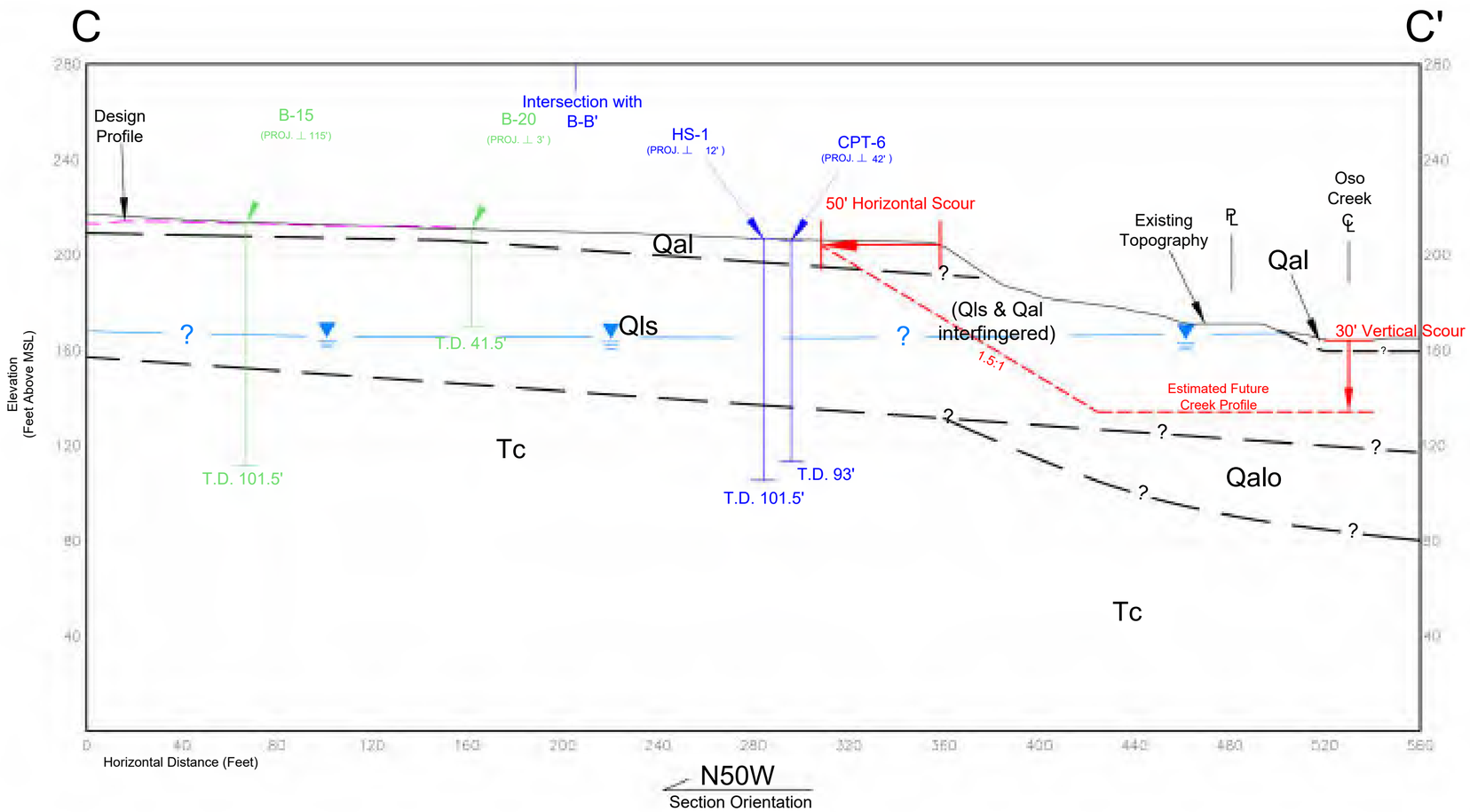
SCALE: 1"=100'

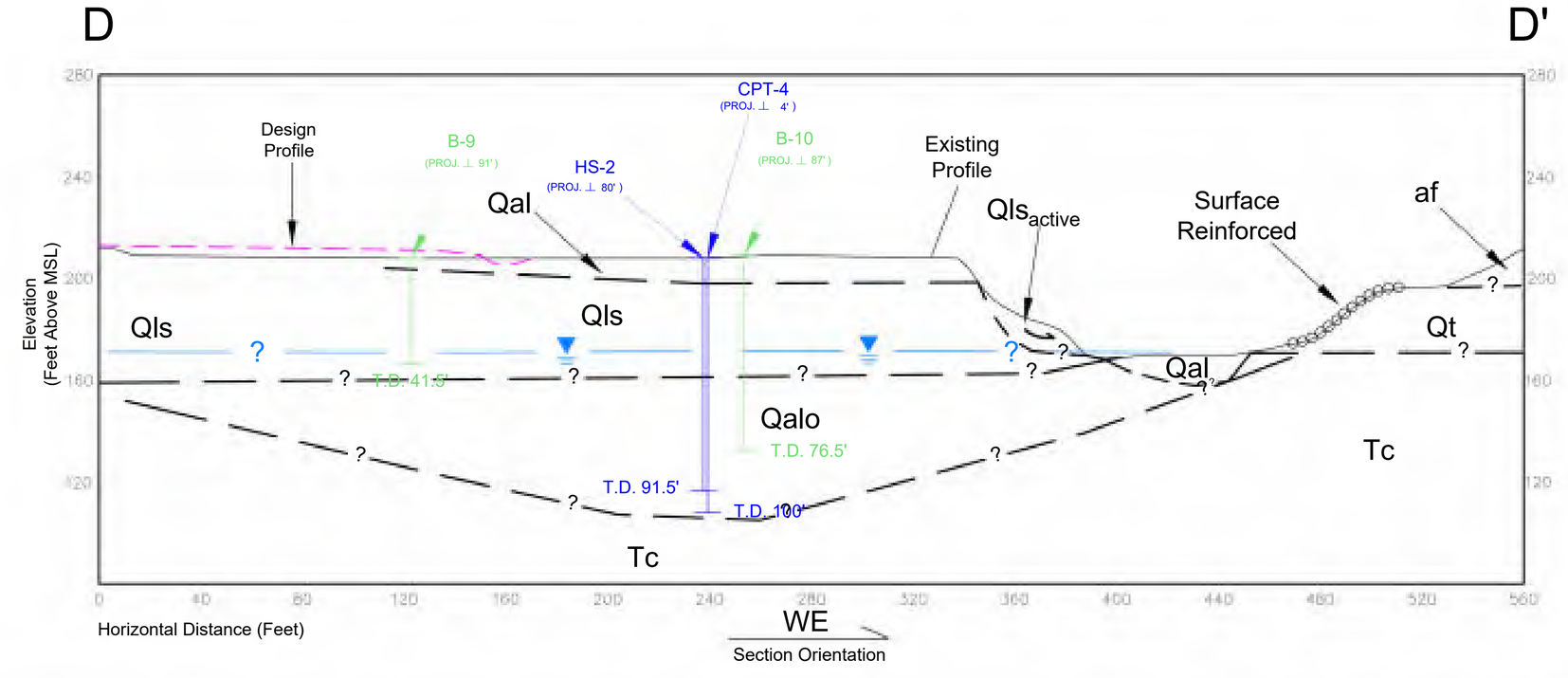
LGC Geotechnical, Inc.	LGC Geotechnical, Inc. 131 Calle Iglesia, Ste. 200 San Clemente, CA 92672 TEL (949) 369-6141 FAX (949) 369-6142

Cross Sections A-A' and B-B'

PROJECT NAME	Compass BESS - SJC
PROJECT NO.	22011-01
ENG. / GEOL.	BTZ / KBC
SCALE	1" = 100'
DATE	April 2024

SHEET 2 of 4





SCALE: 1"=40'

40' 0 40' 80'

LGC Geotechnical, Inc.

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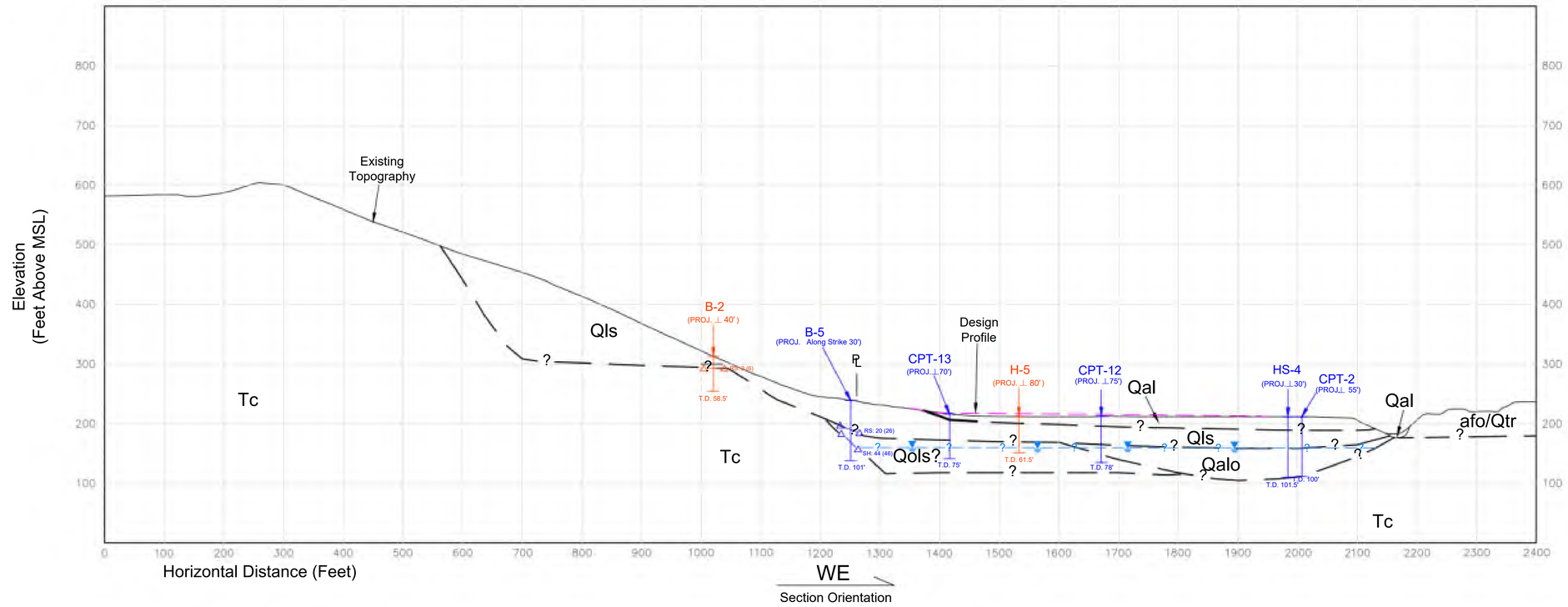
Cross Sections C-C' and D-D'

PROJECT NAME	Compass BESS - SJC
PROJECT NO.	22011-01
ENG. / GEOL.	BTZ / KBC
SCALE	1" = 40'
DATE	April 2024

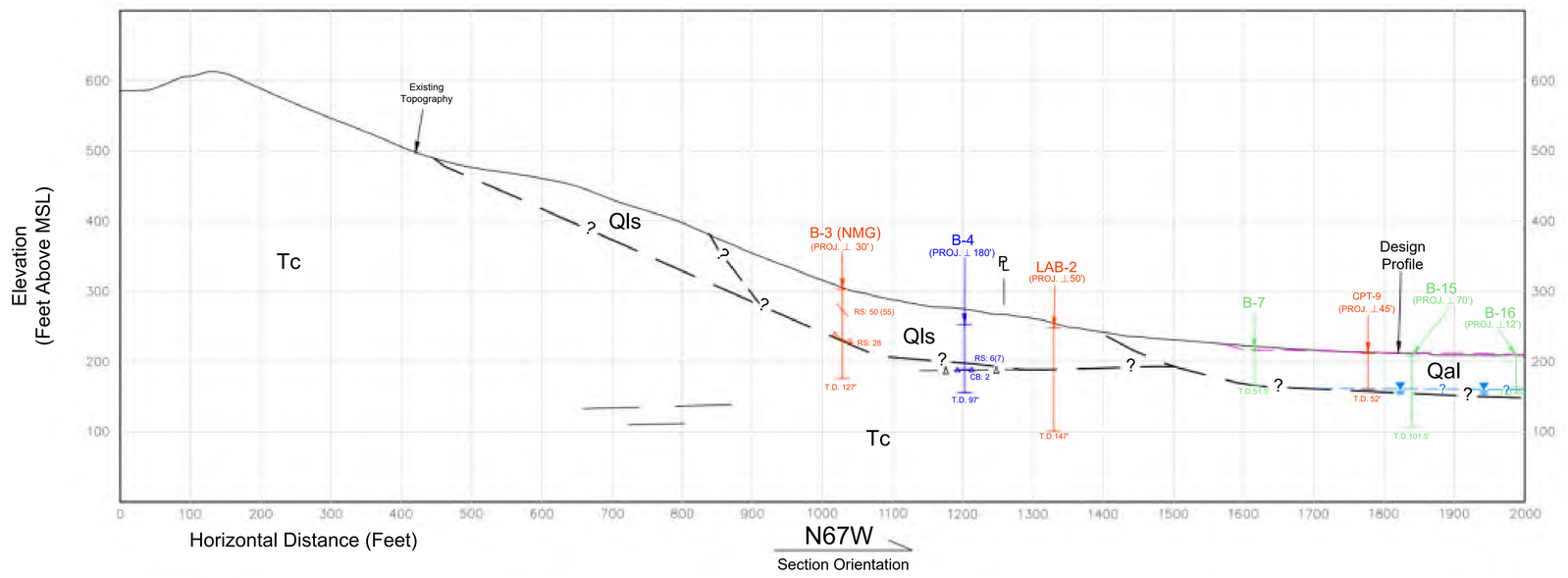
SHEET 3 of 4

G



G'

H



H'

SCALE: 1"=100'

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TEL (949) 369-6141 FAX (949) 369-6142

Cross Sections G-G' and H-H'

PROJECT NAME	Compass BESS - SJC
PROJECT NO.	22011-01
ENG. / GEOL.	BTZ / KBC
SCALE	1" = 100'
DATE	April 2024

SHEET 4 of 4

Appendix 4.4B

Response to Geotechnical Review Comments

October 7, 2025 Project No. 22011-02

Mr. Mike Prokes
EPC Services Company
10851 N. Canyon Highway, Suite 660
Phoenix, Arizona 85029

Subject: ***Response to Geotechnical Review Comments, Compass Battery Energy Storage Development, San Juan Capistrano, California***

Introduction

In accordance with your request, LGC Geotechnical, Inc. has prepared this response to geotechnical review comments regarding the proposed Compass Battery Energy Storage Development to be located in San Juan Capistrano, California. The provided California Energy Commission (CEC) review comments (CEC, 2025) are based on our geotechnical report for the project (LGC Geotechnical, 2024).

This response-report should be considered as part of the project design documents in conjunction with our previous geotechnical report (LGC Geotechnical, 2024). In the case of conflict, the recommendations contained herein should supersede those provided in our previous report. The remaining recommendations provided in our previous geotechnical report (LGC Geotechnical, 2024) remain valid and applicable.

Geotechnical Review Dated August 12, 2025

For your convenience, the pertinent geotechnical review comments have been repeated below along with our responses. A copy of the review sheet is provided in Appendix B.

Comment SDR GEO-1

"CEC staff requests the applicant provide more information on the conclusion that 1-inch of total seismic settlement and 0.5 inches of differential seismic settlement are anticipated. For example, CEC staff requests the applicant provide an expanded discussion of the liquefaction analysis, including the assumptions, methods, results, and conclusions."

"CEC staff notes that Appendix D: Liquefaction in LGC Geotechnical, Inc. (2024) contains results from 19 cone penetration tests at the project site. LGC Geotechnical, Inc.'s (2024) recommended mitigation for liquefaction hazards includes removing at least 5 feet of sediment below grade and beyond the

foundation footprint, replacing that sediment with appropriate compacted fill, and constructing the project on a mat foundation."

Response to Comment SDR GEO-1

In general, liquefaction is a concern for loose to medium dense saturated sandy soils with low fines contents (i.e., silts and clays). The vast majority of the alluvial soils tested for the site are clayey, or cohesive and not considered to be susceptible to liquefaction.

The current standard of practice is to perform liquefaction analysis as outlined in "Recommended Procedures for Implementing of DMG Special Publication 117A, Guidelines for Analyzing and Mitigating Liquefaction in California" (SCEC, 1999 & CGS, 2008). Liquefaction analysis was performed using the program CLiq (GeoLogismiki, 2022) using the 1998 NCEER method of analysis (Youd, et al, 1998). Cone Penetration Test (CPT) soundings provide a near continuous log of the materials encountered during the sounding and are a very useful tool in characterizing the subsurface conditions and evaluating liquefaction. Liquefaction analysis is required to be performed for the Maximum Considered Earthquake (MCE) per Section 11.8.3 of ASCE 7-22 which is adopted by the 2022 CBC. The MCE represents the most severe earthquake an area is expected to experience, characterized by a 2 percent probability of exceedance in 50 years which corresponds to a 2,475-year return period. Liquefaction analysis was performed based on the required seismic criteria (PGA_M equal to 0.56g) and corresponding earthquake magnitude of 6.7. Liquefaction analysis is required to be performed for the historic high groundwater level. Within the development area the estimated historic high groundwater is 5 feet below grade. While the vast majority of alluvial soils encountered are cohesive and not considered susceptible to liquefaction, the analysis indicates that site contains isolated typically relatively thin sandy layers that are susceptible to liquefaction. The estimated total settlement of 1-inch and differential settlement of ½ an inch over 50 feet due to liquefaction is in our opinion relatively minor.

Comment SDR GEO-2

"CEC staff requests the applicant further explain how the proposed mitigation would mitigate the potential direct and indirect impacts from liquefaction hazards to less than significant.

"According to the CGS Earthquake Zones of Required Investigation online mapping application, slopes adjacent to the project's western boundary are landslide zones (CDOC 2024). LGC Geotechnical, Inc. (2024) observed that the landslide complex that originates upslope of the project extends under the project site. LGC Geotechnical Inc. (2024) conducted a slope stability analysis and concluded the landslides to the west of the project site are stable. LGC Geotechnical, Inc.'s (2024) recommended mitigation for landslide hazards, including not cutting into the landslide complex, a setback from the landslide complex, and a program and guidelines for maintaining long-term slope stability (Dudek 2024aa). The investigation does not appear to evaluate if the landslide deposits that underlie the project site are stable."

Response to Comment SDR GEO-2

While we are not structural engineers, it has been our experience working on numerous projects in San Juan Capistrano and the southern California area that the estimated seismic total (1-inch) and

differential (1/2-inch over 50 feet) settlement is relatively minor and well within tolerable limits for proposed structures placed on a mat foundation. This differential settlement for the proposed structures is well within the requirements of ASCE 7-16 Table 12.13-3, "Differential Settlement Threshold" which has been adopted by the 2022 California Building Code (CBC). While not the governing agency, the City of Los Angeles allows up to 4 inches of total settlement and 2 inches of differential settlement for building placed on a mat foundation. In addition, existing soils will be removed a minimum depth of 5 feet below existing grade and replaced with compacted fill. Based on estimated seismic settlement, proposed earthwork removals and use of mat foundations, we consider potential direct and indirect impacts from liquefaction hazards to be less than significant.

The material underlying the relatively flat-lying, development area of the site has been depicted as landslide material underlying alluvial deposits and overlying older alluvial deposits (LGC Geotechnical, 2024). This is a simplified model of the materials encountered. The landslide materials encountered in this portion of the site consisted of landslide debris interfingered with alluvial deposits. This area of "landslide" material is not anticipated to include a basal rupture surface/slip plane. Therefore, it is not considered a slope stability concern for large block-type landslide failures that fail along a clay bed rupture surface. However, as discussed in our report (LGC Geotechnical, 2024); "Where exposed along the Oso Creek channel, some of the material was observed to have recently moved toward the stream bed as localized rotational failure, labeled as 'active.'" It is because of this concern for rotational failures of the western embankment of the Oso Creek Channel, as well as the potential for additional channel migration, that we recommended the development area of the site be setback from the western channel embankment (LGC Geotechnical, 2024). It should be noted that the setback recommendation is no longer considered applicable due to recent embankment landslides. Additional geotechnical evaluation (field evaluation, laboratory testing, analysis, etc.) is required. It should be further noted that it is our understanding that plans are being prepared for channel restoration of the adjacent portion of Oso Creek. Slope stability concerns for the western embankment will need to be evaluated and addressed as part of the channel restoration planning.

Comment SDR GEO-3

"CEC staff requests the applicant provide more information on the conclusion that the landslide complex is stable. For example, CEC staff requests the applicant provide an expanded discussion of LGC Geotechnical, Inc.'s 2024 slope stability analysis, including the assumptions, methods, results, and conclusions. CEC staff notes that Appendix E: Slope Stability Analysis in LGC Geotechnical, Inc. (2024) contains computational results for slope stability analyses on four geologic cross-sections. Also, CEC staff requests the applicant evaluate if the landslide deposits that underlie the project site are stable.

Response to Comment SDR GEO-3

The primary input parameters in slope stability analysis are the geological model as depicted on the geologic cross sections and the soil shear strength. The soil shear parameters are based on laboratory test results, published shear strength data (CGS, 2001) and engineering judgment. Laboratory testing of recent and previous field investigations as referenced in LGC Geotechnical, 2024 were evaluated. Laboratory testing for shear strength was primarily by direct shear and torsional ring shear. Direct shear and torsional ring shear are the primary laboratory tests for soil shear strength. For direct shear testing, driven undisturbed ring samples are obtained from the field evaluation. The samples are inundated with water and sheared at rate slow enough for drained conditions. Direct shear tests are

typically performed to a displacement of approximately 0.25 inch. Samples are typically run at three normal stresses and the corresponding shear strength values are obtained providing a composite friction angle and cohesion intercept. Torsional ring shear is used for landslide rupture clay surfaces and clay beds. A grab sample of the clay surface is obtained during the field investigation. The clay is placed in a torsional ring shear apparatus and various normal stress are performed until the residual strength envelope is obtained. The resulting value is a friction angle with a zero cohesion (intercept) value.

Slope stability analyses were performed based on the proposed design profile. The cross-sections were digitized and converted to a series of x and y coordinates to facilitate the analysis of the geologic cross section. Slope stability analysis was performed using the computer program GEOSTASE, version 4.30.31 (Gregory Geotechnical Software, 2019) for both static and pseudo-static (seismic) loading conditions. Potential rotational and block surfaces were analyzed using Bishop's Modified Method and Janbu's Simplified Method, respectively. These computational methods are the standard of practice for the southern California area and are referenced in Special Publication 117 (Blake, et al, 2002). Slope stability analysis indicates that the large landslide complex that underlies the western portion of the site and the ascending hillside to the west of the site is relatively stable with respect to the proposed development.

With respect to the western portion of the Oso Creek (eastern portion of the site) it is our understanding that plans are being prepared for channel restoration. Channel restoration should include mitigation of the slope stability concerns as discussed in response to above Comment SDR GEO-2.

Regarding landslide deposits that underlie the project site refer to our discussion provided in response to SDR GEO-2.

The section of our report entitled "Slope Maintenance Guidelines" (LGC Geotechnical, 2024) is meant to apply to onsite, slopes graded as part of proposed site development. The intent is to reduce the potential for surficial slope failures, slumps, excessive erosion, localized saturated zones, nuisance type water issues, etc. for the newly constructed slopes. It is not our intent to suggest that it is the responsibility of the developer of the subject site to maintain offsite slopes.

Comment SDR GEO-4

"CEC staff requests the applicant expand their explanation of how they propose to mitigate the potential direct and indirect impacts from landslide hazards to less than significant."

"CEC staff reviewed Geosyntec Consultants, Inc.'s (2021) geomorphic investigation of Oso Creek (2021) and Chang Consultants' sediment transport analysis of Oso Creek (2024). Both studies identify westward soil erosion on Oso Creek through vertical scour, lateral erosion, and bank collapse as a threat to the project site. (Dudek 2025i)."

"Geosyntec Consultants, Inc. (2021) calculated that, between 2014 and 2021, Oso Creek eroded laterally into its western bank, toward the proposed project site, at an average rate of 3 feet per year. Lateral erosion is episodic and varies longitudinally along the stream channel. At over 50 percent of measurement locations within Geosyntec Consultants, Inc.'s 2021s study reach, the maximum annual

lateral migration rate was less than or equal to 10 feet per year. At less than 5 percent of measurement locations, the maximum annual migration rate was 80 feet per year."

"Geosyntec Consultants, Inc. (2021) and Chang Consultants (2024) concluded that lateral erosion varies longitudinally along the stream channel. Chang Consultants concluded that most erosion occurs during high streamflow events, such as 5-year, 10-year, 25-year, and 100-year floods. (Dudek 2025i)."

"Geosyntec Consultants, Inc. (2021) proposed a retaining wall solution to protect the project site from soil erosion. Chang Consultants (2024) proposed setbacks to protect the project site from soil erosion (Dudek 2025i). LGS Geotechnical (2024) also proposed setbacks to protect the project site from soil erosion (Dudek 2024aa)."

"Application Section 4.4: Geologic Hazards and Resources stated that adherence to the recommendations provided in LGC Geotechnical (2024) would reduce potential impacts related to geologic hazards to less than significant during construction and operation. (Dudek 2024h, 2024aa)."

"Based on the results from Geosyntec Consultants, Inc. (2021) and Chang Consultants (2024) (Dudek 2025i), CEC staff concludes that Oso Creek would erode laterally into the project site during the life of the project. CEC staff concludes that setbacks are insufficient mitigation because setbacks would not alter the ongoing lateral erosion. As described in **SDR GEO-5, SDR GEO-6,** and **SDR WATER-1** (below), CEC staff are also concerned the level spreader would load stormwater onto the setback area and into Oso Creek's western streambank, which would likely destabilize the Oso Creek's western streambank and exacerbate soil erosion."

"LGC Geotechnical, Inc. (2024) does not recommend infiltrating stormwater runoff into the subsurface because that activity would likely decrease slope stability and exacerbate soil erosion. (Dudek 2024aa)

Response to Comment SDR GEO-4

See response to SDR GEO-2 & GEO-5.

Comment SDR GEO-5

"CEC staff requests the applicant explain how they propose to mitigate soil erosion's direct and indirect impacts on the proposed project."

"A feature labeled "Swale-1" and described as a small erosional feature in the updated aquatic resources delineation, was identified in the southeast portion of the project site (Dudek 2024yyy). This feature is also defined as a small linear topographical depression shown on the geotechnical map (Sheet 1 of 4) included in the geotechnical report prepared by LCG Geotechnical Inc., (2024) and is subparallel with the top of the Oso Creek's western embankment (Dudek 2024cc)."

"During a site visit on July 16, 2025, CEC staff observed that the Swale-1 structure was irregular in both in surface expression and depth (approximately 1 to 2.5 feet). There was no evidence of sedimentation or running water (CEC 2025s). Since the linear feature runs roughly parallel to Oso Creek's western embankment, is irregular, and shows no evidence of running water, CEC staff are concerned this might indicate a developing stream embankment slump that has occurred at several

nearby upstream locations. If this is a developing slump, there are implications that the level spreader proposed to disperse stormwater would further exacerbate the stability of the Oso Creek's western embankment."

Response to Comment SDR GEO-5

We understand that storm water management for the project is being revised by the project civil engineer. We further understand that the project will now include channel restoration of Oso Creek and stabilization of the western embankment of the creek.

Comment SDR GEO-6

"CEC staff requests the applicant evaluate the Swale-1 feature and the possible impacts from stormwater from the proposed level spreader structure."

"Based on closer scrutiny of the project design drawings (Dudek 2024pp) and the stormwater management plan (Dudek 2024ddd), as well as the various geotechnical reports (Dudek 2024aa, 2024bb, 2024cc, 2025i, 2025l, 2025m, 2025n, 2025o, 2025p, 2025q, 2025r, 2025s, 2025t, and 2025u), it appears that the proposed solution to disperse offsite stormwater runoff could exacerbate the condition of slumping along the Oso Creek's western streambank."

"As shown on the design drawings and described in the stormwater management plan, offsite stormwater runoff from two of the modeled drainage areas east of the project facility (West [17.01 acres] and South 27.70 acres]) would be captured by a drainage ditch along the west side of the facility and be diverted to a level spreader along the southeast corner of the project facility. The level spreader would discharge stormwater onto the bench above the west bank of Oso Creek (Dudek 2024pp, 2024ddd)."

"Modeling associated with the stormwater management plan indicates that outflow from the level spreader would have a volume of approximately 10.6 acre-feet (AF) flowing at a rate of 98.6 cubic feet per second (CFS) during a 25-year rain event, and a volume of 14.3 AF flowing at a rate of 134 CFS during a 100-year rain event (Dudek 2024ddd). The introduction of stormwater discharge in an area where slump block head scarps would be expected to form, could aggravate the condition of slumping along the west streambank of Oso Creek as described in various geotechnical reports (Dudek 2024aa, 2025i, 2025l, 2025m, 2025n, 2025o, 2025p, 2025q, 2025r, 2025s, 2025t, and 2025u)."

Response to Comment SDR GEO-6

We understand that storm water management for the project is being revised by the project civil engineer. We further understand that the project will now include channel restoration of Oso Creek and stabilization of the western embankment of the creek.

Comment SDR WATER-1

"CEC staff requests that the applicant explain how the level spreader could be modified to mitigate stormwater discharge that could impact Oso Creek streambank slumping, or develop an alternative to disperse offsite stormwater runoff."

Response to Comment SDR WATER-1

Response is the purview of the project civil engineer.

Should you have any questions regarding this report, please do not hesitate to contact this office.

Sincerely,

LGC Geotechnical, Inc.

Brad Zellmer, GE 2618
Director of Engineering

Kevin B. Colson, CEG 2210
Principal Geologist

KBC/BTZ/amm

Attachments: Appendix A – References
Appendix B – California Energy Commission Review Sheet dated August 12, 2025

Distribution: (1) Addressee (electronic copy)

Appendix A
References

APPENDIX A

References

American Society of Civil Engineers (ASCE), 2017, Minimum Design Loads for Buildings and Other Structures, ASCE/SEI 7-16, 2017.

_____, 2018, Standard 7-16, Minimum Design Loads for Buildings and Associated Criteria for Buildings and Other Structures, Supplement 1, effective: December 12, 2018.

Blake, T.F., Hollingsworth, R.A., and Stewart, J.P., 2002, Recommended Procedures for Implementation of DMG Special Publication 117-Guidelines for Analyzing and Mitigating Landslide Hazards in California: Committee organized through ASCE, Los Angeles Section Geotechnical Group, Document published by the Southern California Earthquake Center.

California Building Standards Commission, 2022, California Building Code (CBC), California Code of Regulations Title 24, Volumes 1 and 2, dated July 2022.

California Department of Conservation, California Geological Survey (CGS), California Geological Society Special Publication 117A: Guidelines for Evaluating and Mitigating Seismic Hazards in California.

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LGC Geotechnical, 2024**,** Geotechnical Evaluation Report, Compass Battery Energy Storage System, San Juan Capistrano, California, Project No. 22011-02, dated April 4, 2024.

California Department of Conservation, California Geological Survey (CGS), (Previously California Division of Mines and Geology [CDMG]), 2001, Seismic Hazard Evaluation of the San Juan Capistrano 7.5-Minute Quadrangle, Orange County, California, Open File Report 053, dated 2001.

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Southern California Earthquake Center (SCEC), 1999, "Recommended Procedure for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigation Liquefaction Hazards in California", Edited by Martin, G.R., and Lew, M., dated March 1999.

Youd, T.L., Idriss, I.M., Andrus, R.D., Arango, I., Castro, G., Christian, J.T., Dobry, R., Finn, W.D.L., Harder, L.F., Hynes, M.E., Ishihara, K., Koester, J.P., Liao, S., Marcuson III, W.F., Martin, G.R., Mitchell, J.K., Moriwaki, Y., Power, M.S., Roberston, P.K., Seed, R., and Stokoe, K.H., Liquefaction Resistance of Soils: Summary Report from the 1996 NCEER and 1998 NCEER/NSF Workshop on Evaluation of Liquefaction Resistance of Soils, ASCE, Journal of Geotechnical and Geoenvironmental Engineering, Vol. 127, October, pp 817-833.

Appendix B
California Energy Commission Review Sheet dated August 12, 2025

DOCKETED	
Docket Number:	24-OPT-02
Project Title:	Compass Energy Storage Project
TN #:	265548
Document Title:	Post Scoping Data Requests Set 2
Description:	Post Scoping Set 2 Data Requests for Compass Energy Storage Project (24-OPT-02)
Filer:	Yiming Luo
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	8/12/2025 1:05:31 PM
Docketed Date:	8/12/2025

August 12, 2025

Renée L. Robin, J.D.
Director, Permitting & Planning
Engie North America LLC
1360 Post Oak Blvd Ste 400
Houston, Texas 77056

Post Scoping Set 2 Data Requests for Compass Energy Storage Project (24-OPT-02)

Dear Renée L. Robin, J.D.,

Pursuant to Public Resources Code section 25545.4(d) and California Code of Regulations, title 20, section 1878(a), the California Energy Commission staff is asking for the information specified in the enclosed data requests, which is necessary for a complete staff analysis of biological resources, geologic hazards, and water resources for the Compass Energy Storage Project under the California Environmental Quality Act (CEQA). These biological resources data requests are in response to the comment letter from California Department of Fish and Wildlife (CDFW) on the Notice of Preparation of a Draft Environmental Impact Report for the Compass Energy Storage Project, SCH No. 2025050184; Orange County, CA (TN 263799).

The geologic hazards and water resources data requests are based on CEC staff analysis and in response to comments received during the Informational and Environmental Scoping Meeting (TN 264429) and written comments from the Orange County Transportation Authority, Notice of Preparation of a Draft Environmental Impact Report – Compass Energy Storage Project – Docket Number 24-OPT-02 (TN 263660). These geological hazards requests are in addition to the historic geotechnical studies identified at the informational meeting, requested by staff, and filed by the applicant into the project docket on July 2, 2025.

Pursuant to Public Resources Code section 25545.4, responses to the data requests shall be submitted within 30 days. If you are unable to provide the information requested or believe that additional time will be needed to provide a response, please send written notice to me within 10 days of receipt of this letter.

If you have any questions, please email the CEQA project manager, at renee.longman@energy.ca.gov.

Sincerely,

Drew Bohan
Executive Director

Enclosure:

Supplemental NOP Data Requests Set 2

Supplemental NOP Data Requests Set 2 - All Topics

BIOLOGICAL RESOURCES

CEC staff reviewed the comment letter on the Notice of Preparation of a Draft Environmental Impact Report for the Compass Energy Storage Project provided by the California Department of Fish and Wildlife (CDFW) (CDFW 2025a). The CDFW comment letter indicates that up-to-date visual surveys should be conducted for southwestern pond turtles *(Actinemys pallida*), a California Species of Special Concern and a candidate for listing under the federal Endangered Species Act.

During a site visit conducted on May 21, 2024 with the applicant, the applicant's biologists, CDFW, and CEC staff, turtles were observed within the creek adjacent to the site. While the turtles appeared to be pond turtle, CEC and CDFW staff seeks to confirm if these are the southwestern pond turtles or a non-native species. Although work is not proposed to be conducted in the creek itself, this species is routinely found in upland areas for aestivation and nesting and therefore could be impacted during construction of the project.

> **SDR BIO-3.** CEC staff requests that the applicant complete visual surveys following the Western Pond Turtle Visual Survey Protocol for the Southcoast Ecoregion (USGS 2006) to confirm presence/absence of southwestern pond turtles. The surveys should be conducted as soon as possible to ensure this species is accurately addressed in the Staff Assessment. Please provide a survey report that meets the standards of the visual survey guidance.

GEOLOGIC HAZARDS and WATER RESOURCES

CEC staff has identified potentially significant geologic hazards associated with liquefaction, landslides, and soil erosion. Staff has also identified potential geologic hazards associated with expansive soils and compressible soils. Oral comments submitted during the Informational and Environmental Scoping Meeting, and written comments from the Orange County Transportation Authority confirmed these concerns. Two studies that the applicant performed of Oso Creek, which were docketed on June 27, 2025, and a site visit that CEC staff conducted on July 16, 2025 (CEC 2025s) also confirmed these concerns. In the supplementary data requests below, CEC staff requests additional information related to mitigation of geologic hazards.

Section 4.4: Geologic Hazards and Resources of the project application stated that potential direct and indirect impacts associated with geologic hazards would be mitigated to less than significant (Dudek 2024h). Specifically, the application (Dudek 2024h) stated that project construction and operation would mitigate geologic hazards through grading, construction, and design recommendations in the applicant's geotechnical investigation, LGC Geotechnical, Inc. (2024). CEC staff reviewed the Geotechnical Evaluation Report prepared by LGC Geotechnical, Inc. for the project site

(2024) which is included in application Appendix 4.4, Dudek (2024aa, 2024bb, and 2024cc).

CEC staff reviewed Geosyntec Consultants, Inc.'s geomorphologic analysis of Oso Creek (2021) and Chang Consultants sedimentary transport analysis of Oso Creek (2024) completed for the proposed project. Note, both studies are compiled in Dudek (2025i) and referenced by LGC Geotechnical, Inc. (2024) (Dudek 2024aa).

In addition, CEC staff reviewed the following prior geotechnical investigations that were either conducted at the site by the applicant for the proposed project or for earlier projects. Terracon Consultants, Inc. (2021) completed a geotechnical investigation for the applicant. Terracon Consultants, Inc. (2021) is compiled in Dudek (2025i).

Leighton and Associates, Inc. (2009) completed a geotechnical investigation for an earlier project at the same site. Leighton and Associates, Inc. (2009) included results from subsurface investigations conducted by Lowney and Associates in 2001 for an earlier project. Leighton and Associates, Inc. (2009) is compiled in Dudek (2025m, 2025n, 2025o, 2025p, 2025q, 2025r, 2025s, 2025t, and 2025u).

NMG Geotechnical (2001) completed a geotechnical investigation for an earlier project and is compiled in Dudek (2025l).

According to the CGS Earthquake Zones of Required Investigation online mapping application, the project is in a liquefaction zone (CDOC 2024). LGC Geotechnical, Inc.'s geotechnical investigation (2024) sampled and evaluated subsurface soils and sediments for liquefaction potential. The study observed shallow groundwater, about 5 feet below the ground surface. The investigation concluded that alluvial soils at the project site are cohesive and not considered susceptible to liquefaction. The investigation also concluded that relatively thin sandy layers up to 50 feet below the ground surface are susceptible to liquefaction. The investigation calculated there is potential for 1-inch of total seismic settlement and 0.5 inches of differential seismic settlement at the project site. The investigation does not appear to state if the landslide deposits that underlie the project site are cohesive or susceptible to liquefaction.

SDR GEO-1. CEC staff requests the applicant provide more information on the conclusion that 1-inch of total seismic settlement and 0.5 inches of differential seismic settlement are anticipated. For example, CEC staff requests the applicant provide an expanded discussion of the liquefaction analysis, including the assumptions, methods, results, and conclusions.

CEC staff notes that Appendix D: Liquefaction in LGC Geotechnical, Inc. (2024) contains results from 19 cone penetration tests at the project site. LGC Geotechnical, Inc.'s (2024) recommended mitigation for liquefaction hazards includes removing at least 5 feet of sediment below grade and beyond the

foundation footprint, replacing that sediment with appropriate compacted fill, and constructing the project on a mat foundation.

SDR GEO-2. CEC staff requests the applicant further explain how the proposed mitigation would mitigate the potential direct and indirect impacts from liquefaction hazards to less than significant.

According to the CGS Earthquake Zones of Required Investigation online mapping application, slopes adjacent to the project's western boundary are landslide zones (CDOC 2024). LGC Geotechnical, Inc. (2024) observed that the landslide complex that originates upslope of the project extends under the project site. LGC Geothechnical Inc. (2024) conducted a slope stability analysis and concluded the landslides to the west of the project site are stable. LGC Geotechnical, Inc.'s (2024) recommended mitigation for landslide hazards, including not cutting into the landslide complex, a setback from the landslide complex, and a program and guidelines for maintaining long-term slope stability (Dudek 2024aa). The investigation does not appear to evaluate if the landslide deposits that underlie the project site are stable.

SDR GEO-3. CEC staff requests the applicant provide more information on the conclusion that the landslide complex is stable. For example, CEC staff requests the applicant provide an expanded discussion of LGC Geotechnical, Inc.'s 2024 slope stability analysis, including the assumptions, methods, results, and conclusions. CEC staff notes that Appendix E: Slope Stability Analysis in LGC Geotechnical, Inc. (2024) contains computational results for slope stability analyses on four geologic cross-sections. Also, CEC staff requests the applicant evaluate if the landslide deposits that underlie the project site are stable.

SDR GEO-4. CEC staff requests the applicant expand their explanation of how they propose to mitigate the potential direct and indirect impacts from landslide hazards to less than significant.

CEC staff reviewed Geosyntec Consultants, Inc.'s (2021) geomorphic investigation of Oso Creek (2021) and Chang Consultants' sediment transport analysis of Oso Creek (2024). Both studies identify westward soil erosion on Oso Creek through vertical scour, lateral erosion, and bank collapse as a threat to the project site. (Dudek 2025i)

Geosyntec Consultants, Inc. (2021) calculated that, between 2014 and 2021, Oso Creek eroded laterally into its western bank, toward the proposed project site, at an average rate of 3 feet per year. Lateral erosion is episodic and varies longitudinally along the stream channel. At over 50 percent of measurement locations within Geosyntec Consultants, Inc.'s 2021s study reach, the maximum annual lateral migration rate was less than or equal to 10 feet per year. At less than 5 percent of measurement locations, the maximum annual migration rate was 80 feet per year.

Geosyntec Consultants, Inc. (2021) and Chang Consultants (2024) concluded that lateral erosion varies longitudinally along the stream channel. Chang Consultants concluded that most erosion occurs during high streamflow events, such as 5-year, 10-year, 25-year, and 100-year floods. (Dudek 2025i)

Geosyntec Consultants, Inc. (2021) proposed a retaining wall solution to protect the project site from soil erosion. Chang Consultants (2024) proposed setbacks to protect the project site from soil erosion (Dudek 2025i). LGS Geotechnical (2024) also proposed setbacks to protect the project site from soil erosion (Dudek 2024aa).

Application Section 4.4: Geologic Hazards and Resources stated that adherence to the recommendations provided in LGC Geotechnical (2024) would reduce potential impacts related to geologic hazards to less than significant during construction and operation. (Dudek 2024h, 2024aa)

Based on the results from Geosyntec Consultants, Inc. (2021) and Chang Consultants (2024) (Dudek 2025i), CEC staff concludes that Oso Creek would erode laterally into the project site during the life of the project. CEC staff concludes that setbacks are insufficient mitigation because setbacks would not alter the ongoing lateral erosion. As described in **SDR GEO-5, SDR GEO-6,** and **SDR WATER-1** (below), CEC staff are also concerned the level spreader would load stormwater onto the setback area and into Oso Creek's western streambank, which would likely destabilize the Oso Creek's western streambank and exacerbate soil erosion.

LGC Geotechnical, Inc. (2024) does not recommend infiltrating stormwater runoff into the subsurface because that activity would likely decrease slope stability and exacerbate soil erosion. (Dudek 2024aa)

SDR GEO-5. CEC staff requests the applicant explain how they propose to mitigate soil erosion's direct and indirect impacts on the proposed project.

A feature labeled "Swale-1" and described as a small erosional feature in the updated aquatic resources delineation, was identified in the southeast portion of the project site (Dudek 2024yyy). This feature is also defined as a small linear topographical depression shown on the geotechnical map (Sheet 1 of 4) included in the geotechnical report prepared by LCG Geotechnical Inc., (2024) and is subparallel with the top of the Oso Creek's western embankment (Dudek 2024cc).

During a site visit on July 16, 2025, CEC staff observed that the Swale-1 structure was irregular in both in surface expression and depth (approximately 1 to 2.5 feet). There was no evidence of sedimentation or running water (CEC 2025s). Since the linear feature runs roughly parallel to Oso Creek's western embankment, is irregular, and shows no evidence of running water, CEC staff are concerned this might indicate a developing stream embankment slump that has occurred at several nearby upstream locations. If this is a developing slump, there are implications that

the level spreader proposed to disperse stormwater would further exacerbate the stability of the Oso Creek's western embankment.

SDR GEO-6. CEC staff requests the applicant evaluate the Swale-1 feature and the possible impacts from stormwater from the proposed level spreader structure.

Based on closer scrutiny of the project design drawings (Dudek 2024pp) and the stormwater management plan (Dudek 2024ddd), as well as the various geotechnical reports (Dudek 2024aa, 2024bb, 2024cc, 2025i, 2025l, 2025m, 2025n, 2025o, 2025p, 2025q, 2025r, 2025s, 2025t, and 2025u), it appears that the proposed solution to disperse offsite stormwater runoff could exacerbate the condition of slumping along the Oso Creek's western streambank.

As shown on the design drawings and described in the stormwater management plan, offsite stormwater runoff from two of the modeled drainage areas east of the project facility (West [17.01 acres] and South 27.70 acres]) would be captured by a drainage ditch along the west side of the facility and be diverted to a level spreader along the southeast corner of the project facility. The level spreader would discharge stormwater onto the bench above the west bank of Oso Creek (Dudek 2024pp, 2024ddd).

Modeling associated with the stormwater management plan indicates that outflow from the level spreader would have a volume of approximately 10.6 acre-feet (AF) flowing at a rate of 98.6 cubic feet per second (CFS) during a 25-year rain event, and a volume of 14.3 AF flowing at a rate of 134 CFS during a 100-year rain event (Dudek 2024ddd). The introduction of stormwater discharge in an area where slump block head scarps would be expected to form, could aggravate the condition of slumping along the west streambank of Oso Creek as described in various geotechnical reports (Dudek 2024aa, 2025i, 2025l, 2025m, 2025n, 2025o, 2025p, 2025q, 2025r, 2025s, 2025t, and 2025u)

SDR WATER-1. CEC staff requests that the applicant explain how the level spreader could be modified to mitigate stormwater discharge that could impact Oso Creek streambank slumping, or develop an alternative to disperse offsite stormwater runoff.

REFERENCES

CDFW 2025a – California Department of Fish and Wildlife (TN 263799). CDFW's Comments for the Notice of Preparation of a Draft Environmental Impact Report for the Compass Energy Storage Project. Docketed June 3, 2025. Accessed online at: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=24-OPT-02

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