GEOTECHNICAL ENGINEERING REPORT

Jernee Mill Industrial

Middlesex County, New Jersey

March 29, 2024

Prepared for:
Claremont Development
32 Mount Kemble Avenue
Morristown, New Jersey, 07960

Attn: Marc Baumann, VP of Development and Construction

Prepared by:
Geo-Technology Associates, Inc.
Geotechnical and Environmental Consultants

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GTA Project No: 31232654

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

March 29, 2024

Claremont Development
32 Mount Kemble Avenue
Morristown, New Jersey 07960

Attn: Marc Baumann, VP of Development and Construction

Re: Geotechnical Engineering Report
Jernee Mill Industrial
Middlesex County, New Jersey

Dear Marc:

In accordance with our agreement dated November 10, 2023, and executed on November 17, 2023, Geo-Technology Associates, Inc. (GTA) has conducted a geotechnical engineering study in support of the proposed cold storage warehouse to be constructed in the Borough of Sayreville, Middlesex County, New Jersey. GTA has prepared this report to convey our findings, conclusions, and recommendations about subsurface conditions that could affect foundation support and related geotechnical considerations for the proposed residential construction.

Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the explorations 60 days after the date of this report. If you have any questions or concerns about this report, or if you want additional information, please contact office at (732) 271-9301.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.

Kyle T. Plaza, P.E.
Associate

Robert Dykstra, P.E.
Vice President

TABLE OF CONTENTS

1.0 INTRODUCTION

This report presents the results of a geotechnical engineering exploration performed by Geo-Technology Associates, Inc. (GTA) for the planning and design of the proposed cold storage warehouse development to be located in the Borough of Sayreville, Middlesex County, New Jersey. GTA has performed a geotechnical engineering study and prepared this report for Claremont Development in accordance with our proposal dated November 10, 2023.

1.1 Study Purpose

GTA conducted this study to develop confirmation-dependent geotechnical engineering recommendations for the proposed warehouse development. The scope of GTA's study included a field exploration, laboratory testing, and geotechnical engineering analyses.

1.2 Referenced Documents

GTA was provided with the following documents.

- A preliminary geotechnical engineering report by Whitestone Associates, Inc. (Whitestone) titled "Preliminary Geotechnical Investigation & Stormwater Management Area Evaluation" dated August 15, 2022.
- A geotechnical engineering report by Whitestone titled "Limited Report of Geotechnical Investigation" dated January 31, 2023.
- A set of plans titled "Preliminary & Final Major Site Plan for Jernee Mill Industrial" (31 pages) by Colliers Engineering & Design dated June 6, 2023 showing the previously proposed layout with 2 buildings.
- A plan titled "Overall Site Plan" by Colliers Engineering & Design dated July 5, 2023 showing the updated proposed layout containing 1 building.
- A plan titled "Test Pit Location Map" by Colliers Engineering & Design dated March 8, 2023 showing 21 requested test pit locations based on the previously proposed 2-building site layout; 11 of the requested locations pertain to the development of the building.

GTA has based our understanding of the project on its review of the plans, prior reports, and other references identified above. If the reference documents are modified after the date of this report, Client should provide the updated versions to GTA. Modifications may make it necessary for GTA to revise the geotechnical engineering recommendations presented in this report.

2.0 PROJECT DESCRIPTION

2.1 Site Location

The project site is located in the Borough of Sayreville, Middlesex County, New Jersey. The site is identified as Lots 2.01 & 9 in Block 58 on the Borough of Sayreville tax map and is bounded by Jernee Mill Road to the east, the South River to the west, and wooded areas and commercial properties to the north and south. The Site Location Map, in Appendix A, Figure No. 1, indicates the site location in relation to adjacent properties.

2.2 Existing Site Conditions

At the time of GTA's exploration, the eastern portion of the site was predominantly wooded, and the western portion of the site was an existing landfill site. Based on the provided plan, existing ground surface elevations in the general vicinity of the proposed building ranged from approximately Elevation (EL) 19 feet in the northeastern portion of the site along Jernee Mill Road to approximately EL 5 feet in the southern portion of the site.

2.3 Proposed Construction

2.3.1 Site Grading

Based on the plans provided, fills of up to about 18 feet will generally be required to achieve the proposed building and site grades. The proposed building will have its ground floor established at about EL 25 feet and will generally require fills ranging from about 11½ to 18 feet. Retaining walls with heights up to about 14 to 16 feet are indicated on the provided plans in the southern and northern portions of the site, respectively.

2.3.2 Proposed Building

The proposed cold storage warehouse will have a footprint area of approximately 250,000 square feet and will be constructed using a slab-on-grade. We anticipate the proposed structure will be constructed using cast-in-place concrete and steel- or wood-framed construction. Based on information provided by the Client, we understand that the maximum column and wall loads will be approximately 96 kips and 6 kips per linear foot, respectively. Floor slab loads of up to about 1,465 pounds per square foot (psf) are expected throughout the majority of the warehouse.

2.3.3 Stormwater Management (SWM)

The provided plans indicate that two SWM basins will be sited adjacently east and south of the proposed warehouse building. Additionally, porous pavement areas are proposed adjacently west and south of the proposed building.

3.0 GEOTECHNICAL ENGINEERING STUDY

3.1 Historical Review

We understand that the western portion of the site was once a municipal landfill that has since been capped. Based on our review of aerial photography on historicaerials.com, it appears that the landfill was created sometime between 1969 and 1972 and was decommissioned and capped sometime between 1995 and 2002. The site appears to remain relatively undisturbed since 2002.

3.2 Geologic Review

The subject site is situated within the Coastal Plains physiographic province of New Jersey which is characterized by unconsolidated deposits gently dipping to the southeast. Based on the *Surficial Geology of the South Amboy Quadrangle, Middlesex and Monmouth Counties, New Jersey (OFM 18, 1995)* prepared by the New Jersey Geological Survey, the surficial geology of the site is that of the Estuarine Deposits and Lower Terrace Deposits. The Estuarine Deposits consist of brown to dark gray peat and organic rich clay and silt, with minor sand and shells, and can be as much as 70 feet thick. The Lower Terrace Deposits consist of sand, silt, and pebble gravel with minor clay and peat and can be as much as 30 feet thick.

According to the *Bedrock Geology of the South Amboy Quadrangle Middlesex and Monmouth Counties, New Jersey (OFM 65, 2005)* the site is predominantly underlain by the Woodbridge Clay and the eastern portion of the site along Jernee Mill Road is mapped as South Amboy Fire Clay. The Woodbridge Clay consists of dark gray, massive clay and silt with mica, wood, and pyrite which is occasionally interbedded with light gray to white sand. This unit can be as much as 110 feet thick. The South Amboy Fire Clay consists of locally dark gray massive to laminated clay and can be as much as 30 feet thick.

Please refer to the referenced publications for more detailed descriptions of the geologic members.

3.3 Prior Geotechnical Information

Whitestone's preliminary geotechnical investigation included a total of 15 SPT borings and 6 soil profile pits that extended to depths ranging from approximately 10 to 25 feet below existing site grades.

Whitestone performed limited laboratory testing consisting of natural moisture contents, grain size analyses, and Atterberg Limits.

Whitestone's explorations encountered existing fill materials extending to depths of about 2 to 6 feet below the ground surface. These existing fill materials consisted of sand and gravel, and occasionally minor amounts of debris. Beneath the existing fill, where present, Whitestone's explorations encountered native soils generally consisting of sand with varying amounts of silt and clay (SP, SP-SM, SM, SC) overlying and occasionally interstratified with silt and clay with varying amounts of granular materials (ML, CL, CH). Groundwater was encountered in Whitestone's explorations at depths ranging from about 4 to 6 feet below the ground surface. Whitestone's exploration logs are included in Appendix D of this report.

3.4 Subsurface Exploration Scope

GTA performed a subsurface exploration of the site consisting of 14 Cone Penetrometer Test (CPT) soundings and 11 test pit excavations with in-situ infiltration testing throughout the proposed development area. The CPTs were performed by GTA on February 6 and 7, 2024 using a track-mounted CPT rig and extended to depths ranging from about 47½ to 50 feet below the existing surface grades. The CPT involves pushing a cylindrical probe into the ground, which collects tip- and sleeve-resistance readings at approximate ¾-inch intervals. The CPT readings can be correlated with the engineering properties of the soils.

The test pits were excavated by Krutis Excavating on February 5 and 6, 2024 using a Komatsu PC138us LC excavator and extended to depths ranging from about 7 to 14 feet below the existing surface grades. In-situ infiltration testing was performed adjacent to the test pits within proposed SWM basin areas. The exploration locations were selected by GTA and located in the field using a hand-held GPS unit and the existing site features as reference. The approximate locations of the explorations performed for this study are shown on the Exploration Location Plan, which is included as Figure 2 in Appendix A of this report.

Please refer to the CPT Sounding Data included in Appendix B of this report for further information regarding the CPT soundings. Detailed descriptions of the encountered subsurface conditions are indicated on the Logs of Test Pits which are included in Appendix B. The ground surface elevations shown on the exploration logs were obtained from interpolating between topographic information available on the provided plans and should be considered approximate.

The soil samples obtained from the explorations were delivered to GTA's laboratory for visual classification and laboratory testing. The classifications shown on the logs are based on the Unified Soil Classification System (USCS) visual/manual methods, supplemented by laboratory testing.

3.5 Subsurface Conditions

The results of the subsurface exploration were, for the most part, consistent with the known site history and geologic mapping of the project site. The specific subsurface conditions at each exploration location are shown on the individual CPT sounding and test pit logs in Appendix B. It is important to note that CPT soundings do not allow for the collection of physical soil samples. The subsurface profile shown on the CPT sounding logs is derived from the electronic data gathered from the soundings which correlates to a "Soil Behavior Type" (SBT). The specific subsurface conditions at each exploration location are shown on the individual exploration logs within Appendix B. GTA has summarized the subsurface conditions encountered in the following sections.

3.5.1 Surficial Materials

An approximately 6-inch-thick layer of topsoil was encountered in 10 of the 11 test pits performed for this exploration. Test Pit TP-4 was performed within the parking lot of the commercial facility located to the south and encountered a 3-inch-thick layer of asphalt at the ground surface. The reported topsoil thicknesses generally represent the upper layer of dark and organic soil.

3.5.2 Existing Fill

Existing fill materials were encountered in 8 of the 11 test pits performed for this study. The existing fill extended to about 3½ feet below the ground surface at Test Pit TP-4 which was located within a truck maintenance yard in the southern portion of the site. Deeper fill areas were encountered in test pits TP-5 through TP-11 which were located within the limits of the existing landfill. In Test Pits TP-5 through TP-10, the existing fill extended to the full completion depth of the test pit excavations. In Test Pit TP-11, the existing fill materials extended to about 12 feet below the ground surface. The upper portions of the fill materials were used to construct the landfill cap and consisted predominantly of poorly-graded sands, silty/clayey sands, and sandy clays to about 3½ to 5 feet below the ground surface. Beyond these depths, the fill materials were predominantly sands and contained significant amounts of deleterious landfill materials, debris, and organics. Photographs of the existing fill materials encountered in Test Pits TP-5 through TP-11 are included in the Photograph Log in Appendix C of this report.

3.5.3 Native Soils

Beneath the surficial materials and existing fill, where present, the explorations encountered native soils generally consistent with the geologic mapping of the site. The subsurface profile predominantly consisted of sands with varying amounts of fines (SP, SP-SM, SM, SC) overlying fine-grained lean clays (CL) and silts (ML).

3.5.4 Groundwater

Groundwater was encountered in Test Pits TP-2 through TP-11 at depths ranging from about 3½ to 9 feet below the ground surface. Note that groundwater levels can fluctuate with seasonal variations in precipitation and as a result of development activity. Also, perched water conditions may develop in localized areas where granular soils are underlain by less permeable, fine-grained soils.

3.6 Laboratory Testing

GTA performed laboratory testing on selected soil samples obtained from the explorations, including natural moisture content determinations, Atterberg Limits, and grain size analyses for classification of the soils in accordance with the Unified Soil Classification System (USCS). Classification of the soils in accordance with the USCS provides information regarding the engineering properties of the on-site soils that will likely support the proposed foundations, slabs, and pavements, and be used as controlled compacted fill and backfill. Detailed results of the laboratory testing performed for this study are included in Appendix C. The results of the laboratory tests are summarized in the following table:

SUMMARY OF CLASSIFICATION TESTING

Test Pit No.	Depth (ft.)	LL (%)	PI (%)	USCS Classification	NMC (%)	Fines (%)
TP-1	5	34.6	9.2	SILT (ML)	23.6	NV
TP-3	3.5	NV	NV	Poorly-graded SAND with silt (SP-SM)	23.6	5.0
TP-6	4	NV	NV	FILL: Silty SAND (SM)	13.2	15.8
TP-9	3	NV	NV	FILL: Clayey SAND (SC)	16.1	28.7

Note: NMC=Natural Moisture Content, Fines=Material passing the #200 sieve, NV= Not Verified

3.7 Infiltration Test Results

In-situ infiltration testing was performed for this study using a double-ring infiltrometer at depths ranging from about 1 to 3½ feet below the existing ground surface. The results of the infiltration tests performed for this study are summarized in the following table.

SUMMARY OF INFILTRATION TEST RESULTS

Exploration Location	Depth (ft.)	USCS Classification [USDA Classification]	Measured Infiltration Rate (in/hr)
TP-1	3½	SILT (ML) [Silt]	0
TP-2	1	Poorly-graded SAND with silt (SP-SM) [Loamy Sand]	18
TP-3	1	Poorly-graded SAND with silt (SP-SM) [Loamy Sand]	12
TP-4	2	FILL – Clayey SAND with gravel [Sandy Loam]	0
TP-5	3	FILL – Silty SAND [Sandy Loam]	0
TP-6	1	FILL – Silty SAND [Sandy Loam]	0
TP-7	2½	FILL – Sandy Lean CLAY [Sandy Clay]	0
TP-8	3	FILL – Sandy Lean CLAY [Sandy Clay]	0
TP-9	3	FILL – Clayey SAND [Sandy Clay Loam]	0
TP-10	3	FILL – Sandy Lean CLAY [Sandy Clay]	0
TP-11	1	FILL – Silty SAND [Sandy Loam]	0

Note: A factor of safety of at least 2 should be applied to the measured infiltration rates for design purposes.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our geotechnical engineering study, it is GTA's professional opinion that the subsurface conditions at the project site are generally suitable for construction of the proposed warehouse development, provided the following geotechnical engineering recommendations are followed, and that applicable standard of care is maintained during construction. **The design and construction of the proposed warehouse will likely be most significantly impacted by excessive settlements of the native soils due to mass fill placement and the proposed building loads. Based on conversations with the project team, we understand that the implementation of a ground improvement program is the preferred option to maintain the settlement tolerances provided by the project team.** GTA's recommendations regarding earthwork, foundation and slab design, and other geotechnical considerations are presented in the following paragraphs.

4.1 Site Preparation

4.1.1 Demolition of Existing Structures

Due to the potential conflicts with new construction, GTA recommends the demolition include removal of any existing foundation and utilities that may remain from within the proposed building area. The resulting excavations should then be backfilled with structural fill that is placed and compacted in accordance with the recommendations contained in the Fill Placement section. It should be noted that soft/loose existing fill materials and wet soils may be encountered adjacent to and below any existing foundation elements and abandoned utilities. Therefore, GTA recommends that the subgrade be evaluated prior to backfilling. Where soft/loose materials are encountered, localized overexcavation will be required.

Existing utilities beyond the proposed building areas that will not be incorporated into the proposed construction can be abandoned in-place. In-place abandonment of utilities should consist of completely filling the pipelines with grout or flowable fill, or potentially capping the ends. Alternatively, these utilities can be removed and the resulting excavations backfilled in accordance with the recommendations presented in the Fill Placement section.

4.1.2 Stripping

The site should be stripped of topsoil and existing pavements from within and at least 5 feet beyond the proposed building and pavement areas. The removal of topsoil, pavement, and unstable surface soils should be performed before controlled fill placement. The actual stripping thickness will depend on the localized topsoil development, soil moisture, disturbance by construction traffic, and contractor care. The stripped topsoil and asphalt will not be suitable for reuse as controlled compacted fill or backfill within building or pavement areas, or atop utilities. The stripped topsoil can be relocated to proposed landscaped areas to the extent feasible. Milled pavement can be reused in the subbase layer of the proposed pavement section per NJDEP, but GTA recommends that it be thoroughly mixed with NJDOT Dense Graded Aggregate (DGA) for stability reasons.

4.1.3 Existing Fill

Existing fill materials were encountered throughout the area of the existing landfill. **The full depth of existing fill materials should be removed from beneath proposed pavements, utilities, building footprints (including stoops), and from within 10 feet horizontally of building footprints/stoops.** The existing fill should be replaced with controlled compacted fill as recommended in the Fill Placement section. Existing fill materials may be reused as new fill, under the conditions described in the Fill Criteria section.

4.2 Earthwork

4.2.1 Excavations

As a minimum, all construction excavations should be sloped and shored in accordance with OSHA excavation regulations or stricter local governing safety codes. It is our opinion that the undisturbed natural soils or controlled compacted fill composed of similarly graded materials would generally be classified as "Type C" soils under the OSHA excavation regulations. Significantly flatter excavation side-slopes will be required where groundwater seepage occurs.

4.2.2 Groundwater

The presence of groundwater will not likely affect mass grading activities on a widespread basis. Nonetheless, seepage of perched water may occur where water becomes trapped in granular soils underlain by less-permeable soils or rock, particularly after periods of precipitation. Also, groundwater levels may fluctuate with seasonal variations in precipitation and as a result of development activity. Accordingly, if excavations are required below the existing surface grades at the site, the contractor should be prepared to dewater and shore excavations during construction.

4.2.3 Moisture Sensitivity & Stability

Fine-grained soils (CL, ML) are moisture sensitive and will lose strength and stability if disturbed in the presence of water. Additionally, near surface materials and existing fill materials may become soft and unstable under construction equipment. Drying of the fine-grained soils will only be feasible during the warm, dry season of the year and may require extended drying times and discing effort to adequately dry the soils to a moisture content that is acceptable for compaction. Based on the encountered fine-grained soils, drying of the on-site soils should be anticipated on this project.

GTA recommends that positive drainage be maintained across the site during construction to prevent ponding of water since the exposed subgrades could destabilize in combination with construction traffic and precipitation. If the subgrade is disturbed by construction traffic and becomes unstable, undercutting and replacement of these surficial materials will be required.

4.2.4 Fill Material Criteria

The soils encountered in the explorations will generally be suitable for reuse as structural fill, with the following limitations:

- Pavement Subgrade Fill: Fine-grained and/or plastic soils (USCS Classifications ML, CL, MH, CH, and the more-plastic SC) will likely be moisture- and disturbance-sensitive. These materials are

not recommended for use as fill within the top 18 inches of pavement subgrade, unless chemical stabilization of the pavement subgrade is planned.

- Utility Backfill: GTA recommends against using clays (USCS Classifications CL or CH) as utility trench backfill. If clays are nonetheless used for trench backfill, the constructors involved must apply the special construction methods described in the Utility Trench Backfill section.

- Retaining Wall Backfill: Soils used as retaining wall backfill should meet the criteria identified in the Site Retaining Walls section.

- Imported Fill: Off-site borrow materials, if required, should meet the USCS designation SM, SP, SW, SC, GP, GM, GC, or GW. These materials should be approved by the geotechnical engineer and be tested for their environmental quality before import. Crushed concrete (a.k.a. Recycled Concrete Aggregate) generated from on-site or off-site sources should not be used as material that is intended to promote drainage (e.g., drainage stone for walls).

- Existing Fill: Granular portions of existing fill materials may be reused as controlled fill, **provided organic material, debris, and other deleterious materials are removed.** Concrete, brick, and asphalt fragments may be reused as controlled fill, provided they are crushed to particles no greater than 3 inches in the largest dimension and mixed with soil at a ratio of at least one part soil to one part concrete, brick, and/or asphalt.

4.2.5 Fill Placement

The areas to receive fill should first be proofrolled with a loaded, tandem-axle dump truck or numerous passes of a large smooth drum vibratory compactor with a static drum weight of at least ten tons under the observation of GTA. Other methods of compaction may be deemed more appropriate for the subgrade evaluation by GTA's on-site representative depending on prevailing weather conditions and space constraints. Any subgrade materials identified as soft/loose, wet, or otherwise unsuitable should be overexcavated to a stable bearing stratum before placement of controlled fill. After a suitable subgrade has been achieved, controlled fill should be placed and compacted in 8- to 12-inch thick lifts (as measured before compaction). The fill should be compacted to the following recommended specifications:

RECOMMENDED COMPACTION SPECIFICATIONS

Fill Location	Compaction Specification
Below foundations, slabs-on-grade, and retaining walls; slopes steeper than 5H:1V	95% of Maximum Dry Density per the Modified Proctor (ASTM D-1557), Moisture: ± 3% of optimum

RECOMMENDED COMPACTION SPECIFICATIONS

Fill Location	Compaction Specification
Utility and roadway fill within the top 12 inches of pavement subgrade	95% of Maximum Dry Density per the Modified Proctor (ASTM D-1557), Moisture: ± 2% of optimum
Utility and roadway fill greater than 12 inches below pavement subgrade	90% of Maximum Dry Density per the Modified Proctor (ASTM D-1557), Moisture: ± 3% of optimum

The 2021 IBC requires that fill placement must be observed on a full-time basis by a field representative working under the supervision of a licensed geotechnical engineer and be retained by the Owner or their authorized representative (not the contractor). All compactive effort should be verified by in-place density testing.

4.3 Building Construction Considerations

4.3.1 Expected Settlement

Based on our analyses, settlements of the native soils on the order of about 1½ inches to about 6 inches are expected throughout the development area due to the proposed mass fill placement at the site. Based on the provided loads, additional post-construction settlements ranging from about 1½ to 4½ inches can be expected within the native soils due to the imposed slab loads of the proposed warehouse.

The settlement tolerances provided by the project team are 1" total and ½" differential (assumed over a 30-foot span). In order to possibly achieve these tolerances, it will be necessary to pre-load the site and then employ ground improvement techniques.

4.3.2 Ground Improvement Program

Based on our conversations with the project team, we understand that a ground improvement program is the preferred option to maintain settlements within the prescribed tolerances. The ground improvement program will be necessary to consolidate and densify the in-situ soils prior to construction. Based on the soil profile encountered at the site and the settlement tolerances provided by the project team, a cost-effective ground improvement program consisting of mass fill placement (pre-loading) followed by a settlement monitoring period in conjunction with rigid inclusion elements is recommended and outlined below.

Based on the provided plans, fills ranging in height from about 11½ to 18 feet are expected to achieve the finished floor elevation (FFE) of 25 feet throughout the proposed building footprint area. After discussions with ground improvement installers, we recommend the installation of settlement plates

prior to fill placement to bring site grades up to a few feet below the proposed FFE. The final elevation of this working platform should be discussed and agreed upon with the selected ground improvement installer. After the initial fill placement to achieve the working platform elevation, the settlement plates should be continuously monitored until the settlement of the native soils due to the fill load is complete. We expect that the initial settlement monitoring period can potentially be on the order of approximately 3 to 9 months.

After completion of the initial settlement, the ground improvement installer can begin the installation of the rigid inclusion elements. Rigid inclusions are a type of ground improvement that consist of full displacement grouted columns that are used to improve the overall modulus of the in-place soils. Rigid inclusions are individual elements, typically 10 to 18 inches in diameter, and are constructed using a displacement auger and grouted from the bottom design elevation to the surface. Using this method, ground improvement elements are not structurally connected to the building and following the installation of the elements, a Load Transfer Platform (LTP) will be necessary to alleviate "pressure points" on building footings and slabs due to the rigid elements. Based on our conversations with installers, if the proper materials are used, we believe that the final few feet of fill placement can suffice to serve as the LTP but should be confirmed with the selected contractor.

Ground improvement is a design-build service offered by a variety of installers using their own proprietary techniques. After preliminary discussions with ground improvement installers, we believe the implementation of the program outlined above could result in allowable bearing pressures of up to 5,000 psf while limiting settlements beneath the structures to 1 inch total and ½ inch differential. The selected ground improvement installer will confirm the allowable post-installation bearing capacity based on their review of the final building loads, construction drawings, and performance criteria specifications.

If this ground improvement option is chosen by the project team, GTA can be retained to provide performance-based specifications for the project, aid in the selection of an installer, and provide quality control oversight during installation.

4.3.3 Foundation Construction Considerations

Following implementation of the ground improvement program, it is GTA's opinion that shallow spread footings will be able to support the proposed warehouse. GTA recommends minimum widths of 24 inches for wall footings and 30 inches for column footings, where foundation design based on the recommended allowable soil-bearing pressure would otherwise yield a narrower footing. Exterior footings should be founded at least 36 inches below final exterior grades to protect against the effects of frost, or deeper if required by local ordinance.

We expect the proposed footings to be supported on new compacted fill placed during mass grading. New fill will be suitable for foundation support only if it is placed and compacted as we recommend in the Fill Placement section.

Before concrete placement, a licensed geotechnical engineer or a qualified representative should evaluate the footing subgrade soils and perform penetration testing on the exposed footing subgrades to confirm the design allowable bearing capacity. **Any loose/soft soils should be overexcavated to a stable bearing stratum.** Overexcavations should be replaced with lean concrete, AASHTO No. 57 stone, or controlled compacted fill. If overexcavations are replaced with soil fill, they should be placed and compacted as recommended in the Fill Placement section. Alternatively, the footings could be lowered to a competent bearing stratum. Overexcavation and replacement, if required, should be performed as recommended by a licensed geotechnical engineer or a qualified representative based on conditions observed in the field during construction. Footings should be concreted on the day the excavations are made to prevent excessive disturbance and/or moisture increase.

4.3.4 Seismic Site Class Designation

The soil conditions within the upper 100 feet at this site can be categorized as Site Class D per the 2021 International Building Code, New Jersey Edition (IBC). This categorization is based on the boring data, general geologic information for the region, and the information contained in the applicable code. Subsurface explorations at this site were extended to a maximum depth of 50 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of the geologic conditions of the general area. A site-specific seismic study could be performed to confirm the conditions below the current maximum boring depth.

4.3.5 Slab Design

Following the earthwork procedures recommended in this report, lowest-level slabs can be designed as concrete slabs-on-grade using a design modulus of subgrade reaction (k) of 200 pounds per cubic inch (pci) for floors supported on the LTP. To prevent or retard the rise of capillary moisture through the slab, GTA recommends that the slabs be founded on a minimum 4-inch-thick layer of open-graded stone, covered with a polyethylene vapor barrier beneath the slab. The open-graded stone layer should be comprised of imported washed gravel or crushed stone materials with less than 5 percent fines. The vapor barrier should be at least 6-mil thick if it will also serve as a radon gas retarder.

4.3.6 Slab Construction

Before concrete placement, a representative of GTA should evaluate the stability and compaction of compacted fill subgrades for support of the floor slabs. Soft or loose layers should be removed from

the slab subgrade and replaced as recommended in the Fill Placement section. Floor slabs should not be rigidly connected to foundation walls, so that wall movements will not affect the slab. Control joints should be provided to control shrinkage cracking of the concrete floor system.

4.4 Lateral Earth Pressures

Retaining walls will be subjected to unbalanced lateral-earth pressures and so must be designed to resist such pressures.

For design, GTA recommends the following design parameters and considerations:

Soil Property	On-Site Backfill (PI < 15)	AASHTO #57 Clean Stone	Dense-Graded Aggregate backfill
Unit Weight, γ	125 pcf	105 pcf	145 pcf
Angle of Internal Friction, Φ	30°	38°	42°
Coefficient of Active Earth Pressure (Ka)	0.33	0.24	0.20
Coefficient of Passive Earth Pressure (Kp)	3.0	4.2	5.0
Coefficient of Earth Pressure at Rest (Ko)	0.50	0.38	0.33
Base Friction, tan δ	0.36	0.47	0.53
Equivalent Fluid Pressure (Unrestrained Top of Wall)	41 psf/ft	25 psf/ft	29 psf/ft
Equivalent Fluid Pressure (Restrained Top of Wall)	63 psf/ft	40 psf/ft	48 psf/ft

Hydrostatic pressure is not included in the above values because it is assumed adequate drainage will be provided. Drainage panels and a perimeter drain should be provided behind below grade walls and retaining walls to carry away any infiltrating surface water so that hydrostatic pressures do not develop. The perimeter drain should consist of a minimum four-inch diameter slotted or perforated pipe encased in a minimum of six inches of crushed stone that is wrapped by a geotextile filter. The crushed stone should meet the gradational requirements of AASHTO Size No. 57 aggregate. The perimeter drain should tie into a sump pit, adjacent storm sewer, or off-site drainage system. Where retaining walls are used, the collection system should discharge water to weepholes which are at least two inches in diameter and spaced at maximum eight feet on center. All below grade foundation walls should be water- or moisture-proofed.

4.4.1 Site Retaining Walls

Based on the provided plans, site retaining walls will be required as part of the proposed site improvements. The retaining wall design must be performed by an appropriately experienced, licensed engineer and must include a global-stability analysis. The design engineer should select soil parameters

for foundation soils and retained soils (behind the granular backfill zone) using the available subsurface data. Retaining wall design is beyond GTA's scope of services for this *Geotechnical Engineering Report;* however, GTA can provide those services, if requested. If retaining walls are designed by others, GTA should be provided the opportunity to review and comment on the retaining wall designs.

The *NCMA Segmental Retaining Walls Best Practices Guide* recommends soil fill placed within the reinforced zone contain less than 35 percent fines (Material passing the No. 200 sieve). Taller walls may require backfill soils with less than 15 percent fines. ***It should be noted that significant portions of the site soils will likely not meet this gradation and will not be suitable as reinforced backfill for segmental block retaining walls and granular or processed stone materials will likely be required.*** Segregation of soils will be necessary to effectively re-use portions of the on-site soils within the reinforced zones.

Ground improvement consisting of either aggregate piers or rigid inclusions will be required to support the retaining walls and the retained fill soils. Allowable bearing capacities of up to 5,000 psf are recommended for site retaining walls constructed on the aforementioned ground improvement elements. Final allowable bearing capacities should be confirmed by the ground improvement installer. Higher bearing capacities may be possible but will be dependent on wall location, bottom of wall elevation, wall types, and encountered soils. Additional explorations may be required for higher capacities.

A qualified representative of the third-party testing consultant should evaluate exposed retaining wall subgrades in the field. Soft/loose, unstable, or otherwise-unsuitable materials present at the retaining wall subgrade should be undercut and replaced at the time of construction. The third-party testing consultant representative should observe any such undercutting and replacement on a full-time basis.

In order to help ensure that imported backfill materials meet the wall design criteria, a qualified third-party testing consultant representative should evaluate such materials before they are imported. Compaction equipment used within six feet of the walls should be limited to light, self-propelled rollers or other, similar equipment. Heavy compaction equipment must not be used within six feet of the walls to avoid imposing increased lateral loads on the walls.

The following additional recommendations may be used in the design of below grade foundation walls and retaining walls:

- Walls subjected to surcharge loads (e.g., roadways, backslopes) should be designed to resist such loads.

- Structural-wall elements (e.g., wall blocks, geogrid reinforcement) should not be installed within the influence zone of building footings, defined by a 1H:1V line extending downward and outward from the nearest corner of the building footing.
- Where SWM facilities are planned at the bottoms of retaining walls, SWM facility elements (including below-grade planting media and stone) should not be planned below a 1.5H:1V line extending downward and outward from the nearest retaining wall block/footing.
- Where SWM facilities are planned at the tops of retaining walls, they should be lined or otherwise designed to prevent water infiltration into the soils retained by the retaining walls. Infiltration facilities should not be located within the retained zone immediately behind the reinforced zone without further analysis.
- Retaining walls should incorporate drainage systems to prevent buildup of hydrostatic pressure behind the walls.

4.5 Utilities

4.5.1 Utility Excavations

Utility excavations can likely be accomplished using standard excavation techniques. If groundwater is encountered in utility excavations, dewatering devices like sumps or gravity-flow trenches will likely be sufficient to control the water seepage. We recommend that 8- to 12-inches of AASHTO No. 57 stone be placed below utilities that will be installed below the groundwater level. Utility excavations should be properly shored and supported in accordance with the latest requirements of OSHA and such other regulatory authorities with jurisdiction.

4.5.2 Utility Support

The native soils and controlled fill placed during mass grading will likely be suitable for supporting the proposed utilities. Any soft/loose or unstable soils encountered at the utility subgrades should be overexcavated and replaced with controlled compacted fill or AASHTO No. 57 stone. To facilitate compaction, provide additional protection for the pipe, and decrease the risk of excessive trench settlement, GTA recommends placing AASHTO No. 57 stone or DGA to at least 6 inches above utility pipes made of plastic or flexible metal (i.e., ductile iron) and to the spring line of rigid pipes.

4.5.3 Utility Trench Backfill

Utilities installed below proposed pavement or other structural areas should be backfilled with controlled compacted fill. The backfill should be placed and compacted in accordance with project requirements or the recommended compaction specifications provided in the Fill Placement section.

Utility trenches should be backfilled with the most granular material available. The granular soils encountered during the subsurface exploration of the project site will generally be suitable for use as utility backfill. However, fine-grained materials (CL, ML) and organic materials (PT) were encountered in some explorations, and may be encountered in utility excavations. **The use of fine-grained, plastic soils for utility backfill should be avoided or limited to the extent feasible.** We do not recommend using the peat materials. Nonetheless, if fine-grained/plastic soils are used as utility backfill, they should be placed in maximum 6-inch (loose measure) lifts and compacted with a sheep's-foot type roller at a moisture content of 2 to 4 percent above optimum. To reduce the risk of trench settlement and associated impacts, moisture conditioning and breaking of clay clumps/clods must be performed for proper placement and compaction of clayey soils as utility backfill. Unless subgrade stabilization is planned, these materials should not be placed within 18 inches of final pavement subgrade.

Hand-operated equipment should be used for compaction around utility structures. Where hand-operated equipment is used for compaction, lift thicknesses should not exceed 4 inches (as measured before compaction). When backfilling around utility structures, each lift should be uniformly compacted with a sufficient number of passes to obtain the required degree of compaction.

4.6 Slopes

New fills constructed on existing slopes steeper than 5H:1V (horizontal to vertical) should be keyed into existing slopes for stability considerations. All proposed fill slopes steeper than 5H:1V should be placed as structural fill and be controlled and compacted to the densities specified in the Structural Fill and Backfill section of this report. Based upon the surficial fine-grained soils encountered in our exploration, the use of fill slopes steeper than 3H:1V will require additional engineering evaluation, may warrant special erosion protection, and will likely require geosynthetic reinforcement or the use of granular materials. GTA recommends flattening fill slopes to 3H:1V or flatter or the use of high-quality granular materials or geogrid reinforcement will be required. Slope stability analyses are beyond GTA's scope of services for this *Geotechnical Engineering Report*; however, GTA can provide those services if requested.

5.0 ADDITIONAL SERVICES

We recommended that GTA be retained during construction of the subject project to provide geotechnical consultation and construction observation and testing services as outlined below:

- Review final site and structural plans to evaluate if they conform to the intent of this report.
- Provide on-site observation of site stripping, subgrade evaluation, and testing of controlled fills.
- Observe excavated footings for compliance with the project drawings and the intent of this geotechnical report.

- Observe the proofrolling of floor slab and pavement subgrades to evaluate stability.
- Perform observation and materials testing during concrete and masonry construction.
- Testing of imported fill for environmental quality.

6.0 LIMITATIONS

This report, including all supporting exploration logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of Claremont Development pursuant to agreement between GTA and Claremont Development in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and Claremont Development is unauthorized and such use is at the sole risk of the user.

The analysis and recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. CPTs and test pits indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between the exploration locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations of subsurface conditions from those described in this report are noted during construction, recommendations in this report may need to be reevaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our client.

This report and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

APPENDIX A

Figures

Note: Site boundary is approximate.

SITE LOCATION MAP

Jernee Mill Industrial

Borough of Sayreville,
Middlesex County, New Jersey

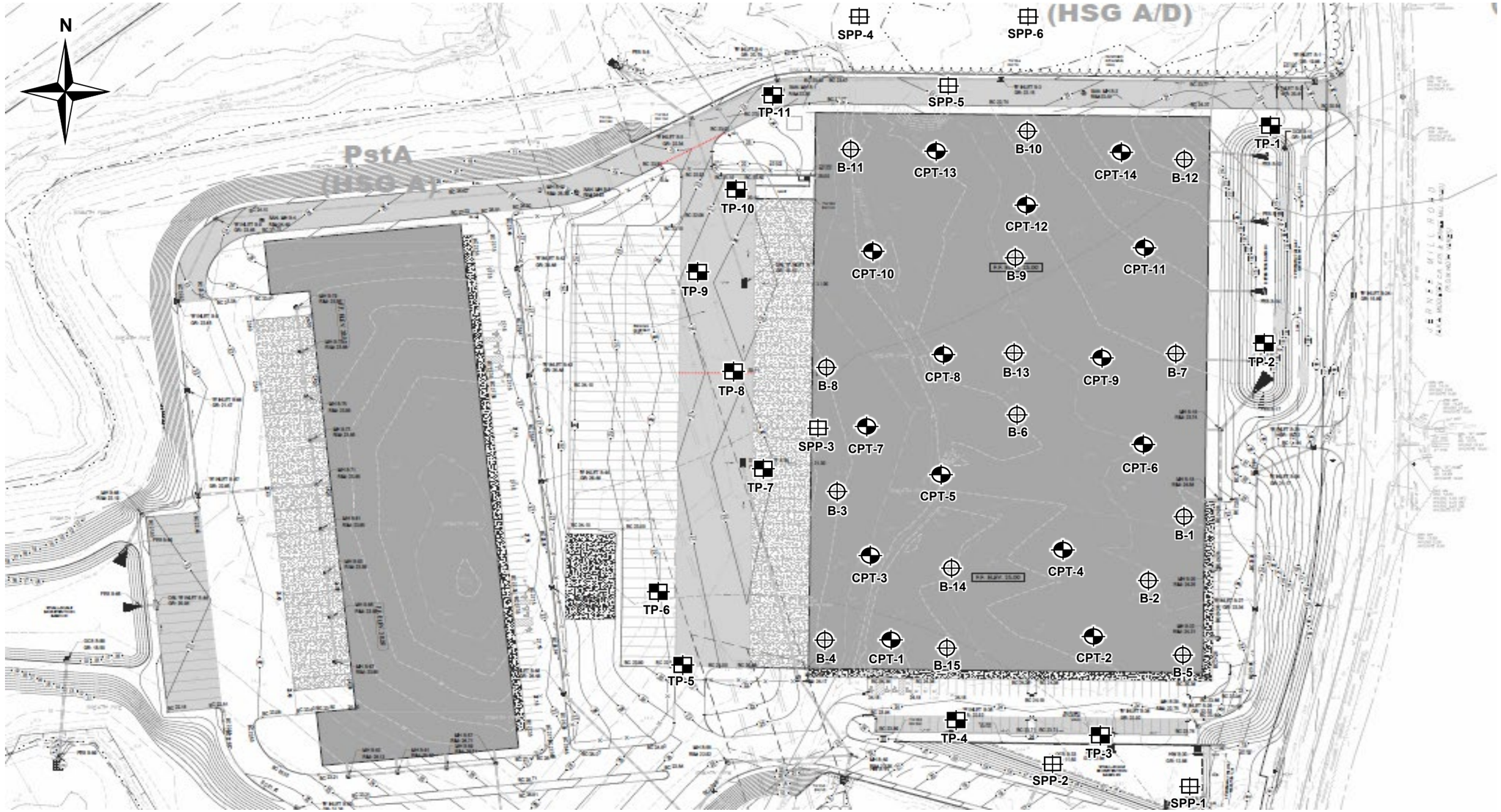
Prepared For: Claremont Development

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

GEO-TECHNOLOGY ASSOCIATES, INC.

SOURCE: Google Maps		
SCALE: NTS	DATE: FEB. 2024	PROJECT #: 31232654

Figure 1



*Base plan prepared by Colliers Engineering & Design titled "Preliminary and Final Major Site Plan for Jernee Mill Industrial" dated June 6, 2023, last revised August 28, 2023.

LEGEND:

CPT-X	Indicates the numbers and approximate locations of CPTs performed by GTA for this study.
TP-X	Indicates the numbers and approximate locations of test pits performed by GTA for this study.
B-X	Indicates the numbers and approximate locations of borings performed by Whitestone for this study.
SPP-X	Indicates the numbers and approximate locations of soil profile pits performed by Whitestone for this study.

EXPLORATION LOCATION PLAN

14 Worlds Fair Drive, Suite A
Somerset, New Jersey 08873
(732) 271-9301
fax (732) 271-9306

GEO-TECHNOLOGY ASSOCIATES, INC.

Jernee Mill Industrial

Borough of Sayreville,
Middlesex County, New Jersey

Prepared For: Claremont Development

DESIGN BY: *	DRAWN BY: VP	REVIEWED BY: KTP
SCALE: NTS	DATE: FEB. 2024	PROJECT #: 31232654

Figure 2

APPENDIX B

Exploration Logs

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS GRAPHIC	SYMBOLS LETTER
COARSE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			GW
					GP
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM
					GC
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			SW
					SP
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM
					SC
FINE-GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED ON THE NO. 200 SIEVE) SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED ON THE NO. 200 SIEVE) SANDY OR GRAVELLY SILT OR CLAY (>30% RETAINED ON THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS LIQUID LIMIT LESS THAN 50			ML
					CL
					OL
		ELASTIC SILTS AND FAT CLAYS LIQUID LIMIT GREATER THAN 50			MH
					CH
					OH
HIGHLY ORGANIC SOILS					PT

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COARSE-GRAINED SOILS WHICH CONTAIN AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12% FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALLS IN THE PLASTICITY CHART'S CROSS-HATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR 1" OF PENETRATION OR LESS, AUGER PENETRABLE	

COARSE-GRAINED SOILS
(GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS
(SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OF ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS AFTER COMPLETION	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

LOG OF TEST PIT NO. TP-1

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/6/2024**
DATE COMPLETED: **2/6/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **N/E**
GROUND SURFACE ELEVATION: **17 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
16.5				6 In. Topsoil	
		SP-SM		Yellow-brown (10YR 5/6), very moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	
13.5	4	ML		Light gray (10YR 7/1), moist, SILT [Silt per USDA]	- Infiltration Rate = 0 in/hr at 3-1/2 Ft. - NMC = 23.6%
10.0		CL-ML		Dark gray (10YR 4/1), moist, Silty CLAY [Silty Clay Loam per USDA]	
8.5	8	ML		Red (2.5YR 4/6), moist, SILT with sand [Silt Loam per USDA]	
7.5		CL-ML		Very dark gray (10YR 3/1), moist, Silty CLAY [Silty Clay Loam per USDA]	
	12				
3.0				Test pit complete at 14 Ft.	
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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14 Worlds Fair Drive, Suite A
Somerset, NJ 08873

LOG OF TEST PIT NO. TP-1

LOG OF TEST PIT NO. TP-2

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/6/2024**
DATE COMPLETED: **2/6/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **4 Ft.**
GROUND SURFACE ELEVATION: **12.25 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
11.8				6 In. Topsoil	
		SP-SM		Yellow-brown (10YR 5/6), very moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	- Infiltration Rate = 18 in/hr at 1 Ft.
	4				▼ - Moderate water seepage at 4 Ft.
5.3				Test pit complete at 7 Ft. due to sidewall collapse	
	8				
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-2

LOG OF TEST PIT NO. TP-3

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/6/2024**
DATE COMPLETED: **2/6/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **3.5 Ft.**
GROUND SURFACE ELEVATION: **10.1 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
9.6				6 In. Topsoil	
		SP-SM		Yellow-brown (10YR 5/6), very moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	- Infiltration Rate = 12 in/hr at 1 Ft. ▼ - Moderate water seepage at 3-1/2 Ft. - NMC = 23.6%
	4				
3.1				Test pit complete at 7 Ft. due to sidewall collapse	
	8				
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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Somerset, NJ 08873

LOG OF TEST PIT NO. TP-3

LOG OF TEST PIT NO. TP-4

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/6/2024**
DATE COMPLETED: **2/6/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **4 Ft.**
GROUND SURFACE ELEVATION: **9.75 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
9.5	0			3 In. Asphalt	
				FILL - Dark gray, moist, silty sand with gravel and asphalt millings [Loamy Sand per USDA]	
				- Brown (10YR 4/3), moist, clayey sand with gravel [Sandy Loam per USDA]	- Infiltration Rate = 0 in/hr at 2 Ft.
6.3	4	SP-SM		Dark brown (10YR 3/3), very moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	
				- wet at 4 Ft.	▼ - Moderate water seepage at 4 Ft.
3.8		SP		Dark yellow-brown (10YR 3/6), moist, Poorly-graded SAND [Sand per USDA]	
1.8	8			Test pit complete at 8 Ft. due to sidewall collapse	
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-4

LOG OF TEST PIT NO. TP-5

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **9 Ft.**
GROUND SURFACE ELEVATION: **14.25 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
13.8	0			6 In. Topsoil	
				FILL - Dark yellow-brown (10YR 3/4), moist, Silty SAND [Sandy Loam per USDA]	
11.8				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 2-1/2 Ft. - Infiltration Rate = 0 in/hr at 3 Ft.
11.3				FILL - Very dark gray (10YR 3/1), moist, Silty SAND [Sandy Loam per USDA]	
10.3	4			FILL - Dark red-brown (2.5YR 3/4), moist, Silty GRAVEL with sand and cobbles [Silty Gravel per USDA]	
9.3				FILL - Olive-gray (10YR 4/2), moist, Clayey SAND [Sandy Loam per USDA]	
	8			- Buried trash (glass, plastic, scrap metal, tires, and organic materials) at 9 Ft.	▼ - Rapid water seepage at 9 Ft.
	12				
1.3				Test pit complete at 13 Ft.	
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-5

LOG OF TEST PIT NO. TP-6

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **8 Ft.**
GROUND SURFACE ELEVATION: **15.6 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
15.1	0			6 In. Topsoil	
				FILL - Dark yellow-brown (10YR 3/4), moist, Silty SAND [Sandy Loam per USDA]	- Infiltration Rate = 0 in/hr at 1 Ft.
12.6				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 3 Ft.
12.1	4			FILL - Dark yellow-brown (10YR 3/4), moist, Silty SAND [Sandy Loam per USDA] - Buried trash (glass, plastic, scrap metal, tires, and organic materials)	
10.6				FILL - Dark yellow-brown (10YR 4/6), moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	- NMC = 13.2%
	8				▼ - Moderate water seepage at 8 Ft.
5.6				Test pit complete at 10 Ft.	
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-6

LOG OF TEST PIT NO. TP-7

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **8.5 Ft.**
GROUND SURFACE ELEVATION: **13.75 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
13.3				6 In. Topsoil	
				FILL - Dark brown (10YR 3/3), moist, Silty SAND [Sandy Loam per USDA]	
12.3				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 1-1/2 Ft.
11.3				FILL - Very dark gray (10YR 3/1), moist, Sandy Lean CLAY [Sandy Clay per USDA]	
10.3	4			FILL - Olive-brown (2.5Y 4/3), moist, Silty SAND [Sandy Loam per USDA] - Buried trash (glass, plastic, scrap metal, tires, and organic materials)	- Infiltration Rate = 0 in/hr at 2-1/2 Ft.
	8				▼ - Moderate water seepage at 8-1/2 Ft.
	12				
0.8				Test pit complete at 13 Ft.	
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-7

LOG OF TEST PIT NO. TP-8

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **8.5 Ft.**
GROUND SURFACE ELEVATION: **14.1 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
13.6	0			6 In. Topsoil FILL - Dark yellow-brown (10YR 3/6), moist, Silty SAND [Sandy Loam per USDA]	
11.6				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 2.5 Ft. - Infiltration Rate = 0 in/hr at 3 Ft.
11.1				FILL - Very dark gray (10YR 3/1), moist, Sandy Lean CLAY [Sandy Clay per USDA]	
10.1	4			FILL - Olive-brown (2.5Y 4/3), moist, Silty SAND [Sandy Loam per USDA] - Buried trash (glass, plastic, scrap metal, tires, and organic materials)	
	8				▼ - Rapid water seepage at 8-1/2 Ft.
4.6				Test pit complete at 9-1/2 Ft.	
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-8

LOG OF TEST PIT NO. TP-9

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

PROJECT NO.: **31232654**

GROUNDWATER ENCOUNTERED: **7.5 Ft.**
GROUND SURFACE ELEVATION: **14.5 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
14.0				6 In. Topsoil	
				FILL - Dark yellow-brown (10YR 3/6), moist, Silty SAND [Sandy Loam per USDA]	
12.0					
11.5				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 2.5 Ft.
				FILL - Very dark gray (10YR 3/1), moist, Clayey SAND [Sand Loam per USDA]	
10.5	4			FILL - Dark yellow-brown, moist, Poorly-graded SAND with silt [Loamy Sand per USDA]	- Infiltration Rate = 0 in/hr at 3 Ft.
				- Buried trash (glass, plastic, scrap metal, tires, and organic materials)	- NMC = 16.1%
				- Olive-brown (2.5Y 4/3) at 7 Ft.	▼ - Rapid water seepage at 7-1/2 Ft.
	8				
5.5				Test pit complete at 9 Ft.	
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-9

LOG OF TEST PIT NO. TP-10

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **8.5 Ft.**
GROUND SURFACE ELEVATION: **12.5 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
12.0	0			6 In. Topsoil FILL - Dark brown (10YR 3/3), moist, Silty SAND [Sandy Loam per USDA]	
10.0				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 2.5 Ft. - Infiltration Rate = 0 in/hr at 3 Ft.
9.5				FILL - Very dark gray (10YR 3/1), moist, Sandy Lean CLAY [Sandy Clay per USDA]	
7.5	4			FILL - Dark yellow-brown (10YR 4/6), moist, Silty SAND [Sandy Loam per USDA] - Buried trash (glass, plastic, scrap metal, tires, and organic materials)	
3.0	8			Test pit complete at 9-1/2 Ft.	▼ - Moderate water seepage at 8-1/2 Ft.
	12				
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-10

LOG OF TEST PIT NO. TP-11

PROJECT: **Jernee Mill Industrial**
PROJECT LOCATION: **Borough of Sayreville, NJ**
CLIENT: **Claremont Development**

PROJECT NO.: **31232654**

DATE STARTED: **2/5/2024**
DATE COMPLETED: **2/5/2024**
CONTRACTOR: **Krutis Excavating**
EQUIPMENT: **Komatsu PC138us LC**

GROUNDWATER ENCOUNTERED: **7.5 Ft.**
GROUND SURFACE ELEVATION: **11.25 Ft.**
DATUM: **Provided**
LOGGED BY: **VP**
CHECKED BY: **KTP**

ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
	0				
10.8				6 In. Topsoil	
				FILL - Dark brown (10YR 3/3), moist, Silty SAND [Sandy Loam per USDA]	- Infiltration Rate = 0 in/hr at 1 Ft.
8.8				FILL - Light yellow-brown (2.5Y 6/3), moist, Poorly-graded SAND [SAND per USDA]	- Filter fabric, Geo-grid, and Impermeable liner at 2.5 Ft.
8.3				FILL - Very dark gray (10YR 3/1), moist, Sandy Lean CLAY [Sandy Clay per USDA]	
	4				
5.8				FILL - Dark yellow-brown (10YR 4/6), moist, Silty SAND [Sandy Loam per USDA] - Buried trash (glass, plastic, scrap metal, tires, and organic materials)	
	8				▼ - Moderate water seepage at 7-1/2 Ft.
-0.8	12	PT		Black (10YR 2/1), wet, Peat [Silty Clay per USDA]	
-1.8				Test pit complete at 13 Ft.	
	16				
	20				
	24				

NOTES: **Location and elevation are approximate.**
BOC = Backfilled on completion

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LOG OF TEST PIT NO. TP-11

14 Worlds Fair Drive, Suite A
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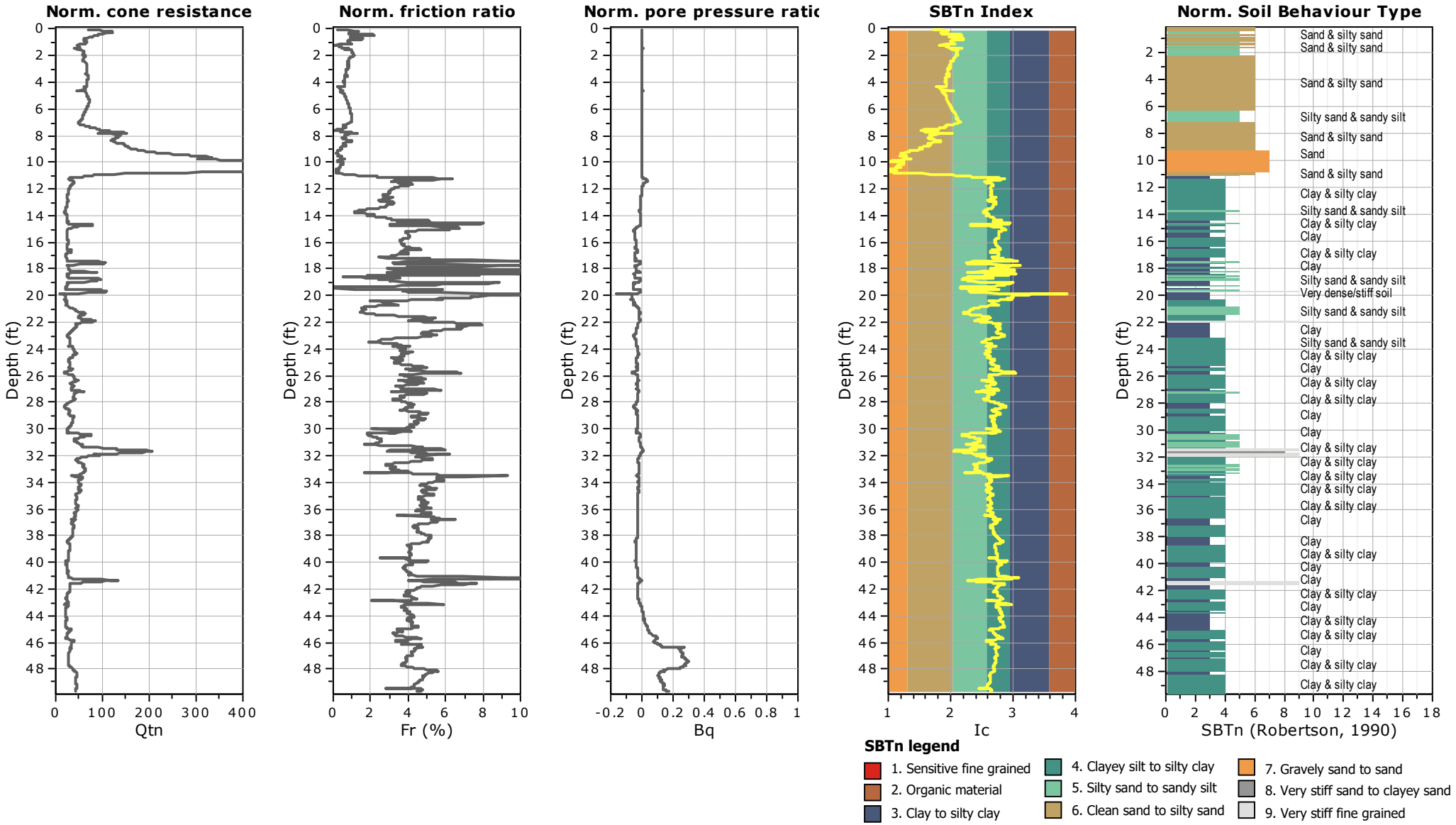
732-271-9301
www.gtaeng.com

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 1
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 7.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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Somerset, NJ 08873
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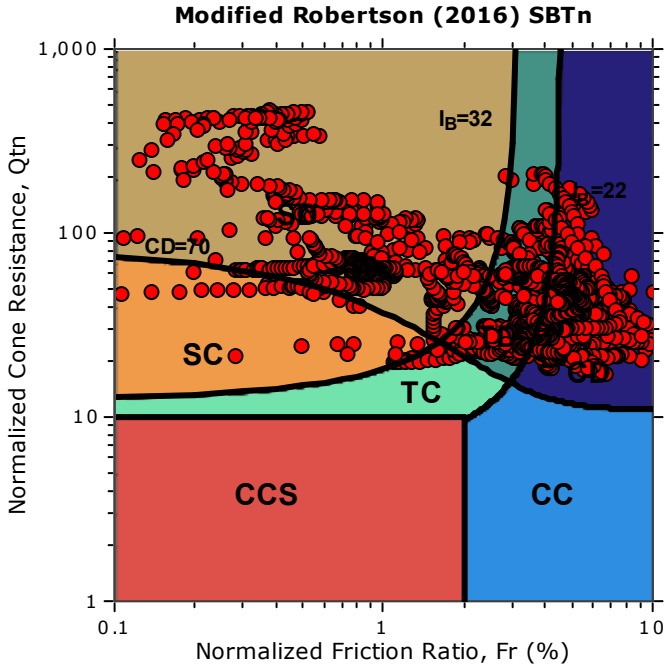
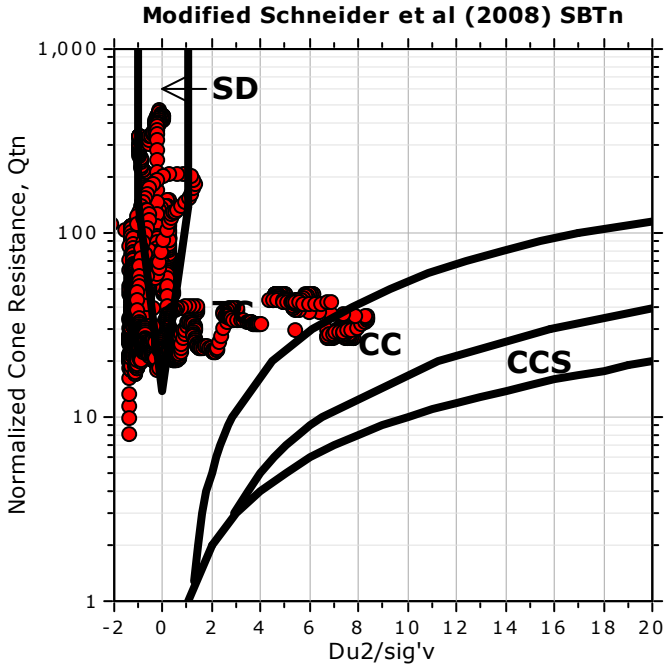
www.gtaeng.com

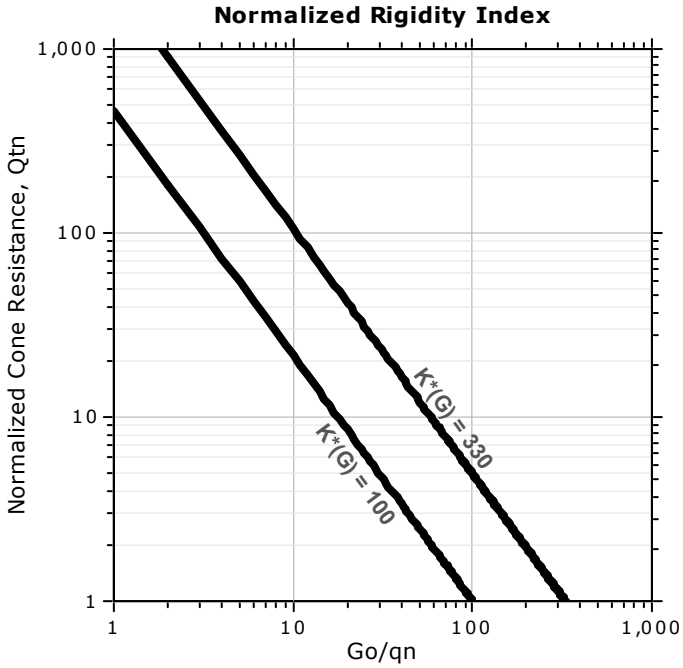
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 1
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 7.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
CD: Clay-like - Dilative
TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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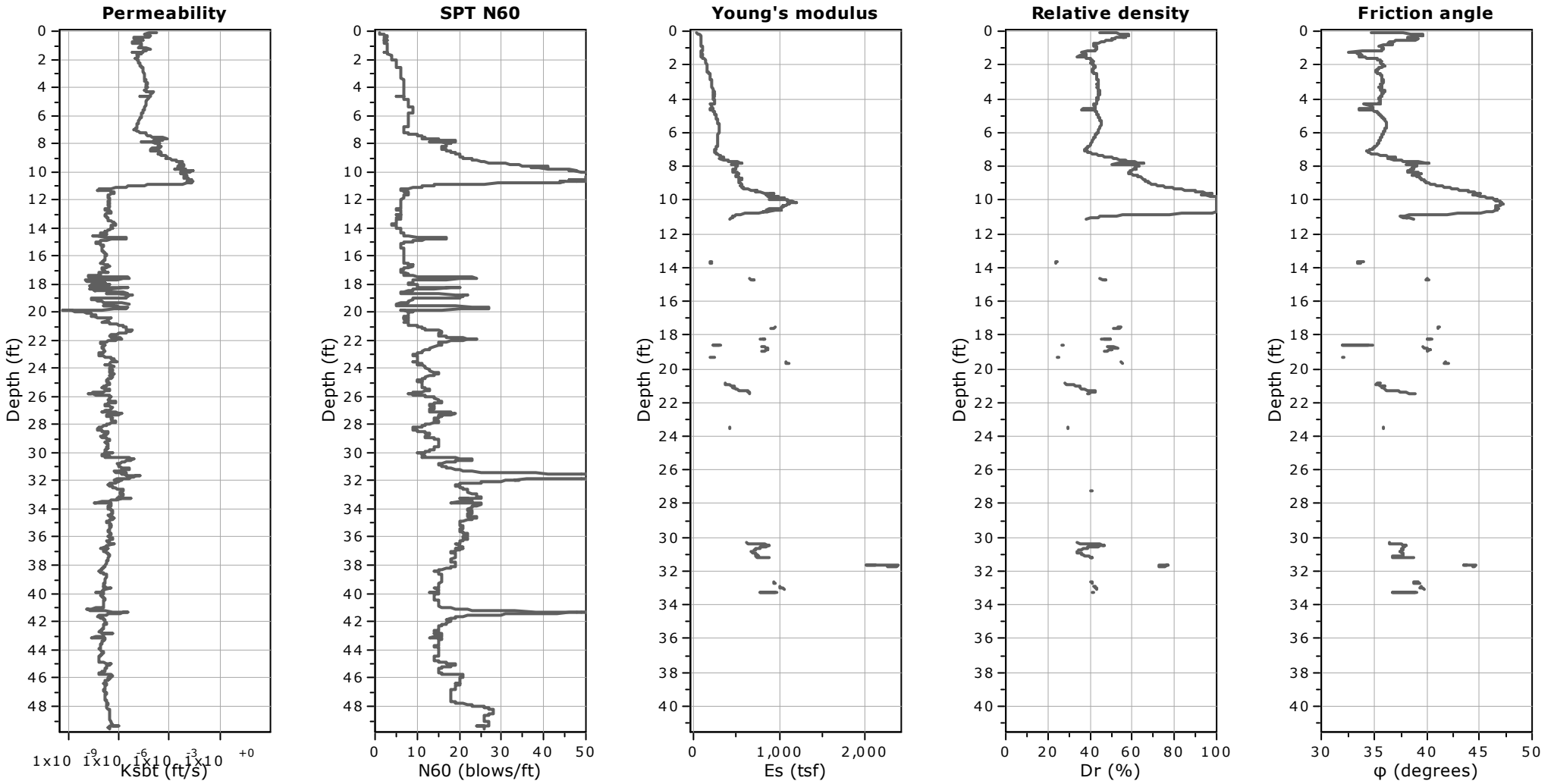
CPT: 1
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 7.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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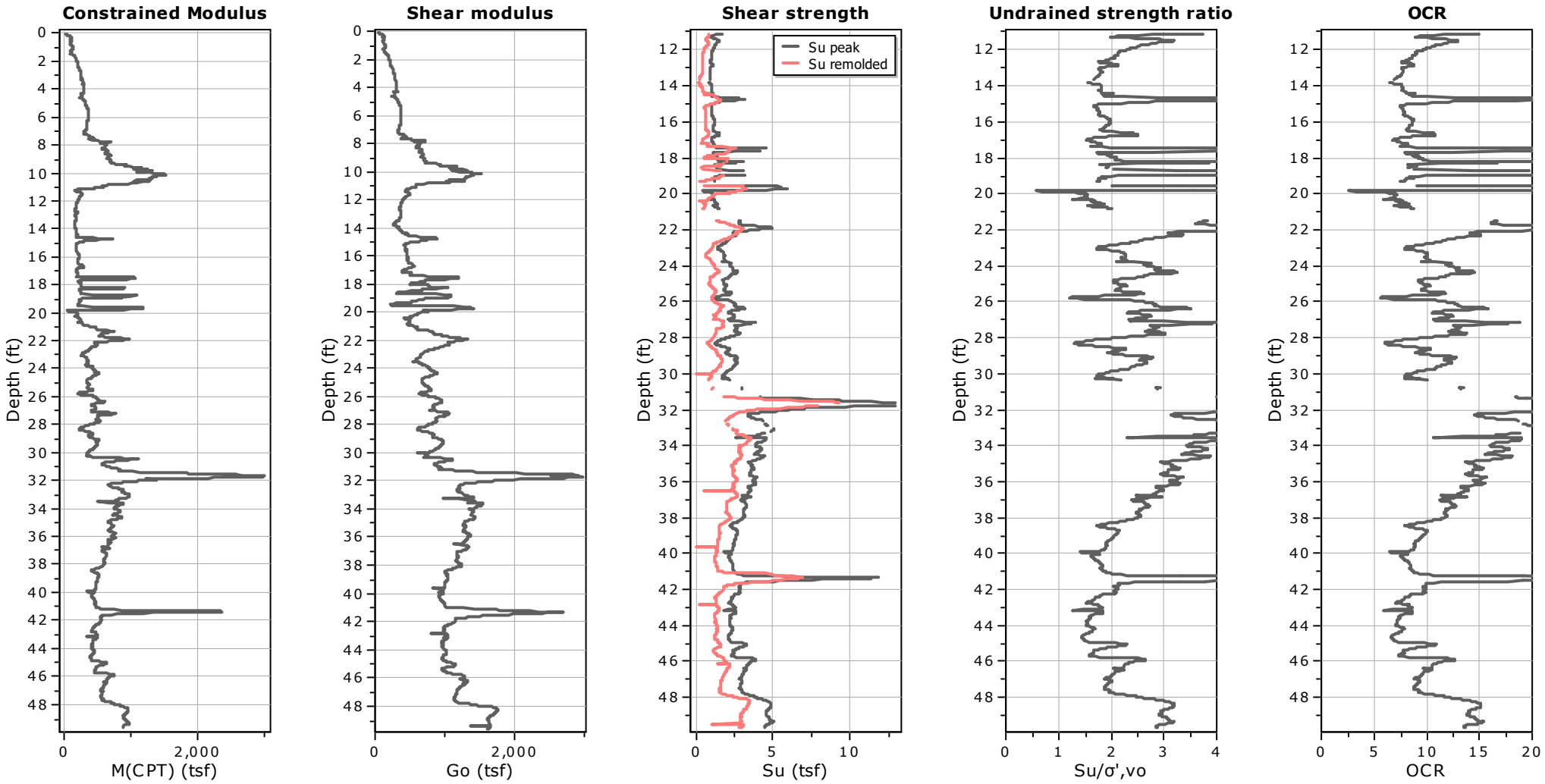
CPT: 1
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 7.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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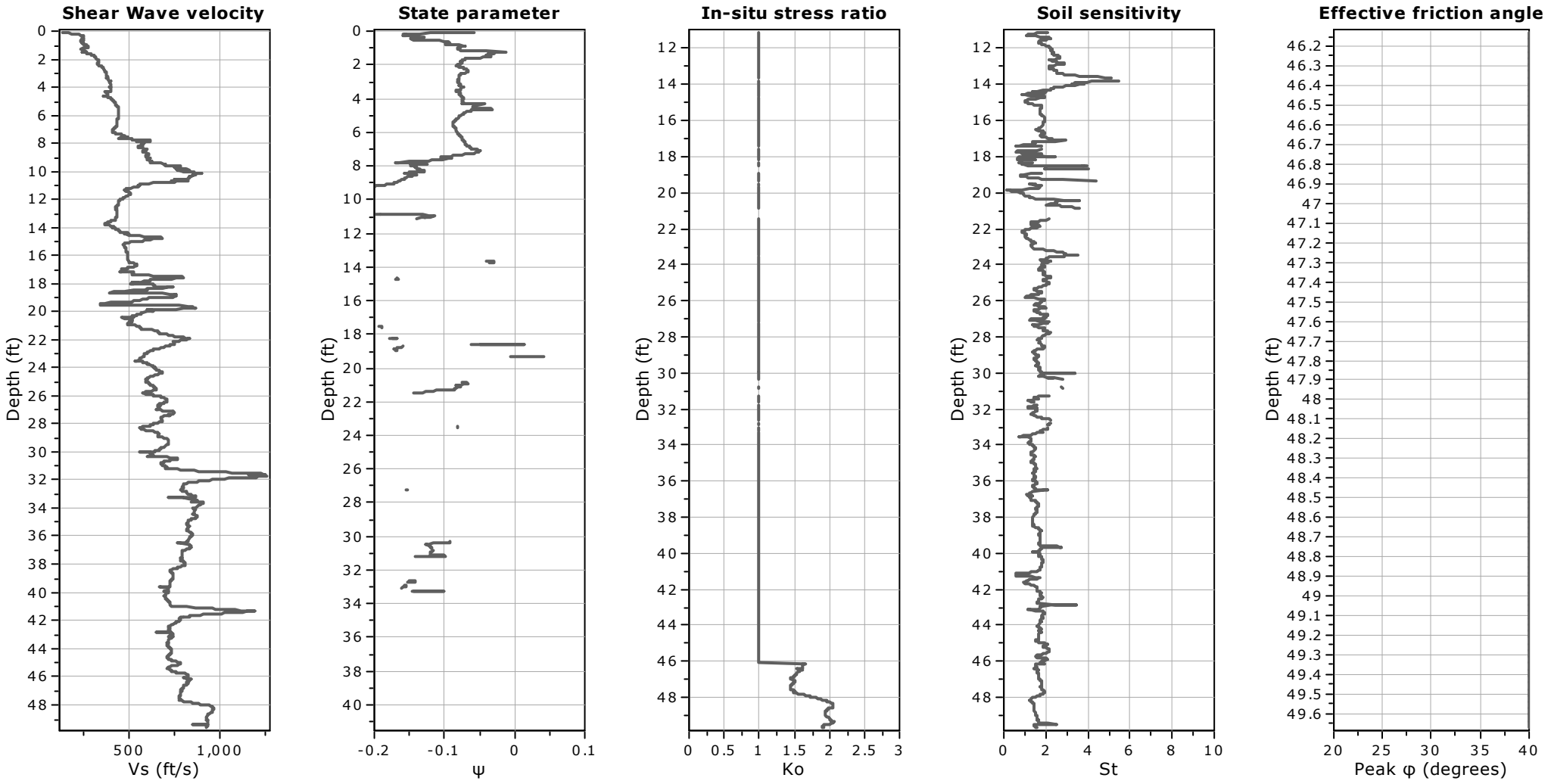
CPT: 1
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 7.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

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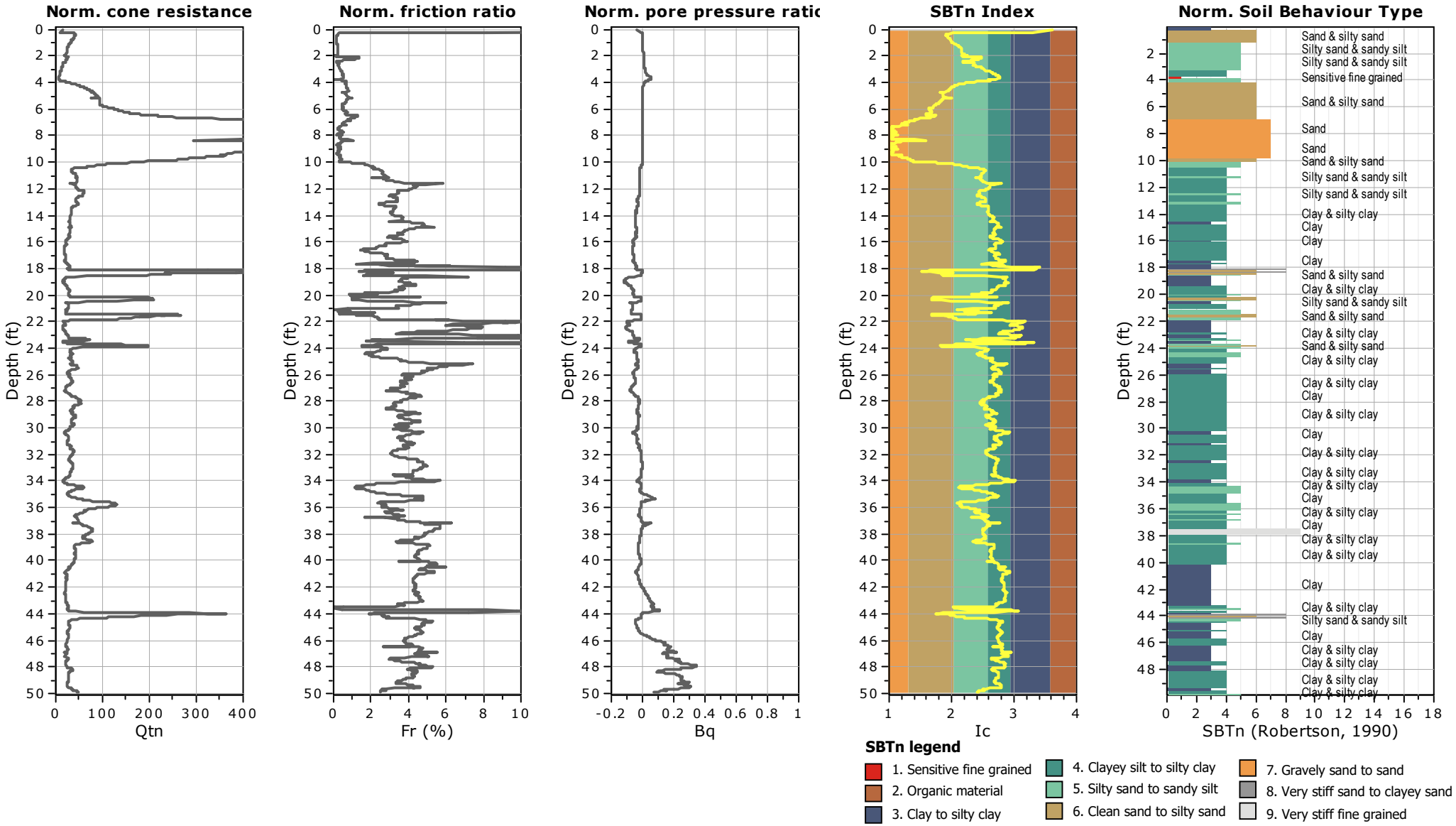
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 2
Total depth: 49.90 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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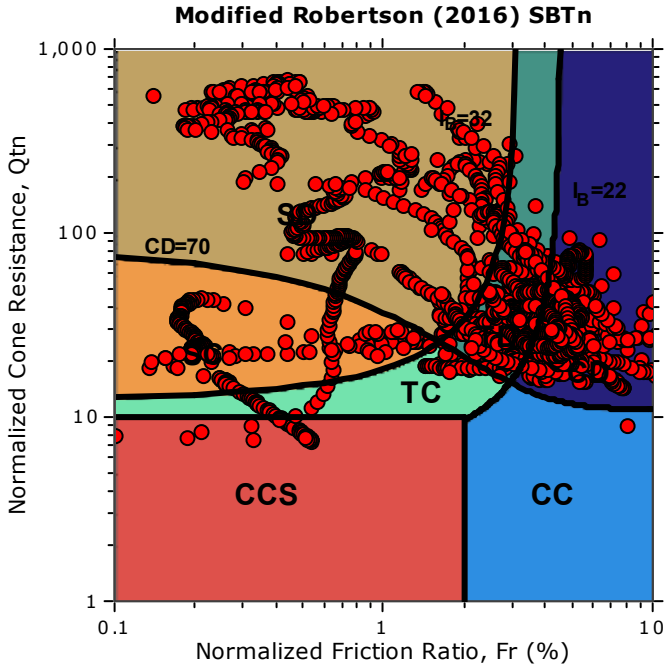
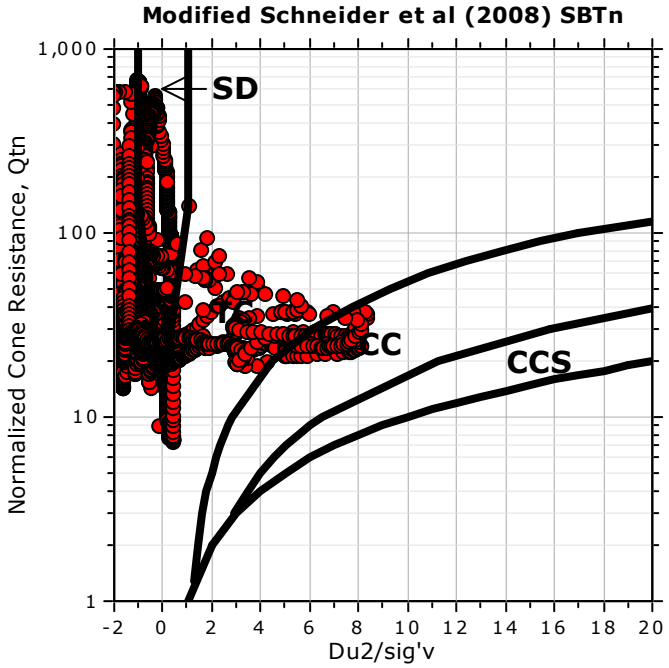
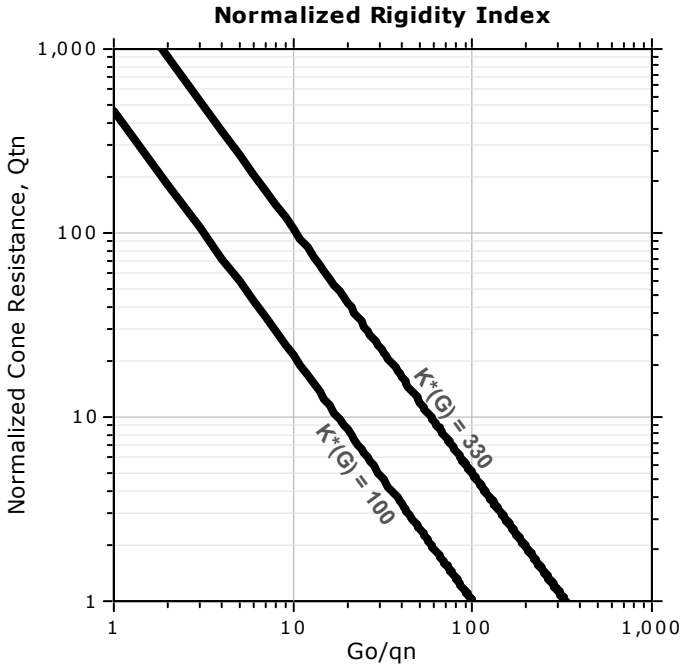
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 2
Total depth: 49.90 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
CD: Clay-like - Dilative
TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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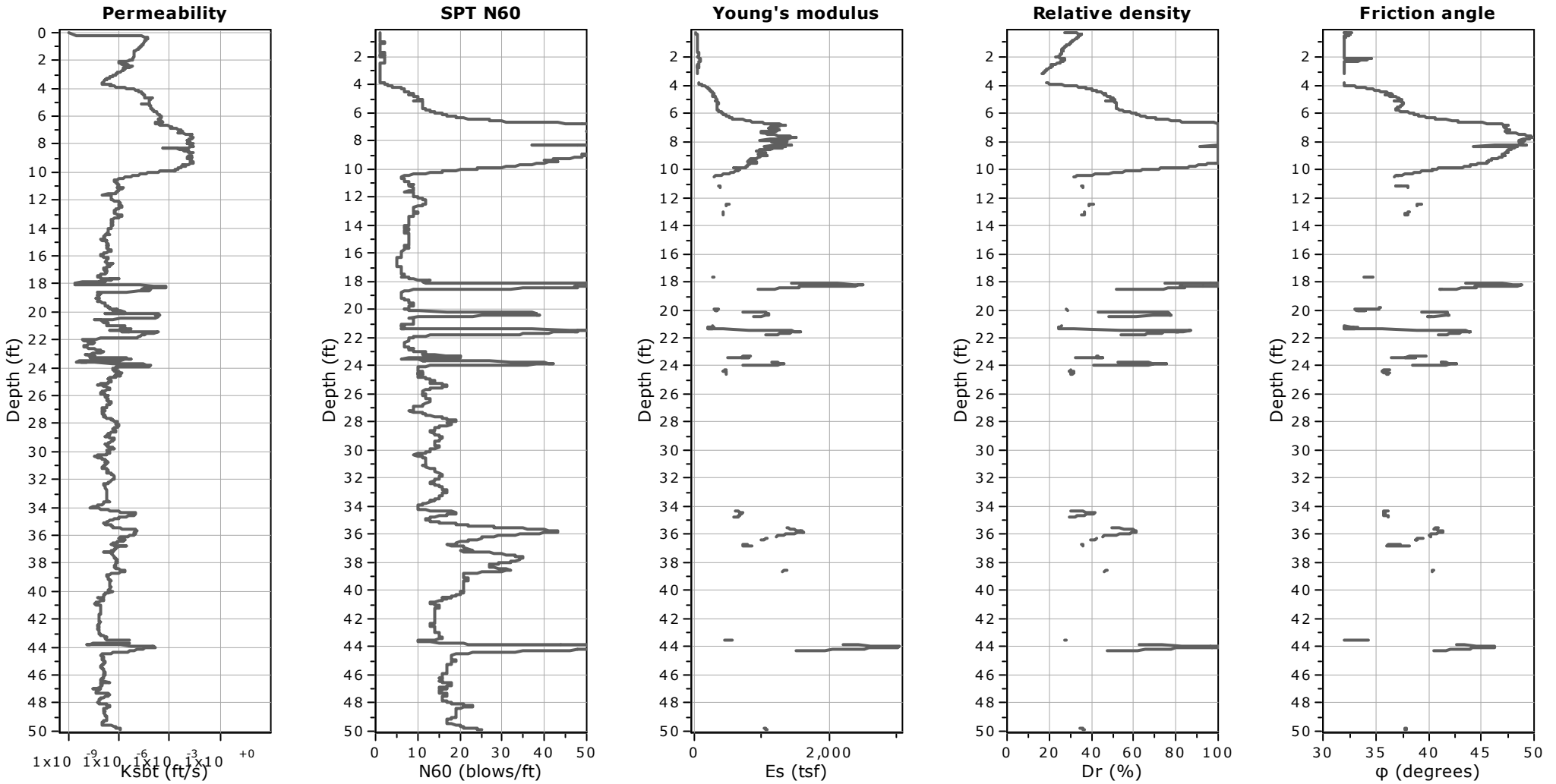
CPT: 2
Total depth: 49.90 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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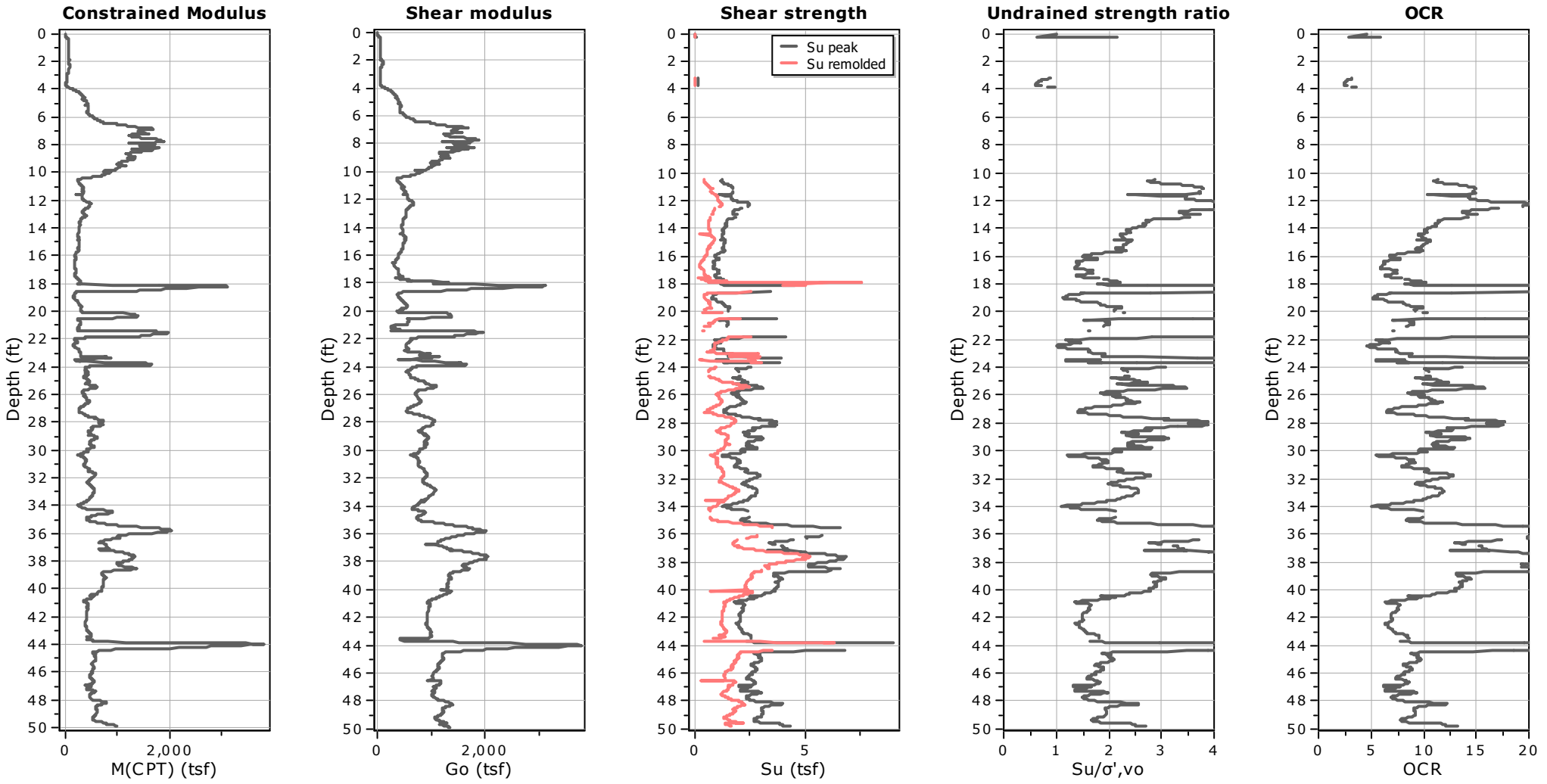
CPT: 2
Total depth: 49.90 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

14 Worlds Fair Drive, Suite A
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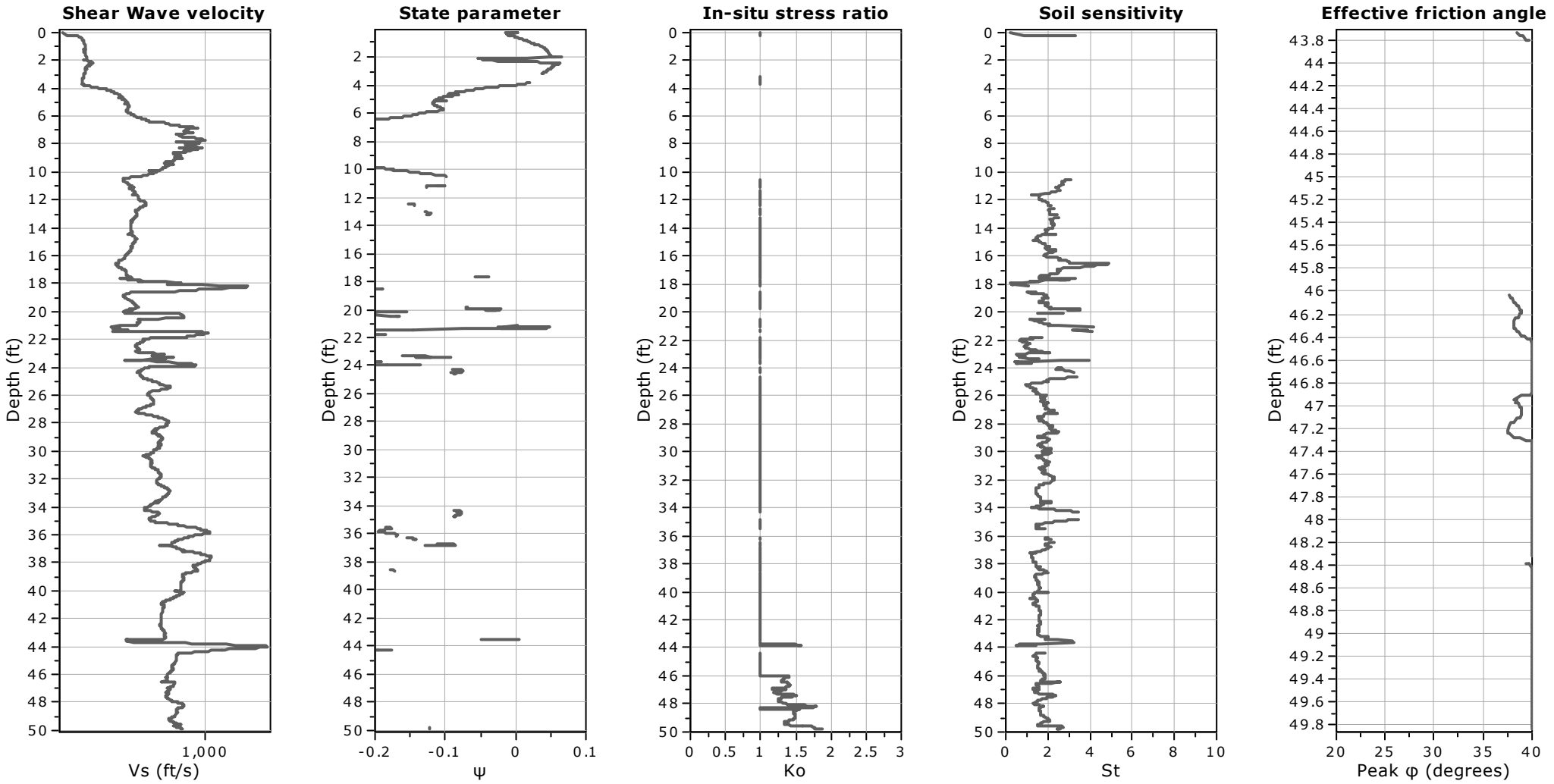
CPT: 2
Total depth: 49.90 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

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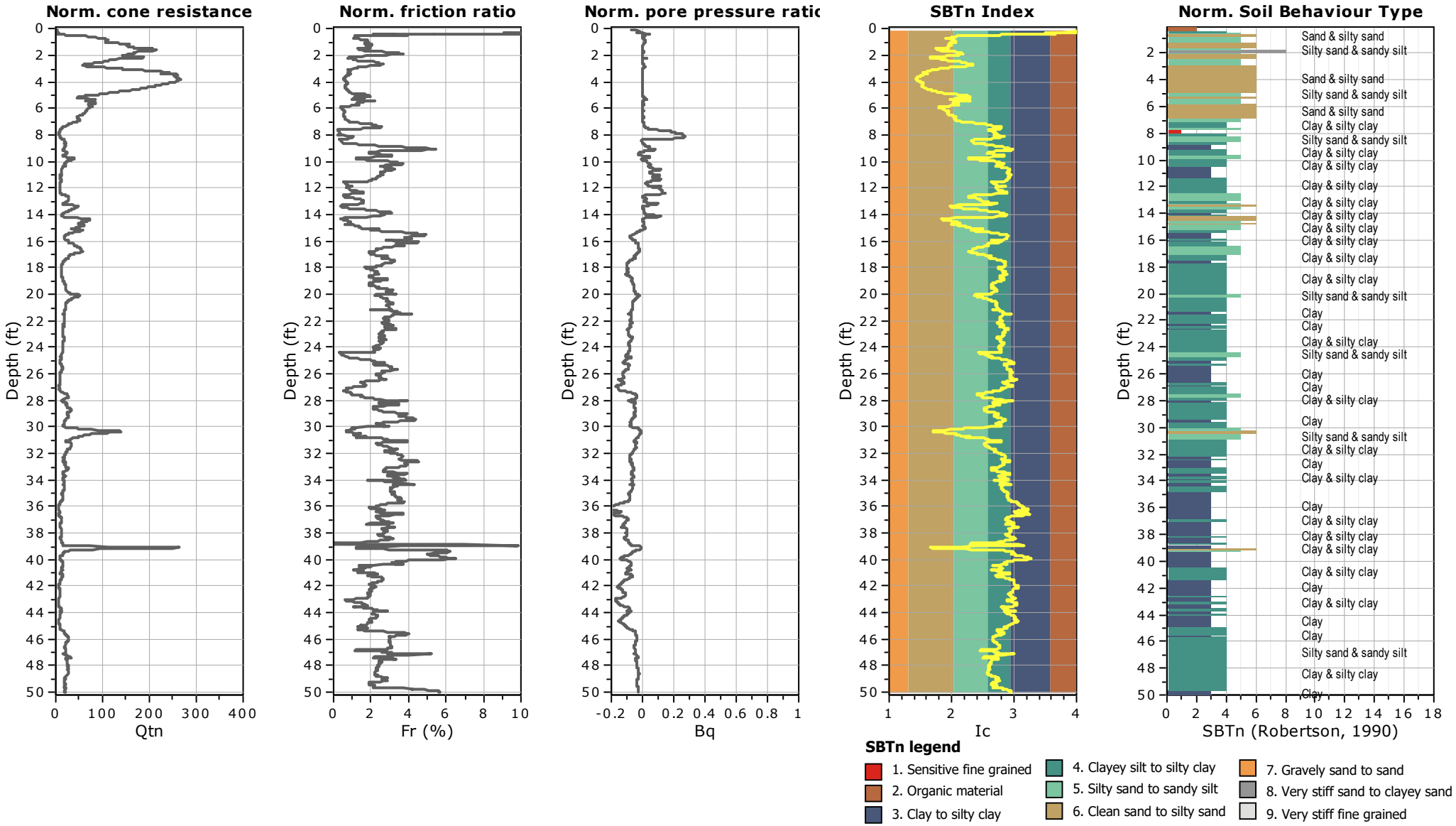
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 3
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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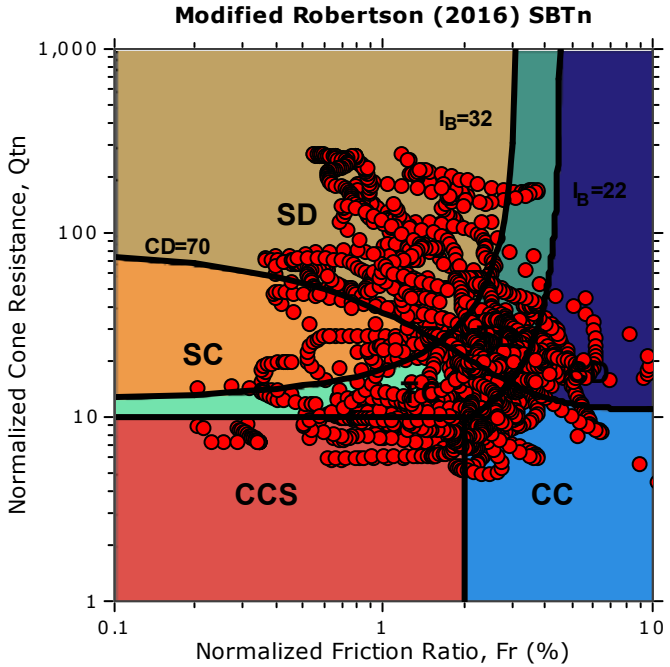
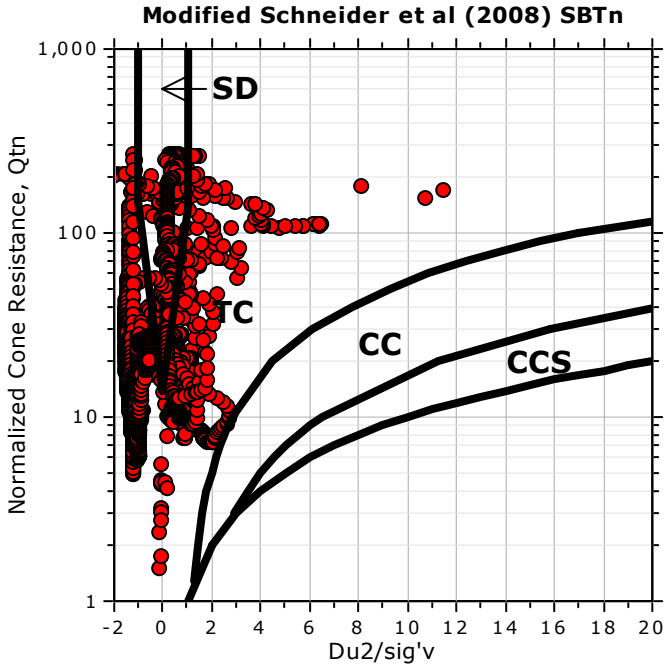
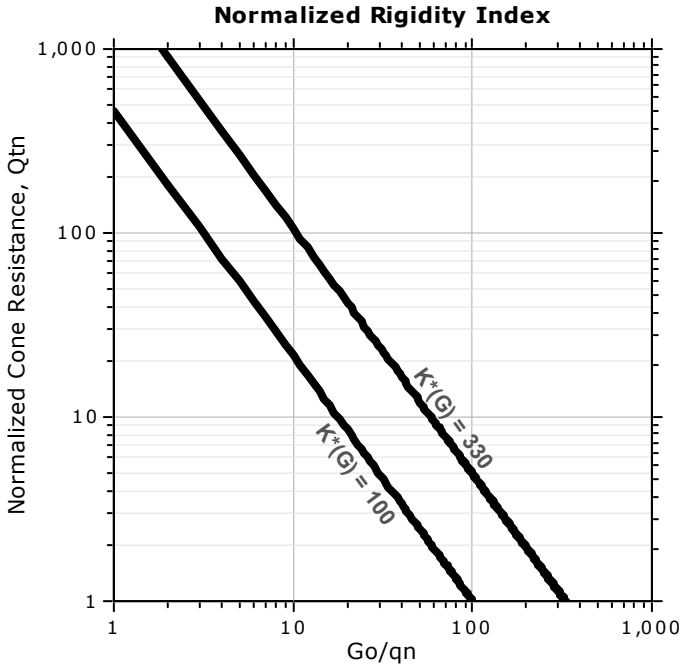
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 3
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
CD: Clay-like - Dilative
TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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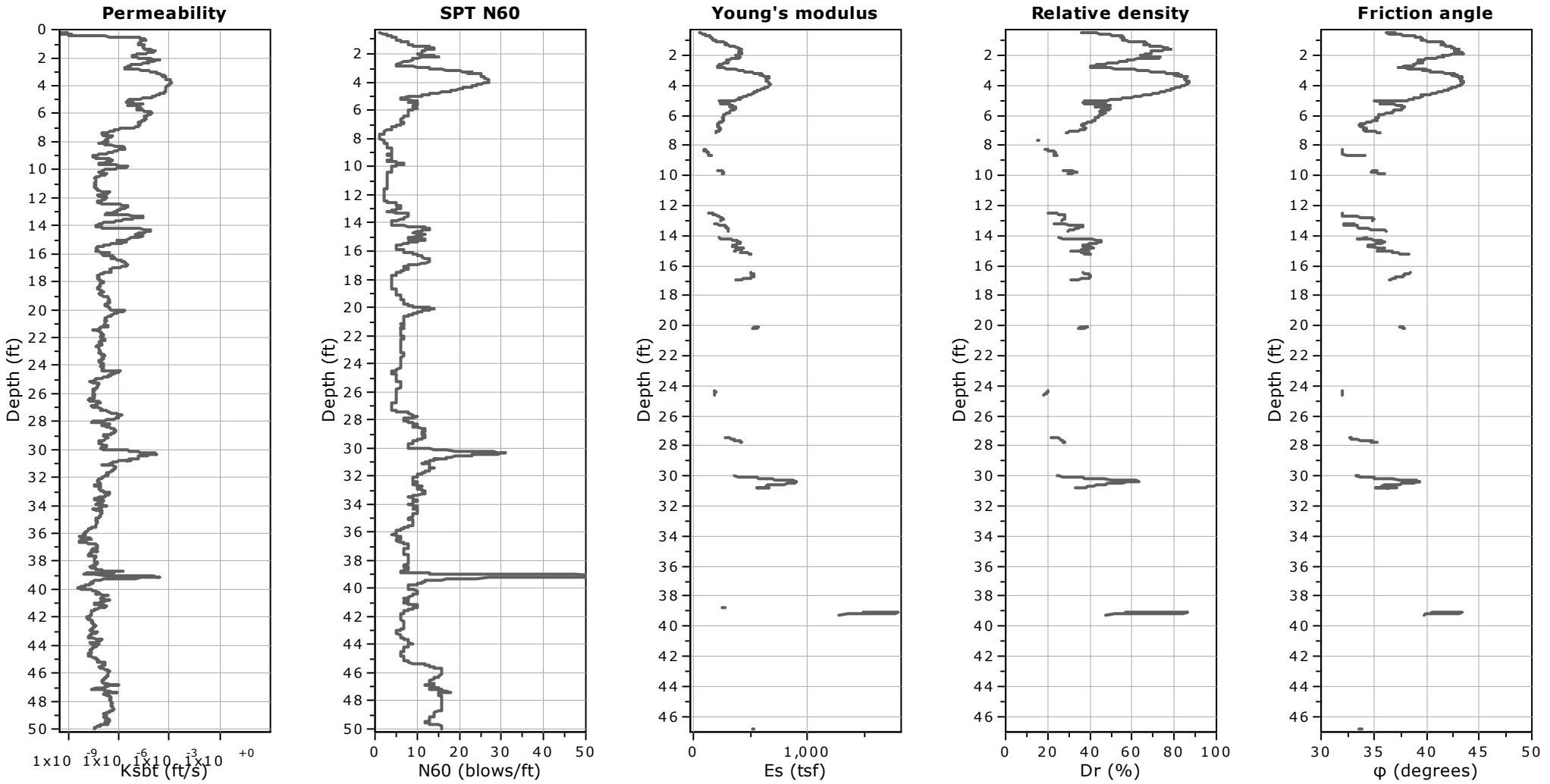
CPT: 3
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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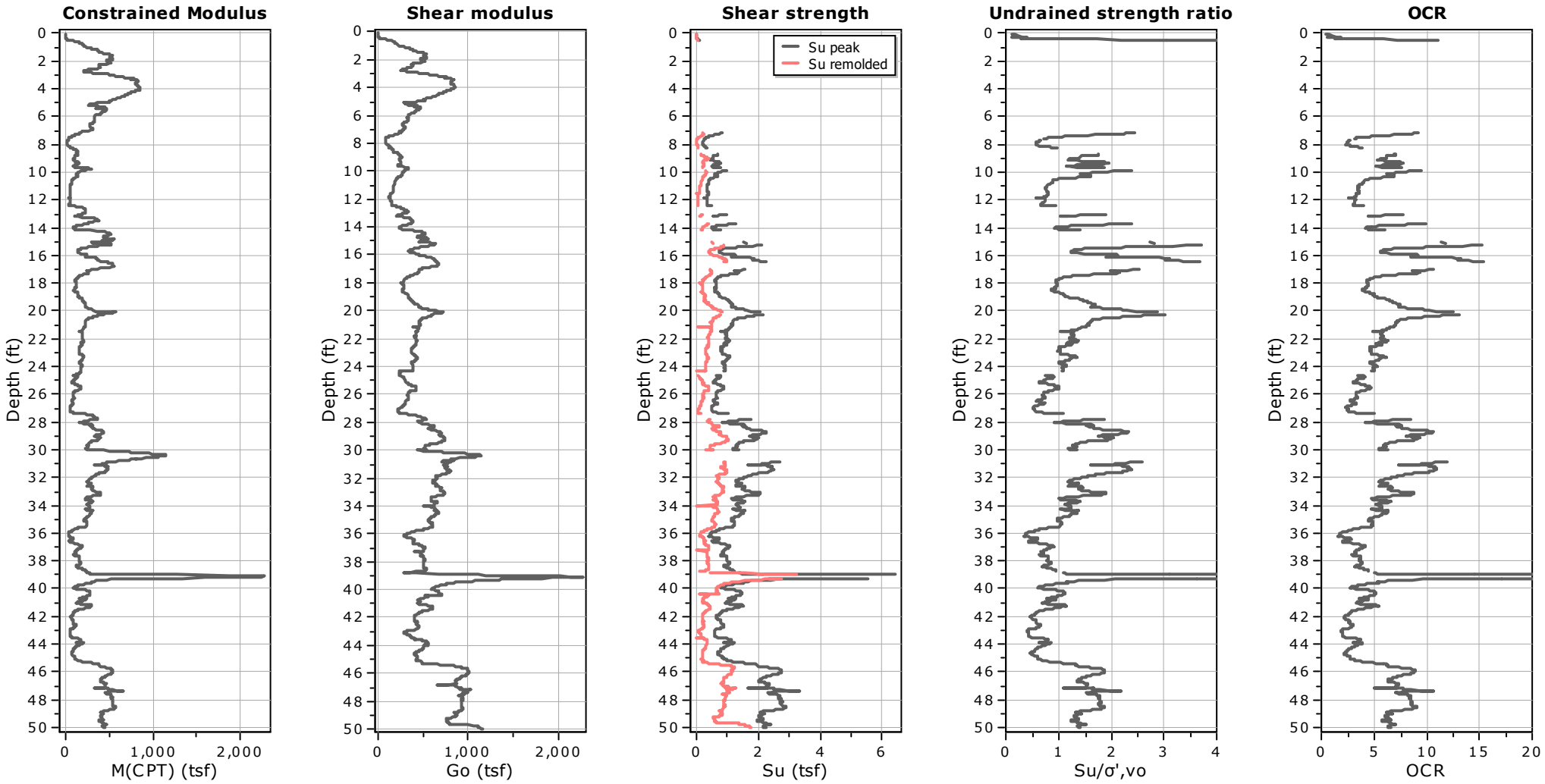
CPT: 3
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873
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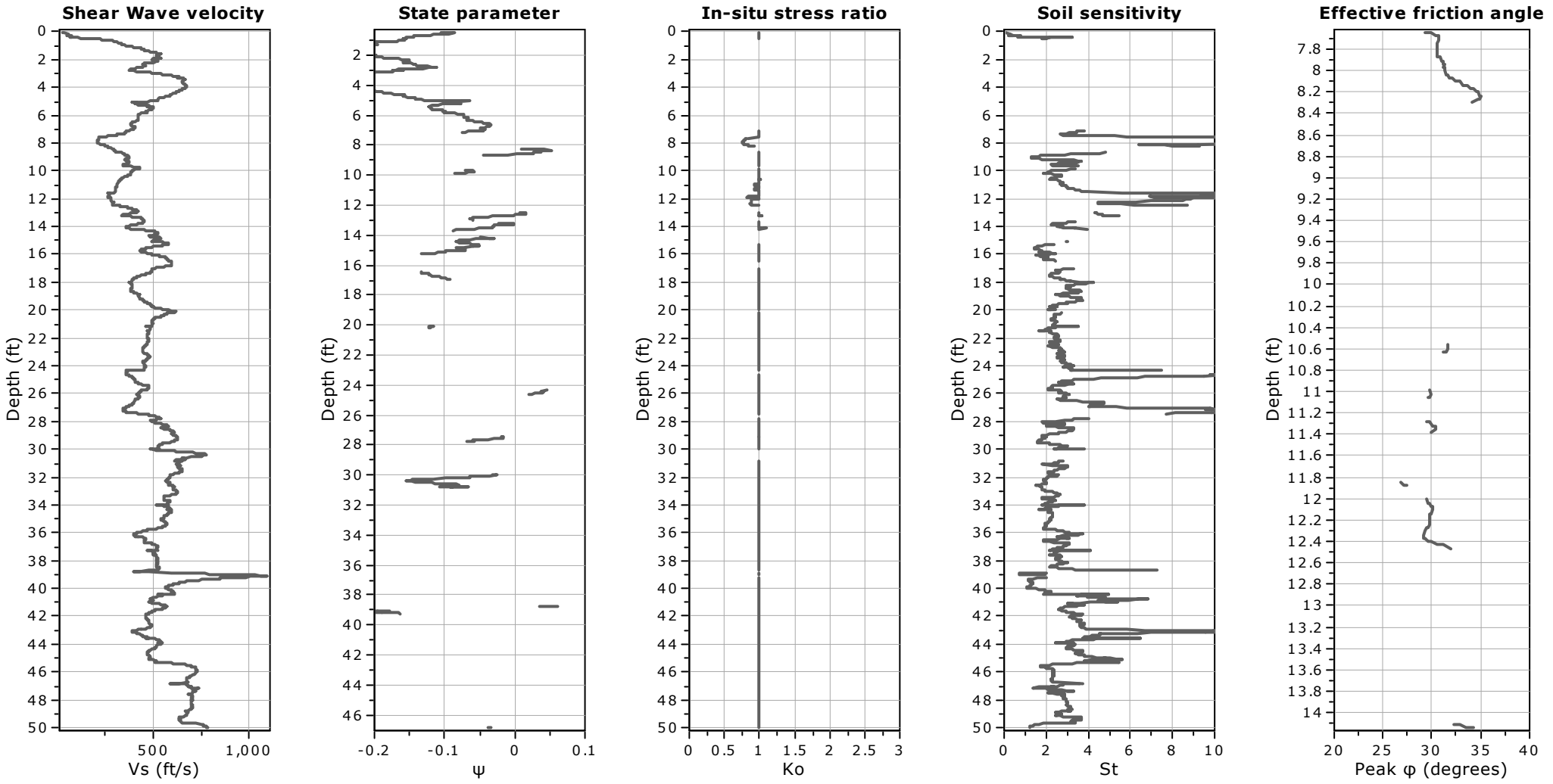
www.gtaeng.com

CPT: 3
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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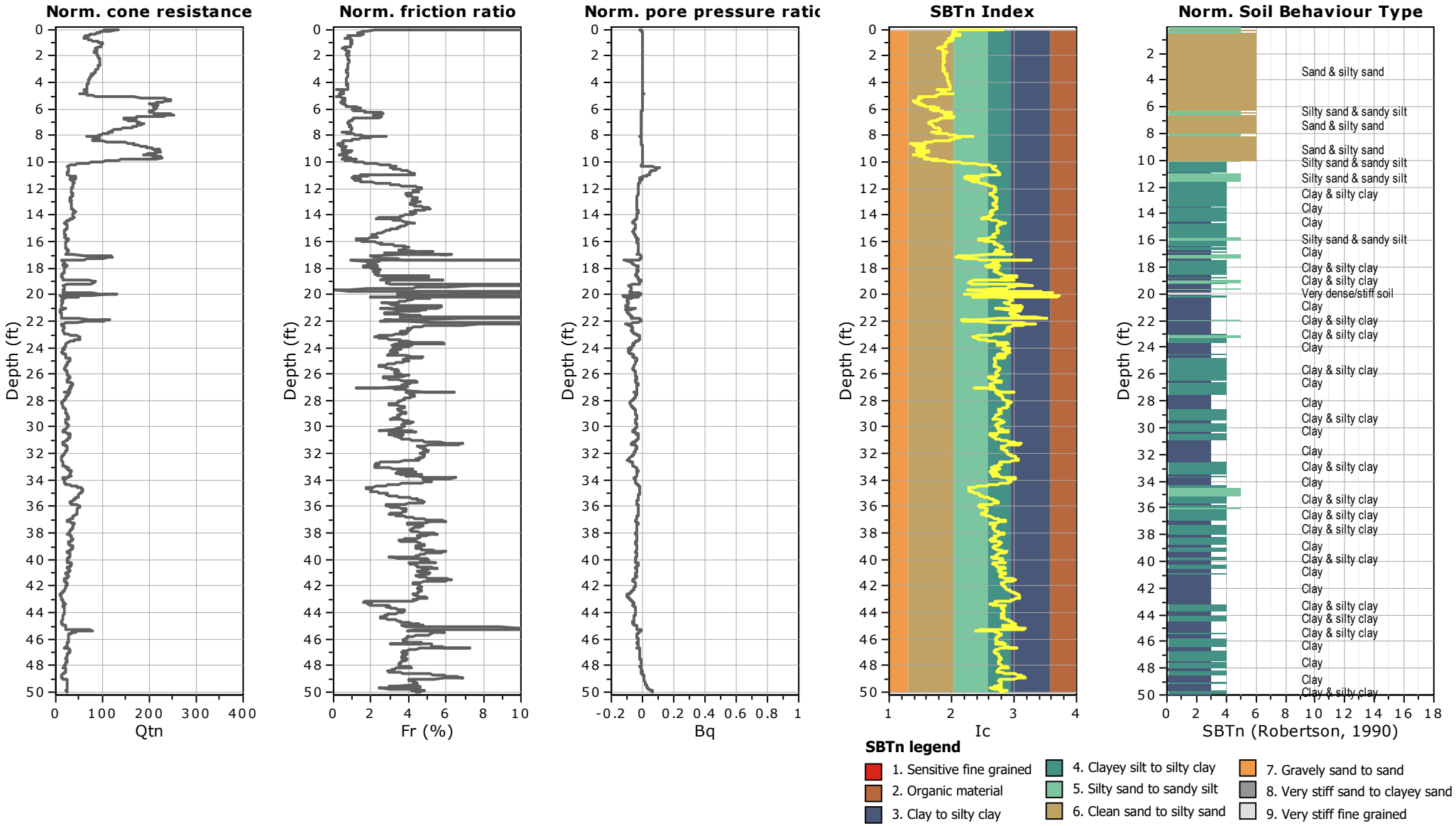
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 4
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 4
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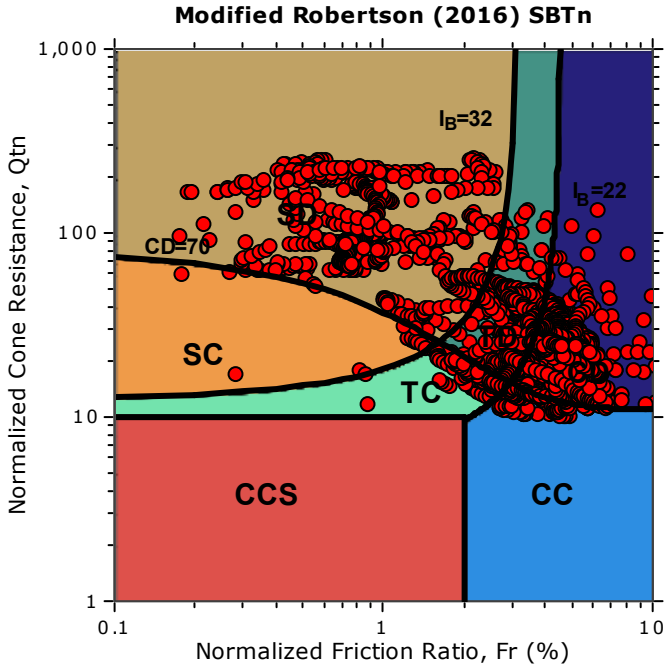
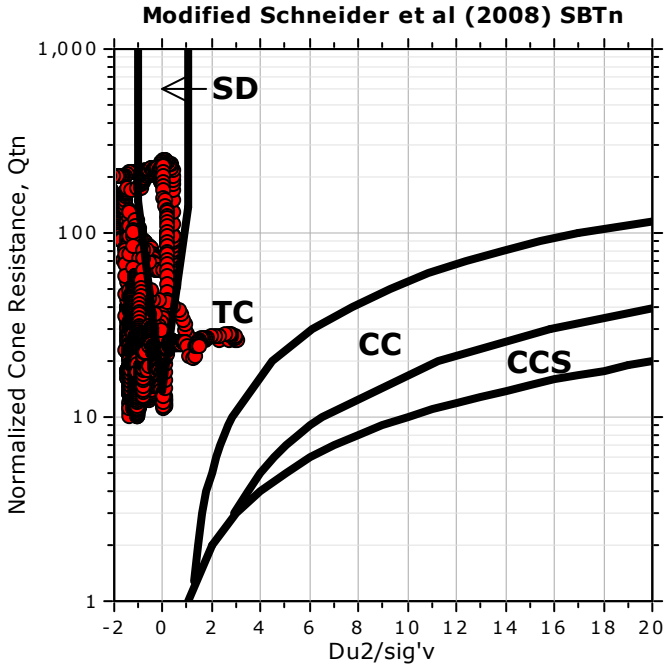
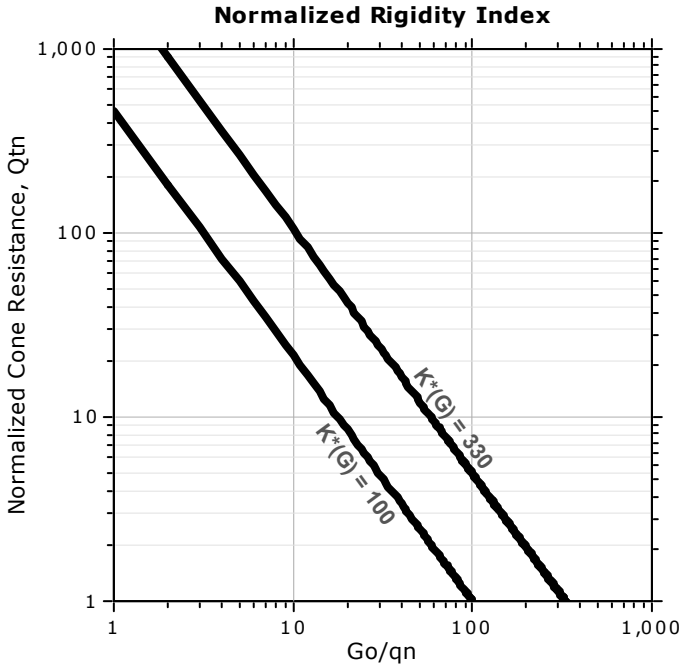
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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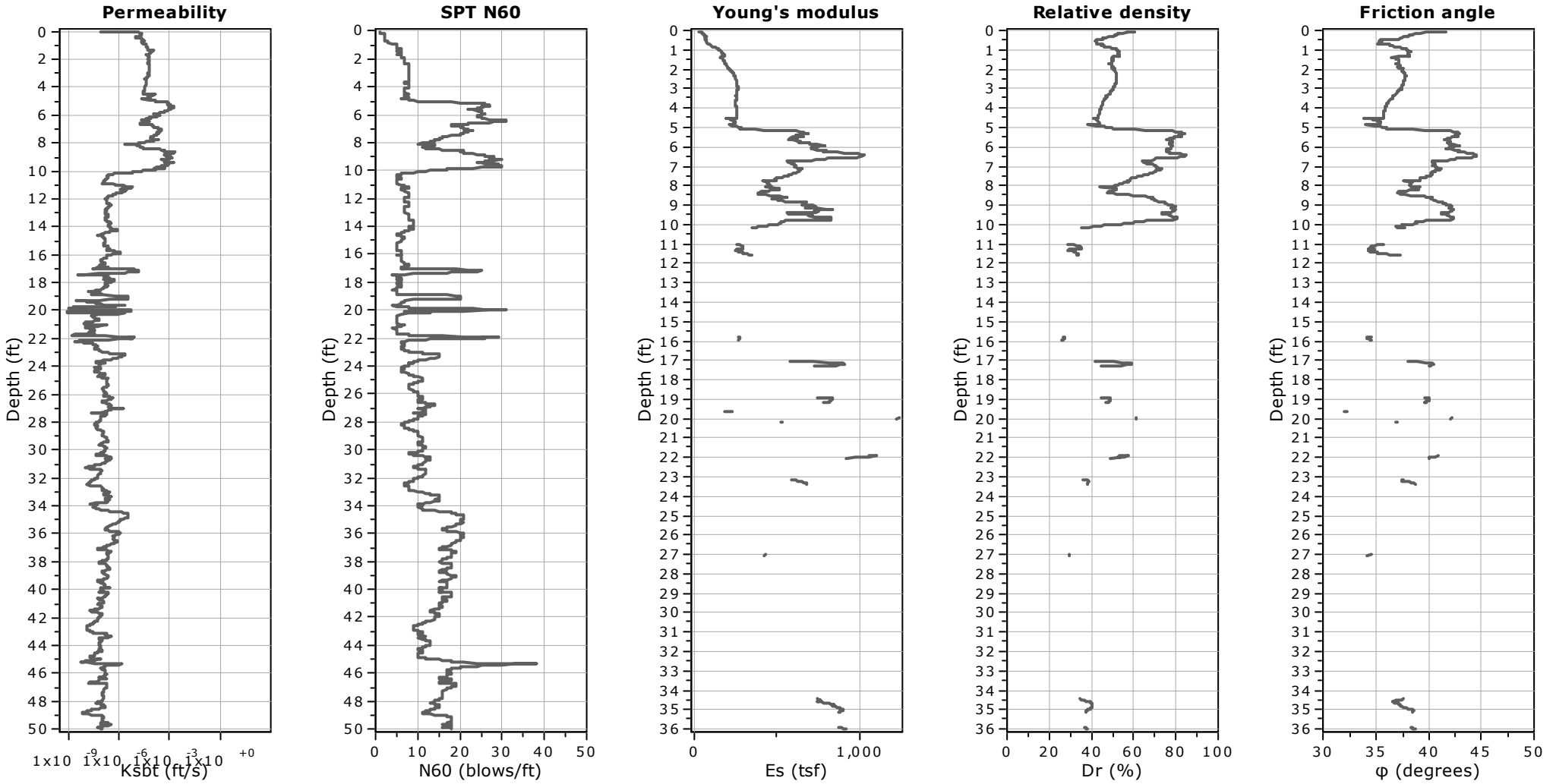
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 4
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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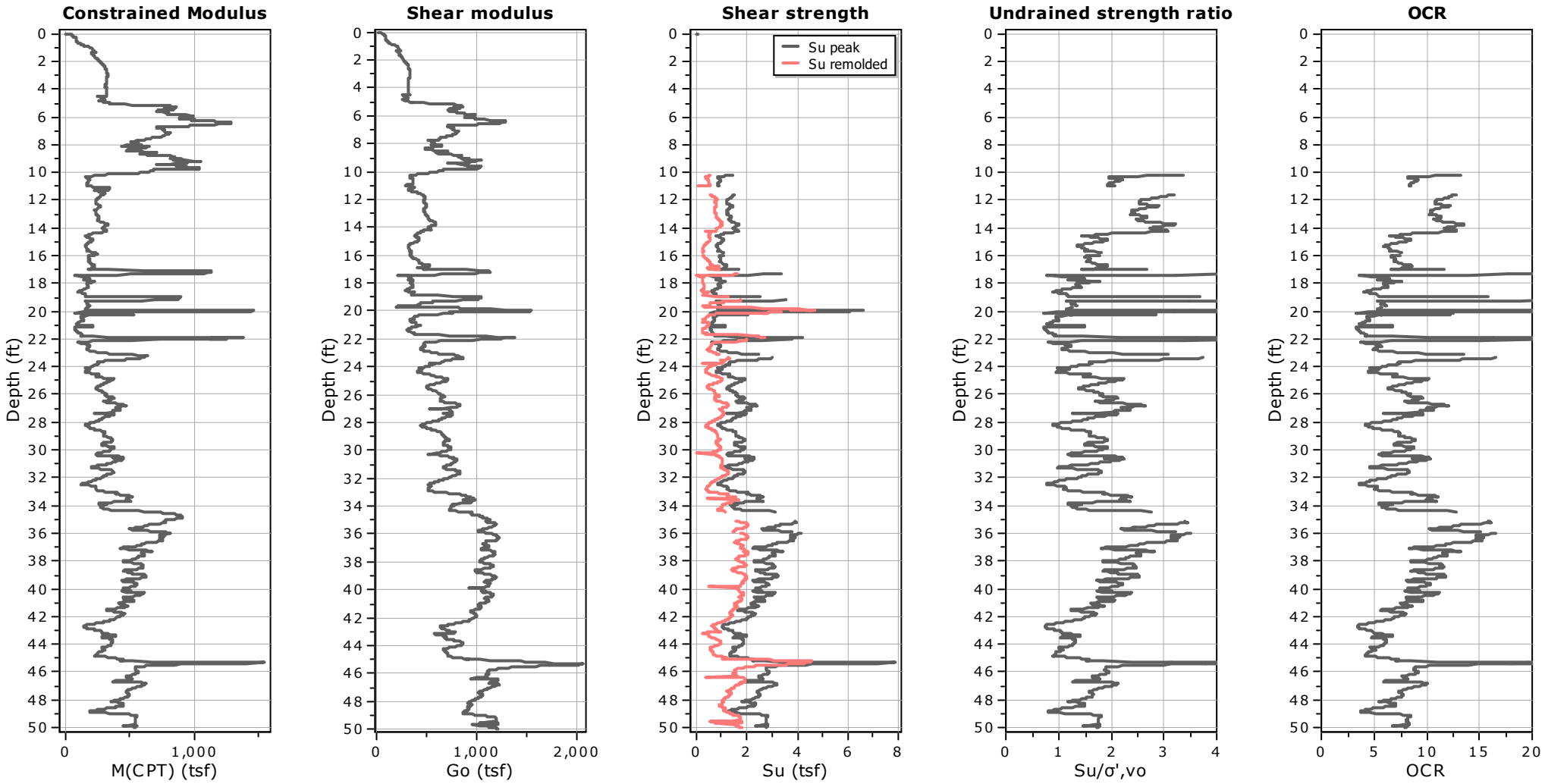
CPT: 4
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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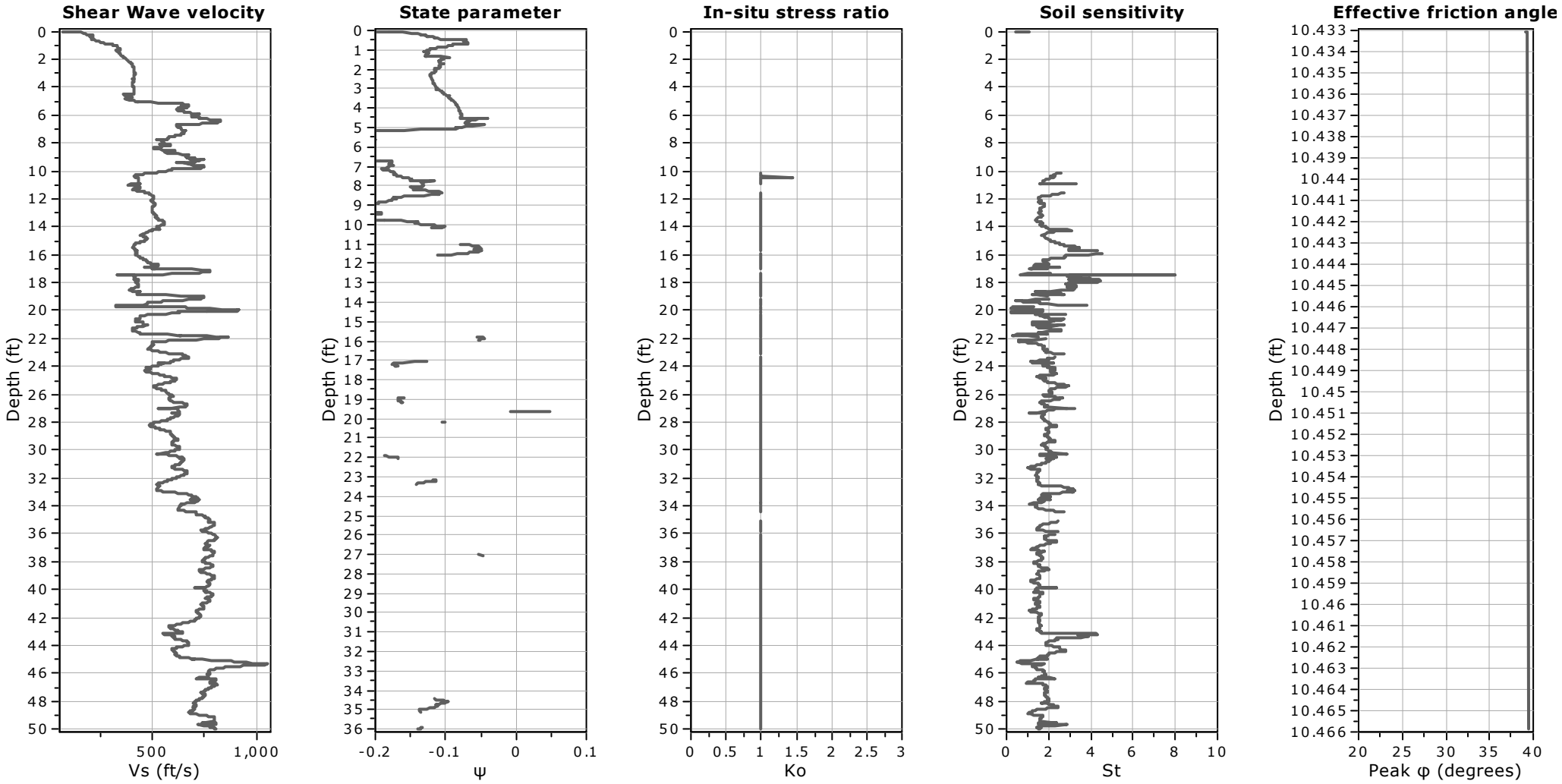
CPT: 4
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

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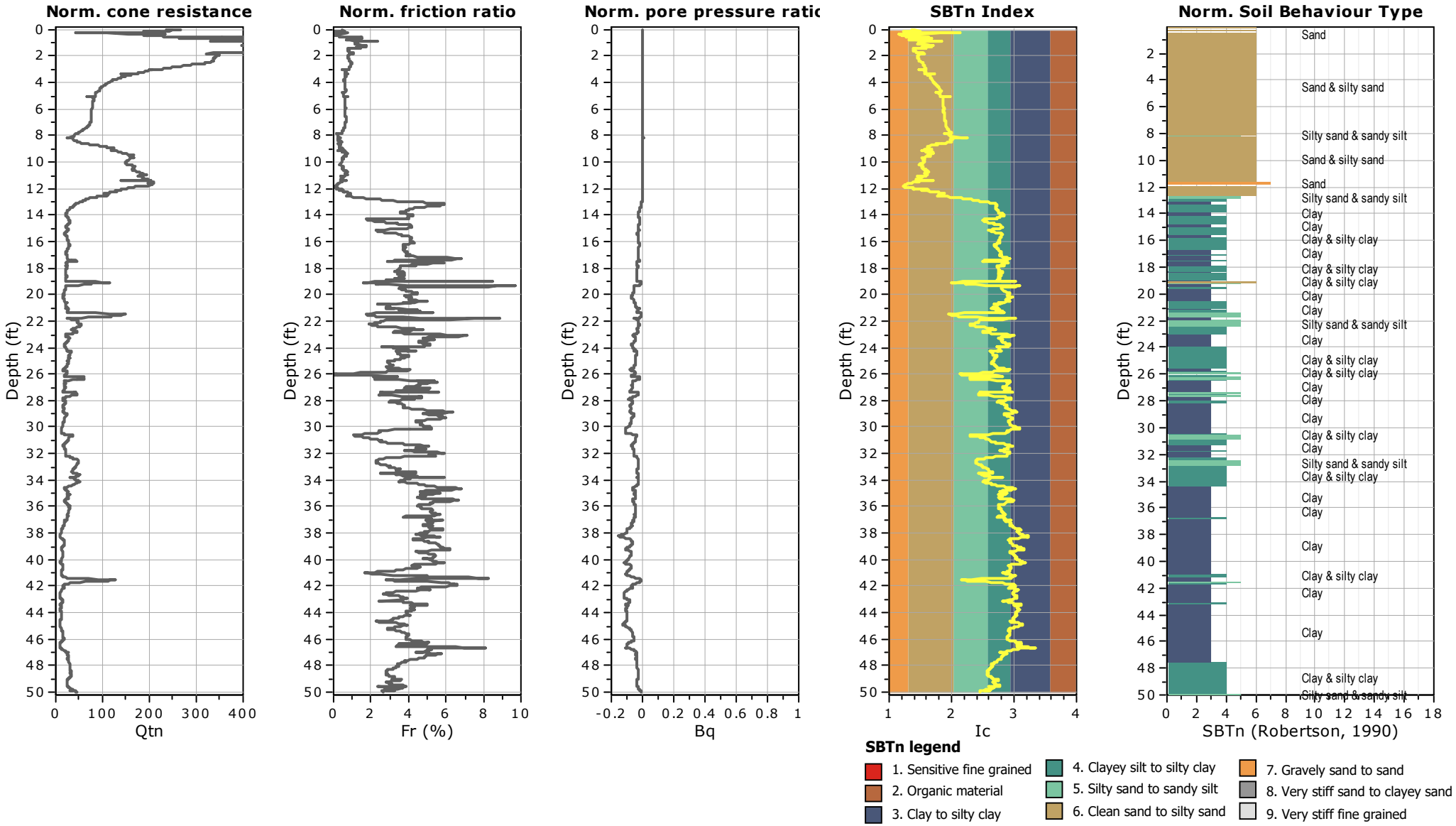
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 5
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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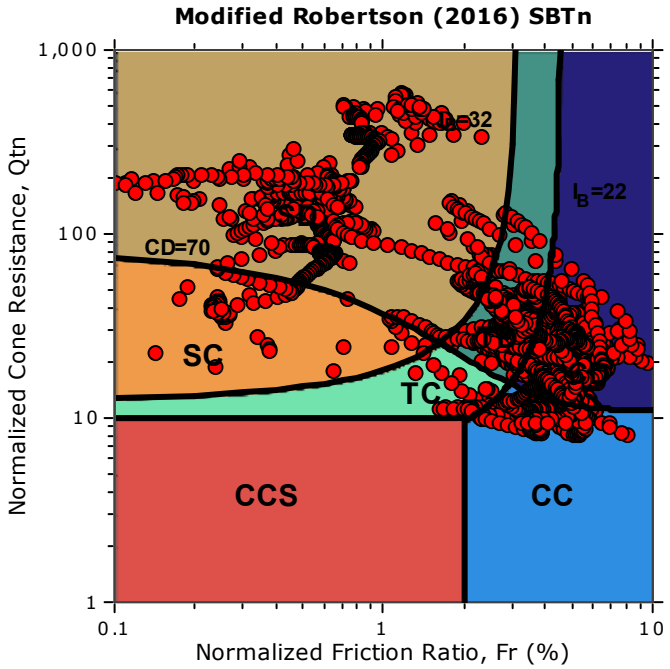
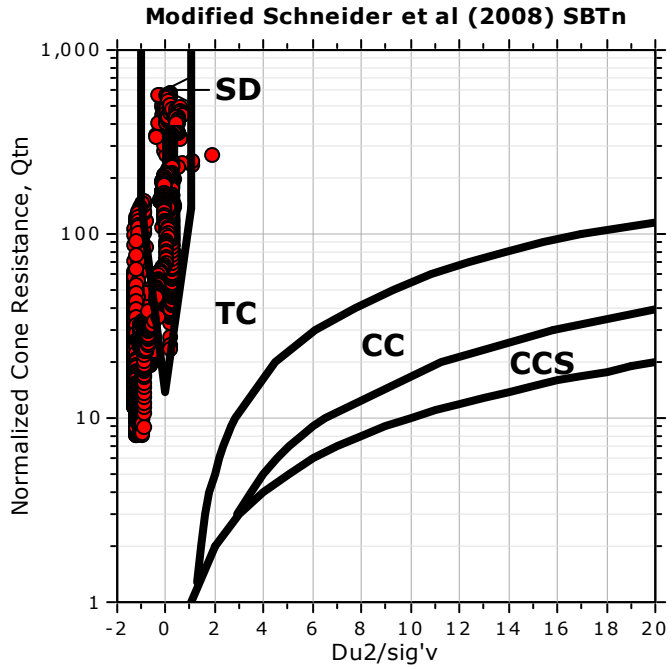
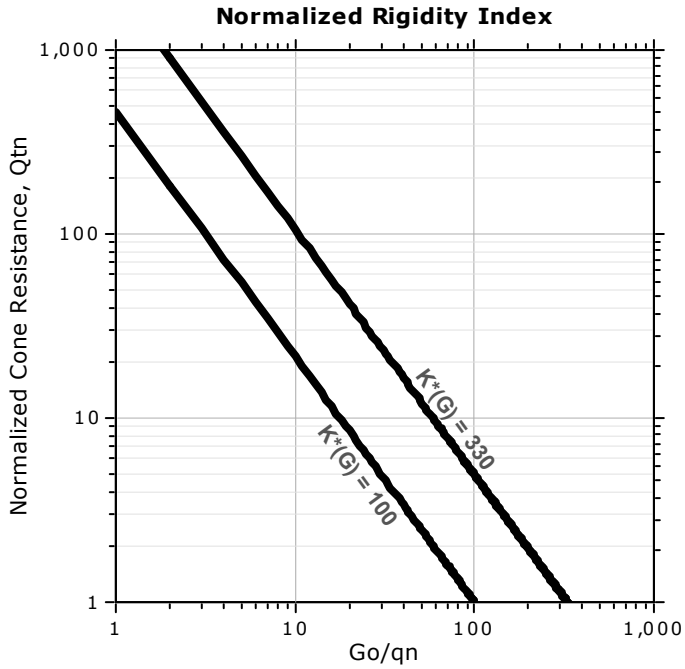
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 5
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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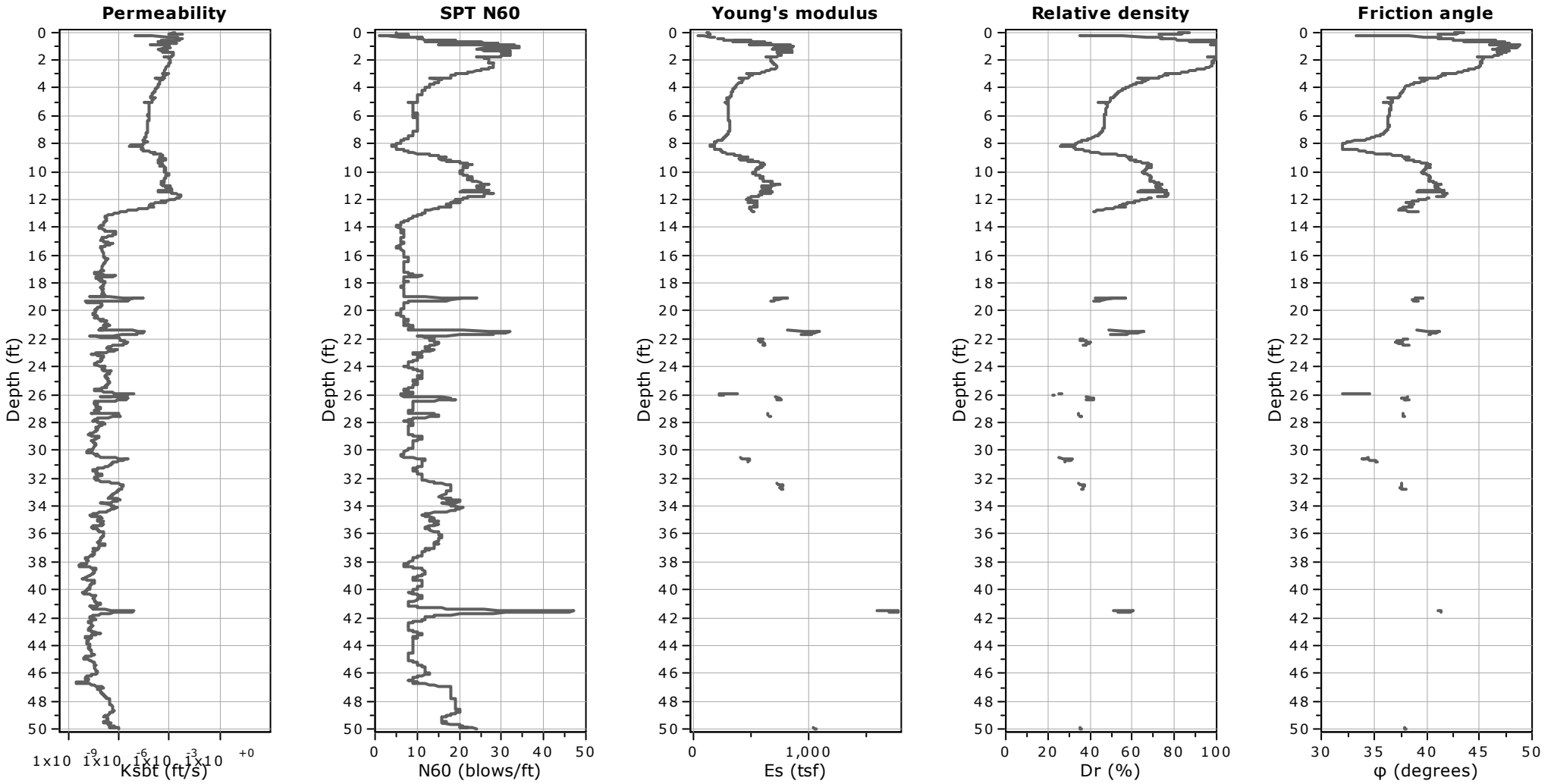
CPT: 5
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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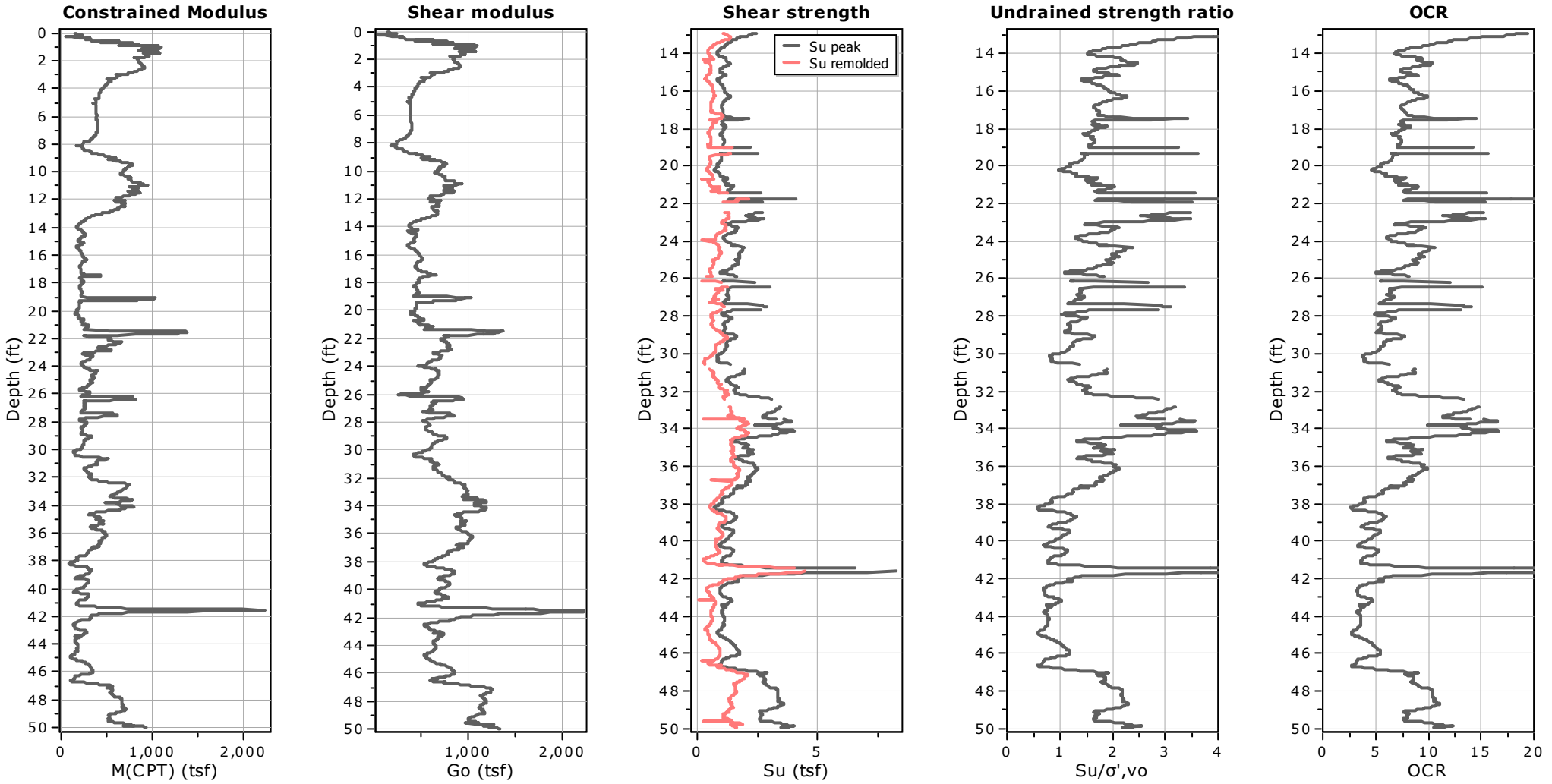
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 5
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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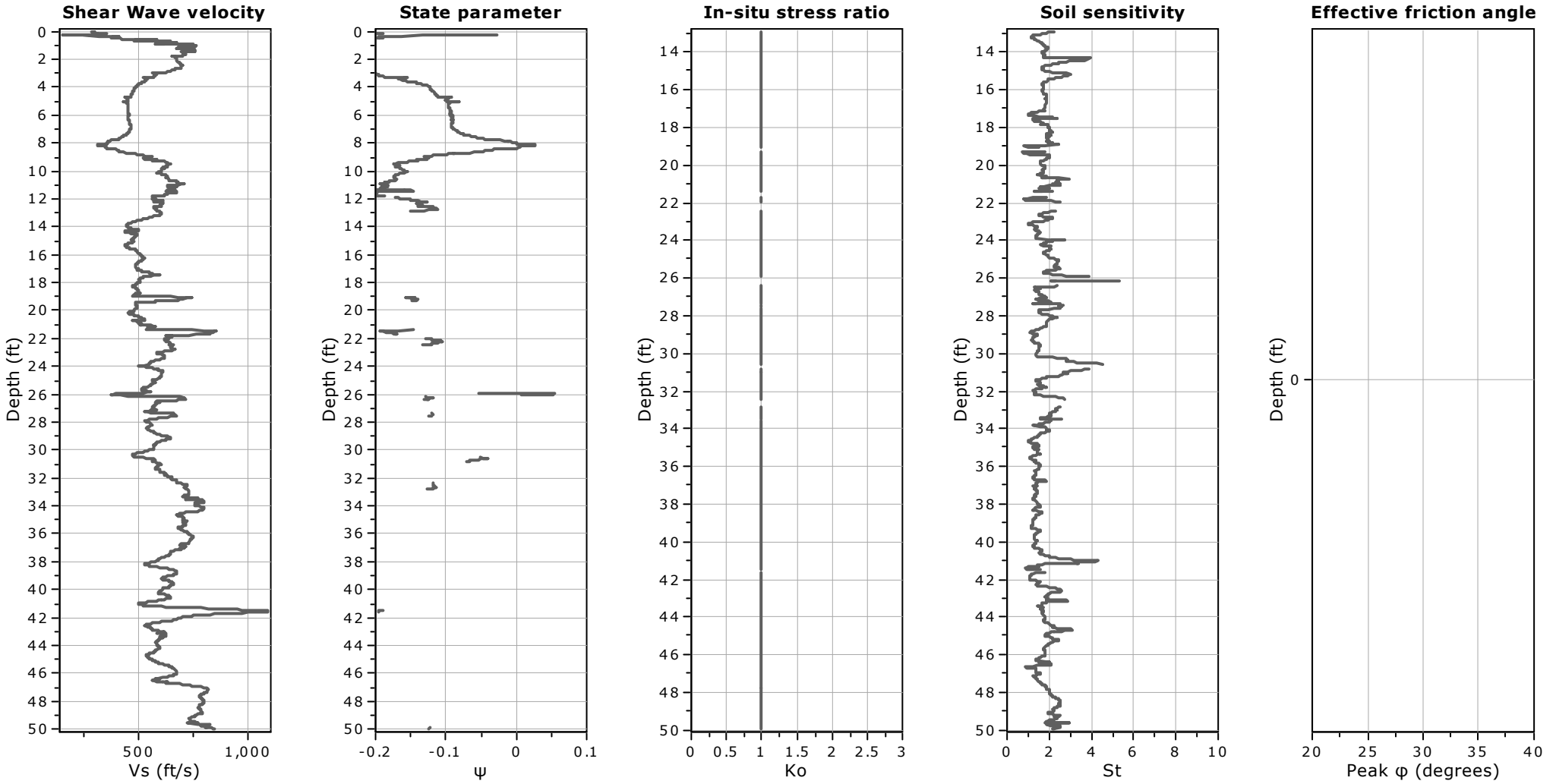
CPT: 5
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 9.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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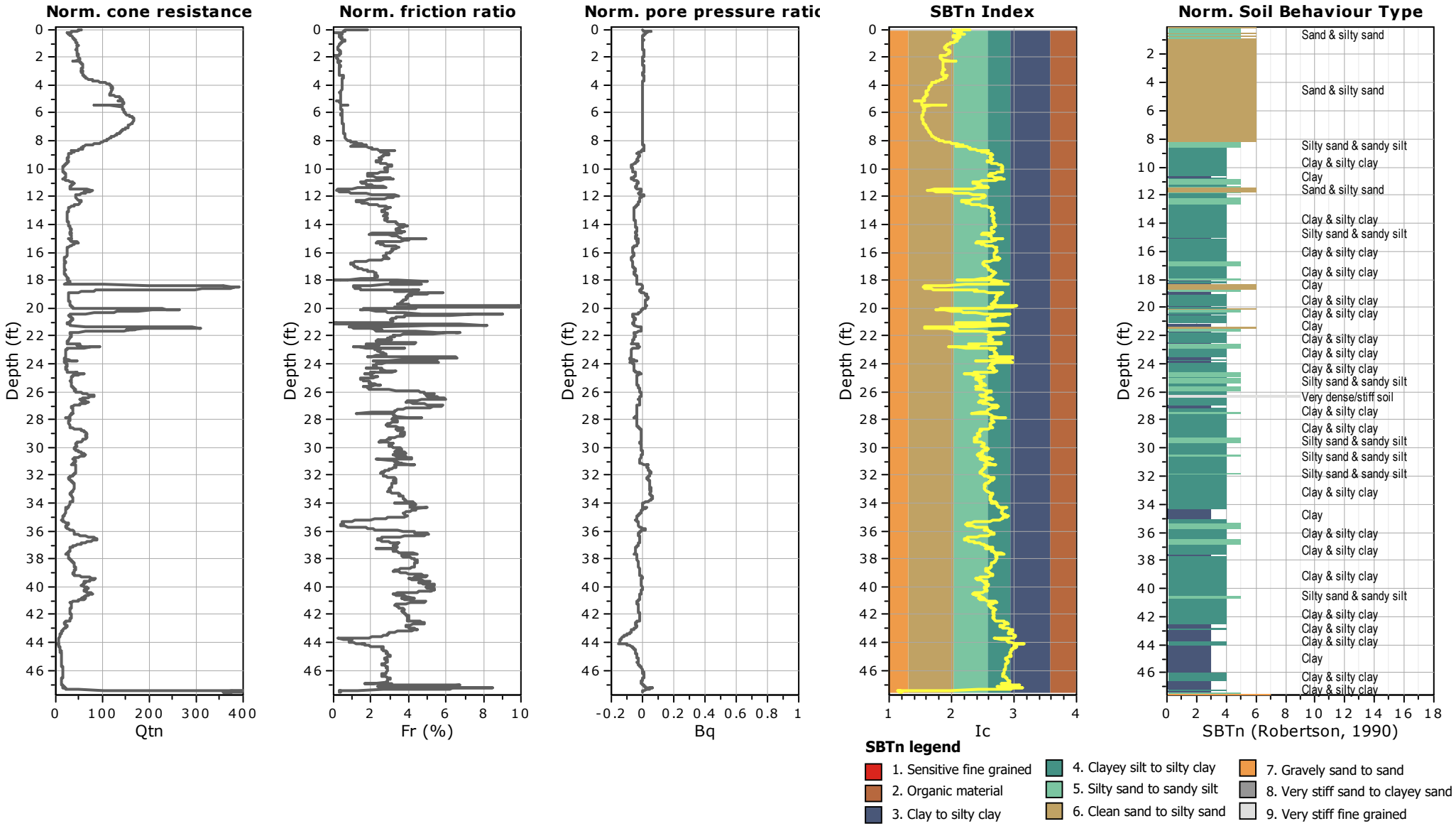
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 6
Total depth: 47.57 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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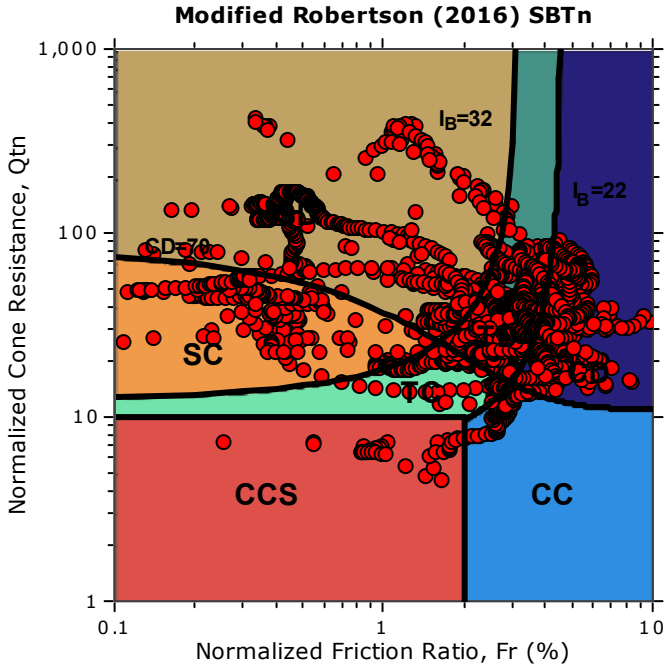
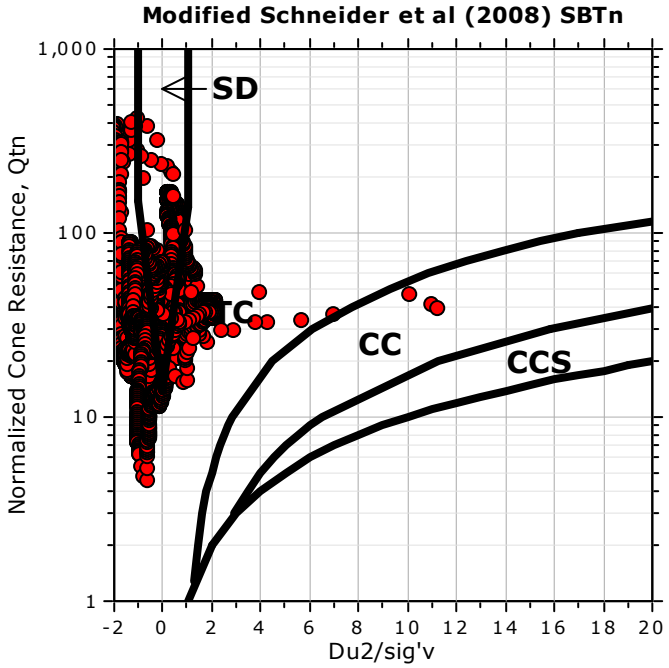
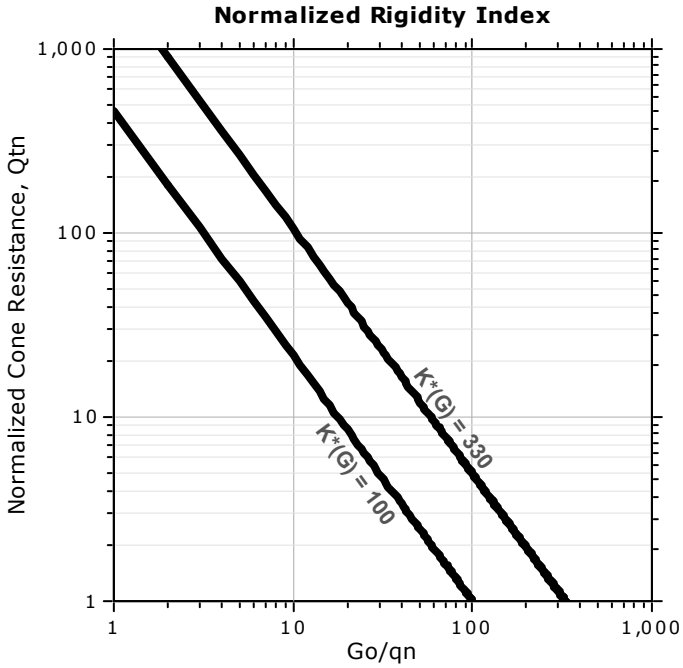
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 6
Total depth: 47.57 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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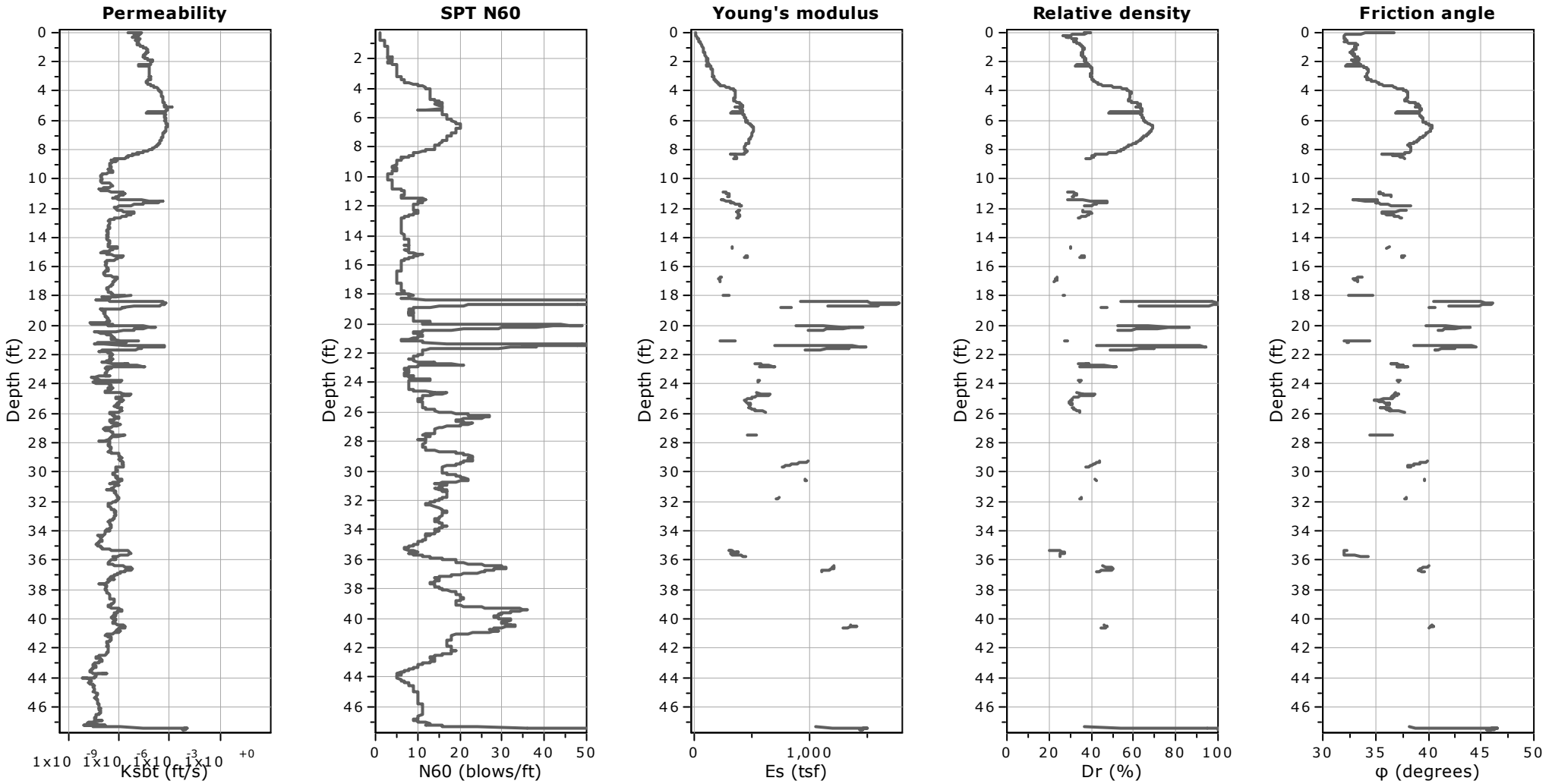
CPT: 6
Total depth: 47.57 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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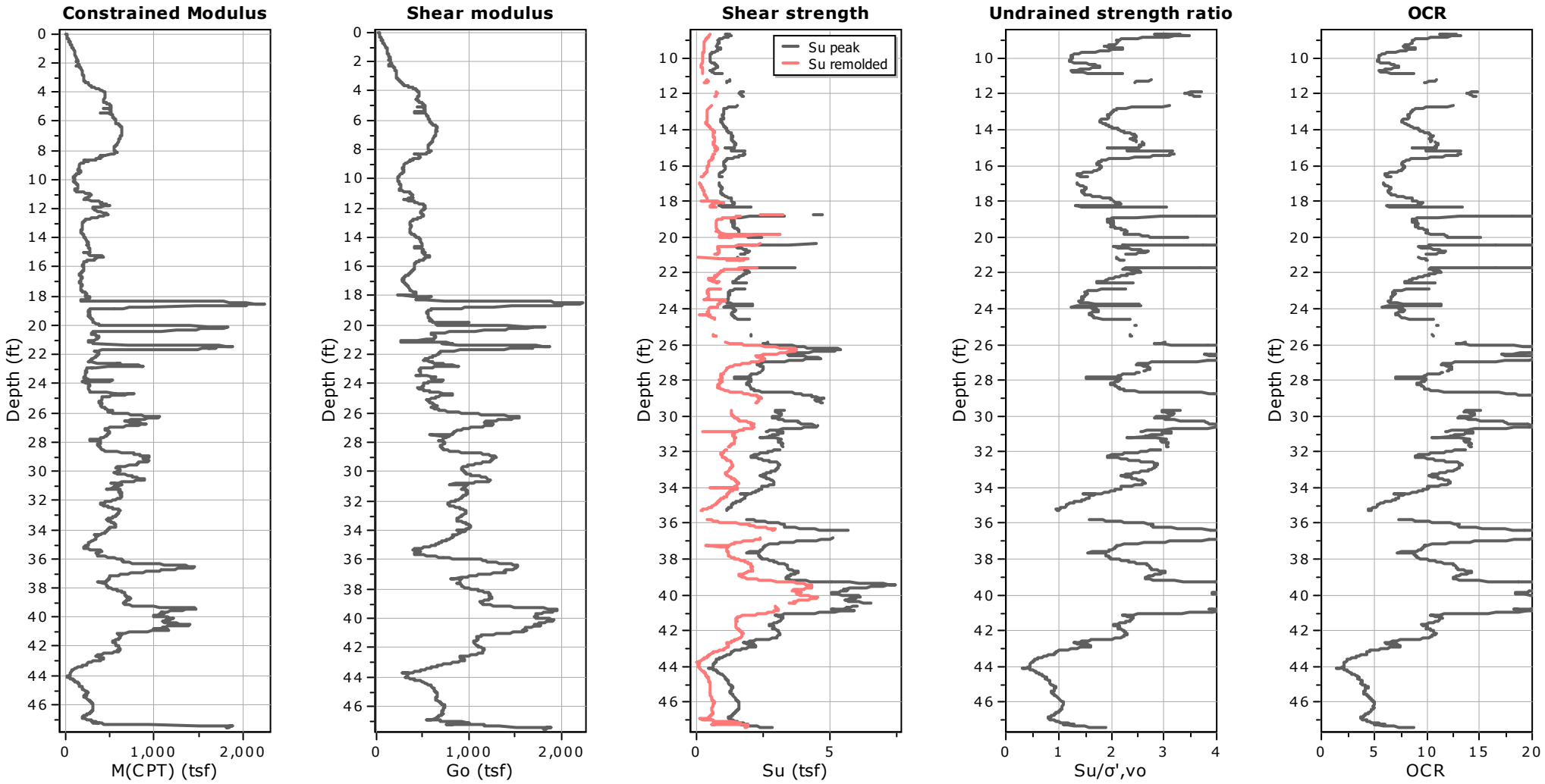
CPT: 6
Total depth: 47.57 ft, Date: 2/6/2024
Surface Elevation: 10.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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CPT: 6
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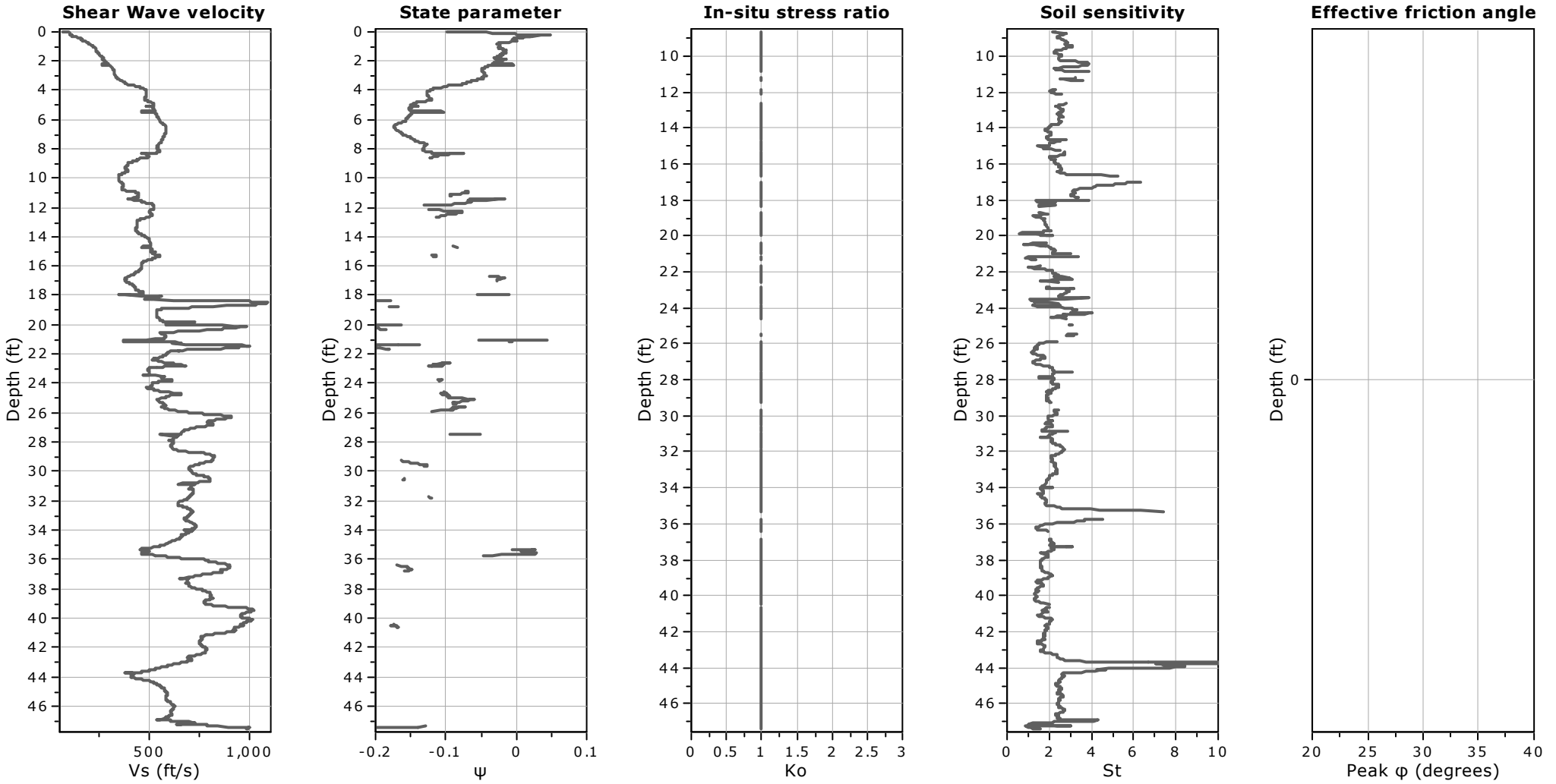

Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

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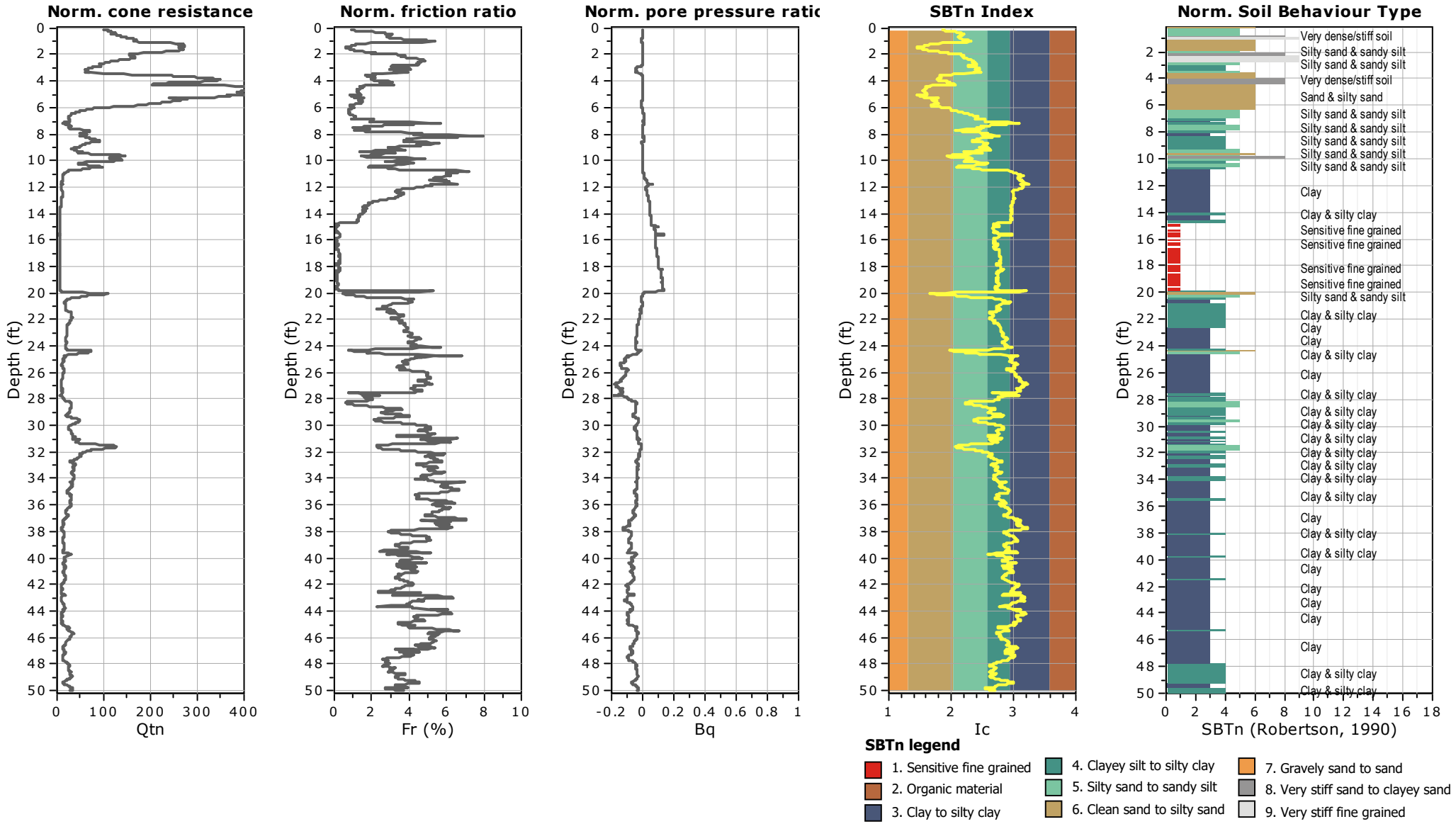
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 7
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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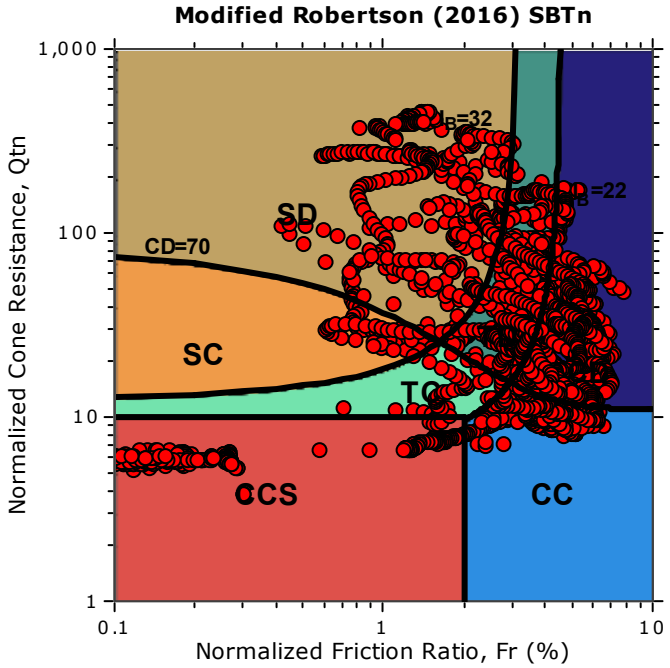
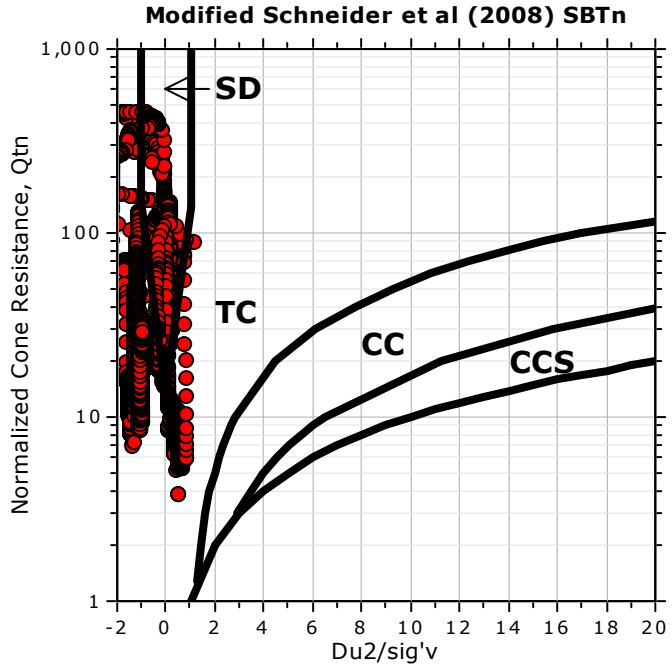
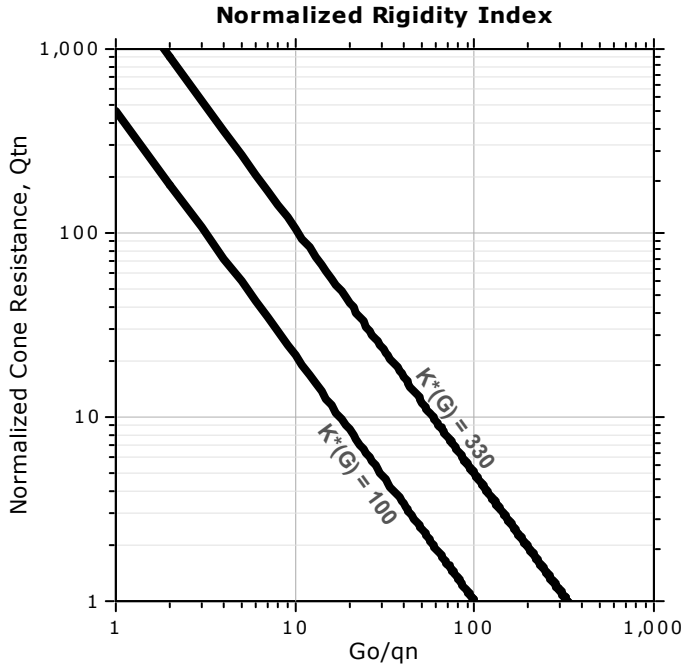
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 7
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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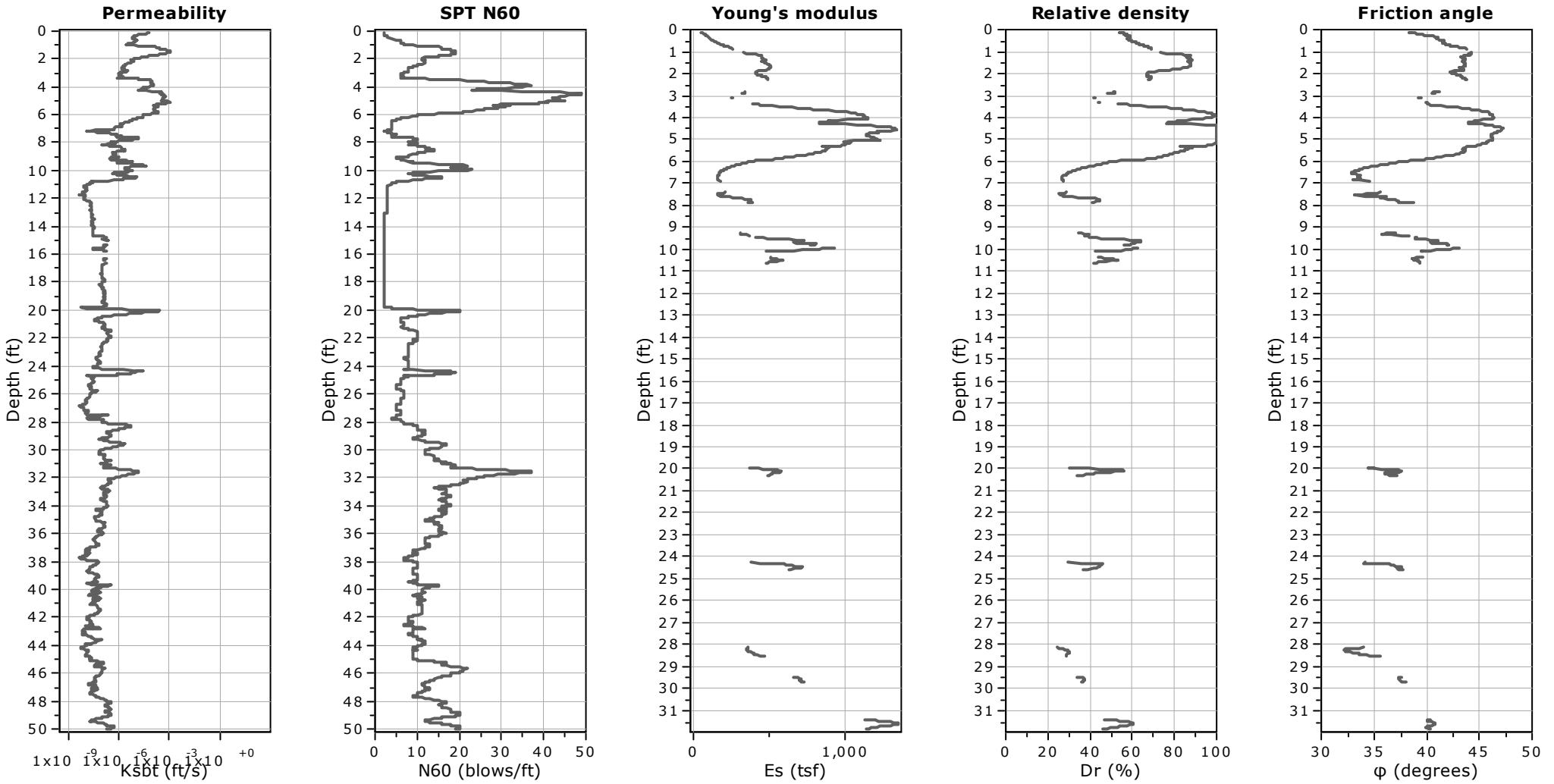
CPT: 7
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
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Surface Elevation: 10.50 ft
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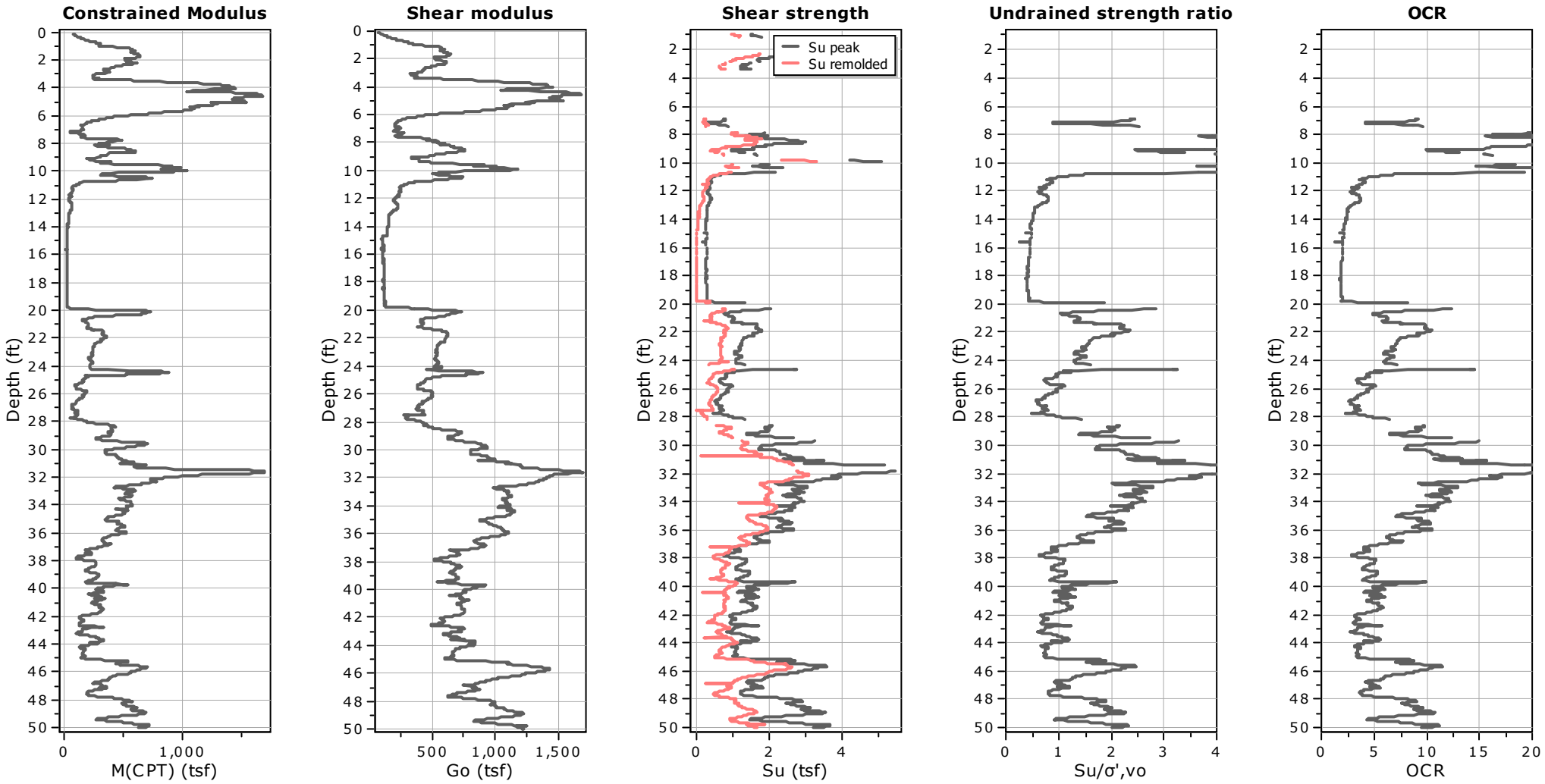
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

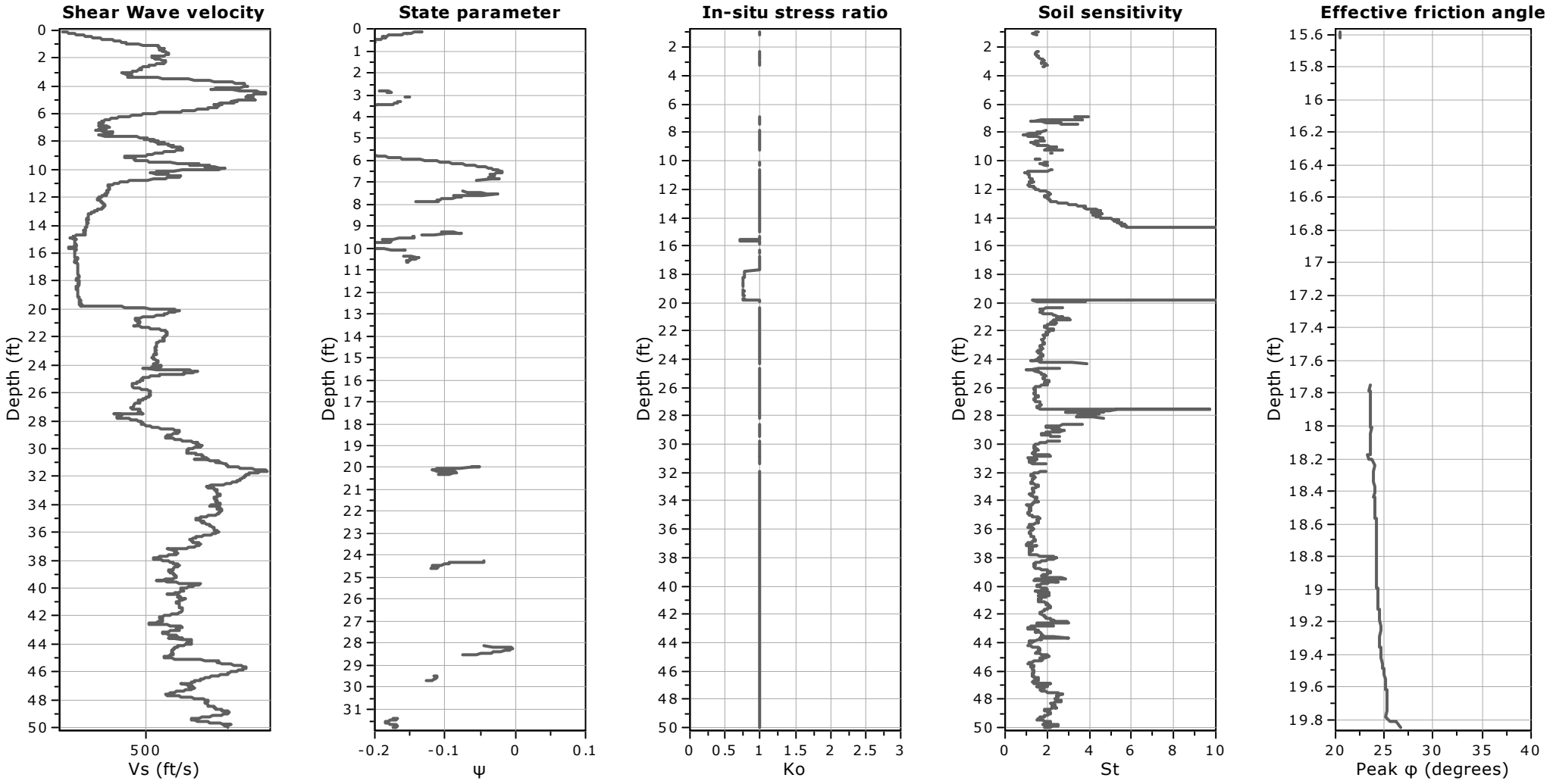
Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873
732-271-9301
www.gtaeng.com

CPT: 7
Total depth: 50.00 ft, Date: 2/6/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

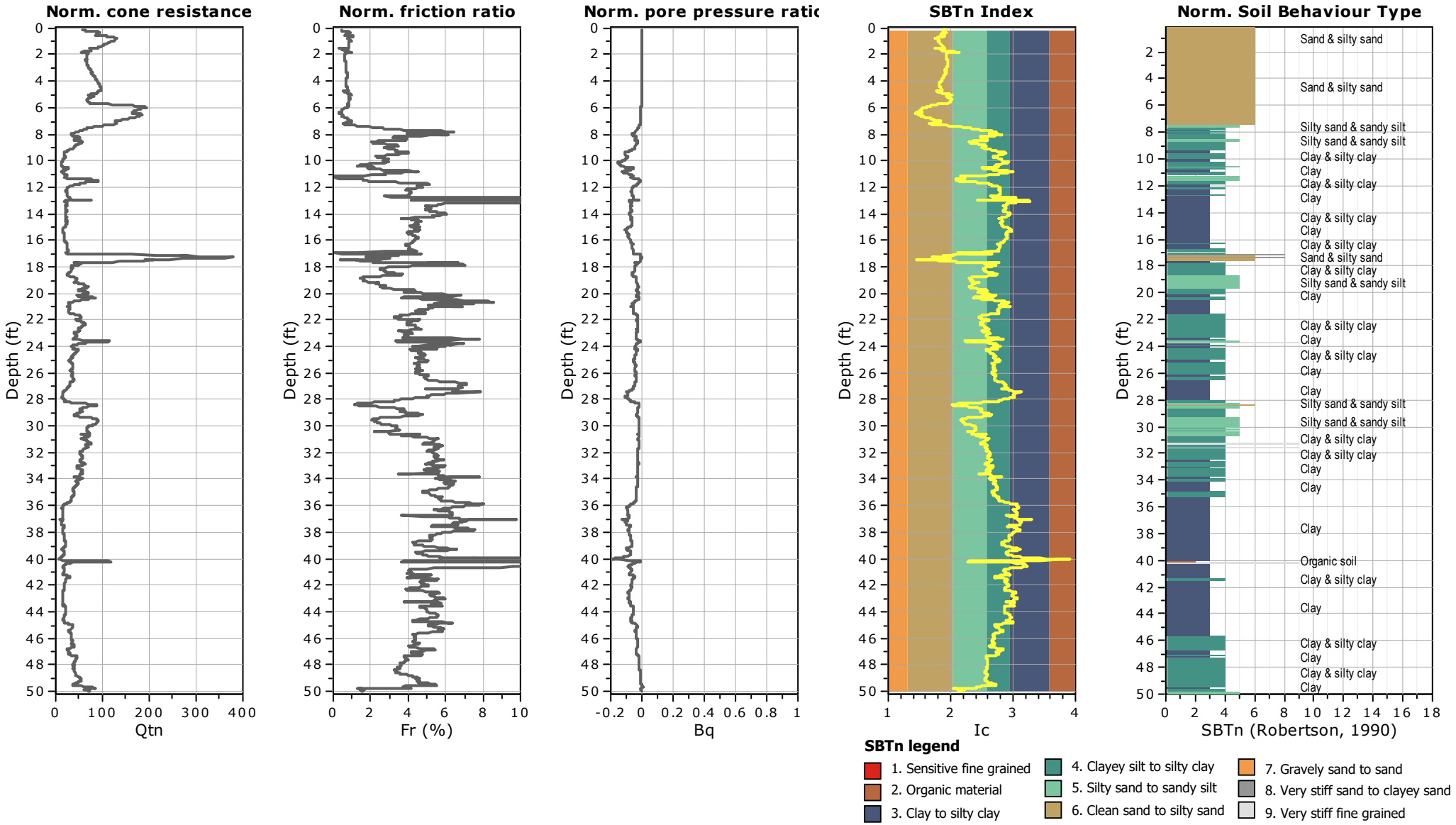
Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873
732-271-9301
www.gtaeng.com

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 8
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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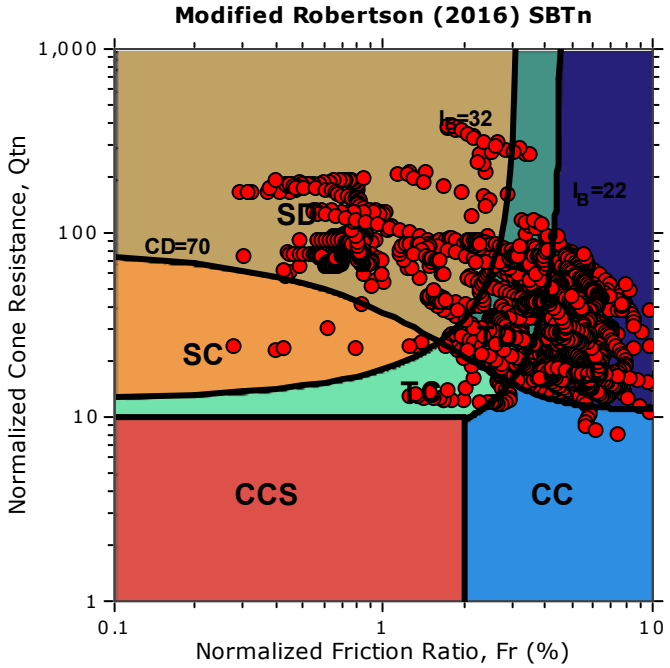
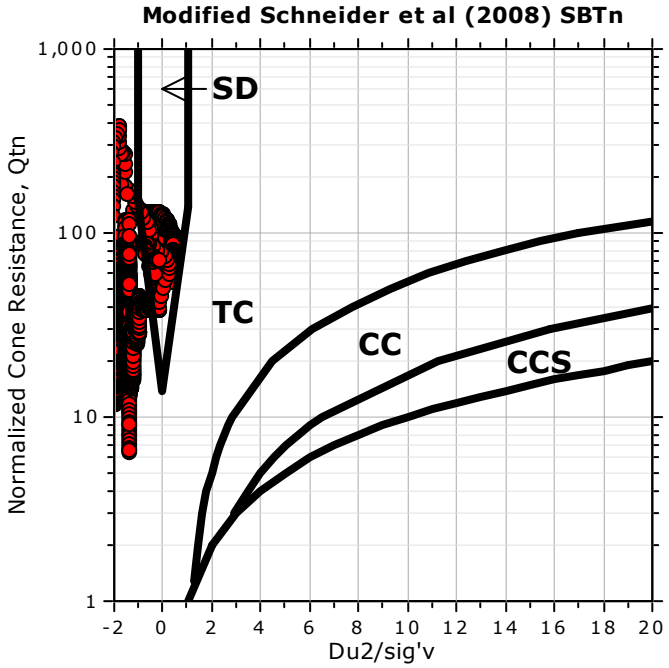
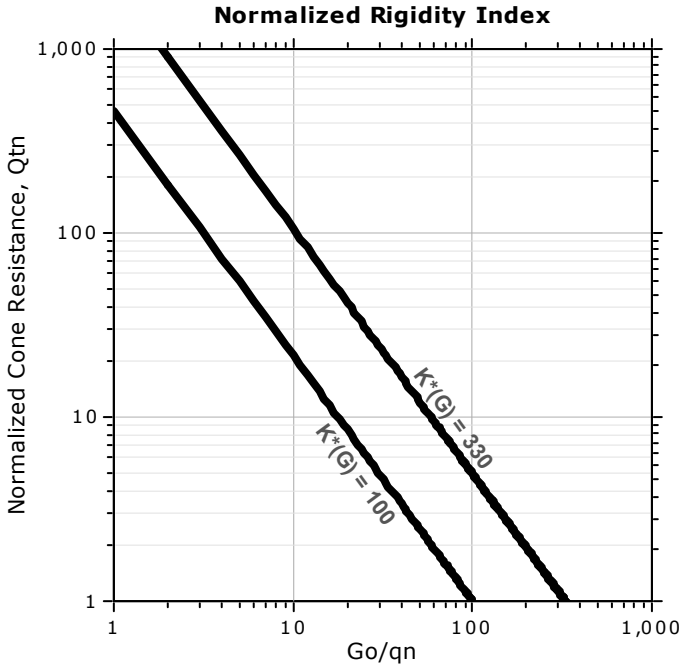
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 8
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
CD: Clay-like - Dilative
TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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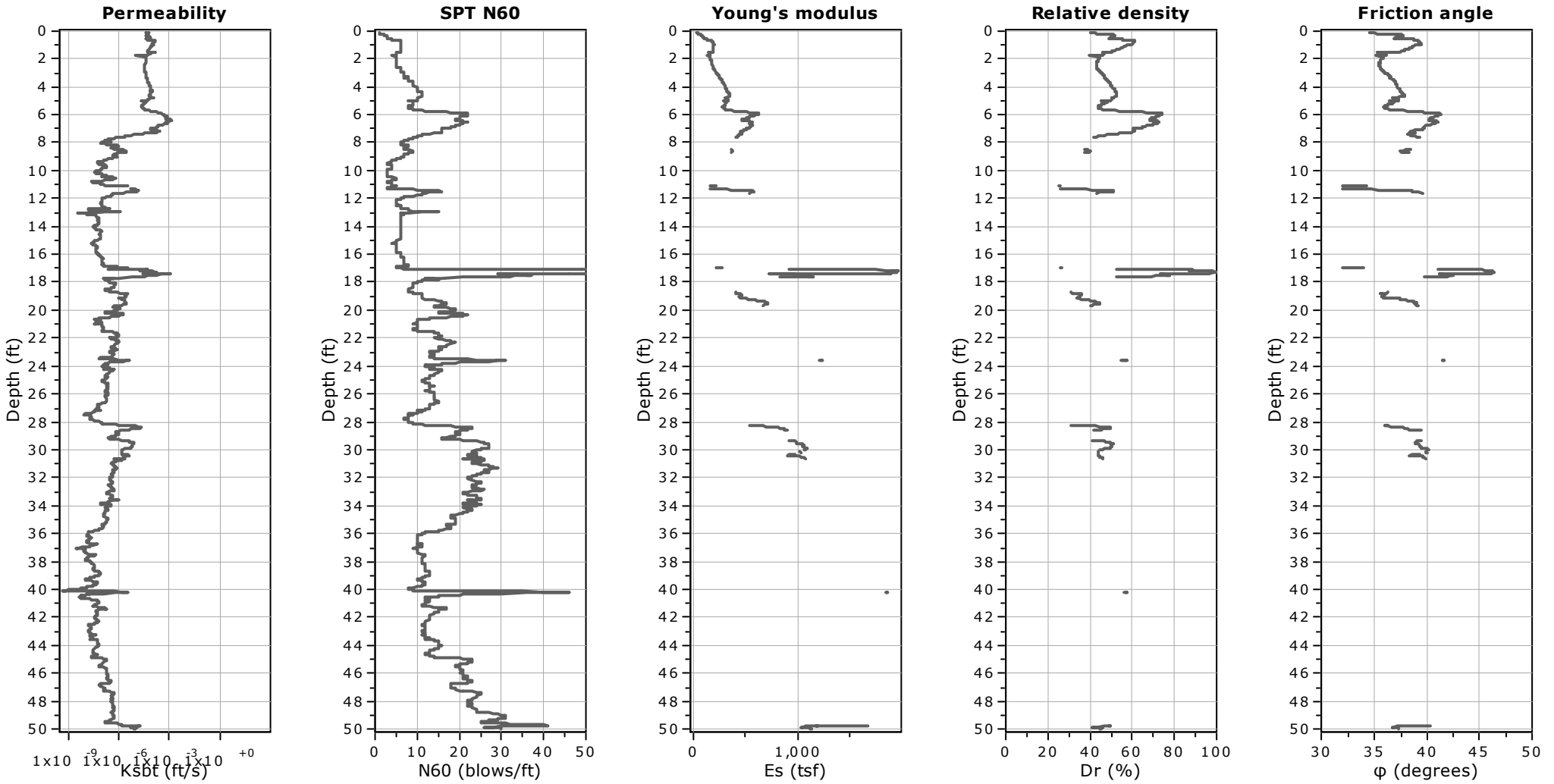
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 8
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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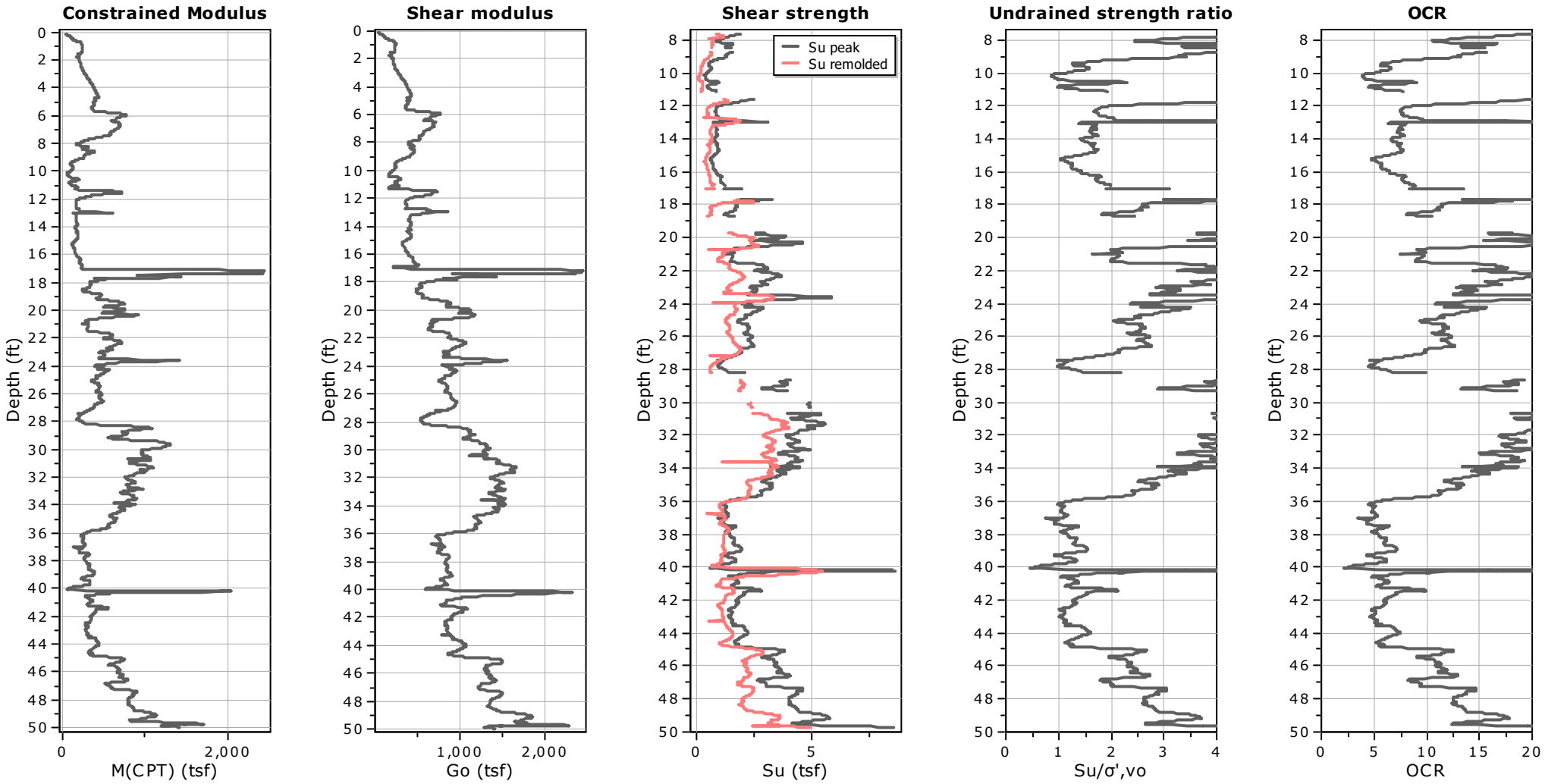
732-271-9301
www.gtaeng.com

CPT: 8
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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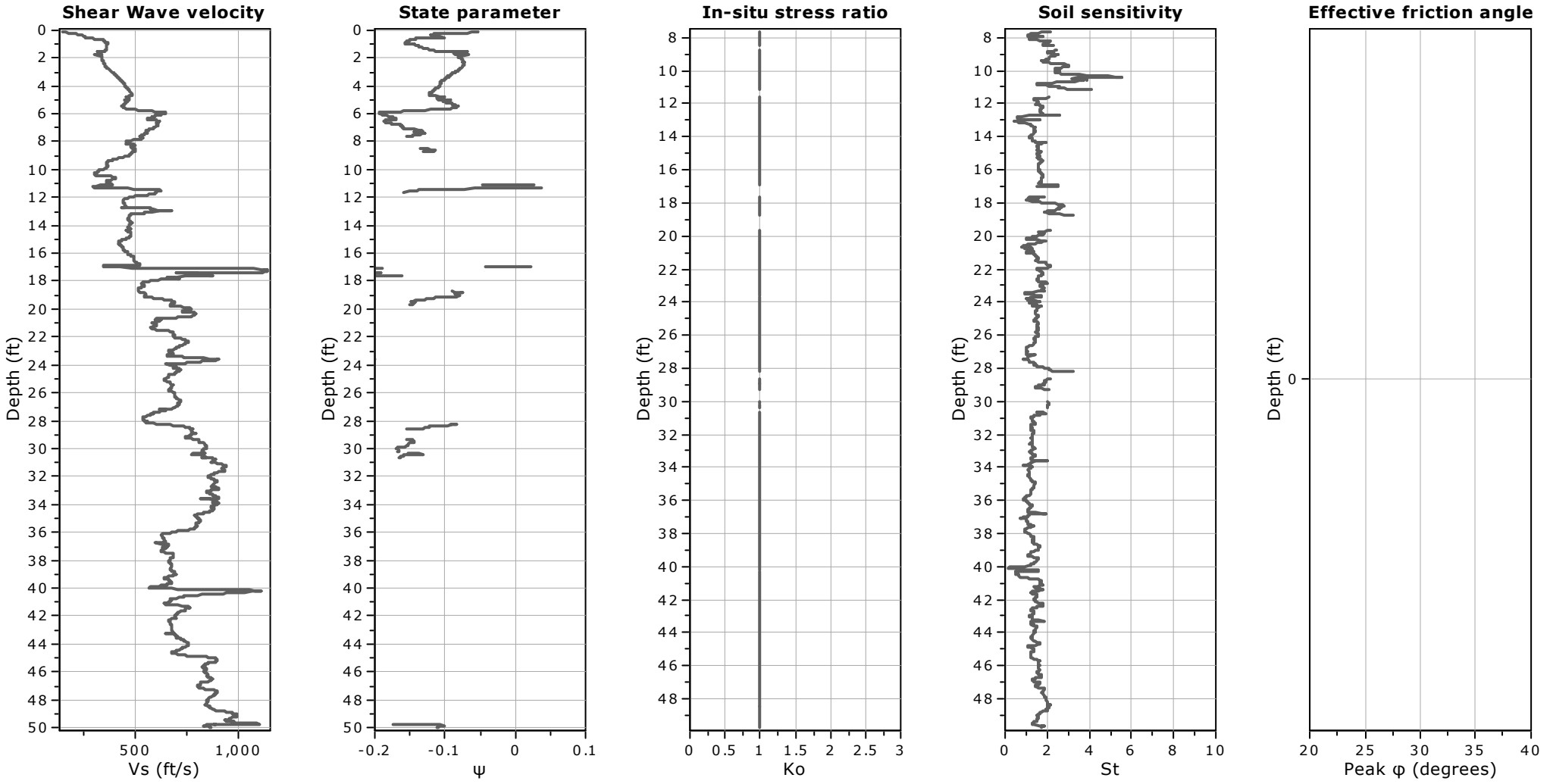
CPT: 8
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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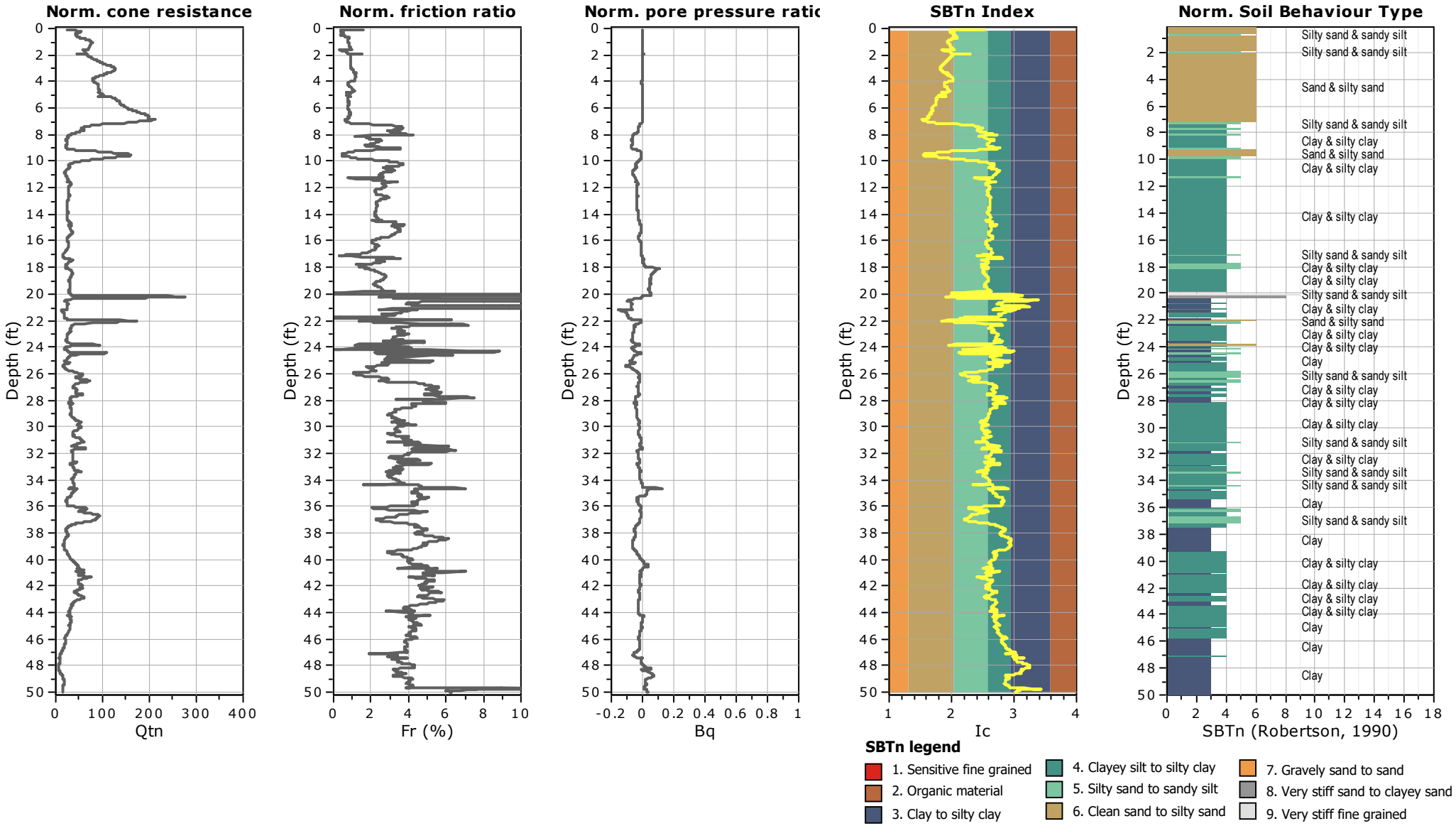
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 9
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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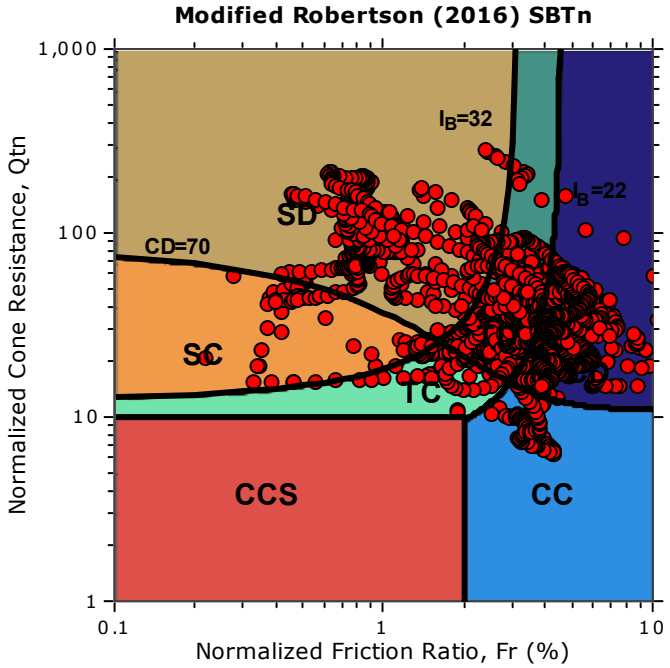
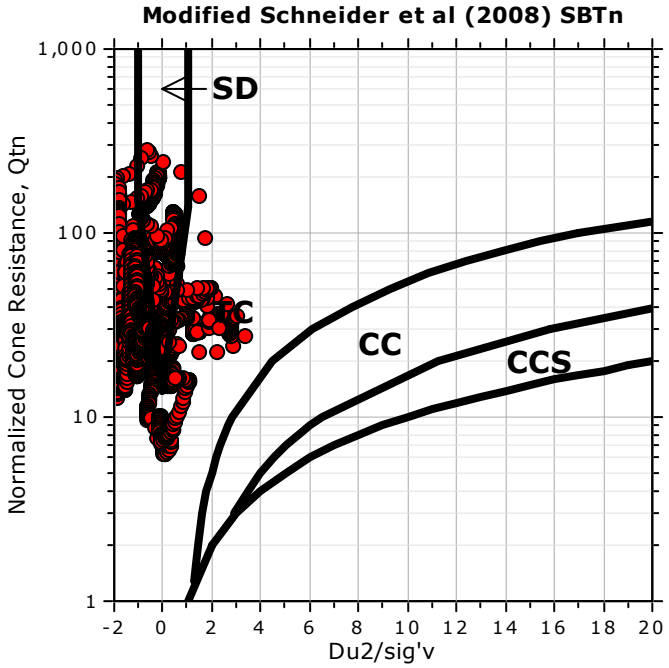
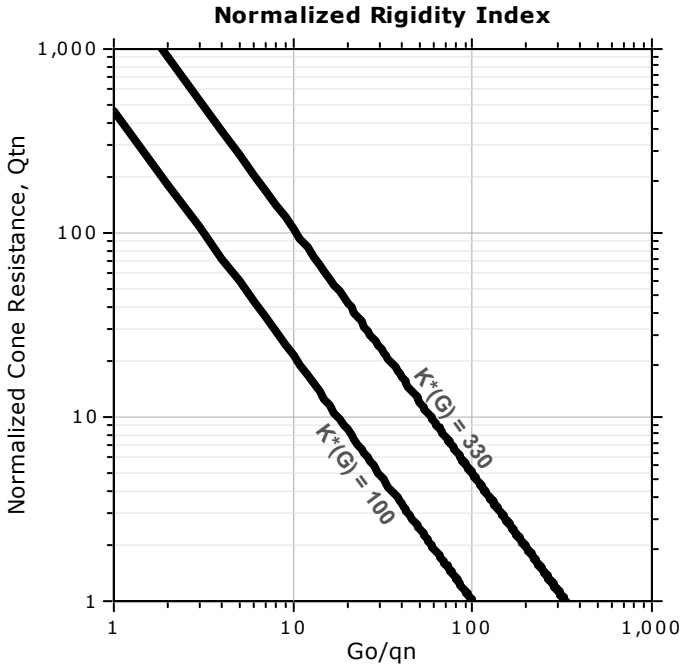
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 9
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
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K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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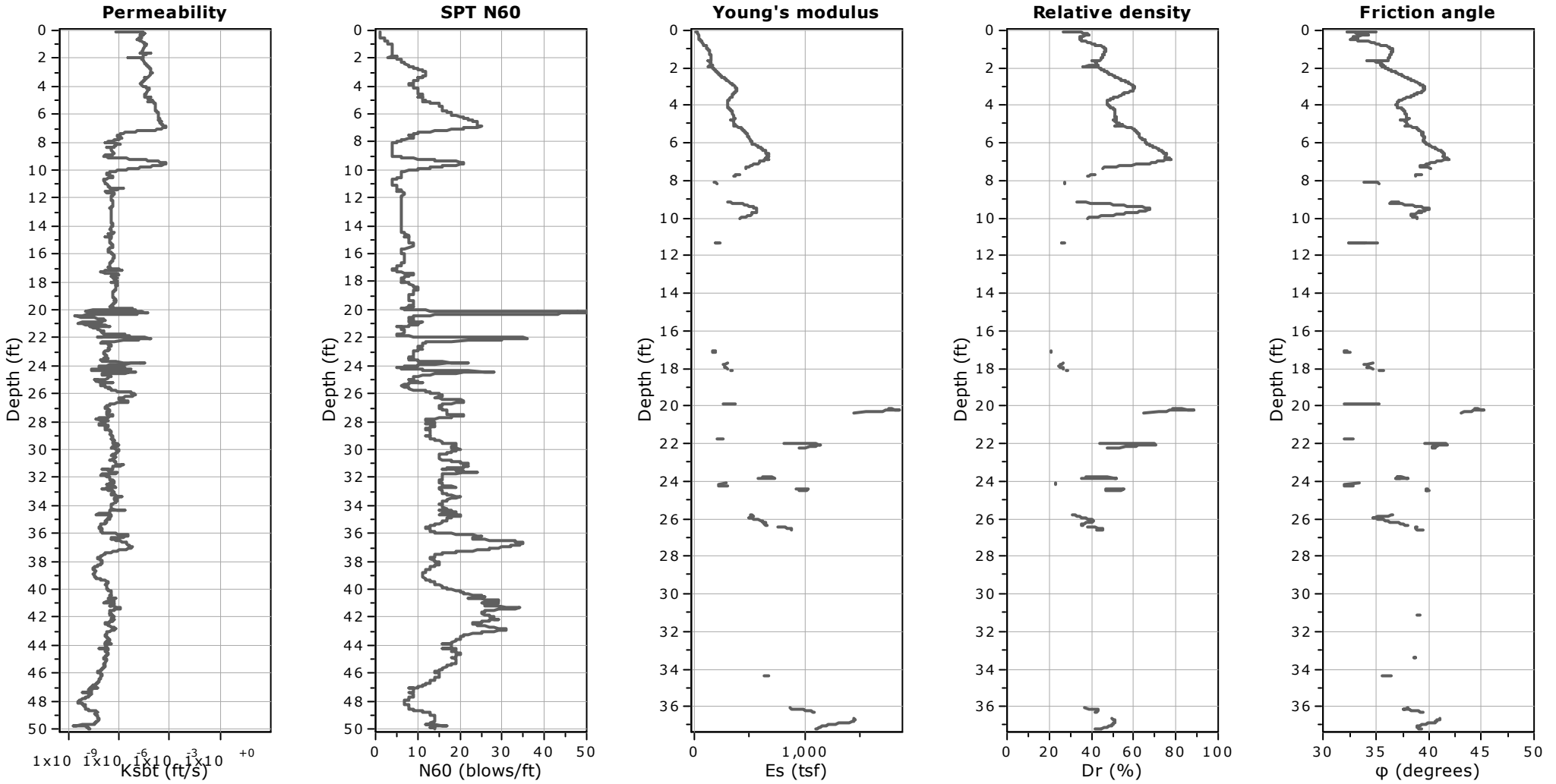
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 9
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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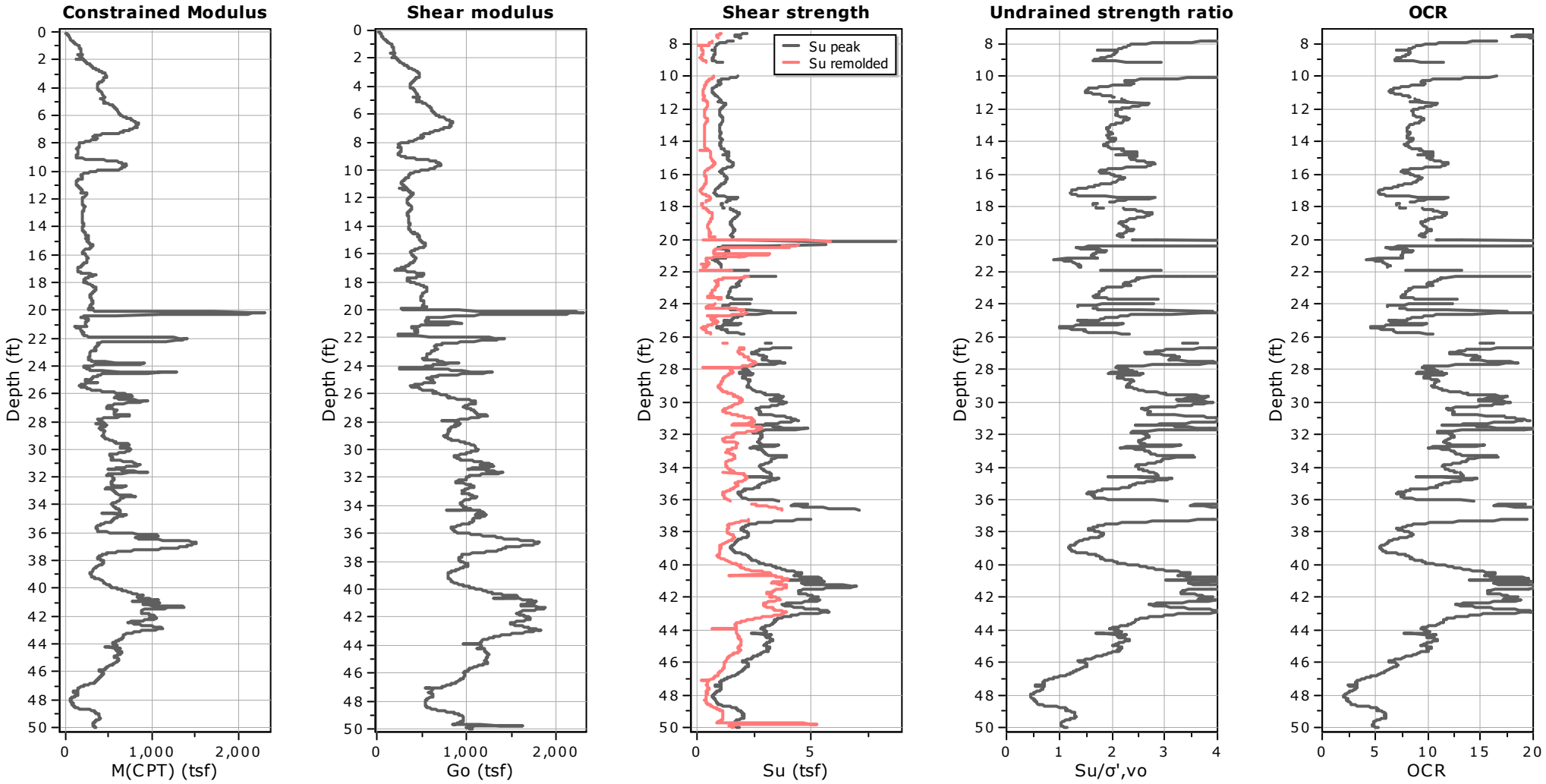
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 9
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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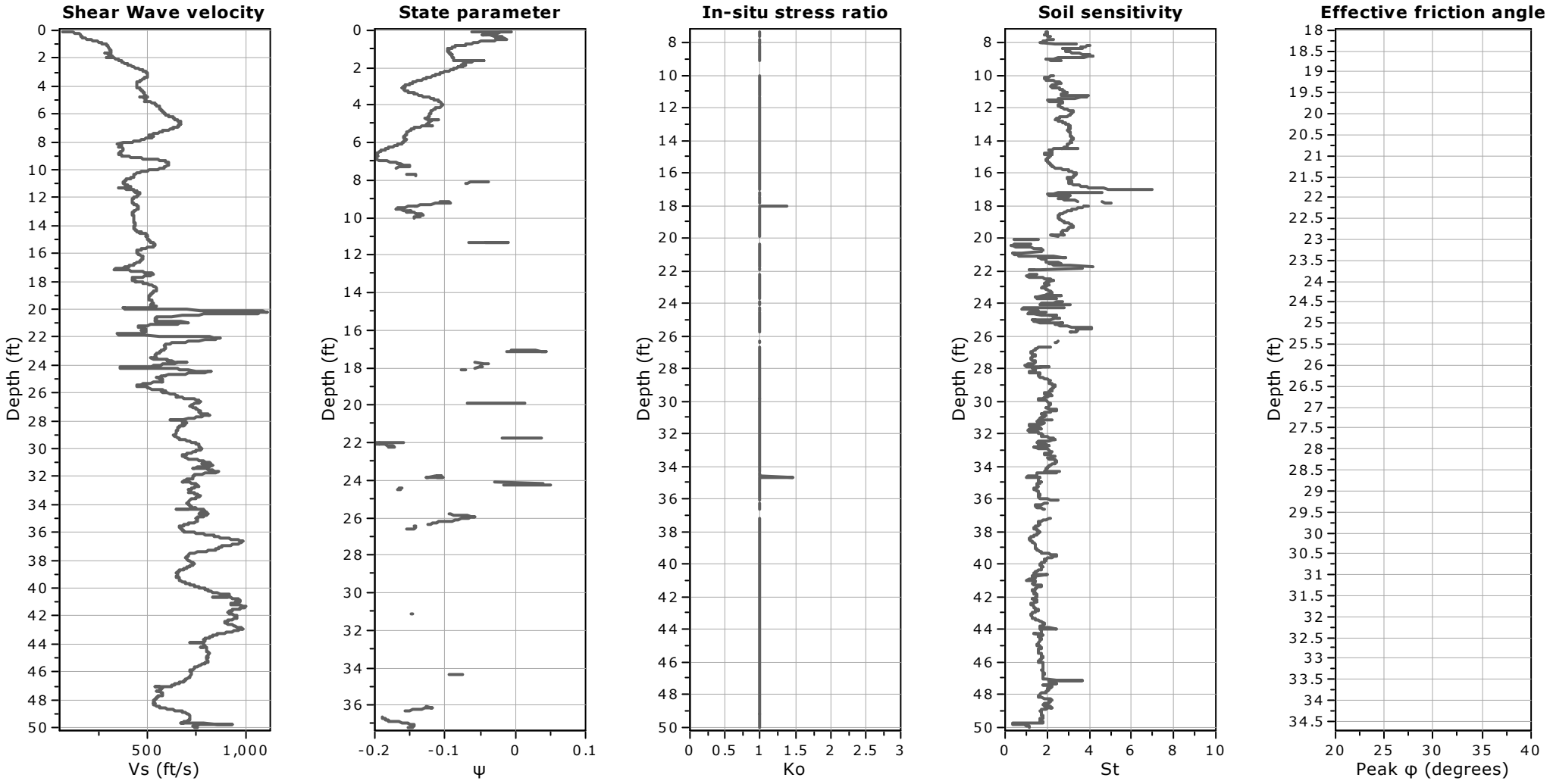
CPT: 9
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 10.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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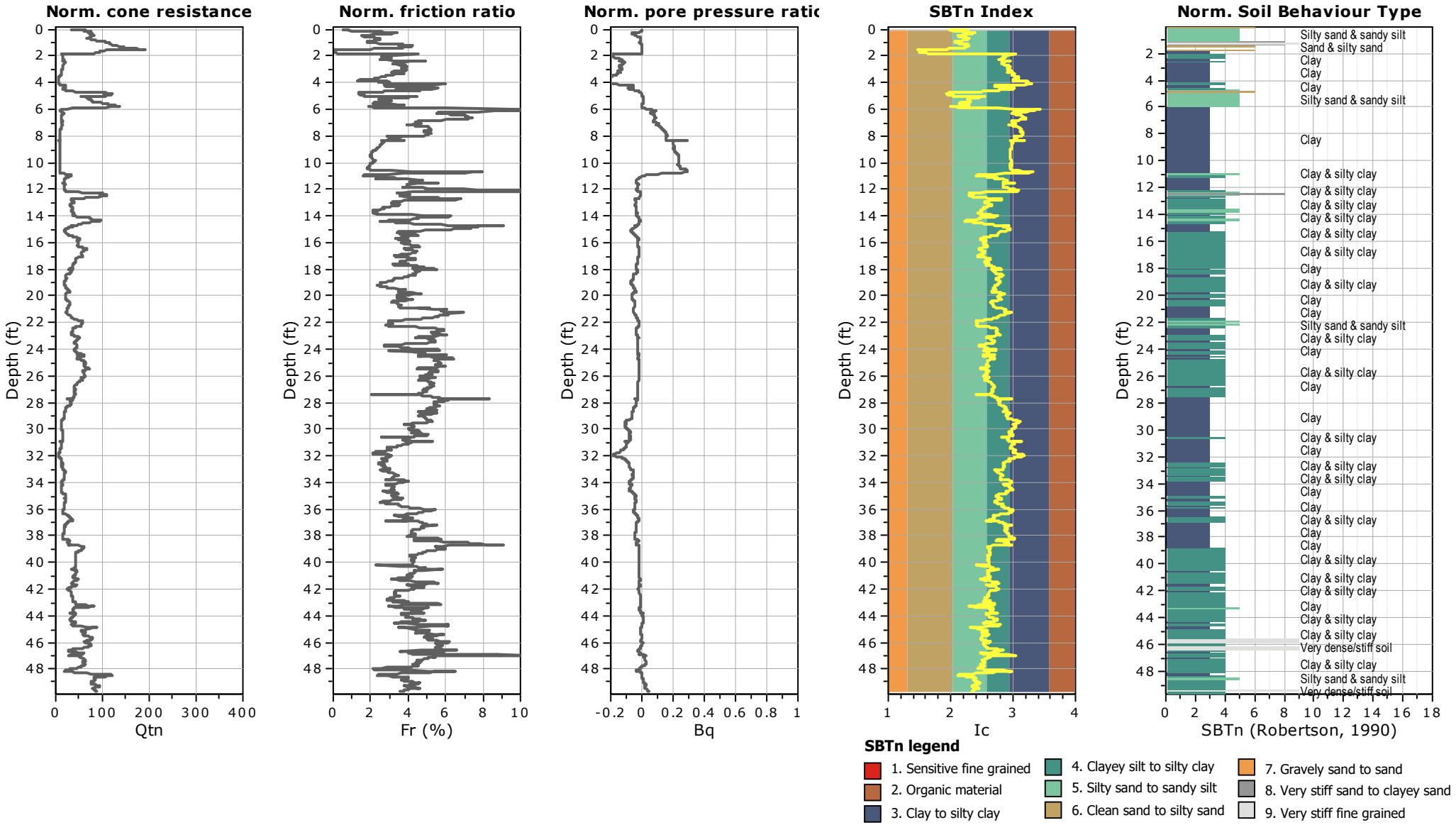
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 10
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 8.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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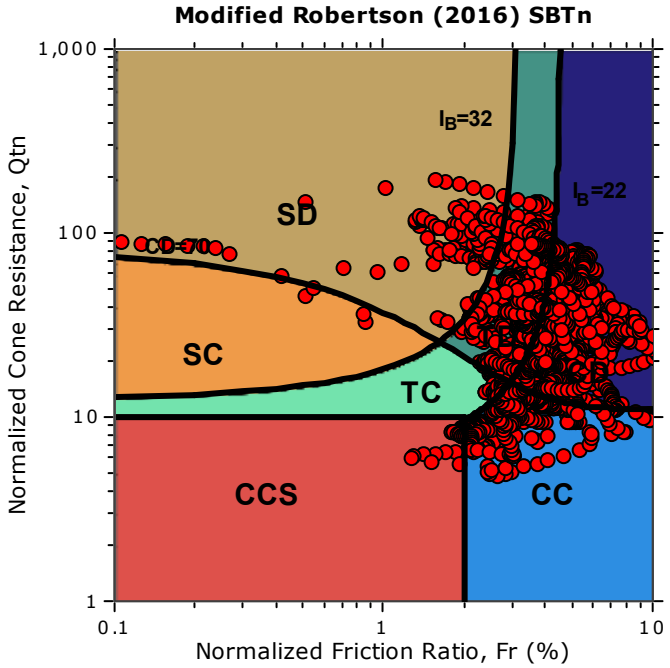
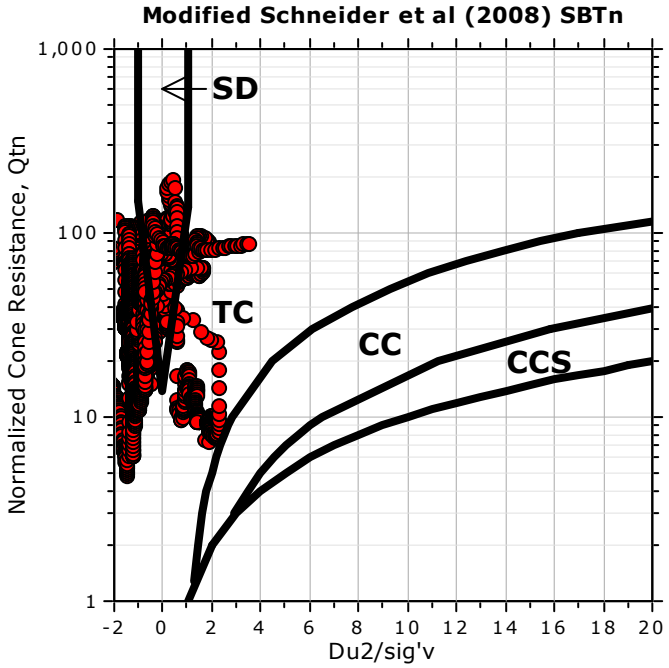
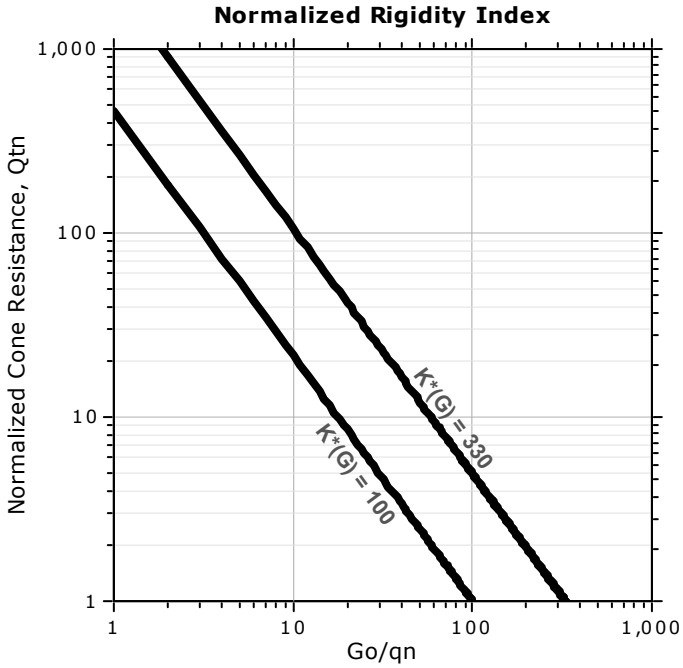
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 10
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 8.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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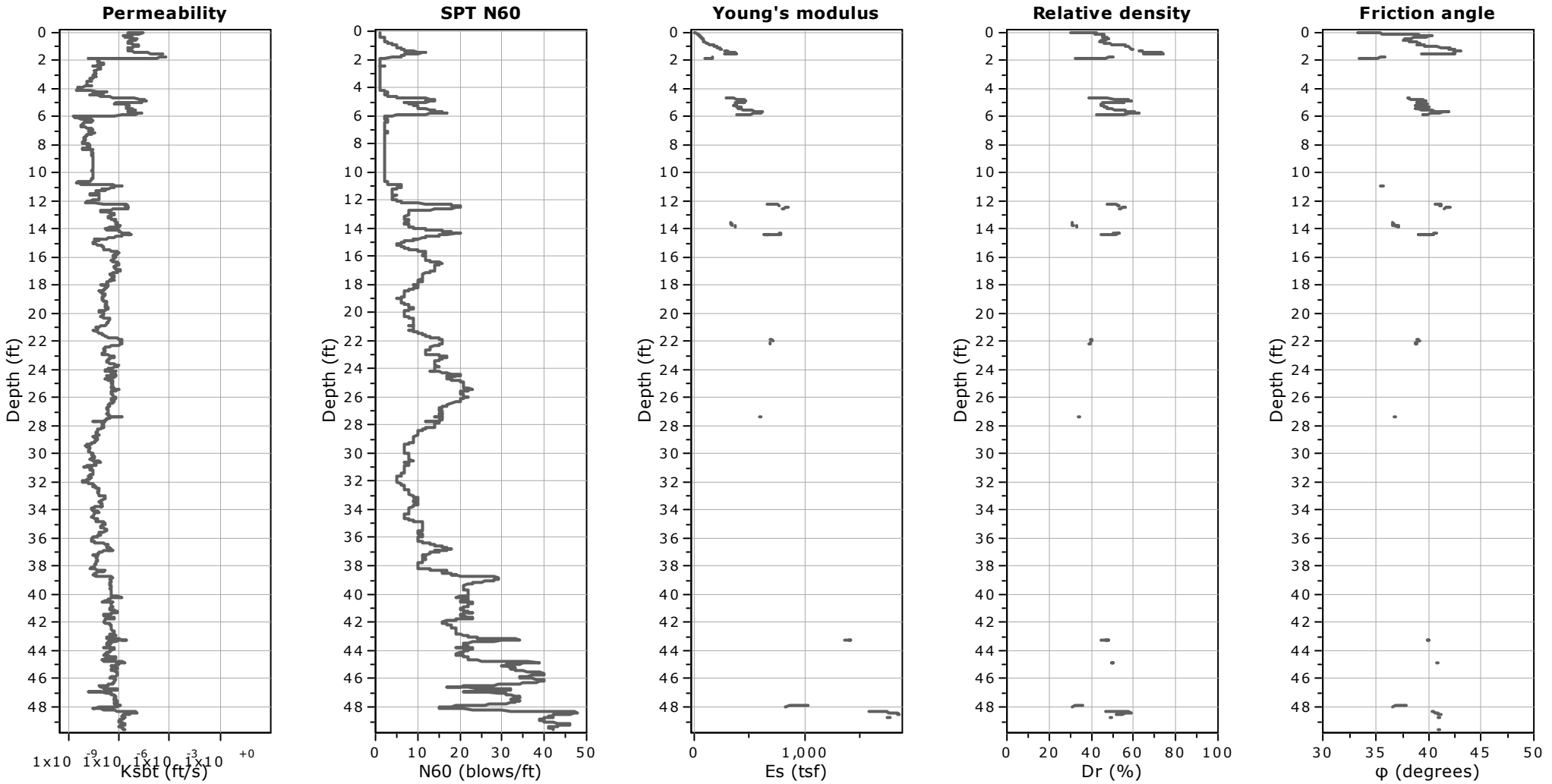
CPT: 10
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 8.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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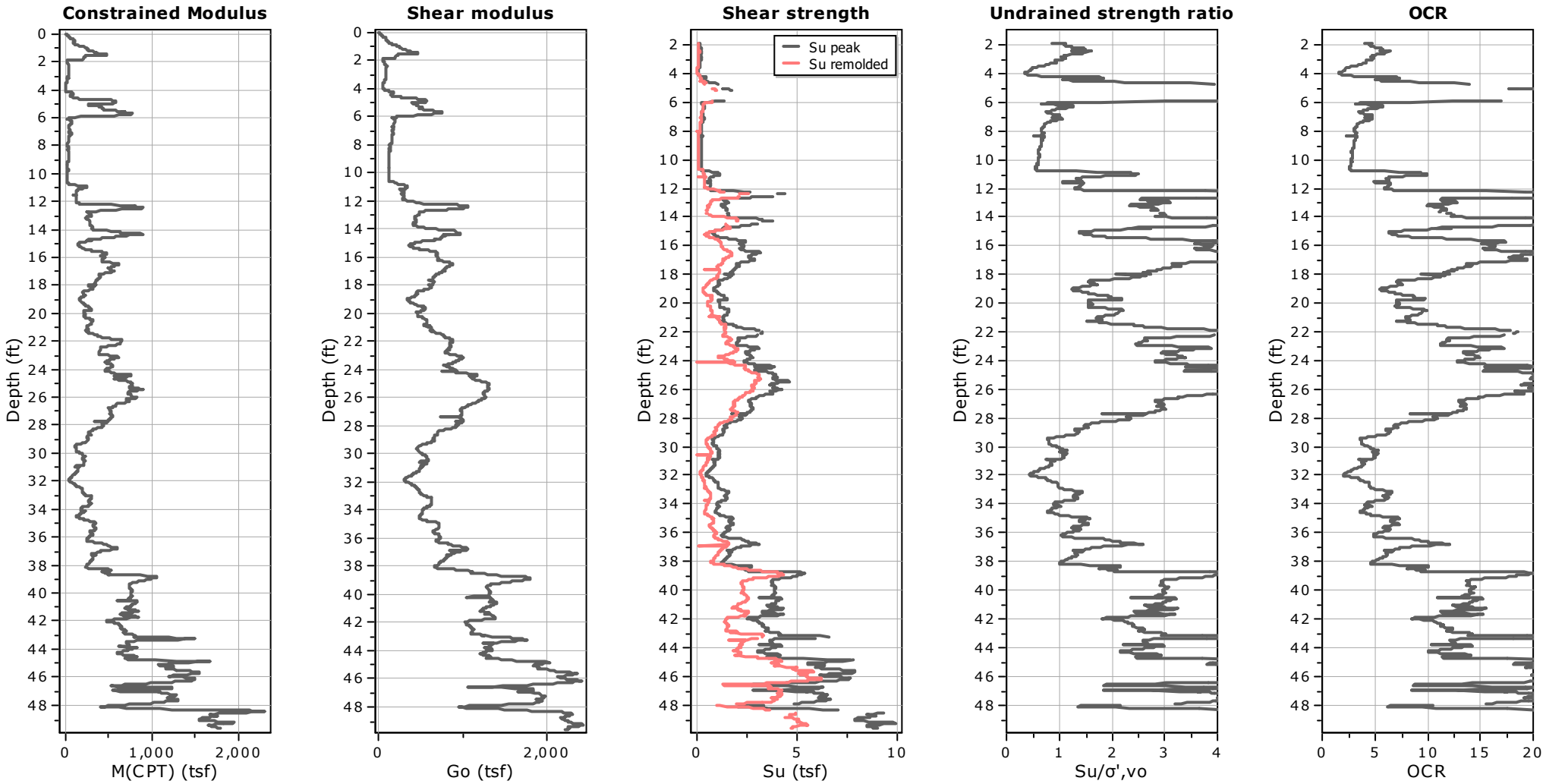
CPT: 10
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 8.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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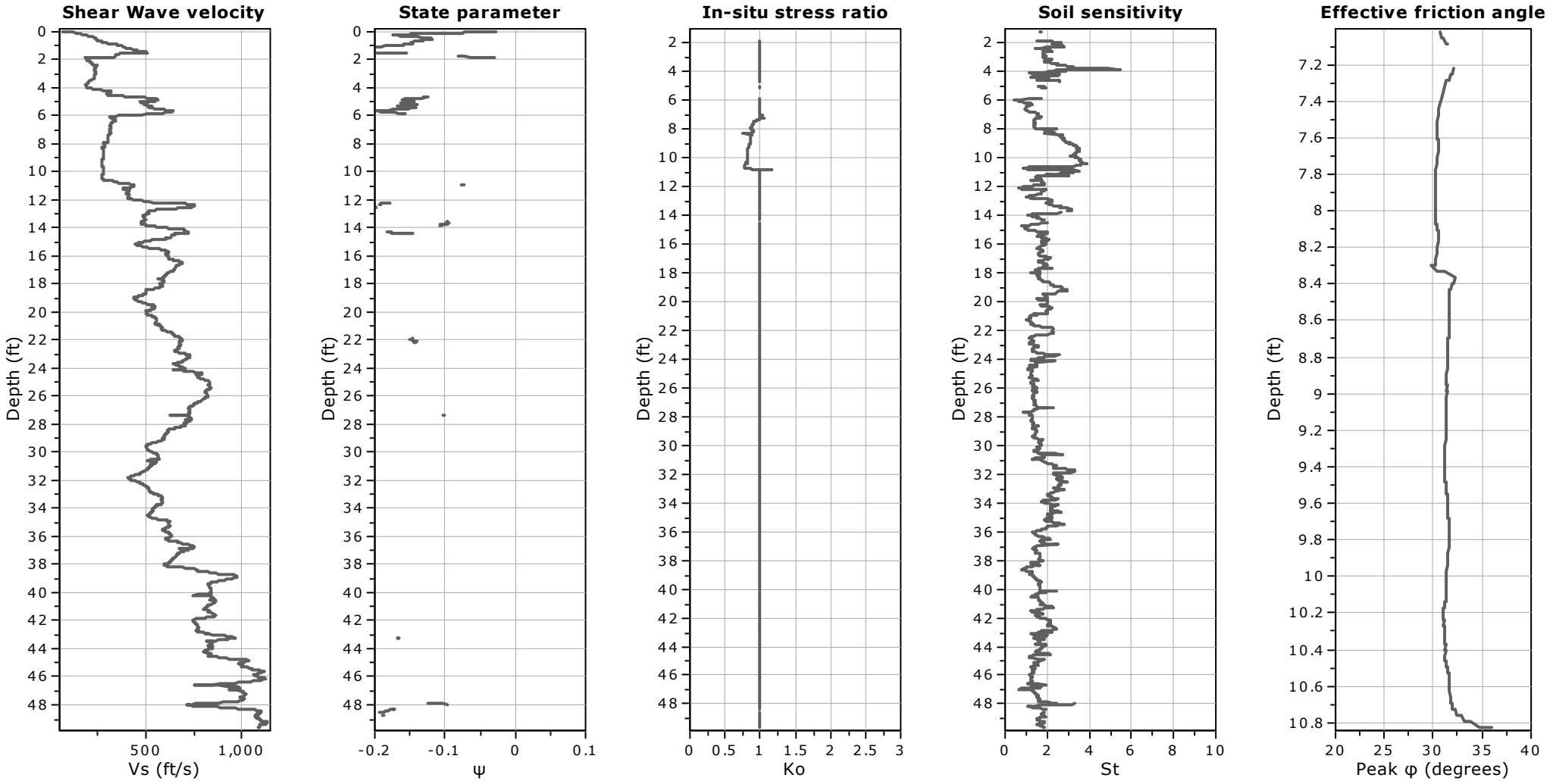
CPT: 10
Total depth: 49.67 ft, Date: 2/6/2024
Surface Elevation: 8.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873
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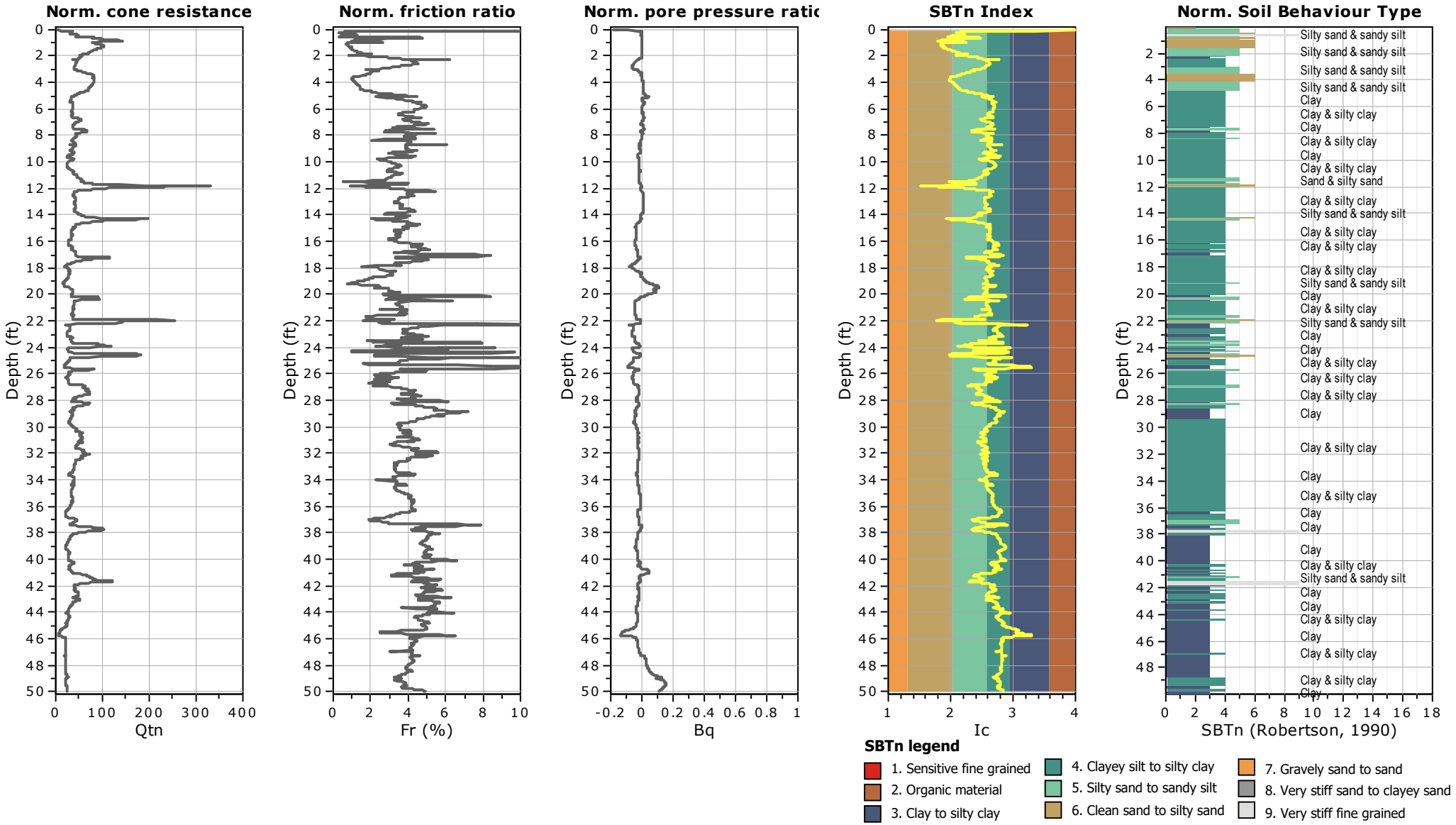
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 11
Total depth: 49.97 ft, Date: 2/7/2024
Surface Elevation: 12.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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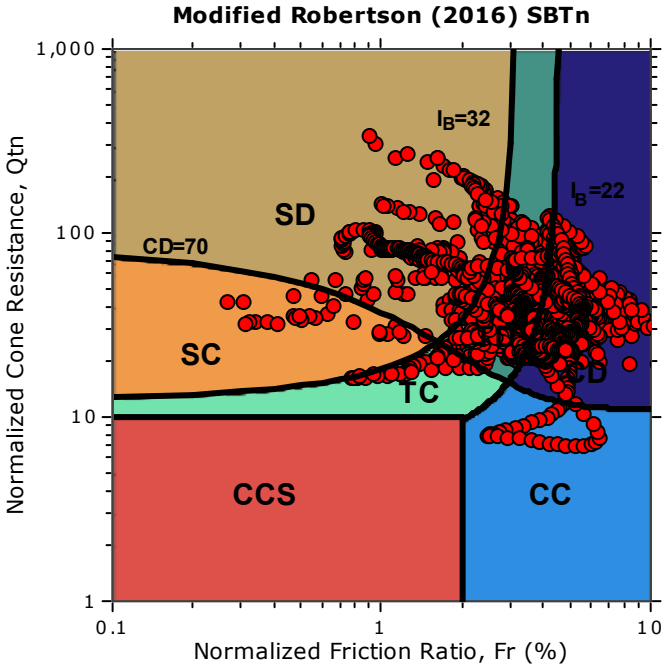
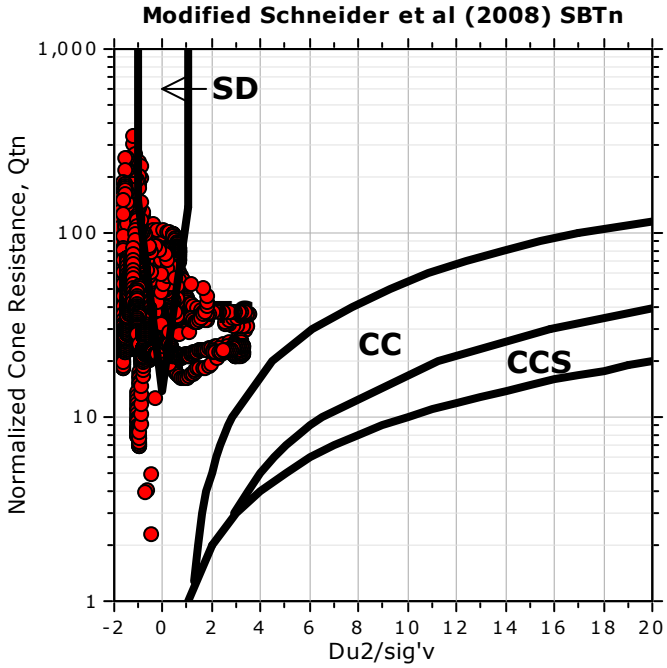
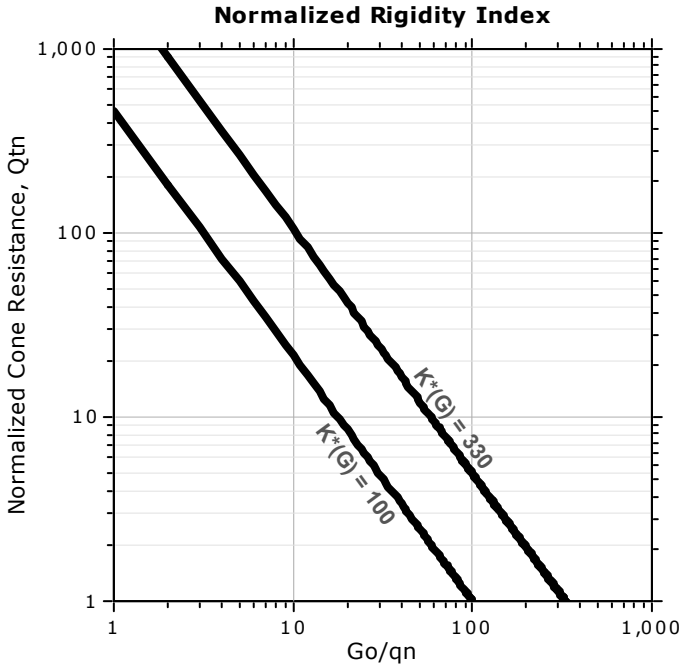
Location: **Sayreville, NJ**

CPT: 11
Total depth: 49.97 ft, Date: 2/7/2024
Surface Elevation: 12.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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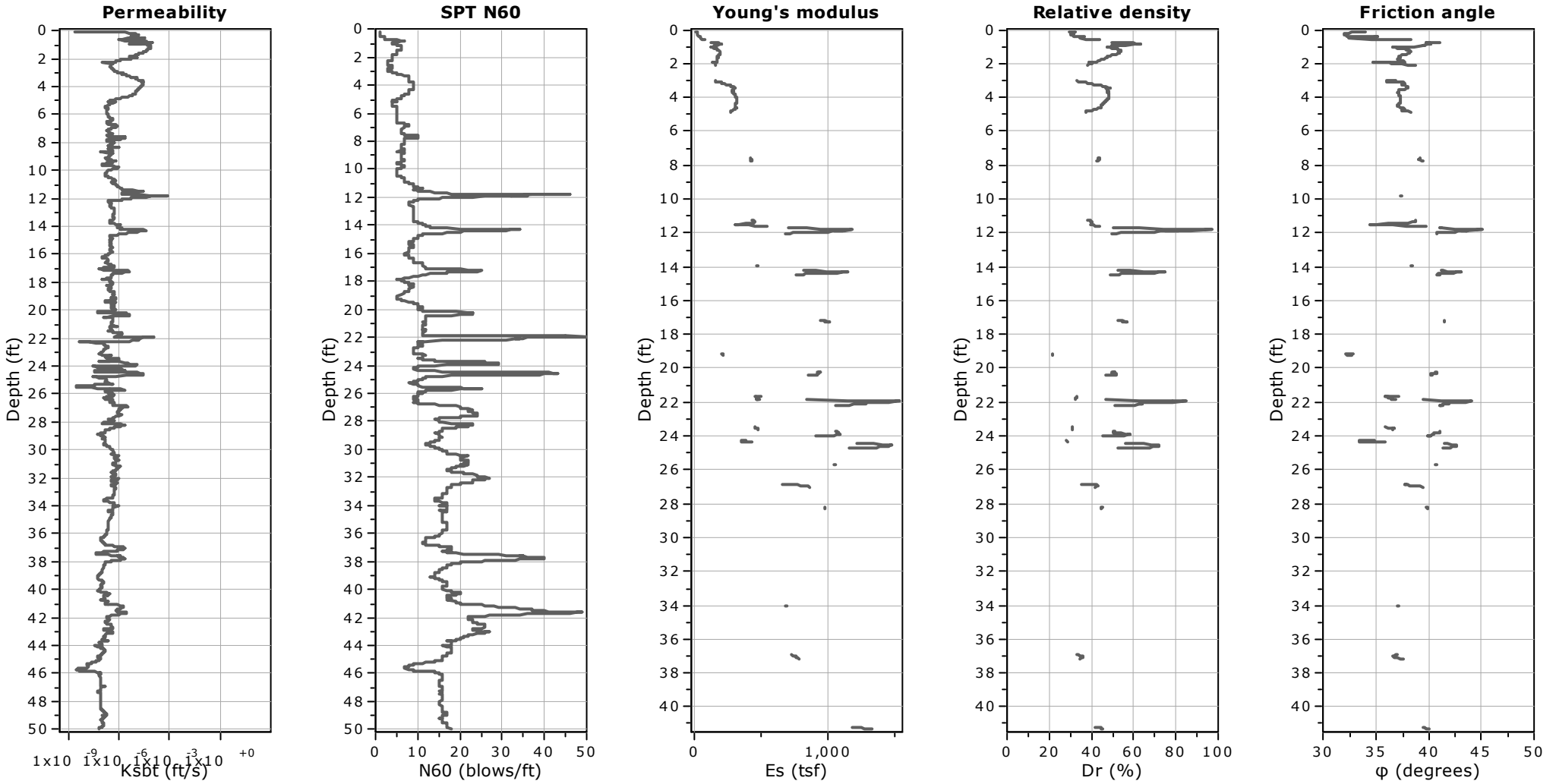
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 11
Total depth: 49.97 ft, Date: 2/7/2024
Surface Elevation: 12.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
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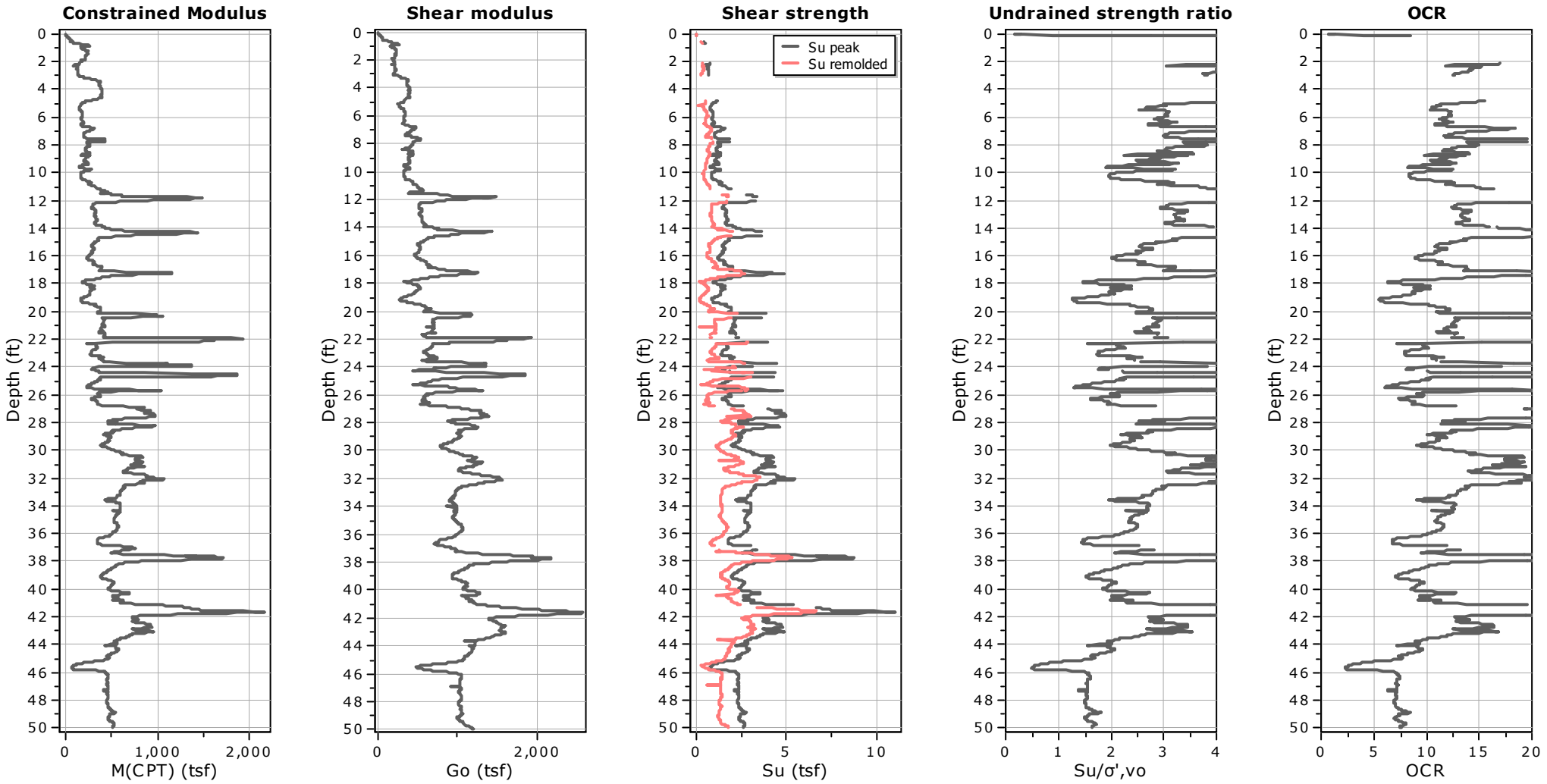
CPT: 11
Total depth: 49.97 ft, Date: 2/7/2024
Surface Elevation: 12.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

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User defined estimation data
Flat Dilatometer Test data

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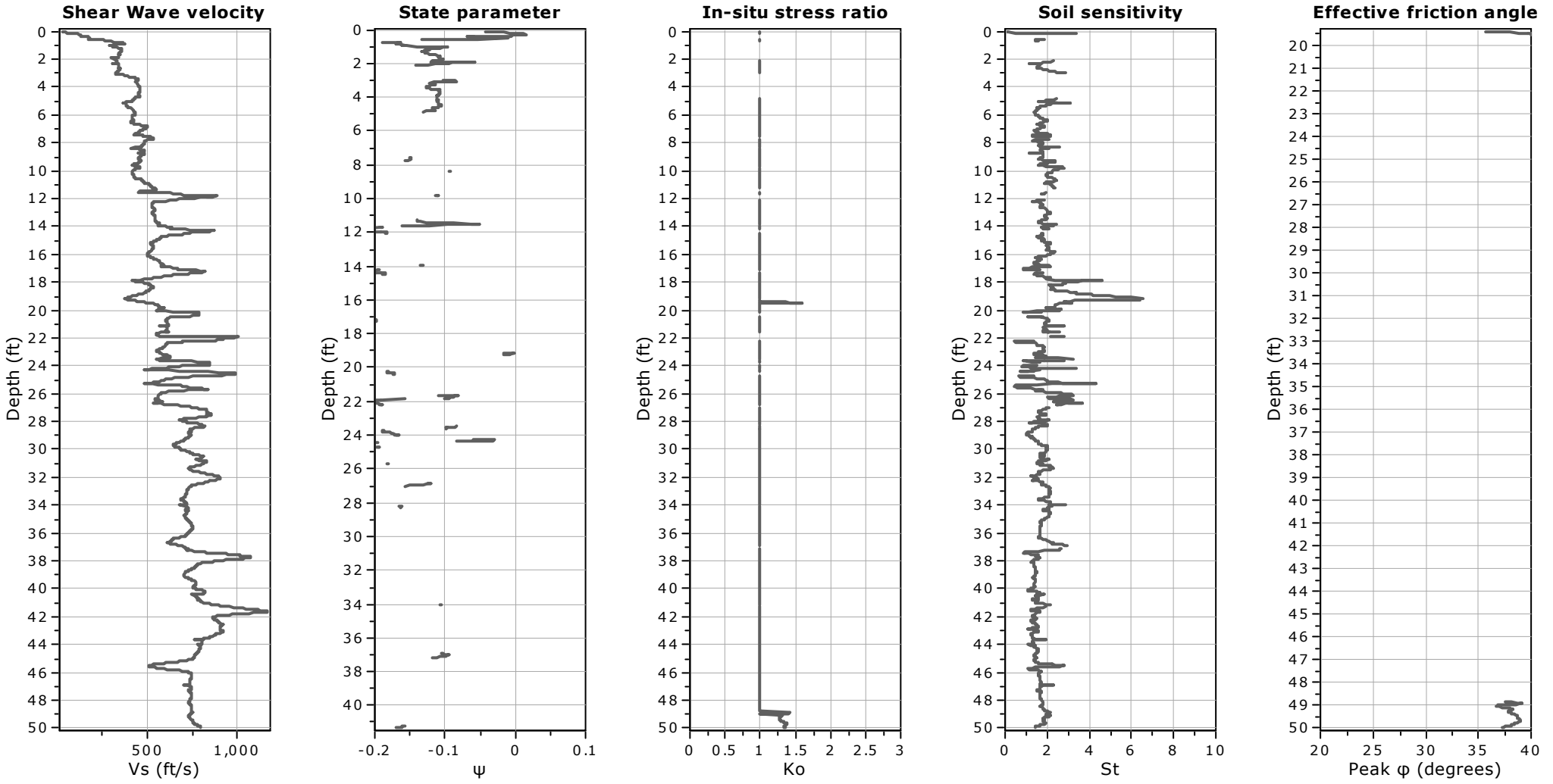
CPT: 11
Total depth: 49.97 ft, Date: 2/7/2024
Surface Elevation: 12.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

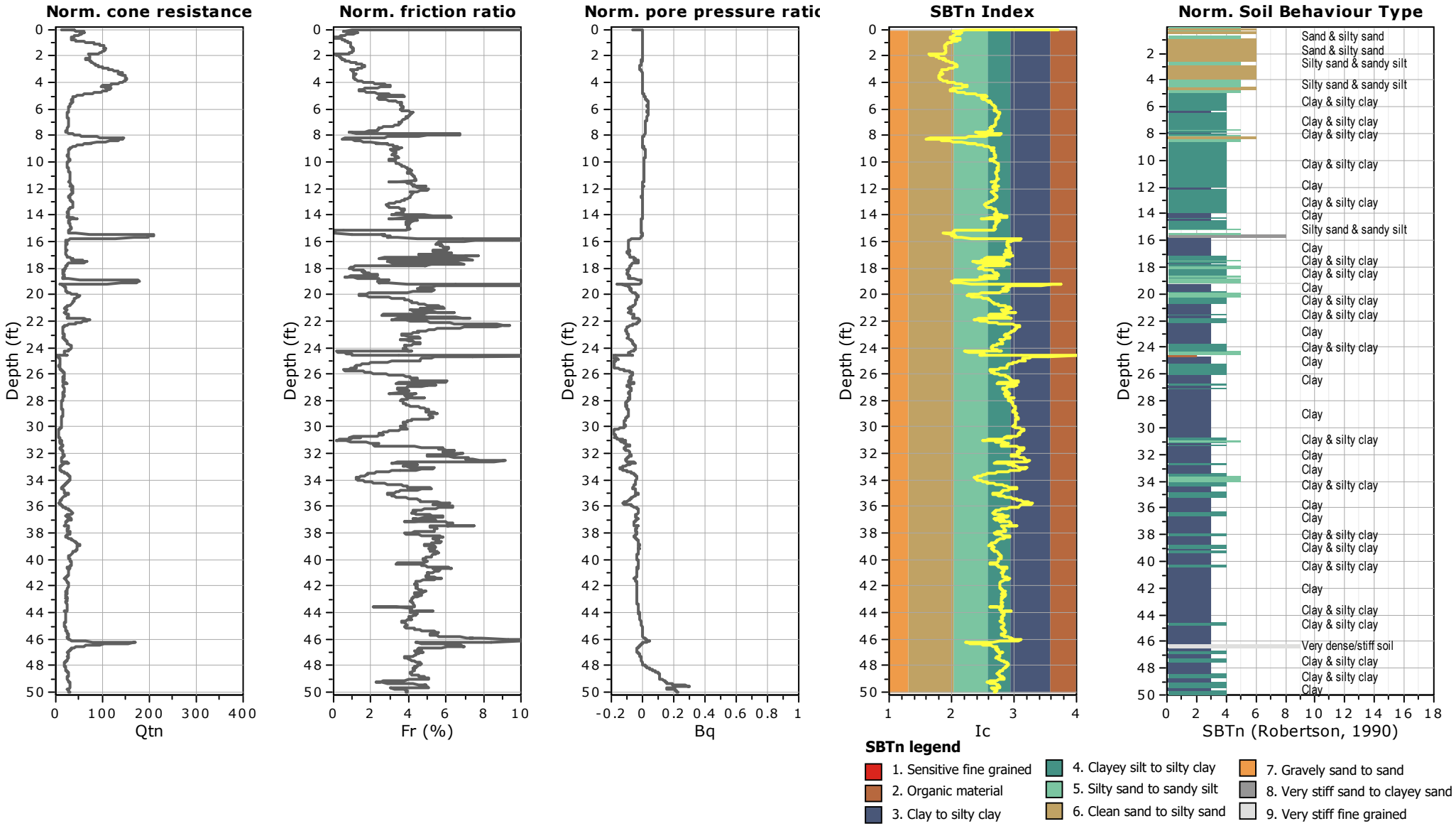
Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
Somerset, NJ 08873
732-271-9301
www.gtaeng.com

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 12
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 11.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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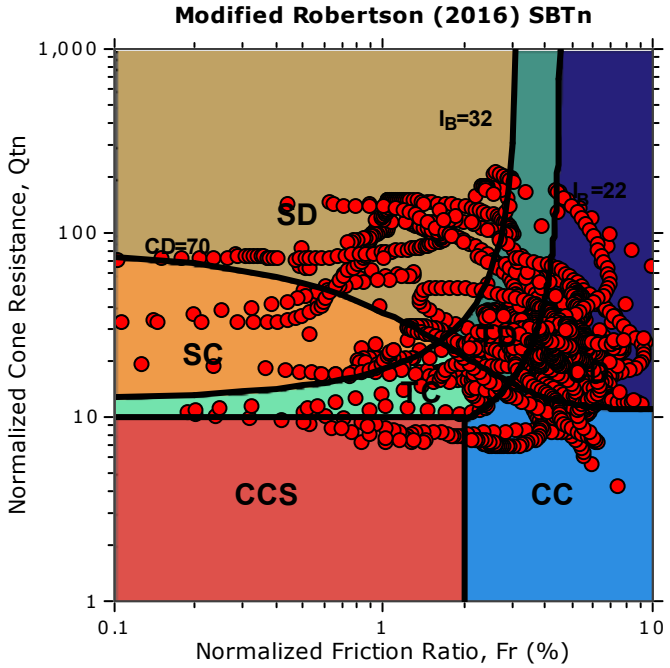
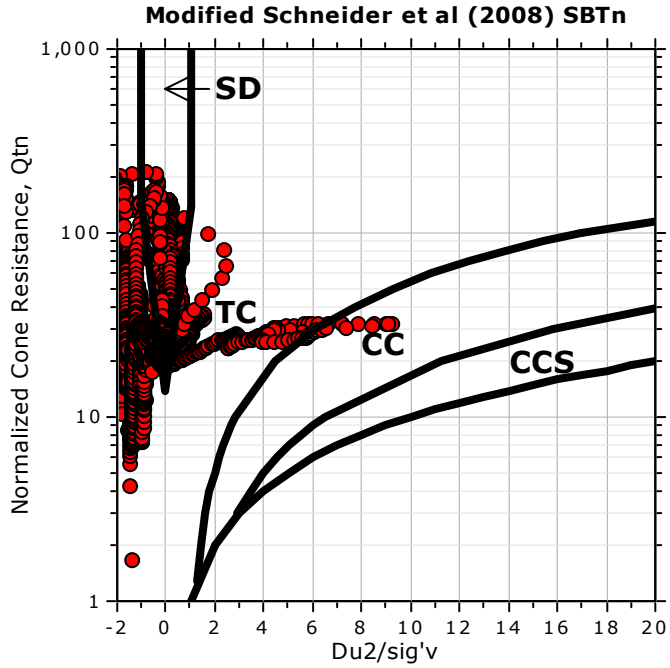
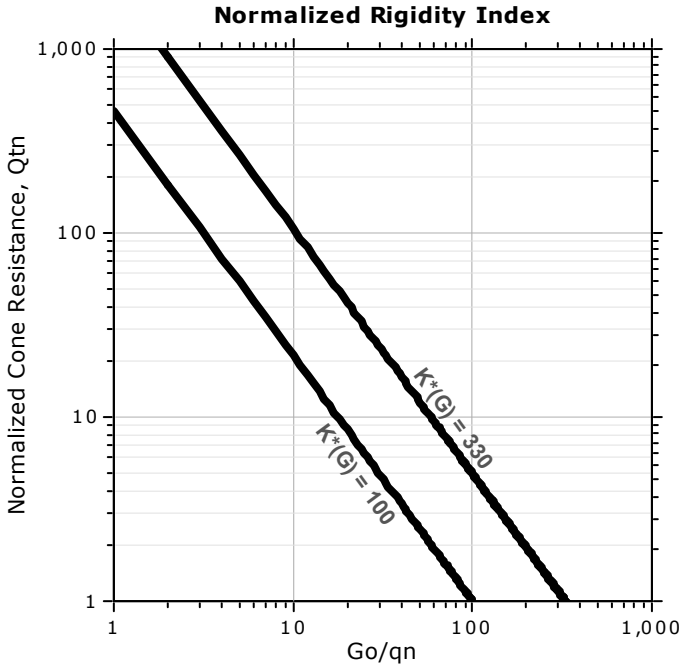
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 12
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 11.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
CD: Clay-like - Dilative
TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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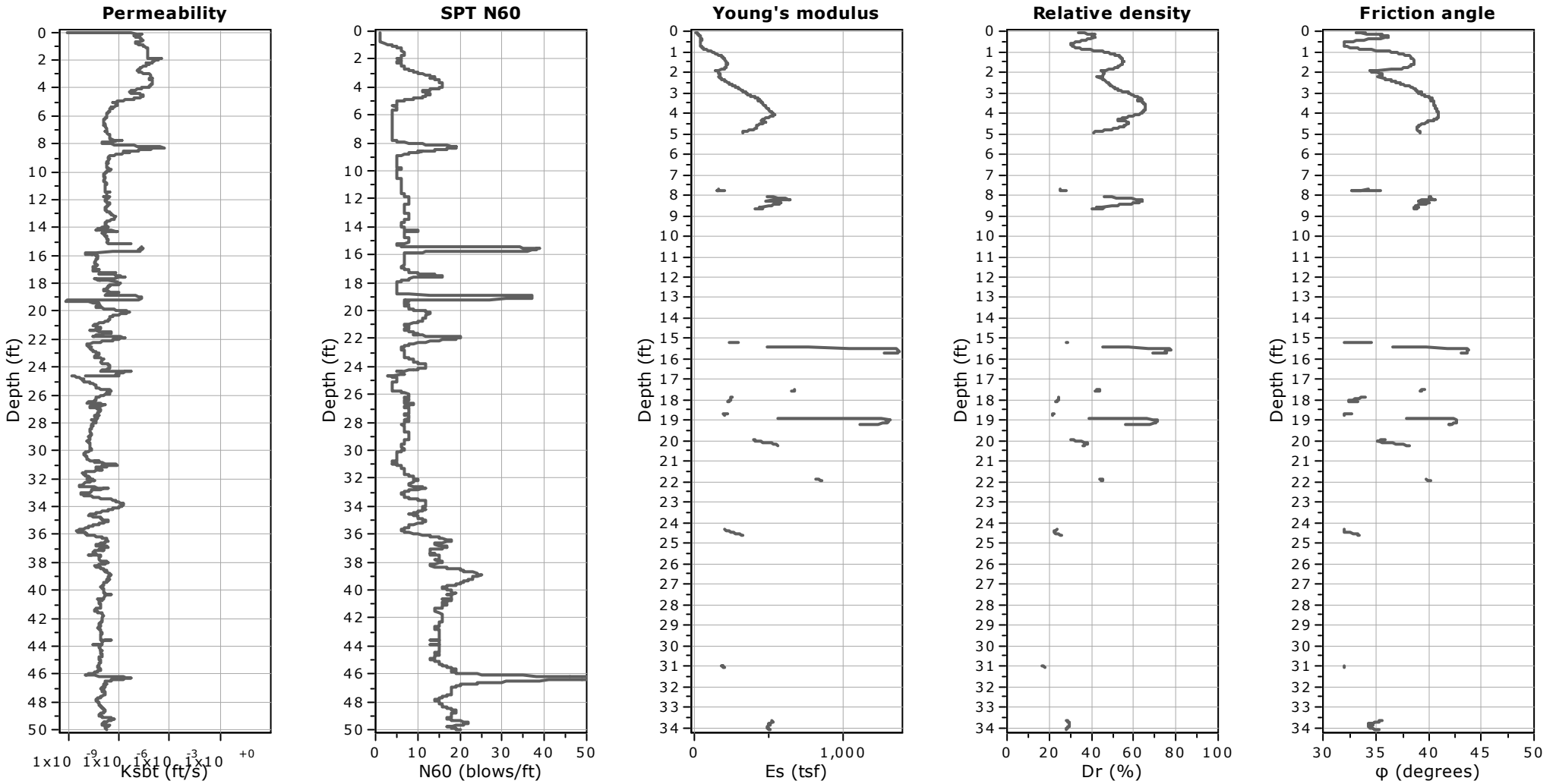
CPT: 12
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 11.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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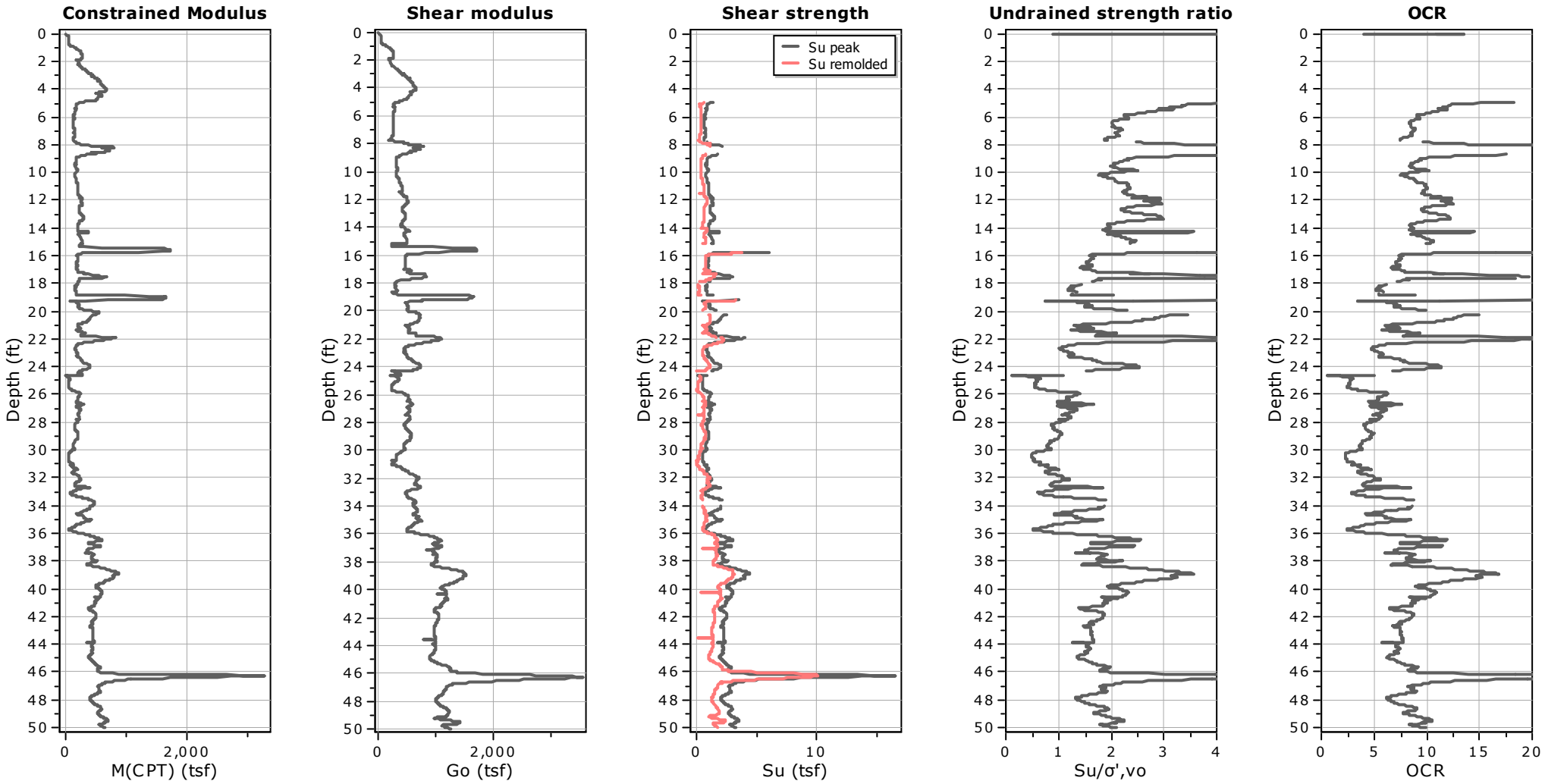
CPT: 12
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 11.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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732-271-9301
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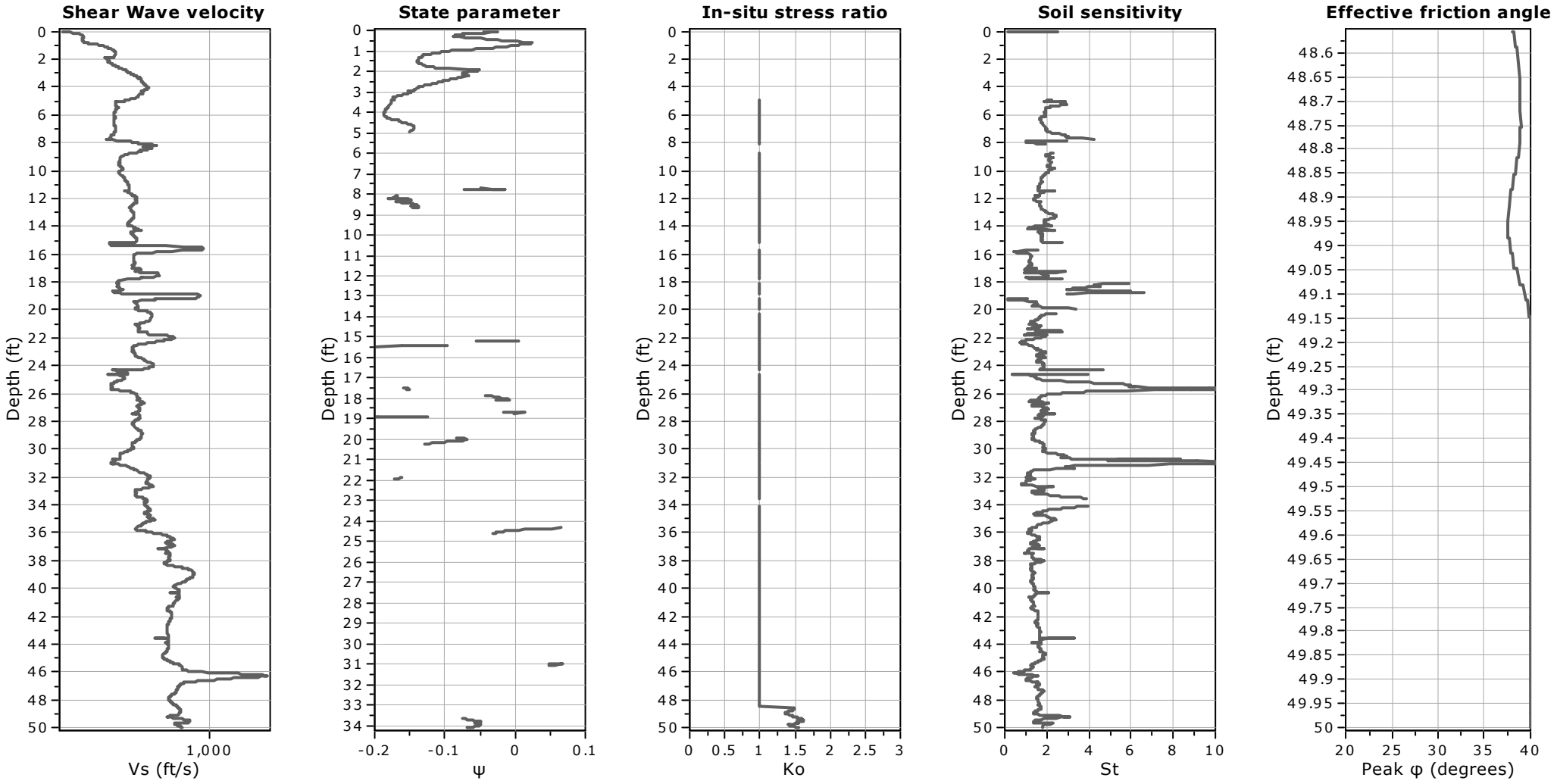
CPT: 12
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 11.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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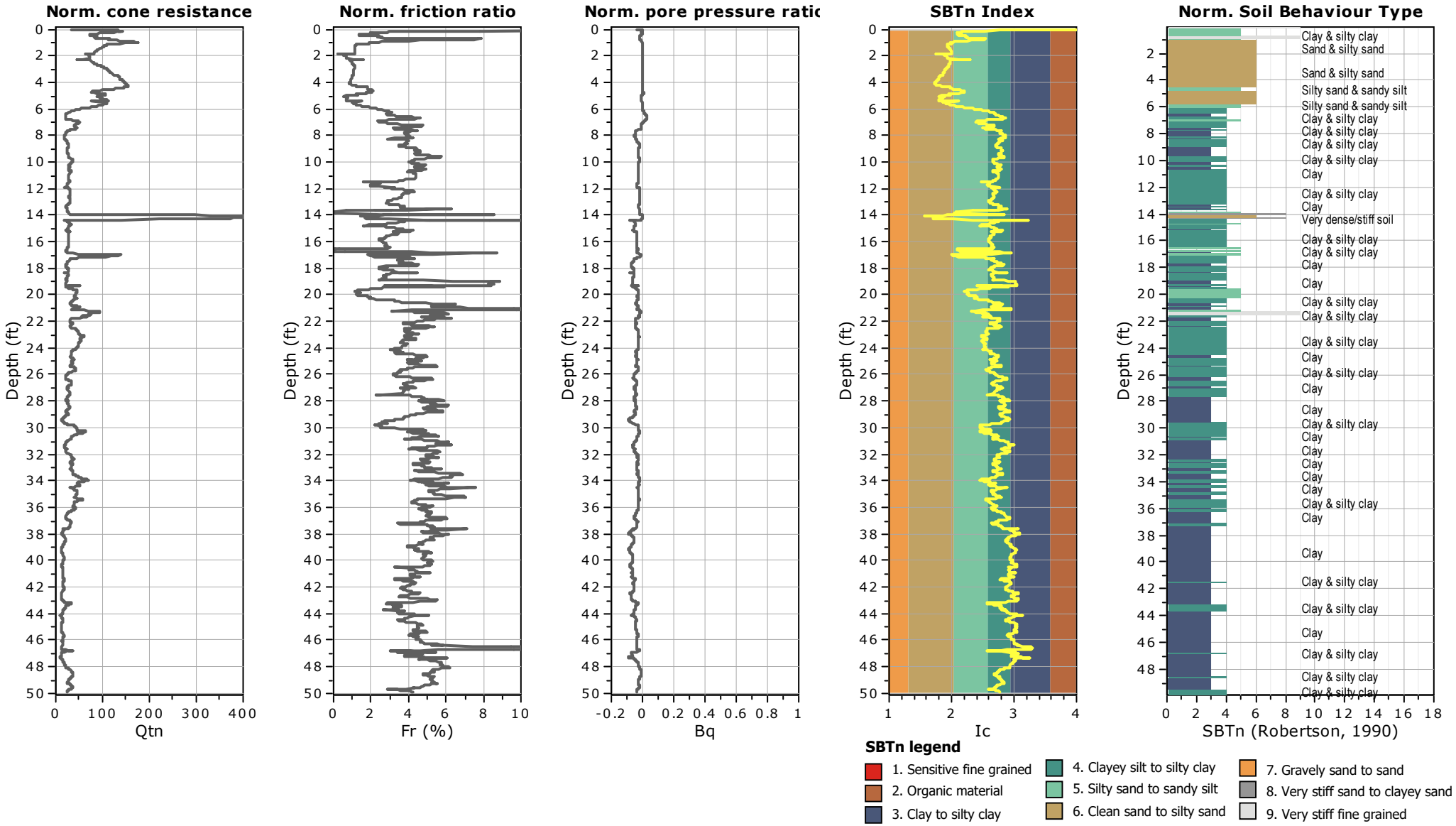
732-271-9301
www.gtaeng.com

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 13
Total depth: 49.93 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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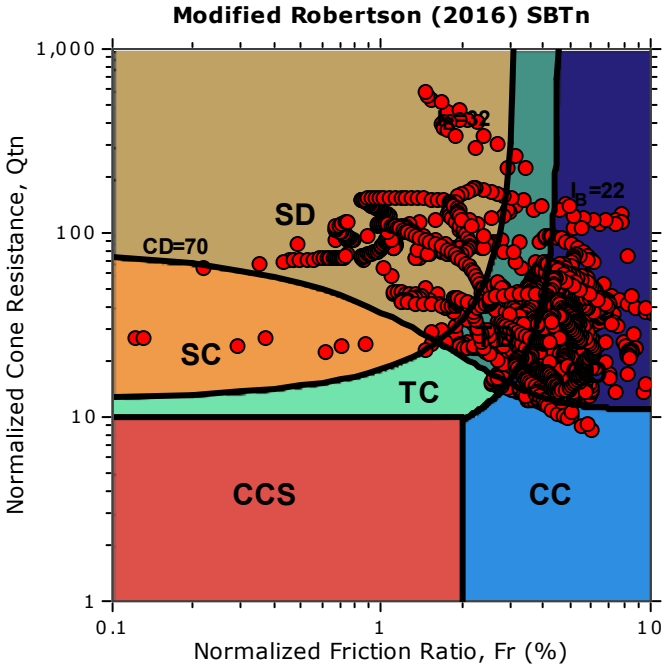
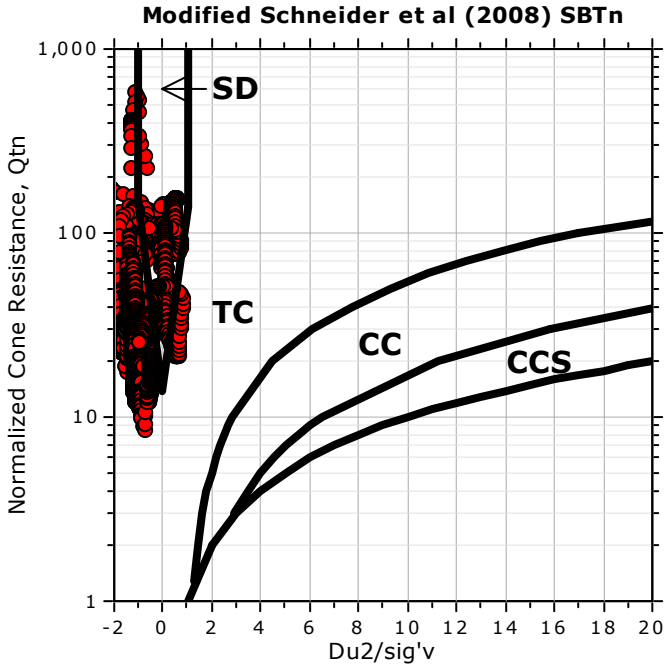
www.gtaeng.com

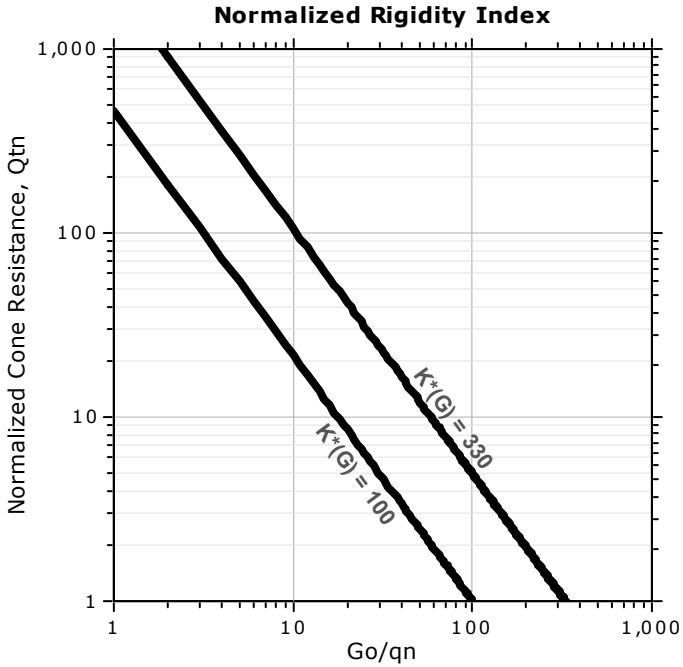
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 13
Total depth: 49.93 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







CCS: Clay-like - Contractive - Sensitive
CC: Clay-like - Contractive
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TC: Transitional - Contractive
TD: Transitional - Dilative
SC: Sand-like - Contractive
SD: Sand-like - Dilative

K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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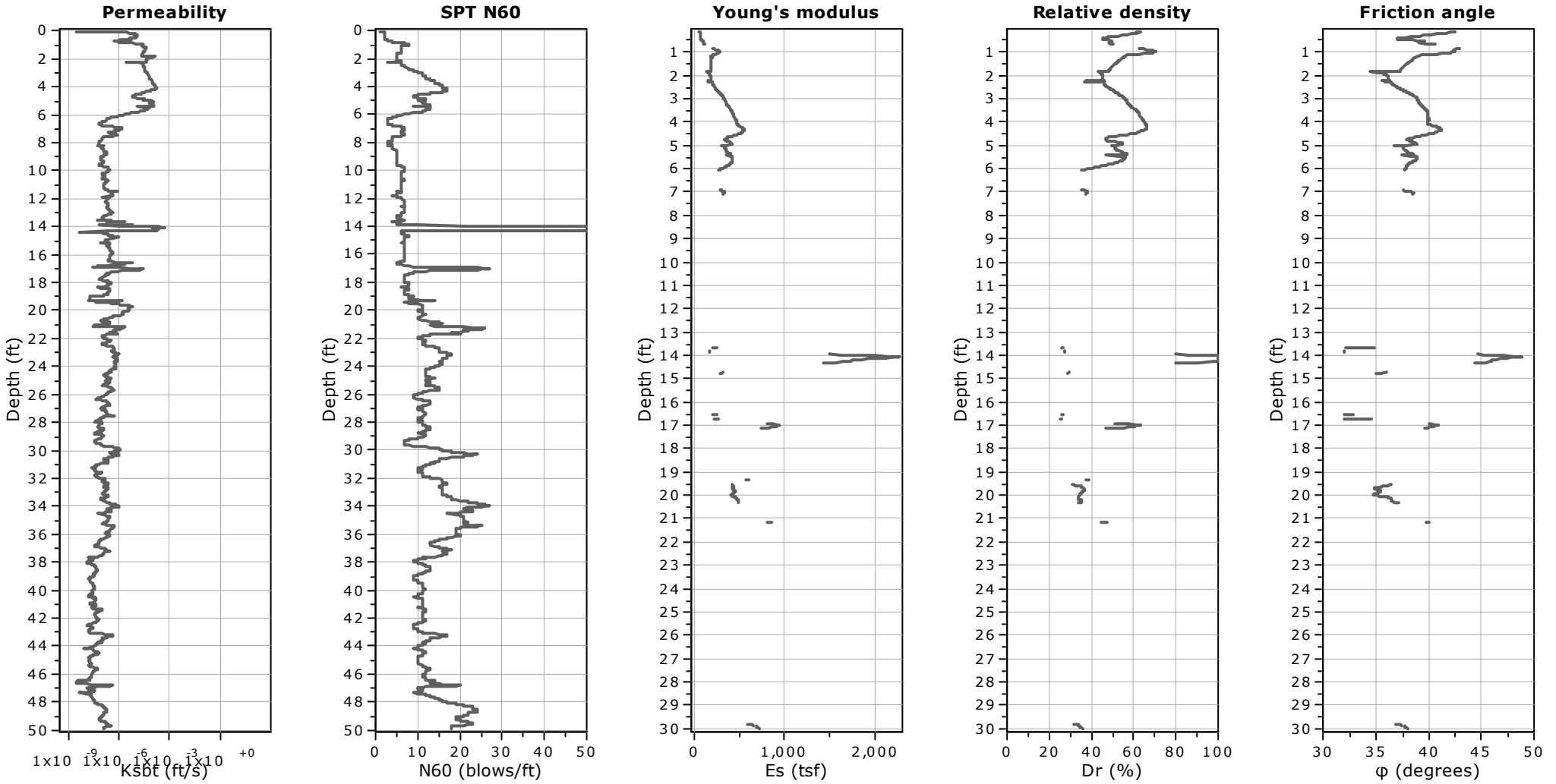
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 13
Total depth: 49.93 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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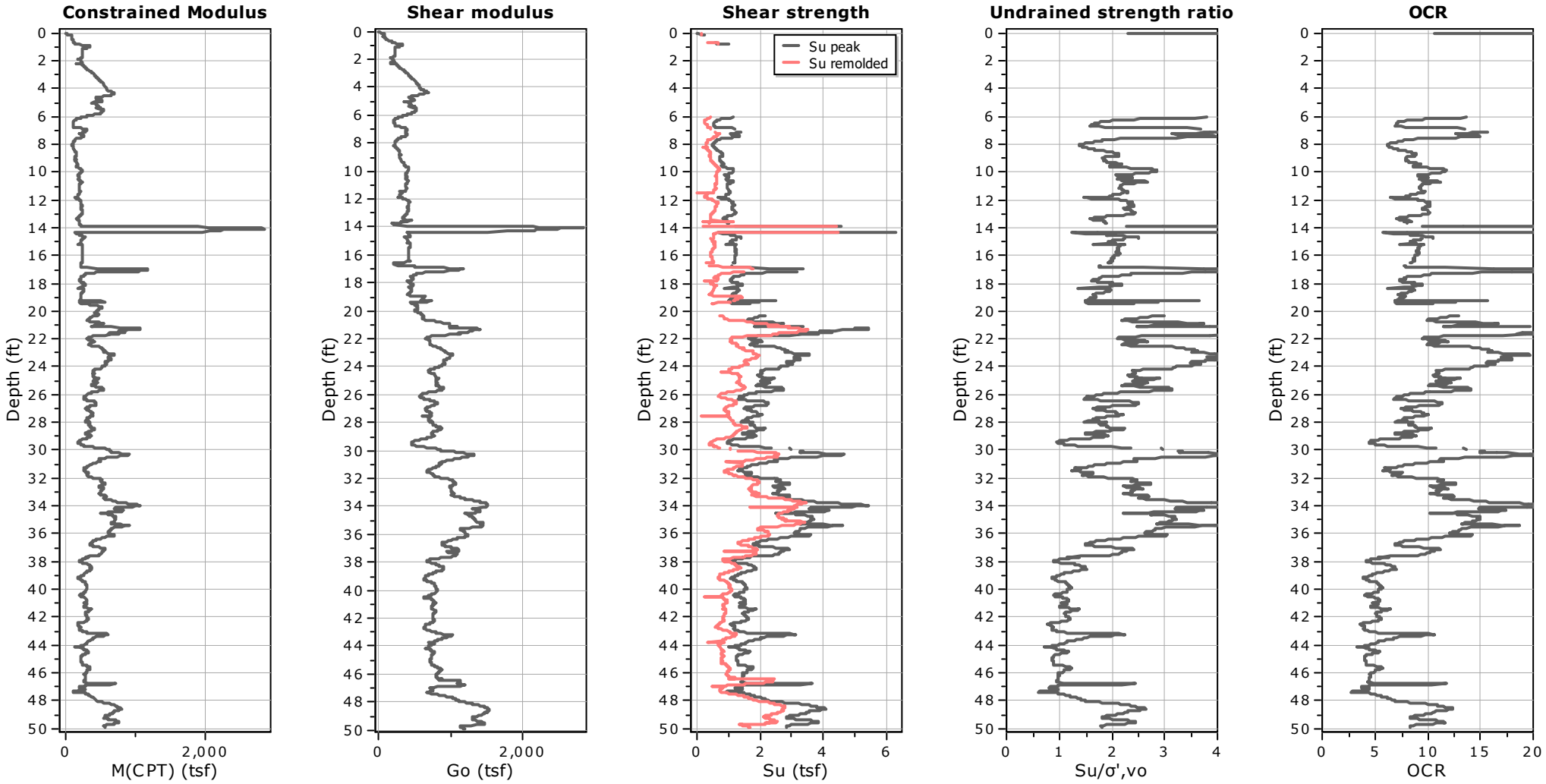
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 13
Total depth: 49.93 ft, Date: 2/7/2024
Surface Elevation: 9.00 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14

OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

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CPT: 13
Total depth: 49.93 ft, Date: 2/7/2024
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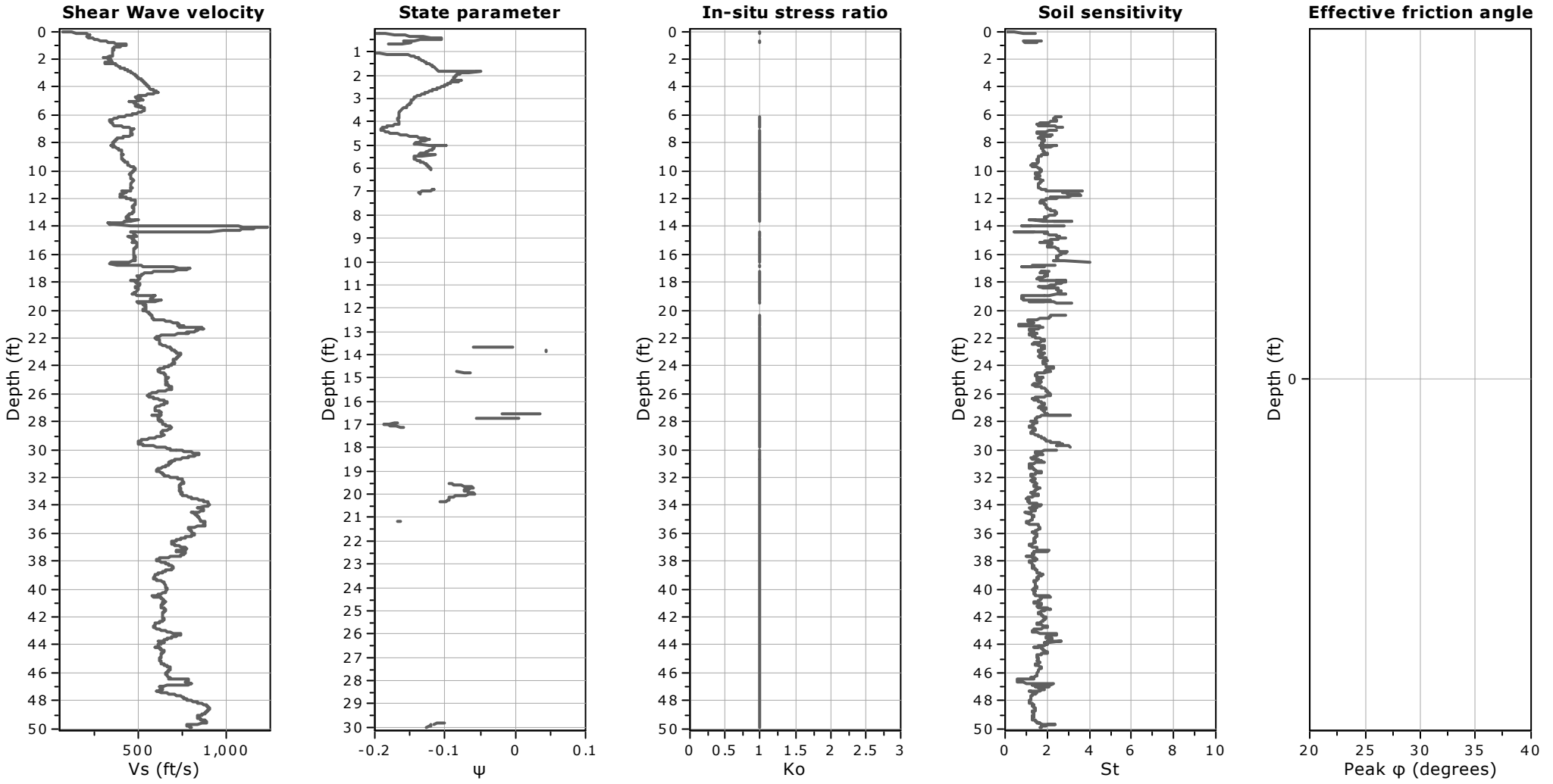
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

14 Worlds Fair Drive, Suite A
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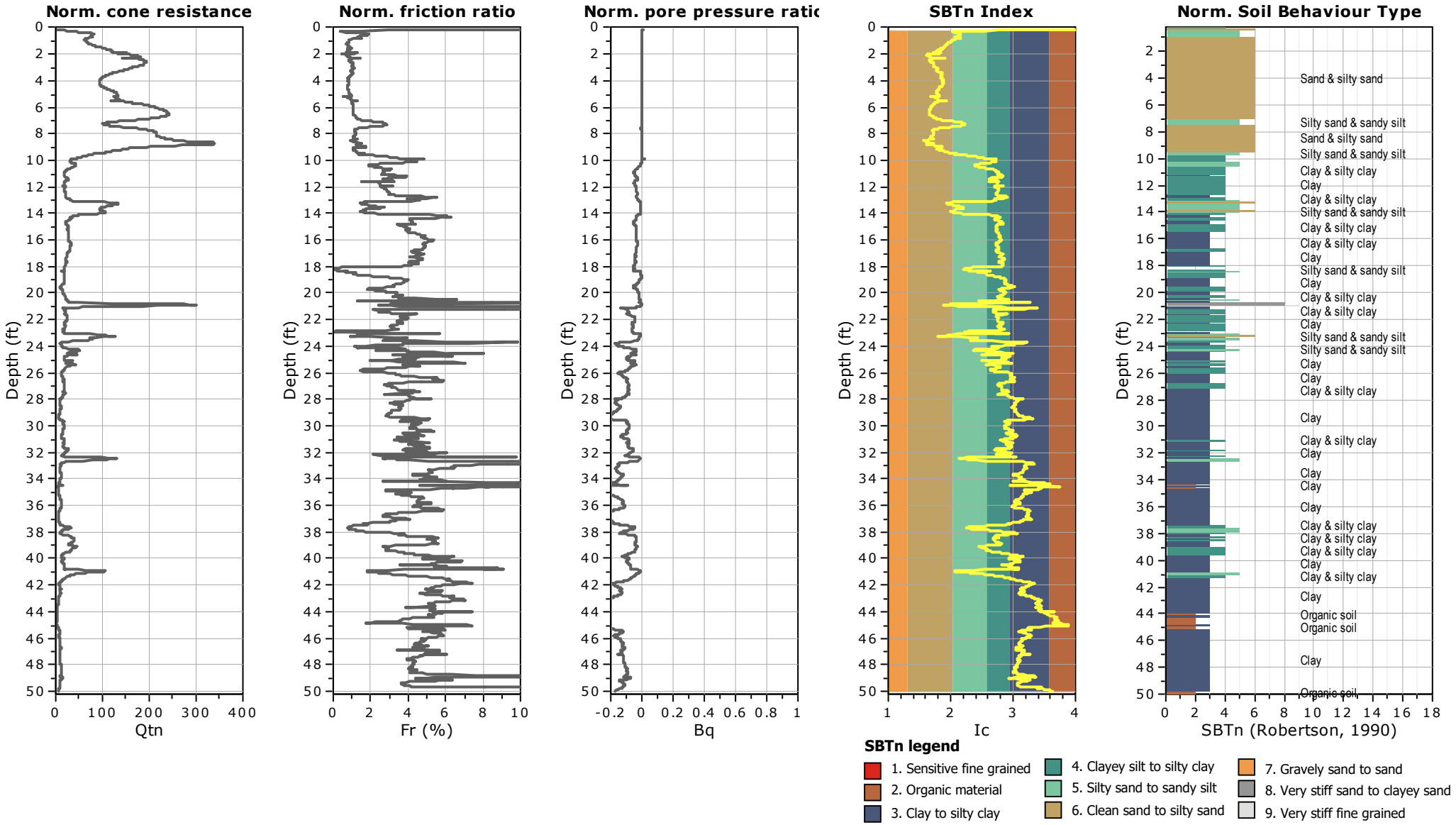
Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**

CPT: 14
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 13.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans



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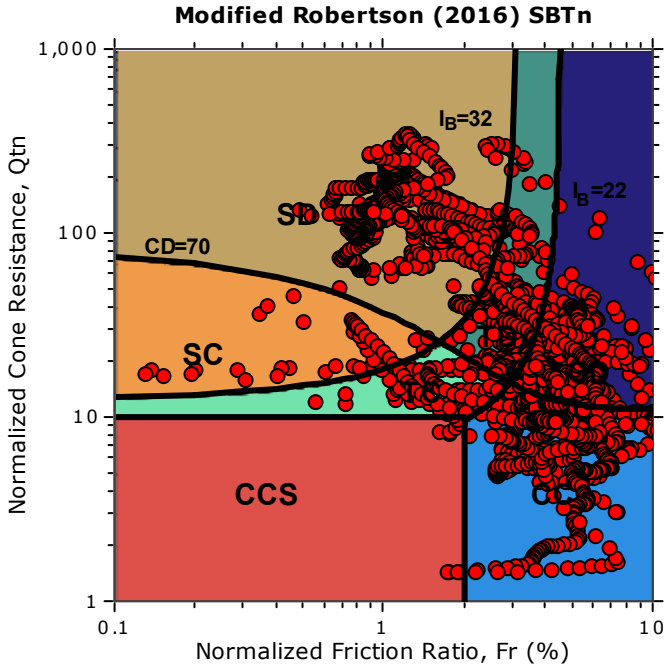
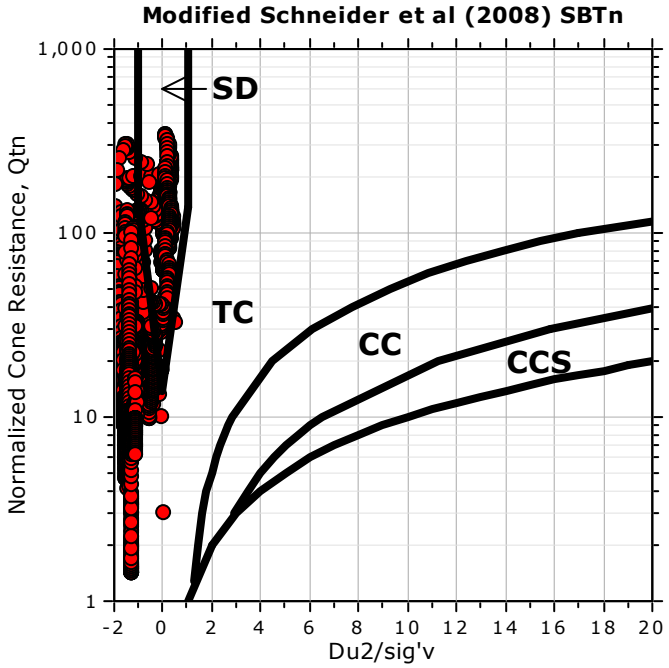
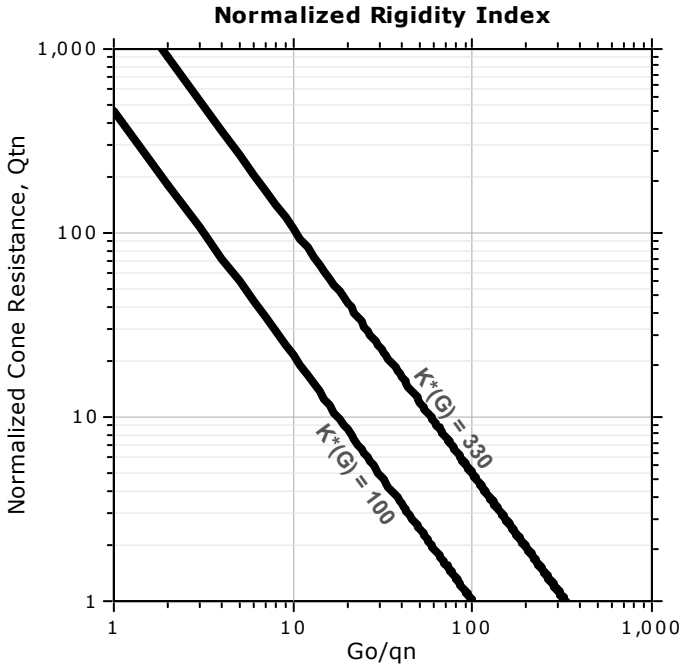
Location: **Sayreville, NJ**

CPT: 14
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 13.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Updated SBTn plots







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K(G) > 330: Soils with significant microstructure (e.g. age/cementation)

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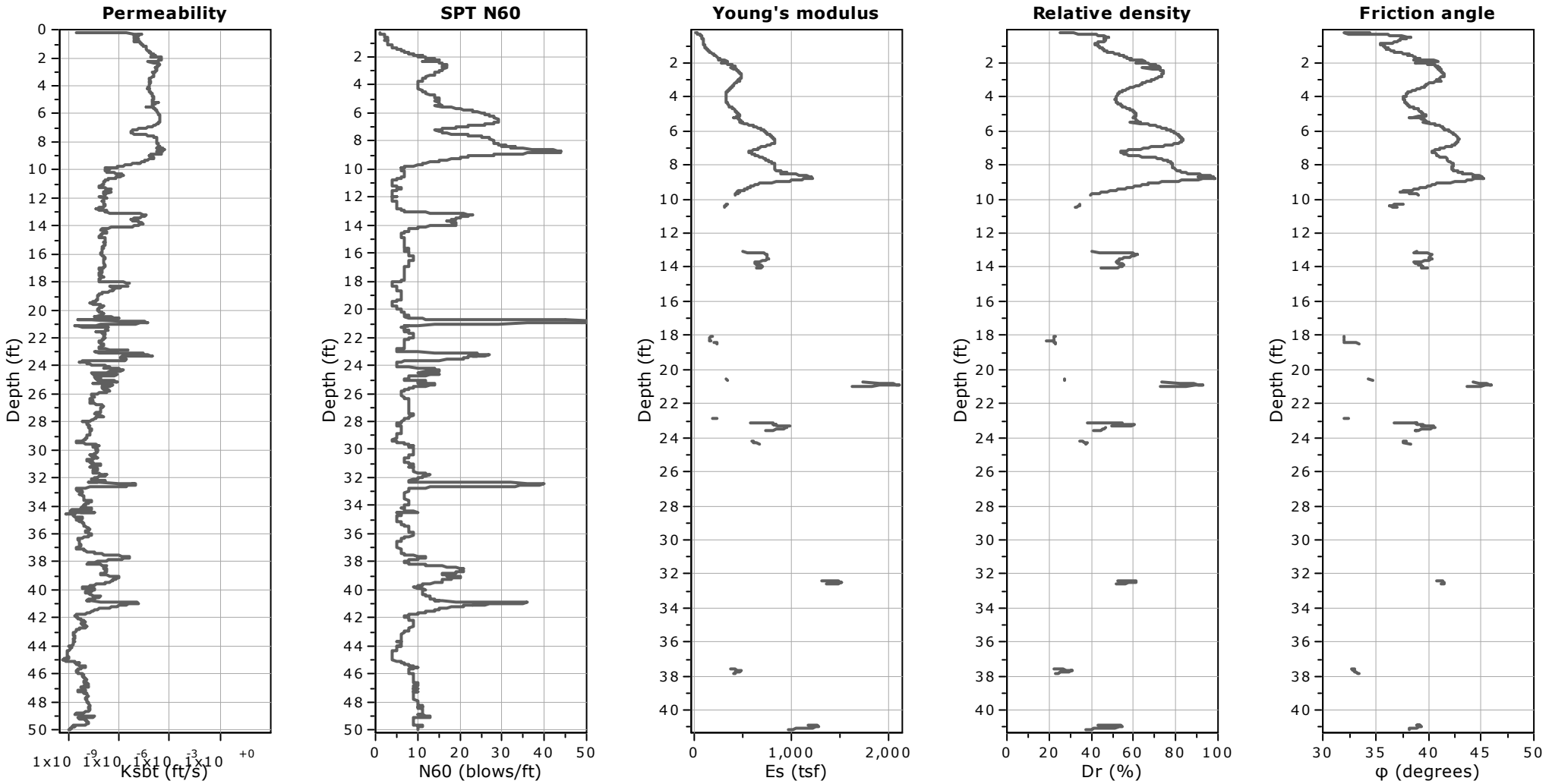
CPT: 14
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 13.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)
User defined estimation data

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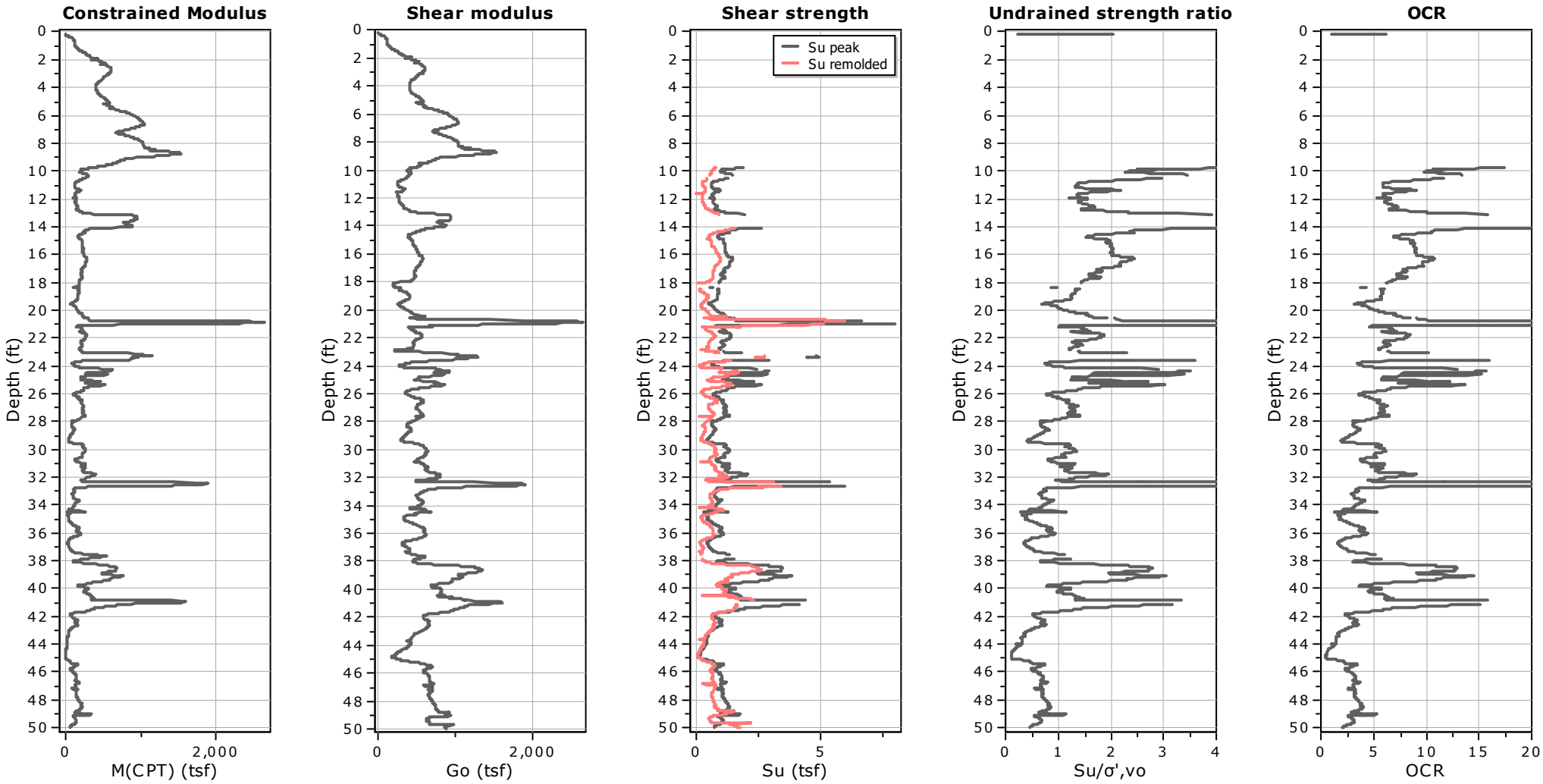
CPT: 14
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 13.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
User defined estimation data
Flat Dilatometer Test data

14 Worlds Fair Drive, Suite A
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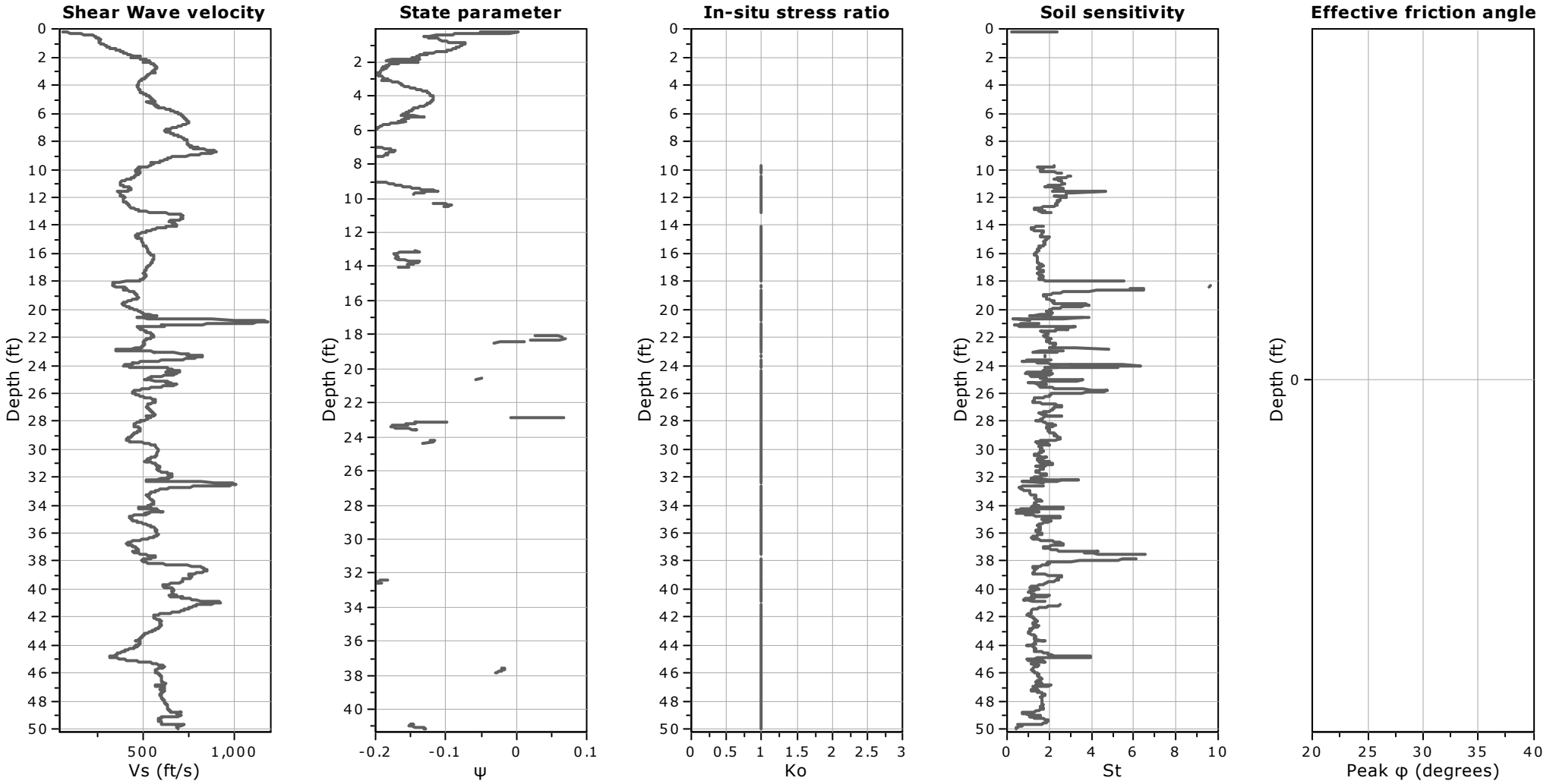
CPT: 14
Total depth: 50.00 ft, Date: 2/7/2024
Surface Elevation: 13.50 ft
Cone Type: Hogentogler
Cone Operator: D. Hans

Project: **Jernee Mill Industrial**
Location: **Sayreville, NJ**



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

User defined estimation data

Test Pit TP-5

Test Pit TP-6

Test Pit TP-7

Test Pit TP-8

Test Pit TP-9

Test Pit TP-10

Test Pit TP-11

APPENDIX C

Laboratory Data

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.1	3.7	39.1	34.3	15.8	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	1.4840	0.5709	0.4236	0.2312				

Material Description	USCS	AASHTO
○ Silty SAND	SM	A-1-b

Project No. 31232654 **Client:** Claremont Development

Project: Jernee Mill Industrial

○ **Source of Sample:** TP-6 **Depth:** 4

Remarks:

○NMC = 13.2%

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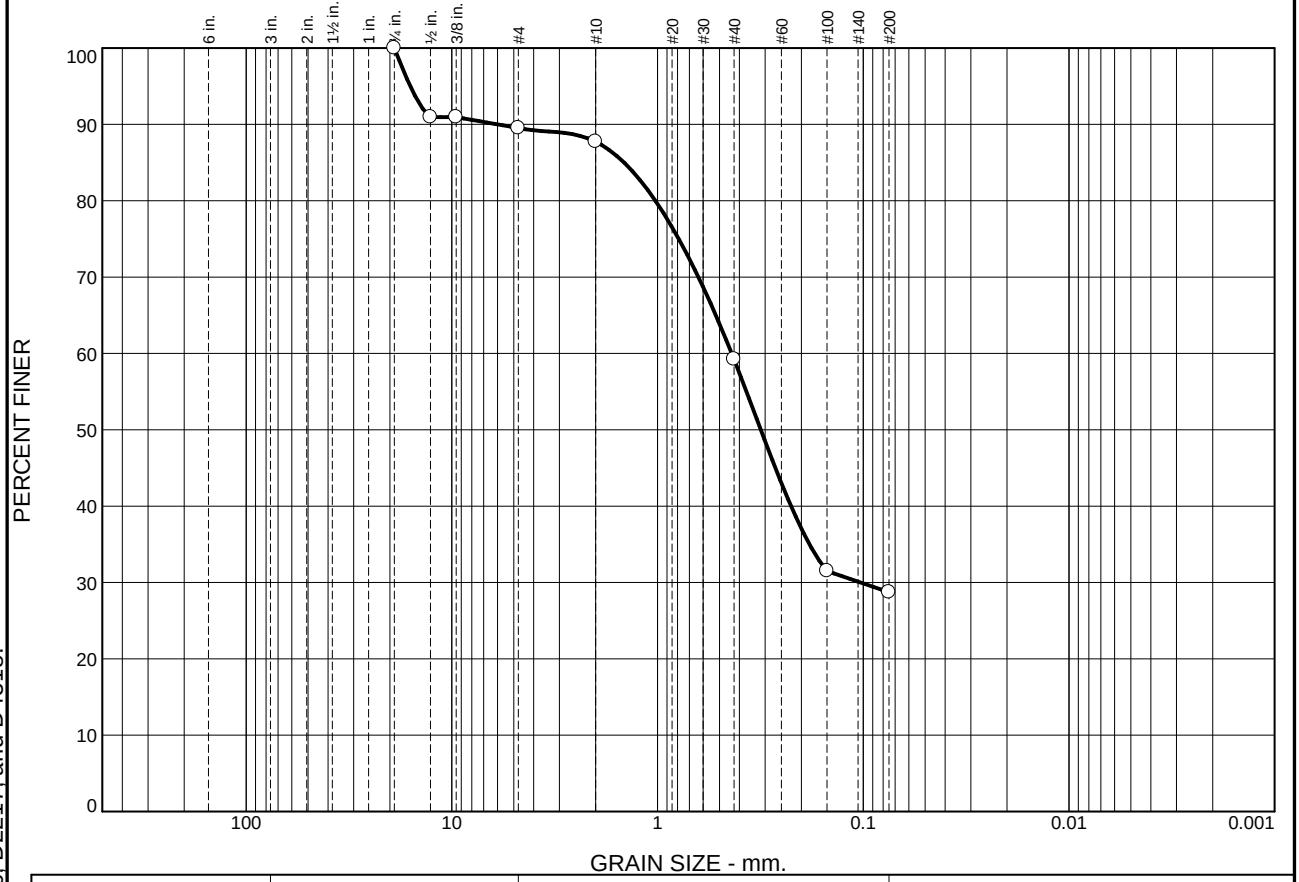
Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: VP/RR **Checked By:** KTP

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	10.5	1.8	28.5	30.5	28.7	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	1.4550	0.4362	0.3149	0.1031				

Material Description	USCS	AASHTO
○ Clayey SAND	SC	A-2-4(0)

Project No. 31232654 **Client:** Claremont Development

Project: Jernee Mill Industrial

○ **Source of Sample:** TP-9 **Depth:** 3

Remarks:

○NMC = 16.1%

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Somerset, NJ 08873

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: VP/RR **Checked By:** KTP

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.8	1.7	21.0	67.5	5.0	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○	NP	NP	0.8683	0.3466	0.3002	0.2262	0.1763	0.1578	0.94	2.20

Material Description	USCS	AASHTO
○ Poorly-graded SAND with silt	SP-SM	A-3

Project No. 31232654 **Client:** Claremont Development

Project: Jernee Mill Industrial

○ **Source of Sample:** TP-3 **Depth:** 3.5

Remarks:

○NMC = 23.6%

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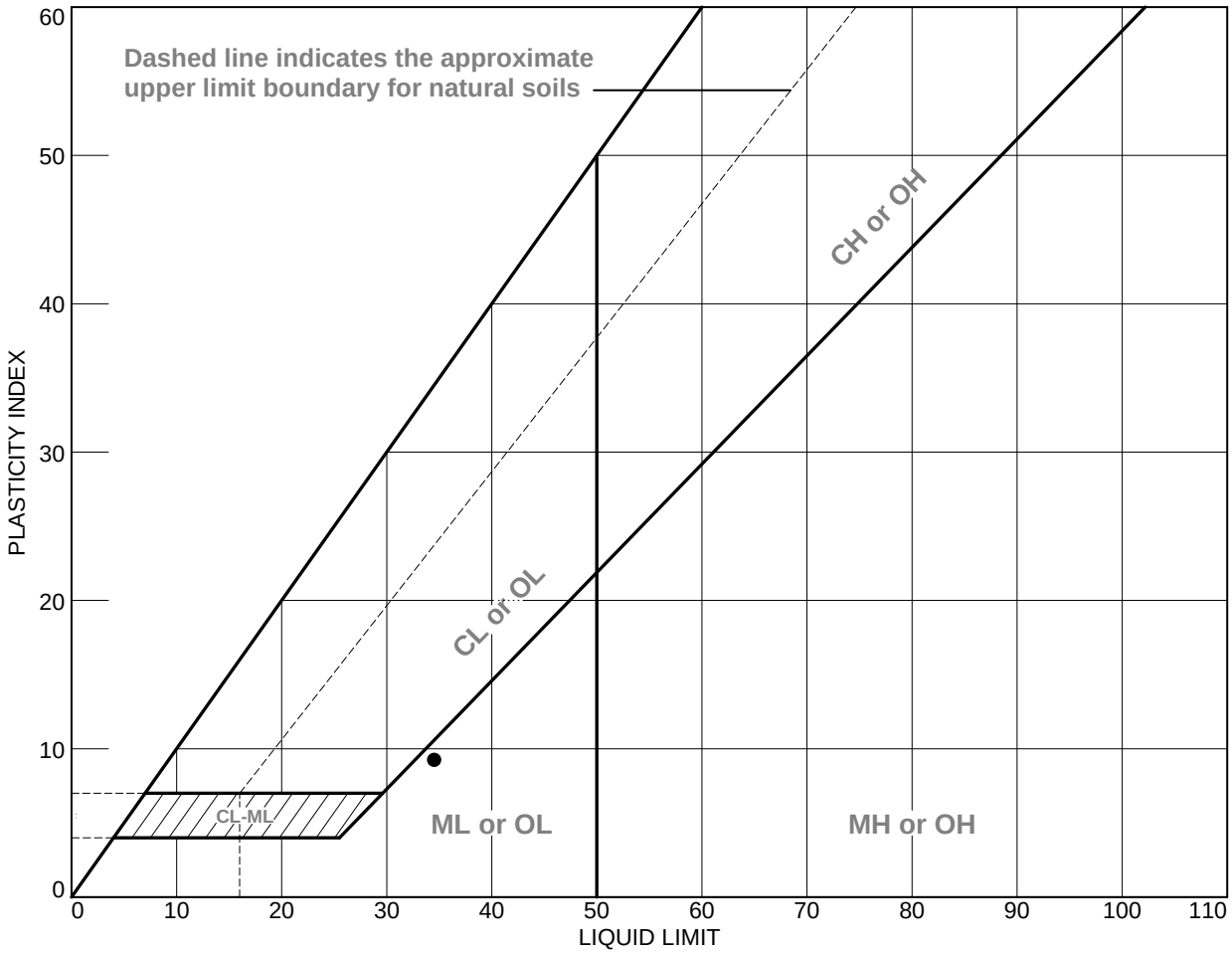
Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: RR **Checked By:** AFS

LIQUID AND PLASTIC LIMITS TEST REPORT - ASTM D4318



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	TP-1		5	23.6	25.4	34.6	9.2	ML

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

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Somerset, NJ 08873

Client: Claremont Development
Project: Jernee Mill Industrial
Project No.: 31232654 **Figure**

Tested By: VP **Checked By:** KTP

APPENDIX D

Exploration Logs by Others

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-1

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC
Surface Elevation:	± NS feet	**Date Started:**	7/28/2022
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/28/2022
Proposed Location:	Building	**Logged By:**	RL
Drill / Test Method:	HSA / SPT	**Contractor:**	RM
		Equipment:	CME-45

Water Depth | Elevation (feet bgs) | (feet)		Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	4.0 | ---		
At Completion:	4.0 | ---	**At Completion:**	6.0 | ---
24 Hours:	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						0.0	TOPSOIL	1" Topsoil	
0 - 2	S-1		4 - 19 - 37 - 47	9	56	0.1	COASTAL PLAIN DEPOSITS	Brown Silty Sand with Gravel, Dry, Very Dense (SM)	
2 - 4	S-2		19 - 29 - 37 - 32	12	66	2.0		Orangish-Brown Poorly Graded Sand, Dry, Very Dense (SP)	
4 - 6	S-3		6 - 6 - 8 - 10	12	14	5.0		As Above, Wet, Medium Dense (SP)	
6 - 8	S-4		18 - 20 - 19 - 16	16	39	6.0		Brown Silty Sand with Gravel, Wet, Dense (SM)	
8 - 10	S-5		7 - 9 - 9 - 9	15	18	8.0		Brown Poorly Graded Sand with Silt, Wet, Medium Dense (SP-SM)	
						10.0			
13 - 15	S-6		6 - 2 - 3 - 5	8	5	13.0		Gray Silt, Stiff, Wet (ML)	Qu = 1.0 tsf Trace Clay
						15.0			
18 - 20	S-7		3 - 2 - 5 - 12	16	7	18.0		Gray Lean Clay, Wet, Stiff (CL)	Qu = 1.0 tsf
						20.0			
23 - 25	S-8		7 - 10 - 7 - 7	16	17	23.0		Gray Silty Lean Clay, Wet, Firm (CL-ML)	Qu = 0.75 tsf
						25.0		Boring Log B-1 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-2

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/28/2022	**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**	
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/28/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	8.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						0.0	TOPSOIL	1" Topsoil	
0 - 2	S-1		4 - 10 - 10 - 9	4	20	0.1	COASTAL PLAIN DEPOSITS	Brown Poorly Graded Sand, Dry, Medium Dense (SP)	
2 - 4	S-2		7 - 8 - 10 - 11	10	18			As Above (SP)	
4 - 6	S-3		15 - 7 - 9 - 8	8	16	5.0		Brown Silty Sand, Wet, Medium Dense (SM)	
6 - 8	S-4		15 - 19 - 26 - 27	12	45			As Above, with Gravel, Dense (SM)	
8 - 10	S-5		4 - 7 - 6 - 7	15	13			As Above (SM)	
						10.0			
						13.0			
13 - 15	S-6		8 - 6 - 6 - 10	10	12			Gray Sandy Lean Clay, Wet, Stiff (CL)	Qu = 1.25 tsf
						15.0			
18 - 20	S-7		50/1"	1	50/1"			As Above (CL)	Qu = 2.5 tsf
						20.0			
23 - 25	S-8		27 - 34 - 25 - 18	22	59			As Above (CL)	Qu = 2.5 tsf
						25.0			
								Boring Log B-2 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-3

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/28/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/28/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	6.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		2 - 8 - 16 - 20	12	24		FILL		Gray Poorly Graded Gravel, Dry (FILL)	Clean Stone
2 - 4	S-2		31 - 50/4"	6	50/4"				Brown Silty Sand with Gravel, Dry (FILL)	Trace Brick
4 - 6	S-3		9 - 8 - 13 - 13	10	21	5.0	COASTAL PLAIN DEPOSITS		Orangish-Brown Silty Sand with Gravel, Wet, Medium Dense (SM)	
6 - 8	S-4		11 - 19 - 30 - 32	21	49				As Above, Dense (SM)	
8 - 10	S-5		13 - 16 - 8 - 10	8	24				As Above, Medium Dense (SM)	
						10.0				
						13.0				
13 - 15	S-6		7 - 3 - 7 - 7	10	10				Gray Sandy Lean Clay, Wet, Stiff (CL)	Qu = 1.5 tsf
						15.0				
18 - 20	S-7		8 - 7 - 13 - 11	NR	20				No Recovery, Presumed As Above (CL)	
						20.0				
23 - 25	S-8		10 - 12 - 14 - 21	2	26				As Above (CL)	Qu = 1.0 tsf
						25.0				
									Boring Log B-3 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-4

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/28/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/28/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	6.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0	TOPSOIL		1" Topsoil	
0 - 2	S-1		5 - 7 - 6 - 5	4	11	0.1	FILL		Brown Silty Sand (FILL)	
2 - 4	S-2		2 - 3 - 4 - 4	6	7				As Above (FILL)	Trace Brick
4 - 6	S-3		14 - 11 - 9 - 6	4	20	5.0			As Above, Wet (FILL)	Trace Wood
6 - 8	S-4		5 - 4 - 2 - 2	6	6	6.0	COASTAL PLAIN DEPOSITS		Brown Poorly Graded Sand, Wet, Loose (SP)	
8 - 10	S-5		2 - 3 - 4 - 3	18	7				As Above (SP)	
						10.0				
13 - 15	S-6		7 - 12 - 16 - 13	12	28				As Above, Medium Dense (SP)	
						15.0				
18 - 20	S-7		4 - 7 - 7 - 11	20	14				As Above (SP)	
						20.0				
						23.0				
23 - 25	S-8		6 - 7 - 7 - 9	22	14				Gray Lean Clay, Wet, Stiff (CL)	Qu = 1.25 tsf
						25.0				
									Boring Log B-4 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-5

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/29/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	7.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						0.0			
0 - 2	S-1		1 - 2 - 2 - 2	12	9	0.2	TOPSOIL	2" Topsoil	
							COASTAL PLAIN DEPOSITS	Orangish-Brown Poorly Graded Sand, Moist, Loose (SP)	
2 - 4	S-2		2 - 3 - 2 - 2	16	5			As Above (SP)	
4 - 6	S-3		2 - 2 - 3 - 3	10	5	5.0		As Above, Wet (SP)	
6 - 8	S-4		3 - 3 - 5 - 6	8	8			As Above (SP)	
8 - 10	S-5		10 - 14 - 12 - 13	12	26	10.0		As Above, Medium Dense (SP)	
						13.0			
13 - 15	S-6		9 - 4 - 5 - 6	10	9	15.0		Black Silt, Wet, Stiff (ML)	Qu = 1.0 tsf
18 - 20	S-7		4 - 4 - 6 - 6	18	10	20.0		As Above (ML)	Qu = 1.0 tsf
						23.0			
23 - 25	S-8		5 - 5 - 8 - 10	21	13	25.0		Black Lean Clay, Wet, Firm (CL)	Qu = 0.75 tsf
								Boring Log B-5 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-6

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC
Surface Elevation:	± NS feet	**Date Started:**	7/29/2022
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/29/2022
Proposed Location:	Building	**Logged By:**	RL
Drill / Test Method:	HSA / SPT	**Contractor:**	RM
		Equipment:	CME-45

Water Depth | Elevation (feet bgs) | (feet)			Cave-In Depth | Elevation (feet bgs) | (feet)	
During:	4.0	---		
At Completion:	4.0	---	**At Completion:**	6.0 | ---
24 Hours:	---	---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)			
						0.0			
						0.3	TOPSOIL	3" Topsoil	
0 - 2	S-1		1 - 2 - 2 - 3	8	4		COASTAL PLAIN DEPOSITS	Orangish-Brown Poorly Graded Sand, Loose (SP)	
2 - 4	S-2		2 - 3 - 4 - 5	10	7			As Above (SP)	
4 - 6	S-3		5 - 5 - 6 - 6	12	11	5.0		As Above, Wet, Medium Dense (SP)	
6 - 8	S-4		5 - 6 - 5 - 7	12	11			As Above (SP)	
8 - 10	S-5		5 - 7 - 8 - 10	12	15			As Above (SP)	
						10.0			
						13.0			
13 - 15	S-6		3 - 4 - 4 - 4	15	8			Black Silt, Wet, Stiff (ML)	Qu = 1.0 tsf
						15.0			
18 - 20	S-7		3 - 6 - 6 - 9	12	12			As Above (ML)	Qu = 1.0 tsf
						20.0			
						23.0			
23 - 25	S-8		4 - 6 - 8 - 11	18	14			Black Lean Clay with Silt, Wet, Stiff (CL-ML)	Qu = 1.0 tsf
						25.0			
								Boring Log B-6 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-7

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/29/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	7.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		2 - 2 - 2 - 2	12	4		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Dry, Loose (S:P)	
2 - 4	S-2		2 - 3 - 4 - 4	18	7				As Above, Moist (SP)	
4 - 6	S-3		7 - 3 - 5 - 5	12	8	5.0			As Above, Wet (SP)	
6 - 8	S-4		5 - 7 - 7 - 9	14	14				As Above, Medium Dense (SP)	
8 - 10	S-5		5 - 7 - 10 - 12	12	17				As Above (SP)	
						10.0				
						13.0				
13 - 15	S-6		3 - 4 - 6 - 7	10	10				Black Silt, Wet, Stiff (ML)	Qu = 1.0 tsf
						15.0				
						18.0				
18 - 20	S-7		3 - 3 - 5 - 7	16	8				Black Lean Clay, Wet, Stiff (CL)	Qu = 1.0 tsf
						20.0				
23 - 25	S-8		4 - 7 - 8 - 9	18	15				As Above (CL)	Qu = 1.0 tsf
						25.0				
									Boring Log B-7 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-8

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		
Termination Depth:	25.0 feet bgs	**Date Completed:**	7/29/2022		
Proposed Location:	Building	**Logged By:**	RL	**During:** 4.0 | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:** 4.0 | ---	**At Completion:** 8.0 | ---
		Equipment:	CME-45	**24 Hours:** --- | ---	**24 Hours:** --- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		2 - 2 - 2 - 2	10	4		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Dry, Loose (SP)	
2 - 4	S-2		2 - 2 - 1 - 2	16	3				As Above (SP)	
4 - 6	S-3		2 - 2 - 4 - 4	12	6	5.0			As Above, Wet (SP)	
6 - 8	S-4		5 - 7 - 7 - 8	12	14				As Above, Medium Dense (SP)	
8 - 10	S-5		4 - 5 - 6 - 7	18	11				As Above (SP)	
						10.0				
						13.0				
13 - 15	S-6		3 - 17 - 11 - 10	16	28				Black Sandy Lean Clay, Wet, Very Stiff (CL)	Qu = 3.0 tsf
						15.0				
18 - 20	S-7		7 - 25 - 11 - 9	14	26				As Above, Stiff (CL)	Qu = 1.0 tsf
						20.0				
23 - 25	S-8		12 - 16 - 21 - 19	18	37				As Above, Stiff (CL)	Qu = 1.0 tsf
						25.0			Boring Log B-8 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-9

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

				Water Depth | Elevation (feet bgs) | (feet)	Cave-In Depth | Elevation (feet bgs) | (feet)
Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		
Termination Depth:	25.0 feet bgs	**Date Completed:**	8/1/2022		
Proposed Location:	Building	**Logged By:**	RL	**During:** 4.0 | ---	
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:** 4.0 | ---	**At Completion:** 6.0 | ---
		Equipment:	CME-45	**24 Hours:** --- | ---	**24 Hours:** --- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		1 - 2 - 1 - 1	8	3		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Dry, Very Loose (SP)	
2 - 4	S-2		3 - 3 - 6 - 7	6	9				As Above, Loose (SP)	
4 - 6	S-3		3 - 6 - 8 - 8	12	14	5.0			As Above, Wet, Medium Dense (SP)	
						6.0				
6 - 8	S-4		6 - 7 - 6 - 5	15	13				Orangish-Brown Silty Sand, Wet, Medium Dense (SM)	
8 - 10	S-5		3 - 4 - 3 - 3	12	7				As Above, Loose (SM)	
						10.0				
						13.0				
13 - 15	S-6		5 - 5 - 6 - 6	20	11				Black Lean Clay, Wet, Stiff (CL)	Qu = 1.0 tsf
						15.0				
18 - 20	S-7		9 - 6 - 7 - 8	18	13				As Above (CL)	Qu = 1.25 tsf
						20.0				
23 - 25	S-8		8 - 8 - 10 - 12	12	18				As Above (CL)	Qu = 1.0 tsf
						25.0				
									Boring Log B-9 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-10

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	6.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	6.0 | ---	**At Completion:**	8.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		1 - 1 - 1 - 1	6	2		COASTAL PLAIN DEPOSITS		Orangish-Brown Silty Sand, Moist, Very Loose (SM)	
2 - 4	S-2		4 - 4 - 3 - 4	6	7				As Above, Loose (SM)	
4 - 6	S-3		4 - 4 - 3 - 2	16	7	5.0			As Above (SM)	
						6.0				
6 - 8	S-4		2 - 2 - 4 - 4	10	6				Orangish-Brown Sandy Lean Clay with Silt and Sand, Wet, Stiff (CL-ML)	Qu = 1.0 tsf
8 - 10	S-5		4 - 3 - 4 - 3	12	7				As Above (CL-ML)	Qu = 1.0 tsf
						10.0				
						13.0				
13 - 15	S-6		3 - 3 - 4 - 6	18	7				Black Sandy Silt, Wet, Very Stiff (ML)	Qu = 2.0 tsf
						15.0				
						18.0				
18 - 20	S-7		8 - 21 - 15 - 10	12	36				Black Lean Clay, Wet, Very Stiff (CL)	Qu = 1.0 tsf
						20.0				
23 - 25	S-8		14 - 20 - 10 - 11	18	30				As Above (CL)	Qu = 1.0 tsf
						25.0			Boring Log B-10 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-11

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	8.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		2 - 3 - 5 - 4	8	8		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Moist, Loose (SP)	
						2.0				
2 - 4	S-2		3 - 3 - 3 - 3	12	6				Orangish-Brown Poorly Graded Sand with Silt, Moist, Loose (SP-SM)	
						4.0				
4 - 6	S-3		4 - 5 - 6 - 5	10	11	5.0			Brown Silty Sand, Wet, Medium Dense (SM)	
						6.0				
6 - 8	S-4		3 - 4 - 4 - 4	15	8				Gray Clayey Sand, Wet, Loose (SC)	
8 - 10	S-5		2 - 3 - 4 - 5	18	7				As Above (SC)	
						10.0				
						13.0				
13 - 15	S-6		3 - 3 - 5 - 5	16	8				Black Lean Clay, Wet, Stiff (CL)	Qu = 1.0 tsf
						15.0				
18 - 20	S-7		3 - 3 - 4 - 4	12	7				As Above (CL)	Qu = 1.5 tsf
						20.0				
23 - 25	S-8		4 - 6 - 5 - 5	12	11				As Above (CL)	Qu = 1.0 tsf
						25.0			Boring Log B-11 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-12

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	25.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	6.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	6.0 | ---	**At Completion:**	10.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0	TOPSOIL		1" Topsoil	
0 - 2	S-1		3 - 3 - 3 - 4	12	6	0.1	COASTAL PLAIN DEPOSITS		Brown Silty Sand, Moist, Loose (SM)	
						2.0				
2 - 4	S-2		3 - 4 - 6 - 6	6	10				Gray Lean Clay with Silt, Moist, Very Stiff (CL-ML)	Qu = 2.0 tsf
4 - 6	S-3		4 - 6 - 8 - 8	8	14	5.0			As Above (CL-ML)	Qu = 2.5 tsf
						6.0				
6 - 8	S-4		7 - 8 - 10 - 11		18				Gray Lean Clay, Wet, Very Stiff (CL)	Qu = 2.0 tsf
8 - 10	S-5		10 - 12 - 7 - 8		19				As Above, Stiff (CL)	Qu = 1.5 tsf
						10.0				
13 - 15	S-6		3 - 4 - 3 - 4	NR	7				No Recovery, Presumed As Above (CL)	
						15.0				
18 - 20	S-7		3 - 4 - 4 - 4	12	8				As Above, Very Stiff (CL)	Qu = 2.5 tsf
						20.0				
23 - 25	S-8		5 - 5 - 8 - 7	12	13				As Above (CL)	Qu = 2.0 tsf
						25.0				
									Boring Log B-12 Terminated at a Depth of 25.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-13

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	6.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		2 - 2 - 2 - 2	6	4	0.1	TOPSOIL		2" Topsoil	
							COASTAL PLAIN DEPOSITS		Orangish-Brown Silty Sand, Dry, Loose (SM)	
2 - 4	S-2		2 - 3 - 3 - 4	12	6				As Above, Moist (SM)	
						4.0				
4 - 6	S-3		4 - 4 - 5 - 4	12	9	5.0			Orangish-Brown Poorly Graded Sand, Wet, Loose (SP)	
6 - 8	S-4		5 - 6 - 5 - 6	16	11				As Above, Medium Dense (SP)	
8 - 10	S-5		7 - 5 - 8 - 6	18	13				As Above (SP)	
						10.0				
									Boring Log B-13 Terminated at a Depth of 10.0 Feet Below Ground Surface	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-14

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building Pad	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	6.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
0 - 2	S-1		4 - 6 - 5 - 8	12	11		FILL		Gray Poorly Graded Gravel (FILL)	Clean Stone
						2.0				
2 - 4	S-2		5 - 7 - 10 - 6	10	17				Brown Silty Sand with Gravel (FILL)	
						4.0				
4 - 6	S-3		4 - 4 - 5 - 7	12	9	5.0	COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Wet, Loose (SP)	
6 - 8	S-4		3 - 5 - 3 - 4	16	8				As Above (SP)	
8 - 10	S-5		4 - 5 - 4 - 4	12	9				As Above (SP)	
						10.0				
									Boring Log B-14 Terminated at a Depth of 10.0 Feet Below Ground Surface	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Boring No.: B-15

Page 1 of 1

Project:	Claremont Property Acquisitions, LLC	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	8/1/2022		**Water Depth | Elevation (feet bgs) | (feet)**		**Cave-In Depth | Elevation (feet bgs) | (feet)**
Termination Depth:	10.0 feet bgs	**Date Completed:**	8/1/2022				
Proposed Location:	Building	**Logged By:**	RL	**During:**	4.0 | ---		
Drill / Test Method:	HSA / SPT	**Contractor:**	RM	**At Completion:**	4.0 | ---	**At Completion:**	6.0 | ---
		Equipment:	CME-45	**24 Hours:**	--- | ---	**24 Hours:**	--- | ---

SAMPLE INFORMATION						DEPTH	STRATA		DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	No	Type	Blows Per 6"	Rec. (in.)	N	(feet)				
						0.0				
						0.2	TOPSOIL		2" Topsoil	
0 - 2	S-1		1 - 2 - 2 - 2	6	4		COASTAL PLAIN DEPOSITS		Orangish-Brown Poorly Graded Sand, Dry, Loose (SP)	
2 - 4	S-2		2 - 4 - 4 - 6	10	8				As Above (SP)	
4 - 6	S-3		5 - 5 - 6 - 7	16	11	5.0			As Above, Wet, Medium Dense (SP)	
6 - 8	S-4		4 - 6 - 6 - 5	12	12				As Above (SP)	
8 - 10	S-5		5 - 6 - 7 - 7	18	13				As Above (SP)	
						10.0			Boring Log B-15 Terminated at a Depth of 10.0 Feet Below Ground Surface	
						15.0				
						20.0				
						25.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Soil Profile Pit No.: SPP-1

Project:	Proposed Warehouse	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	7/29/2022				
Proposed Location:	SWM Basin	**Logged By:**	RL	**During:**	4.0	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	TS	**At Completion:**	4.0	---	**At Completion:** 4.0 / ---
Test Method:	Visual Observation	**Rig Type:**	Komatsu	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH		HORIZON	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	Number	Type	feet				
			0.0				
0 - 0.2	S-1	BAG		0 - 0.2	TOPSOIL	2" Topsoil	
0.2 - 2	S-2	BAG	1.0	0.2 - 2	FILL	Dark Brown (10YR 3/3) LOAMY SAND; 10% Gravel; Moist; Fine to Medium, Moderate Granular Structure; Friable; Few, Fine Roots	Trace Brick
			2.0				
2 - 12	S-3	BAG	3.0 4.0 ▽▽▼ 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0	2 - 12	COASTAL PLAIN DEPOSITS	Yellowish-Brown (10YR 5/4) SAND; 5% Gravel; Moist; Coarse, Weak Granular Structure; Loose; No Roots	Infiltration Testing Performed @ 2.0 fbgs
			13.0 14.0 15.0			Soil Profile Pit SPP-1 Terminated at a Depth of 12.0 Feet Below Ground Surface	

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Soil Profile Pit No.: SPP-2

Project:	Proposed Warehouse	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		**Water Depth (feet bgs)**	**Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs)** / **Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	7/29/2022				
Proposed Location:	SWM Basin	**Logged By:**	RL	**During:**	4.0	---	
Excavating Method:	Test Pit Excavation	**Contractor:**	TS	**At Completion:**	4.0	---	**At Completion:** 4.0 / ---
Test Method:	Visual Observation	**Rig Type:**	Komatsu	**24 Hours:**	---	---	

SAMPLE INFORMATION			DEPTH		HORIZON	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	Number	Type	feet				
			0.0				
0 - 0.25	S-1	BAG		0 - 0.2	TOPSOIL	3" Topsoil	
0.25 - 12	S-2	BAG	1.0	0.25 - 12	COASTAL PLAIN DEPOSITS	Light Yellowish-Brown (10YR 6/4) SAND; No Coarse Fragments; Dry; Coarse, Weak Granular Structure; Loose; Common, Medium Roots	Infiltration Testing Performed @ 2.0 fbgs
			2.0				
			3.0				
			4.0 ▽▽▼				
			5.0				
			6.0				
			7.0				
			8.0				
			9.0				
			10.0				
			11.0				
			12.0				
						Soil Profile Pit SPP-2 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			13.0				
			14.0				
			15.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Soil Profile Pit No.: SPP-3

Project:	Proposed Warehouse	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

				Water Depth (feet bgs)	Elevation (feet)	Estimated Seasonal High Groundwater Depth (feet bgs)	Elevation (feet)
Surface Elevation:	± NS feet	**Date Started:**	7/29/2022				
Termination Depth:	12.0 feet bgs	**Date Completed:**	7/29/2022				
Proposed Location:	SWM Basin	**Logged By:**	RL	**During:** 4.0	---		
Excavating Method:	Test Pit Excavation	**Contractor:**	TS	**At Completion:** 4.0	---	**At Completion:** 4.0	---
Test Method:	Visual Observation	**Rig Type:**	Komatsu	**24 Hours:** ---	---		

SAMPLE INFORMATION			DEPTH		HORIZON	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	Number	Type	feet				
			0.0				
0 - 0.5	S-1	BAG		0 - 0.5	FILL	6" Stone Base	
0.5 - 2	S-2	BAG	1.0	0.5 - 2		Dark Yellowish-Brown (10YR 4/4) LOAMY SAND; 25% Gravel, 10% Cobbles; Moist; Medium, Moderate Granular Structure; Friable; No Roots	
			2.0				
				2 - 12	COASTAL PLAIN DEPOSITS	Light Yellowish-Brown (10YR 6/4) SAND; No Coarse Fragments; Dry; Coarse, Weak Granular Structure; Loose; Common, Medium Roots	
			3.0				
			4.0 ▽▽▼			Wet @ 4.0 fbgs	Infiltration Testing Performed @ 4.0 fbgs
			5.0				
			6.0				
2 - 12	S-3	BAG	7.0				
			8.0				
			9.0				
			10.0				
			11.0				
			12.0				
			13.0			Soil Profile Pit SPP-3 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			14.0				
			15.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched

WHITESTONE

RECORD OF SUBSURFACE EXPLORATION

Soil Profile Pit No.: SPP-4

Project:	Proposed Warehouse	**WAI Project No.:**	GS2219396.000
Location:	Red Oak Lane & Jernee Mill Road; Sayreville, Middlesex County, NJ	**Client:**	Claremont Property Acquisitions, LLC

Surface Elevation:	± NS feet	**Date Started:**	7/29/2022		**Water Depth (feet bgs) | Elevation (feet)**	**Estimated Seasonal High Groundwater Depth (feet bgs) | Elevation (feet)**
Termination Depth:	12.0 feet bgs	**Date Completed:**	7/29/2022			
Proposed Location:	SWM Basin	**Logged By:**	RL	**During:**	NE | ---	
Excavating Method:	Test Pit Excavation	**Contractor:**	TS	**At Completion:**	NE | ---	**At Completion:** 6.0 | ---
Test Method:	Visual Observation	**Rig Type:**	Komatsu	**24 Hours:**	--- | ---	

SAMPLE INFORMATION			DEPTH		HORIZON	DESCRIPTION OF MATERIALS (Classification)	REMARKS
Depth (feet)	Number	Type	feet				
			0.0				
0 - 0.5	S-1	BAG		0 - 0.5	TOPSOIL	6" Topsoil	
0.5 - 4	S-2	BAG	1.0	0.5 - 4	COASTAL PLAIN DEPOSITS	Dark Yellowish-Brown (10YR 4/4) SANDY CLAY LOAM; No Coarse Fragments; Moist; Fine to Medium, Moderate Crumb Structure; Friable; Many, Medium Roots	
			2.0				
			3.0				
			4.0				
4 - 12	S-3	BAG	5.0	4 - 12		Black (10YR 1/1) CLAY; No Coarse Fragments; Moist; Fine, Strong Crumb Structure; Friable; No Roots; Faint Mottling @ 6.0 fbgs	Infiltration Testing Performed @ 4.0 fbgs Mottling @ 6.0 fbgs
			6.0				
			7.0				
			8.0				
			9.0				
			10.0				
			11.0				
			12.0				
			13.0			Soil Profile Pit SPP-4 Terminated at a Depth of 12.0 Feet Below Ground Surface	
			14.0				
			15.0				

NOTES: bgs = below ground surface, NA = Not Applicable, NE = Not Encountered, NS = Not Surveyed, P = Perched