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April 27, 2022

Via Electronic Filing

Ms. Tanowa Troupe
Administration/Docketing
Ohio Power Siting Board
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3793

Re: Scioto Farms Solar Project, LLC, Case No. 21-0868-EL-BGN

Dear Ms. Troupe:

On December 13, 2021, Scioto Farms Solar Project LLC, filed an application for a Certificate of Environmental Compatibility and Public Need to develop, construct, an up to 110 megawatt solar-powered electric generating facility in Wayne Township, Pickaway County, Ohio. Attached for filing in the above-referenced case is a copy of the Geotechnical Report.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Sommer L. Sheely

Attachment

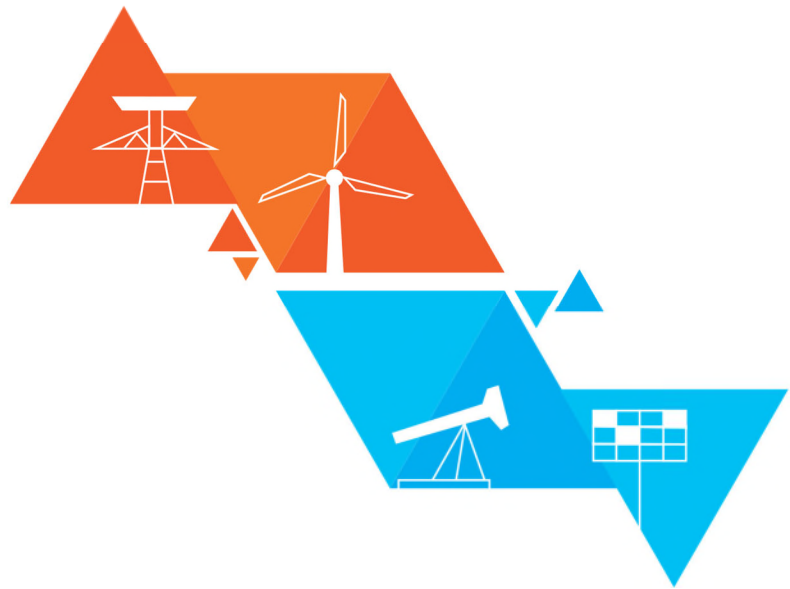
Cc: Thomas Crawford (w/Attachment)
Jonathan Pawley (w/Attachment)

Geotechnical Report

Scioto Farms Solar Project

Pickaway County, Ohio

PREPARED FOR



Prepared By:



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RRC Project No. GE2110047

experience matters

February 9, 2022

Naturgy Candela Devco LLC
500 Sansome Street, Suite 500
San Francisco, CA 94111

Attn: Mr. Alfonso Tovar

**Re: Geotechnical Report
Scioto Farms Solar Project
Pickaway County, Ohio
RRC Project No. GE2110047**

Dear Mr. Tovar:

RRC Power & Energy, LLC (RRC) has completed the authorized subsurface exploration and geotechnical engineering evaluation for the proposed Scioto Farms Solar Project. The purpose of the geotechnical engineering study was to explore and evaluate the subsurface conditions at various locations on the sites and develop geotechnical design and construction recommendations for the project. The attached report contains:

- A description of our exploration and findings from the field exploration, pile load testing and laboratory-testing program;
- Our engineering interpretation of the results with respect to the subsurface characteristics; and
- Our geotechnical site-specific development and foundation design recommendations for the planned project.

We appreciate the opportunity to be of service to Naturgy Candela Devco LLC. We are also prepared to provide construction materials testing services during the construction phase of the project. Please call us if you have any questions concerning this report or any of our services.

Respectfully submitted,

RRC Power & Energy, LLC (RRC)

Yuqing "Jeffrey" Liu
Geotechnical Engineer

REVISION HISTORY

Revision	Reason for Change	Performed by	Reviewed by	Issued Date



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FEBRUARY 9, 2022

PROJECT No. GE2110047

FIRM REGISTRATION NO. OH COA.04263

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GEOTECHNICAL REPORT

1.0 INTRODUCTION

RRC has completed the authorized subsurface exploration and geotechnical engineering evaluation for the proposed Scioto Farms Solar Project. The site is located southwest of the Town Circleville in Pickaway County, Ohio. The approximate boundaries of the site are shown on Figure 1, Site Location Map.

The purpose of this investigation and report was to:

- Explore subsurface soil, bedrock, and groundwater conditions;
- Conduct field and laboratory tests to characterize the subsurface soil and bedrock properties at selected locations across the site; and
- Provide geotechnical engineering recommendations for the design and construction of proposed foundation systems and access roadways.

The recommendations contained in this report are based upon the following:

- Our field and laboratory testing results, engineering analyses, experience with similar soil conditions, and our understanding of the proposed project; and review of published geological maps and groundwater level data obtained from published well logs.

2.0 PROPOSED CONSTRUCTION

We understand this project will include a solar photovoltaic (PV) system, an underground cable collection system, supporting structures and equipment, substation and private access roadways within the project sites. We assume that the proposed solar trackers will be supported on driven steel piles with anticipated pile embedment depths of about 8 to 10 feet below existing ground surface. We assume the minimum center-to-center spacing to be 5 feet or more between adjacent tracker piles, and typical site grading in solar array area.

3.0 SITE EXPLORATION

A subsurface exploration program was conducted by RRC at selected locations within the project site. RRC's surface exploration consisted of 20 soil borings and 11 test pits within proposed project area. Additionally, a total of 23 test piles were installed at 19 PV soil boring locations across project site and tested by RRC. The following section describes our site exploration program in detail.

RRC's subsurface exploration program consisted of:

- Drilled 19 soil borings with sampling within proposed PV Array and 1 boring within proposed Substation area;
- Excavated 11 test pits within proposed project site;
- Performed in-situ Thermal Resistivity (TR) testing at 7 selected locations; Sampled 1 bulk soil samples for laboratory thermal resistivity testing;
- Sampled 5 bulk samples for laboratory California Bearing Ratio (CBR) testing;
- 7 Electrical Resistivity (ER) surveys; and
- Installed 23 test piles, with one to two piles at each of PV soil boring location.

Figures 1 to 4 in Appendix A consist of maps for the various boreholes, sample locations, and geophysics locations. A summary of subsurface exploration is provided within Table A1 within Appendix A.

3.1 RRC Field Exploration and Testing

A total of 20 borings were drilled between November 8 and November 10, 2021, under the direction of RRC's field representative. For the 20 borings drilled, 19 borings were drilled with sampling to depth of 15.0 feet within the proposed solar array area and 1 boring was drilled to a depth of 50.5 feet within the proposed substation location. A total of 11 test pits were excavated to depth of approximate 10 feet, between November 1 and November 12, 2021, under the direction of RRC's field representative. A summary of geographic latitude and longitude coordinates, and depth of each boring and test pit location drilled/excavated as part of the subsurface exploration program is presented in Table A1 within Appendix A. The boring/test pit locations were located in the field by RRC's field representative using handheld GPS device with accuracy of approximately 15 feet. Figure 2 within Appendix A shows the boring locations on a topographic map.

The borings were advanced with a track-mounted Mobile B-50 drill rigs utilizing hollow stem auger (HSA) drilling techniques from the existing ground surface to the full depth of exploration. Soil samples were obtained using Standard Penetration Test (SPT) samplers. The test pits were excavated with backhoe from the existing ground surface to the full depth of excavation, bulk samples were collected from each test within 4 feet below ground.

Standard Penetration Test (SPT) samplers obtain disturbed soil samples. RRC documented each penetration resistance value in accordance with *ASTM D1586: Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils*. This test consists of driving the sampler into the ground with a 140-pound hammer free-falling 30 inches. The number of blows required to advance the SPT sampler 18 inches is counted and recorded, with the sum of the blows to drive the last 12 inches referred to as the standard penetration resistance value (N-value). Results of the field tests are shown on the logs of boring under the "Field Data" column and are preceded by the letter "N". Each soil sample from the SPT samplers collected in the field were visually classified, placed in plastic bags to preserve moisture content, and labeled as to location and depth. All SPT samples were arranged in core boxes and transported to our laboratory facility in Round Rock, Texas for further analysis.

Relatively undisturbed samples were obtained in cohesive soils, as directed by RRC's field geologist and/or field engineer, utilizing hydraulically advanced 3-inch (OD) diameter stainless steel, thin-walled tube (Shelby) samplers in accordance with *ASTM D1587: Standard Practice for Thin-Walled Tube Sampling of Soils for Geotechnical Purposes*. Soil samples obtained using Shelby tubes were tested for consistency utilizing a pocket-sized penetrometer. The penetrometer reading is included on the log of boring preceded by the letter "P." Readings in excess of 4.5 tons per square feet (tsf), if any, indicate that the capacity of the device has been exceeded. Sufficient material from the lower end of the Shelby tube was removed for visual classification purposes. Both ends of the Shelby tube were sealed using plastic caps and secured with duct tape to prevent moisture loss in the sample. Sample location and depth was labeled on the outside surface of the tube. The Shelby tube sample was transported to our laboratory facility in Round Rock, Texas for further analysis.

RRC classifies soils in general accordance with the Unified Soil Classification System (USCS); *ASTM D2488: Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*. The soil classification symbols appear on the logs of boring and are briefly described in Appendix A. RRC's field geologist prepared field logs for each boring. The logs of boring contain classification of the materials encountered during drilling as well as interpolation of the subsurface conditions between samples.

The project engineer/geologist reviewed all the field logs, soil samples, and lab test data to make appropriate modifications to the logs of boring as necessary. Final Logs of Boring and laboratory testing results are provided in Appendix A. The logs of boring describe the strata encountered, their approximate thickness, SPT results, soil and rock classifications, the various depths at which the samples were obtained, as well as the presence of groundwater.

3.2 Laboratory Tests

The soil samples were returned to the laboratory, examined by the project engineer/geologist, and applicable laboratory testing was assigned on selected soil samples. Laboratory testing was performed in general accordance with ASTM and locally accepted practices. The following laboratory methods of analyses were generally utilized, where sample quality allowed:

- Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System): ASTM D2487;
- Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass: ASTM D2216;
- Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils: ASTM D4318;
- Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75- μ m) Sieve: ASTM D1140;
- Standard Test Method for Particle-Size Analysis of Soils: ASTM D6913;
- Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort: ASTM D698;

- Standard Test Methods for Moisture-Density (Unit Weight) Relations of Soil-Cement Mixtures: ASTM D558;
- Standard Test Methods for One Dimensional Swell: ASTM D4546;
- Standard Test Methods for Unconfined Compressive Strength of Cohesive Soils: ASTM D2166;
- Standard Test Methods for CBR (California Bearing Ratio) of Laboratory-Compacted Soils: ASTM D1883;
- Standard Test Method for Measurement of Soil Resistivity using the Two-Electrode Soil Box Method: ASTM G187;
- Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing: ASTM G51; and
- Sulfate and Chlorides Content: EPA 300/300.1 and applicable ASTM standards.

4.0 SUBSURFACE CONDITIONS

4.1 Geology

Although northwestern Ohio is typified by geologically recent glacial deposits and landforms, beneath the thick till lies sedimentary rock formed hundreds of millions of years ago. The land at the time of the Paleozoic Era was occupied by a shallow sea, depositing the shale layer found within the project site boundaries (Reference 1). Earth's climate cooled and the formation of glaciers took place across the planet. Multiple episodes of long-standing cooling and brief warming took place during the Quaternary Period. The majority of Canada and parts of the northern United States were covered in thick sheets of ice. Multiple lobes of ice, leading edges of ice the size of states, advanced and receded as the climate's temperature fluctuated ever so slightly. Beneath the lobes formed the till plains. In front of the lobes, as they pushed forward, were the moraines made up of clay, silt, sand, gravel, and even cobble- to boulder-sized rocks. Once the ice began retreating, the moraines stayed put, evidence of the most recent advance of ice (Reference 2).

Since the period of glaciation, Earth's climate has warmed, and the enormous continental glaciers have disappeared. Small drainages have formed atop the glacial deposits, once again redistributing the sediments. Hummocky topography, a direct result of materials reworked by ice, defines the landscape. Loess, produced from the grinding of rocky material by ice, is picked up by the wind from local drainages and swept across the till.

The Quaternary Geologic Map of the Blue Ridge Quadrangle, scale 1:1,000,000 (Reference 3) and the Bedrock Geologic Map of Ohio, scale 1:500,000 (Reference 4) indicate surficial and bedrock deposits consist of the following geologic units of the listed geologic time periods.

Quaternary Period

- **Alluvium** (al): Yellowish-brown, brown, reddish-brown, or gray silt, sand and gravel. Calcareous to noncalcareous, stratified, texture variable. Upper part is mostly silt, fine sand, and minor lenses of clay and organic matter. Lower part is mostly sand and rounded gravel, locally cobble. The clasts are chiefly sandstone and shale. Underlies flood plains,

low stream terraces, and alluvial fans. Thickness is commonly between 3 to 13 feet, no more than 32 feet.

- **Loamy Till (tl):** Yellowish brown, brown, dark brown or grayish brown, generally non-calcareous silt loam and sandy loam, non-sorted, compact. Layer contains sparse pebbles, and a few cobbles – boulders are uncommon. Well-defined boulder belts on surface locally. Clasts are chiefly dolomite and limestone; there is also some sandstone, shale, and erratic igneous and metamorphic rocks. Mapped areas include small deposits of outwash and ice-contact sand and gravel (gg), lake clay and silt (lca), alluvium (al), and bedrock outcrops. Locally, till is overlain by alluvium, peat, or swamp deposits.
 - **Ground moraine (tlg):** Thickness generally around 3 to 10 feet.
 - **End moraine (tle):** Forms broad, low ridges or complex areas of narrow, concentric ridges having a knob-and-kettle topography. Thickness generally around 26 to 100 feet.

Devonian Period

- **Olentangy Shale (Do):** Shale; upper portion is greenish-gray, lower portion is gray. Clayey, disseminated pyrite. Locally contains lenses and nodules of limestone. Contains, thin, brownish-black shale beds in upper portion.

4.2 Subsurface Stratigraphy

As indicated on the logs of boring, the soil stratigraphy at the site generally consisted of topsoil underlain by either clay or sand layers. Bedrock was not encountered in drilled borings as part of this study. The soil layers can generally be described as:

- Soft to hard, Lean to Fat Clay soils with varying amounts of sand and gravel.
- Loose to dense, Sand with varying amounts of silt and clay.

Detailed Logs of Boring present detailed stratum descriptions, soil classifications, types of sampling used, laboratory test data, and additional field data. Bore logs are presented in Appendix A. The lines separating strata types on the Logs of Boring do not necessarily represent distinct lines of demarcation because transitions can be gradual. The Boring Log Key, defining the terms and descriptive symbols used on each log of boring, is also presented in Appendix A.

4.3 Laboratory Test Results

RRC obtained the service of Beyond Engineering & Testing, LLC to conduct laboratory tests. Laboratory test results indicate the native soils possess in-situ moisture contents in the range from about 7 to 29% with an average of 16%.

The native soils have Plasticity Indices (PI) ranging from 6% to 41% with an average PI of 19. Clay soils with a PI less than 15 are generally considered to exhibit a low expansive potential provided their moisture contents are stable. High plasticity clay soils with a PI greater than 25 are generally considered to exhibit a high expansive potential if their moisture contents are allowed to change significantly.

The in-situ dry unit weight of the native soils at the project site range from 106 to 127 pounds per cubic foot (pcf) with an average of 120 pcf. The in-situ total unit weights range from 127 to 144 pcf with an average of 137 pcf.

We performed moisture/density relationships (proctors) to determine the maximum dry unit weight and optimum moisture content in accordance with ASTM D698 (standard method). We also conducted Atterberg Limits on these samples to assess soil type. A summary of the test results is presented below.

Table 4.3.1 Summary of Proctors and Atterberg Test Results

Sample Location	Depth (feet)	Material Type	Liquid Limit (%)	Plasticity Index (%)	Maximum Dry Unit Weight (pcf)	Optimum Moisture Content (%)
TP-02	2 to 4	CL	26	12	118.0	13.9
TP-05	2 to 4	CL	24	9	124.3	11.4
TP-08	2 to 4	CL	26	11	120.5	12.5
TP-10	2 to 4	CL	32	16	111.2	16.3
TP-11	2 to 4	CL	24	10	125.5	10.6

Notes: pcf = pounds per cubic foot; CL = Lean Clay.

Results of Unconfined Compressive Strength (UC) tests are presented in Table 4.3.2. These tests are performed in accordance with ASTM D2166 on relatively undisturbed samples.

Table 4.3.2 Summary of Unconfined Compressive Strength Test Results

Sample Location	Depth (feet)	Material Type	In-situ Dry Unit Weight (pcf)	In-situ Moisture Content (%)	Unconfined Compressive Strength, q_u (psf)
B-04	4	SC	99.2	23.8	2,520
B-05	7	CH	120.9	13.4	1,940
SUB-1	4	CL-ML	129.8	12.7	1,420
TP-5	2	CH	123.9	12.4	1,300
TP-8	2	CL	107.5	17.6	580
TP-10	2	CH	105.6	20.5	4,140

Notes: pcf = pounds per cubic foot; psf = pounds per square foot; CH = Fat Clay; CL = Lean Clay; CL-ML = Silty Clay; SC = Clayed Sand.

Results of swell/expansion tests, performed in accordance with ASTM D4546, are presented in Table 4.3.3.

Table 4.3.3 Summary of Swell/ Expansion Test Results

Sample Location	Depth (feet)	Material Type	Dry Density (pcf)	Moisture Content (%)	Surcharge Load (psf)	Swell Strain (%)	Swell Pressure (psf)
B-02	4	CL	123.0	12.6	100	0.2	280
SUB-1	4	CL-ML	122.0	13.1	100	-0.1	--
TP-5	2	CL	123.9	13.7	100	0.0	--
TP-8	2	CL	114.9	16.1	100	0.1	220
TP-10	2	CL	101.4	18.2	100	1.8	1,850

Notes: pcf = pounds per cubic foot; psf = pounds per square foot; CL = Lean Clay; CL-ML = Silty Clay.

We performed five California Bearing Ratio (CBR) tests on select samples. The test specimens soaked for 96 hours prior to the CBR load test. A summary of the CBR test results is presented in Table 4.3.4. Design CBR values represent strength at 95% compaction relative to the maximum dry density as determined by ASTM D698. CBR increases with increased density.

Table 4.3.4 Summary of CBR Test Results

Sample Location	Depth (feet)	Material Type	Design Dry Unit Weight (pcf)	Design CBR (%)
TP-2	1 to 3	CL	112.1	3.5
TP-5	1 to 3	CL	114.2	1.7
TP-8	1 to 3	CL	114.5	3.2
TP-10	1 to 3	CL	103.4	1.8
TP-11	1 to 3	CL	114.6	4.0

Notes: pcf = pounds per cubic foot; CL = Lean Clay.

Graphical test results of laboratory testing results along with a summary of laboratory testing are presented in Appendix B.

4.4 Groundwater Conditions

Groundwater was encountered at 10 out of 31 drilled boring or test pit locations (B-01, B-04, B-05, B-08, B-11, B-19, SUB-1, TP-01, TP-04, TP-07) at the time of drilling and 24 hours after the completion of drilling operations in the borings drilled as part of this study as summarized in Table A1, Geographic Latitude and Longitude Summary of Field Exploration Program, presented in Appendix A. Upon completion of the drilling operations, the borings were backfilled in accordance with applicable state and local regulations; therefore, subsequent groundwater measurements are not available.

Based upon review of published well logs in Pickaway County, Ohio (Reference 5), near the project site, static groundwater levels were reported to be about 8 to 65 feet below the ground surface at well locations summarized in Table A2 within Appendix A. The well locations shown in Table A2 are plotted on Figure 11 within Appendix A.

It should be noted that the majority of the water wells were installed to deep aquifers below typical foundation depths and indicate piezometric or static groundwater level within those deep aquifers only. The static water levels from the deep wells do not always provide useful groundwater information for shallow aquifers or perched water tables near foundation depths that should be considered in foundation design. Based upon the information obtained from the boring logs drilled as part of this study and review of published well log records, it is our opinion that groundwater may have an impact on design and construction of proposed foundations at 6 feet or deeper below ground at the solar project site.

It is imperative to note that the short-term groundwater level observations performed as part of this study are not an accurate evaluation of groundwater levels at the project sites and should not

be interpreted as a comprehensive groundwater study. The observations made during this investigation may also not represent conditions at the time of construction and it should be understood the presence of groundwater may have an effect on certain construction activities and long-term performance of foundations and pavements. Groundwater levels are highly dependent on climatic and hydrologic conditions before and after construction, and sites development including irrigation demands, drainage and other factors. If a detailed groundwater study is desired, a groundwater hydrologist should be retained to perform these services.

4.5 Geohazard Assessment

The following items within Table 4.5.1 represent geologic or physical hazards to the project. Within each item, we address the level of risk associated with the particular hazard relative to this project.

Table 4.5.1 Geohazard Assessment

Geohazard	Site Risk	Comment
Swelling/shrinking soils	Low to Moderate	Expansive soil was encountered at some of the proposed project areas.
Collapsible Soils	Low	No collapsible soils (eolian, colluvial, loess, alluvium deposits) found within project site.
Frost Penetration Depth	Moderate	About 32 inches
Corrosive Soils (Concrete)	Low to Moderate	Surficial soils are expected to exhibit a low to moderate potential for corrosion of concrete.
Corrosive Soils (Steel)	Moderate to High	Surficial soils are expected to exhibit a moderate to high potential for corrosion of unprotected steel.
Earthquake (Ground Rupture)	Low	Low hazard zone in the U.S.
Earthquake (Seismicity)	Low	Low hazard zone in the U.S.
Flooding	Low	Proposed project area is not within the 100-year flood zones, but near it on east of proposed project area.
Settlement	Low	Anticipated settlement for typical solar PV system and associated structures is anticipated low and within manufacturers limit.
Slope Failure	Low	
Subsidence (Caves/Karst)	Low	The risk of finding karstic features within the project area boundaries is low.
Pile Foundation Drivability	Low	Pile driving refusal was not encountered within 9 feet, based on test piles installed across the proposed PV Array.

4.6 Field Electrical Resistivity and Laboratory Thermal Resistivity Measurements

Field electrical resistivity (ER) measurements were performed at 7 locations as shown in Figure 4 included in Appendix A. Table A1 presents a summary of geographic latitude and longitude coordinates where field electrical resistivity measurements were performed. In-situ thermal resistivity (TR) testing was performed at 7 selected test pit locations, and soil samples were

collected for laboratory TR testing, the locations where the soil samples were collected for thermal resistivity testing are shown in Figure 3 included in Appendix A. Table A1 presents a summary of geographic latitude and longitude coordinates where soil samples for laboratory thermal resistivity testing were collected.

The field electrical resistivity measurements were conducted by RRC utilizing MEGGER DET 2/2 Digital Ground Resistivity Tester using the Wenner 4-pin array method in accordance with the ASTM G57. The measurements were performed using 2 perpendicular array arrangements at 'a' spacing ranging from 2.5 to 200 feet at each test location within PV array. The results of the electrical resistivity measurements are presented in Appendix C.

In-situ thermal resistivity testing was performed by Beyond Engineering & Testing, LLC, at a total of 7 selected test pit locations. Bulk samples of native soil samples were at TP-10 for laboratory thermal resistivity testing in accordance with ASTM Standard. Thermal resistivity tests were performed on remolded soil samples obtained at depths ranging from 2 to 4 feet below existing site grade. The disturbed soil samples were remolded to 85% and 95% of their respective maximum dry density as determined by ASTM D698 at "as-received" moisture content prior to the thermal resistivity testing. Thermal resistivity values were then tested with samples at a series of moisture contents from "as-received" moisture content to 0% moisture content to provide a thermal resistivity dry-out curve. Results of thermal resistivity tests are presented within Appendix C.

Interpretation of the electrical resistivity and thermal resistivity testing results is beyond the scope of this study and should be performed by the design team.

5.0 STATIC PILE LOAD TESTING

5.1 Pile Information

After evaluating the available testing data and considering the potential change and variability in ground condition, RRC installed test piles at 19 selected locations and performed pile load testing at 23 selected test piles within the project area. The approximate locations of static pile testing are shown in Figure 10 included in Appendix A. The purpose of the static load testing program was to obtain site-specific performance data for design of pile foundations.

5.2 Test Pile Driving

A total of 23 test piles (at 19 selected locations) were installed by J&B on November 19, 2021, utilizing a PD-10 pile driver. The test piles consisted of wide flange sections W6X9 steel piles. RRC assumes the production piles will be installed using the same model of driving machine, or comparable pile driving machine of similar energy output. Pile driving refusal or difficult pile driving condition was not encountered. Difficult pile driving condition is defined as less than 6-inch of movement over one minute of drive time using PD-10 Pile Drive. The detailed information of test piles installed at each location is presented in the Summary Table of Test Pile Locations and Installation Records within Appendix E.

At each test location, one to two test piles were initially attempted to drive to the target embedment depth of 7 feet and 9 feet below ground surface. The test piles are spaced about 10 feet apart from each other, to reduce interference.

The time that was used to advance each pile to its final embedment depth was recorded by RRC during test pile installation. The summary of pile installation record showing individual pile drive time is presented in the Summary Table of Test Pile Locations and Installation Records within Appendix E. Following installation of the piles, RRC performed lateral and axial tension load testing of the test piles between December 1 and December 3, 2021.

5.3 Pile Load Test Procedures and Equipment

Lateral and axial loads were applied to the test piles using an excavator provided by J&B. Connections to the test piles were made using shackles with 8.5-ton load capacity and flange clamps with 5-ton load capacity designed for connection to W sections. Deflections were measured with calibrated Mitutoyo electronic displacement indicators and loads were measured with calibrated tension load cells.

For lateral load testing, an Enerpac pull cylinder and an excavator were utilized to generate the specified lateral loads. The horizontal loads for the lateral load tests were applied at approximately 4 feet above ground surface of each test pile in the strong-axis direction of the piles. Deflections were measured with two dial gauges capable of measuring deflections up to 4-inch travel. One dial gauge was placed at approximately 4 inches above the ground surface and another dial gauge placed at 4 feet above ground surface for the lateral testing for horizontal deflection measurements of piles under the specified horizontal loads.

For axial uplift testing, an Enerpac pull cylinder and an excavator were utilized to generate the specified uplift loads. Loading was applied at the top center of each pile. Axial deflections were measured using two dial gauges, attached to the two sides of the flanges at approximately 6 inches above the ground surface.

The load cells and gauges were read and the data was recorded by RRC field personnel. The magnitude and sequence of test load steps were provided by the Client. Table 5.3.1 summarized the maximum applied test load as well as the test pile information. The test equipment set up for lateral and tension tests of the piles are shown in Figure 5.3.1.

Table 5.3.1 Static pile load testing summary

Testing Type	Axial Tension	Lateral Test
Max. applied load (lbs)	10,000	3,000
Height of applied load (in)	--	48
Pile embedment (ft)	7 and 9	7 and 9
Number of tested piles	23	23



Figure 5.3.1 Pile Test Equipment Set Up for Lateral and Tension Tests

5.4 Pile Load Test Results

The results of the 23 test piles in 19 test locations were used to evaluate the vertical and lateral support for the driven piles. The recommended design parameters for pile foundation support are presented in Appendix D. The lateral, axial uplift load testing data, including graphical plots of the load testing, are presented in Appendix E. When determining the uplift and compressive pile skin friction values, RRC referred to a criterion of failure, which is defined as 0.5-inch axial deflection of the pile, to interpret the pile capacity. For lateral loading test, a calibration model using LPILE V2019.11.07 was used to simulate the lateral load test results and determine LPILE parameters for the pile lateral design.

6.0 GEOTECHNICAL RECOMMENDATIONS

The PV Array supporting system proposed to be used is single-axis tracking system. We assume tracking systems will be supported on steel driven pile foundation systems.

The extent and location of site grading is also unknown currently. RRC should be retained to review the civil drawings and cross-sections for PV Array areas and other critical areas along the proposed roadways. This will allow us to evaluate the need for additional studies such as slope stability analyses. If current site grade is changed at structure locations, we can assess whether our original recommendations apply. However, for this current study, we anticipate the proposed foundations will bear on/in native soils with finish grade at or slightly above current existing site grade with minimal slope stability impacts. RRC's geotechnical recommendations presented in this report should be verified when information on the foundation design and site grading become available.

6.1 General PV Tracking System Foundation Expectations

The proposed project sites appear suitable for the proposed solar project construction. Driven pile foundations may be used for support of solar trackers and other heavily loaded (axial or lateral) structures. Based upon the information obtained from the borings drilled as part of this study, the use of driven pipe piles and/or spread footings and/or mat foundations for support of lightly loaded structures such as equipment pads is considered acceptable.

A summary of anticipated issues that may have an impact on the design and construction of foundation systems for this project is found below.

- During this phase of site investigation, medium stiff clay soils were encountered at some borings below existing ground surface within the project site (Borings B-01, B-04, B-05, B-06 and B-09). The subgrade includes low strength soils that will exhibit low capacity behavior for the proposed foundations, which shall be considered by the foundation designer.
- For shallow spread footings bearing on native soil, it is anticipated that excavations may be advanced with conventional earth moving equipment to cover the potential scour depth and unsuitable topsoils.
- Fat clay soils were encountered predominately at boring locations within project site. High plasticity fat clay soils may exhibit a high expansion potential if their moisture contents are allowed to change significantly. Therefore, mitigation measures discussed in subsequent sections should be considered to reduce uplift forces in driven piles and driller pier foundation system.
- Our review of boring logs and published well logs information obtained as part of this study indicates that groundwater conditions may not have an effect on shallow foundation design within 6 feet below existing ground.
- We assume minimal cut and fill for the proposed solar development and anticipate the majority of driven piles will bear on native soils with minimal slope stability impacts. The final grading plan is recommended to be provided to review in the final design.
- We recommend the design engineers to take site flooding/scour into proper account during civil, structural and electrical design.

Detailed foundation design and construction recommendations are outlined in subsequent sections of this report.

6.1.1 Driven Pile Foundation for PV Tracking System

Solar panels with anticipated relatively large uplift wind force, overturning moment and lateral shear force may utilize driven or hydraulically advanced steel piles. Pile lengths will be dictated by uplift, compressive or overturning resistance. The length of the steel piles should be determined by the structural engineer to meet axial and lateral loading requirements.

Based on RRC's evaluation of the available geotechnical data, clay and sand soils are encountered within the anticipated embedment depths of the proposed pile foundations. Driving refusal is not anticipated within native soils with SPT N-values of less than 50 blows/ft, however, drivability of driven piles may be an issue in the weakly gravel/bedrock and in native soils with SPT N-values of greater than 50 blows/ft encountered within the anticipated embedment depths. Difficult pile driving condition or pile driving refusal (less than 6-inch/min penetration) was not encountered at installed test piles during test pile installation with pile embedment depth in 9 feet below existing ground. Predrilling prior to driving steel piles may be required if bedrock or hard clay is encountered to achieve design depths. Pile remediation plan or properly construction means and methods shall be considered for the project areas with difficult pile driving condition.

The axial compression and uplift capacity of driven piles were estimated based on skin friction developed along the perimeter of the pile. The perimeter of a wide flange pile was taken as twice the sum of the flange width and web depth (i.e. the "box" perimeter). The ultimate uplift and compression unit skin friction is based on the results of the axial load testing. A minimum factor of safety of 1.5 was used to calculate the H-pile allowable uplift skin friction and allowable compressive skin friction, and a minimum factor of safety of 2.0 was included in the allowable end bearing capacity value. The summary of allowable uplift skin friction, allowable compressive skin friction and allowable end bearing capacity for H-piles installed within the proposed solar array site are presented in Table D1.1 and D2.1 within Appendix D. Recommended design parameters are based on our interpretation of filed and laboratory test results and taking anticipated short-term and long term soil behavior into account during the project design life.

Based on RRC's review of the pile load test results, it is RRC's opinion that it is appropriate to include H-pile end bearing capacity for this project for partial soil plugging condition, to enhance pile axial capacity under compression. The allowable pile end bearing under compression should be applied for a maximum of 50% of the box area of the H-pile provided that the pile lengths are at least 5 feet embedded into the subsurface materials.

The frost penetration depth at project site is approximately 2 to 3 feet (New Mexico Climate Spring 2008 Vol. 6 (1)). Driven pile foundations should be designed to prevent damage resulting from adfreezing and potential for frost jacking. Therefore, uplift forces due to frost heave action shall be considered in the driven pile design. The uplift forces can be resisted by a combination of dead-load and skin friction contribution of the soils below upper 32 inches zone. We recommend using 1,600 psf for frost heave stress on steel piles/drilled piers within the upper 32 inches below ground. Placing friction reducing material can be considered as an alternate option to prevent damage resulting from adfreezing and potential for frost jacking. Means and methods to properly install driven pile with placing friction reducing material is the responsibility of the contractor.

Site soil consists of fat clay which could be potentially expansive soil with swell/shrink nature. Potential Vertical Rise (PVR) is an estimate of the potential of an expansive soil to swell from its current state, if the clay is allowed to absorb additional moisture. It is RRC's opinion that the swell/shrink nature of the site expansive soil is at low to moderate risk. High plasticity clay may experience shrinkage during periods of dry weather as moisture evaporation occurs at the ground

surface and the groundwater table drops. Therefore, uniformity and preservation of the moisture contents of the near surface clays during construction and during the life of the structure is critical to reducing potential shrink-swell movement. It is imperative that proper drainage be maintained during construction and throughout the life of these structures.

In order to calculate the lateral load response of pile foundations utilizing LPILE program, input parameters were evaluated using modeled lateral response of the tested piles. LPILE analyses were performed by applying the test loads that resulted in significant deflection at ground surface for piles with different embedment depths to calibrate the LPILE input parameters to match the lateral pile load test results. For lateral pile analysis, we recommend the soil within the upper 24 inches of pile embedment, or within the anticipated sour depth, whichever is deeper, be modeled as soft clay with low strength to simulate the long-term effect during pile design life. The summary of recommended LPILE parameters for lateral analysis of driven H-piles was presented in Table D1.2 and D2.2 within Appendix D.

6.2 Shallow Foundation Systems

Lightly loaded structures, including inverter/transformer skids within solar array area, equipment pads at Substation may be supported by continuous/spread footings. Since the finished site grade of inverter/transformer skid or Substation is not available during preparation of this report, we assume the finished site grade will be at or slightly above the existing ground surface. We also assumed that the continuous and spread footings will be 24 inches or greater in width.

For structural design of the continuous footings and spread footings, the parameters outlined in Table 6.2.1 can be used, with a safety factor of 3 included in the allowable bearing pressure values. The shallow foundations should have a minimum embedment of 32 inches below finished site grade for confinement. However, at some locations, when soft to medium stiff clay soils are encountered beneath the shallow foundation bearing elevation, we recommend that the continuous or square footings should bear on a minimum of 2 feet of compacted selected fill materials. The over-excavated area should extend laterally a minimum of 1-foot beyond the perimeter of the foundation. Selected fill materials should be compacted to a minimum of 98% of the maximum dry density as determined by ASTM D698 and shall be moisture conditioned within 2% of optimum moisture content. Anticipated settlement of the foundations under service loads will be on the order of about 1 inch or less. Other alternatives such as thermal insulation may be used to protect against frost and the contractor or designer of thermal insulation shall be responsible for compliance with local building codes. A net allowable bearing pressure 1,500 psf can be used for reinforced concrete slabs bearing at finished graded provided the above design guidelines are followed.

It is recommended that a qualified representative of the geotechnical engineer observe shallow foundation excavations in this area to assess the need for any over-excavation and re-compaction and/or replacement.

Shallow foundations should be adequately reinforced and proportioned to resist swell/uplift forces associated with the near surface clay soils. For shallow foundation systems founded on

compacted fill material at project site, net allowable bearing pressures, which include a factor of safety of 3, outlined in Table 6.2.1 can be used.

Table 6.2.1 Native Clay Soil Parameters for Structural Design of Footings and Mat Foundations at Substation and PV area

Soil Parameters and Allowable Bearing Pressures	Design Value for Substation and PV area
Average Unit Weight, pcf	115
Modulus of Subgrade Reaction, pci	30*
Cohesion (undrained), psf	700
Friction Coefficient at Foundation Base	0.35
Net Allowable bearing pressure for Strip or Continuous Footings (psf)	1,500
Net Allowable bearing pressure for Square or Pad Footings (psf)	2,000

* For a 1 ft. x 1 ft. Plate.

Other design and construction recommendations are outlined in the ACI design Manual should be followed. It is imperative that proper drainage be maintained during construction and throughout the life of structures to provide for adequate shallow foundation performance.

6.3 Substation Drilled Shaft Foundation Systems

Structure elements with heavy axial loads and/or large overturning moments may utilize drilled pier foundations. Pier lengths will likely be dictated by overturning resistance. Allowable end bearing pressures and allowable skin friction values at the substation (Table D3.2) location are presented in Appendix D.

Allowable end bearing pressures and allowable skin frictions utilize a factor of safety of 3 and 2.5, respectively. Skin friction values should be reduced by 25% when calculating pull-out resistance, where applicable. Settlement associated with drilled piers is anticipated to be on the order of about ½ to 1 inch. Piers should have a minimum diameter of 1½ feet. The length of the drilled piers should be determined by the structural engineer to satisfy axial and lateral loading.

The frost penetration depth at project site is approximately 2 to 3 feet (New Mexico Climate Spring 2008 Vol. 6 (1)). Drilled pier foundations should be designed to prevent damage resulting from adfreezing and potential for frost jacking. Therefore, uplift forces due to frost heave action shall be considered in the drilled pier design. The uplift forces can be resisted by a combination of dead-load and skin friction contribution of the soils below upper 32 inches zone. We recommend using 1,600 psf for frost heave stress on steel piles/drilled piers within the upper 32 inches below ground. Placing friction reducing material can be considered as an alternate option to prevent damage resulting from adfreezing and potential for frost jacking. Means and methods to properly install driven pile with placing friction reducing material is the responsibility of the contractor.

Lateral load analysis may be performed using the LPILE computer program. LPILE uses a p-y curve finite difference technique for predicting the soil-structure interaction and response. Based on our interpretation of the subsurface strata and the results of the field and laboratory tests, the parameters outlined within Appendix D, Table D3.1 may be used to evaluate drilled piers under lateral loads at the substation.

Vertical steel reinforcement to resist tensile loads caused by uplift forces should extend the full length of the pier shaft. Additional reinforcement required by structural demands for axial compressive loads, lateral loads, or minimum reinforcement required by design codes should be satisfied.

6.4 Corrosivity of Soils

Water-soluble sulfate and chloride test results are presented in Appendix B. Test results indicate soil corrosion potential to concrete is “Negligible”. Foundation concrete should be designed in accordance with *ACI 318: Building Code Requirements for Structural Concrete and Commentary*.

Minimum Soil Box Electrical Resistivity and pH testing results are presented in Appendix B of this report. Soil Box Electrical Resistivity results indicate soils exhibit “Corrosive” to “Mildly Corrosive” electrical characteristics with regards to galvanic corrosion of steel. For chlorides, the test results indicate “non-aggressive” corrosion potentials to steel. Cathodic protection for buried metal pipe should be designed by a qualified corrosion engineer.

Table 6.4.1 Effect of Soil Box Electrical Resistivity on Corrosion

Aggressiveness	Resistivity in ohm-cm
Very Corrosive	< 700
Corrosive	700 – 2,000
Moderately Corrosive	2,000 – 5,000
Mildly Corrosive	5,000 – 10,000
Non-Corrosive	> 10,000

6.5 Lateral Earth Pressures

Lateral earth pressures will apply in soil strata. The proposed foundations will be designed to resist all lateral movements; therefore, the “at rest” lateral earth pressure will apply. The following “at rest” equivalent fluid pressures are recommended in Table 6.5.1. The lightweight range is more conservative and necessary for the “at rest” and “passive” condition. The heavier weights are more conservative for the “active” condition.

Table 6.5.1 Equivalent Fluid Pressures

Soil Type	Condition	Equivalent Fluid Pressure (psf/ft)
Clay Soils	At Rest, $k_0 = 0.65$	76

Soil Type	Condition	Equivalent Fluid Pressure (psf/ft)
$\phi=20$, $\gamma_t=115$ pcf	Active, $k_a=0.49$	56
	Passive, $k_p=2.0$	235
Sand Soils $\phi=30$, $\gamma_t=120$ pcf	At Rest, $k_o=0.50$	60
	Active, $k_a=0.33$	40
	Passive, $k_p=3.0$	360

Passive and active earth pressure resistance will only mobilize after significant movement of the foundation. The passive case occurs where a structural element tends to move into the soil mass. The active case occurs when the element tends to move away from the soil mass. Both cases are applicable for unrestrained foundation elements.

The above earth pressure values do not include safety factors. We recommend a minimum safety factor of 2.0 be applied when using passive earth pressure for lateral load resistance. Surcharge loads should also be considered where appropriate. The values apply only to cases where the ground surface is level. We should be contacted to provide suitable values for cases where the ground surface is sloped. Similarly, if a structure is submerged below water, then the earth pressures change dramatically and require a different analysis.

6.6 Seismic Design

RRC provides seismic design using 2015 International Building Code (IBC) (Reference 9). Based on Logs of Boring data, we recommend using a Site Class C for very dense soils and bedrock conditions. The Mapped Spectral Response Acceleration for the 1 second (S_1) and short periods (S_s) were computed using the Applied Technology Council *Seismic Design Maps*, which is a web-based application program (Reference 8). The table below summarizes recommended seismic parameters to be used in the design:

Table 6.6.1 Recommended Seismic Parameters

Parameter	Recommended Value
S_s – Mapped Spectral Response Acceleration at Short Period (0.2-Second)	0.121 g
S_1 – Mapped Spectral Response Acceleration at 1-Second Period	0.065 g
F_a (Site Coefficient) – Site Class D	1.6
F_v (Site Coefficient) – Site Class D	2.4

7.0 FOUNDATION CONSTRUCTION CRITERIA

7.1 Site Preparation

Prior to construction, we recommend adequate positive drainage be provided to maintain a relatively dry condition in the area of proposed construction. This will be very important if any

work is attempted during periods of prolonged rainfall or heavy snow fall followed by warmer days. Ponding of water in the areas of construction should be avoided.

Site preparation should begin by removing surface vegetation and major root systems within the foundation areas. Topsoil or organics shall not be allowed underneath proposed facilities, structures or permanent pavement. Deleterious materials should be placed in non-structural areas or removed from the sites. During excavation of the foundations, every effort should be made to avoid disturbing the subgrade materials at the planned foundation bearing elevation. When the subgrade is disturbed, the resulting surface should be re-compacted to achieve a minimum compaction of 95% of the maximum dry density as determined by ASTM D698 and moisture conditioned to within 3% of the optimum moisture content. In areas where densification of the subgrade materials is required, proper slopes meeting federal, and state OSHA requirements should be maintained.

7.2 General Site Grading Fill Specifications

Imported general site grading fill where required, should consist of an inorganic sand and lean clay soil, having a PI less than 20 percent. The on-site sand and clay material can be used as general site grading fill provided that they do not contain significant amounts of organics. After site clearing and grubbing, the general site grading fill should be placed in loose lifts not exceeding 9 inches in thickness and compacted to a minimum of 90% of the ASTM D698 maximum dry unit weight. If the general site grading is located below proposed pavement, foundations or equipment pads, they should be placed in accordance with structural fill specification outlined in Section 7.3 of this report.

Both cut and fill slopes shall be no steeper than 3 horizontal to 1 vertical. Fill areas shall be cleared of all vegetation and debris, recompacted to a minimum of 90% of the ASTM D698 maximum dry unit weight, proof-rolled and inspected by the grading inspector and geotechnical engineer prior to the placing of fill. The proof-rolling should be conducted with a heavy-weight (40,000 lbs or heavier), tired vehicle to assess the presence of soft areas and the need for remedial measures, if any. Proof-rolling acceptance standards include no rutting greater than 1.5 inches and no "pumping".

7.3 Structural Fill Specifications

Structural fill material should consist of a non-expansive, well-graded material with sufficient binder for compaction purposes. RRC's intent is to make Structural Fill interchangeable with flexible road base, where convenient.

Structural fill should be compacted to a minimum of 95% of ASTM D1557. The structural fill should be moisture conditioned within 2% of optimum moisture content. Typically, 9-inch lifts are a maximum, but if a contractor can complete thicker lifts and it can be verified that full densification occurs throughout the lift, then lifts to 12-inches are possible.

7.4 Native Soils as Select Fill for Foundations

RRC understands the importance of using native soils whenever feasible. The following specifications allow reasonable native soil reuse while maintaining structural requirements for end bearing capacity and settlement. Modification of unsuitable foundation soils shall consist of over-excavation and replacement with any of the following materials:

All soils that possess the following properties qualify as Select Fill that may be used under foundations: maximum plasticity index of 15 and a maximum liquid limit of 40, and classify as SC-SM, SC, Sandy CL, GC and GM.

Select Fill placement below foundations should be limited to two-feet thick. Deeper replacement must be approved by the Geotechnical Engineer in order to assess settlement potentials for that specific location. Otherwise, use Structural Fill.

When dealing with subgrade pumping, rutting, or moisture, and the remediation has a maximum thickness of 12-inches, then the excavated soils may be scarified and reused to complete the remediation. Deeper remediation requires either Select Fill or Structural Fill.

All reused and Select Fill soils used under foundations shall be compacted to a minimum of 98% of the maximum dry density as determined by ASTM D698 and shall be moisture conditioned within 3% of optimum moisture content.

7.5 PV Array and Substation Structures

This section provides construction recommendations and specifications related to shallow and deep foundations for the proposed structures. This section is intended to apply for all electrical substation, switchyard and transmission line structures. If future, more specific geotechnical studies for those facilities are conducted, then disregard this section and refer to the recommendations in those more specific studies.

7.5.1 Shallow Foundation Construction

The following construction criteria and general guidance should be observed during foundation construction:

- All foundation excavations should be observed by the engineer's qualified representative to assess proper bearing materials are present at foundation bearing elevation in accordance with the recommendations given herein, and to assess the need for densification of the subgrade materials.
- Care should be taken to protect the exposed soils from being disturbed, freezing or desiccation.
- The foundation excavation should be sloped sufficiently to create internal sumps for runoff collection and removal. Foundation excavations subject to rainfall and possible deterioration from accumulated water should be protected using a protective "mud-slab" (lean concrete). If surface runoff water or groundwater seepage accumulates at the

bottom of the foundation excavation, it should be collected and removed and not allowed to adversely affect the quality of the bearing surface.

- The foundation excavations should be checked for size and cleaned prior to the placement of reinforcing steel. Take precautions during the placement of reinforcement and concrete to prevent the loose material from falling into the excavation.

7.5.2 Drilled Shaft Foundation Construction

The following items are important for the successful completion of drilled shaft foundations:

- The engineer's representative should observe all drilled shaft excavations. This inspection is to verify proper depth, bearing stratum, cleanliness, verticality (plumbness) and to record other observations regarding the drilled shaft construction.
- If water is present within the shaft, it is imperative that the contractor use proper construction methods to account for the water. Either the water must be removed, or the contractor must use tremies or pumps to allow concrete placement under water.
- Prompt placement of concrete in the excavation as it is completed, cleaned, and inspected is strongly recommended. Under no circumstances should a shaft be drilled that cannot be filled with concrete before the end of the workday.
- The reinforcement steel cage placed in the shaft should be designed to be stable and centered during the placement of concrete.
- The use of a casing or liner may be required in areas where shaft excavations extend into areas of caving sand soils. The drilling contractor should be prepared to provide means and methods to properly construct drilled shafts. We recommend that the construction contract include a budget for temporary casing and/or slurry drilling in case the sloughing of sands or entry of water prevents the proper construction of piers.
- Varying subsurface soil conditions may be encountered at a distance from a boring location or some interval between boring locations along the transmission line alignment. A Geotechnical Engineer or his representative should observe subsurface conditions during installation of any intermediate poles or ancillary structures such as anchors to verify subsurface conditions match the design criteria.
- Drilled shaft construction should follow applicable industry standard. Means and methods of construction shall be determined by the contractor.

7.5.3 Driven Pile Foundation Construction

The following items are important for the successful completion of driven pile foundations:

- The Project Engineer or his/her representative should observe all driven pile sections. Steel piles shall be of the cross section, size, and weight per foot (mass per meter) specified in the contract documents. All piles which have been improperly driven, broken,

or are otherwise defective shall be removed and replaced or otherwise corrected, as directed by the Project Engineer or his/her representative.

- Pile driving equipment furnished by the Contractor shall be approved by the Project Engineer or his/her representative. All pile driving equipment shall be sized so that the project piles can be driven with reasonable effort to the required lengths without damage.
- Upon completion of driving, inspection, and approval, the pile (if required) shall be neatly cut on a horizontal plane at the elevation specified in the contract documents.
- Consideration should be given to protect exposed sections of steel pile sections against corrosion, abrasion or other detrimental factors.
- We recommend that pile load tests be performed for production piles to verify pile capacities. Qualified geotechnical personnel should conduct the pile load tests and present the testing results to the design engineer of record for further evaluation. Load tests should be performed in general accordance with ASTM standards. Piles driving time shall be recorded for all test and production piles and submitted to the design engineer of record for review.
- Pile driving can affect existing structures in the vicinity, if any. Structures located close to the proposed pile foundations should be surveyed prior to construction and pre-existing conditions of such structures and their vicinity be adequately recorded.

7.6 Open Excavations

With all excavations in soils, sloped excavations and trench shields are required for excavations greater than four feet in depth. The contractor's "Competent Person" (as defined by OSHA) must inspect each trench wall to determine the type of bench or slope that is required. With all excavations, only a "Competent Person" shall determine whether sloped, benched, or trench shields can be used. OSHA and applicable state and local standards should be observed and followed. Site safety is the responsibility of the contractor. For general planning purposes, RRC offers the following:

- The surficial cohesive clay soils across this site are generally stiff. This soil type classifies as an OSHA Type A material that requires the excavation's sidewall be sloped at 3/4H:1V (or flatter).
- The sandy soils at the site possess low to zero cohesion. This soil type classifies as an OSHA Type B material that requires the excavation's sidewall be sloped at a 1H:1V slope (or flatter). The silt content may give the appearance of cohesion when first excavated, but this is not correct.
- The presence of water within any excavation automatically creates a Type C classification. All Type C class excavations require a 1.5H:1V slope or bench.

Protect construction slopes and permanent embankment slopes from surface runoff water. Design site grading to deter surface water from flowing down unprotected slopes. The contractor should avoid surcharge loads, either static or dynamic, adjacent to an excavation slope. Prevent construction equipment from traveling along or near the top of the excavation slope. The contractor's "Competent Person" must monitor temporary slopes, trenches, and dewatering during construction in order to detect early warnings of movement. Site safety is the responsibility of the contractor.

7.7 Drainage and Construction Dewatering

Proper drainage should be provided away from the foundation elements during all phases of construction and post-construction grading. Proper drainage is essential to the long-term stability of the structures. Ponding of water near the foundation elements from improper drainage should not be permitted.

Based on the available groundwater information, shallow groundwater should not be a concern for proposed foundation and electrical trench excavations. If rain causes perched water conditions, we anticipate the groundwater re-charge rate should be slow enough to conduct excavation dewatering with conventional sumps and pumps in the majority of project area. If different condition is encountered during construction, approximate dewatering means and methods shall be considered by the contractor.

8.0 ACCESS ROADWAYS

8.1 Pavement Section Thickness Recommendations Based on 1993 AASHTO

It is our understanding that private access roadways will be built for construction and maintenance purposes and these roadways will consist of compacted earth or gravel. Traffic volumes during construction are anticipated to be frequent with medium to heavy equipment utilizing the access roadways. Following the construction period, the traffic volumes will be light and vehicles accessing the roadways will generally consist of pickup trucks and occasional single and multi-unit truck traffic.

The surficial materials encountered within a majority of the testing locations indicated native soils consisting of clay soils with varying amounts of sand and silt. These materials are generally considered to be poor in terms of supporting vehicular and construction traffic as defined by AASHTO when used for support of pavement structures. The estimated aggregate base thickness is presented below based on the anticipated ESAL values of different road sections within typical solar project. Based on laboratory testing results, a CBR value of 1.5 is recommended for road section design purposes. If actual pavement design is based on wet subgrade without subgrade improvement, additional CBR tests are recommended to verify surficial materials encountered near road sections with higher required ESAL. If the actual ESAL and CBR are different from the values below, RRC should be contacted to reevaluate the aggregate base thickness. The final access roadway section thickness and required aggregate course material thickness recommendation should be provided by the Civil Engineer of Record of this project following.

Table 8.0.1 Estimated Aggregate Base Thickness for Access Roadway

Anticipated Minimum ESAL for different road sections	Aggregate Base Thickness (inches) with Allowable Rut Depth of 2-inch	
	Wet Subgrade Design CBR=1.5 (without Subgrade Improvement)	With Subgrade Improvement Using Soil-Cement/Lime Mix Assumed CBR=15*
1,000	4.5	4.0
10,000	10.0	4.5

Notes: * A formal cement or lime mix design should be performed prior to construction to determine design unconfined compressive strengths, CBR values and aggregate base thicknesses.

Prior to the placement of the aggregate base materials along access roadway alignments, stripping and removal of existing vegetation and other deleterious materials from the proposed roadway alignment should be performed. Topsoil and organics should not be allowed for use along roadway alignments. The exposed subgrade should then be proof-rolled using a fully loaded 20-tons double-axle water-truck or similar heavy equipment prior to the placement of the aggregate base course materials to assess the presence of soft areas and the need for remedial measures, if any. In areas where excessive “pumping” of the subgrade is observed, partial removal of unsuitable soils in these areas and re-compaction and/or replacement with granular materials will be required. As an alternative, consideration should be given to placing geogrid (Tensar Biaxial Type 2 or equivalent) on top of geotextile (Mirafi HP 570 or equivalent) in areas where excessive “pumping” is observed. Aggregate base materials should be compacted to a minimum of 95% of ASTM D1557 and within 2% of the optimum moisture content.

Consideration could also be given to performing a cement or lime mix design to stabilize the subgrade soils supporting pavement structures as an alternative. Stabilized subgrade materials treated to a depth of 8 to 12 inches with about 4 to 6% cement or about 5 to 7% hydrated lime by dry weight can achieve higher CBR values when compacted to 95% of the maximum dry density as determined by ASTM D698 at or near optimum moisture content. Aggregate base thickness for stabilized access roadway sections could be reduced. A soil-cement testing was performed using the sample collected at the selected location, details are included within the following section.

It is imperative that proper drainage be provided in the construction of the roadways to enhance their performance. Post-construction proof rolling of the access roads should be performed prior to re-opening the roadways for traffic after periods of heavy rainfall/snow melt to assess stability of the roadway and the need for remedial measures. Areas where remedial measures are required should be re-worked and corrected prior to acceptance. It is also imperative that periodic inspection of the access roadways be performed following periods of rainfall or snowmelt to assess the condition of the roads.

9.0 LIMITATIONS

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It

is likely soil conditions will vary between or beyond the points explored. If soil conditions are encountered during construction that differ from those described herein, we should be notified immediately in order to provide supplemental recommendations (if needed). If the scope of the proposed construction, including the proposed loads or structural locations, changes from those described in this report, our data should also be reviewed.

We have prepared this report in substantial accordance with the generally accepted geotechnical engineering practice as it exists in the site area at the time of our study. No warranty is expressed or implied. The recommendations provided in this report assume RRC will conduct an adequate program of tests and observations during the construction phase in order to evaluate compliance with our recommendations.

This report may be used only by the client and only for the purposes stated, within three years from its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client, or the client's design team members for this project, who wishes to use this report shall notify RRC of such intended use. Based on the intended use of the report, RRC may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release RRC from any liability resulting from the use of this report by any unauthorized party.

Other standards or documents referenced in any given standard cited in this report, or otherwise relied upon by the authors of this report, are only mentioned in the given standard; they are not incorporated into it or "included by reference," as that latter term is used relative to contracts or other matters of law.

10.0 REFERENCES

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512.992.2087

APPENDIX A

Table A1: Geographic Latitude and Longitude as well as Summary of Field Exploration Program

Testing ID	Latitude	Longitude	Electrical Resistivity Testing	Thermal Resistivity Samples	In-Situ TR Testing	CBR	PLT	Drilling/ Test Date	Auger (ft)	Total Depth (ft)	Groundwater During Drilling (ft)	Groundwater Immediately After Drilling (ft)	Remarks
B-01	39.54345	-83.02570					X	11/09/21	15.5	15.5	9	5	
B-02	39.54127	-83.02370					X	11/09/21	15.5	15.5	NE	NE	
B-03	39.53893	-83.01620					X	11/09/21	15.5	15.5	NE	NE	
B-04	39.53598	-83.01980					X	11/09/21	15.5	15.5	12	6	
B-05	39.53743	-83.02880					X	11/09/21	15.5	15.5	14	NE	
B-06	39.53506	-83.02550					X	11/09/21	15.5	15.5	NE	NE	
B-07	39.53290	-83.02230					X	11/10/21	15.5	15.5	NE	NE	
B-08	39.53193	-83.01650					X	11/10/21	15.5	15.5	9	7	
B-09	39.52992	-83.02720					X	11/10/21	15.0	15.0	NE	NE	
B-10	39.52840	-83.01830					X	11/10/21	15.5	15.5	NE	NE	
B-11	39.52556	-83.02630					X	11/10/21	15.5	15.5	10	6	
B-12	39.52353	-83.02130					X	11/08/21	15.5	15.5	NE	NE	
B-13	39.51950	-83.02720					X	11/08/21	15.5	15.5	NE	NE	
B-14	39.52044	-83.01960					X	11/08/21	15.5	15.5	NE	NE	
B-15	39.51555	-83.02310					X	11/08/21	15.5	15.5	NE	NE	
B-16	39.51239	-83.01600					X	11/08/21	15.5	15.5	NE	NE	
B-17	39.51270	-83.01160					X	11/08/21	15.5	15.5	NE	NE	
B-18	39.51802	-83.01390					X	11/08/21	15.5	15.5	NE	NE	
B-19	39.52835	-83.01470					X	11/08/21	15.5	15.5	14	NE	
SUB-1	39.54285	-83.02588						11/09/21	50.5	50.5	29	8.5	
TP-01	39.54264	-83.02530			X			11/02/21	10.0	10.0	6.5	NA	
TP-02	39.53866	-83.02120			X	X		11/01/21	10.0	10.0	NE	NE	
TP-03	39.53566	-83.02320						11/01/21	10.0	10.0	NE	NE	
TP-04	39.53286	-83.01910						11/12/21	9.0	9.0	9	NA	
TP-05	39.53024	-83.02340			X	X		11/01/21	11.0	11.0	NE	NE	
TP-06	39.52801	-83.02070						11/01/21	10.0	10.0	NE	NE	
TP-07	39.52503	-83.02350						11/12/21	10.0	10.0	9.5	NA	
TP-08	39.52231	-83.02740			X	X		11/02/21	10.0	10.0	NE	NE	
TP-09	39.52153	-83.02190			X			11/01/21	10.0	10.0	NE	NE	
TP-10	39.51391	-83.01900		X	X	X		11/02/21	10.0	10.0	NE	NE	
TP-11	39.51491	-83.01330			X	X		11/02/21	10.0	10.0	NE	NE	
R-1	39.54281	-83.02588	X					11/11/21					
R-2	39.53327	-83.01770	X					11/11/21					
R-3	39.52900	-83.02600	X					10/31/21					
R-4	39.52461	-83.01850	X					11/12/21					
R-5	39.52126	-83.02750	X					11/09/21					
R-6	39.51514	-83.02000	X					11/10/21					
R-7	39.51451	-83.01300	X					11/07/21					

Notes: NE = Not Encountered; NA = Not Available

Table A2 : Well Log Information Obtained from the Ohio Department of Natural Resources

Water Well No.	Latitude (degree °)	Longitude (degree °)	Elevation (feet above sea level)	Well Depth (feet below land surface)	Static Water Level Record (feet below land surface)	Reported Drilling Date (MM/DD/YYYY)
46721	39.526843	-83.018419	705	110.0	65.0	N/A
2086270	39.546836	-83.022912	713.0	68.0	16.0	05/26/2021
2073107	39.534444	-83.013889	705	74.0	30.0	4/2/2019
738356	39.527170	-83.038690	696.0	26.0	20.0	11/12/1991
124716	39.522246	-83.016241	705	109.0	30.0	03/27/1959
95695	39.51325	-83.026906	671.0	32.0	15.0	01/01/1954
990182	39.51278	-83.033890	676.0	47.0	15.0	10/28/2005
2039795	39.53307	-83.047230	698.0	58.0	8.0	09/19/2021
789420	39.5417	-83.029220	707.0	62.0	20.0	08/19/1994
1009392	39.5475	-83.010000	677.0	87.0	36.0	02/29/2008

Figure 1
Site Location Map

Scioto Farms Solar Project
Pickaway County, OH

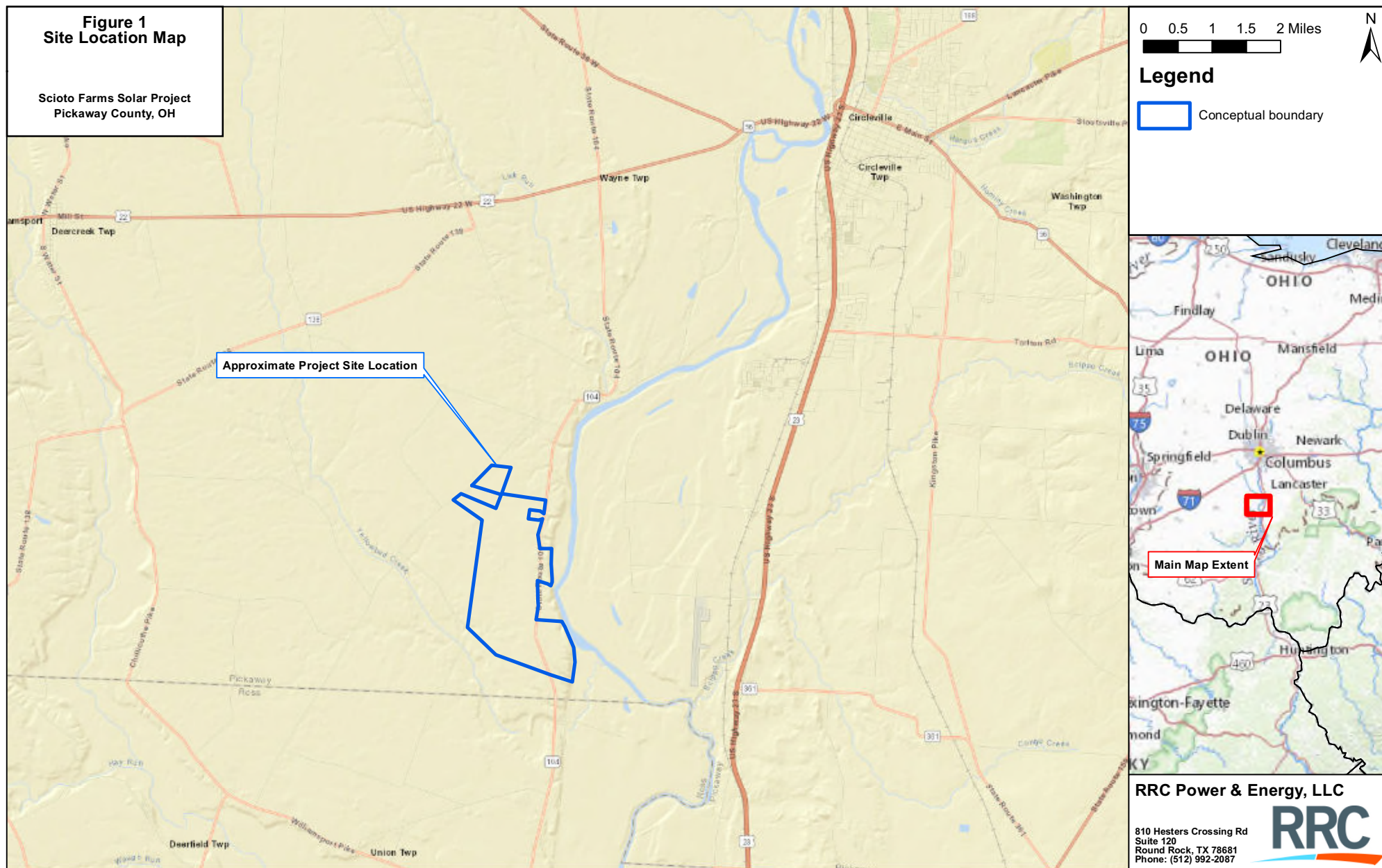


Figure 2
Boring Locations on a
Topographic Map

Scioto Farms Solar Project
Pickaway County, OH

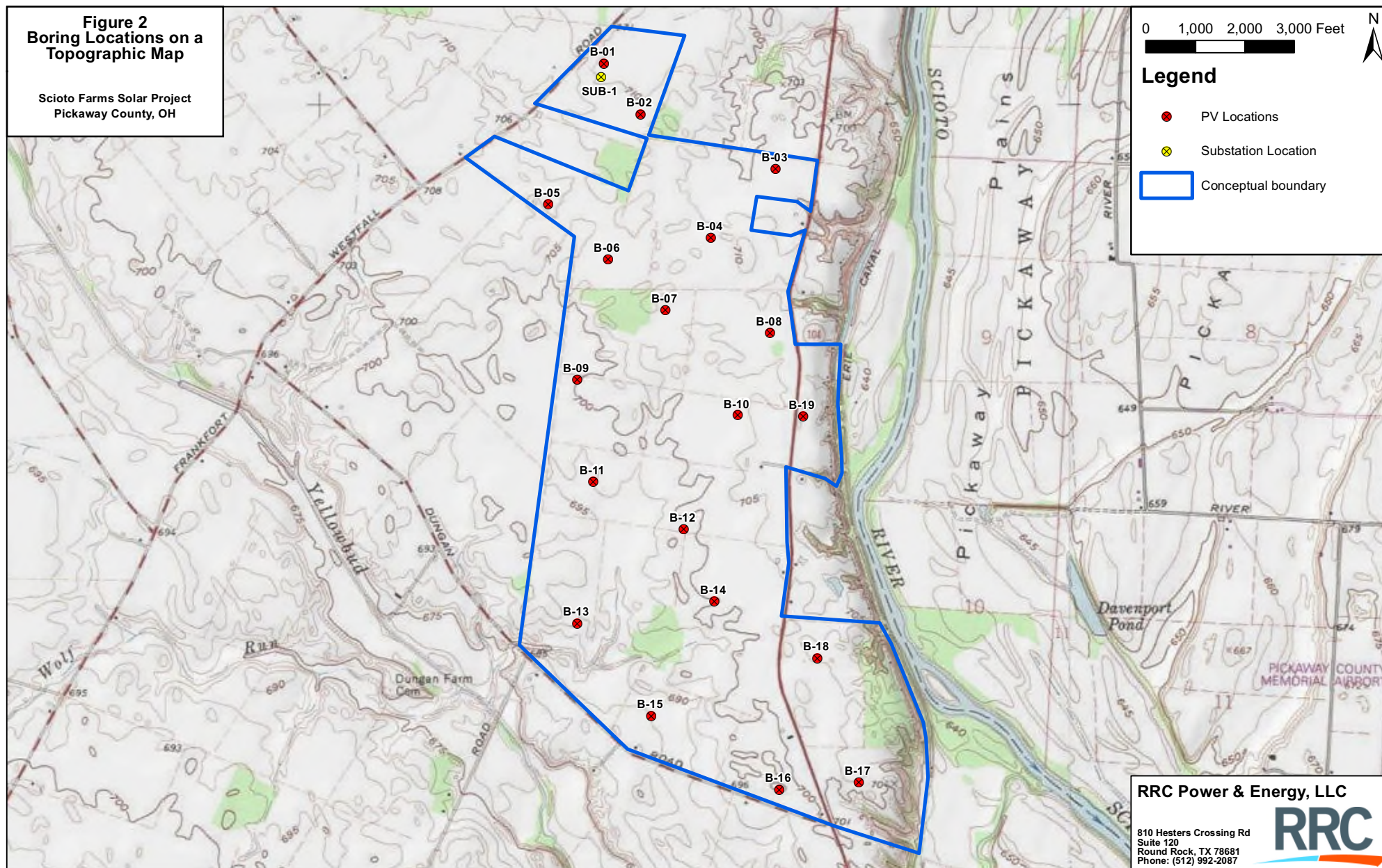


Figure 3
Test Pit, Thermal
Resistivity, and CBR
Testing Locations Map

Scioto Farms Solar Project
Pickaway County, OH

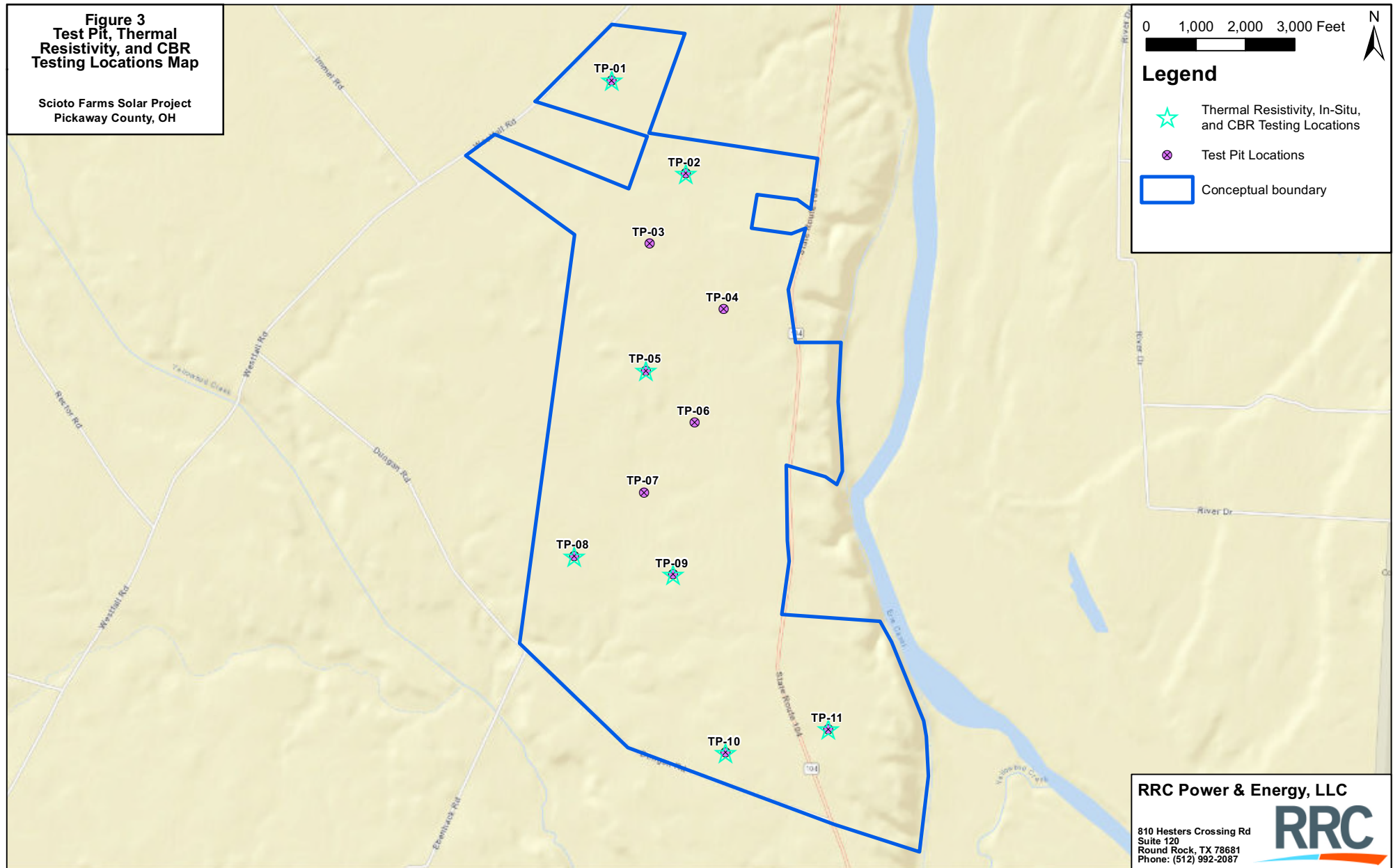
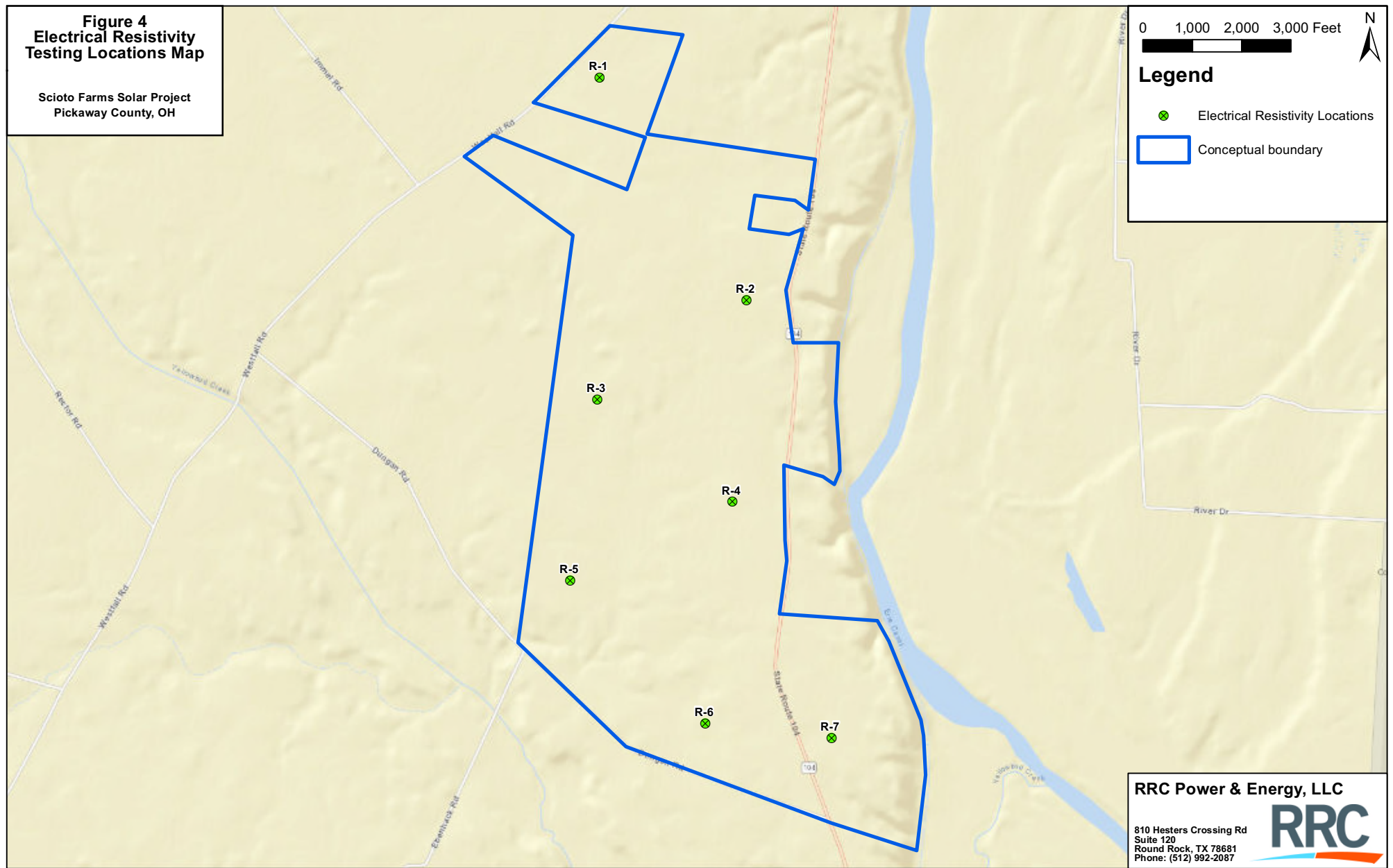


Figure 4
Electrical Resistivity
Testing Locations Map

Scioto Farms Solar Project
Pickaway County, OH



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Phone: (512) 992-2087



Figure 5
FEMA Flood Hazard Map

Scioto Farms Solar Project
 Pickaway County, OH

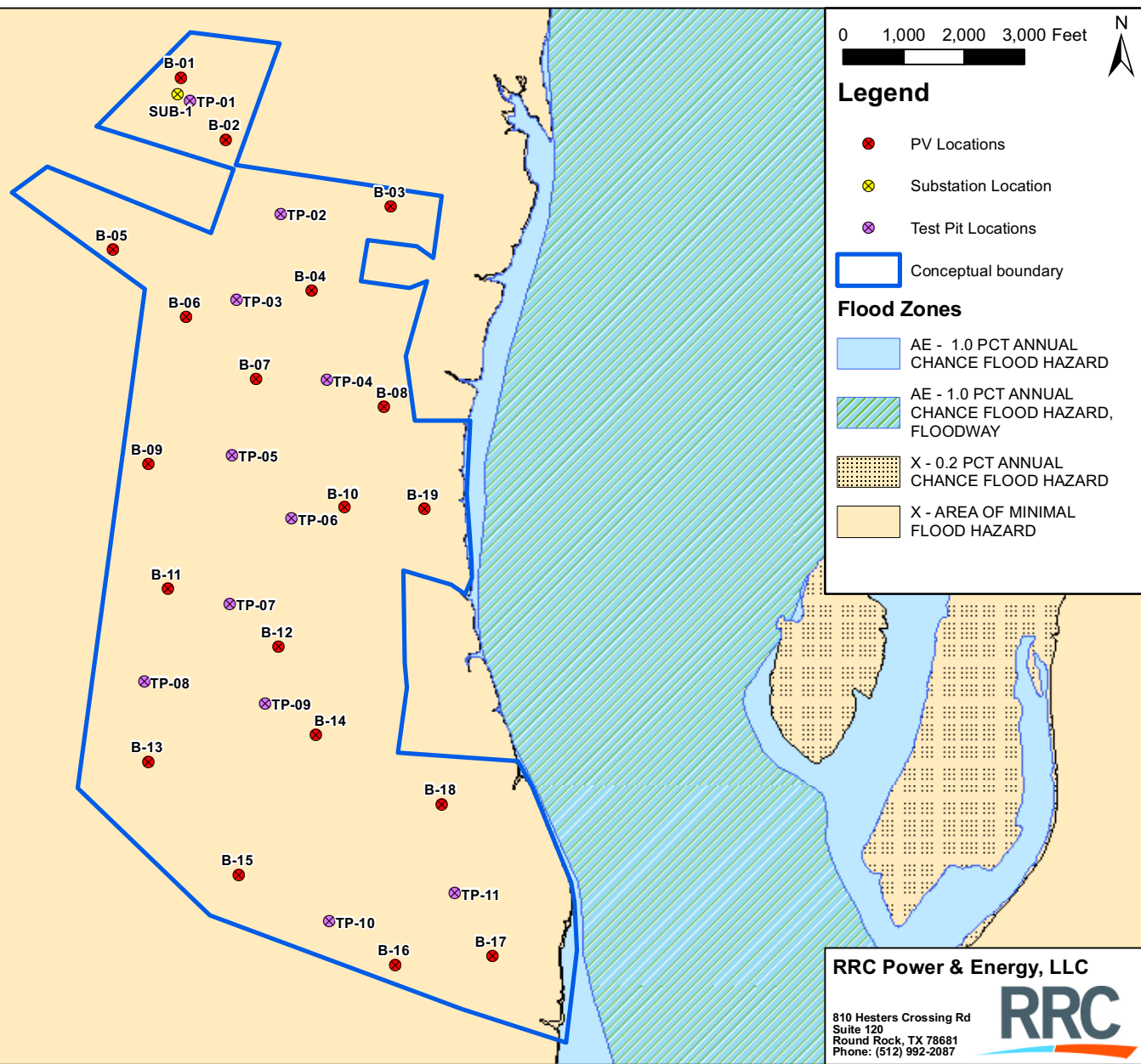


Figure 6
Site Vicinity Surficial
Geologic Map

Scioto Farms Solar Project
Pickaway County, OH

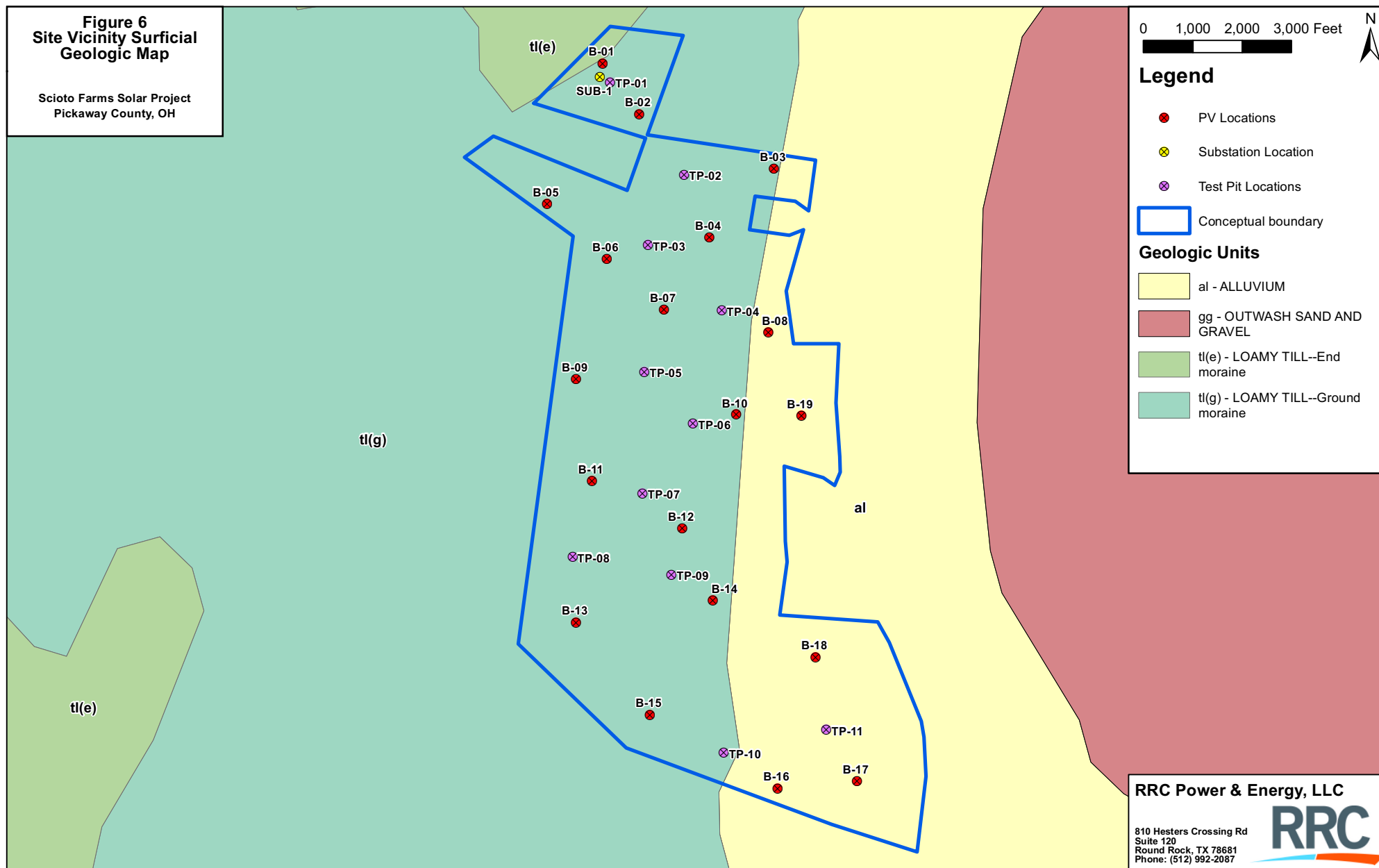
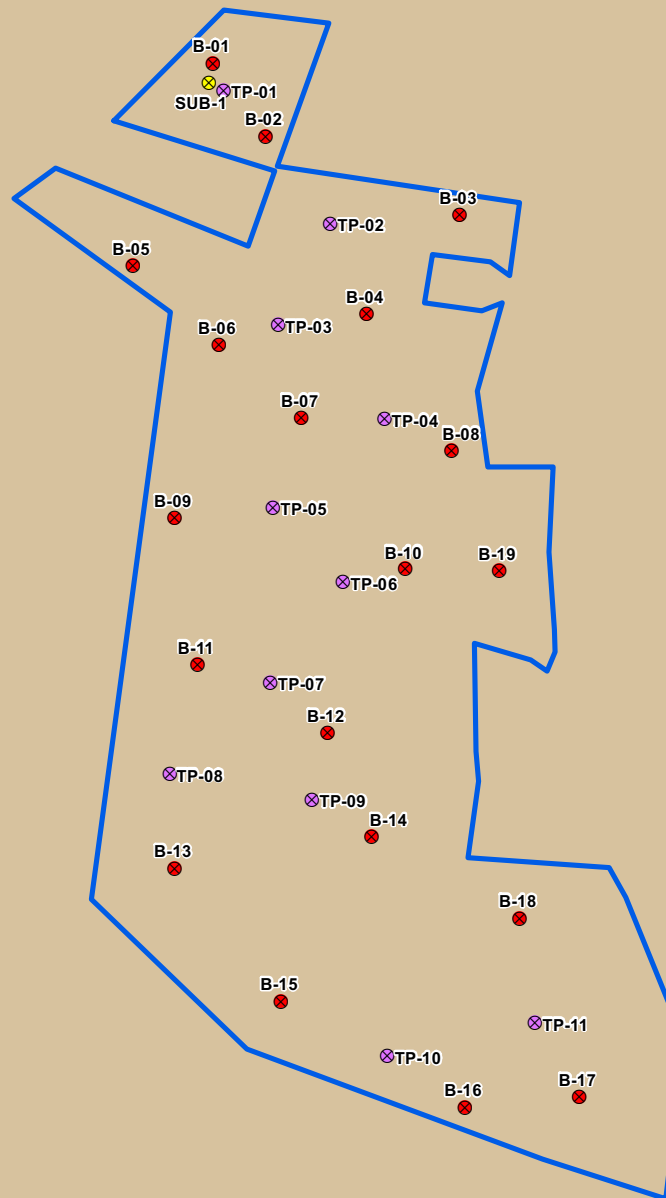


Figure 7
Site Vicinity Bedrock
Geologic Map

Scioto Farms Solar Project
Pickaway County, OH



0 1,000 2,000 3,000 Feet



Legend

- PV Locations
- Substation Location
- ✕ Test Pit Locations
- Conceptual boundary

Geologic Units

- Do Olentangy Shale

RRC Power & Energy, LLC

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Figure 8
Soil to Steel Corrosion
Map

Scioto Farms Solar Project
Pickaway County, OH



Figure 9
Soil to Concrete
Corrosion Map

Scioto Farms Solar Project
Pickaway County, OH

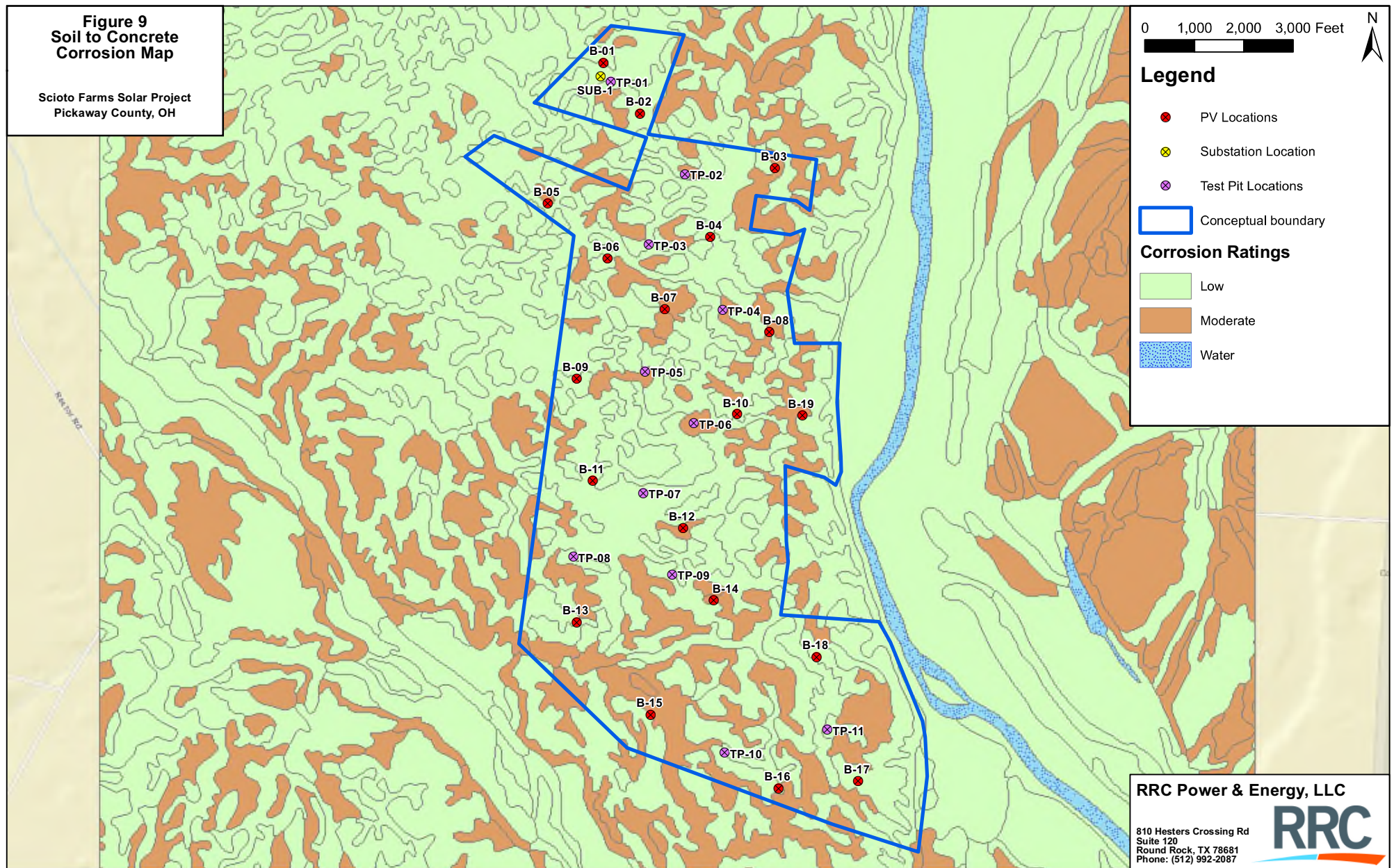
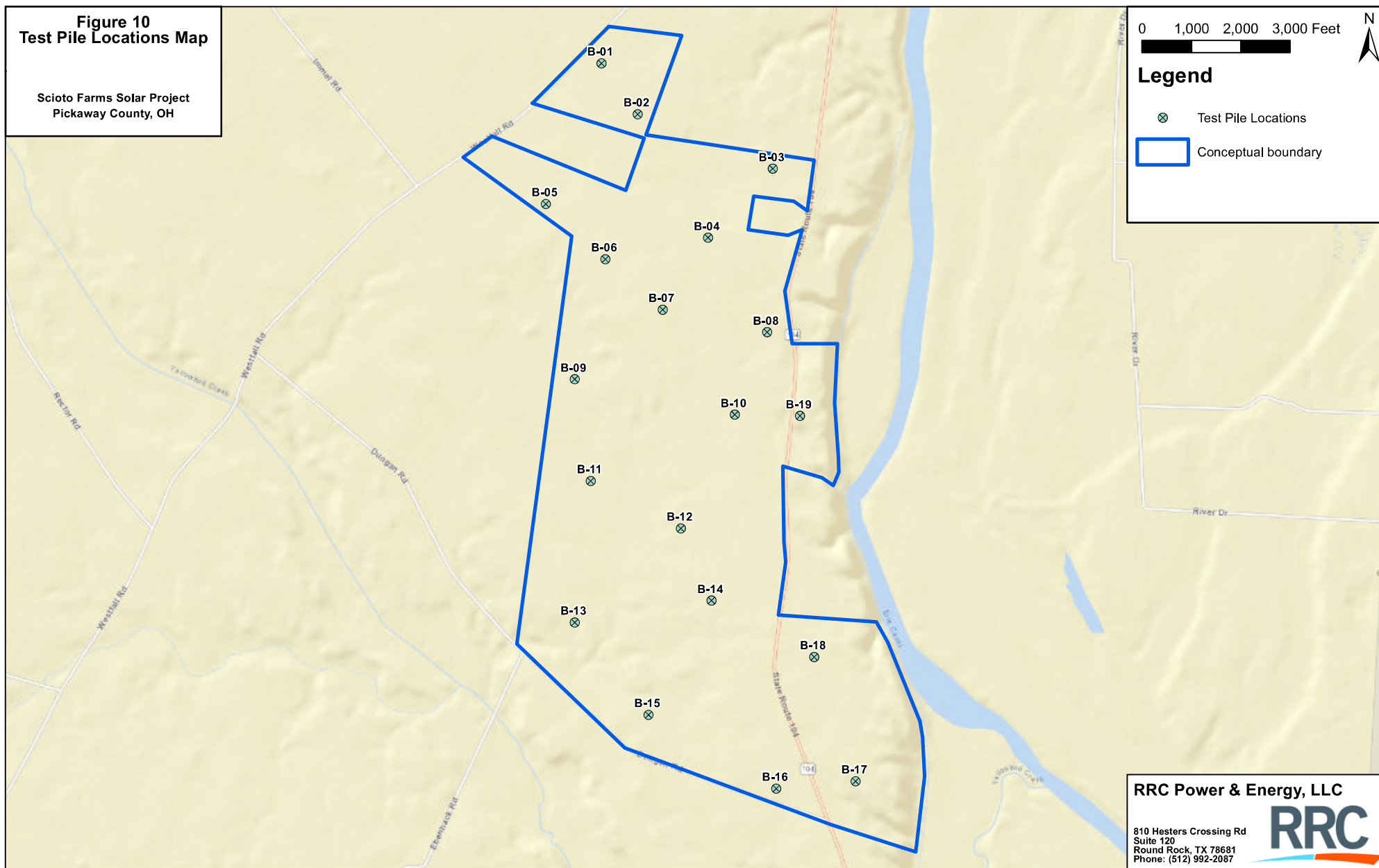









Figure 10
Test Pile Locations Map

Scioto Farms Solar Project
Pickaway County, OH
























BORING LOG KEY

FIELD DATA				LABORATORY DATA							DRILLING METHOD(S): Continuous Flight Auger/Hollow-stem Auger/Wet Rotary/NX Core	
SOIL SYMBOL	DEPTH (FT)	SAMPLES N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ FT)	FAILURE STRAIN (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Subsurface water was not encountered either during or upon completion of the drilling operations.
				LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI						
SURFACE ELEVATION: ft.												DESCRIPTION OF STRATUM
		 - INTACT PUSH TUBE SAMPLE  - SPLIT SPOON SAMPLE  N = 40 (Modified CA Sampler)  - AUGER CUTTINGS  T = 100/2.5" (TCP Blow Count) - INITIAL GROUNDWATER OBSERVATION  - WATER LEVEL AT END OF DRILLING, OR AS SHOWN  - ROCK CORE SAMPLE R = 100 RQD = 50										

-- TESTING SYMBOLS DEFINITIONS --

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

TYPICAL SOIL AND ROCK SYMBOLS (USCS CLASSIFICATION)

	Lean Clay (CL)		Poorly-Graded Sand (SP)		Claystone
	Fat Clay (CH)		Well-Graded Sand (SW)		BASALT
	Silt (ML)		Poorly-Graded Gravel (GP)		Limestone
	Elastic Silt (MH)		Well-Graded Gravel (GW)		Sandstone
	Silty Sand (SM)		Clayey Gravel (GC)		Siltstone
	Clayey Sand (SC)		Silty Gravel (GM)		Fill Material
	Silty, Clayey Sand (SC-SM)		Silty Clay (CL-ML)		Shale

DEGREE OF WEATHERING

- 1) Unweathered: No evidence of any chemical or mechanical alteration.
- 2) Slightly weathered: Slight discoloration on surface, slight alteration along discontinuities, less than 10% of the rock volume altered.
- 3) Moderately weathered: Discoloring evident, surface pitted and altered with alteration penetrating well below rock surfaces, weathering "halos" evident, 10% to 50% of the rock volume altered.
- 4) Highly weathered: Entire mass discolored, alteration pervading nearly all of the rock with some pockets of slightly weathered rock noticeable, some minerals leached away.
- 5) Decomposed: rock reduced to a soil with relic rock texture, generally molded and crumbled by hand.

SOIL STRUCTURE

- Calcareous.....Containing calcium carbonate
- Slickensided.....The presence of planes of weakness having a slick and glossy appearance
- Interbedded.....Alternating layers of varying material




LOG OF BORING B-01

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/9/2021

	FIELD DATA				LABORATORY DATA				DRILLING METHOD(S):				
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater encountered at 9 ft. during drilling and measured at 5 ft. immediately after drilling
SURFACE ELEVATION (FT):													
DESCRIPTION OF STRATUM													
	8 in. Topsoil												
		FAT CLAY (CH), trace Sand, brown, medium stiff, moist											
		Grading with Sand											
		SANDY FAT CLAY (CH), brown, very stiff to hard, dry to moist											
		Grading trace Gravel											
	Total Depth = 15.5 ft.												
	REMARKS: GPS COORDINATES: Lat. 39.543449, Long. -83.025651												

LOG OF BORING B-02

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/9/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S): Hollow Stem Auger												
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling																									
					LL	PL	PI						SURFACE ELEVATION (FT):																									
													DESCRIPTION OF STRATUM																									
													8 in. Topsoil																									
			N = 10	25									FAT CLAY (CH), with Sand, brown, stiff, moist																									
	5		P = 4.5	13	22	13	9	123				57	SANDY LEAN CLAY (CL), gray, medium stiff to hard, moist																									
			N = 6	16																																		
	10		N = 7	17																																		
		N = 29																																				
15		N = 32	10										Grading trace Gravel																									
													Total Depth = 15.5 ft.																									
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.541270, Long. -83.023684																									

LOG OF BORING B-03

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables

PROJECT: Scioto Farms Solar

LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

DATE(S) DRILLED: 11/9/2021

DRILLING METHOD(S):

Hollow Stem Auger

GROUNDWATER INFORMATION:

Groundwater not encountered during or immediately after drilling

SURFACE ELEVATION (FT):

DESCRIPTION OF STRATUM

8 in. Topsoil

FAT CLAY (CH), trace Sand and Gravel, brown, medium stiff to hard, moist

CLAYEY SAND (SC), trace Gravel, gray, medium dense, moist,
fine grained

SANDY FAT CLAY (CH), trace Gravel, gray, stiff, moist

POORLY GRADED SAND (SP-SC), with Clay, gray, medium dense, moist, fine grained

Total Depth = 15.5 ft.

REMARKS:

GPS COORDINATES: Lat. 39.538930, Long. -83.016281

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

LOG OF BORING B-04

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/9/2021

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP202 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

FIELD DATA		LABORATORY DATA										DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater encountered at 12 ft. during drilling and measured at 6 ft. immediately after drilling SURFACE ELEVATION (FT):
					LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI						
													DESCRIPTION OF STRATUM
													1 ft. Topsoil
	5	N = 7 P = 1.25		28 24	25	14	11	99	1.27	12.1	0.0	47	CLAYEY SAND (SC), dark brown, medium stiff to stiff, moist, fine grained
												68	SANDY LEAN CLAY (CL), gray, soft, moist
	10	N = 10		14									FAT CLAY (CH), with Sand, brown, stiff, moist
													POORLY GRADED SAND (SP-SC), with Clay, gray, medium dense, moist to wet, fine grained
	15	N = 23											FAT CLAY (CH), trace Sand, gray, very stiff, moist
													Total Depth = 15.5 ft.
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION												REMARKS: GPS COORDINATES: Lat. 39.535980, Long. -83.019834	








LOG OF BORING B-05

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/9/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger					
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater encountered at 14 ft. during drilling and not encountered immediately after drilling					
														SURFACE ELEVATION (FT):				
														DESCRIPTION OF STRATUM				
	5		N = 6	18									6 in. Topsoil					
			P = 3.5	13				121	1.94	6.8	0.0	FAT CLAY (CH), with Sand, dark brown, medium stiff to very stiff, moist						
			N = 6	14								Grading gray						
			N = 13	12														
			N = 7	13														
	15		N = 12										POORLY GRADED SAND (SP-SC), with Clay, grayish brown, medium dense, moist to wet, fine to coarse grained					
													Total Depth = 15.5 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.537430, Long. -83.028754					

LOG OF BORING B-06

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables

PROJECT: Scioto Farms Solar

LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

DATE(S) DRILLED: 11/9/2021

DRILLING METHOD(S):

Hollow Stem Auger

GROUNDWATER INFORMATION:

Groundwater not encountered during or immediately after drilling

SURFACE ELEVATION (FT):

DESCRIPTION OF STRATUM

8 in. Topsoil

FAT CLAY (CH), with Sand, trace Gravel, brown, medium stiff to very stiff, moist

POORLY GRADED SAND (SP-SC), with Clay, grayish brown,
medium dense, moist to wet, fine to coarse grained

Total Depth = 15.5 ft.

REMARKS:

GPS COORDINATES: Lat. 39.535062, Long. -83.025480

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

LOG OF BORING B-07

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

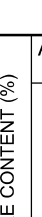

CLIENT: Candela Renewables

PROJECT: Scioto Farms Solar

LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

DATE(S) DRILLED: 11/10/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S): Hollow Stem Auger												
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling																									
					LL	PL	PI						SURFACE ELEVATION (FT):																									
													DESCRIPTION OF STRATUM																									
	5	N = 6	25										10 in. Topsoil																									
		N = 10	13									FAT CLAY (CH), trace Sand, brown, medium stiff to stiff, moist																										
		N = 10	15									SANDY FAT CLAY (CH), trace Gravel, brown, stiff, moist																										
	10	N = 18	10										CLAYEY SAND (SC), trace Gravel, grayish brown, medium dense to dense, dry to moist, fine grained																									
N = 49																																						
N = 43																																						
	15												Total Depth = 15.5 ft.																									
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.532892, Long. -83.022294																									

LOG OF BORING B-08

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/10/2021

FIELD DATA										LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger		
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater encountered at 9 ft. during drilling and measured at 7 ft. immediately after drilling		
														SURFACE ELEVATION (FT):	
DESCRIPTION OF STRATUM															
	5	N = 7 P = +4.5	27 13				127						8 in. Topsoil FAT CLAY (CH), trace Sand and Gravel, brown, medium stiff to hard, moist		
		N = 17	14										SANDY LEAN CLAY (CL), brown, very stiff, moist		
	10	N = 21	20										POORLY GRADED SAND (SP-SC), with Clay, brown, medium dense, moist to wet, fine grained		
		N = 20	10										CLAYEY SAND (SC), trace Gravel, gray, medium dense to very dense, moist, fine grained		
	15	N = 76/11"	7										Total Depth = 15.5 ft.		
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.531927, Long. -83.016545		








LOG OF BORING B-09

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/10/2021

	FIELD DATA				LABORATORY DATA				DRILLING METHOD(S):				
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling
DESCRIPTION OF STRATUM													
	5		N = 7	23									8 in. Topsoil
			N = 10	13									FAT CLAY (CH), trace Sand, brown, medium stiff to hard, moist
			P = +4.5	13				125					Grading with Sand
			N = 7	12									
			N = 12	12									
			N = 50/2"										Total Depth = 14.5 ft.
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.529920, Long. -83.027213

LOG OF BORING B-10

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables

PROJECT: Scioto Farms Solar

LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

DATE(S) DRILLED: 11/10/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger					
					LL	PL	PI						GROUNDWATER INFORMATION:					
														Groundwater not encountered during or immediately after drilling				
															SURFACE ELEVATION (FT):			
													DESCRIPTION OF STRATUM					
													8 in. Topsoil					
	5	N = 6	29										FAT CLAY (CH), trace Sand, brown, medium stiff to very stiff, moist					
		P = 3.0											Grading with Sand					
		N = 10	13															
	10	N = 30	12										POORLY GRADED SAND (SP-SC), with Clay, trace Gravel, medium dense, moist, fine grained					
15	N = 20												CLAYEY SAND (SC), trace Gravel, gray, medium dense, moist, fine grained					
	N = 26	12											Total Depth = 15.5 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.528398, Long. -83.018311					



LOG OF BORING B-11

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/10/2021

FIELD DATA										LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger		
					LL	PL	PI						GROUNDWATER INFORMATION:		
														SURFACE ELEVATION (FT):	
DESCRIPTION OF STRATUM															
	5	N = 8	23										8 in. Topsoil		
		P = 3.0	13				126					FAT CLAY (CH), trace Sand, grayish brown, medium stiff to very stiff, moist			
		N = 19	13									Grading with Sand			
	10	N = 27	12										POORLY GRADED SAND (SP-SC), with Clay, trave Gravel, gray, medium dense, moist, fine grained		
	15	N = 32	10										CLAYEY SAND (SC), trace Gravel, gray, dense to very dense, moist to wet, fine grained		
		N = 88/11"											Total Depth = 15.5 ft.		
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.525568, Long. -83.026332		

LOG OF BORING B-12

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP202 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S):												
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger																									
					LL	PL	PI						GROUNDWATER INFORMATION:																									
													Groundwater not encountered during or immediately after drilling																									
													SURFACE ELEVATION (FT):																									
													DESCRIPTION OF STRATUM																									
													6 in. Topsoil																									
													SANDY FAT CLAY (CH), brown, stiff to hard, moist																									
	5		N = 15 P = 4.5	24 13				127																														
			N = 9	13																																		
	10		N = 34	12									POORLY GRADED SAND (SP-SC), with Clay, gray, dense, moist, fine grained																									
			N = 18										SANDY LEAN CLAY (CL), trace Gravel, brown, stiff to very stiff, moist																									
	15		N = 14	13																																		
													Total Depth = 15.5 ft.																									
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.523525, Long. -83.021282																									





LOG OF BORING B-13

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger					
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling					
														SURFACE ELEVATION (FT):				
DESCRIPTION OF STRATUM																		
													1 ft. Topsoil					
	5	N = 6 P = +4.5 N = 13	25 13										FAT CLAY (CH), with Sand, dark brown, medium stiff to hard, moist					
	10	N = 16 N = 9 N = 32	11 12										POORLY GRADED SAND (SP-SC), with Clay, gray, loose to very dense, moist, fine grained					
	15	N = 73	9										Total Depth = 15.5 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.519511, Long. -83.027226					

LOG OF BORING B-14

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S): Hollow Stem Auger												
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling																									
					LL	PL	PI						SURFACE ELEVATION (FT):																									
													DESCRIPTION OF STRATUM																									
	5	N = 9	25										8 in. Topsoil																									
		N = 5	16	34	16	18						68	SANDY LEAN CLAY (CL), brown, medium stiff to stiff, moist																									
		P = 2.0	22				108					68	Grading trace Gravel																									
	10	N = 20	10											POORLY GRADED SAND (SP-SC), with Clay, gray, medium dense to dense, moist, fine to coarse grained																								
N = 16		10																																				
N = 33																																						
15													Total Depth = 15.5 ft.																									
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.520432, Long. -83.019618																									








LOG OF BORING B-15

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger					
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling					
														SURFACE ELEVATION (FT):				
															DESCRIPTION OF STRATUM			
	5		N = 11	27				122					6 in. Topsoil					
			P = 3.5	12						FAT CLAY (CH), with Sand, brown, stiff to hard, moist								
			N = 16	13														
			N = 32	13														
	10		N = 15	11														
		N = 31										CLAYEY SAND (SC), gray, dense, dry to moist, fine grained						
15													Total Depth = 15.5 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.515554, Long. -83.023090					



LOG OF BORING B-16

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger					
					LL	PL	PI						GROUNDWATER INFORMATION:					
													Groundwater not encountered during or immediately after drilling					
													SURFACE ELEVATION (FT):					
													DESCRIPTION OF STRATUM					
	5	N = 6	27										6 in. Topsoil					
		N = 20	21										FAT CLAY (CH), with Sand, brown, medium stiff to hard, moist					
		P = 4.5																
		N = 14											Grading trace Gravel					
	10	N = 10																
	15	N = 40	12										POORLY GRADED SAND (SP-SC), with Clay, gray, dense, moist, fine grained					
													Total Depth = 15.5 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.512386, Long. -83.015924					










LOG OF BORING B-17

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S): Hollow Stem Auger												
SOIL SYMBOL	DEPTH (FT)	SAMPLES N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling																										
				LL	PL	PI						SURFACE ELEVATION (FT):																										
												DESCRIPTION OF STRATUM																										
												1 ft. Topsoil																										
	5	 N = 6  P = +4.5  N = 10	27									SANDY LEAN CLAY (CL), brown, medium stiff to hard, moist																										
	10	 N = 7  N = 9  N = 20	15	22	15	7					38	SILTY, CLAYEY SAND (SC-SM), trace Gravel, brown, loose to medium dense, moist, fine to coarse grained																										
	15											Total Depth = 15.5 ft.																										
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION												REMARKS: GPS COORDINATES: Lat. 39.512701, Long. -83.011616																										

LOG OF BORING B-18

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

	FIELD DATA				LABORATORY DATA							DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger
					LL	PL	PI						GROUNDWATER INFORMATION: Groundwater not encountered during or immediately after drilling
DESCRIPTION OF STRATUM													
8 in. Topsoil													
FAT CLAY (CH), with Sand, brown, stiff to very stiff, moist													
Grading gray													
Total Depth = 15.5 ft.													
REMARKS: GPS COORDINATES: Lat. 39.518010, Long. -83.013908													

LOG OF BORING B-19

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/8/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S): Hollow Stem Auger																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	GROUNDWATER INFORMATION: Groundwater encountered at 14 ft. during drilling and not encountered immediately after drilling																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
					LL	PL	PI						SURFACE ELEVATION (FT):																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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	5		N = 12	16	39	18	21					58	6 in. Topsoil SANDY LEAN CLAY (CL), brown, stiff to very stiff, moist																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
				P = 3.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																

LOG OF BORING SUB-1




SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/9/2021

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP2102 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Hollow Stem Auger														
					LIQUID LIMIT LL	PLASTIC LIMIT PL	PLASTICITY INDEX PI						GROUNDWATER INFORMATION:														
													Groundwater encountered at 29 ft. during drilling and measured at 8.5 ft. immediately after drilling														
													SURFACE ELEVATION (FT):		DESCRIPTION OF STRATUM												
		X	N = 4	19	35	17	18					67	8 in. Topsoil														
													SANDY LEAN CLAY (CL), brown, soft, moist														
	5	■	P = 1.5	13	20	14	6	130	1.43	6.8	0.0	59	SANDY SILTY CLAY (CL-ML), trace Gravel, brown, stiff to hard, dry to moist														
		X	N = 13	11																							
	10	X	N = 31	9																							
		X	N = 32																								
	15	X	N = 50	11																							
		X	N = 23																								
	20	X	N = 64																								
		X	N = 22	21																							
	30	X	N = 22	21									POORLY GRADED SAND (SP), trace Clay, brown, medium dense, moist to wet, fine grained														
		X	N = 26										FAT CLAY (CH), trace Sand, brown, very stiff, moist														
	35	X	N = 23																								
	40	X	N = 29																								
	45	X	N = 23	22																							
	50	X	N = 23	22																							
													Total Depth = 50.5 ft.														
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.542856, Long. -83.025881														





SHEET 1 of 1

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/2/2021

FIELD DATA													LABORATORY DATA													DRILLING METHOD(S):												
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe																									
					LL	PL	PI						GROUNDWATER INFORMATION:																									
													Groundwater encountered at 6.5 ft. during excavation																									
													SURFACE ELEVATION (FT):																									
													DESCRIPTION OF STRATUM																									
	5		P = 3.0										6 in. Topsoil																									
													FAT CLAY (CH), with Sand and Gravel, grayish brown, dry to moist																									
	10												POORLY GRADED SAND (SP), with Gravel, grayish brown, moist, fine to coarse grained																									
													Total Depth = 10 ft.																									
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.54265, Long. -83.025287																									



SHEET 1 of 1

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/1/2021

FIELD DATA										LABORATORY DATA					DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe			
					LL	PL	PI						GROUNDWATER INFORMATION:			
													Groundwater not encountered during excavation			
													SURFACE ELEVATION (FT):			
DESCRIPTION OF STRATUM																
	5		P = N/A	16	26	14	12					52	6 in. Topsoil			
													SANDY LEAN CLAY (CL), trace Gravel, grayish brown, dry to moist			
	10												Grading with Gravel			
													Total Depth = 10 ft.			
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.538661, Long. -83.021164			



SHEET 1 of 1

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/1/2021

FIELD DATA										LABORATORY DATA					DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe			
					LL	PL	PI						GROUNDWATER INFORMATION:			
													Groundwater not encountered during excavation			
													SURFACE ELEVATION (FT):			
DESCRIPTION OF STRATUM																
	1												1 ft. Topsoil			
	5												FAT CLAY (CH), with Sand and Gravel, grayish brown, dry to moist			
	10												Grading gray			
													Total Depth = 10 ft.			
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.535645, Long. -83.02316			


LOG OF BORING TP-04

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/12/2021

FIELD DATA													LABORATORY DATA										DRILLING METHOD(S):									
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe																			
					LL	PL	PI						GROUNDWATER INFORMATION:																			
													Groundwater encountered at 9 ft. during excavation																			
													SURFACE ELEVATION (FT):																			
													DESCRIPTION OF STRATUM																			
	5												6 in. Topsoil																			
														FAT CLAY (CH), trace Sand and Gravel, grayish brown, dry to moist																		
														Grading with Sand																		
													SANDY FAT CLAY (CH), grayish brown, dry to moist																			
													Total Depth = 9 ft.																			
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.532859, Long. -83.019145																			

LOG OF BORING TP-05

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/1/2021

FIELD DATA

LABORATORY DATA

DRILLING METHOD(S):

Backhoe

GROUNDWATER INFORMATION:

Groundwater not encountered during excavation

SURFACE ELEVATION (FT):

DESCRIPTION OF STRATUM

3 in. Topsoil
SANDY LEAN CLAY (CL), trace Gravel, grayish brown, dry to moist

Grading gray

Total Depth = 11 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:
GPS COORDINATES: Lat. 39.530239, Long. -83.023432

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP2102 DESIGN\GEO\TECHNICAL\G DRIVE\INT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

LOG OF BORING TP-06

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/1/2021

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP202 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

FIELD DATA										LABORATORY DATA					DRILLING METHOD(S):
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)			
					LL	PL	PI								
													Backhoe		
													GROUNDWATER INFORMATION: Groundwater not encountered during excavation		
													SURFACE ELEVATION (FT):		
													DESCRIPTION OF STRATUM		
													6 in. Topsoil		
													SANDY LEAN CLAY (CL), trace Gravel, brown, dry to moist		
													Grading grayish brown		
													Grading with Gravel		
	10												Total Depth = 10 ft.		
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.528013, Long. -83.020691		



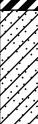

SHEET 1 of 1

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/12/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe					
					LL	PL	PI						GROUNDWATER INFORMATION:					
													Groundwater encountered at 9.5 ft. during excavation					
SURFACE ELEVATION (FT):													DESCRIPTION OF STRATUM					
													1 ft. Topsoil					
	5												FAT CLAY (CH), with Sand, grayish brown, dry to moist					
													Grading trace Sand and Gravel					
	10			▽									CLAYEY SAND (SC), trace Gravel, gray, dry to moist, fine to coarse grained					
													Total Depth = 10 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.525029, Long. -83.023482					

LOG OF BORING TP-08

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/2/2021

FIELD DATA

LABORATORY DATA

DRILLING METHOD(S):

Backhoe

GROUNDWATER INFORMATION:

Groundwater not encountered during excavation

SURFACE ELEVATION (FT):

DESCRIPTION OF STRATUM

6 in. Topsoil

SANDY LEAN CLAY (CL), trace Gravel, grayish brown, dry to moist

Total Depth = 10 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION

REMARKS:

GPS COORDINATES: Lat. 39.52234, Long. -83.027393

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP202 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

LOG OF BORING TP-09

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/1/2021

FIELD DATA

LABORATORY DATA

DRILLING METHOD(S):

Backhoe

GROUNDWATER INFORMATION:

Groundwater not encountered during excavation

SURFACE ELEVATION (FT):

DESCRIPTION OF STRATUM

4 in. Topsoil
FAT CLAY (CH), with Sand and Gravel, grayish brown, dry to moist

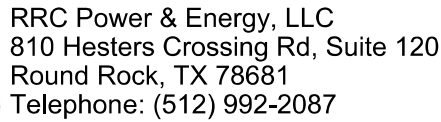
Total Depth = 10 ft.

N - STANDARD PENETRATION TEST RESISTANCE
P - POCKET PENETROMETER RESISTANCE
T - TXDOT CONE PENETRATION RESISTANCE
R - ROCK CORE RECOVERY
RQD - ROCK QUALITY DESIGNATION


REMARKS:
GPS COORDINATES: Lat. 39.521549, Long. -83.021939

RENEWABLE LOG - LOG A GNNL01.GDT - 1/14/22 18:59 - R:\OPERATIONS\IOP202 DESIGN\GEO\TECHNICAL\G DRIVE\GINT\PROJECTS\2021\SCIOTO SOLAR - GE2110047\SCIOTO-GE2110047.GPJ

SHEET 1 of 1



CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/2/2021

FIELD DATA													LABORATORY DATA					DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe						
					LL	PL	PI						GROUNDWATER INFORMATION:						
													Groundwater not encountered during excavation						
													SURFACE ELEVATION (FT):						
DESCRIPTION OF STRATUM																			
	5	P = +4.5	21 19	48 32	18 16	30 16	106	4.14	3.3	0.0	84 80	6 in. Topsoil							
												LEAN CLAY (CL), with Sand, trace Gravel, grayish brown, hard, dry to moist							
	10											Total Depth = 10 ft.							
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.513908, Long. -83.01896						


LOG OF BORING TP-11

SHEET 1 of 1



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047
DATE(S) DRILLED: 11/2/2021

FIELD DATA													LABORATORY DATA				DRILLING METHOD(S):	
SOIL SYMBOL	DEPTH (FT)	SAMPLES	N: BLOWS/FT P: TONS/SQ FT T: BLOWS R: % RQD: %	MOISTURE CONTENT (%)	ATTERBERG LIMITS			DRY DENSITY POUNDS/CU.FT	COMPRESSIVE STRENGTH (TONS/SQ. FT)	STRAIN AT FAILURE (%)	CONFINING PRESSURE (POUNDS/SQ IN)	MINUS NO. 200 SIEVE (%)	Backhoe					
					LL	PL	PI						GROUNDWATER INFORMATION:					
													Groundwater not encountered during excavation					
													SURFACE ELEVATION (FT):					
													DESCRIPTION OF STRATUM					
	5	P = 2.5		12	24	14	10					75	6 in. Topsoil LEAN CLAY (CL), with Sand, trace Gravel, brown, very stiff, dry to moist					
	10												Grading grayish brown					
													Total Depth = 10 ft.					
N - STANDARD PENETRATION TEST RESISTANCE P - POCKET PENETROMETER RESISTANCE T - TXDOT CONE PENETRATION RESISTANCE R - ROCK CORE RECOVERY RQD - ROCK QUALITY DESIGNATION													REMARKS: GPS COORDINATES: Lat. 39.514905, Long. -83.013319					



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810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
512.992.2087

APPENDIX B



Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

MOISTURE-DENSITY RELATIONSHIP

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID

TP-02 at 2.0 to 4.0 ft.

Description of Material

BROWN SANDY LEAN CLAY(CL)

Test Method

ASTM D698 Method A,
Automatic Hammer

TEST RESULTS

Maximum Dry Density 118.0 PCF

Optimum Water Content 13.9 %

ATTERBERG LIMITS

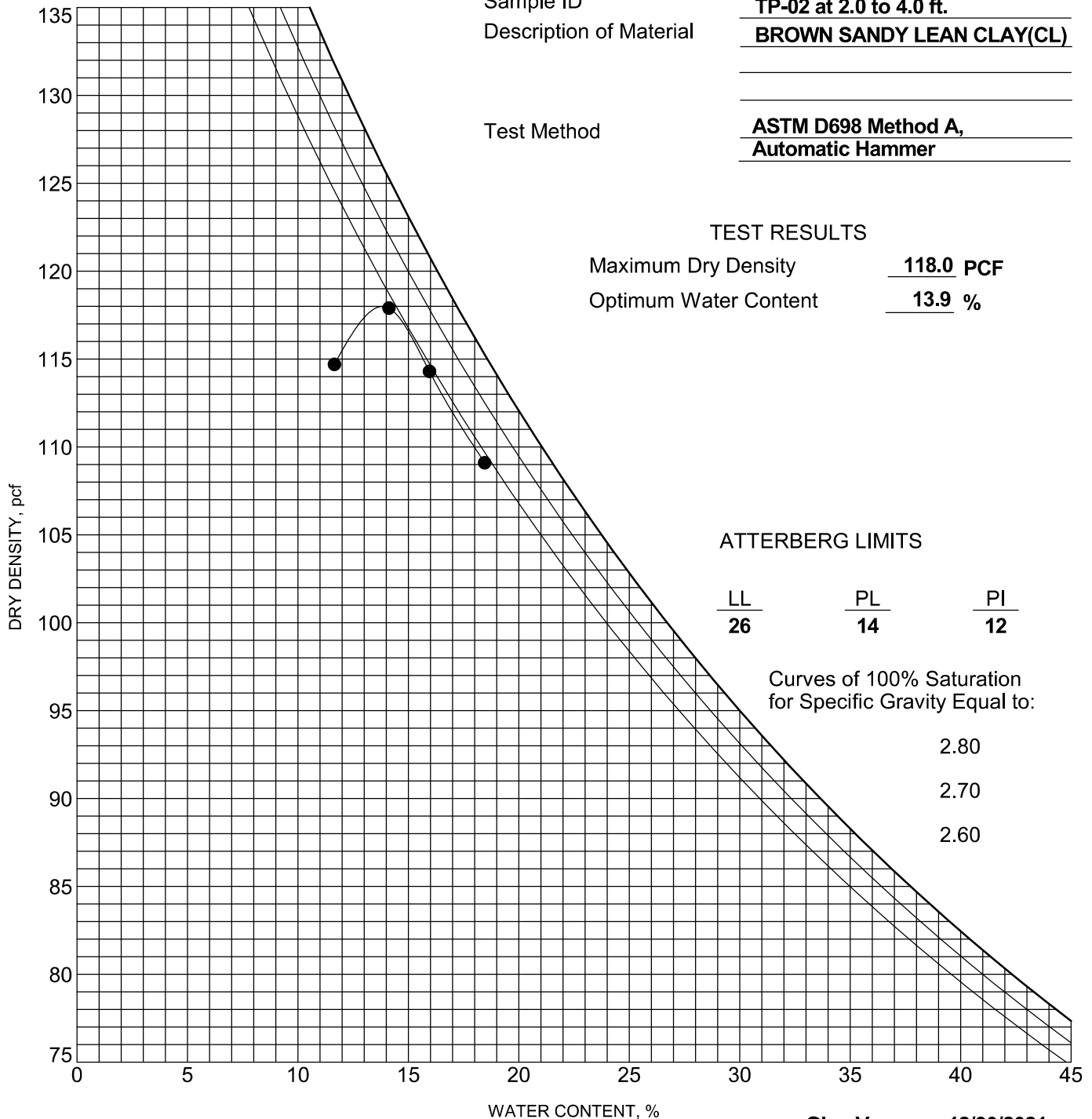
LL	PL	PI
<u>26</u>	<u>14</u>	<u>12</u>

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60



Olga Vasquez, 12/30/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the sample tested and / or inspected. They are not intended to be indicative of qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Unauthorized use or copying of this document is strictly prohibited by anyone other than the client for the specific project.



Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

MOISTURE-DENSITY RELATIONSHIP

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID

TP-05 at 2.0 to 4.0 ft.

Description of Material

BROWN SANDY LEAN CLAY(CL)

Test Method

ASTM D698 Method A,
Automatic Hammer

TEST RESULTS

Maximum Dry Density 124.3 PCF

Optimum Water Content 11.4 %

*Oversized correction applied as per ASTM D4718

ATTERBERG LIMITS

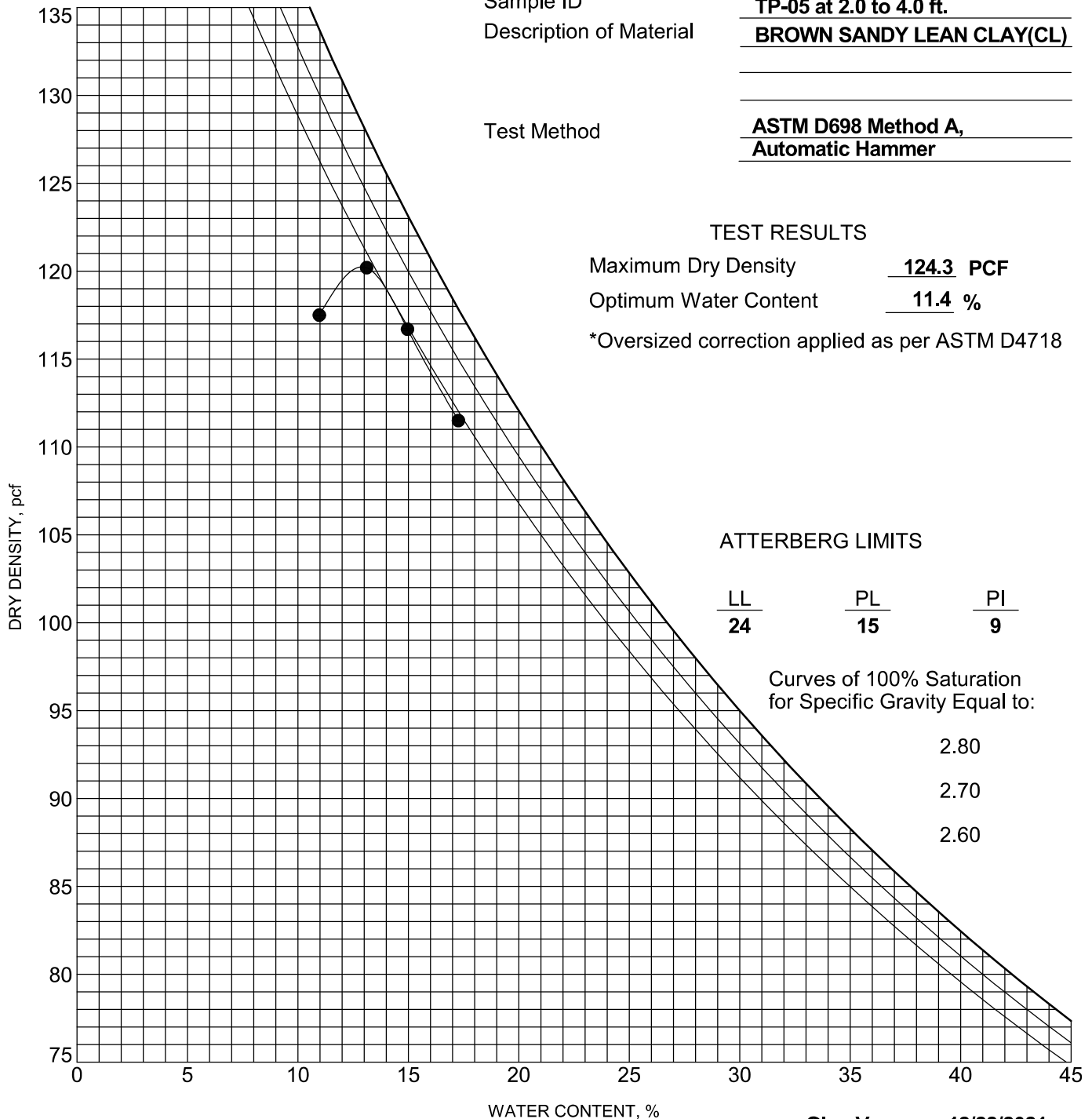
LL	PL	PI
24	15	9

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60



Olga Vasquez, 12/28/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

MOISTURE-DENSITY RELATIONSHIP

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID

TP-08 at 2.0 to 4.0 ft.

Description of Material

BROWN SANDY LEAN CLAY(CL)

Test Method

ASTM D698 Method A,
Automatic Hammer

TEST RESULTS

Maximum Dry Density 120.5 PCF

Optimum Water Content 12.5 %

ATTERBERG LIMITS

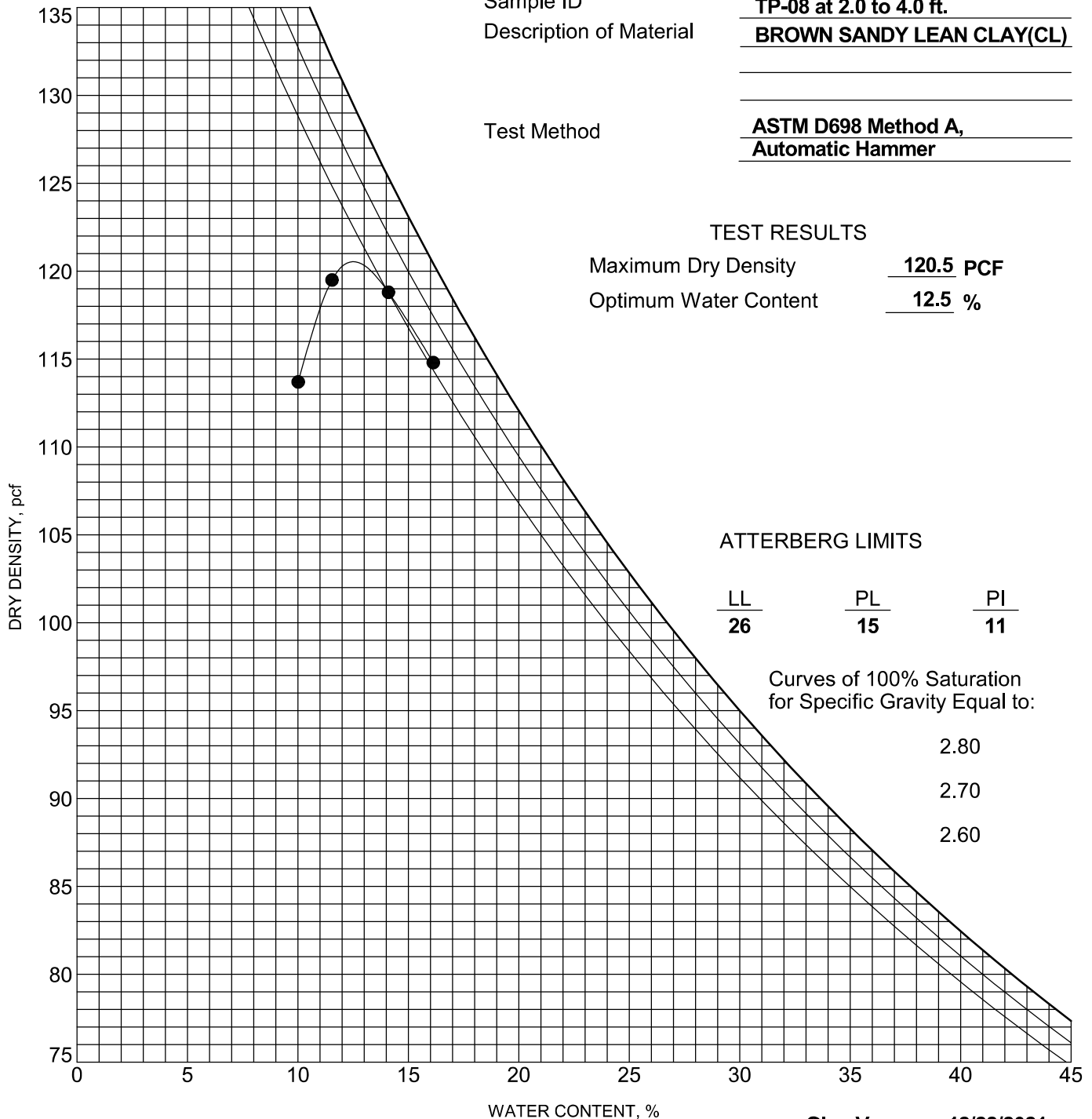
LL	PL	PI
26	15	11

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60



Olga Vasquez, 12/28/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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 Round Rock, TX 78664
 Telephone: (512) 358-6048

MOISTURE-DENSITY RELATIONSHIP

CLIENT: RRC Power & Energy, LLC
 PROJECT: Scioto Farms Solar
 LOCATION: Pickaway County, Ohio
 NUMBER: GE2110047

Sample ID

TP-10 at 2.0 to 4.0 ft.

Description of Material

BROWN LEAN CLAY with
SAND(CL)

Test Method

ASTM D698 Method A,
Automatic Hammer

TEST RESULTS

Maximum Dry Density 111.2 PCF

Optimum Water Content 16.3 %

*Oversized correction applied as per ASTM D4718

ATTERBERG LIMITS

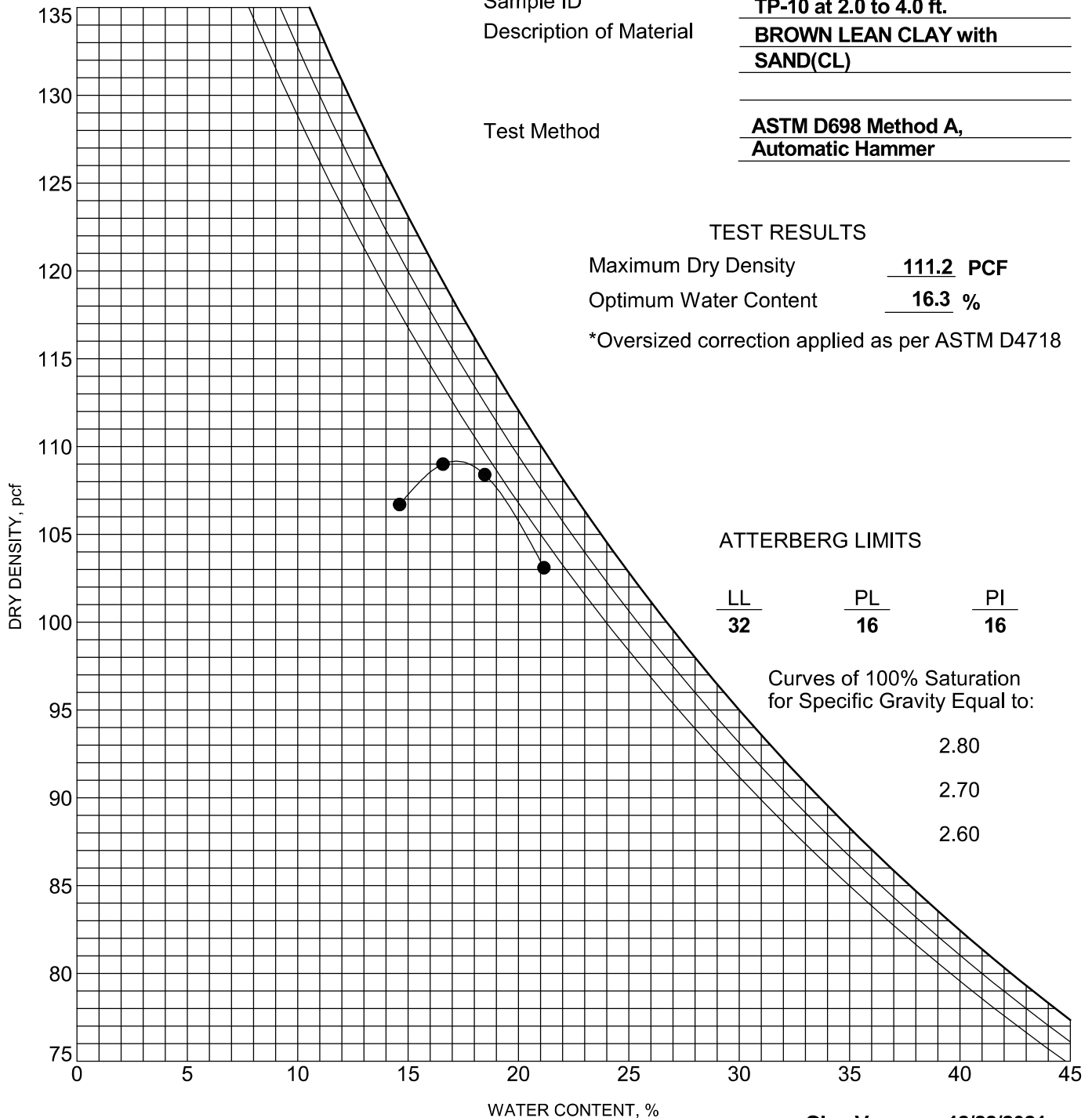
LL	PL	PI
32	16	16

Curves of 100% Saturation
 for Specific Gravity Equal to:

2.80

2.70

2.60



Olga Vasquez, 12/28/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
Telephone: (512) 358-6048

MOISTURE-DENSITY RELATIONSHIP

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID

TP-11 at 2.0 to 4.0 ft.

Description of Material

BROWN LEAN CLAY with
SAND(CL)

Test Method

ASTM D698 Method A,
Automatic Hammer

TEST RESULTS

Maximum Dry Density 125.5 PCF

Optimum Water Content 10.6 %

*Oversized correction applied as per ASTM D4718

ATTERBERG LIMITS

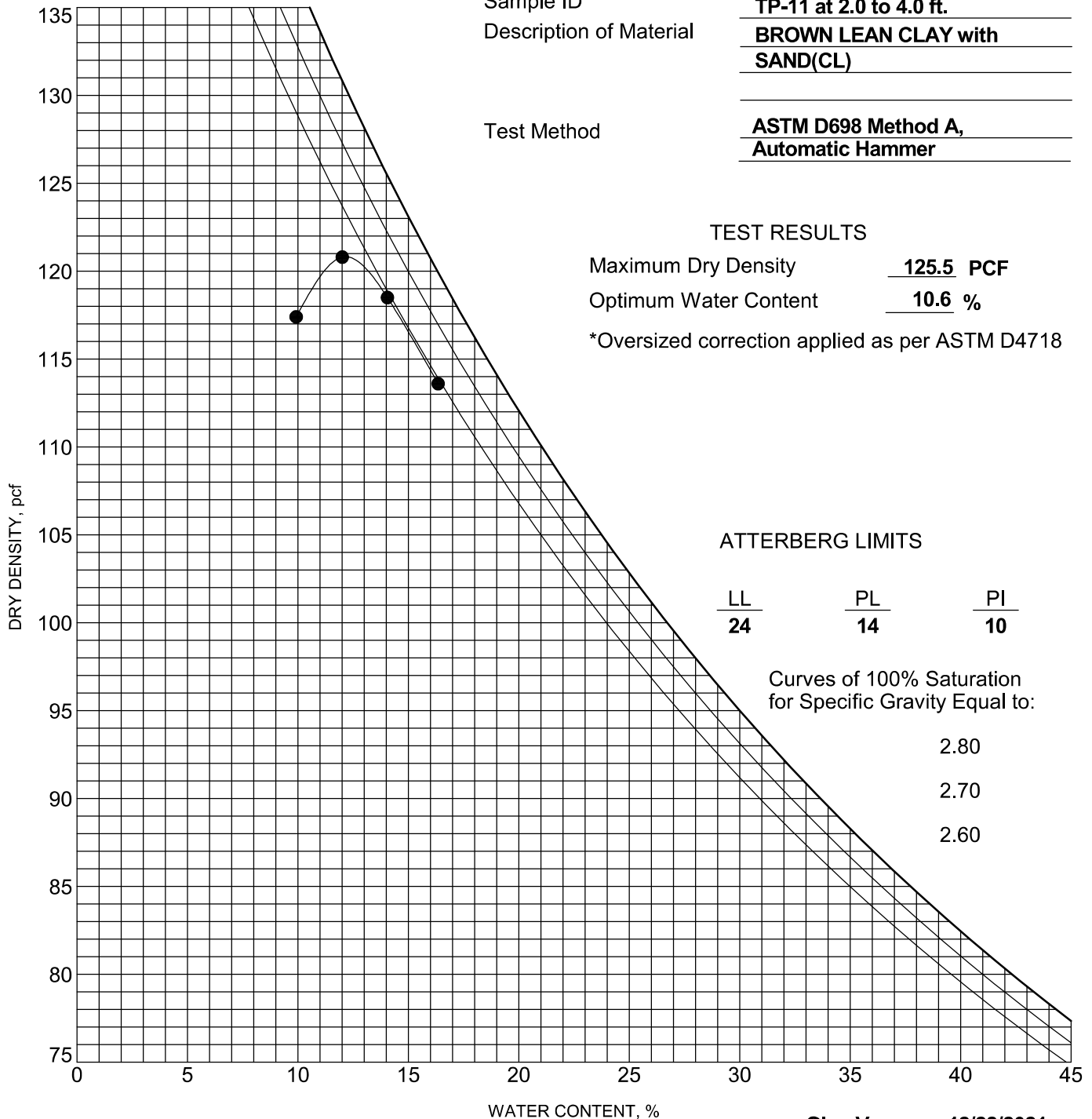
LL	PL	PI
24	14	10

Curves of 100% Saturation
for Specific Gravity Equal to:

2.80

2.70

2.60



Olga Vasquez, 12/28/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

The results shown on this report are for the exclusive use of the client for whom they were obtained and apply only to the sample tested and / or inspected. They are not intended to be indicative of qualities of apparently identical products. The use of our name must receive prior written approval. Reports must be reproduced in their entirety. Unauthorized use or copying of this document is strictly prohibited by anyone other than the client for the specific project.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project No.: GE2110047

Type of Specimen: Shelby Tube Sample

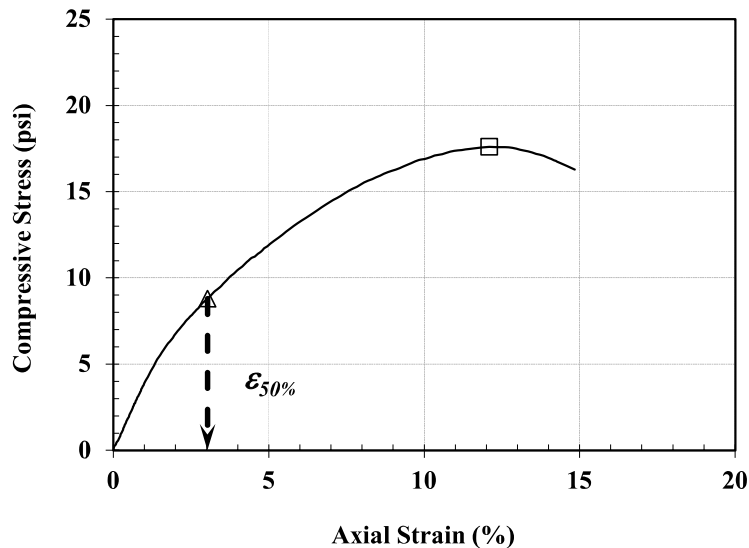
Project: Scioto Farms Solar Project

Test Method: ASTM D2166

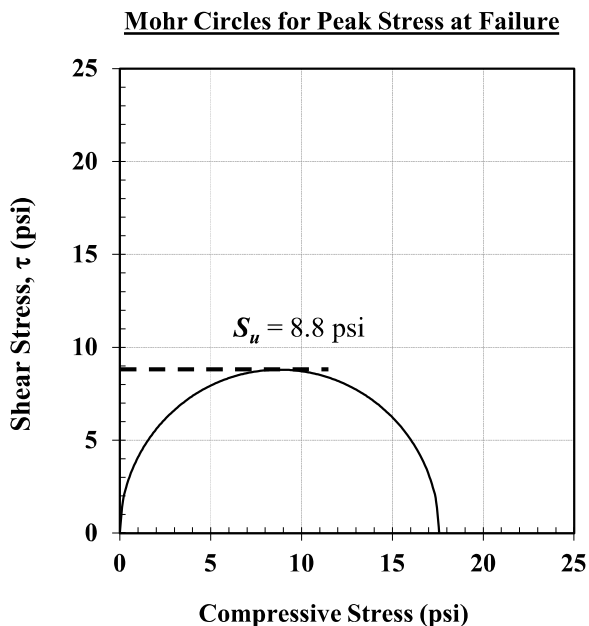
Strain Rate: 1.0 %/min

Sample I.D.: B-04 at 4 ft

Test Date: 1/4/2022



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.02
Avg. Height (in)	H_o	4.36
In-situ Moisture Content (%)	w_o	23.8
Total Unit Weight (pcf)	γ_{total}	122.8
Dry Unit Weight (pcf)	γ_{dry}	99.2
Saturation (%)	S_r	91.7
Void Ratio	e_o	0.70
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	17.6
Axial Strain at Failure (%)	12.1
Axial Strain at 50 % of q_u (%)	3.0
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	17.6
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.63

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 01/12/22

Quality Review/Date
Specimen prepared & tested by: A.P.G.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar Project

Sample I.D.: B-05 at 7 ft

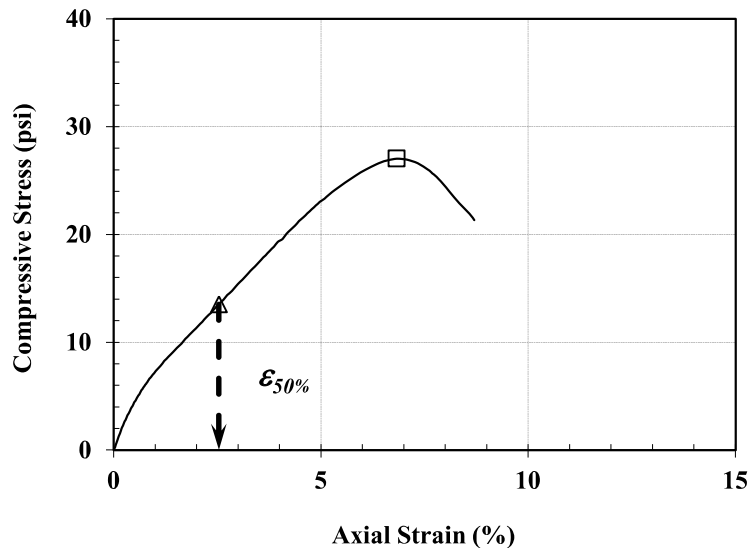
Project No.: GE2110047

Test Method: ASTM D2166

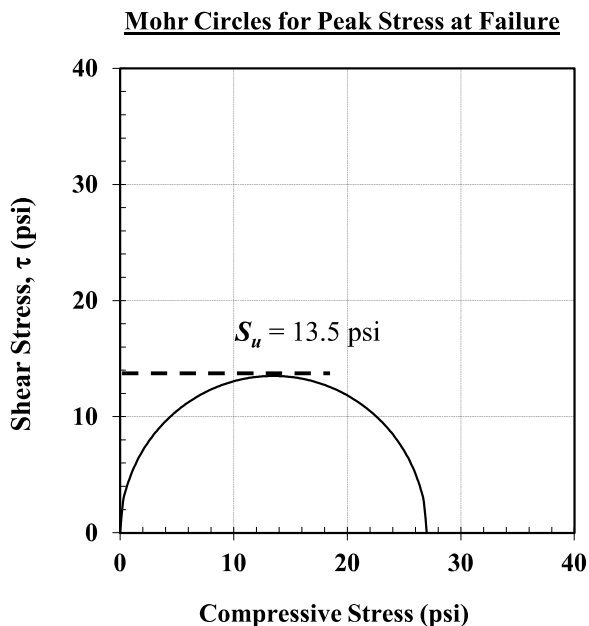
Test Date: 12/10/2021

Type of Specimen: Shelby Tube Sample

Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.87
Avg. Height (in)	H_o	6.02
In-situ Moisture Content (%)	w_o	13.4
Total Unit Weight (pcf)	γ_{total}	137.1
Dry Unit Weight (pcf)	γ_{dry}	120.9
Saturation (%)	S_r	91.6
Void Ratio	e_o	0.39
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	27.0
Axial Strain at Failure (%)	6.8
Axial Strain at 50 % of q_u (%)	2.5
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	27.0
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.97

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 12/15/21

Quality Review/Date
Specimen prepared & tested by: B.Z.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project No.: GE2110047

Type of Specimen: Shelby Tube Sample

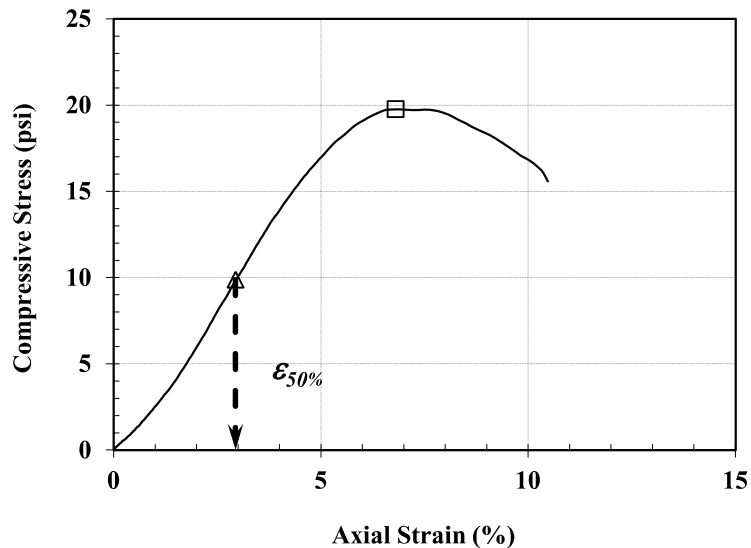
Project: Scioto Farms Solar Project

Test Method: ASTM D2166

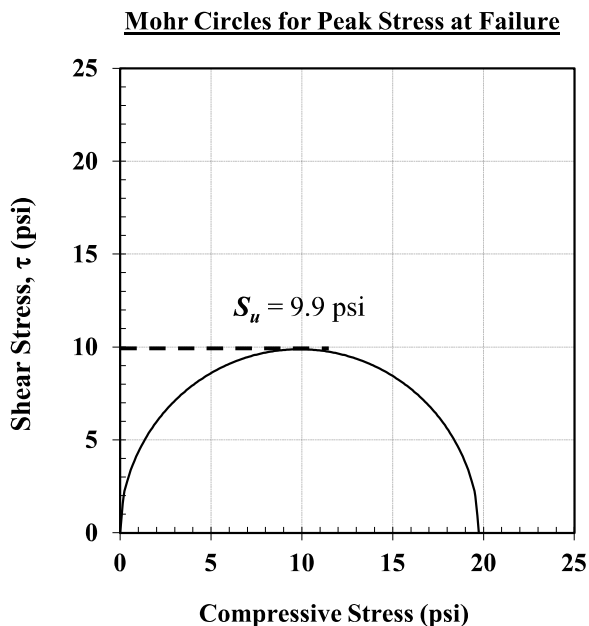
Strain Rate: 1.0 %/min

Sample I.D.: SUB-1 at 4 ft

Test Date: 12/10/2021



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.86
Avg. Height (in)	H_o	5.86
In-situ Moisture Content (%)	w_o	12.7
Total Unit Weight (pcf)	γ_{total}	146.3
Dry Unit Weight (pcf)	γ_{dry}	129.8
Saturation (%)	S_r	100.0
Void Ratio	e_o	0.30
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	19.8
Axial Strain at Failure (%)	6.8
Axial Strain at 50 % of q_u (%)	2.9
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	19.8
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.71

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 12/15/21

Quality Review/Date
Specimen prepared & tested by: B.Z.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar Project

Sample I.D.: TP-5 at 2 ft

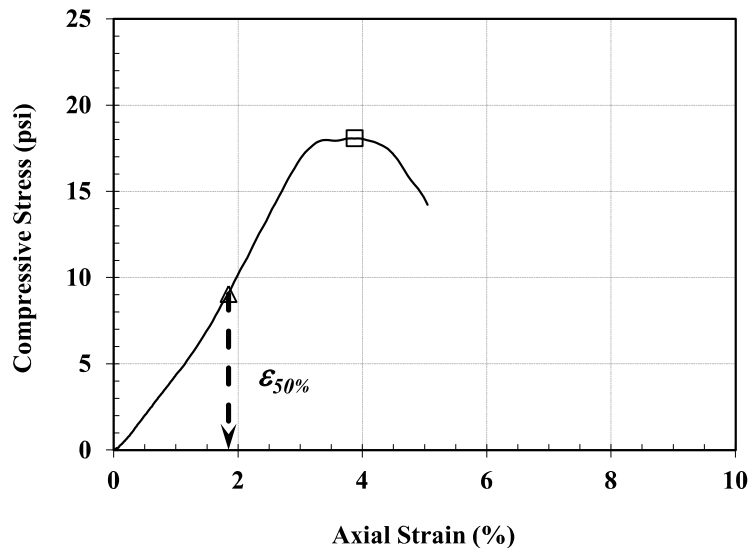
Project No.: GE2110047

Test Method: ASTM D2166

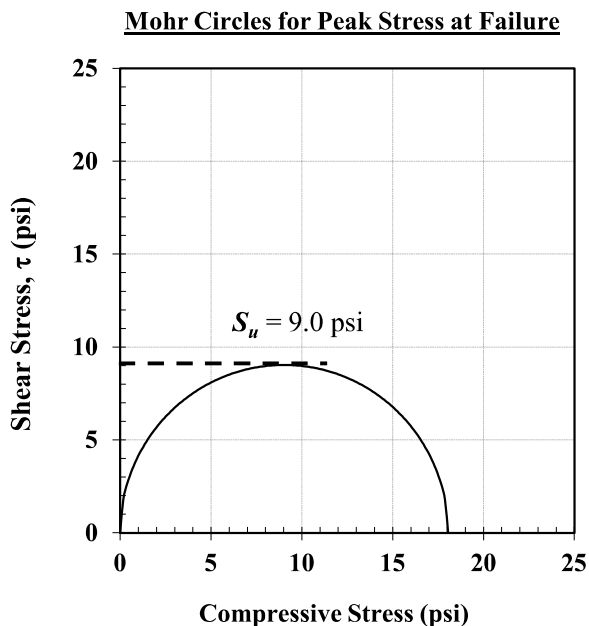
Test Date: 12/10/2021

Type of Specimen: Shelby Tube Sample

Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.87
Avg. Height (in)	H_o	5.97
In-situ Moisture Content (%)	w_o	12.4
Total Unit Weight (pcf)	γ_{total}	139.2
Dry Unit Weight (pcf)	γ_{dry}	123.9
Saturation (%)	S_r	92.5
Void Ratio	e_o	0.36
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	18.1
Axial Strain at Failure (%)	3.9
Axial Strain at 50 % of q_u (%)	1.8
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	18.1
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.65

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 12/15/21

Quality Review/Date
Specimen prepared & tested by: B.Z.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar Project

Sample I.D.: TP-8 at 2 ft

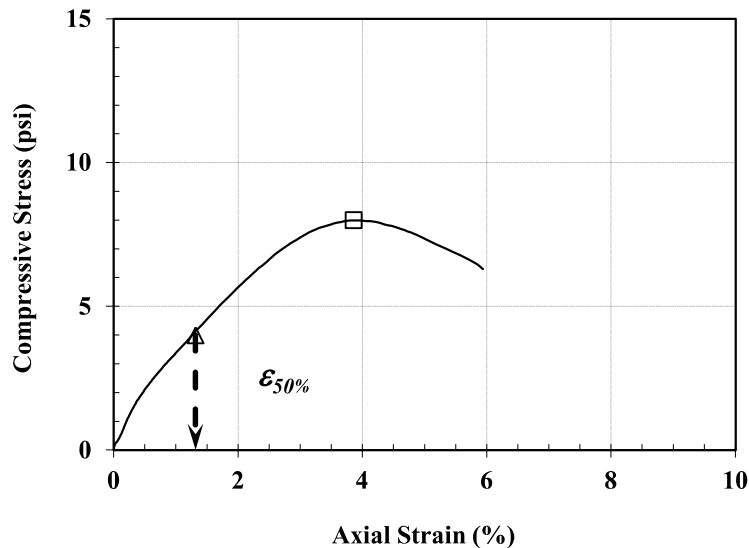
Project No.: GE2110047

Test Method: ASTM D2166

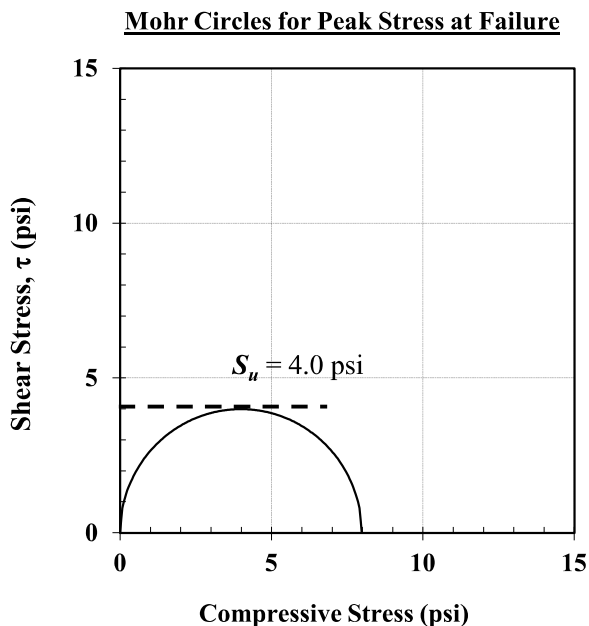
Test Date: 12/10/2021

Type of Specimen: Shelby Tube Sample

Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.85
Avg. Height (in)	H_o	5.76
In-situ Moisture Content (%)	w_o	17.6
Total Unit Weight (pcf)	γ_{total}	126.5
Dry Unit Weight (pcf)	γ_{dry}	107.5
Saturation (%)	S_r	83.8
Void Ratio	e_o	0.57
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	8.0
Axial Strain at Failure (%)	3.9
Axial Strain at 50 % of q_u (%)	1.3
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	8.0
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	0.29

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 12/15/21

Quality Review/Date
Specimen prepared & tested by: B.Z.

Unconfined Compression Test Report

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar Project

Sample I.D.: TP-10 at 2 ft

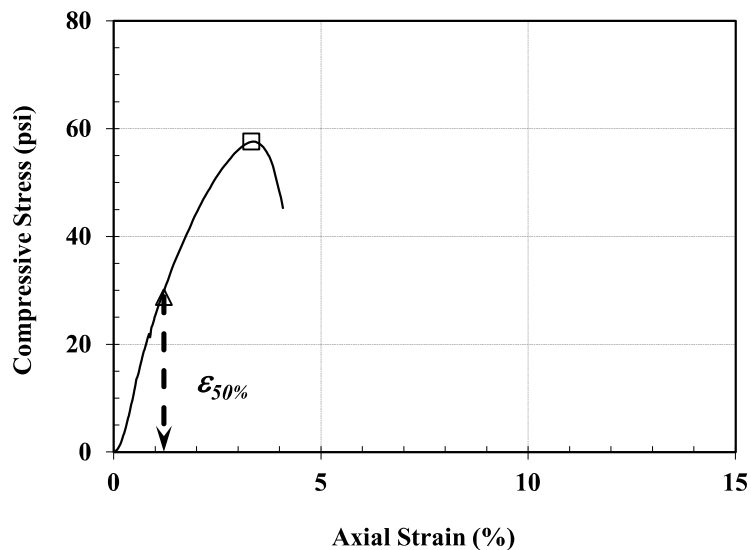
Project No.: GE2110047

Test Method: ASTM D2166

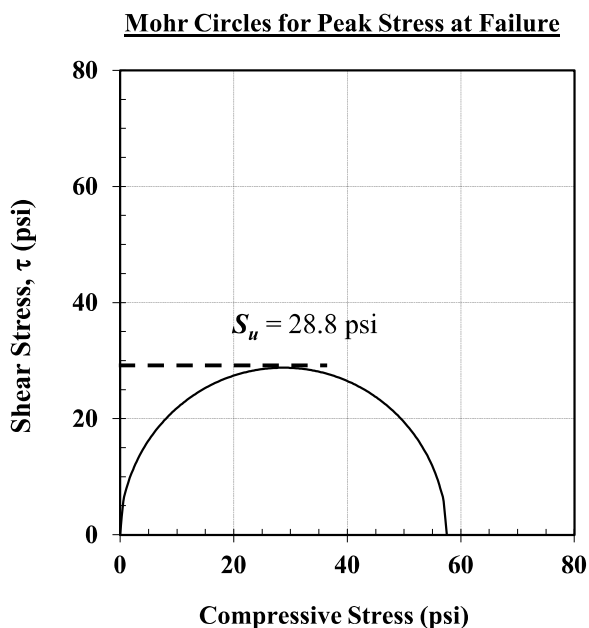
Test Date: 12/8/2021

Type of Specimen: Shelby Tube Sample

Strain Rate: 1.0 %/min



Initial Specimen Conditions		
Avg. Diameter (in)	D_o	2.85
Avg. Height (in)	H_o	6.02
In-situ Moisture Content (%)	w_o	20.5
Total Unit Weight (pcf)	γ_{total}	127.2
Dry Unit Weight (pcf)	γ_{dry}	105.6
Saturation (%)	S_r	92.6
Void Ratio	e_o	0.60
Specific Gravity (Assumed)	G_s	2.70



Stresses at Failure	
Unconfined Compressive Strength, q_u (psi)	57.5
Axial Strain at Failure (%)	3.3
Axial Strain at 50 % of q_u (%)	1.2
Total Stresses at Failure	
Major Principal Stress, σ_1 (psi)	57.5
Minor Principal Stress, σ_3 (psi)	0
Undrained Shear Strength, S_u (tsf)	2.07

Note: Failure was determined at the maximum deviator stress or deviator stress at 15 % axial strain, whenever is obtained first.

Olga Vasquez, 12/13/21

Quality Review/Date
Specimen prepared & tested by: A.P.G.

One-Dimensional Swell or Collapse of Soils

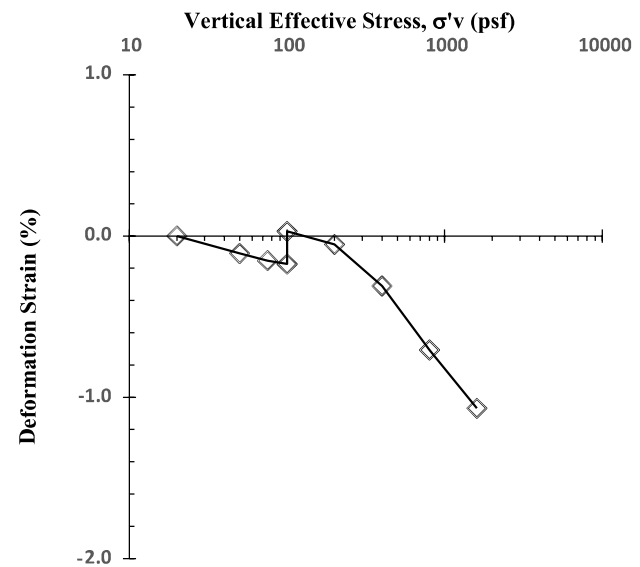
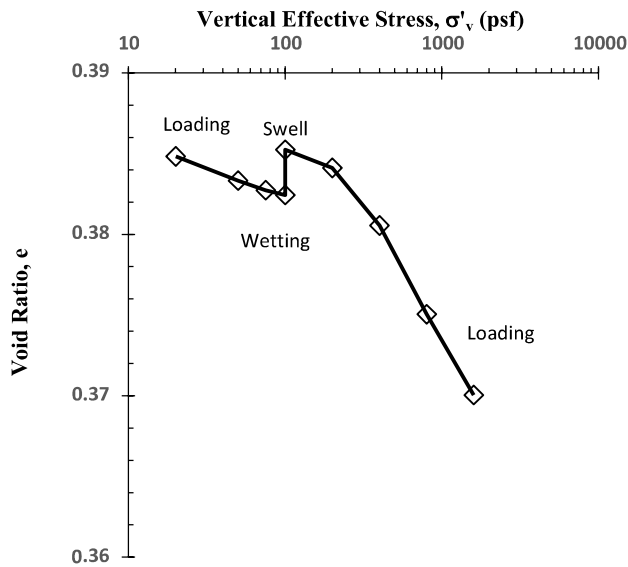
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: B-02 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

Specimen Conditions	
Avg. Water Content of Trimmings (%)	12.6
Final Specimen Water Content (%)	12.6
Initial Specimen Height (in)	0.797
Final Specimen Height (in)	0.788
Initial Dry Unit Weight, γ_o (pcf)	123.0
Final Dry Unit Weight, γ_f (pcf)	124.3
Initial Void Ratio, e_o	0.385
Final Void Ratio, e_f	0.370
Initial Degree of Saturation (%)	89.7
Final Degree of Saturation (%)	93.2
Swell Strain (%)	0.2

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.73
Specimen Diameter: 2.497 inches



Stage No.	Dry				Inundated				
	1	2	3	4	5	6	7	8	9
σ'_v (psf)	20	50	75	100	100	200	400	800	1600
Height (inch)	0.797	0.796	0.795	0.795	0.797	0.796	0.794	0.791	0.788
Void Ratio, e	0.385	0.383	0.383	0.382	0.385	0.384	0.381	0.375	0.370
Axial Strain (%)	0.00	-0.11	-0.15	-0.17	0.03	-0.05	-0.31	-0.71	-1.07

Huamiao Cao, P.E. 12/17/21

Analysis & Quality Review/Date
Specimen prepared and tested by: A.P.G.

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One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: B-02 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

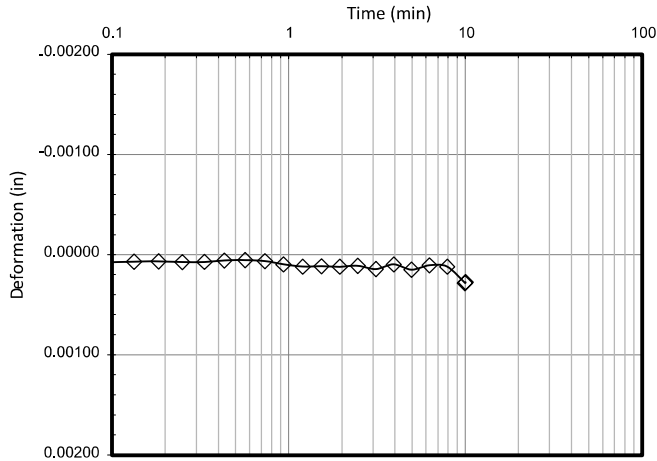


One-Dimensional Swell or Collapse of Soils

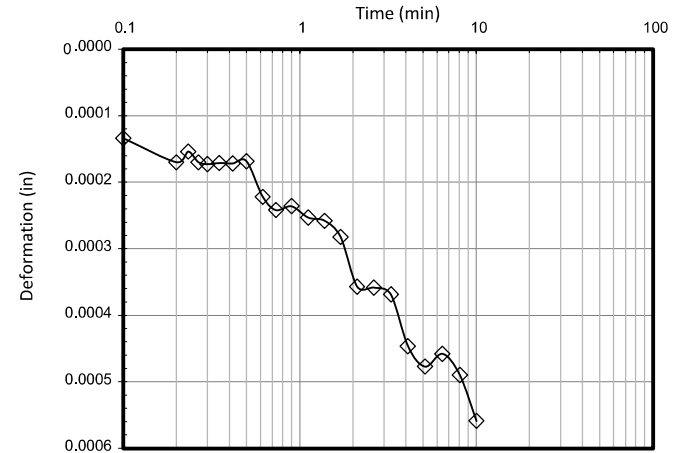
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: B-02 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

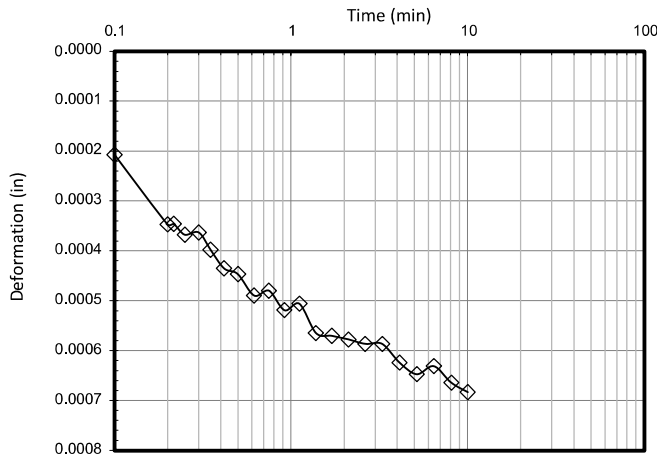
20-psf Load (Seating Load)



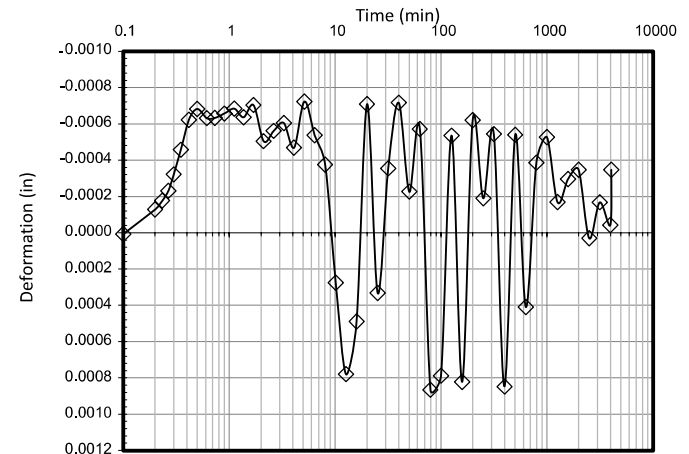
100-psf Load



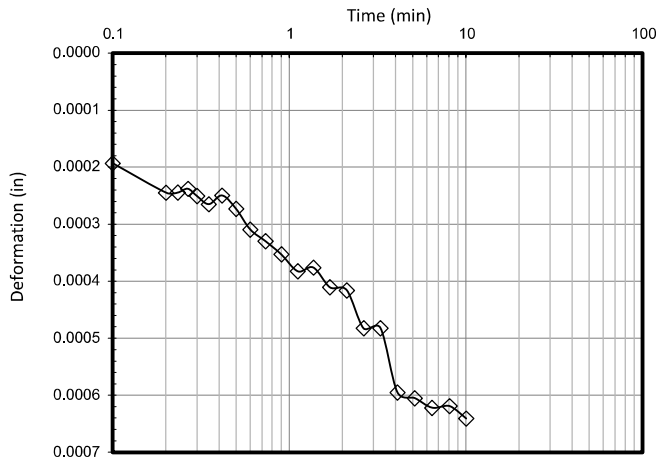
50-psf Load



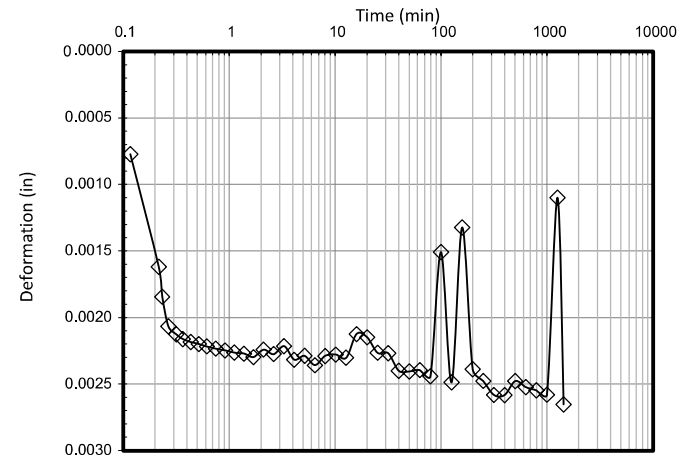
100-psf Load (inundated)



75-psf Load



200-psf Load (inundated)

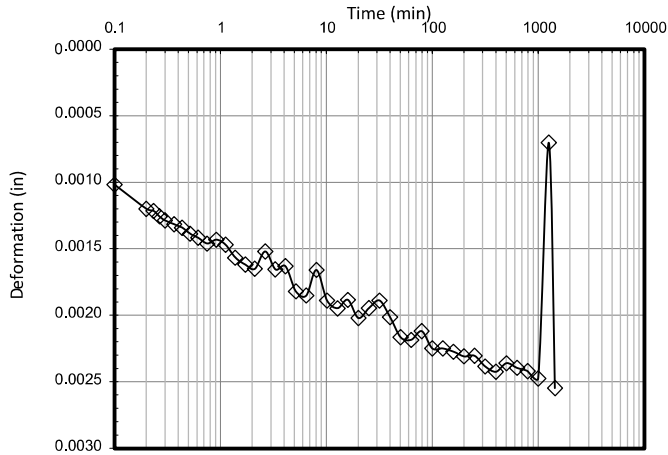


One-Dimensional Swell or Collapse of Soils

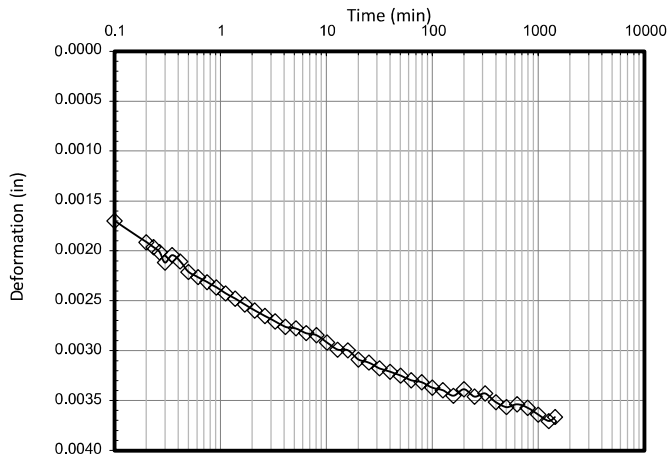
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: B-02 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

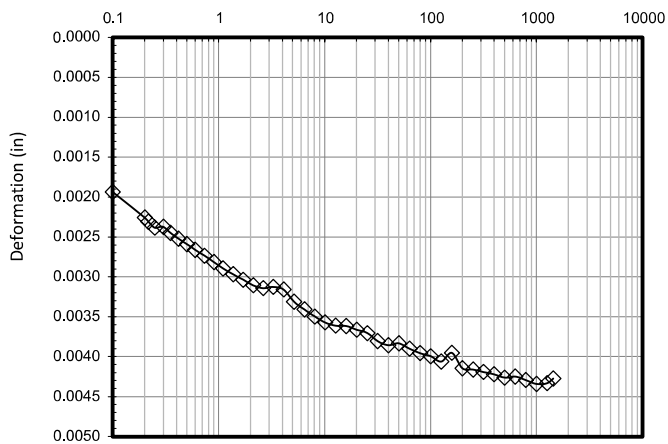
400-psf Load (inundated)



800-psf Load (inundated)



1600-psf Load (inundated)



One-Dimensional Swell or Collapse of Soils

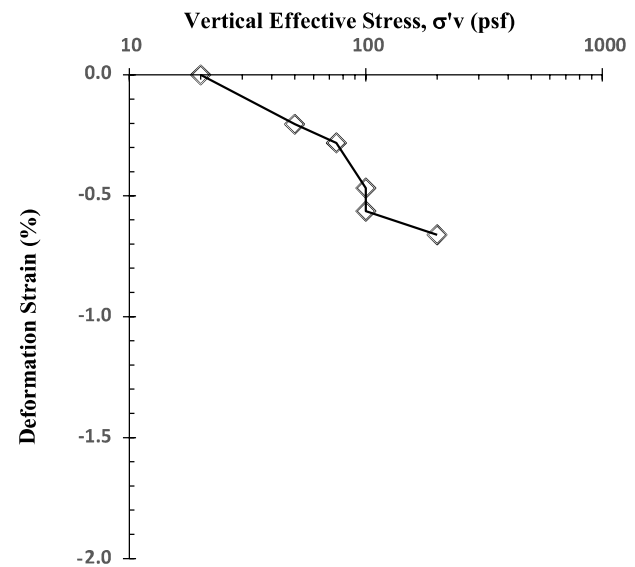
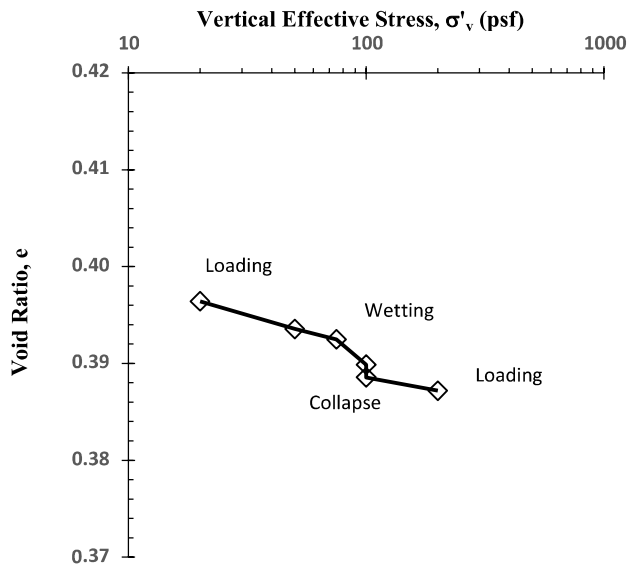
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: SUB-1 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

Specimen Conditions	
Avg. Water Content of Trimmings (%)	13.1
Final Specimen Water Content (%)	13.9
Initial Specimen Height (in)	0.797
Final Specimen Height (in)	0.791
Initial Dry Unit Weight, γ_o (pcf)	122.0
Final Dry Unit Weight, γ_f (pcf)	122.8
Initial Void Ratio, e_o	0.396
Final Void Ratio, e_f	0.387
Initial Degree of Saturation (%)	90.2
Final Degree of Saturation (%)	98.3
Collapse Strain (%)	-0.1

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.73
Specimen Diameter: 2.494 inches



Stage No.	Dry				Inundated	
	1	2	3	4	5	6
σ'_v (psf)	20	50	75	100	100	200
Height (inch)	0.797	0.795	0.794	0.793	0.792	0.791
Void Ratio, e	0.396	0.394	0.392	0.390	0.389	0.387
Axial Strain (%)	0.00	-0.20	-0.28	-0.47	-0.56	-0.66

Huamiao Cao, P.E. 12/17/21

Analysis & Quality Review/Date
Specimen prepared and tested by: A.P.G.

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One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: SUB-1 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

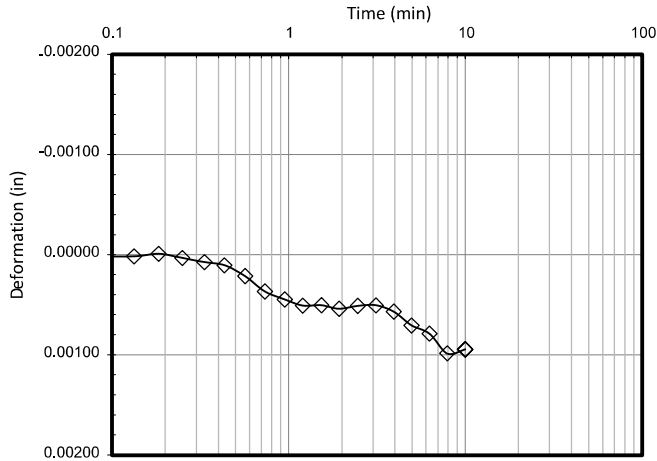


One-Dimensional Swell or Collapse of Soils

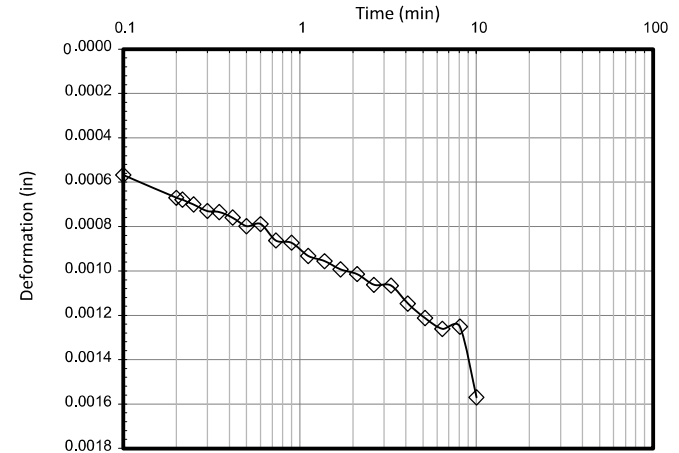
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: SUB-1 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

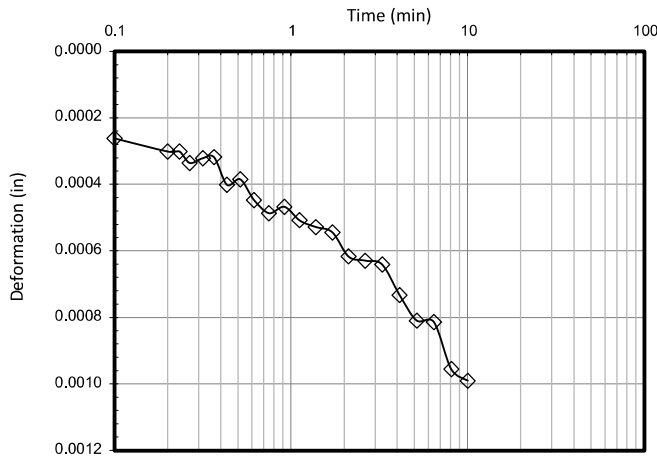
20-psf Load (Seating Load)



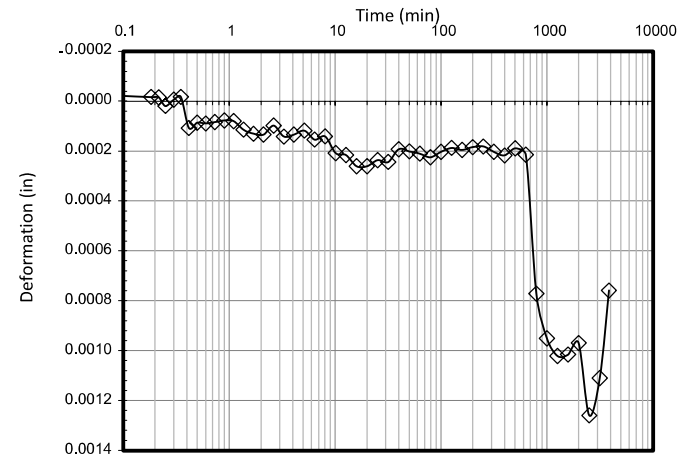
100-psf Load



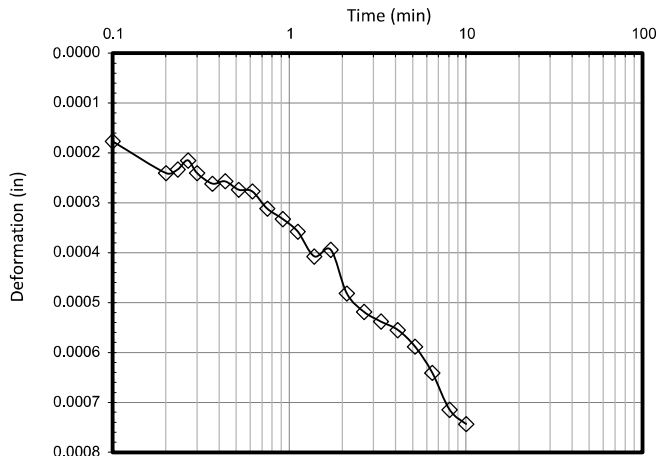
50-psf Load



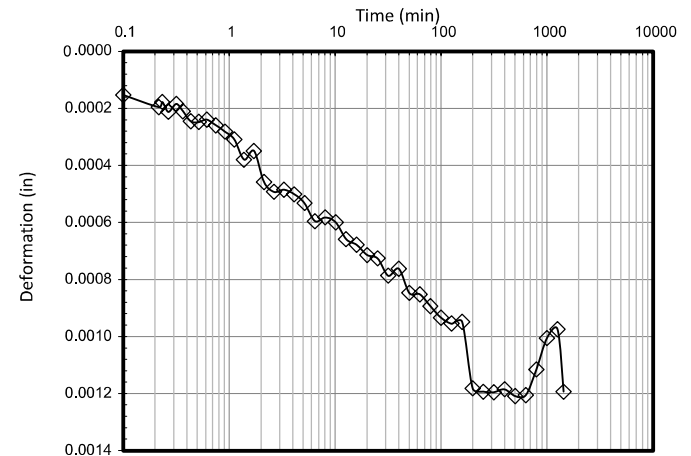
100-psf Load (inundated)



75-psf Load



200-psf Load (inundated)



One-Dimensional Swell or Collapse of Soils

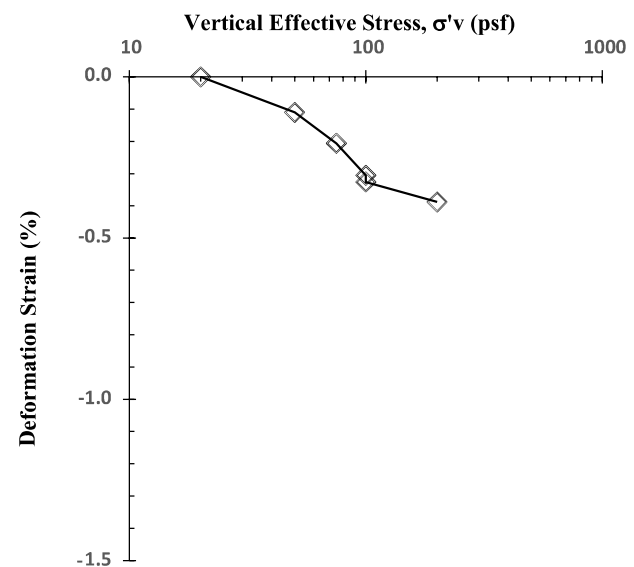
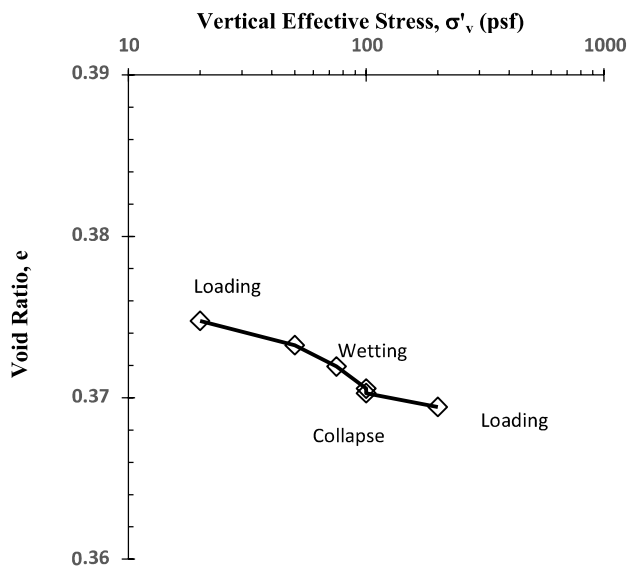
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-5 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/12/2021

Specimen Conditions	
Avg. Water Content of Trimmings (%)	13.7
Final Specimen Water Content (%)	13.1
Initial Specimen Height (in)	0.800
Final Specimen Height (in)	0.797
Initial Dry Unit Weight, γ_o (pcf)	123.9
Final Dry Unit Weight, γ_f (pcf)	124.4
Initial Void Ratio, e_o	0.375
Final Void Ratio, e_f	0.369
Initial Degree of Saturation (%)	99.5
Final Degree of Saturation (%)	97.0
Collapse Strain (%)	0.0

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.73
Specimen Diameter: 2.500 inches



Stage No.	Dry				Inundated	
	1	2	3	4	5	6
σ'_v (psf)	20	50	75	100	100	200
Height (inch)	0.800	0.799	0.799	0.798	0.798	0.797
Void Ratio, e	0.375	0.373	0.372	0.371	0.370	0.369
Axial Strain (%)	0.00	-0.11	-0.21	-0.31	-0.33	-0.39

Huamiao Cao, P.E. 12/17/21

Analysis & Quality Review/Date
Specimen prepared and tested by: A.P.G.

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One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-5 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/12/2021

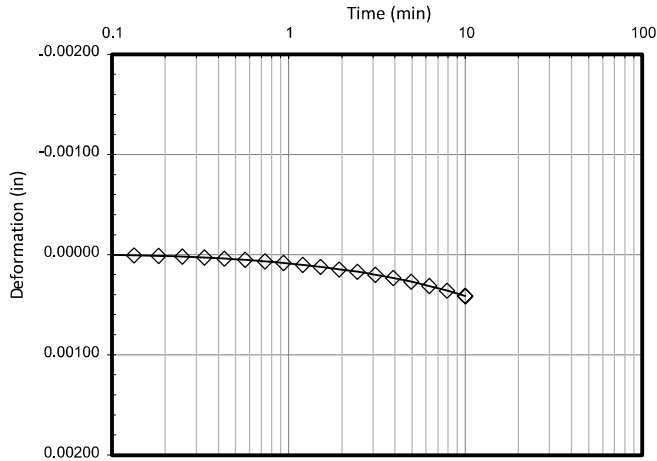


One-Dimensional Swell or Collapse of Soils

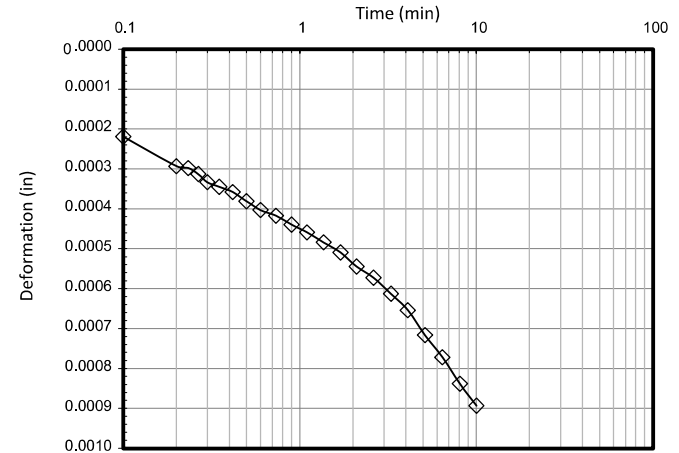
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-5 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/12/2021

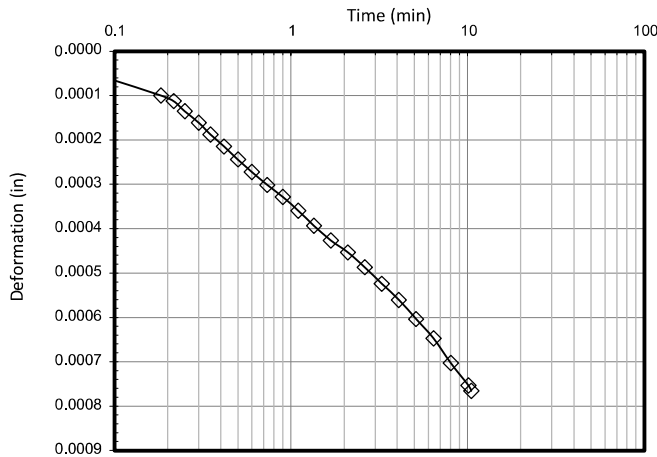
20-psf Load (Seating Load)



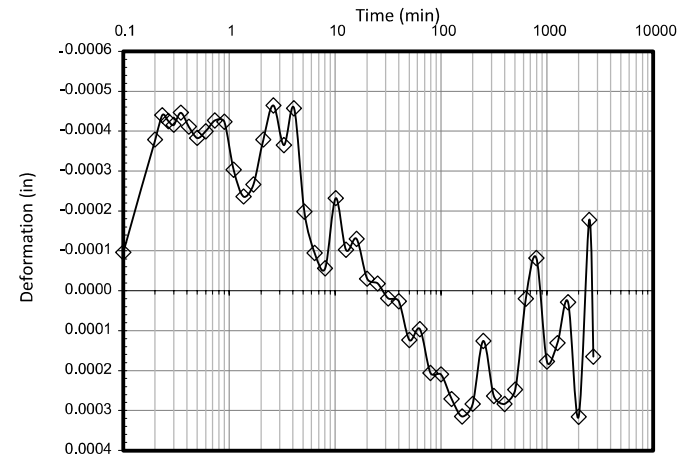
100-psf Load



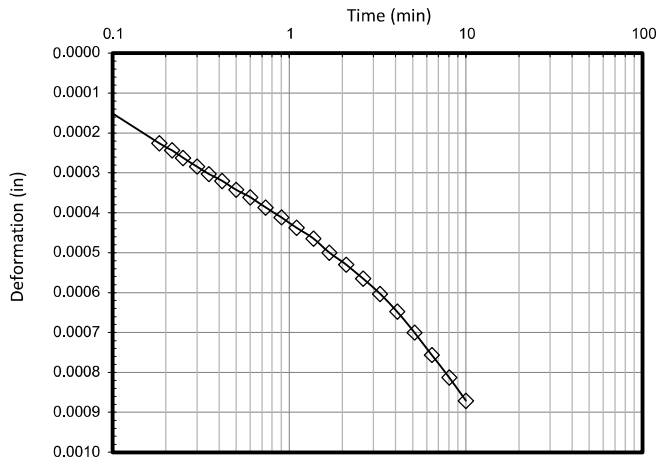
50-psf Load



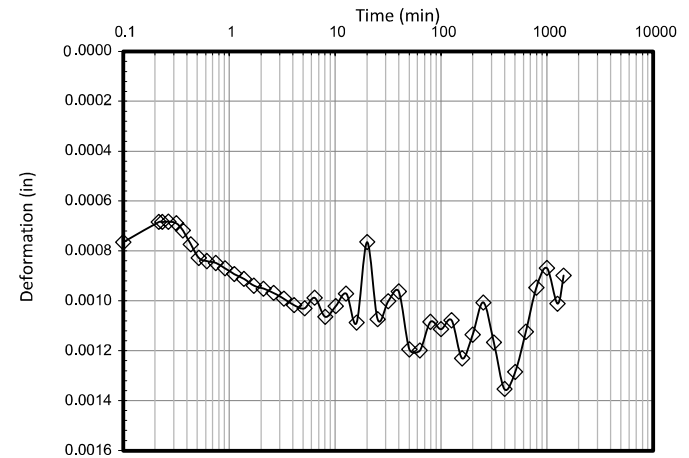
100-psf Load (inundated)



75-psf Load



200-psf Load (inundated)



One-Dimensional Swell or Collapse of Soils

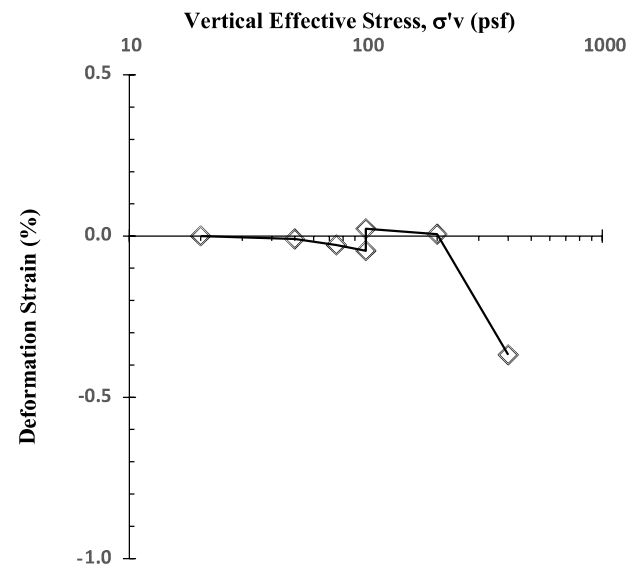
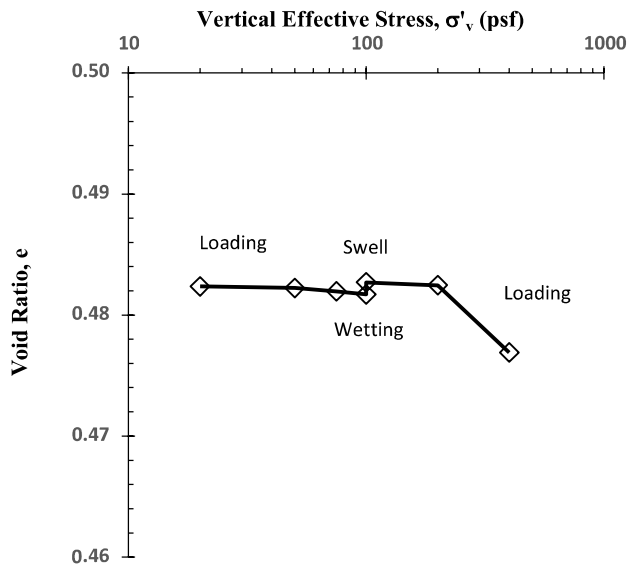
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-8 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/9/2021

Specimen Conditions	
Avg. Water Content of Trimmings (%)	16.1
Final Specimen Water Content (%)	17.3
Initial Specimen Height (in)	0.798
Final Specimen Height (in)	0.795
Initial Dry Unit Weight, γ_o (pcf)	114.9
Final Dry Unit Weight, γ_f (pcf)	115.3
Initial Void Ratio, e_o	0.482
Final Void Ratio, e_f	0.477
Initial Degree of Saturation (%)	90.9
Final Degree of Saturation (%)	99.1
Swell Strain (%)	0.1

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.73
Specimen Diameter: 2.400 inches



Stage No.	Dry				Inundated		
	1	2	3	4	5	6	7
σ'_v (psf)	20	50	75	100	100	200	400
Height (inch)	0.798	0.798	0.798	0.798	0.798	0.798	0.795
Void Ratio, e	0.482	0.482	0.482	0.482	0.483	0.482	0.477
Axial Strain (%)	0.00	-0.01	-0.03	-0.05	0.02	0.01	-0.37

Huamiao Cao, P.E. 12/17/21

Analysis & Quality Review/Date
Specimen prepared and tested by: A.P.G.

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One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-8 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/9/2021

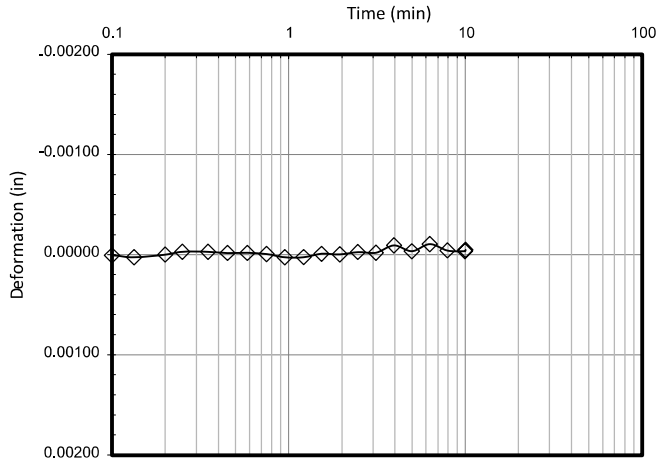


One-Dimensional Swell or Collapse of Soils

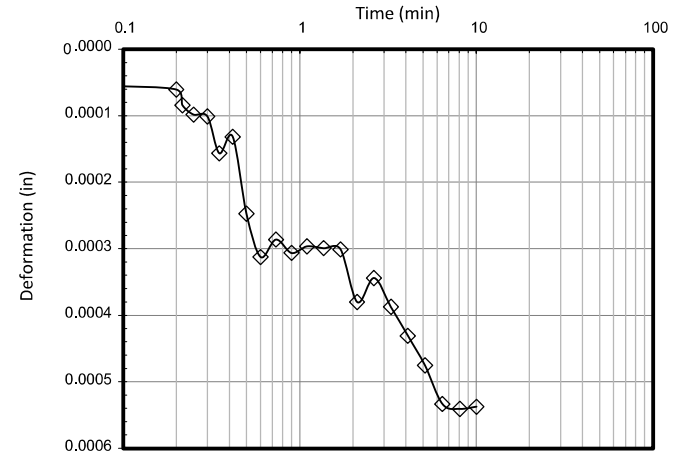
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-8 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/9/2021

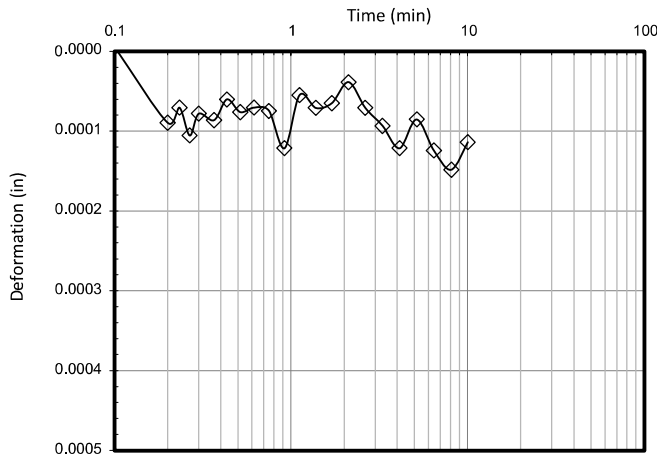
20-psf Load (Seating Load)



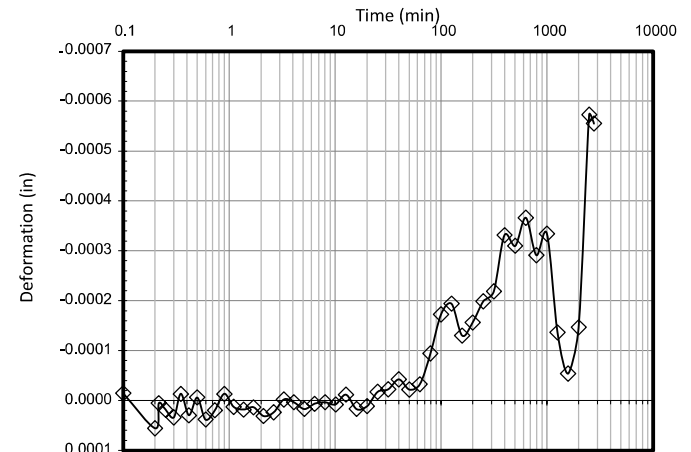
100-psf Load



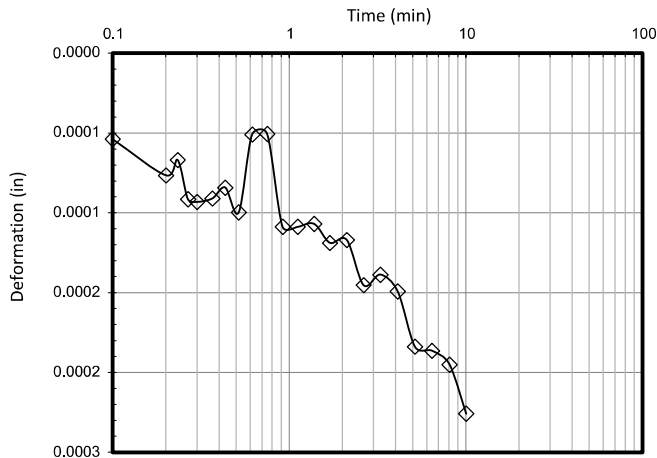
50-psf Load



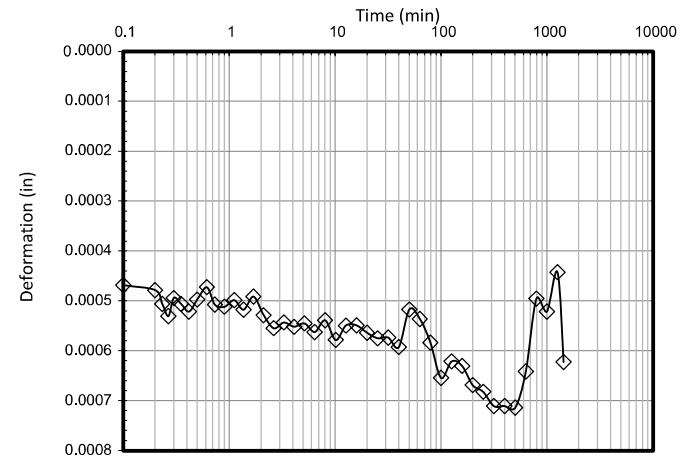
100-psf Load (inundated)



75-psf Load



200-psf Load (inundated)

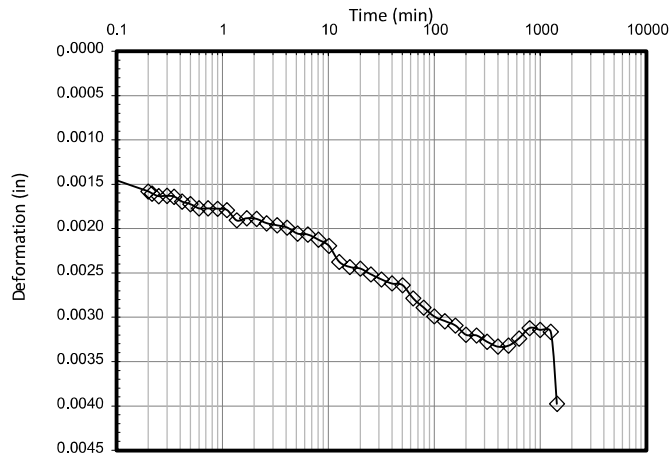


One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-8 at 2 ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/9/2021

400-psf Load (inundated)



One-Dimensional Swell or Collapse of Soils

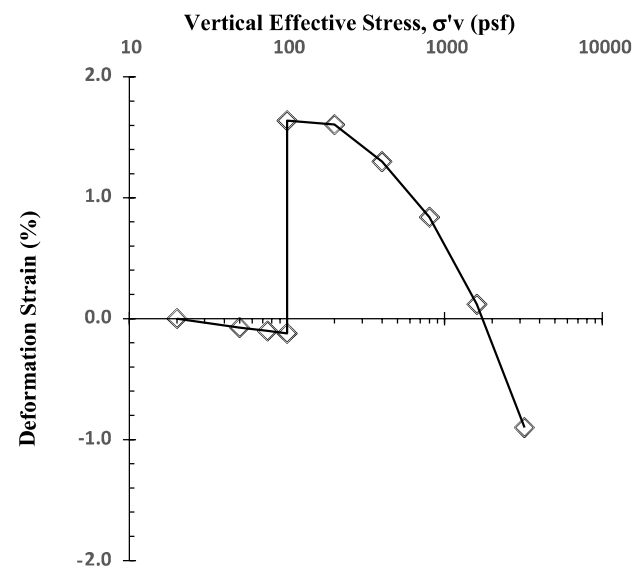
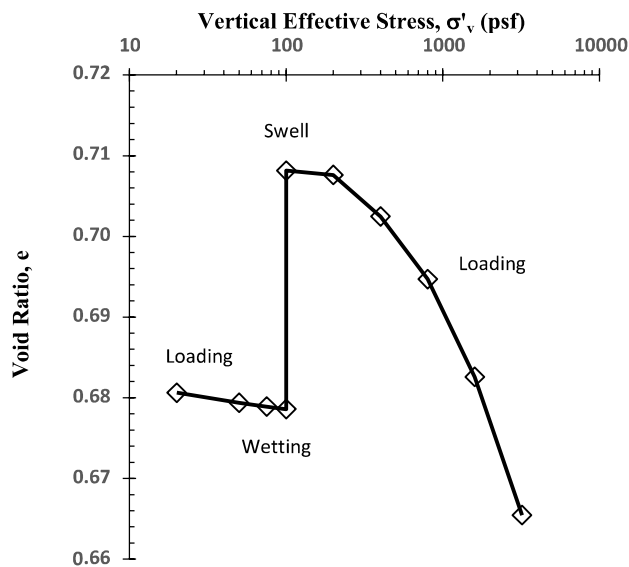
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-10 at 2ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

Specimen Conditions	
Avg. Water Content of Trimmings (%)	18.2
Final Specimen Water Content (%)	23.3
Initial Specimen Height (in)	0.803
Final Specimen Height (in)	0.795
Initial Dry Unit Weight, γ_o (pcf)	101.4
Final Dry Unit Weight, γ_f (pcf)	102.3
Initial Void Ratio, e_o	0.681
Final Void Ratio, e_f	0.665
Initial Degree of Saturation (%)	73.2
Final Degree of Saturation (%)	95.6
Swell Strain (%)	1.8

Specimen was inundated with tap water during testing. Loading increment duration was minimum 24 hours. The calculation included the machine deflections that measured in each loading steps.

Gs assumed to be 2.73
Specimen Diameter: 2.482 inches



	Dry				Inundated					
Stage No.	1	2	3	4	5	6	7	8	9	10
σ'_v (psf)	20	50	75	100	100	200	400	800	1600	3200
Height (inch)	0.803	0.802	0.802	0.802	0.816	0.816	0.813	0.809	0.804	0.795
Void Ratio, e	0.681	0.679	0.679	0.679	0.708	0.708	0.702	0.695	0.683	0.665
Axial Strain (%)	0.00	-0.07	-0.10	-0.12	1.64	1.60	1.30	0.84	0.12	-0.90

Huamiao Cao, P.E. 12/22/21

Analysis & Quality Review/Date
Specimen prepared and tested by: A.P.G.

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One-Dimensional Swell or Collapse of Soils

Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-10 at 2ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

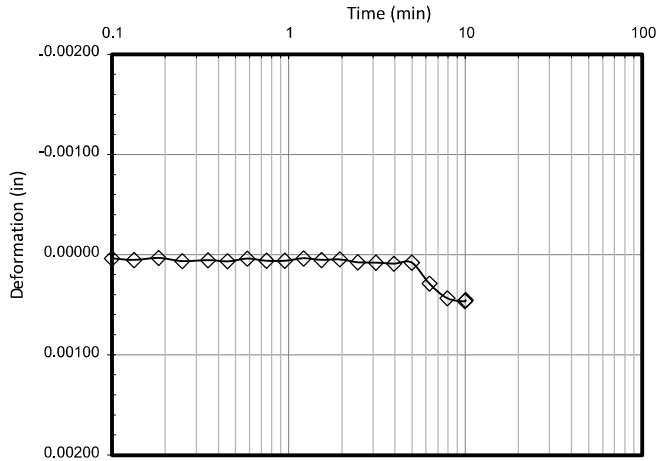


One-Dimensional Swell or Collapse of Soils

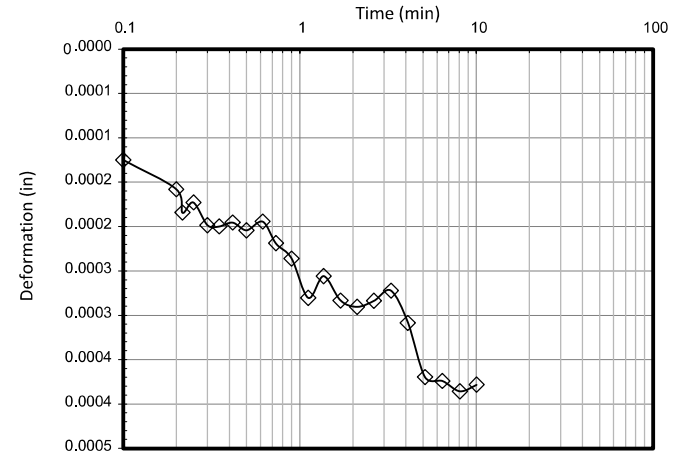
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-10 at 2ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

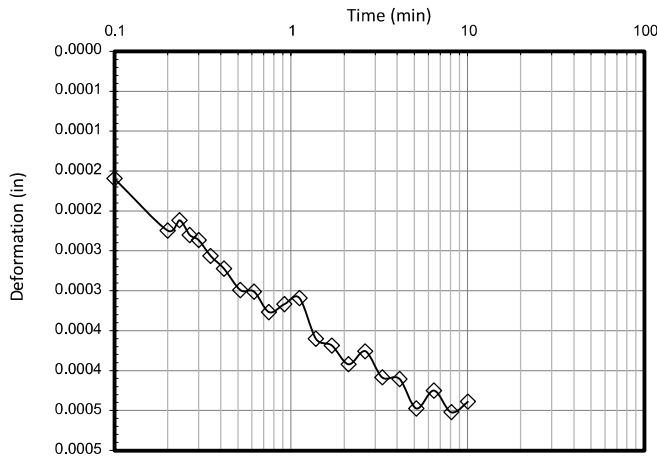
20-psf Load (Seating Load)



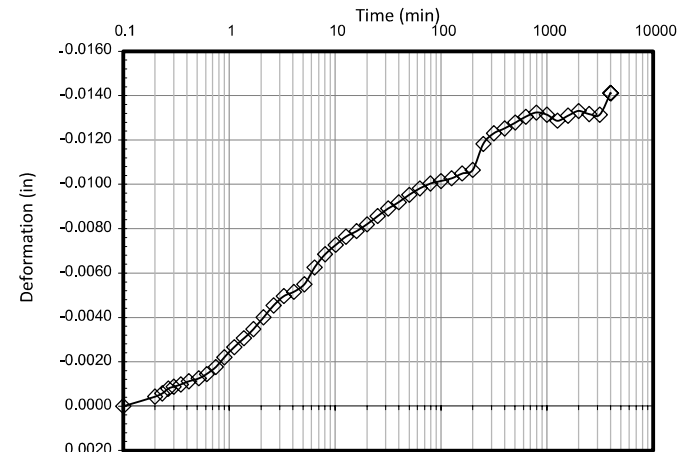
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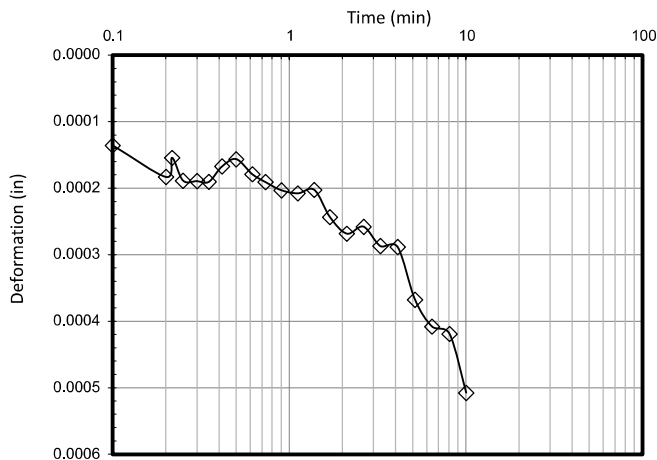
50-psf Load



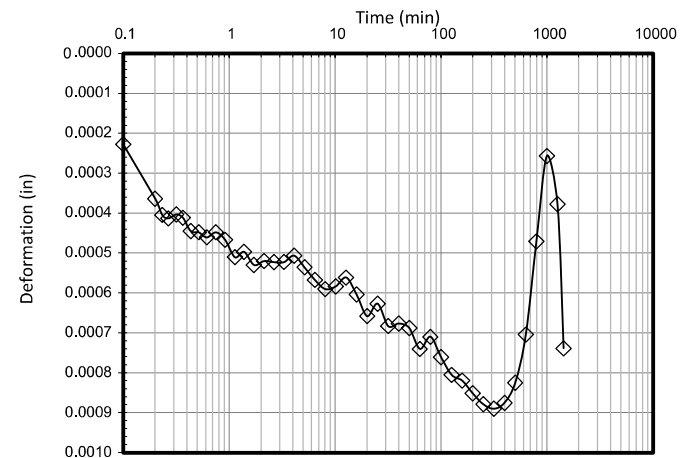
100-psf Load (inundated)



75-psf Load



200-psf Load (inundated)

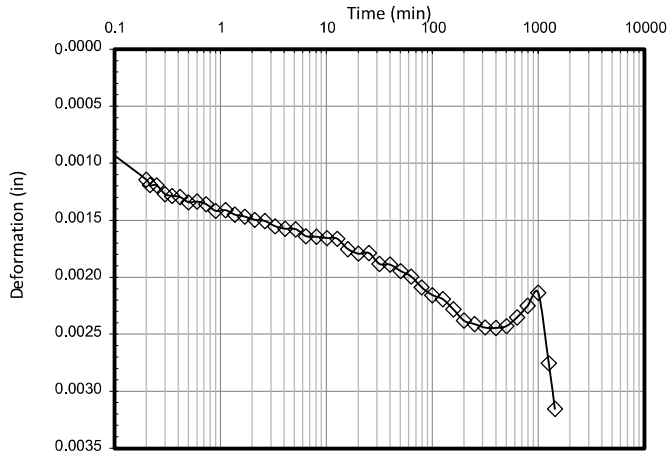


One-Dimensional Swell or Collapse of Soils

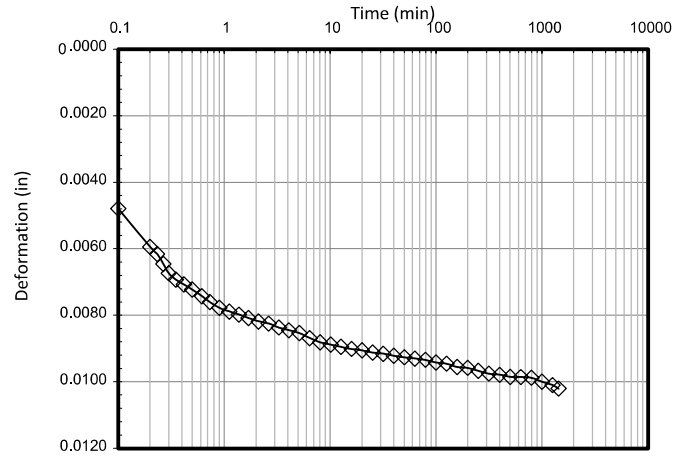
Client: RRC Power & Energy, LLC
Project Name: Scioto Farms Solar Project
Sample ID: TP-10 at 2ft

Beyond Project No.: GE2110047
Test Method: ASTM D4546, Method C
Test Date: 12/8/2021

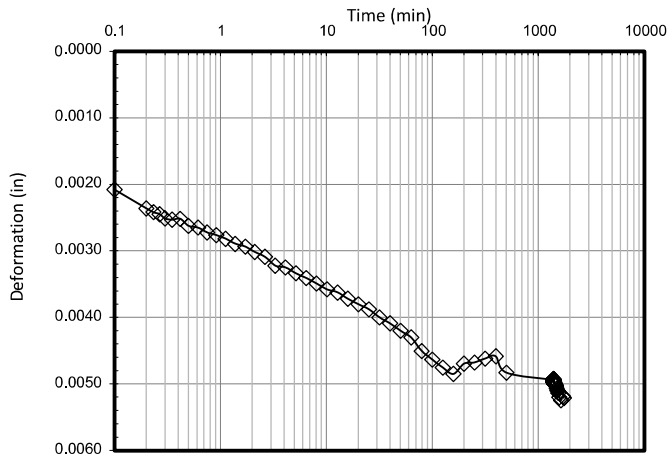
400-psf Load (inundated)



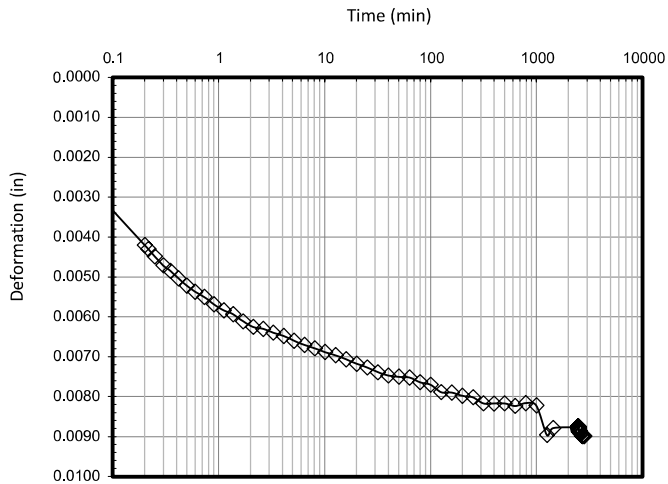
3200-psf Load (inundated)



800-psf Load (inundated)



1600-psf Load (inundated)



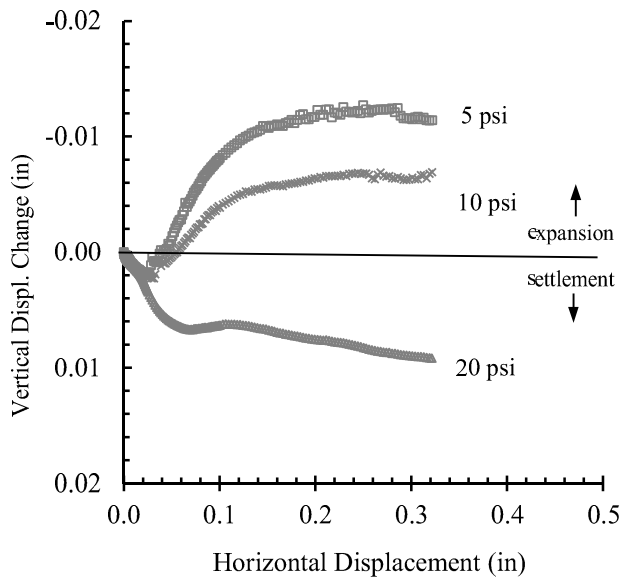
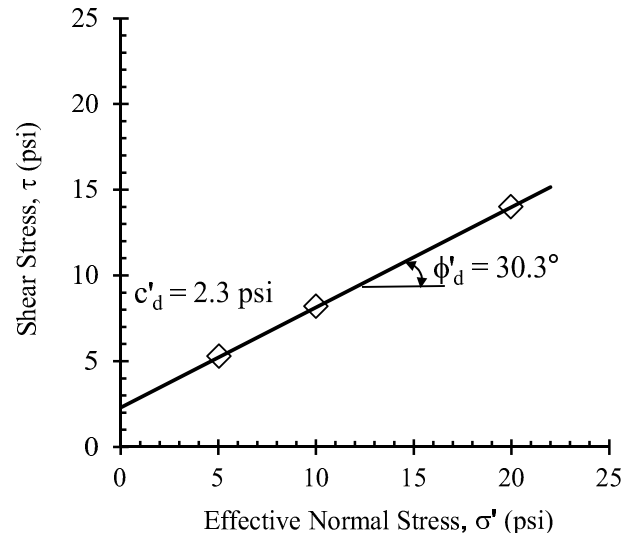
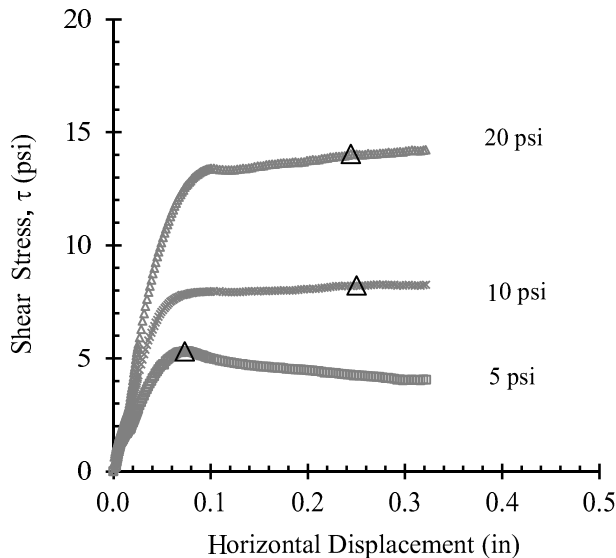


Beyond Engineering & Testing, LLC
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Round Rock, TX 78664
(512) 358-6048

Direct Shear of Soil Under Consolidated-Drained Conditions

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: B-04 at 4.0 ft

Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 01/02/22



Sample Number		1	2	3
Initial Condition	Diameter, in	2.50	2.50	2.50
	Height, in (before consol)	0.98	0.98	0.98
	Water Content, %		13.1	
	Saturation, %	98.6	91.3	81.0
	Dry Unit Weight, pcf	123.9	121.4	117.2
	Void Ratio	0.36	0.39	0.44
Post Consol	Height, in (prior to shear)	0.98	0.98	0.95
	Final Water Content, %	13.4	14.5	16.3
	Dry Unit Weight, pcf	124.7	122.3	120.1
	Void Ratio	0.35	0.38	0.40
Peak Normal Stress, σ' (psi)		5.0	10.0	20.0
Peak Shear Stress, τ (psi)		5.3	8.2	14.0
Displacement at Failure (in)		0.07	0.25	0.24
Displacement rate (in/min)		0.0001	0.0001	0.0001
Sample Type	Undisturbed	ϕ'_d , degrees		30.3
G_s (assumed)	2.70	c'_d , psi		2.3

Note: The Shelby tube sample was extruded and provided by the client.

Huamiao Cao, P.E. 1/12/22

Analysis & Quality Review/Date
Specimens prepared by: A.P.G.

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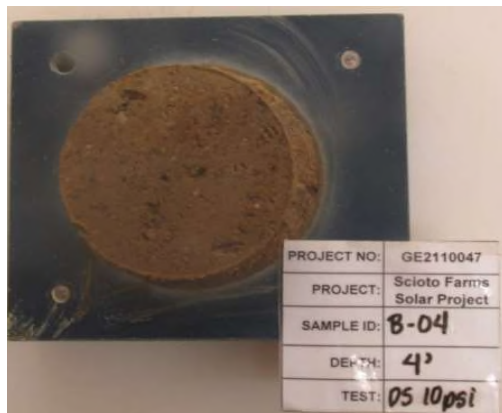
Direct Shear of Soil Appendix

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: B-04 at 4.0 ft

Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 01/02/22



(a) Normal Load = 5 psi



(b) Normal Load = 10 psi



(c) Normal Load = 20 psi



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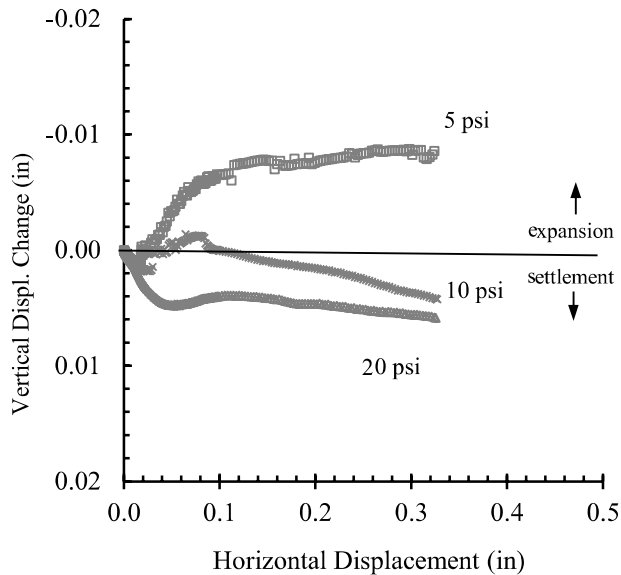
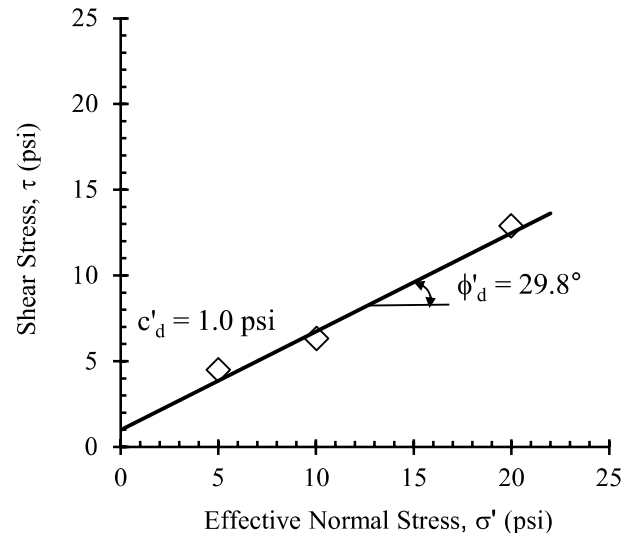
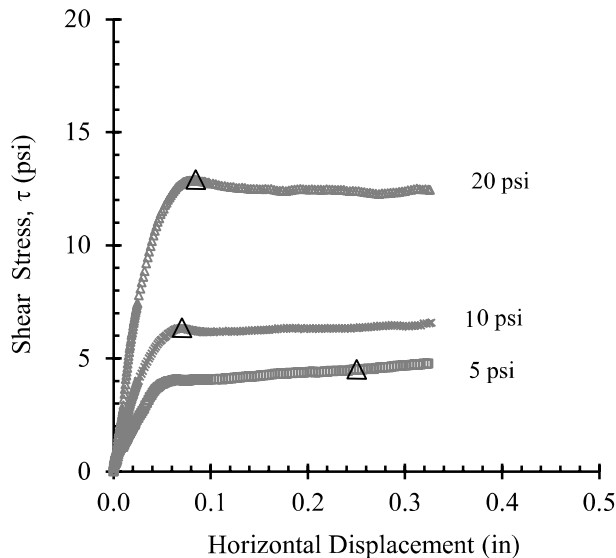


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Direct Shear of Soil Under Consolidated-Drained Conditions

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: SUB-1 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 12/19/21



Sample Number		1	2	3
Initial Condition	Diameter, in	2.50	2.50	2.50
	Height, in (before consol)	0.99	0.99	0.99
	Water Content, %	12.5		
	Saturation, %	95.8	93.1	94.5
	Dry Unit Weight, pcf	124.6	123.7	124.2
	Void Ratio	0.35	0.36	0.36
Post Consol	Height, in (prior to shear)	0.98	0.98	0.96
	Final Water Content, %	13.9	14.0	13.2
	Dry Unit Weight, pcf	125.8	124.8	127.8
	Void Ratio	0.34	0.35	0.32
Peak Normal Stress, σ' (psi)		5.0	10.0	20.0
Peak Shear Stress, τ (psi)		4.5	6.4	12.9
Displacement at Failure (in)		0.25	0.07	0.08
Displacement rate (in/min)		0.00008	0.00008	0.00008
Sample Type	Undisturbed	ϕ'_d , degrees		29.8
G_s (assumed)	2.70	c'_d , psi		1.0

Note: The Shelby tube sample was extruded and provided by the client.

Huamiao Cao, P.E. 12/30/21

Analysis & Quality Review/Date
Specimens prepared by: A.P.G.

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Direct Shear of Soil Appendix

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: SUB-1 at 4 ft

Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 12/19/21



(a) Normal Load = 5 psi



(b) Normal Load = 10 psi



(c) Normal Load = 20 psi



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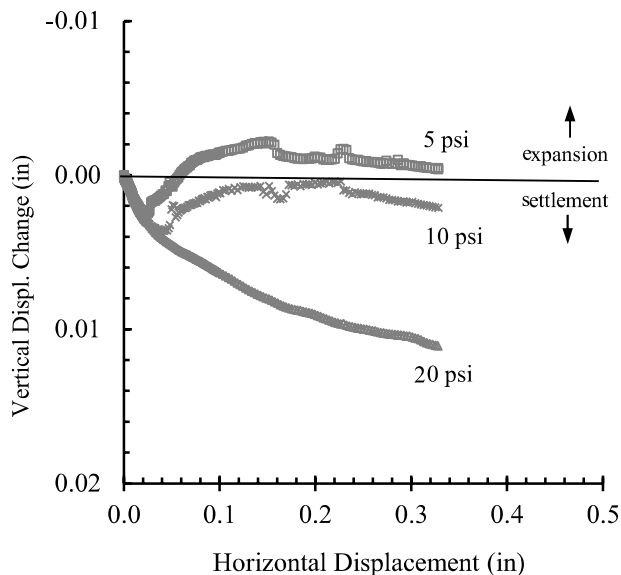
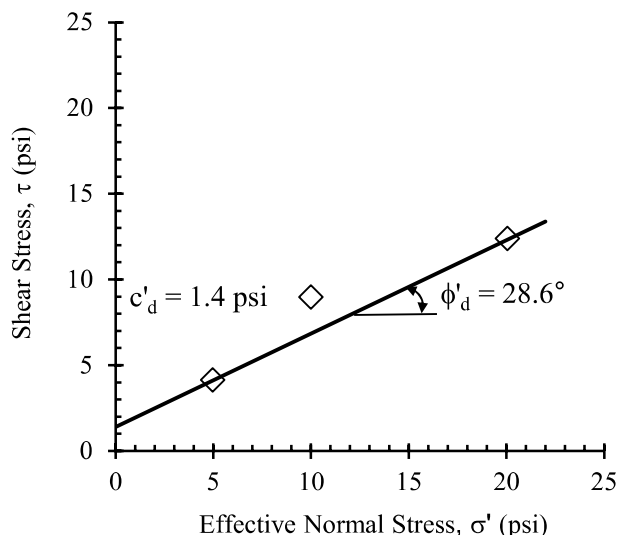
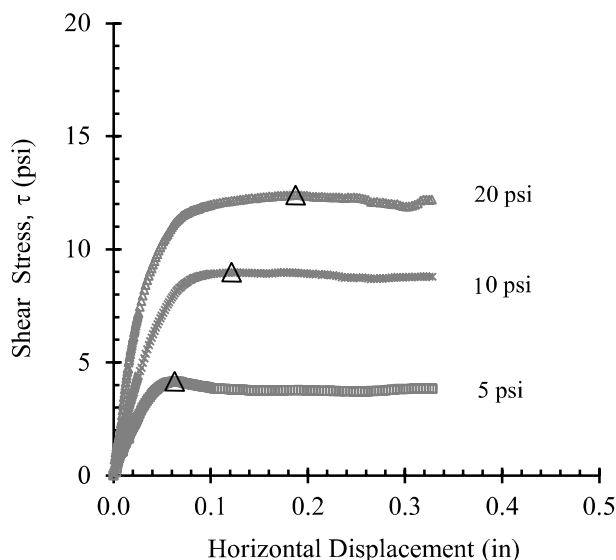


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Direct Shear of Soil Under Consolidated-Drained Conditions

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: B-14 at 7.0 ft

Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 01/06/22



Sample Number		1	2	3
Initial Condition	Diameter, in	2.50	2.50	2.50
	Height, in (before consol)	0.99	0.99	0.99
	Water Content, %	21.8		
	Saturation, %	103.8	113.2	101.7
	Dry Unit Weight, pcf	107.7	111.0	106.9
	Void Ratio	0.57	0.52	0.58
Post Consol	Height, in (prior to shear)	0.98	0.98	0.96
	Final Water Content, %	19.4	15.7	16.6
	Dry Unit Weight, pcf	108.6	112.3	109.7
	Void Ratio	0.55	0.50	0.54
Peak Normal Stress, σ' (psi)		5.0	10.0	20.1
Peak Shear Stress, τ (psi)		4.2	9.0	12.4
Displacement at Failure (in)		0.06	0.12	0.19
Displacement rate (in/min)		0.0001	0.0001	0.0001
Sample Type	Undisturbed	ϕ'_d , degrees		28.6
G_s (assumed)	2.70	c'_d , psi		1.4

Note: The Shelby tube sample was extruded and provided by the client.

Huamiao Cao, P.E. 1/12/22

Analysis & Quality Review/Date
Specimens prepared by: A.P.G.

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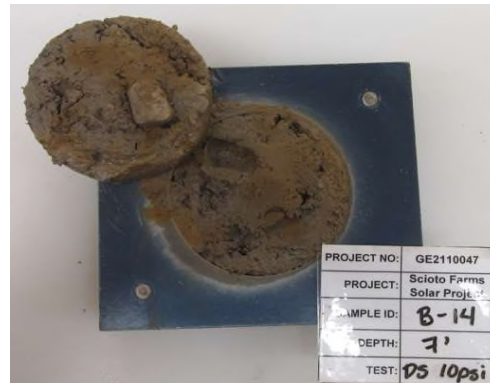
Direct Shear of Soil Appendix

Client: RRC Power & Energy, LLC
Project: Scioto Farms Solar Project
Specimen: B-14 at 7.0 ft

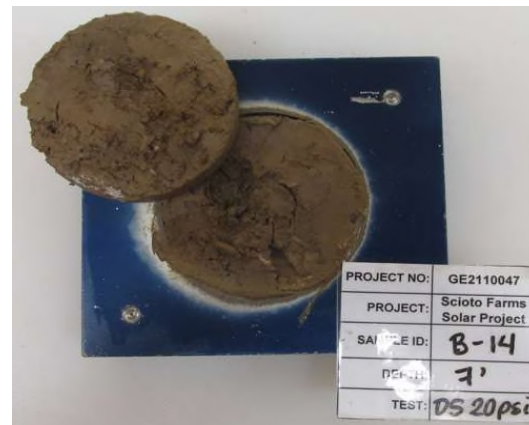
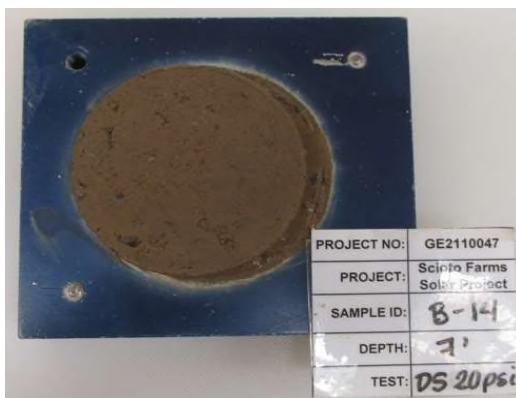
Beyond Project No.: GE2110047
Test Method: ASTM D3080
Test Date: 01/06/22



(a) Normal Load = 5 psi



(b) Normal Load = 10 psi



(c) Normal Load = 20 psi

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Summary of Expansion Index of Soils (ASTM D4829)
Scioto Farms Solar Project (PN: GE2110047)

Sample ID	Depth	Compacted Specimen				Initial Height of Specimen H_i	Initial Deformation Reading, D_i	Final Deformation Reading, D_f	Expansion Index, EI	Potential Expansion
		Percent Passing #4 Sieve	Dry Density	Water Content	Degree of Saturation, S					
		%	pcf	%	%					
TP-2	1-3	92.4	110.9	9.2	48.2	1.000	0.039	0.034	5	Very Low
TP-5	1-3	89.9	115.3	8.8	52.0	1.000	0.104	0.086	18	Very Low
TP-8	1-3	90.0	112.9	9.4	52.0	1.000	0.017	0.015	2	Very Low
TP-10	1-3	99.2	111.1	9.1	48.0	1.000	0.058	0.022	36	Low
TP-11	1-3	95.0	112.7	9.4	51.4	1.000	0.017	0.016	2	Very Low

Note: To determine the water content of the compacted specimen, Test Method ASTM D4643 was used instead of Test Method ASTM D2216.

Huamiao Cao, P.E. 01/17/22

Analysis & Quality Review/Date



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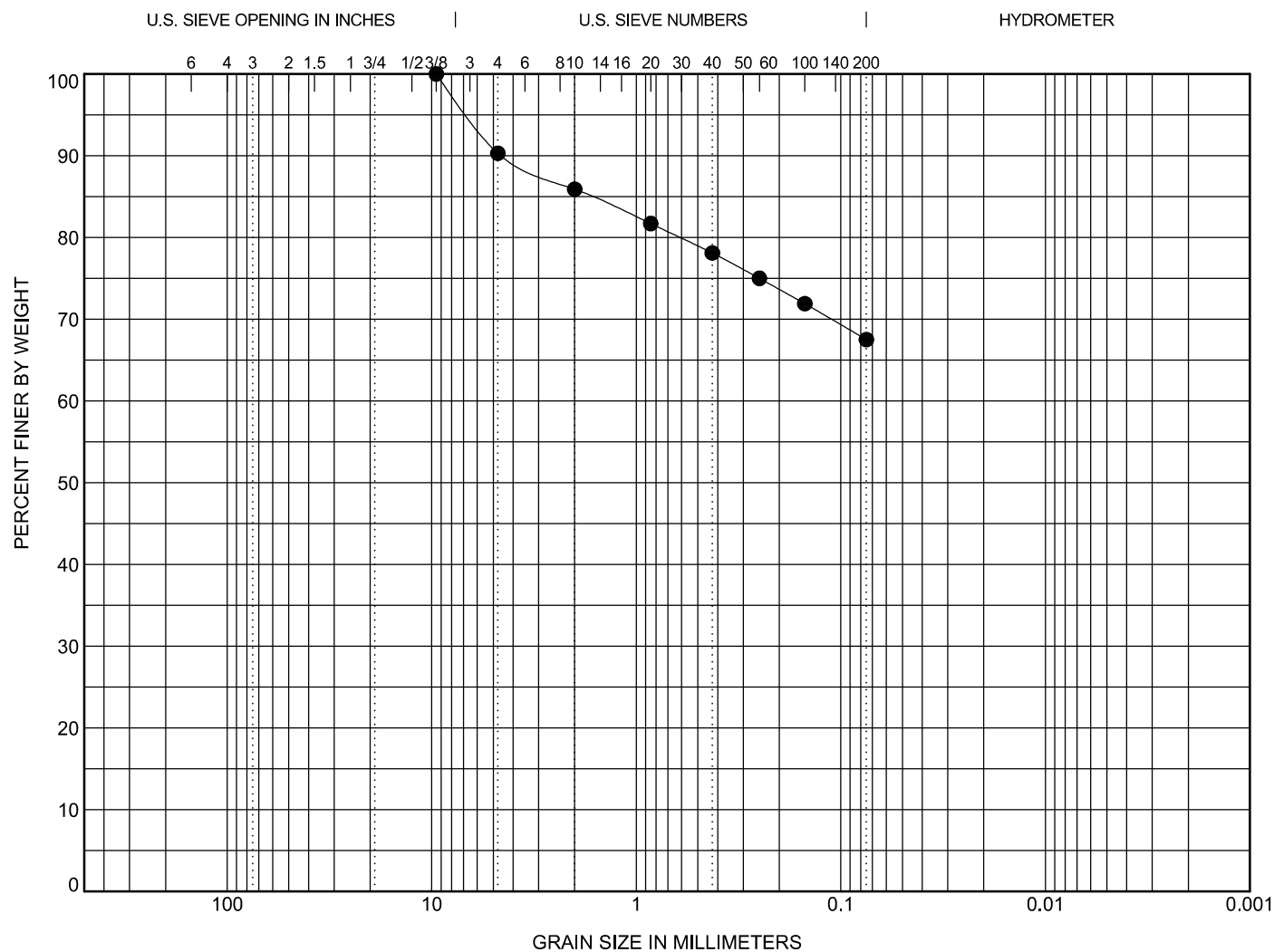
GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID: **B-14 at 7.0 ft.**

Date: **01/03/2022**

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5				9.7	22.8	67.5	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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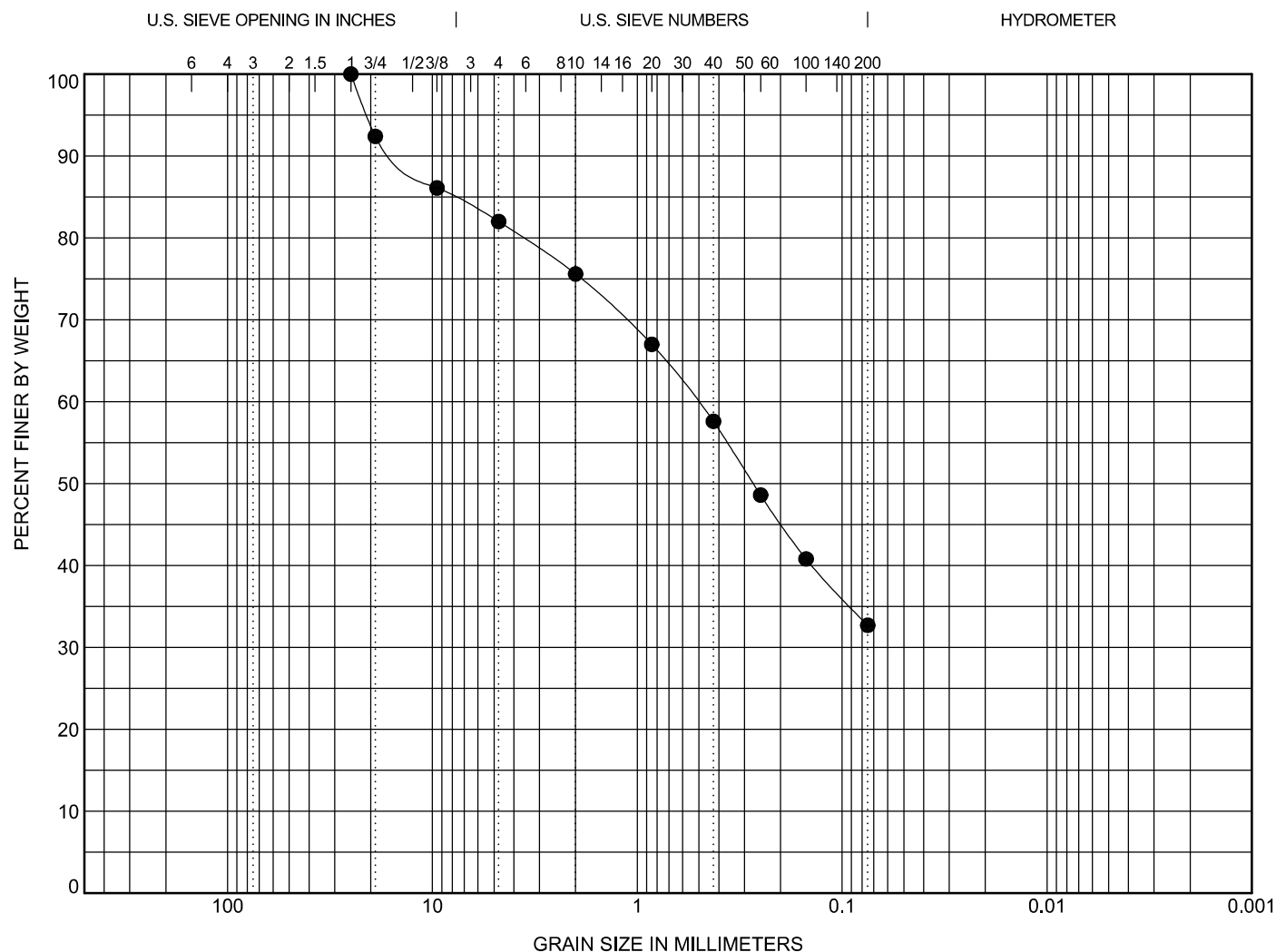
GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID: **B-19 at 12.0 ft.**

Date: _____

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
25	0.507			18.0	49.3	32.7	

Olga Vasquez,
Analysis & Quality Review/Date

Specimens prepared by: T.W.

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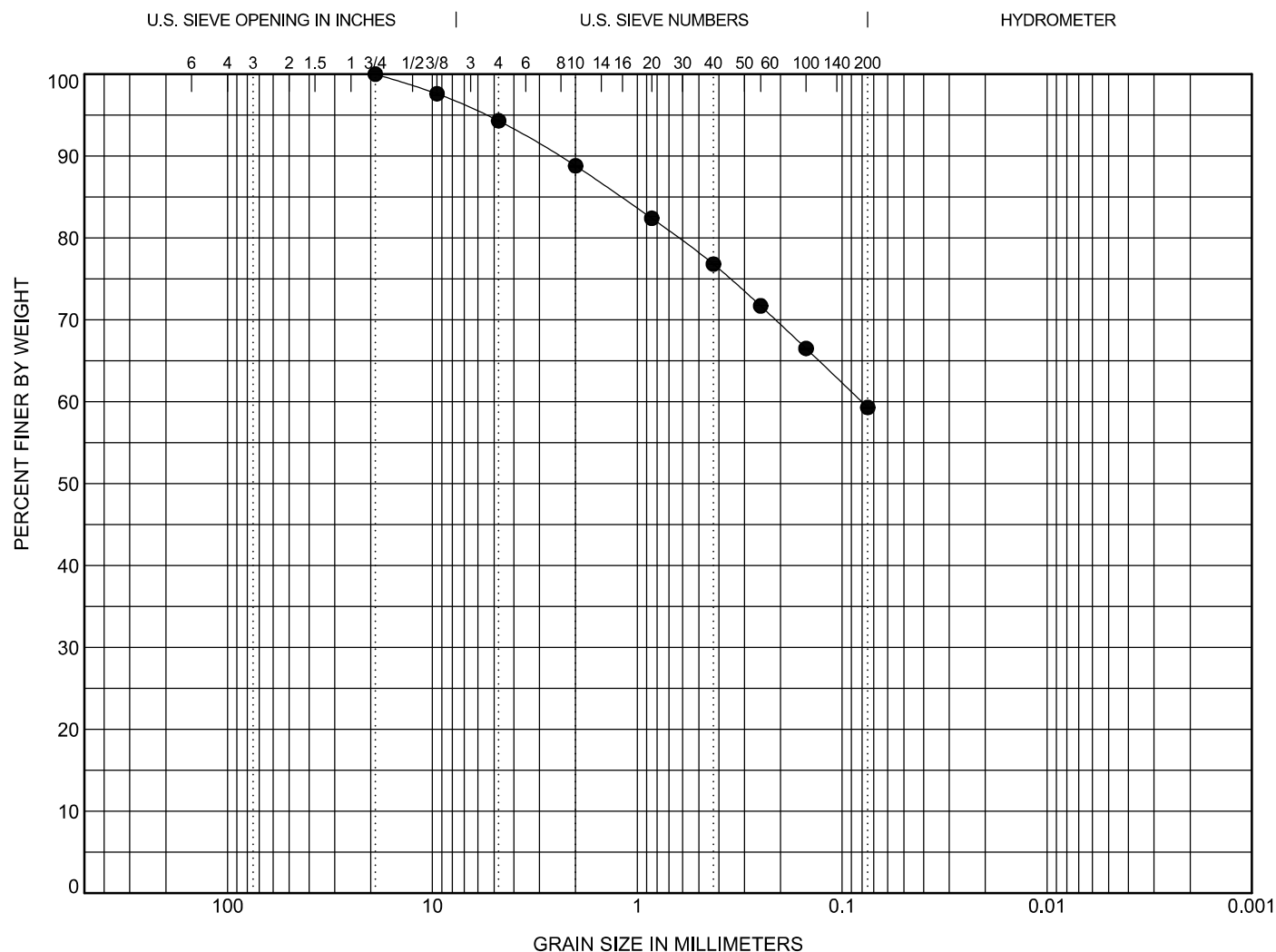
GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID: **SUB-1 at 4.0 ft.**

Date: **12/20/2021**

Test Method: **ASTM D6913**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY SILTY CLAY(CL-ML)	20	14	6		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
19	0.08			5.7	35.0	59.3	

Olga Vasquez, 12/20/2021

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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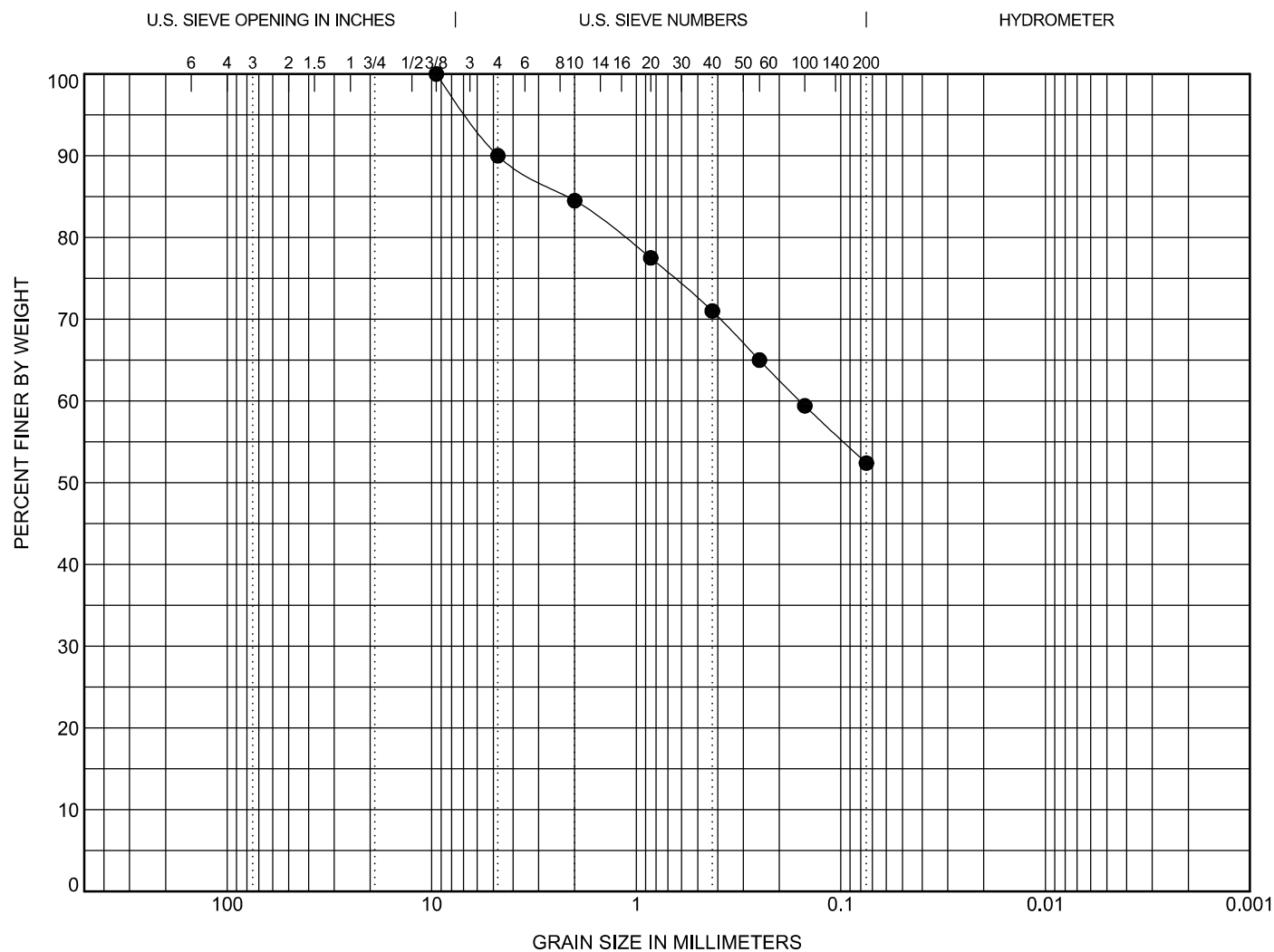
GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID: TP-02 at 2.0 ft.

Date: 01/03/2022

Test Method: ASTM D6913



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	26	14	12		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5	0.158			10.0	37.6	52.4	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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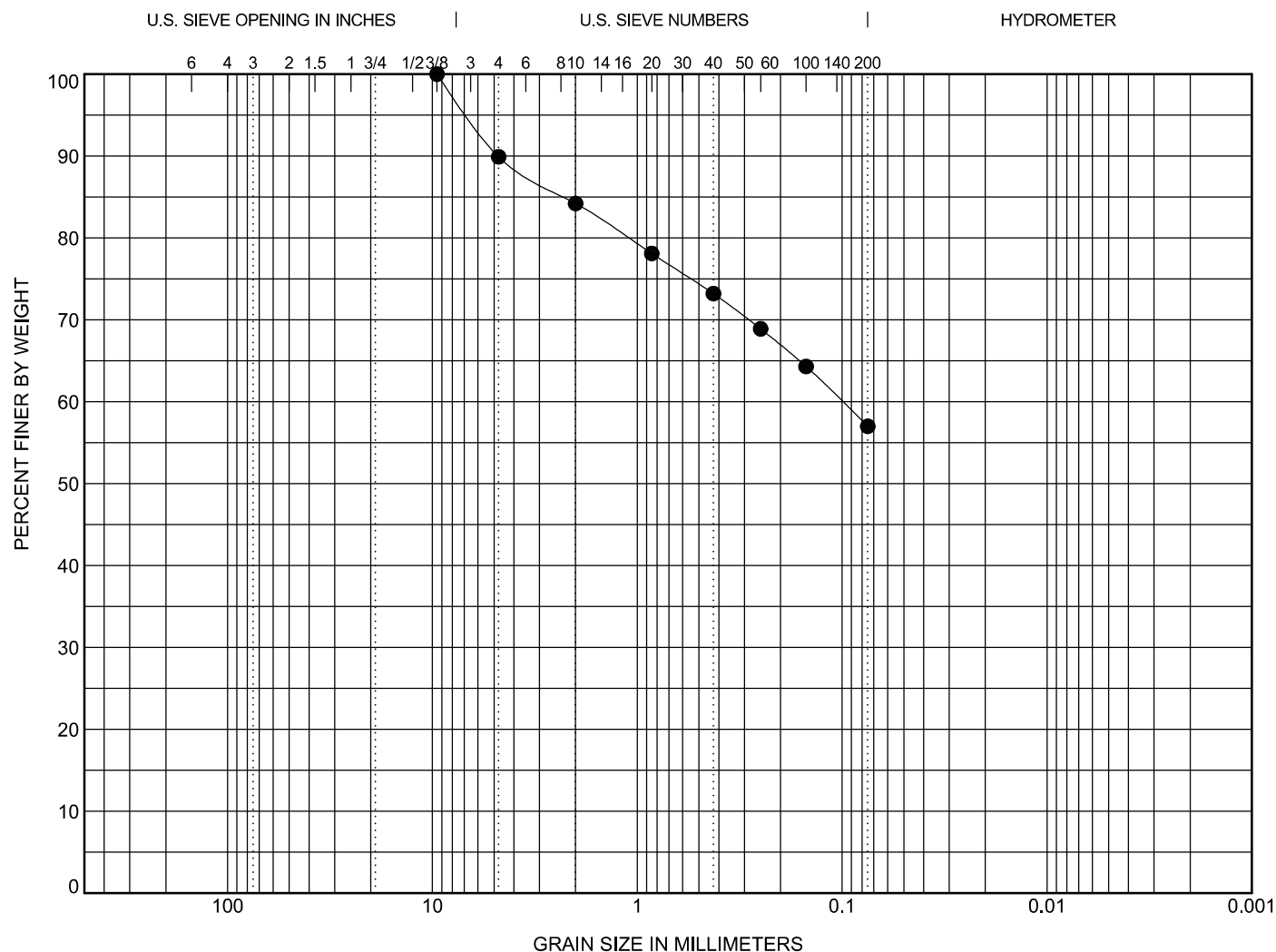
GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Sample ID: TP-05 at 2.0 ft.

Date: 01/03/2022

Test Method: ASTM D6913



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	24	15	9		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5	0.1			10.1	32.9	57.0	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC

PROJECT: Scioto Farms Solar

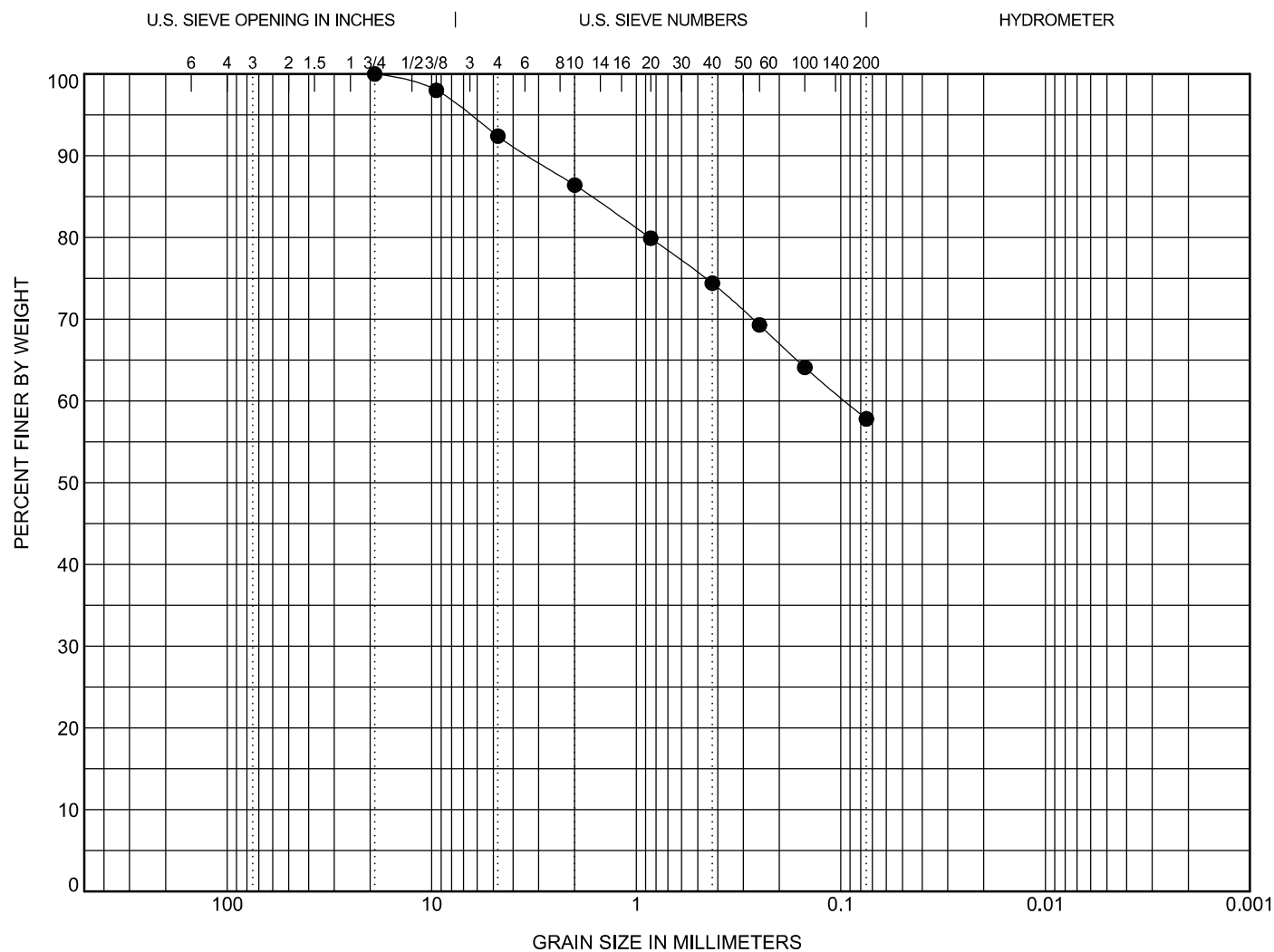
LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

Sample ID: TP-08 at 2.0 ft.

Date: 01/03/2022

Test Method: ASTM D6913



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
SANDY LEAN CLAY(CL)	26	15	11		

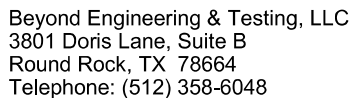
D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
19	0.096			7.6	34.6	57.8	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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CLIENT: RRC Power & Energy, LLC
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Date: 01/03/2022

The graph displays a grain size distribution curve. The y-axis represents the 'PERCENT FINER BY WEIGHT' from 0 to 100. The x-axis represents 'GRAIN SIZE IN MILLIMETERS' on a logarithmic scale from 100 to 0.001. The curve starts at 100% finer for 75 mm and ends at 80% finer for 0.075 mm.

Grain Size (mm)	Percent Finer (%)
75	100
4.75	100
2.5	100
1.18	98
0.85	95
0.6	92
0.425	89
0.3	86
0.25	80

COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
LEAN CLAY with SAND(CL)	32	16	16		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5				0.8	19.3	79.9	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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GRAIN SIZE DISTRIBUTION

CLIENT: RRC Power & Energy, LLC

PROJECT: Scioto Farms Solar

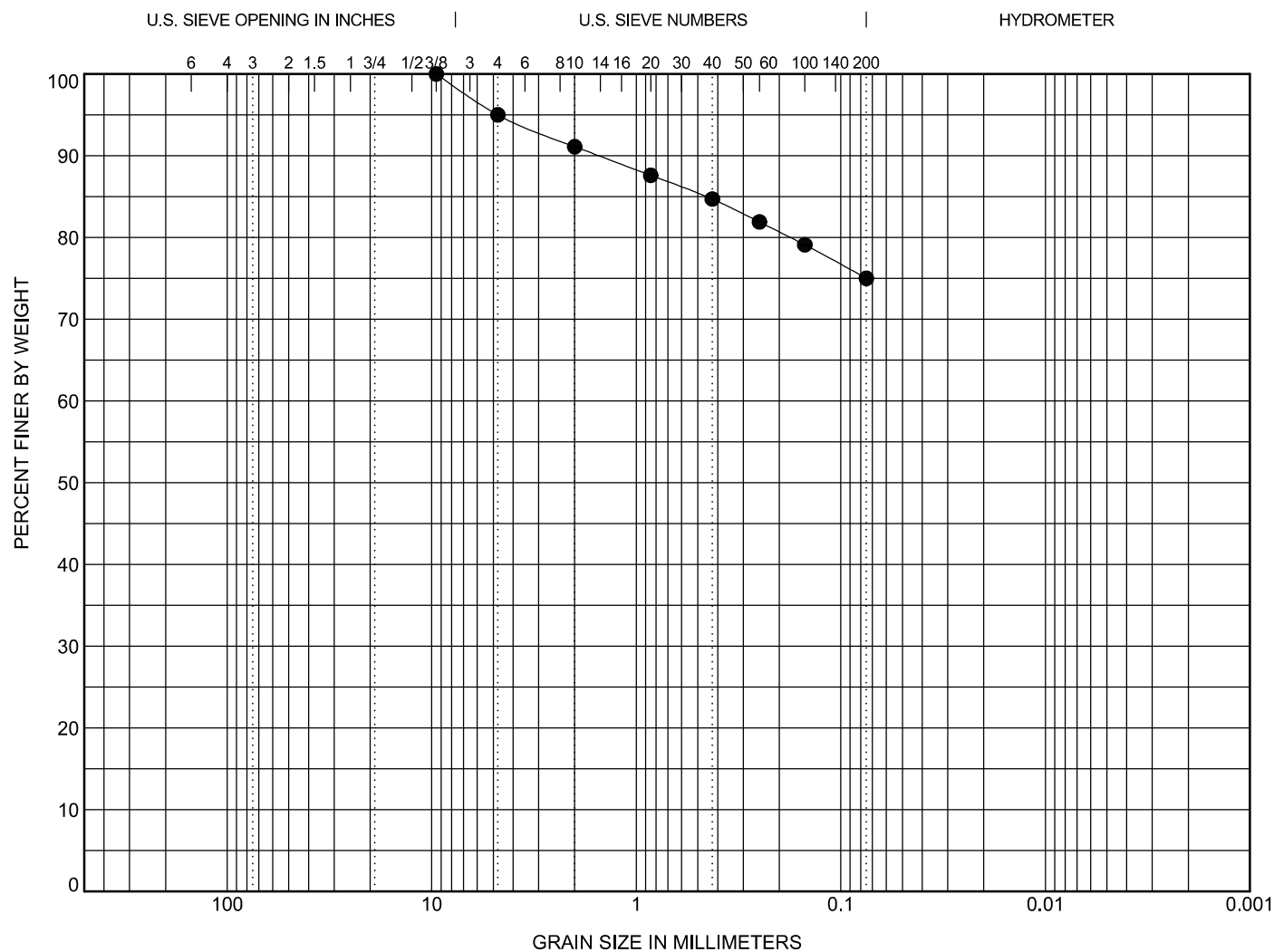
LOCATION: Pickaway County, Ohio

NUMBER: GE2110047

Sample ID: TP-11 at 2.0 ft.

Date: 01/03/2022

Test Method: ASTM D6913



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Classification	LL	PL	PI	Cc	Cu
LEAN CLAY with SAND(CL)	24	14	10		

D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
9.5				5.0	20.0	75.0	

Olga Vasquez, 01/03/2022

Analysis & Quality Review/Date

Specimens prepared by: T.W.

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Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
Round Rock, TX 78664
(512) 358-6048

CBR (California Bearing Ratio) Test

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar

Sample No: TP-2 at 1-3 ft

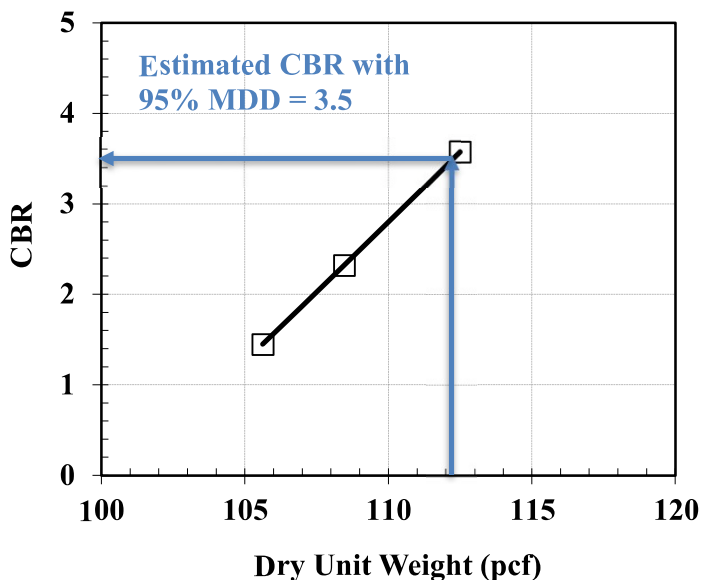
Beyond Project No.: GE2110047

Test Method: ASTM D1883

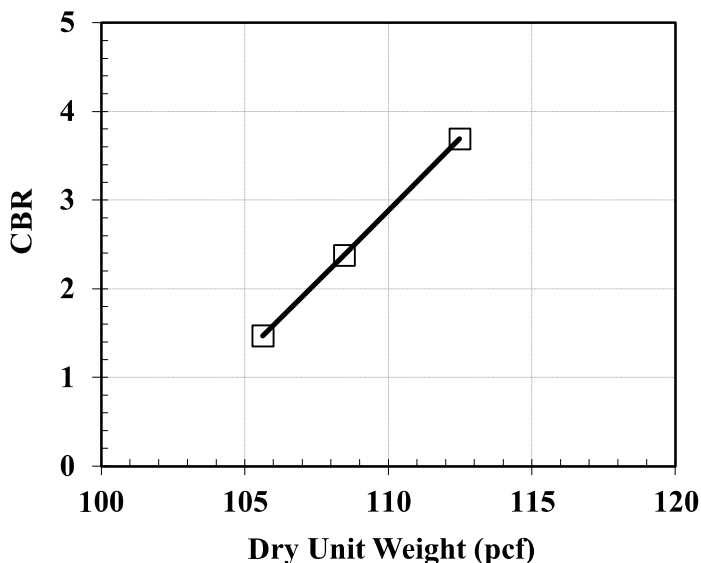
Test Date: 1/14/2022

Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	25	40	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	13.8	13.8	14.1
Dry Unit Weight (pcf)	105.6	108.5	112.5
Percent Compaction (%)	89.5	91.9	95.3
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	19.4	18.6	18.9
Swell (% of initial height)	0.8	0.6	0.5
Bearing Ratio of Sample at 0.100 in penetration	1.4	2.3	3.6
Bearing Ratio of Sample at 0.200 in penetration	1.5	2.4	3.7

Note: Soil specimens were molded to a range of densities using 25, 40 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

HuaMiao Cao, P.E., 1/17/22

Analysis & Quality Review/Date
Specimens prepared and tested by: T.Z.

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CBR (California Bearing Ratio) Test

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar

Sample No: TP-5 at 1-3 ft

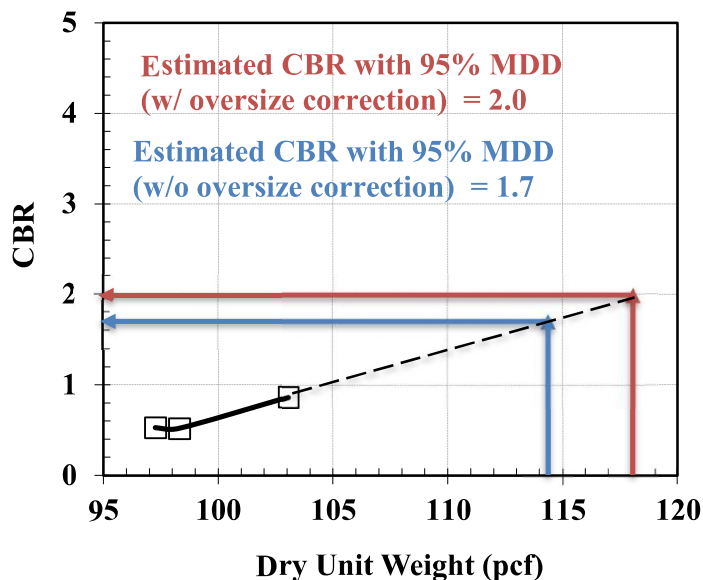
Beyond Project No.: GE2110047

Test Method: ASTM D1883

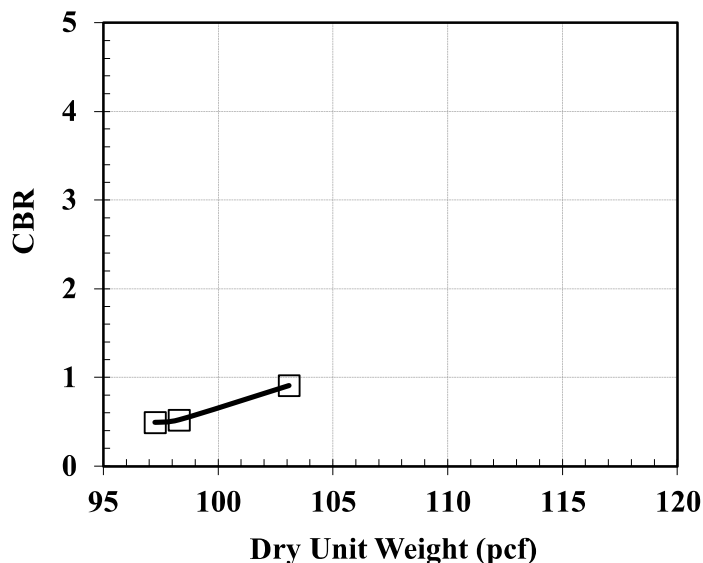
Test Date: 1/14/2022

Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	25	40	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	12.6	11.9	12.3
Dry Unit Weight (pcf)	97.3	98.3	103.1
Percent Compaction (%)	78.2	79.1	82.9
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	25.2	25.6	22.2
Swell (% of initial height)	1.8	1.5	2.1
Bearing Ratio of Sample at 0.100 in penetration	0.5	0.5	0.9
Bearing Ratio of Sample at 0.200 in penetration	0.5	0.5	0.9

Note: Soil specimens were molded to a range of densities using 25, 40 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

HuaMiao Cao, P.E., 1/18/22

Analysis & Quality Review/Date
Specimens prepared and tested by: T.Z.



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CBR (California Bearing Ratio) Test

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar

Sample No: TP-8 at 1-3 ft

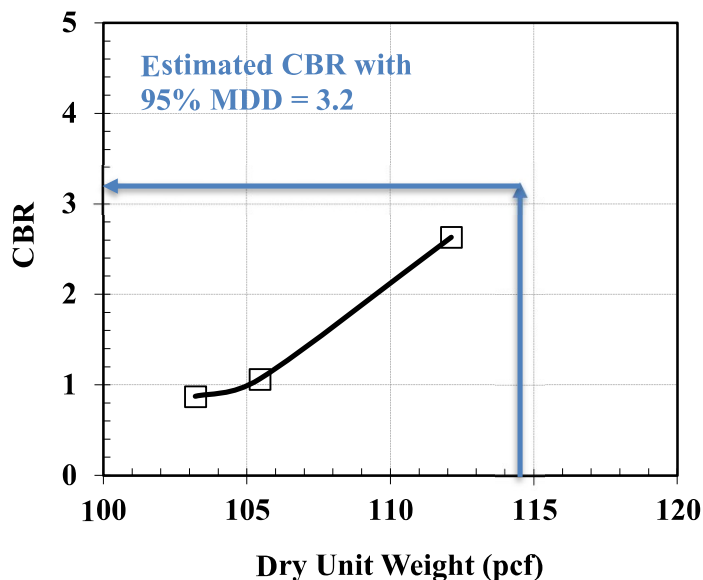
Beyond Project No.: GE2110047

Test Method: ASTM D1883

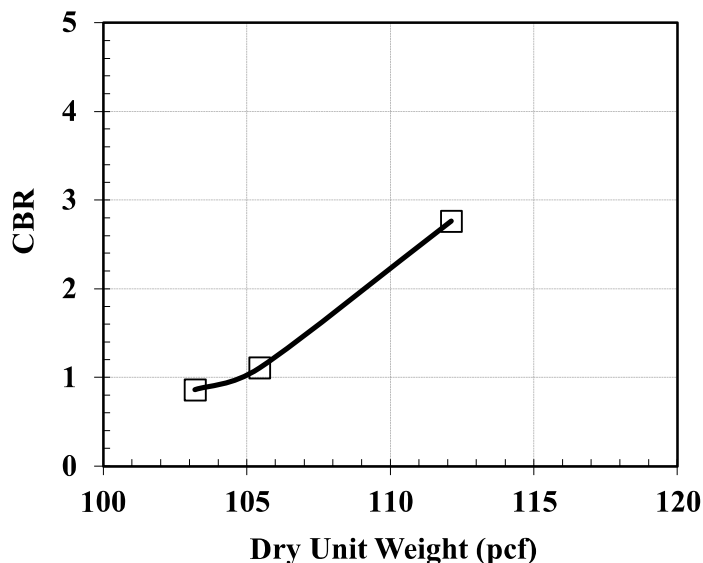
Test Date: 1/14/2022

Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	25	35	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	15.5	15.3	15.3
Dry Unit Weight (pcf)	103.2	105.4	112.1
Percent Compaction (%)	85.6	87.5	93.0
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	22.3	23.3	20.3
Swell (% of initial height)	1.1	1.1	0.6
Bearing Ratio of Sample at 0.100 in penetration	0.9	1.1	2.6
Bearing Ratio of Sample at 0.200 in penetration	0.9	1.1	2.8

Note: Soil specimens were molded to a range of densities using 25, 35 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

HuaMiao Cao, P.E., 1/17/22

Analysis & Quality Review/Date
Specimens prepared and tested by: T.Z.

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CBR (California Bearing Ratio) Test

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar

Sample No: TP-10 at 1-3 ft

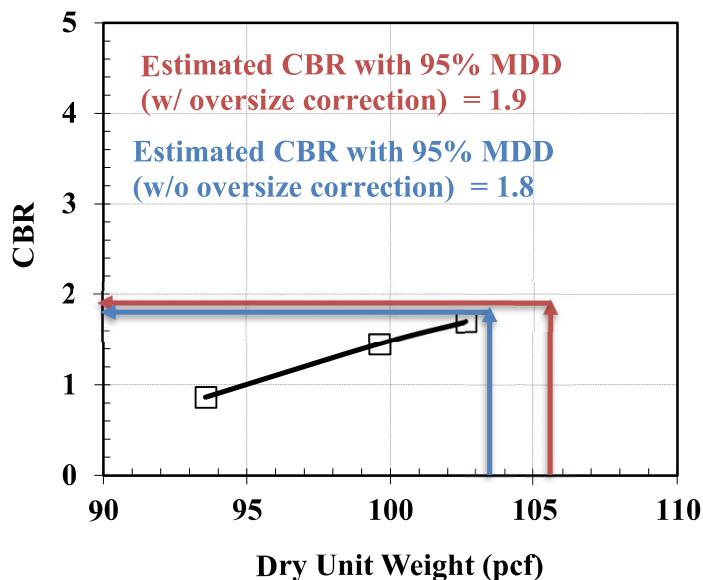
Beyond Project No.: GE2110047

Test Method: ASTM D1883

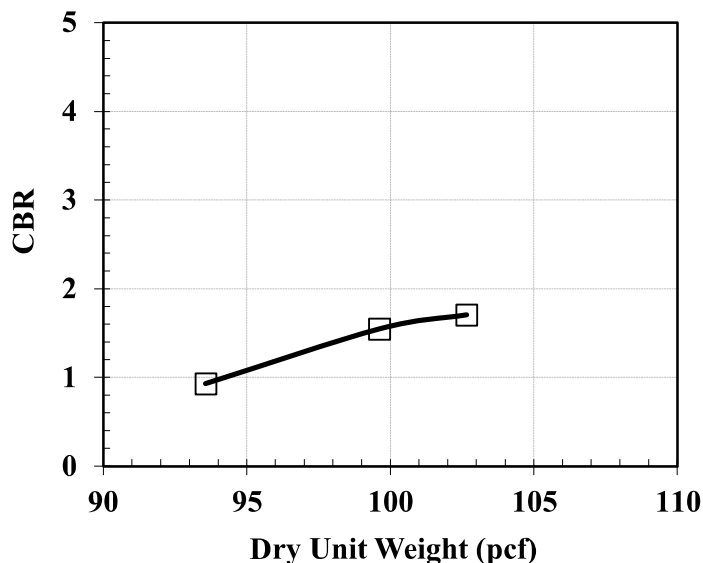
Test Date: 1/12/2022

Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	30	40	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	16.2	17.7	16.7
Dry Unit Weight (pcf)	93.6	99.6	102.7
Percent Compaction (%)	84.1	89.6	92.3
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	28.2	27.5	28.0
Swell (% of initial height)	2.4	2.0	1.9
Bearing Ratio of Sample at 0.100 in penetration	0.9	1.5	1.7
Bearing Ratio of Sample at 0.200 in penetration	0.9	1.5	1.7

Note: Soil specimens were molded to a range of densities using 30, 40 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

HuaMiao Cao, P.E., 1/18/22

Analysis & Quality Review/Date
Specimens prepared and tested by: T.Z.



Beyond Engineering & Testing, LLC
3801 Doris Lane, Suite B
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(512) 358-6048

CBR (California Bearing Ratio) Test

Client: RRC Power & Energy, LLC

Project: Scioto Farms Solar

Sample No: TP-11 at 1-3 ft

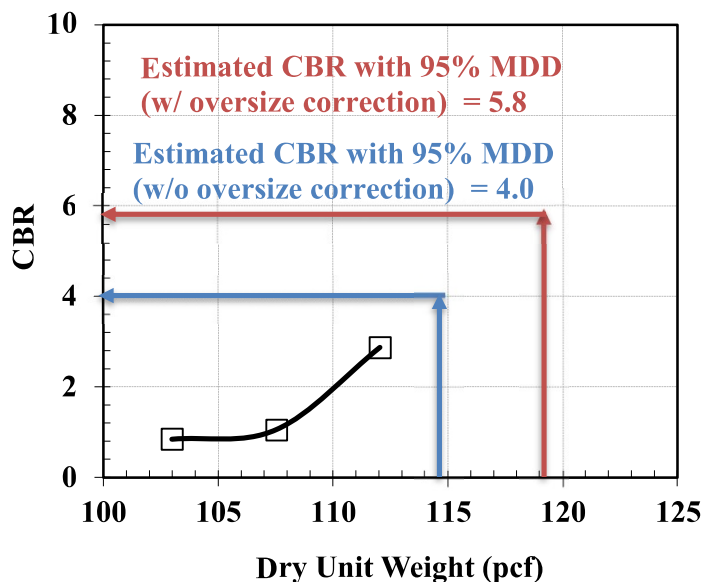
Beyond Project No.: GE2110047

Test Method: ASTM D1883

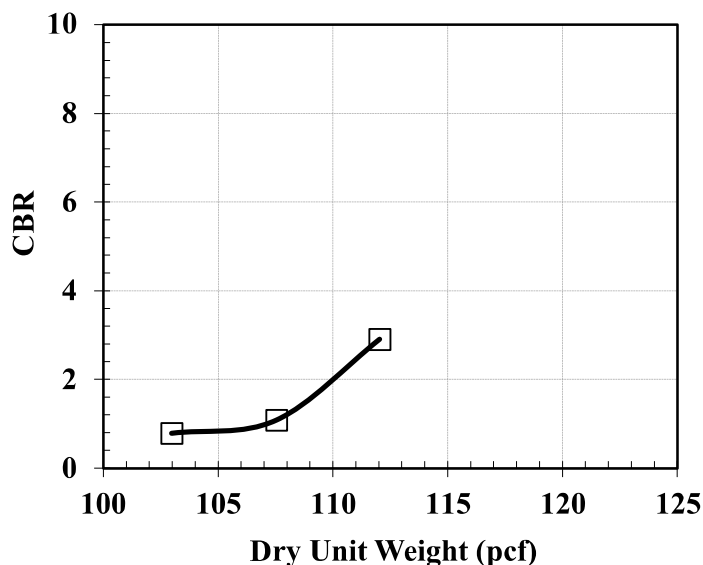
Test Date: 1/14/2022

Rate of Penetration: 0.05 in/min

CBR for 0.100-in Penetration



CBR for 0.200-in Penetration



Initial Conditions			
Specimen No.	1	2	3
Blows per Layer	15	30	60
Surcharge Weight (lbs)	10	10	10
Water Content (%)	14.8	14.4	14.9
Dry Unit Weight (pcf)	103.0	107.5	112.0
Percent Compaction (%)	82.1	85.7	89.3
Final Conditions (soaked)			
Water Content (%) at top 1-in layer after soaking	21.8	21.2	19.3
Swell (% of initial height)	1.2	0.9	0.7
Bearing Ratio of Sample at 0.100 in penetration	0.8	1.1	2.9
Bearing Ratio of Sample at 0.200 in penetration	0.8	1.1	2.9

Note: Soil specimens were molded to a range of densities using 15, 30 and 60 blows at optimum moisture content as per ASTM D 1883 to develop the CBR versus dry density curve. It was allowed the specimens to soak for 96 hrs prior bearing test. Removed the free water and allow the specimens to drain out for 15 min. The 10-lbs surcharge load was placed during bearing test.

HuaMiao Cao, P.E., 1/18/22

Analysis & Quality Review/Date
Specimens prepared and tested by: T.Z.



Soil Analysis Lab Results

Client: RRC Power & Energy LLC

Job Name: Scioto Farms Solar

Client Job Number: GE2110047

Project X Job Number: S211129F

December 1, 2021

Bore# / Description	Method	ASTM D4327		ASTM D4327		ASTM G187		ASTM D4972	ASTM G200	ASTM D4658	ASTM D4327	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D6919	ASTM D4327	ASTM D4327
	Depth	Sulfates		Chlorides		Resistivity		pH	Redox	Sulfide	Nitrate	Ammonium	Lithium	Sodium	Potassium	Magnesium	Calcium	Fluoride	Phosphate
	(ft)	(mg/kg)	(wt%)	(mg/kg)	(wt%)	As Rec'd	Minimum		(mV)	S ²⁻	NO ₃ ⁻	NH ₄ ⁺	Li ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺	F ₂ ⁻	PO ₄ ³⁻
		(mg/kg)	(wt%)	(mg/kg)	(wt%)	(Ohm-cm)	(Ohm-cm)			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
B-01 Soil	1 to 3	0.6	0.0001	1.7	0.0002	1,340	1,273	8.3	195	0.05	0.5	3.4	0.04	53.2	2.5	5.7	5.3	4.4	88.8
B-02 Soil	1 to 3	0.9	0.0001	0.8	0.0001	3,350	3,216	8.7	167	0.02	0.7	6.1	0.03	37.1	2.3	27.8	0.2	4.0	106.9
B-03 Soil	1 to 3	0.6	0.0001	14.1	0.0014	1,340	1,340	8.7	168	<0.01	2.0	0.9	0.04	74.7	2.1	12.6	7.3	4.0	22.8
B-04 Soil	1 to 3	1.3	0.0001	5.0	0.0005	1,206	1,206	8.3	167	0.13	1.5	2.6	0.02	36.9	1.4	11.8	2.4	2.5	16.4
B-05 Soil	1 to 3	0.1	0.0000	2.2	0.0002	3,350	3,283	8.7	191	<0.01	0.0	5.8	0.04	28.0	1.4	11.8	6.7	4.0	51.6
B-06 Soil	1 to 3	1.8	0.0002	5.9	0.0006	3,484	3,417	8.6	189	0.02	2.1	5.6	0.04	22.9	1.2	14.3	4.6	1.4	13.1
B-07 Soil	1 to 3	1.4	0.0001	6.4	0.0006	2,881	2,680	8.7	198	0.02	1.8	2.7	0.03	28.3	0.8	8.7	4.0	4.4	76.2
B-08 Soil	1 to 3	2.0	0.0002	0.8	0.0001	1,809	1,742	8.6	216	0.02	0.8	3.2	0.03	4.0	0.8	15.3	5.4	2.7	65.0
B-09 Soil	1 to 3	2.7	0.0003	5.0	0.0005	2,010	1,943	7.8	230	0.09	0.8	3.6	0.02	39.6	1.2	12.2	0.9	5.2	18.4
B-10 Soil	1 to 3	0.6	0.0001	7.2	0.0007	1,407	1,407	8.0	201	0.02	0.5	2.6	0.04	31.6	1.2	13.4	4.1	5.7	70.2
B-11 Soil	1 to 3	1.3	0.0001	2.1	0.0002	3,082	3,082	8.6	189	<0.01	0.1	3.6	ND	28.6	0.7	16.4	1.8	5.1	23.6
B-12 Soil	1 to 3	1.1	0.0001	8.8	0.0009	9,380	6,365	8.4	200	<0.01	1.8	1.5	0.03	19.5	1.7	36.2	7.6	5.4	63.4
B-13 Soil	1 to 3	0.4	0.0000	1.7	0.0002	2,278	2,211	8.4	182	0.02	0.3	5.0	0.02	14.3	1.0	18.5	3.3	4.4	68.2
B-14 Soil	1 to 3	2.1	0.0002	0.2	0.0000	1,541	1,474	8.3	185	<0.01	3.6	0.1	ND	32.3	1.1	29.0	5.8	8.0	38.2
B-15 Soil	1 to 3	2.0	0.0002	0.6	0.0001	2,881	2,814	8.5	184	<0.01	0.2	2.6	0.02	14.5	1.2	19.6	4.8	3.3	28.2
B-16 Soil	1 to 3	2.2	0.0002	1.1	0.0001	1,742	1,675	8.0	173	0.12	0.8	0.5	0.02	22.5	0.9	15.3	5.4	2.3	32.4
B-17 Soil	1 to 3	1.4	0.0001	5.0	0.0005	1,139	1,072	7.9	164	0.29	0.3	2.5	ND	42.2	1.0	14.9	3.8	5.2	58.1
B-18 Soil	1 to 3	2.4	0.0002	6.1	0.0006	3,283	3,015	8.6	180	0.03	0.3	1.5	ND	33.2	2.0	13.1	5.4	4.8	23.1
B-19 Soil	1 to 3	1.0	0.0001	1.0	0.0001	5,628	4,154	8.7	179	<0.01	0.2	8.7	0.03	12.9	1.8	14.6	3.4	2.0	23.1
SUB-1 Soil	1 to 3	1.8	0.0002	1.2	0.0001	2,479	2,345	8.3	180	<0.01	0.9	1.5	ND	8.7	1.0	11.7	6.5	3.3	181.3

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography

mg/kg = milligrams per kilogram (parts per million) of dry soil weight

ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown

Chemical Analysis performed on 1:3 Soil-To-Water extract

PPM = mg/kg (soil) = mg/L (Liquid)



RRC Power & Energy, LLC
810 Hesters Crossing Rd, Suite 120
Round Rock, TX 78681
Telephone: (512) 992-2087

SUMMARY OF LABORATORY RESULTS

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200 (%)	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
B-01	1.0	CH	26		86	55	23	32							
B-01	4.0		19												
B-01	7.0		16	118	64										
B-01	9.0		8												
B-01	12.0		15												
B-02	1.0		25												
B-02	4.0	CL	13	123	57	22	13	9							
B-02	7.0		16												
B-02	9.0		17												
B-02	14.0		10												
B-03	1.0	CH	25		85	62	21	41							
B-03	4.0		15												
B-03	9.0		14												
B-03	12.0		14												
B-03	14.0		10												
B-04	1.0		28												
B-04	4.0	SC	24	99	47	25	14	11	1.27	12.1	0.0				
B-04	7.0	CL	24		68	28	16	12							
B-04	9.0		14												
B-04	12.0		11												
B-05	1.0		18												
B-05	4.0		13	121					1.94	6.8	0.0				
B-05	7.0		14												
B-05	9.0		12												
B-05	12.0		13												
B-06	1.0		24												
B-06	4.0		12												
B-06	9.0		13												
B-06	12.0		11												
B-07	1.0		25												
B-07	4.0		13												

ND Not Detected; D Diluted;
*Denotes Total Unit Weight



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SUMMARY OF LABORATORY RESULTS

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200 (%)	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
B-07	7.0		15												
B-07	9.0		10												
B-08	1.0		27												
B-08	4.0		13	127											
B-08	7.0		14												
B-08	9.0		20												
B-08	12.0		10												
B-08	14.0		7												
B-09	1.0		23												
B-09	4.0		13												
B-09	7.0		13	125											
B-09	9.0		12												
B-09	12.0		12												
B-10	1.0		29												
B-10	7.0		13												
B-10	9.0		12												
B-10	14.0		12												
B-11	1.0		23												
B-11	4.0		13	126											
B-11	7.0		13												
B-11	9.0		12												
B-11	12.0		10												
B-12	1.0		24												
B-12	4.0		13	127											
B-12	7.0		13												
B-12	9.0		12												
B-12	14.0		13												
B-13	1.0		25												
B-13	6.0		13												
B-13	9.0		11												
B-13	12.0		12												

ND Not Detected; D Diluted;
*Denotes Total Unit Weight



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SUMMARY OF LABORATORY RESULTS

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200 (%)	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
B-13	14.0		9												
B-14	1.0		25												
B-14	4.0	CL	16		68	34	16	18							
B-14	7.0		22	108	68										
B-14	9.0		10												
B-14	12.0		10												
B-15	1.0		27												
B-15	4.0		12	122											
B-15	7.0		13												
B-15	9.0		13												
B-15	12.0		11												
B-16	1.0		27												
B-16	4.0		21												
B-16	14.0		12												
B-17	1.0		27												
B-17	4.0	CL	14	118	56	25	15	10							
B-17	7.0		12												
B-17	9.0	SC-SM	15		38	22	15	7							
B-17	12.0		14												
B-18	1.0		27												
B-18	7.0		13												
B-18	9.0		13												
B-18	12.0		12												
B-19	1.0	CL	16		58	39	18	21							
B-19	7.0		15												
B-19	9.0		11												
B-19	12.0		12		33										
SUB-1	1.0	CL	19		67	35	17	18							
SUB-1	4.0	CL-ML	13	130	59	20	14	6	1.43	6.8	0.0				
SUB-1	7.0		11												
SUB-1	9.0		9												

ND Not Detected; D Diluted;
*Denotes Total Unit Weight



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SUMMARY OF LABORATORY RESULTS

CLIENT: Candela Renewables
PROJECT: Scioto Farms Solar
LOCATION: Pickaway County, Ohio
NUMBER: GE2110047

Borehole	Depth (ft)	USCS	Water Content (%)	Dry Unit Weight (pcf)	< No. 200 (%)	LL	PL	PI	Compressive Strength (tsf)	Strain at Failure (%)	Confining Pressure (psi)	Chlorides (%/weight)	Sulfates (%/weight)	pH	Minimum Resistivity (ohm-cm)
SUB-1	14.0		11												
SUB-1	29.0		21												
SUB-1	49.0		22												
TP-02	2.0	CL	16		52	26	14	12							
TP-05	2.0	CL	12	124	53	28	15	13	1.30	3.9	0.0				
TP-05	2.0	CL	13		57	24	15	9							
TP-08	2.0	CL	18	108	63	39	17	22	0.58	3.9	0.0				
TP-08	2.0	CL	14		58	26	15	11							
TP-10	2.0	CL	21	106	84	48	18	30	4.14	3.3	0.0				
TP-10	2.0	CL	19		80	32	16	16							
TP-11	2.0	CL	12		75	24	14	10							



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512.992.2087

APPENDIX C

SOIL RESISTIVITY MEASUREMENT DATA SHEET

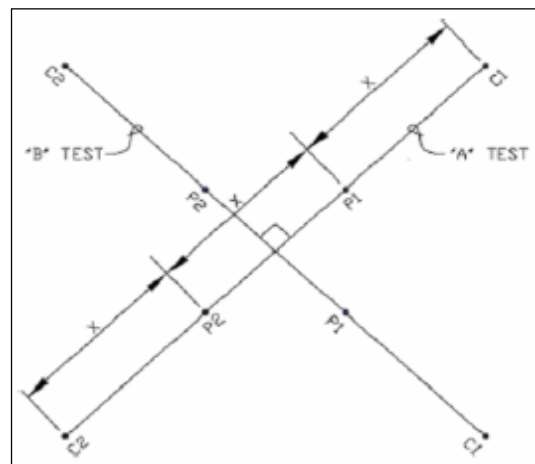
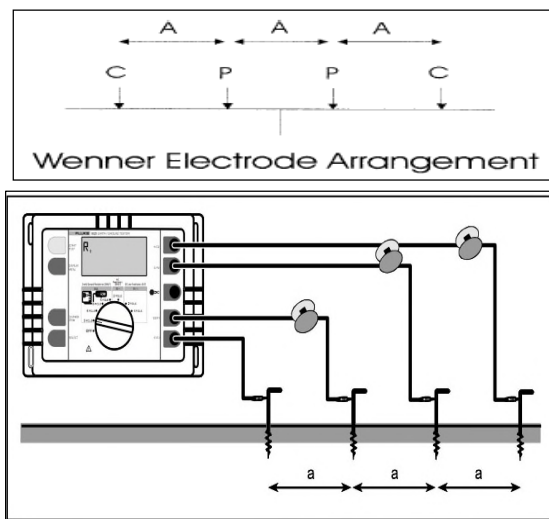
Survey ID R-1
DATE 11/11/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.542808
LONGITUDE : -83.025881
WEATHER: Sunny
TOP SOIL: Fat Clay (CH), trace Sand, dark brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Temp. (°F) 60°F

TEST SET RANGE
Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

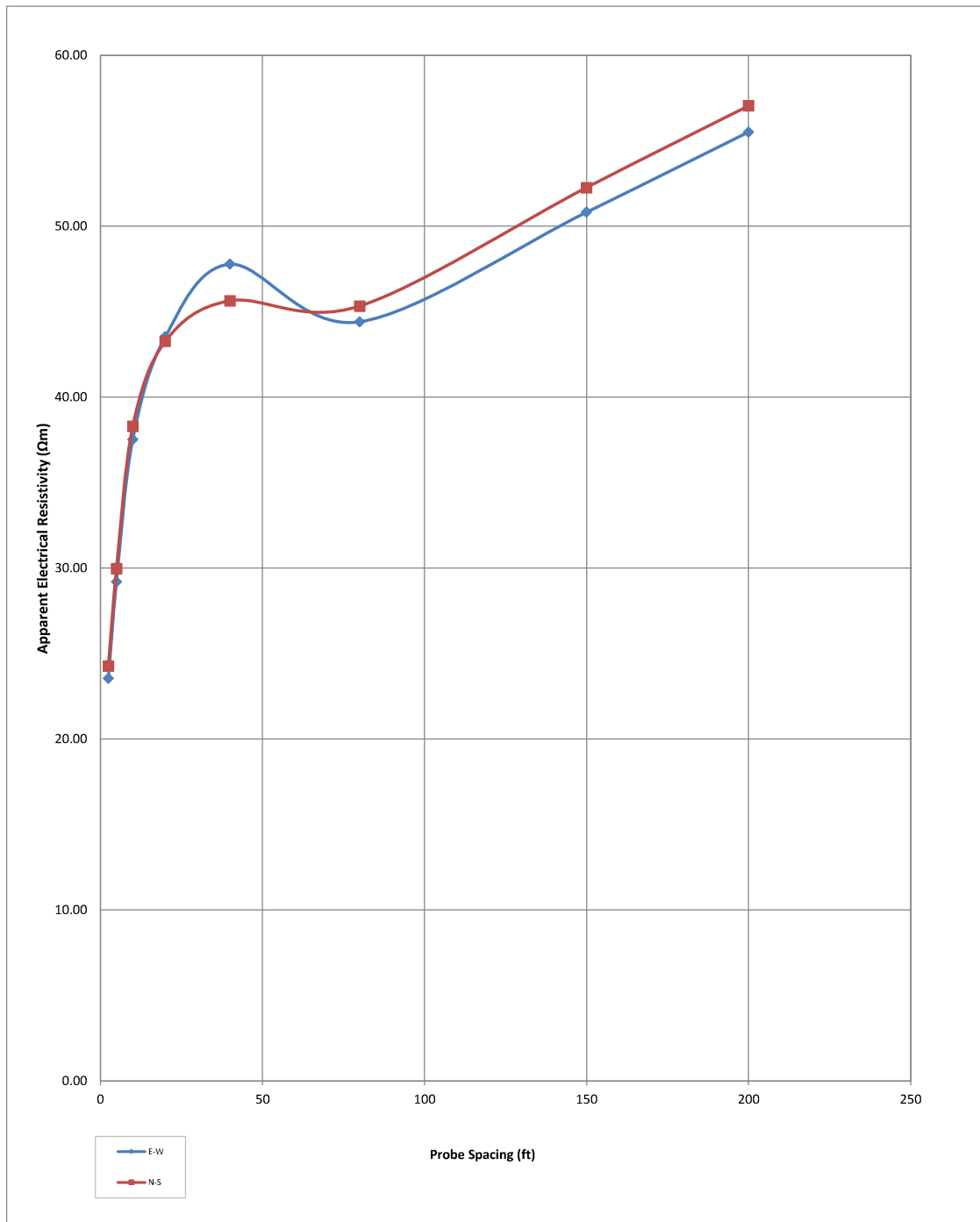
Notes:	(1) Overhead powerline running NE-SW approximately 600 ft. Northwest from the test center
--------	---



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho = 2\pi p R \text{ spacing} \times 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-1



SOIL RESISTIVITY MEASUREMENT DATA SHEET

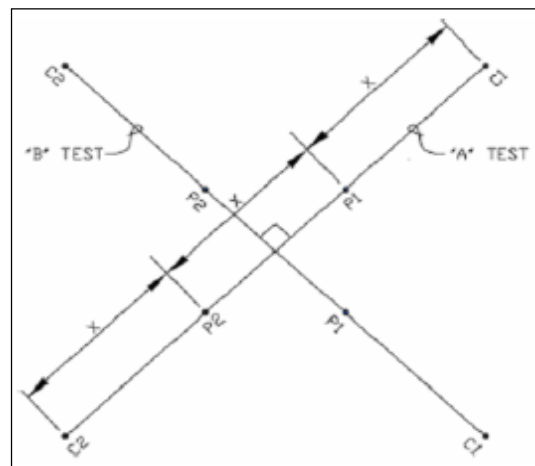
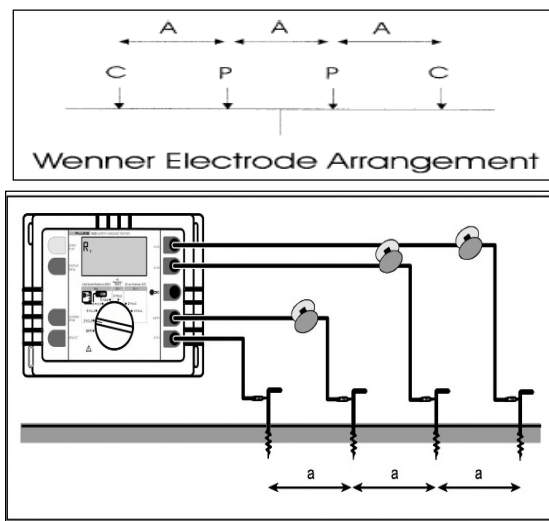
Survey ID R-2
DATE 11/11/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.533271
LONGITUDE : -83.017793
WEATHER: Cloudy
TOP SOIL: Fat Clay (CH), dark brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Temp. (°F) 69°F

TEST SET RANGE
Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

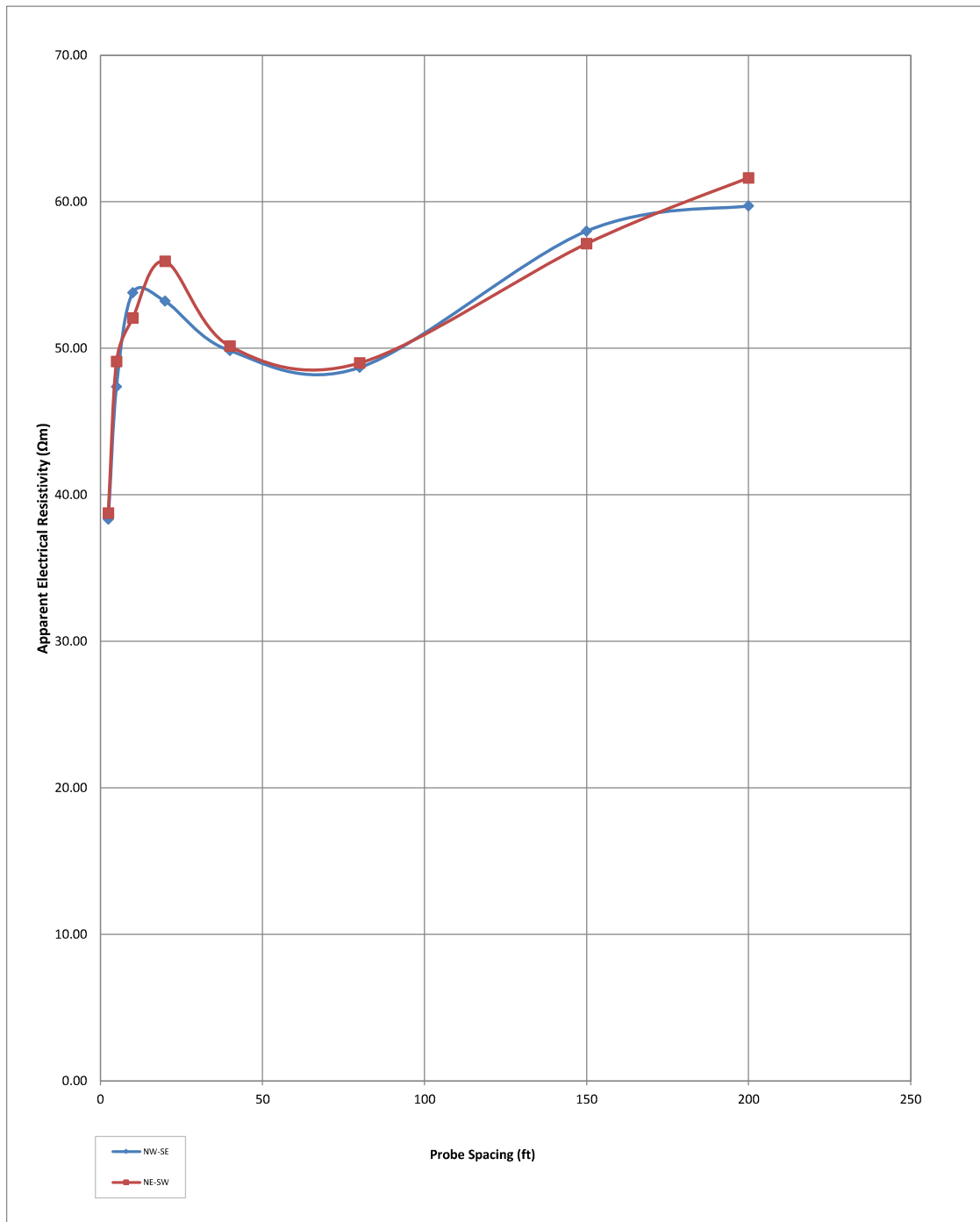
Notes: (1) Overhead powerline running N-S approximately 650 ft. East from the test center



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho_a = 2\pi p R \text{ spacing} \times 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-2



SOIL RESISTIVITY MEASUREMENT DATA SHEET

Survey ID R-3
DATE 10/31/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.528987
LONGITUDE : -83.026
WEATHER: Partly Cloudy
TOP SOIL: Fat Clay (CH), trace Sand, dark brown, moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Project No. GE2110047

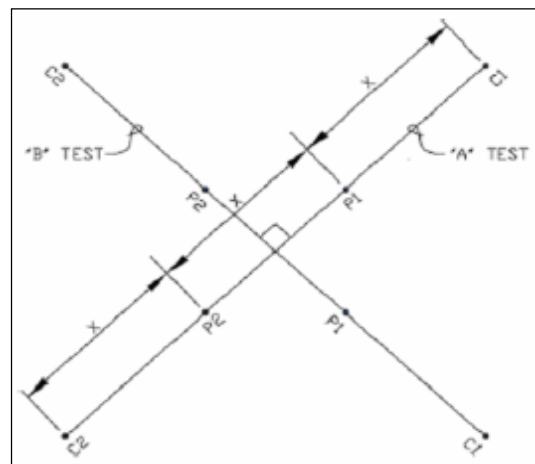
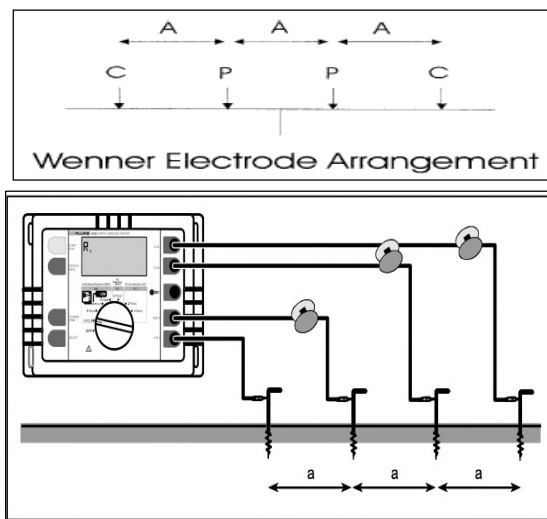
Temp. (°F) 60°F

TEST SET RANGE

Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

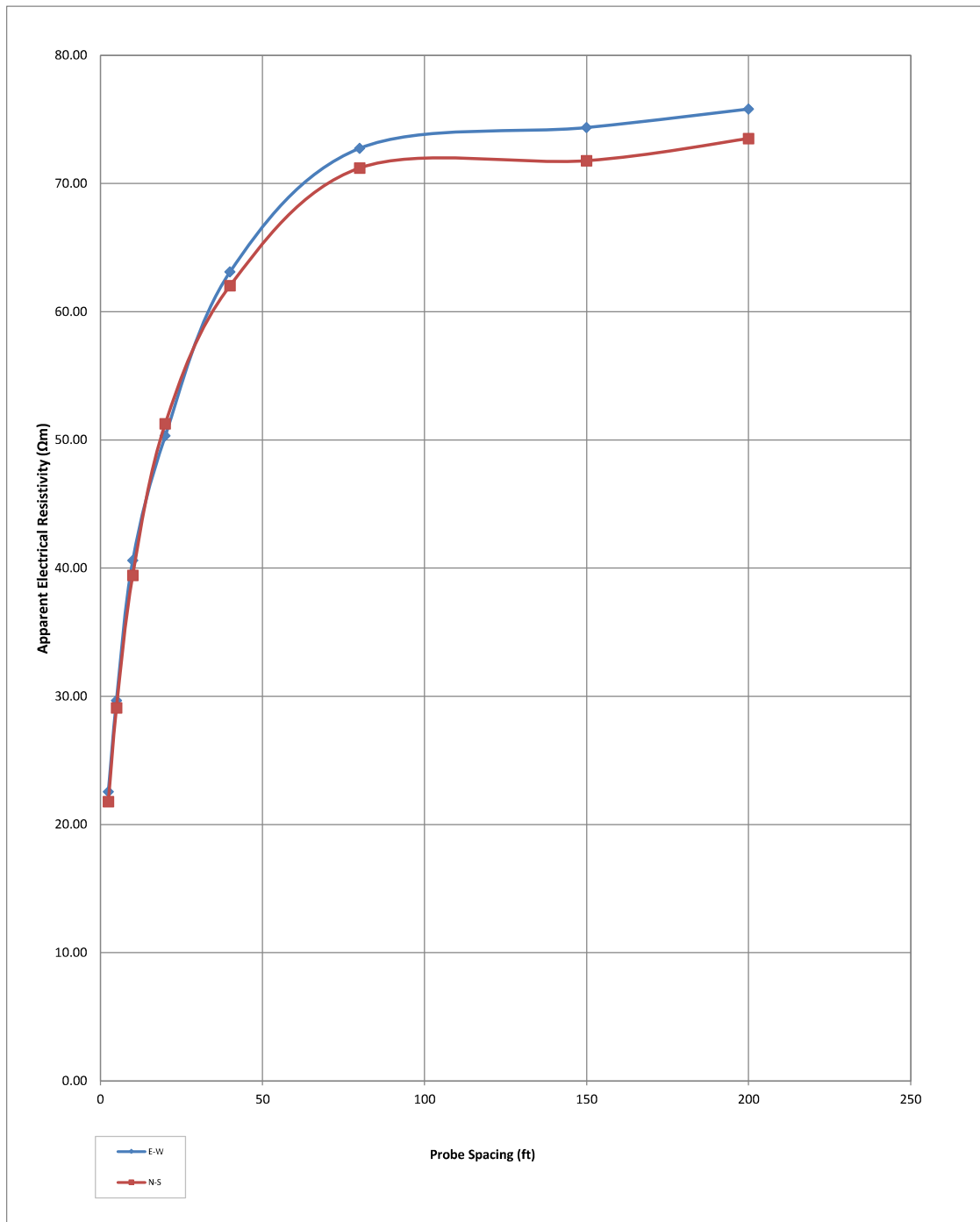
Notes:



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho_a = 2\pi \cdot R \cdot \text{spacing} \cdot 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-3



SOIL RESISTIVITY MEASUREMENT DATA SHEET

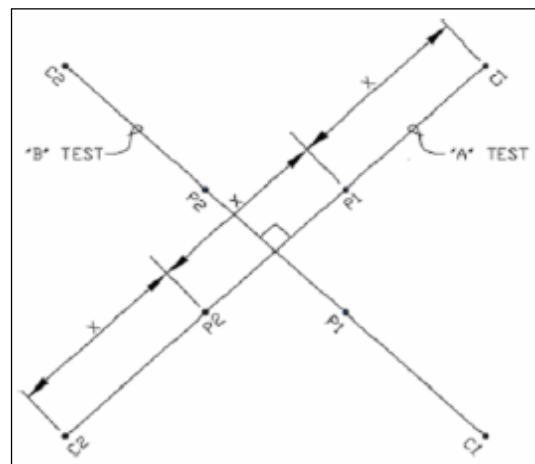
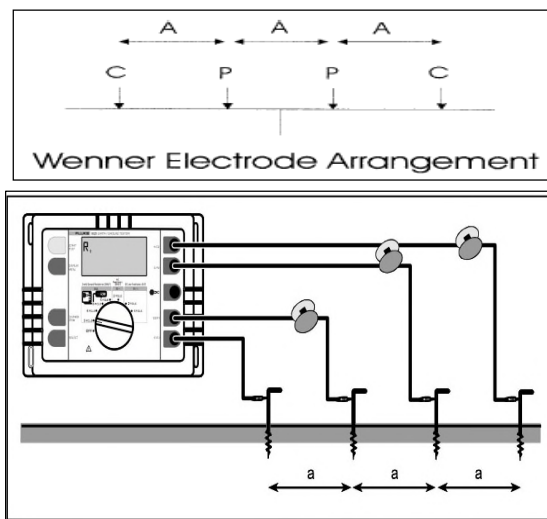
Survey ID R-4
DATE 11/12/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.524597
LONGITUDE : -83.018501
WEATHER: Sunny
TOP SOIL: Fat Clay (CH), dark brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Temp. (°F) 47°F

TEST SET RANGE
Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

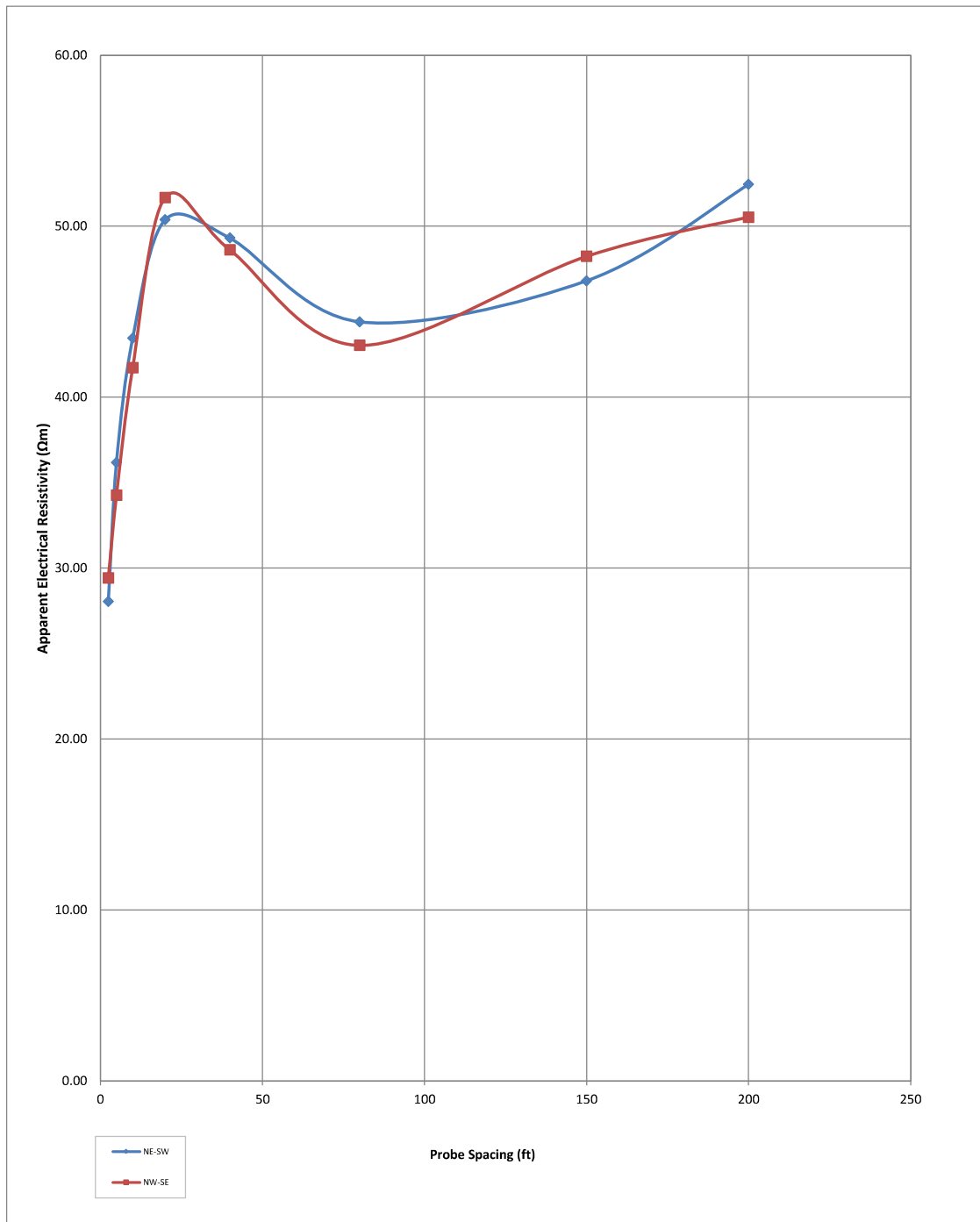
Notes: (1) Overhead powerline running N-S approximately 850 ft. East from the test center



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho_a = 2\pi \cdot R \cdot \text{spacing} \cdot 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-4



SOIL RESISTIVITY MEASUREMENT DATA SHEET

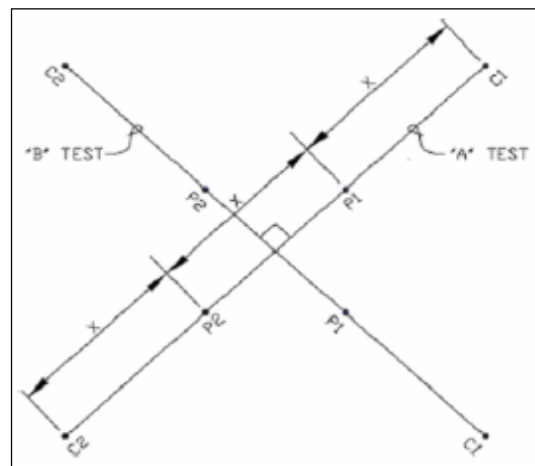
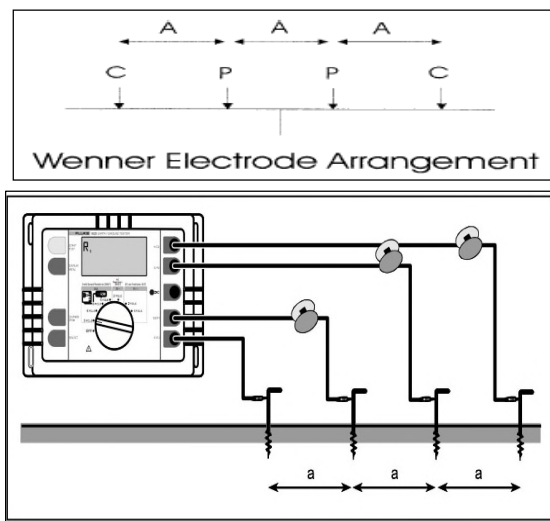
Survey ID R-5
DATE 11/9/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.52127
LONGITUDE : -83.02755
WEATHER: Cloudy
TOP SOIL: Fat Clay (CH), with Sand, brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Temp. (°F) 61°F

TEST SET RANGE
Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

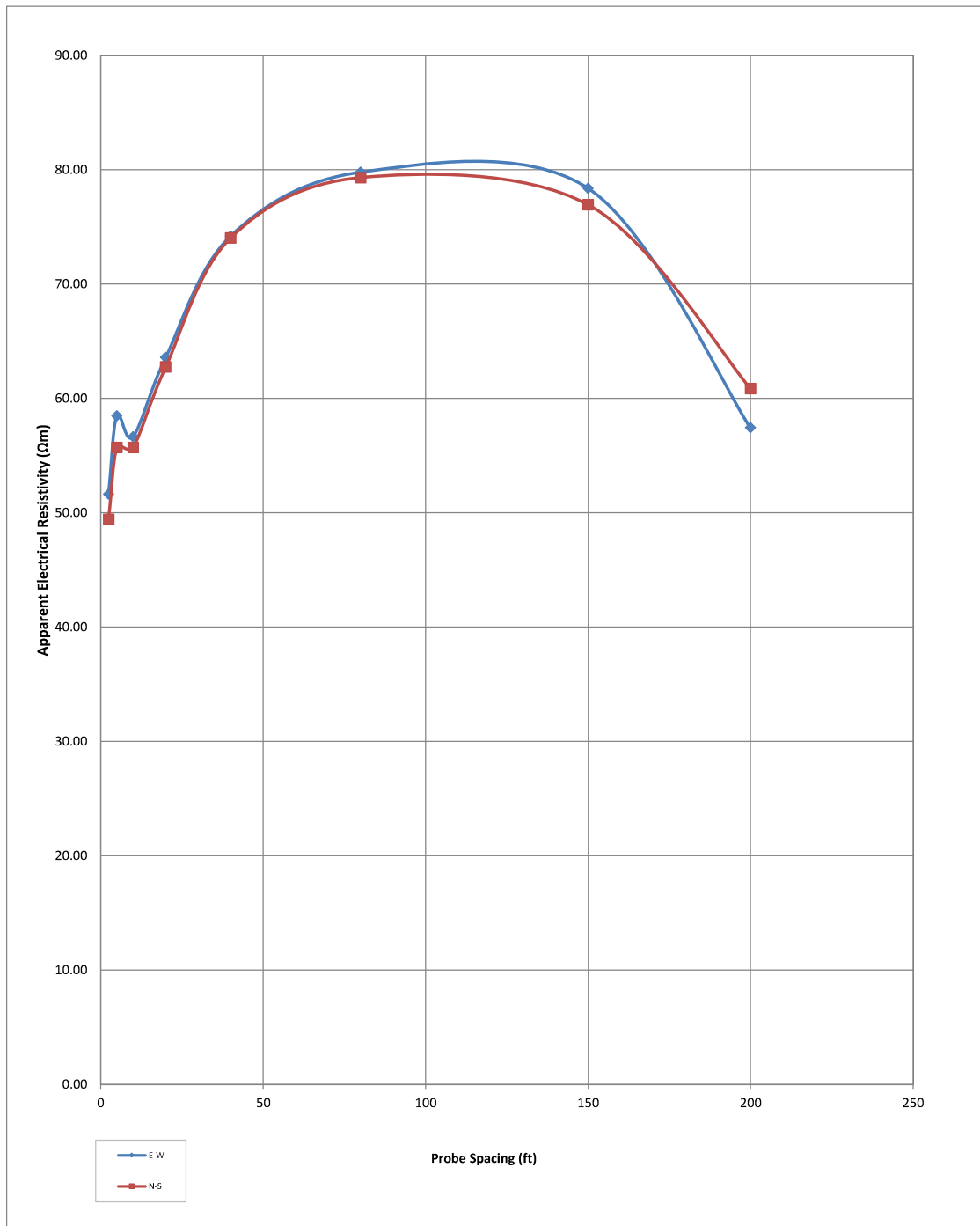
Notes:



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho = 2 \cdot \pi \cdot R \cdot \text{spacing} \cdot 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-5



SOIL RESISTIVITY MEASUREMENT DATA SHEET

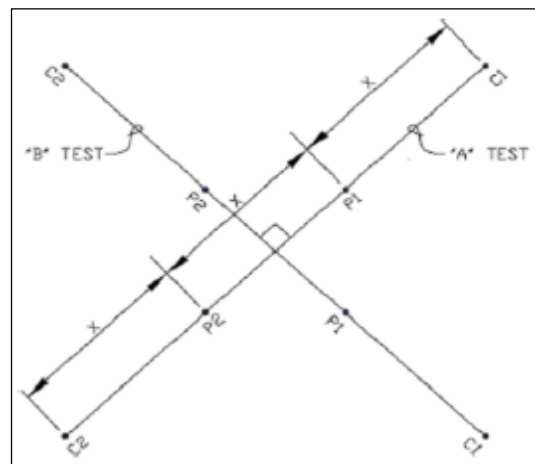
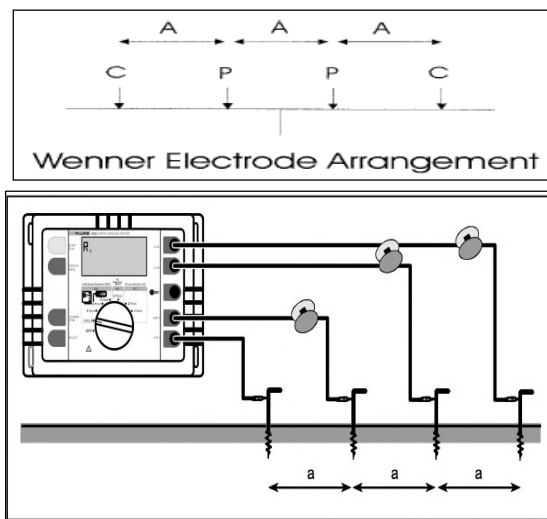
Survey ID R-6
DATE 10/10/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.515002
LONGITUDE : -83.020006
WEATHER: Sunny
TOP SOIL: Fat Clay (CH), trace Sand, brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Temp. (°F) 60°F

TEST SET RANGE
Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

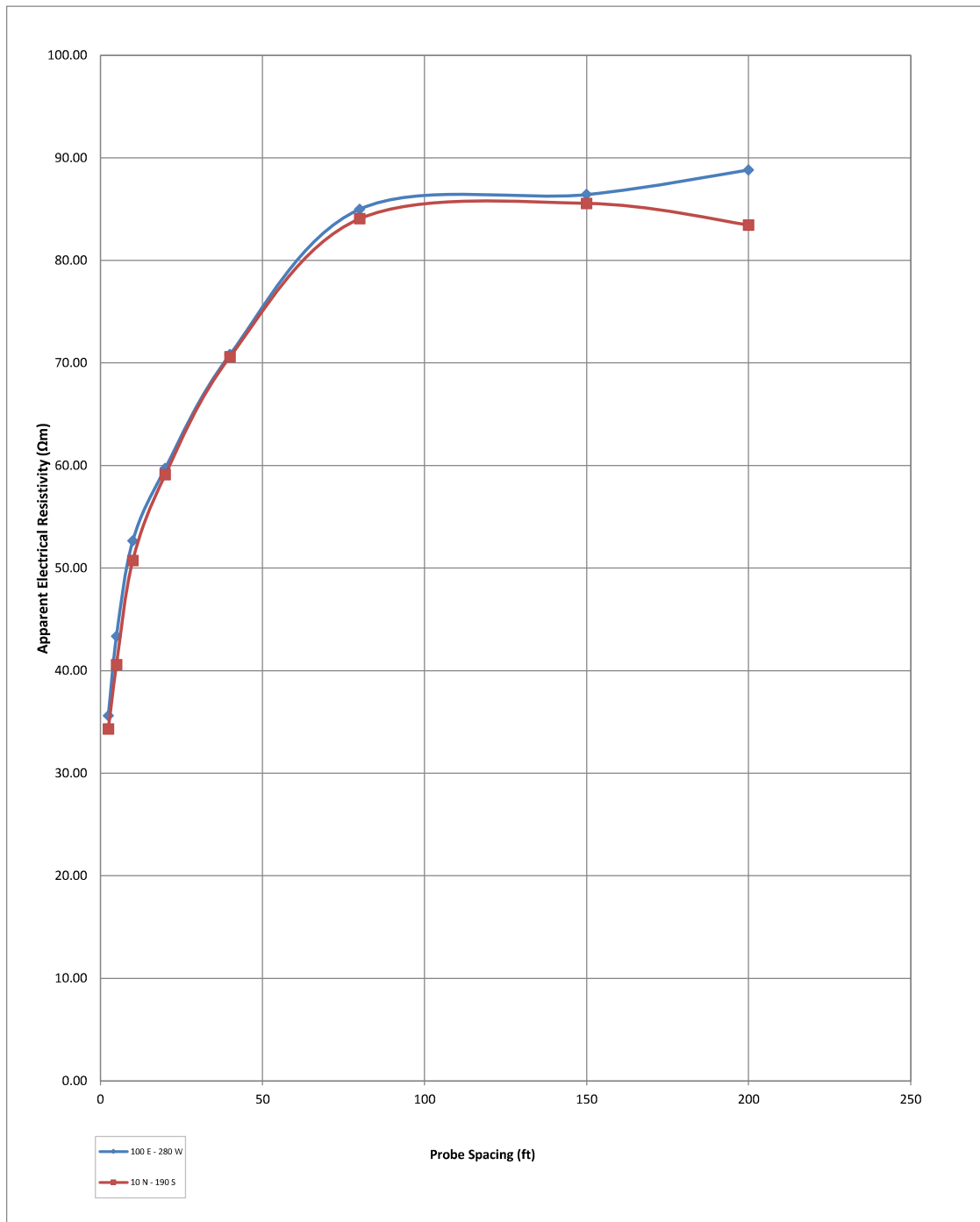
Notes:	(1) Overhead powerline running NW-SE approximately 1250 ft. northeast from the test center
	(2) Metal Tower approximately 1400 ft. north from the test center



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho_a = 2\pi p R \text{ spacing}^2 / 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-6



SOIL RESISTIVITY MEASUREMENT DATA SHEET

Survey ID R-7
DATE 11/4/2021
CLIENT Candela Renewables
PROJECT Scioto Farms Solar
LOCATION: Pickaway County, OH
LATITUDE : 39.514494
LONGITUDE : -83.01299
WEATHER: Sunny
TOP SOIL: Fat Clay (CH), brown, dry to moist
TYPE OF TEST : Wenner 4-Pin Method
EQUIPMENT: Megger
SERIAL NO. 101289851
MODEL: DET 2/2
CALIBRATION DUE DATE: 3/12/2022
TEST PERFORMED BY : RRC

Project No. GE2110047

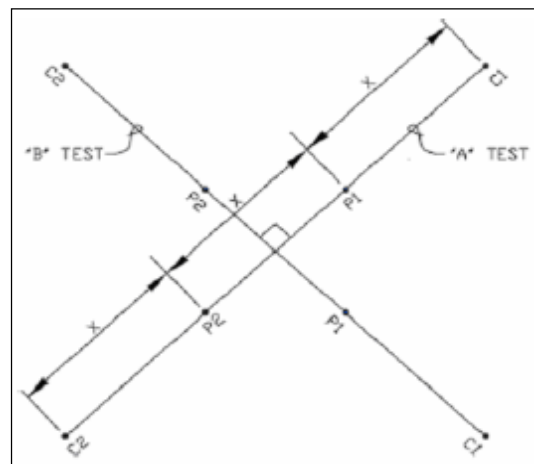
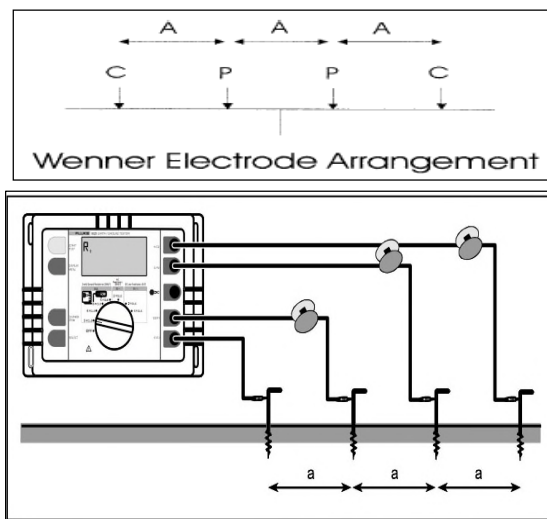
Temp. (°F) 56°F

TEST SET RANGE

Meter Current: 1mA - 50mA
Meter Resistance: 0.01Ohm - 19.99kOhm

[illegible]

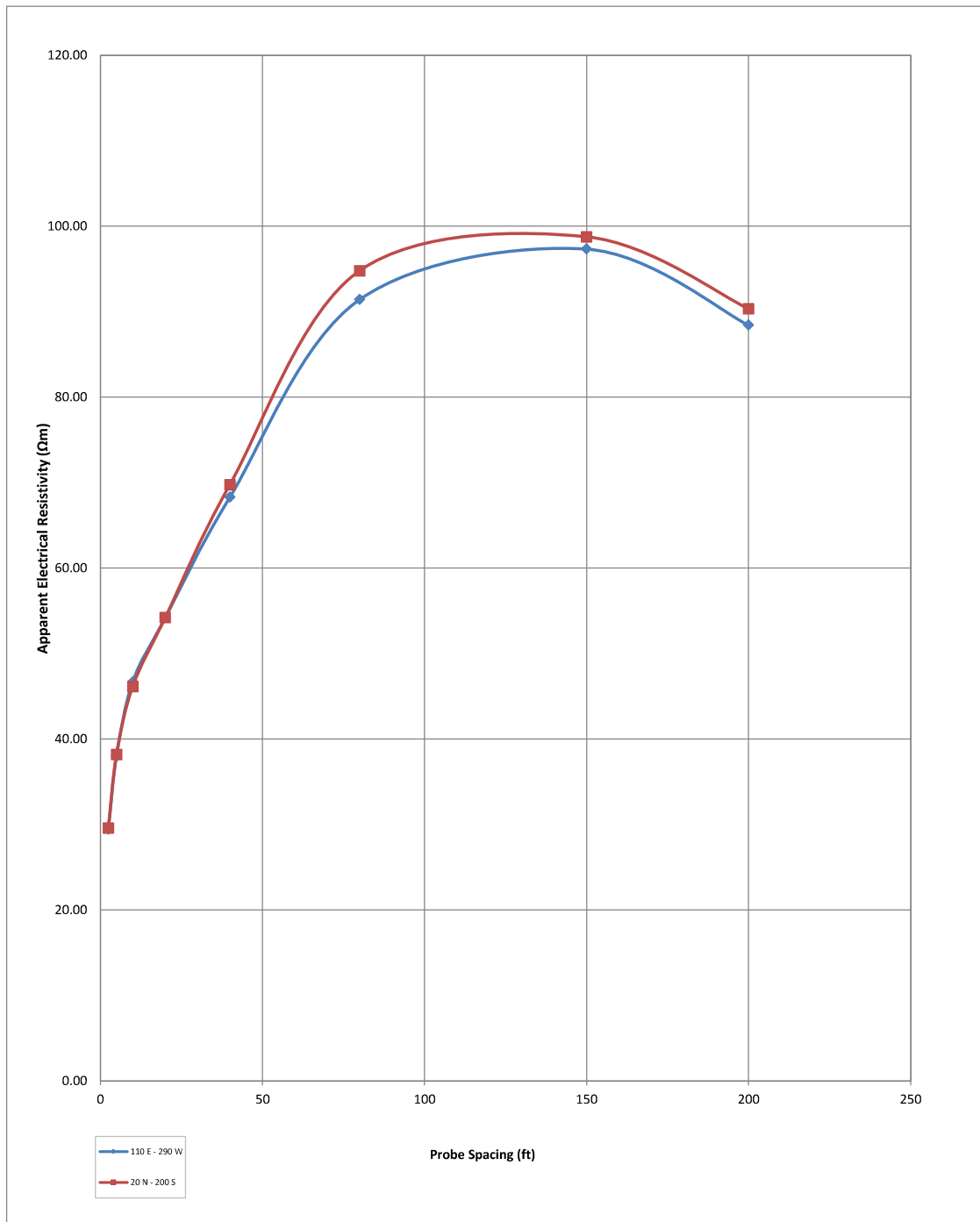
Notes:



General Sketch of the test set up.

Total Array length is 3 times the probe spacing. The Apparent resistivity is calculated using the following equation: $\rho_a = 2\pi p R \text{ spacing}^2 / 0.3048$, where last item converts feet to meters. Wenner Array surveys were performed generally in accordance with IEEE std 81-2012 "IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Grounding System," and ASTM G-57.

Scioto Farms Solar
Electrical Resistivity Survey at R-7





Soil Thermal Resistivity Sample & Testing Summary

Scioto Farms Solar Project (PN: GE2110047)

Field Thermal Resistivity Test					
<i>Location Boring</i>	<i>Depth (ft)</i>	<i>Test Point¹</i>	<i>Temperature (°C)</i>	<i>In-situ Thermal Resistivity (°C-cm/W)</i>	<i>In-Situ Water Content (%)²</i>
TP-1	2.0	1	13.0	59	18.3
		2	13.7	52	15.7
	3.0	1	13.5	41	11.9
		2	14.1	43	13.1
	4.0	1	13.6	44	11.0
		2	14.0	44	12.6
TP-2	2.0	1	13.6	50	14.5
		2	14.4	52	14.9
	3.0	1	14.2	49	12.8
		2	14.3	47	12.6
	4.0	1	13.8	45	13.0
		2	14.4	50	12.5
TP-5	2.0	1	13.8	52	14.3
		2	14.4	57	16.0
	3.0	1	14.1	41	12.1
		2	14.3	44	12.3
	4.0	1	14.0	47	12.5
		2	14.6	49	12.6
TP-8	2.0	1	12.8	46	12.6
		2	13.5	47	12.9
	3.0	1	13.1	47	12.9
		2	13.6	41	11.3
	4.0	1	13.4	46	11.6
		2	13.6	50	13.3
TP-9	2.0	1	14.0	49	12.3
		2	14.4	52	12.3
	3.0	1	14.6	44	12.0
		2	14.6	49	12.0
	4.0	1	13.6	47	12.4
		2	14.5	46	9.7
TP-10	2.0	1	12.6	72	24.9
		2	13.4	73	21.2
	3.0	1	13.6	69	25.5
		2	13.6	74	18.8
	4.0	1	13.3	57	19.3
		2	13.2	55	11.6



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Round Rock, TX 78664
(512) 358-6048

Soil Thermal Resistivity Sample & Testing Summary
Scioto Farms Solar Project (PN: GE2110047)

Field Thermal Resistivity Test (Continue)					
<i>Location Boring</i>	<i>Depth (ft)</i>	<i>Test Point¹</i>	<i>Temperature (°C)</i>	<i>In-situ Thermal Resistivity (°C-cm/W)</i>	<i>In-Situ Water Content (%)²</i>
TP-11	2.0	1	13.1	58	10.5
		2	13.2	67	10.5
	3.0	1	13.8	50	10.9
		2	13.8	47	11.4
	4.0	1	13.7	47	13.0
		2	13.9	47	13.7

Note: 1, At each test pit, two spots were selected for field thermal test.

2, Soil sample closed to the field thermal probe was collected. Water Content was measured in the lab.



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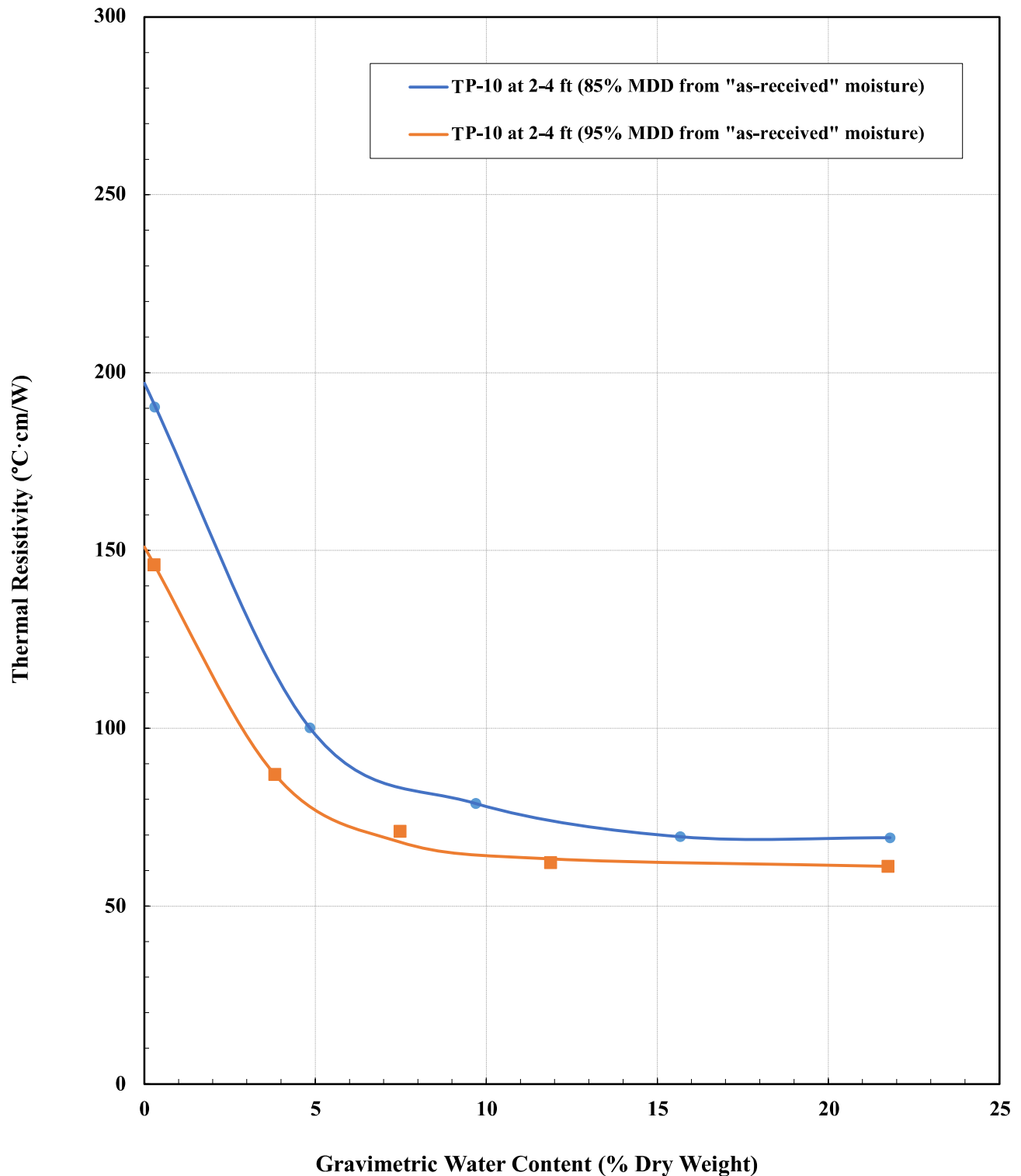
Soil Thermal Resistivity Sample & Testing Summary
Scioto Farms Solar Project (PN: GE2110047)

<i>Boring</i>	<i>Depth</i>	<i>Percent Passing #200 Sieve</i>	<i>Maximum Dry Density (ASTM D698)</i>	<i>Optimum Water Content (ASTM D698)</i>	<i>LL</i>	<i>PL</i>	<i>PI</i>
	<i>ft</i>	<i>%</i>	<i>pcf</i>	<i>%</i>			
TP-10	2-4	79.9	111.2	16.3	48	18	20

<i>Boring</i>	<i>Depth</i>	<i>Soil Type (USCS)</i>
TP-10	2-4	BROWN LEAN CLAY with SAND (CL)

Remolded Samples						
<i>Boring</i>	<i>Remold Water Content</i>	<i>Percent Compaction</i>	<i>Target Remold Dry Density</i>	<i>Actual Remold Dry Density</i>	<i>Thermal Resistivity at Wet (ASTM D5334)</i>	<i>Thermal Resistivity at Dry (ASTM D5334)</i>
	<i>%</i>	<i>%</i>	<i>pcf</i>	<i>pcf</i>	<i>°C-cm/W</i>	<i>°C-cm/W</i>
TP-10	21.8	85	94.5	94.6	69	197
	21.7	95	105.6	105.4	61	151

Soil Thermal Resistivity Testing Dryout Curves Scioto Farms Solar Project (PN: GE2110047)





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APPENDIX D

Table D1.1
Soil Parameters for Driven Pile Capacity Analysis for PV Array

Soil Layer	Depth Interval (feet)	USGS Soil & Rock Classification	Effective Unit Weight (pcf)	Allowable Uplift Unit Skin Friction Based on Pile Load Testing (FOS = 1.5) (psf)	Allowable Unit Skin Friction in Compression Based on Pile Load Testing (FOS = 1.5) (psf)	Allowable Bearing Pressure** (FOS = 2.0) (psf)
1*	0 to 2.7	SOFT CLAY	100	0	0	0
2	2.7 to 9	LEAN/FAT CLAY	115	450	550	7,000
3***	9 to 15	LEAN/FAT CLAY	120	450	550	7,000

Note: *Due to upper 2.7 feet zone with potential frost heave at project site, options below should be considered to prevent damage resulting from adfreezing and potential for frost jacking during driven steel pile design and construction:
Option A: Without placing friction reducing material, we recommend using 1,600 psf for frost heave stress on steel pile within the upper 2.7-ft zone. The uplift forces can be resisted by a combination of dead-load and skin friction contribution of the soils below frost depth zone.
Option B: Placing friction reducing material to prevent damage resulting from adfreezing and potential for frost jacking. Means and methods to properly install driven pile with placing friction reducing material is the responsibility of the contractor.

** Allowable Pile End Bearing Pressure may be applied using a maximum of 50% of H-pile box-area, for calculating the axial compressive pile capacity.

*** Parameters provided in layer 3 are not obtained from pile load test. Recommend verifying with additional pile load testing if pile embedment depths are deeper than 9 feet below existing ground surface.

Table D1.2
L-PILE Computer Program Parameters for Lateral Load Analysis for PV Array

Soil Layer	Depth Interval (feet)	LPILE Soil Type	K (pci)		γ (pcf)	C** (psf)	ϕ (deg)	ϵ_{50} (in/in)	E_{rm} (psi)	UCS (psi)	RQD (%)	K_{rm}
			Static	Cyclic								
1*	0 to 2	Soft Clay	N/A	N/A	100	300	N/A	Program Default	N/A	N/A	N/A	N/A
2	2 to 7	Stiff Clay w/o Free Water (Reese)	N/A	N/A	115	2,500	N/A	Program Default	N/A	N/A	N/A	N/A
3	7 to 9	Stiff Clay w/o Free Water (Reese)	N/A	N/A	120	3,500	N/A	Program Default	N/A	N/A	N/A	N/A
4***	9 to 15	Stiff Clay w/o Free Water (Reese)	N/A	N/A	120	3,500	N/A	Program Default	N/A	N/A	N/A	N/A

Notes: K is the modulus of subgrade reaction; γ is the effective unit weight; C is the cohesion of soil; ϕ is the friction angle of soil; ϵ_{50} is the soil strain parameter; E_{rm} is the rock mass modulus of the rock; UCS is average Unconfined Compressive Strength of rock; RQD is average Rock Quality Designation; K_{rm} is the rock strain parameter.

Notes: *For upper 2 feet or scour depth, whichever is deeper, design parameters have been reduced due to seasonal moisture change and soil disturbance.

** The Undrained Shear Strengths used in this table are used to calibrate the lateral deflections of the piles based on pile load testing program and may not be representative of the actual undrained shear strength of the subsurface materials.

*** Parameters provided in layer 4 are not obtained from pile load test. Recommend verifying with additional pile load testing if pile embedment depths are deeper than 9 feet below existing ground surface.

Table D2.1 Soil Parameters for Driven Pile Capacity Analysis for PV Array (Weak Zone – near Borings B-01, B-04, B-05, B-06, B-09)						
Soil Layer	Depth Interval (feet)	USGS Soil & Rock Classification	Effective Unit Weight (pcf)	Allowable Uplift Unit Skin Friction Based on Pile Load Testing (FOS = 1.5) (psf)	Allowable Unit Skin Friction in Compression Based on Pile Load Testing (FOS = 1.5) (psf)	Allowable Bearing Pressure** (FOS = 2.0) (psf)
1*	0 to 2.7	SOFT CLAY	100	0	0	0
2	2.7 to 9	LEAN/FAT CLAY	115	250	300	5,000
3***	9 to 15	LEAN/FAT CLAY	120	450	550	7,000

Note: *Due to upper 2.7 feet zone with potential frost heave at project site, options below should be considered to prevent damage resulting from adfreezing and potential for frost jacking during driven steel pile design and construction:
Option A: Without placing friction reducing material, we recommend using 1,600 psf for frost heave stress on steel pile within the upper 2.7-ft zone. The uplift forces can be resisted by a combination of dead-load and skin friction contribution of the soils below frost depth zone.

Option B: Placing friction reducing material to prevent damage resulting from adfreezing and potential for frost jacking. Means and methods to properly install driven pile with placing friction reducing material is the responsibility of the contractor.

** Allowable Pile End Bearing Pressure may be applied using a maximum of 50% of H-pile box-area, for calculating the axial compressive pile capacity.

*** Parameters provided in layer 3 are not obtained from pile load test. Recommend verifying with additional pile load testing if pile embedment depths are deeper than 9 feet below existing ground surface.

Table D2.2 L-PILE Computer Program Parameters for Lateral Load Analysis for PV Array (Weak Zone – near Borings B-01, B-04, B-05, B-06, B-09)												
Soil Layer	Depth Interval (feet)	LPILE Soil Type	K (pci)		γ (pcf)	C** (psf)	ϕ (deg)	ϵ_{50} (in/in)	E_m (psi)	UCS (psi)	RQD (%)	K_{rm}
			Static	Cyclic								
1*	0 to 2	Soft Clay	N/A	N/A	100	200	N/A	Program Default	N/A	N/A	N/A	N/A
2	2 to 7	Stiff Clay w/o Free Water (Reese)	N/A	N/A	115	2,250	N/A	Program Default	N/A	N/A	N/A	N/A
3	7 to 9	Stiff Clay w/o Free Water (Reese)	N/A	N/A	120	3,500	N/A	Program Default	N/A	N/A	N/A	N/A
4***	9 to 15	Stiff Clay w/o Free Water (Reese)	N/A	N/A	120	3,500	N/A	Program Default	N/A	N/A	N/A	N/A

Notes: K is the modulus of subgrade reaction; γ is the effective unit weight; C is the cohesion of soil; ϕ is the friction angle of soil; ϵ_{50} is the soil strain parameter; E_m is the rock mass modulus of the rock; UCS is average Unconfined Compressive Strength of rock; RQD is average Rock Quality Designation; K_{rm} is the rock strain parameter.

Notes: *For upper 2 feet or scour depth, whichever is deeper, design parameters have been reduced due to seasonal moisture change and soil disturbance.

** The Undrained Shear Strengths used in this table are used to calibrate the lateral deflections of the piles based on pile load testing program and may not be presentative of the actual undrained shear strength of the subsurface materials.

*** Parameters provided in layer 4 are not obtained from pile load test. Recommend verifying with additional pile load testing if pile embedment depths are deeper than 9 feet below existing ground surface.

Table D3.1 – LPILE Computer Program Parameters for Lateral Load Analysis for Substation

Soil Layer	Depth (feet)	LPILE Soil Type	K (pci)		γ' (pcf)	C (psf)	ϕ (degree)	ε_{50}	E_{rm} (psi)	UCS (psi)	RQD (%)	K_{rm}
			Static	Cyclic								
1*	0 to 3	Stiff Clay w/o Free Water	--	--	115	--	--	--	--	--	--	--
2	3 to 7	Stiff Clay w/o Free Water	--	--	115	650	--	0.010	--	--	--	--
3	7 to 9	Stiff Clay w/o Free Water	--	--	115	1,590	--	0.007	--	--	--	--
4	9 to 14	Stiff Clay w/o Free Water	--	--	115	3,990	--	0.005	--	--	--	--
5	14 to 24	Stiff Clay w/o Free Water	--	--	115	3,990	--	0.005	--	--	--	--
6	24 to 34	Sand (Reese)	60	--	52.6	--	33	--	--	--	--	--
7	34 to 50	Stiff Clay w/o Free Water	--	--	52.6	3,320	--	0.005	--	--	--	--

Notes: *Upper 3 feet of soil should be neglected due to seasonal moisture change.

Table D3.2 – Direct Embedment/Drilled Pier Foundation Design Parameters for Substation

Soil Layer	Depth (feet)	USCS Soil & Rock Classification	γ	ϕ	C	C'_{Rock}	K_p	SPT N-Value (blows/ft)	Deformation Modulus (ksi)	Allowable Unit Skin Friction (FS=2.5) ⁽¹⁾ (psf)	Allowable Bearing Pressure (FS=3) (psf)
			(pcf)	(degree)	(psf)	(psf)					
1*	0 to 3	CL	115	--	--	--	--	--	--	--	--
2	3 to 7	CL	115	--	650	--	2.98	5	0.8	140	1,400
3	7 to 9	CL	115	--	1,590	--	2.98	12	1.4	350	4,200
4	9 to 14	CL	115	--	3,990	--	2.98	30	2.4	810	8,800
5	14 to 24	CL	115	--	3,990	--	2.98	30	2.4	810	8,800
6	24 to 34	SP	52.6	33	--	--	3.39	22	2.1	750	8,800
7	34 to 50	CH	52.6	--	3,320	--	2.98	25	2.2	720	9,900

Notes: Design depth to groundwater is 24 feet

*Upper 3 feet of soils should be neglected due to seasonal moisture change; K_p : Rankine Passive Earth Pressure Coefficient; γ' : Effective Unit Weight ($\gamma' = \gamma_{Total} - 62.4$ pcf); ϕ : Angle of Internal Friction.

⁽¹⁾ For uplift resistance, the allowable skin friction provided in table above should be reduced by 25 percent.



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APPENDIX E

Scioto Farms Solar - Test Pile Driving/Installing Time

Location/ Boring ID	Latitude	Longitude	Test Pile ID	Pile Section	Embedment Depth (ft)	Stick-up Height (ft)	Pile Install Date	Pile Drive Time at 1, 2, 3, 4, 5, 6, 7, 8, 9 ft (sec)									Total Time (sec)
								1'	2'	3'	4'	5'	6'	7'	8'	9'	
B-01	39.543450	-83.025700	PLT-B-01	W6X9	9.0	5.0	11/19/2021	1.0	5.7	9.5	12.4	11.9	10.2	12.0	13.3	14.0	90.0
B-02	39.541270	-83.023700	PLT-B-02A	W6X9	7.0	5.0	11/19/2021	0.6	2.5	6.2	12.2	19.0	20.7	20.1	--	--	81.3
			PLT-B-02B	W6X9	9.0	5.0	11/19/2021	0.4	0.3	5.2	10.6	16.1	41.2	16.1	22.2	24.1	136.2
B-03	39.538930	-83.016200	PLT-B-03	W6X9	7.0	5.0	11/19/2021	0.7	3.2	8.2	14.1	24.0	29.0	21.8	--	--	101.0
B-04	39.535980	-83.019800	PLT-B-04	W6X9	7.0	5.0	11/19/2021	1.3	5.4	7.3	7.7	6.4	6.1	5.4	--	--	39.6
B-05	39.537430	-83.028800	PLT-B-05	W6X9	9.0	5.0	11/19/2021	0.9	4.3	7.5	10.7	12.3	14.1	15.4	16.4	17.9	99.5
B-06	39.535060	-83.025500	PLT-B-06	W6X9	7.0	5.0	11/19/2021	0.7	3.8	6.3	9.0	6.7	8.2	9.0	--	--	43.7
B-07	39.532900	-83.022300	PLT-B-07	W6X9	9.0	5.0	11/19/2021	0.8	2.8	7.0	10.7	15.3	16.9	18.7	22.3	23.9	118.4
B-08	39.531930	-83.016500	PLT-B-08A	W6X9	7.0	5.0	11/19/2021	0.8	3.5	5.4	8.1	12.5	16.8	18.3	--	--	65.4
			PLT-B-08B	W6X9	9.0	5.0	11/19/2021	1.0	3.5	7.0	11.4	14.7	20.1	22.6	26.2	30.5	137.0
B-09	39.529920	-83.027200	PLT-B-09	W6X9	7.0	5.0	11/19/2021	0.7	5.7	8.7	12.4	14.0	14.5	12.4	--	--	68.4
B-10	39.528400	-83.018300	PLT-B-10	W6X9	9.0	5.0	11/19/2021	1.0	3.8	8.4	15.7	25.4	25.3	26.2	22.6	25.6	154.0
B-11	39.525560	-83.026300	PLT-B-11	W6X9	9.0	5.0	11/19/2021	0.5	5.5	6.4	12.5	15.6	17.7	17.5	19.6	24.7	120.0
B-12	39.523530	-83.021300	PLT-B-12	W6X9	7.0	5.0	11/19/2021	0.0	3.3	10.1	18.6	26.6	30.7	36.2	--	--	125.5
B-13	39.519500	-83.027200	PLT-B-13A	W6X9	7.0	5.0	11/19/2021	1.0	4.8	11.3	17.9	21.3	23.5	23.7	--	--	103.5
			PLT-B-13B	W6X9	9.0	5.0	11/19/2021	0.6	4.8	10.5	15.8	19.4	27.4	29.9	30.9	31.2	170.5
B-14	39.520440	-83.019600	PLT-B-14	W6X9	9.0	5.0	11/19/2021	0.6	4.4	10.6	12.9	15.0	17.2	20.5	21.2	19.9	122.3
B-15	39.515550	-83.023100	PLT-B-15	W6X9	7.0	5.0	11/19/2021	0.0	3.3	7.2	14.2	20.1	24.4	29.0	--	--	98.2
B-16	39.512390	-83.016000	PLT-B-16	W6X9	7.0	5.0	11/19/2021	0.4	3.0	5.5	8.0	9.6	13.4	15.0	--	--	54.9
B-17	39.512700	-83.011600	PLT-B-17A	W6X9	7.0	5.0	11/19/2021	0.7	3.0	6.5	11.4	13.4	16.6	21.4	--	--	73.0
			PLT-B-17B	W6X9	9.0	5.0	11/19/2021	1.6	3.3	6.2	10.4	16.5	22.3	25.0	28.7	30.9	144.9
B-18	39.518020	-83.013900	PLT-B-18	W6X9	7.0	5.0	11/19/2021	0.7	5.1	9.7	15.7	17.2	15.9	16.4	--	--	80.7
B-19	39.528350	-83.014700	PLT-B-19	W6X9	9.0	5.0	11/19/2021	1.6	7.2	15.2	24.4	31.5	35.0	23.9	23.5	24.9	187.2

Summary of Pile Load Testing Results

Location/ Boring ID	Latitude	Longitude	Test Pile ID	Pile Section	Type of installation	Load Testing	Embedment Depth (ft)	Stick-up Height (ft)	Driving Time (sec)	Lateral Loading			Uplift Loading									
										Maximum Load (lbs)	Displacement (inches) at 4" above ground	Residual Displacement (inches)	Maximum Load (lbs)	Displacement (inches)	Failure Load (lbs; 0.5-in displacement)	Residual Displacement (inches)	Top Soil/Neglect Zone Thickness (ft)	Resistance Depth (ft) ⁽¹⁾	Resistance Perimeter (ft) ⁽²⁾	Pile Uplift Failure Load (lbs) ⁽³⁾	Pile Uplift Strenght (lbs/ft)	Ultimate Uplift Unit Skin Friction (lbs/ft ²)
B-01	39.543450	-83.025700	PLT-B-01	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	90	3,500	0.878	0.222	7,000	1.060	5,400	1.069	0.67	8.3	1.64	5,274	633	386
B-02	39.541270	-83.023700	PLT-B-02A	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	81.3	3,500	0.902	0.162	7,000	0.107	7,000	—	0.67	6.3	1.64	6,892	1,088	664
			PLT-B-02B	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	136.2	3,000	0.823	0.262	10,000	0.129	>10000	0.055	0.67	8.3	1.64	9,874	1,185	722
B-03	39.538930	-83.016200	PLT-B-03	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	101	3,500	0.852	0.227	10,000	0.183	>10,000	0.160	0.67	6.3	1.64	9,892	1,562	952
B-04	39.535980	-83.019800	PLT-B-04	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	39.6	3,000	1.105	0.590	2,000	0.775	1,650	0.729	1.00	6.0	1.64	1,542	257	157
B-05	39.537430	-83.028800	PLT-B-05	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	99.5	3,500	0.694	0.065	10,000	0.457	>10,000	0.340	0.50	8.5	1.64	9,874	1,162	708
B-06	39.535060	-83.025500	PLT-B-06	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	43.7	3,500	0.748	0.151	6,000	0.751	5,300	0.748	0.67	6.3	1.64	5,192	820	500
B-07	39.532900	-83.022300	PLT-B-07	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	118.4	3,500	0.834	0.079	10,000	0.207	>10,000	0.181	0.83	8.2	1.64	9,874	1,209	737
B-08	39.531930	-83.016500	PLT-B-08A	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	65.4	3,500	0.771	0.112	10,000	2.401	9,000	2.678	0.67	6.3	1.64	8,892	1,404	856
			PLT-B-08B	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	137	3,500	0.702	0.069	10,000	0.246	>10,000	0.160	0.67	8.3	1.64	9,874	1,185	722
B-09	39.529920	-83.027200	PLT-B-09	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	68.4	3,000	0.755	0.208	5,000	1.079	4,100	1.023	0.67	6.3	1.64	3,992	630	384
B-10	39.528400	-83.018300	PLT-B-10	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	154	3,500	0.683	0.077	10,000	0.115	>10,000	0.044	0.67	8.3	1.64	9,874	1,185	722
B-11	39.525560	-83.026300	PLT-B-11	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	120	3,500	0.831	0.109	10,000	0.150	>10,000	0.142	0.67	8.3	1.64	9,874	1,185	722
B-12	39.523530	-83.021300	PLT-B-12	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	125.5	3,500	0.609	0.063	10,000	0.081	>10,000	0.030	0.50	6.5	1.64	9,892	1,522	928
B-13	39.519500	-83.027200	PLT-B-13A	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	103.5	3,500	0.589	0.069	10,000	0.276	>10,000	0.181	1.00	6.0	1.64	9,892	1,649	1005
			PLT-B-13B	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	170.5	3,500	0.645	0.062	10,000	0.121	>10,000	0.038	1.00	8.0	1.64	9,874	1,234	753
B-14	39.520440	-83.019600	PLT-B-14	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	122.3	3,500	0.641	0.064	10,000	0.091	>10,000	0.077	0.67	8.3	1.64	9,874	1,185	722
B-15	39.515550	-83.023100	PLT-B-15	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	98.2	3,500	0.691	0.068	10,000	0.096	>10,000	0.026	0.50	6.5	1.64	9,892	1,522	928
B-16	39.512390	-83.016000	PLT-B-16	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	54.9	3,500	0.754	0.109	9,300	1.174	8,200	1.155	0.50	6.5	1.64	8,092	1,245	759
B-17	39.512700	-83.011600	PLT-B-17A	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	73	3,500	0.694	0.116	10,000	0.152	>10,000	0.128	1.00	6.0	1.64	9,892	1,649	1005
			PLT-B-17B	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	144.9	3,500	0.760	0.111	10,000	0.141	>10,000	0.062	1.00	8.0	1.64	9,874	1,234	753
B-18	39.518020	-83.013900	PLT-B-18	W6X9	Driven Pile	Lateral then Uplift	7.0	5.0	80.7	3,500	0.637	0.075	8,700	1.348	8,000	1.285	0.67	6.3	1.64	7,892	1,246	760
B-19	39.528350	-83.014700	PLT-B-19	W6X9	Driven Pile	Lateral then Uplift	9.0	5.0	187.2	3,500	0.536	0.051	10,000	0.080	>10,000	0.052	0.50	8.5	1.64	9,874	1,162	708

Notes: 1) Resistance depth during testing = Embedment Depth-Top Soil Thickness. Assuming negligible resistance from the top soil during testing. For long-term design, RRC recommend to neglect 2.7 feet (see Table D1.1).
2) Box perimeter 3) Failure load minus weight of the pile. Assume 10,000 lbs maximum failure load.

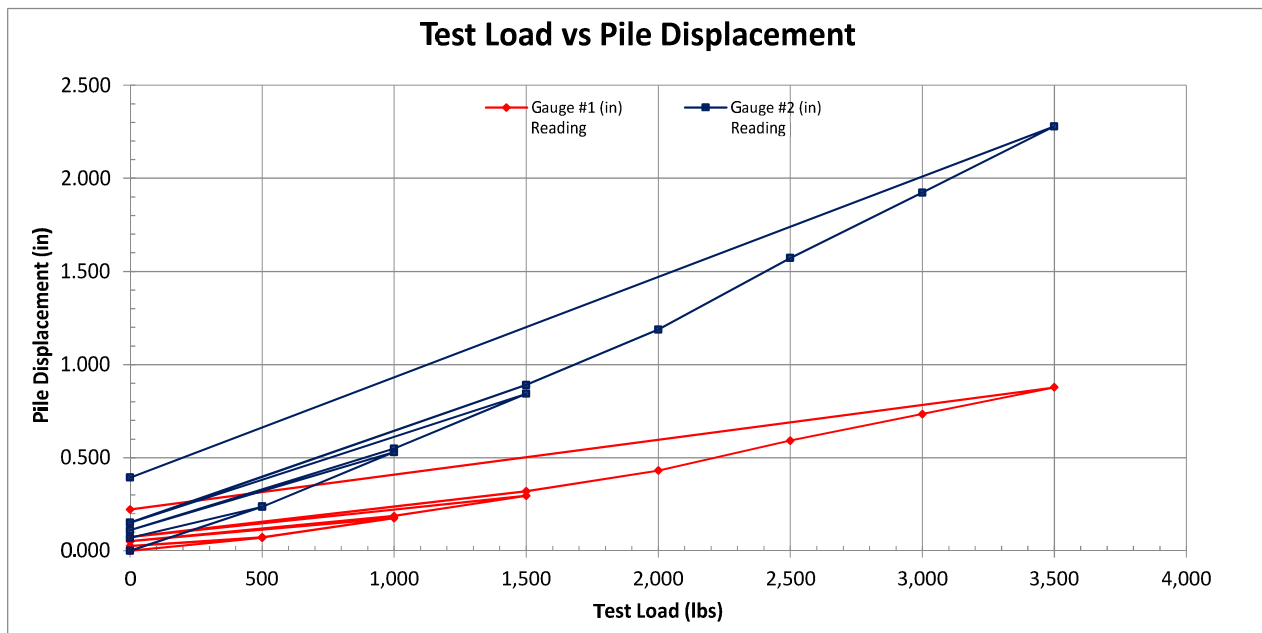


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/1/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-01-L	Weather:	Cloudy
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	90.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.071	-0.237	0.071	0.237	
0	0.5 min	-0.026	-0.070	0.026	0.070	
500	2 min	-0.073	-0.237	0.073	0.237	
1,000	2 min	-0.176	-0.530	0.176	0.530	
0	0.5 min	-0.051	-0.111	0.051	0.111	
1,000	2 min	-0.187	-0.549	0.187	0.549	
1,500	2 min	-0.296	-0.844	0.296	0.844	
0	0.5 min	-0.073	-0.151	0.073	0.151	
1,500	2 min	-0.320	-0.891	0.320	0.891	
2,000	2 min	-0.432	-1.188	0.432	1.188	
2,500	2 min	-0.592	-1.572	0.592	1.572	
3,000	2 min	-0.735	-1.924	0.735	1.924	
3,500	2 min	-0.878	-2.279	0.878	2.279	Pile Failed
0	0.5 min	-0.222	-0.393	0.222	0.393	

Notes:



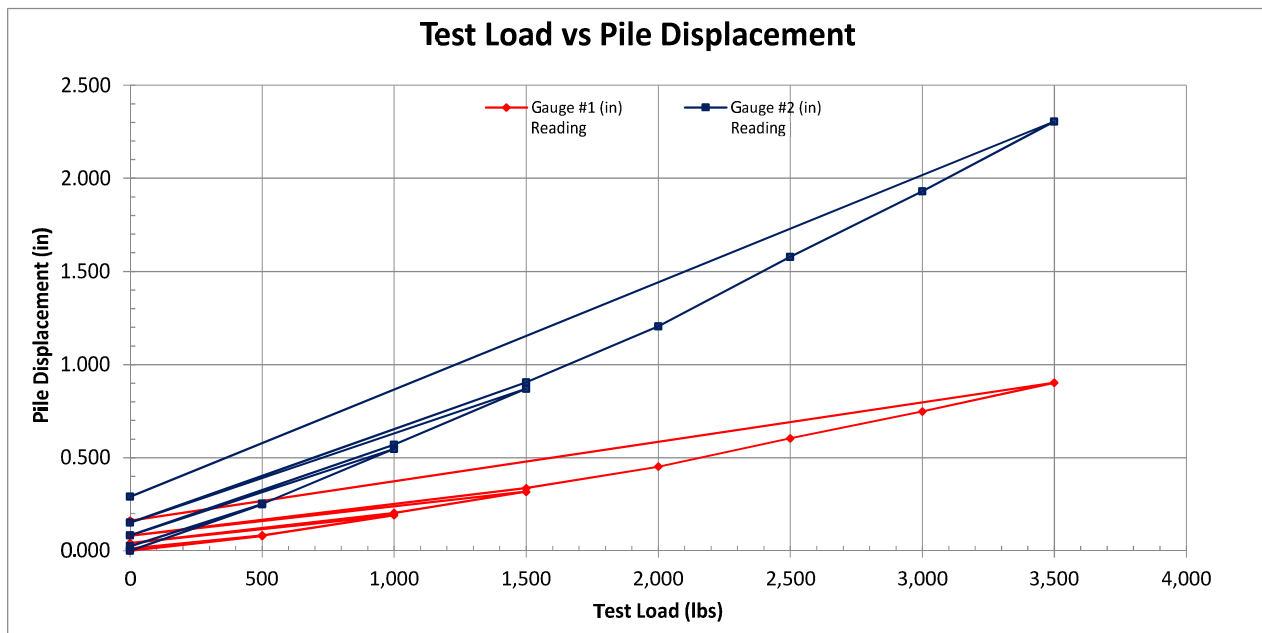


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-02A-L	Weather:	Cloudy
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	81.3	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.080	-0.249	0.080	0.249	
0	0.5 min	-0.013	-0.025	0.013	0.025	
500	2 min	-0.083	-0.253	0.083	0.253	
1,000	2 min	-0.191	-0.547	0.191	0.547	
0	0.5 min	-0.042	-0.083	0.042	0.083	
1,000	2 min	-0.203	-0.570	0.203	0.570	
1,500	2 min	-0.317	-0.871	0.317	0.871	
0	0.5 min	-0.082	-0.152	0.082	0.152	
1,500	2 min	-0.336	-0.905	0.336	0.905	
2,000	2 min	-0.452	-1.206	0.452	1.206	
2,500	2 min	-0.604	-1.578	0.604	1.578	
3,000	2 min	-0.748	-1.931	0.748	1.931	
3,500	2 min	-0.902	-2.305	0.902	2.305	Pile Failed
0	0.5 min	-0.162	-0.291	0.162	0.291	

Notes:





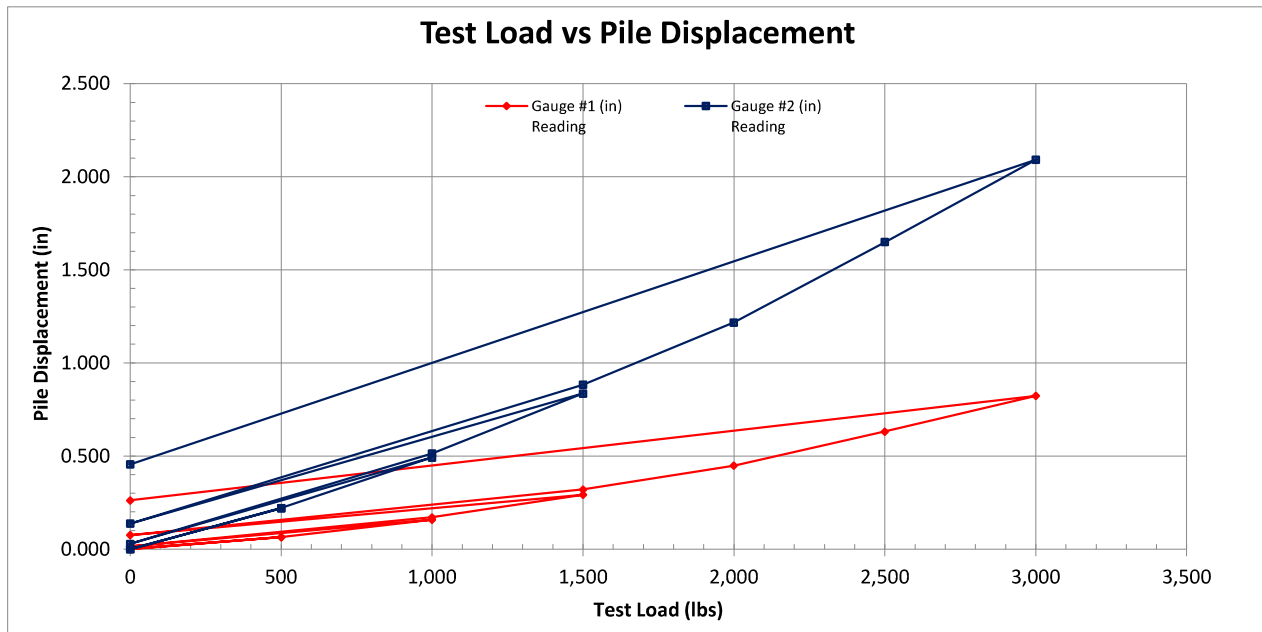
Pile Load Test - Lateral

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-02B-L
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	136.2

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Cloudy
Pile Embedment Depth (ft):	9.0
Gauge#1 and #2 Ht above Ground (in):	4 and 48
Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.065	-0.220	0.065	0.220	
0	0.5 min	-0.002	0.000	0.002	0.000	
500	2 min	-0.066	-0.221	0.066	0.221	
1,000	2 min	-0.159	-0.492	0.159	0.492	
0	0.5 min	-0.016	-0.029	0.016	0.029	
1,000	2 min	-0.171	-0.514	0.171	0.514	
1,500	2 min	-0.293	-0.836	0.293	0.836	
0	0.5 min	-0.076	-0.137	0.076	0.137	
1,500	2 min	-0.321	-0.884	0.321	0.884	
2,000	2 min	-0.448	-1.217	0.448	1.217	
2,500	2 min	-0.632	-1.650	0.632	1.650	
3,000	2 min	-0.823	-2.091	0.823	2.091	Pile Failed
0	0.5 min	-0.262	-0.455	0.262	0.455	

Notes:



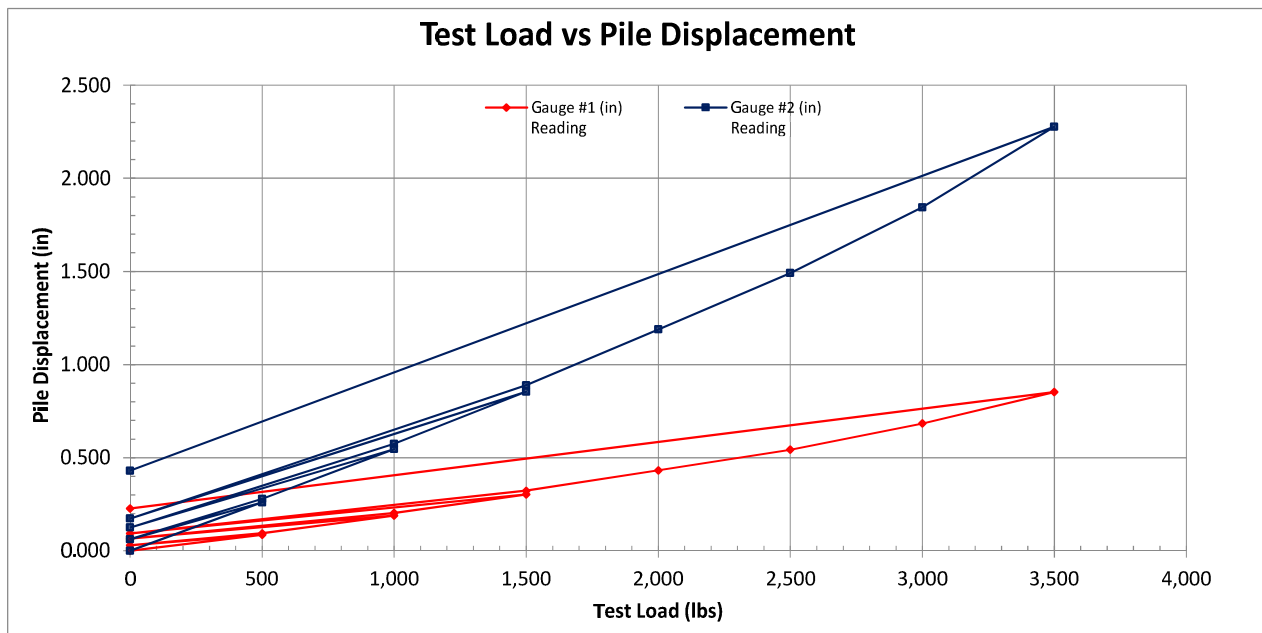


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-03-L	Weather:	Cloudy
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	101.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.086	-0.261	0.086	0.261	
0	0.5 min	-0.029	-0.063	0.029	0.063	
500	2 min	-0.094	-0.280	0.094	0.280	
1,000	2 min	-0.190	-0.547	0.190	0.547	
0	0.5 min	-0.065	-0.126	0.065	0.126	
1,000	2 min	-0.203	-0.575	0.203	0.575	
1,500	2 min	-0.303	-0.855	0.303	0.855	
0	0.5 min	-0.094	-0.174	0.094	0.174	
1,500	2 min	-0.322	-0.889	0.322	0.889	
2,000	2 min	-0.432	-1.189	0.432	1.189	
2,500	2 min	-0.544	-1.491	0.544	1.491	
3,000	2 min	-0.684	-1.845	0.684	1.845	
3,500	2 min	-0.852	-2.277	0.852	2.277	Pile Failed
0	0.5 min	-0.227	-0.431	0.227	0.431	

Notes:



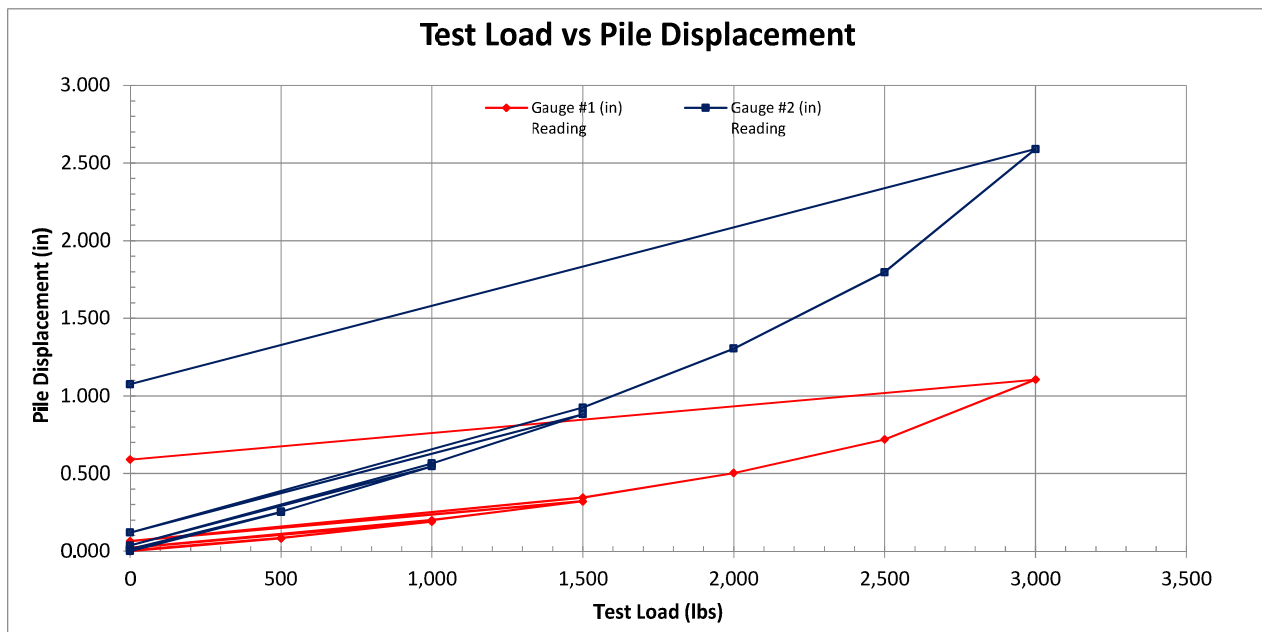


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-04-L	Weather:	Windy
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	39.6	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.082	-0.252	0.082	0.252	
0	0.5 min	-0.005	-0.015	0.005	0.015	
500	2 min	-0.084	-0.254	0.084	0.254	
1,000	2 min	-0.190	-0.546	0.190	0.546	
0	0.5 min	-0.021	-0.037	0.021	0.037	
1,000	2 min	-0.199	-0.565	0.199	0.565	
1,500	2 min	-0.321	-0.883	0.321	0.883	
0	0.5 min	-0.065	-0.120	0.065	0.120	
1,500	2 min	-0.345	-0.925	0.345	0.925	
2,000	2 min	-0.503	-1.306	0.503	1.306	
2,500	2 min	-0.720	-1.797	0.720	1.797	
3,000	2 min	-1.105	-2.591	1.105	2.591	Pile Failed
0	0.5 min	-0.590	-1.075	0.590	1.075	

Notes:



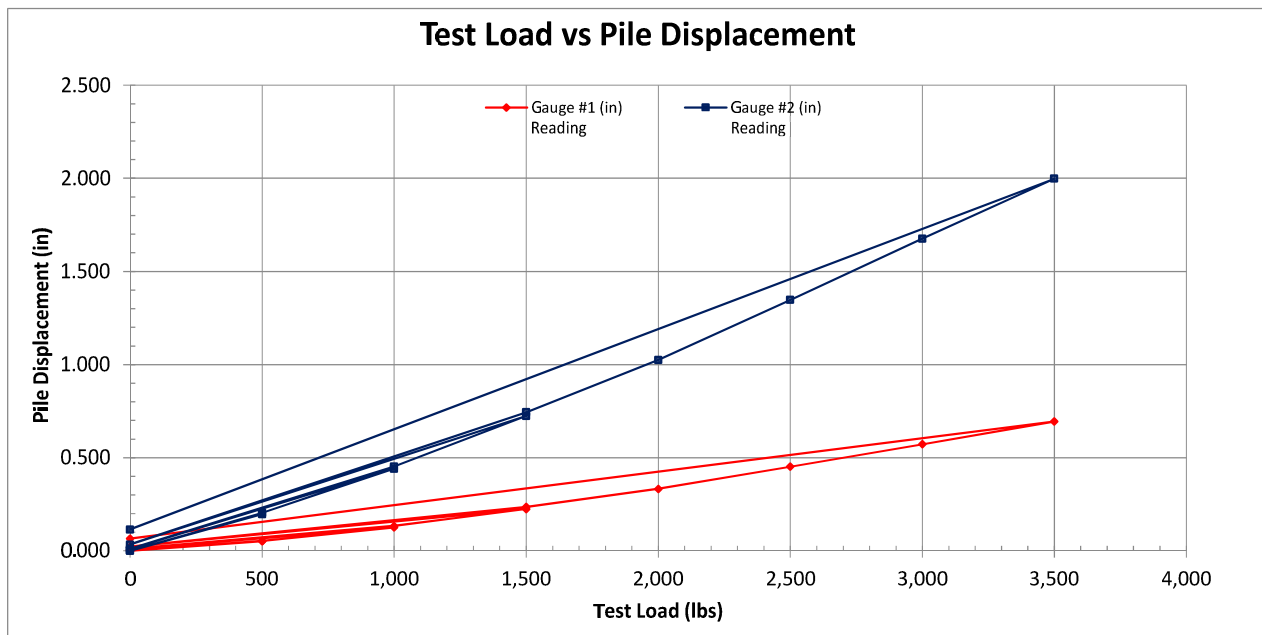


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-05-L	Weather:	Windy
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	99.5	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.052	-0.197	0.052	0.197	
0	0.5 min	-0.003	0.000	0.003	0.000	
500	2 min	-0.053	-0.204	0.053	0.204	
1,000	2 min	-0.126	-0.441	0.126	0.441	
0	0.5 min	-0.010	-0.010	0.010	0.010	
1,000	2 min	-0.134	-0.453	0.134	0.453	
1,500	2 min	-0.225	-0.724	0.225	0.724	
0	0.5 min	-0.022	-0.034	0.022	0.034	
1,500	2 min	-0.236	-0.744	0.236	0.744	
2,000	2 min	-0.333	-1.025	0.333	1.025	
2,500	2 min	-0.452	-1.347	0.452	1.347	
3,000	2 min	-0.572	-1.676	0.572	1.676	
3,500	2 min	-0.694	-1.998	0.694	1.998	
0	0.5 min	-0.065	-0.115	0.065	0.115	

Notes:



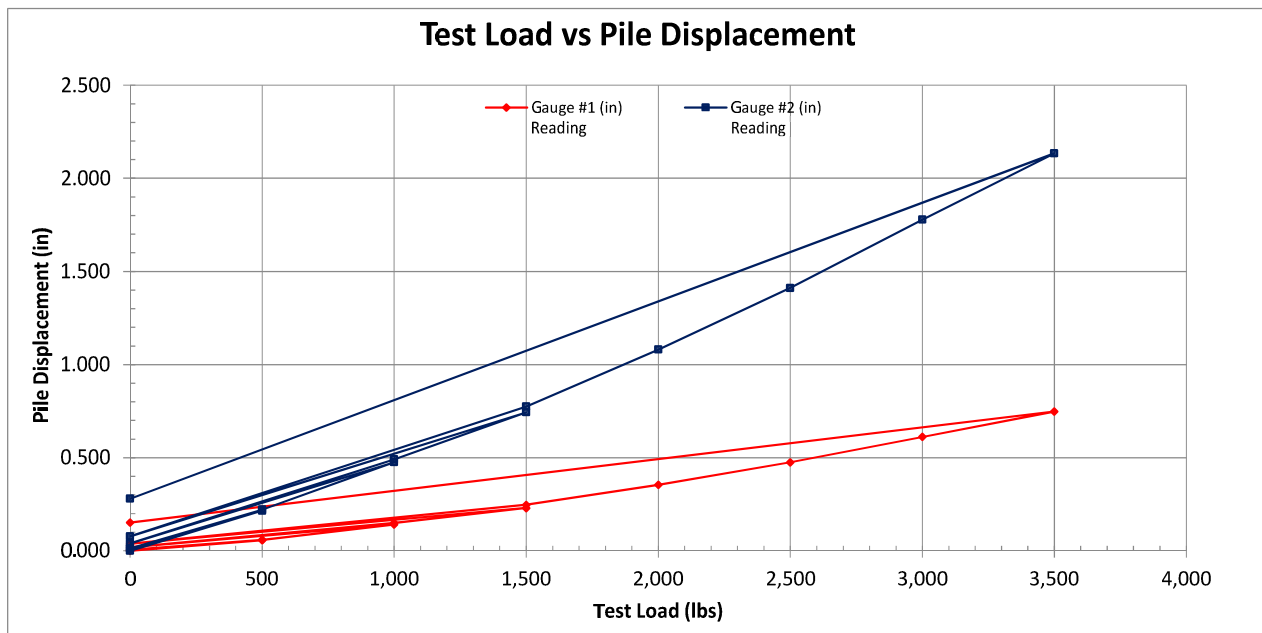


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-06-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	43.7	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.057	-0.216	0.057	0.216	
0	0.5 min	-0.006	-0.013	0.006	0.013	
500	2 min	-0.059	-0.222	0.059	0.222	
1,000	2 min	-0.141	-0.476	0.141	0.476	
0	0.5 min	-0.019	-0.040	0.019	0.040	
1,000	2 min	-0.149	-0.491	0.149	0.491	
1,500	2 min	-0.230	-0.744	0.230	0.744	
0	0.5 min	-0.037	-0.078	0.037	0.078	
1,500	2 min	-0.247	-0.775	0.247	0.775	
2,000	2 min	-0.354	-1.081	0.354	1.081	
2,500	2 min	-0.475	-1.411	0.475	1.411	
3,000	2 min	-0.612	-1.778	0.612	1.778	
3,500	2 min	-0.748	-2.134	0.748	2.134	
0	0.5 min	-0.151	-0.280	0.151	0.280	

Notes:



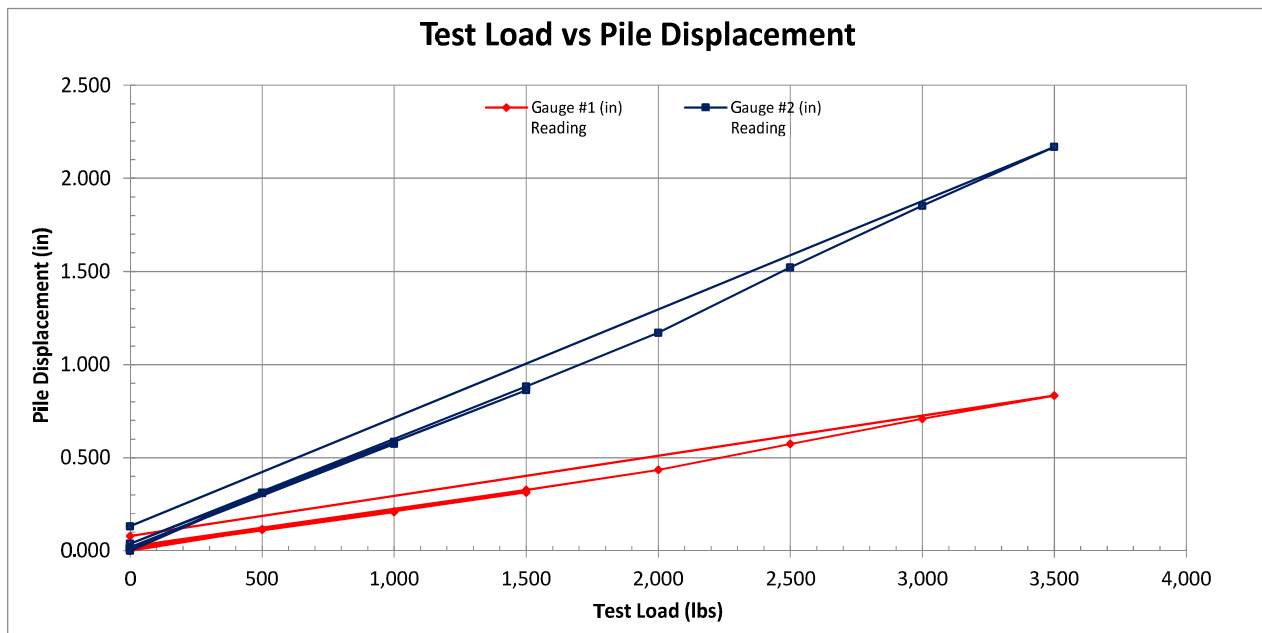


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-07-L	Weather:	Windy
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	118.4	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.115	-0.310	0.115	0.310	
0	0.5 min	-0.007	-0.011	0.007	0.011	
500	2 min	-0.115	-0.312	0.115	0.312	
1,000	2 min	-0.208	-0.574	0.208	0.574	
0	0.5 min	-0.012	-0.020	0.012	0.020	
1,000	2 min	-0.213	-0.585	0.213	0.585	
1,500	2 min	-0.314	-0.863	0.314	0.863	
0	0.5 min	-0.022	-0.039	0.022	0.039	
1,500	2 min	-0.326	-0.882	0.326	0.882	
2,000	2 min	-0.435	-1.171	0.435	1.171	
2,500	2 min	-0.574	-1.521	0.574	1.521	
3,000	2 min	-0.709	-1.853	0.709	1.853	
3,500	2 min	-0.834	-2.169	0.834	2.169	
0	0.5 min	-0.079	-0.132	0.079	0.132	

Notes:



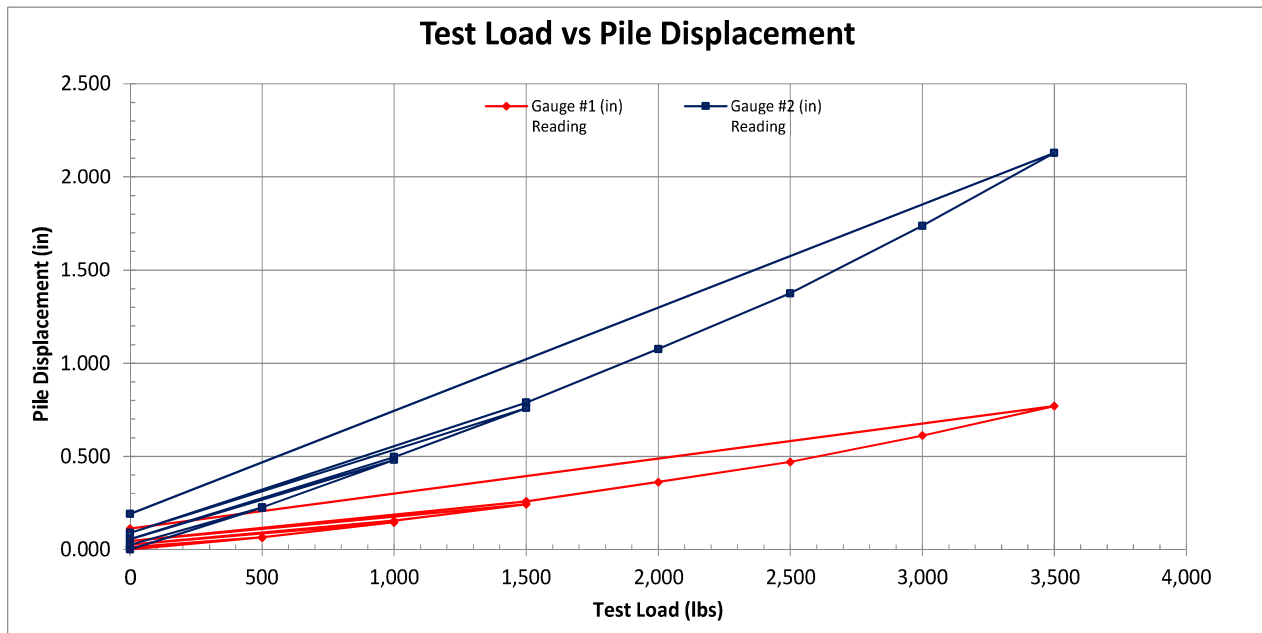


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-08A-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	65.4	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.065	-0.225	0.065	0.225	
0	0.5 min	-0.012	-0.025	0.012	0.025	
500	2 min	-0.065	-0.226	0.065	0.226	
1,000	2 min	-0.146	-0.481	0.146	0.481	
0	0.5 min	-0.027	-0.055	0.027	0.055	
1,000	2 min	-0.154	-0.497	0.154	0.497	
1,500	2 min	-0.242	-0.760	0.242	0.760	
0	0.5 min	-0.045	-0.089	0.045	0.089	
1,500	2 min	-0.258	-0.789	0.258	0.789	
2,000	2 min	-0.362	-1.077	0.362	1.077	
2,500	2 min	-0.470	-1.376	0.470	1.376	
3,000	2 min	-0.612	-1.738	0.612	1.738	
3,500	2 min	-0.771	-2.130	0.771	2.130	
0	0.5 min	-0.112	-0.191	0.112	0.191	

Notes:



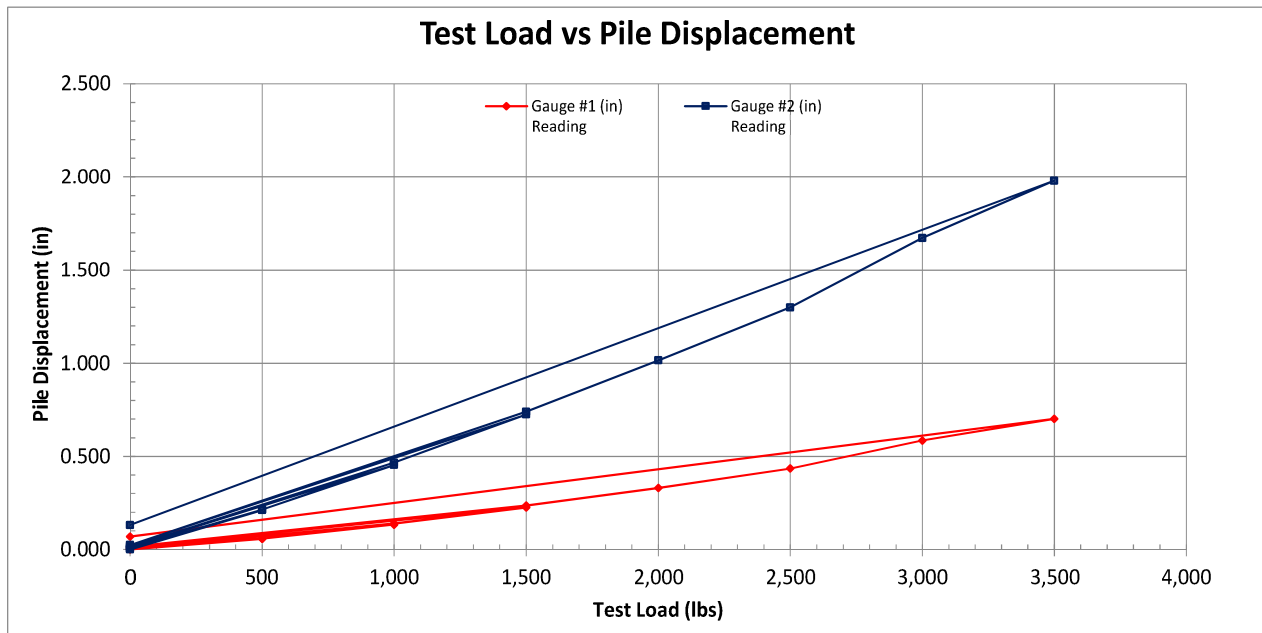


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-08B-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	137.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.057	-0.211	0.057	0.211	
0	0.5 min	-0.003	-0.006	0.003	0.006	
500	2 min	-0.059	-0.214	0.059	0.214	
1,000	2 min	-0.134	-0.454	0.134	0.454	
0	0.5 min	-0.008	-0.014	0.008	0.014	
1,000	2 min	-0.140	-0.467	0.140	0.467	
1,500	2 min	-0.226	-0.725	0.226	0.725	
0	0.5 min	-0.014	-0.025	0.014	0.025	
1,500	2 min	-0.235	-0.740	0.235	0.740	
2,000	2 min	-0.330	-1.016	0.330	1.016	
2,500	2 min	-0.435	-1.300	0.435	1.300	
3,000	2 min	-0.585	-1.673	0.585	1.673	
3,500	2 min	-0.702	-1.980	0.702	1.980	
0	0.5 min	-0.069	-0.132	0.069	0.132	

Notes:



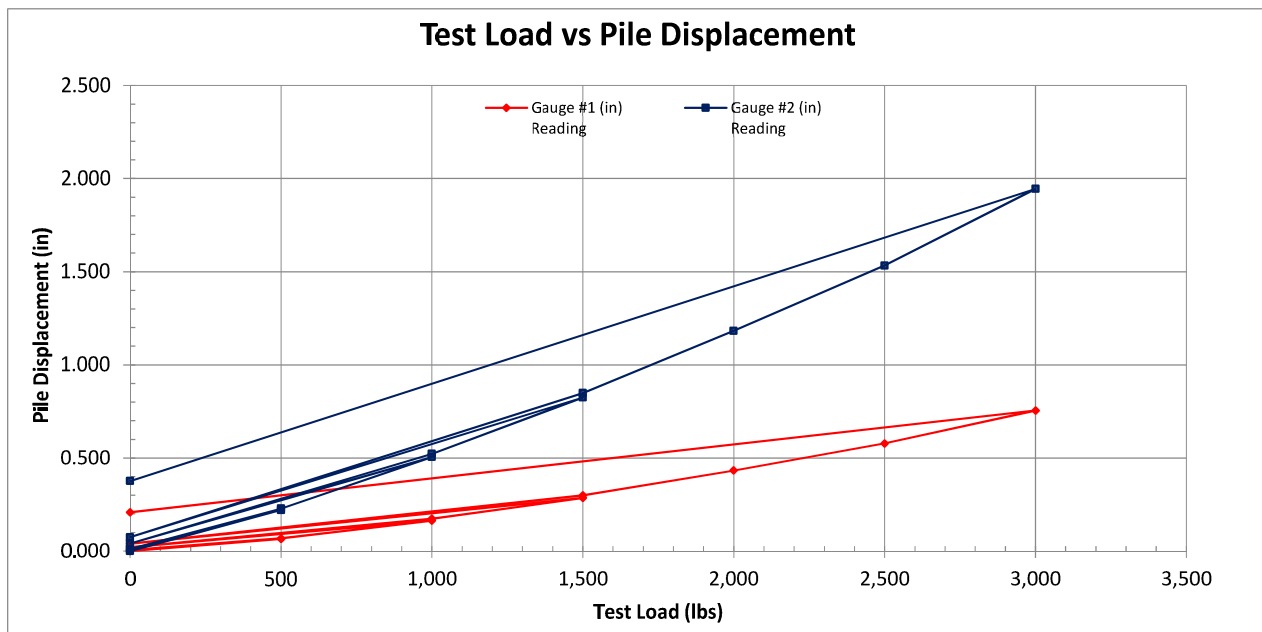


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/2/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-09-L	Weather:	Windy
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	68.4	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.066	-0.221	0.066	0.221	
0	0.5 min	-0.005	-0.012	0.005	0.012	
500	2 min	-0.068	-0.229	0.068	0.229	
1,000	2 min	-0.164	-0.506	0.164	0.506	
0	0.5 min	-0.021	-0.041	0.021	0.041	
1,000	2 min	-0.174	-0.523	0.174	0.523	
1,500	2 min	-0.285	-0.825	0.285	0.825	
0	0.5 min	-0.040	-0.075	0.040	0.075	
1,500	2 min	-0.300	-0.849	0.300	0.849	
2,000	2 min	-0.433	-1.183	0.433	1.183	
2,500	2 min	-0.578	-1.534	0.578	1.534	
3,000	2 min	-0.755	-1.945	0.755	1.945	Pile Failed
0	0.5 min	-0.208	-0.376	0.208	0.376	

Notes:



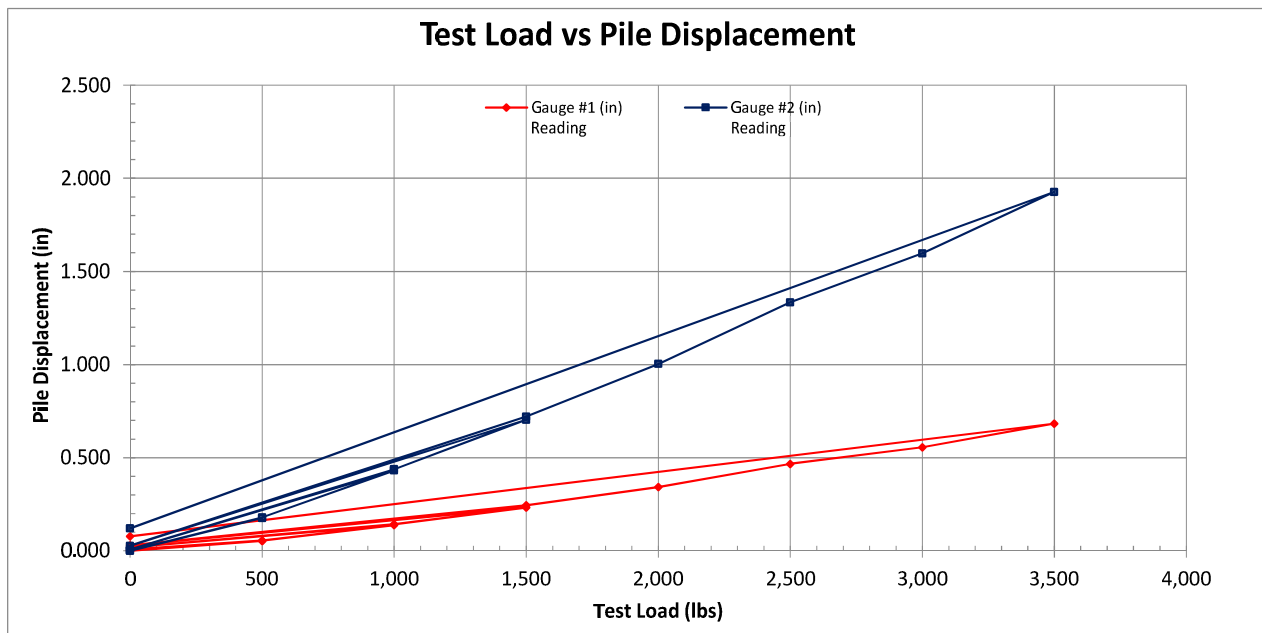


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-10-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	154.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.053	-0.176	0.053	0.176	
0	0.5 min	-0.006	0.000	0.006	0.000	
500	2 min	-0.056	-0.180	0.056	0.180	
1,000	2 min	-0.138	-0.431	0.138	0.431	
0	0.5 min	-0.018	-0.007	0.018	0.007	
1,000	2 min	-0.143	-0.438	0.143	0.438	
1,500	2 min	-0.233	-0.704	0.233	0.704	
0	0.5 min	-0.029	-0.027	0.029	0.027	
1,500	2 min	-0.244	-0.721	0.244	0.721	
2,000	2 min	-0.342	-1.004	0.342	1.004	
2,500	2 min	-0.467	-1.334	0.467	1.334	
3,000	2 min	-0.556	-1.597	0.556	1.597	
3,500	2 min	-0.683	-1.927	0.683	1.927	
0	0.5 min	-0.077	-0.121	0.077	0.121	

Notes:



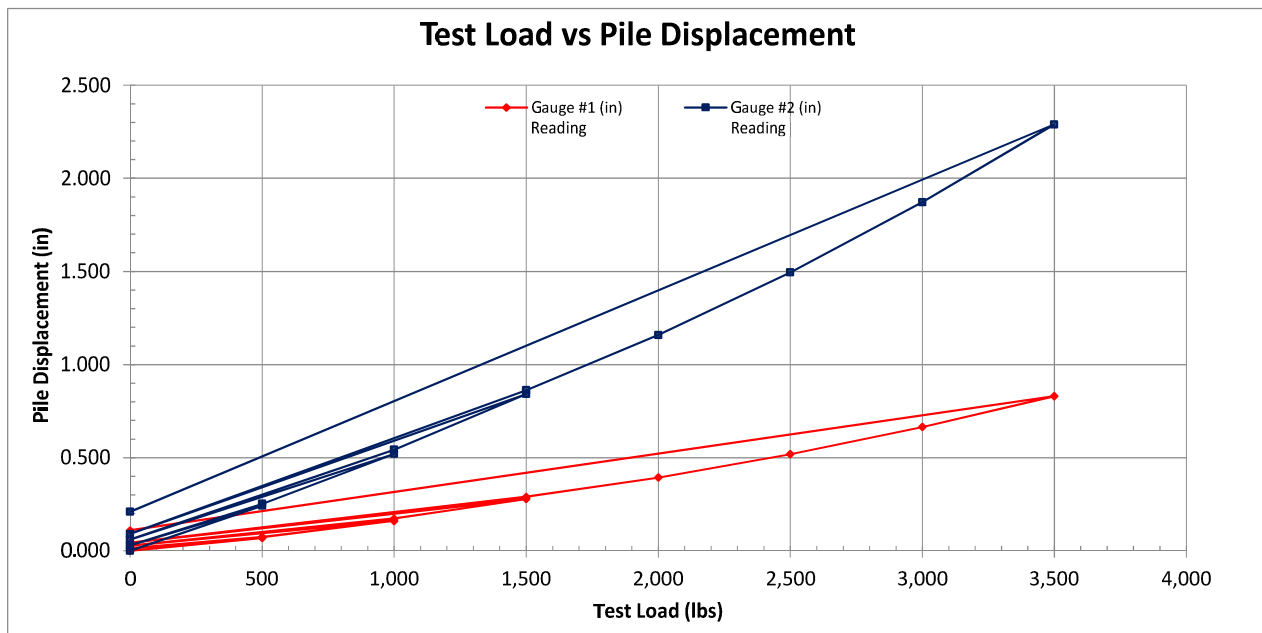


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-11-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	120.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.069	-0.242	0.069	0.242	
0	0.5 min	-0.014	-0.030	0.014	0.030	
500	2 min	-0.074	-0.253	0.074	0.253	
1,000	2 min	-0.161	-0.521	0.161	0.521	
0	0.5 min	-0.027	-0.060	0.027	0.060	
1,000	2 min	-0.173	-0.543	0.173	0.543	
1,500	2 min	-0.279	-0.842	0.279	0.842	
0	0.5 min	-0.044	-0.091	0.044	0.091	
1,500	2 min	-0.290	-0.862	0.290	0.862	
2,000	2 min	-0.394	-1.159	0.394	1.159	
2,500	2 min	-0.519	-1.495	0.519	1.495	
3,000	2 min	-0.665	-1.872	0.665	1.872	
3,500	2 min	-0.831	-2.290	0.831	2.290	Pile Failed
0	0.5 min	-0.109	-0.210	0.109	0.210	

Notes:



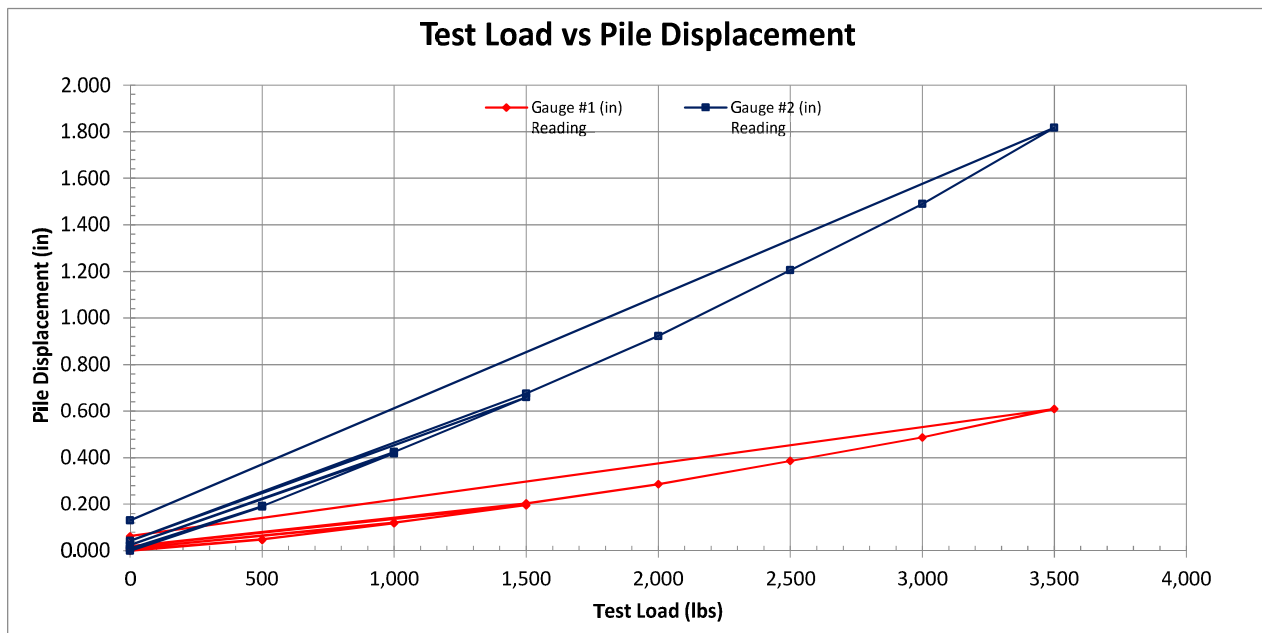


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-12-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	125.5	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.048	-0.190	0.048	0.190	
0	0.5 min	-0.005	-0.010	0.005	0.010	
500	2 min	-0.049	-0.193	0.049	0.193	
1,000	2 min	-0.118	-0.419	0.118	0.419	
0	0.5 min	-0.011	-0.024	0.011	0.024	
1,000	2 min	-0.121	-0.425	0.121	0.425	
1,500	2 min	-0.196	-0.660	0.196	0.660	
0	0.5 min	-0.020	-0.043	0.020	0.043	
1,500	2 min	-0.204	-0.676	0.204	0.676	
2,000	2 min	-0.286	-0.923	0.286	0.923	
2,500	2 min	-0.386	-1.205	0.386	1.205	
3,000	2 min	-0.488	-1.490	0.488	1.490	
3,500	2 min	-0.609	-1.818	0.609	1.818	
0	0.5 min	-0.063	-0.131	0.063	0.131	

Notes:



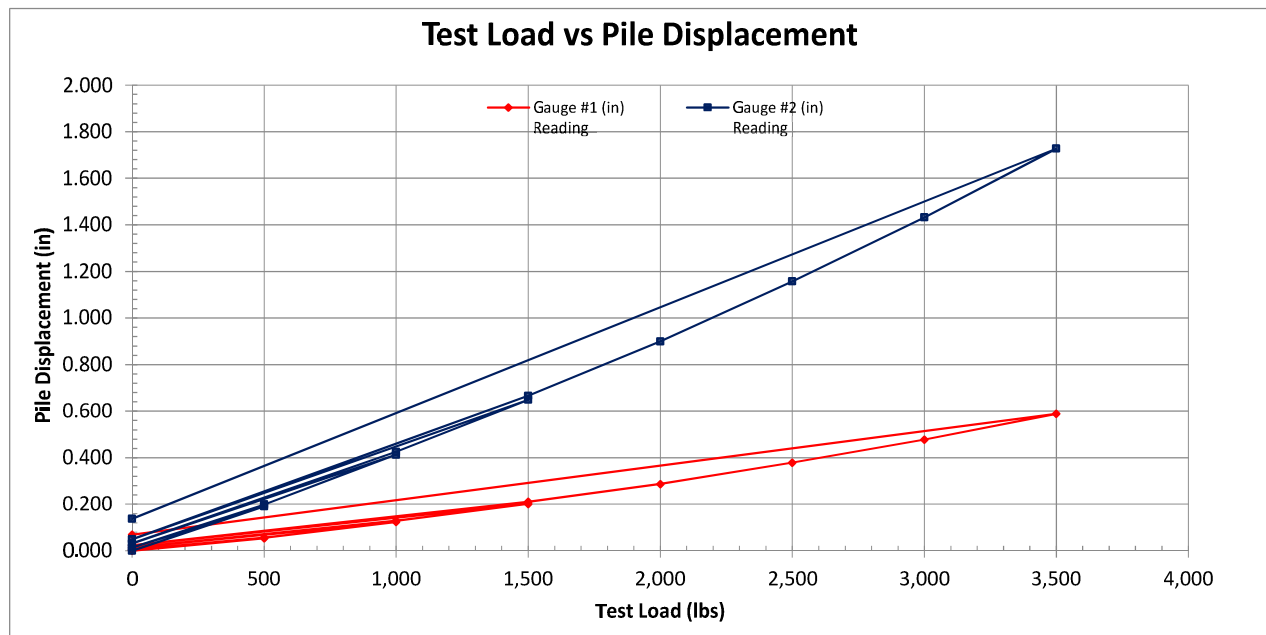


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-13A-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	103.5	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.054	-0.191	0.054	0.191	
0	0.5 min	-0.006	-0.014	0.006	0.014	
500	2 min	-0.056	-0.199	0.056	0.199	
1,000	2 min	-0.124	-0.413	0.124	0.413	
0	0.5 min	-0.014	-0.032	0.014	0.032	
1,000	2 min	-0.129	-0.426	0.129	0.426	
1,500	2 min	-0.202	-0.649	0.202	0.649	
0	0.5 min	-0.023	-0.050	0.023	0.050	
1,500	2 min	-0.210	-0.666	0.210	0.666	
2,000	2 min	-0.287	-0.900	0.287	0.900	
2,500	2 min	-0.379	-1.158	0.379	1.158	
3,000	2 min	-0.478	-1.432	0.478	1.432	
3,500	2 min	-0.589	-1.728	0.589	1.728	
0	0.5 min	-0.069	-0.138	0.069	0.138	

Notes:



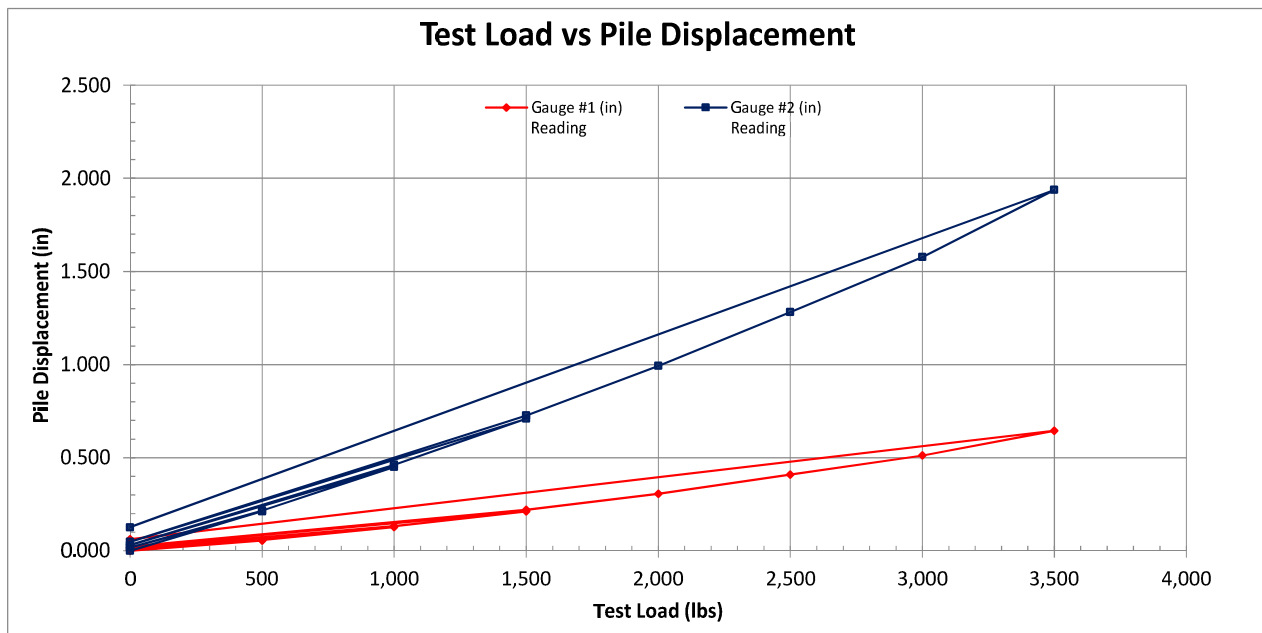


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-13B-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	170.5	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.056	-0.213	0.056	0.213	
0	0.5 min	-0.008	-0.018	0.008	0.018	
500	2 min	-0.058	-0.217	0.058	0.217	
1,000	2 min	-0.127	-0.450	0.127	0.450	
0	0.5 min	-0.014	-0.032	0.014	0.032	
1,000	2 min	-0.133	-0.463	0.133	0.463	
1,500	2 min	-0.212	-0.710	0.212	0.710	
0	0.5 min	-0.022	-0.048	0.022	0.048	
1,500	2 min	-0.220	-0.727	0.220	0.727	
2,000	2 min	-0.306	-0.993	0.306	0.993	
2,500	2 min	-0.409	-1.282	0.409	1.282	
3,000	2 min	-0.512	-1.577	0.512	1.577	
3,500	2 min	-0.645	-1.938	0.645	1.938	
0	0.5 min	-0.062	-0.127	0.062	0.127	

Notes:



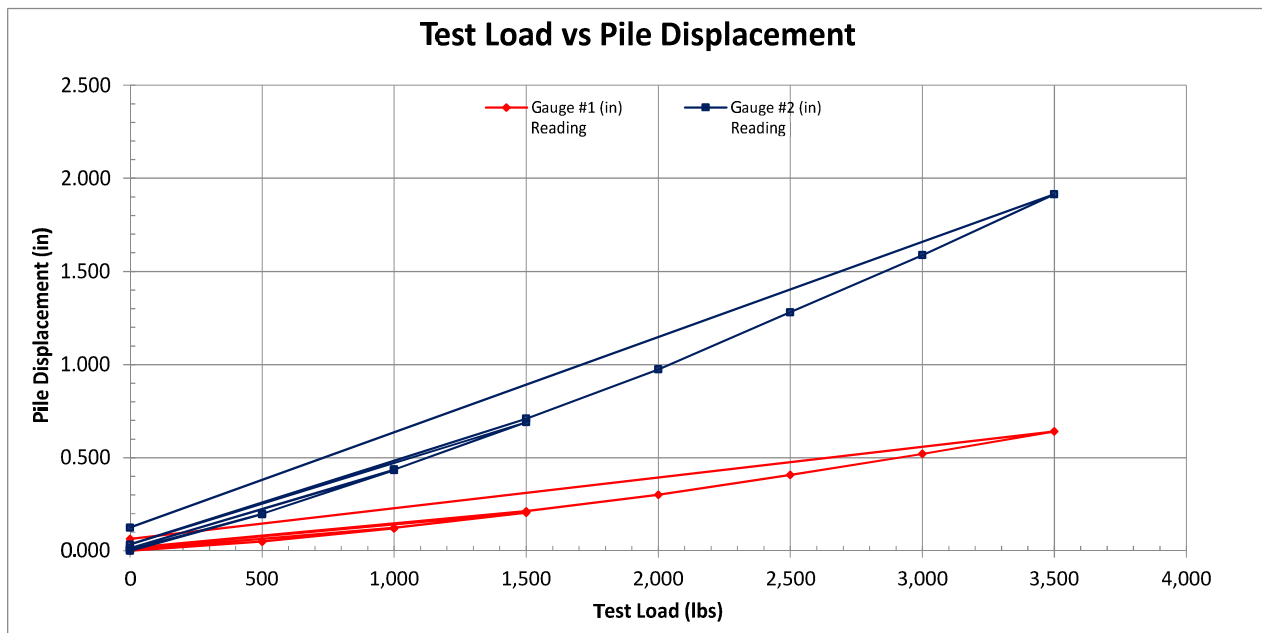


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-14-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	122.3	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.050	-0.197	0.050	0.197	
0	0.5 min	-0.002	-0.005	0.002	0.005	
500	2 min	-0.051	-0.199	0.051	0.199	
1,000	2 min	-0.120	-0.433	0.120	0.433	
0	0.5 min	-0.007	-0.015	0.007	0.015	
1,000	2 min	-0.123	-0.437	0.123	0.437	
1,500	2 min	-0.204	-0.691	0.204	0.691	
0	0.5 min	-0.016	-0.034	0.016	0.034	
1,500	2 min	-0.213	-0.710	0.213	0.710	
2,000	2 min	-0.301	-0.974	0.301	0.974	
2,500	2 min	-0.407	-1.281	0.407	1.281	
3,000	2 min	-0.521	-1.588	0.521	1.588	
3,500	2 min	-0.641	-1.914	0.641	1.914	
0	0.5 min	-0.064	-0.125	0.064	0.125	

Notes:



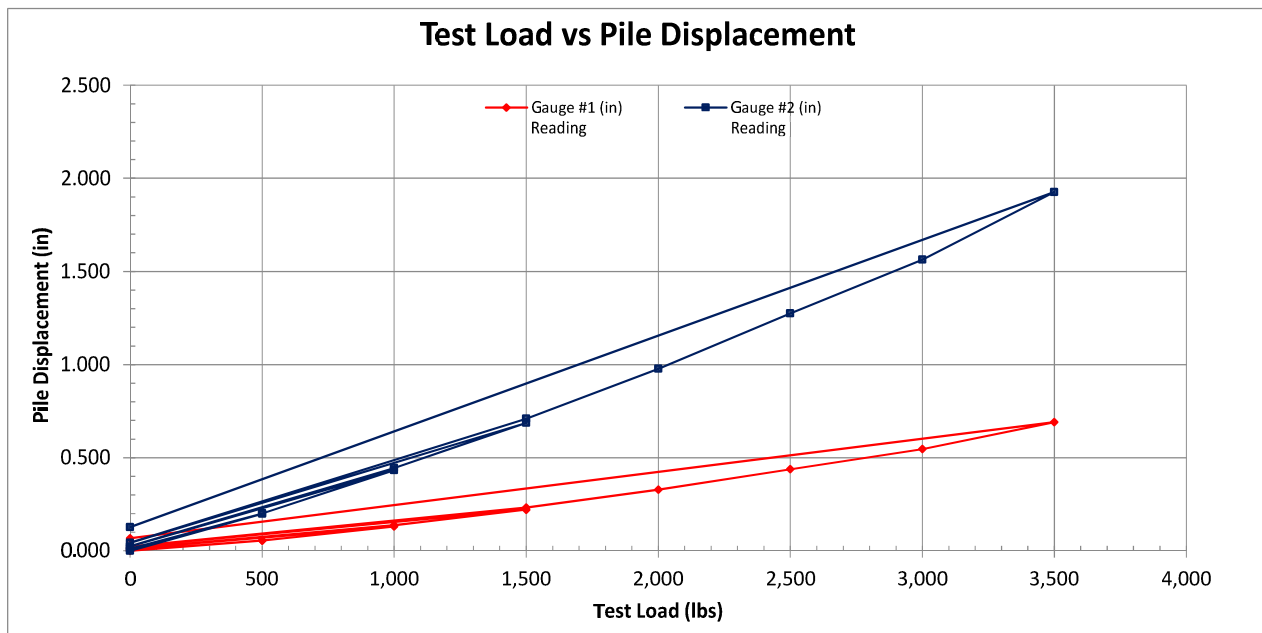


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-15-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	98.2	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.055	-0.200	0.055	0.200	
0	0.5 min	-0.004	-0.010	0.004	0.010	
500	2 min	-0.056	-0.201	0.056	0.201	
1,000	2 min	-0.131	-0.433	0.131	0.433	
0	0.5 min	-0.012	-0.024	0.012	0.024	
1,000	2 min	-0.137	-0.446	0.137	0.446	
1,500	2 min	-0.221	-0.688	0.221	0.688	
0	0.5 min	-0.022	-0.043	0.022	0.043	
1,500	2 min	-0.232	-0.710	0.232	0.710	
2,000	2 min	-0.329	-0.978	0.329	0.978	
2,500	2 min	-0.439	-1.275	0.439	1.275	
3,000	2 min	-0.547	-1.563	0.547	1.563	
3,500	2 min	-0.691	-1.927	0.691	1.927	
0	0.5 min	-0.068	-0.127	0.068	0.127	

Notes:



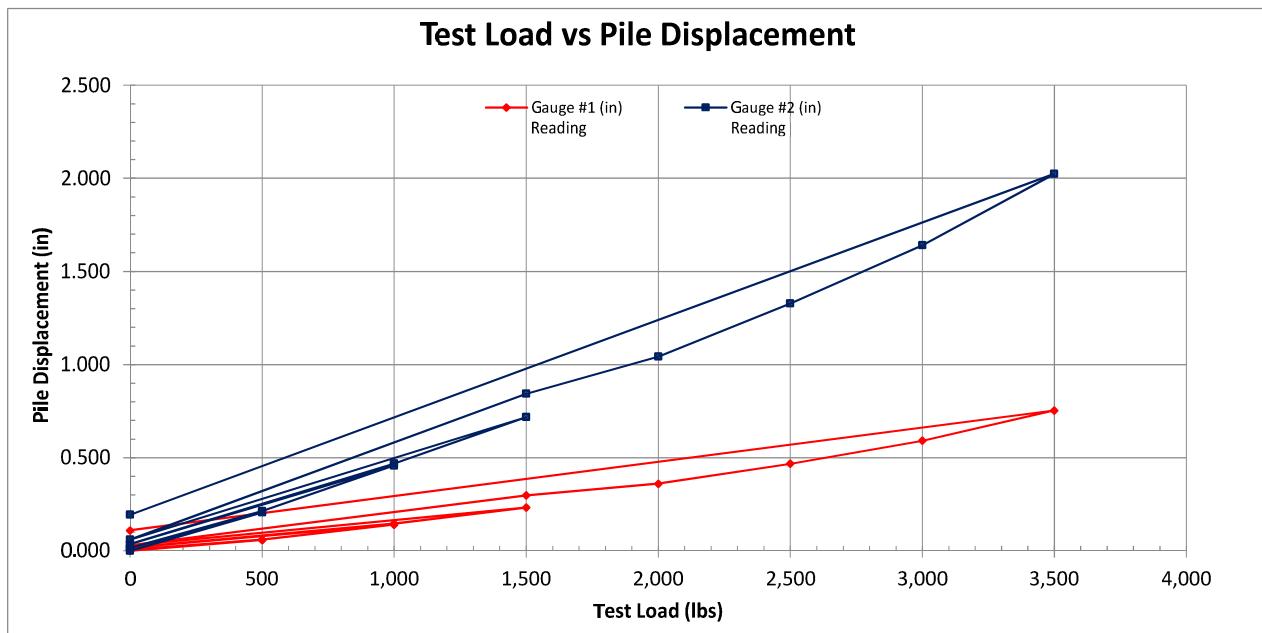


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-16-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	54.9	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.058	-0.207	0.058	0.207	
0	0.5 min	-0.007	-0.016	0.007	0.016	
500	2 min	-0.061	-0.214	0.061	0.214	
1,000	2 min	-0.140	-0.458	0.140	0.458	
0	0.5 min	-0.017	-0.036	0.017	0.036	
1,000	2 min	-0.146	-0.469	0.146	0.469	
1,500	2 min	-0.232	-0.718	0.232	0.718	
0	0.5 min	-0.030	-0.061	0.030	0.061	
1,500	2 min	-0.298	-0.844	0.298	0.844	
2,000	2 min	-0.360	-1.043	0.360	1.043	
2,500	2 min	-0.468	-1.328	0.468	1.328	
3,000	2 min	-0.591	-1.641	0.591	1.641	
3,500	2 min	-0.754	-2.024	0.754	2.024	
0	0.5 min	-0.109	-0.194	0.109	0.194	

Notes:



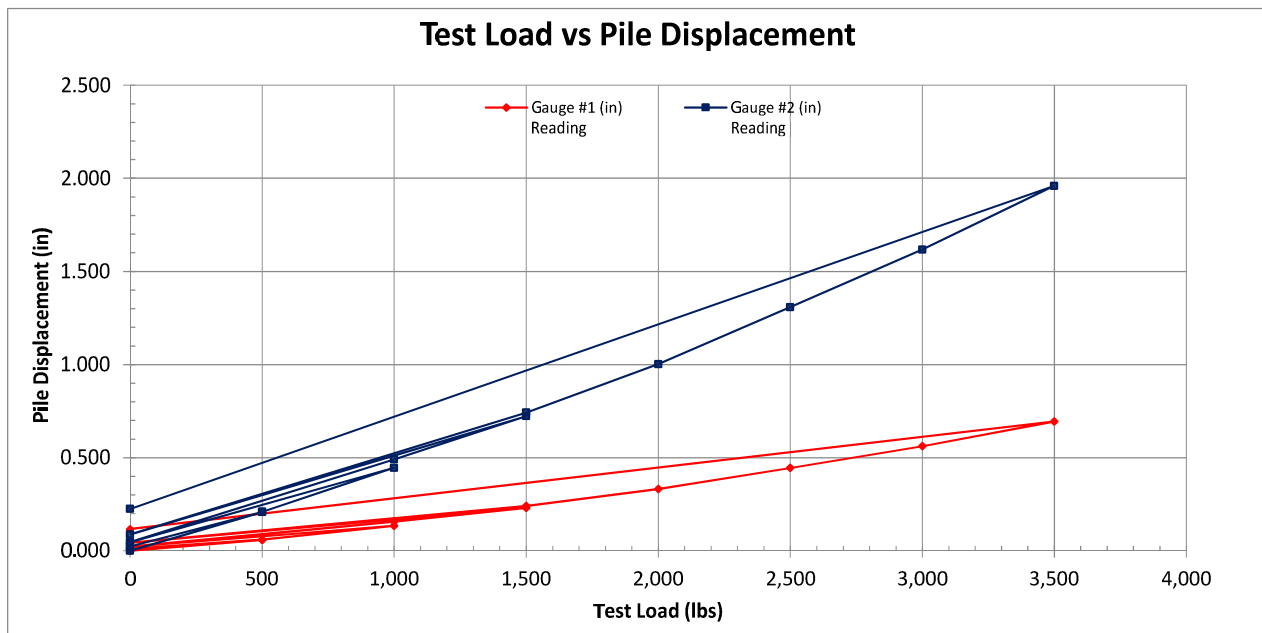


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-17A-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	73.0	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.058	-0.208	0.058	0.208	
0	0.5 min	-0.010	-0.024	0.010	0.024	
500	2 min	-0.060	-0.210	0.060	0.210	
1,000	2 min	-0.135	-0.446	0.135	0.446	
0	0.5 min	-0.022	-0.047	0.022	0.047	
1,000	2 min	-0.157	-0.492	0.157	0.492	
1,500	2 min	-0.231	-0.723	0.231	0.723	
0	0.5 min	-0.043	-0.088	0.043	0.088	
1,500	2 min	-0.241	-0.742	0.241	0.742	
2,000	2 min	-0.332	-1.003	0.332	1.003	
2,500	2 min	-0.445	-1.308	0.445	1.308	
3,000	2 min	-0.562	-1.617	0.562	1.617	
3,500	2 min	-0.694	-1.959	0.694	1.959	
0	0.5 min	-0.116	-0.225	0.116	0.225	

Notes:



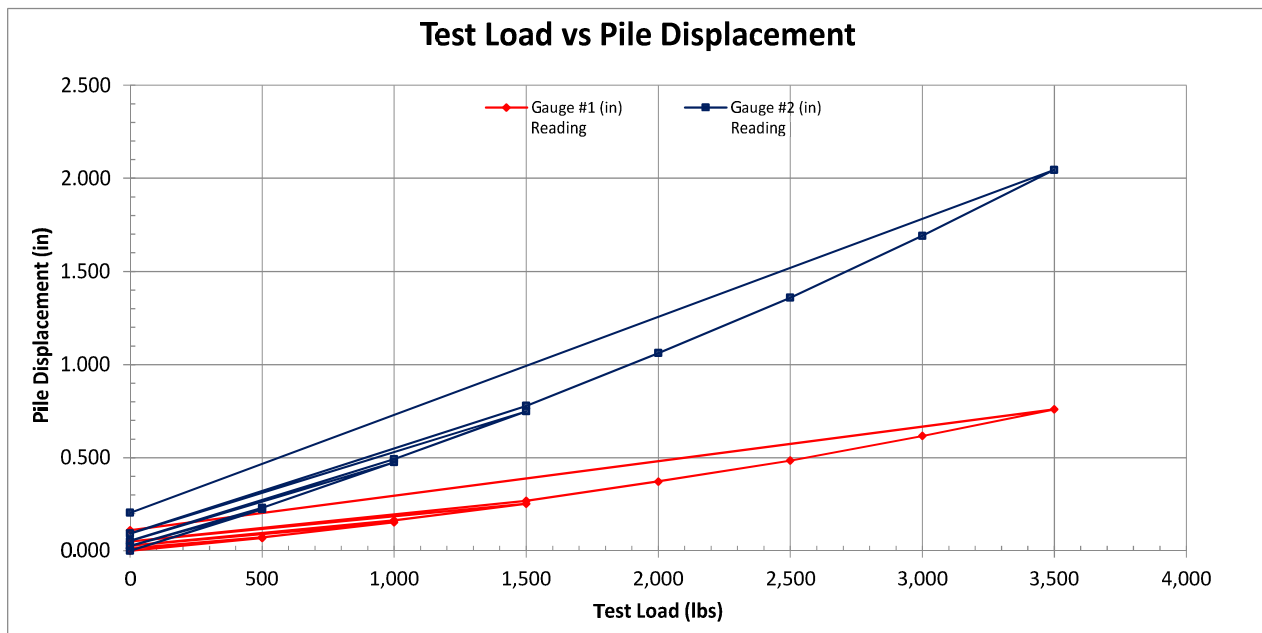


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-17B-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	144.9	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.069	-0.224	0.069	0.224	
0	0.5 min	-0.013	-0.026	0.013	0.026	
500	2 min	-0.072	-0.231	0.072	0.231	
1,000	2 min	-0.154	-0.476	0.154	0.476	
0	0.5 min	-0.027	-0.053	0.027	0.053	
1,000	2 min	-0.164	-0.493	0.164	0.493	
1,500	2 min	-0.253	-0.749	0.253	0.749	
0	0.5 min	-0.049	-0.093	0.049	0.093	
1,500	2 min	-0.269	-0.779	0.269	0.779	
2,000	2 min	-0.372	-1.062	0.372	1.062	
2,500	2 min	-0.485	-1.359	0.485	1.359	
3,000	2 min	-0.617	-1.692	0.617	1.692	
3,500	2 min	-0.760	-2.046	0.760	2.046	
0	0.5 min	-0.111	-0.204	0.111	0.204	

Notes:



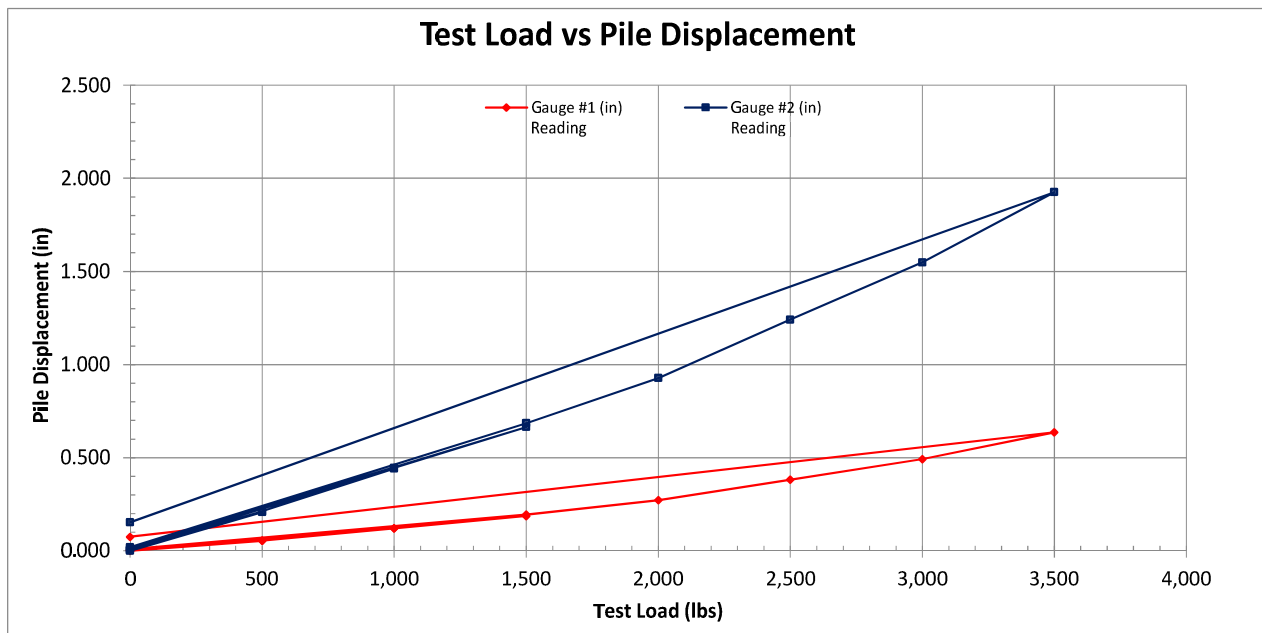


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-18-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	7.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	80.7	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.054	-0.209	0.054	0.209	
0	0.5 min	-0.002	-0.004	0.002	0.004	
500	2 min	-0.055	-0.213	0.055	0.213	
1,000	2 min	-0.121	-0.442	0.121	0.442	
0	0.5 min	-0.002	-0.010	0.002	0.010	
1,000	2 min	-0.121	-0.445	0.121	0.445	
1,500	2 min	-0.187	-0.665	0.187	0.665	
0	0.5 min	-0.008	-0.019	0.008	0.019	
1,500	2 min	-0.195	-0.686	0.195	0.686	
2,000	2 min	-0.271	-0.928	0.271	0.928	
2,500	2 min	-0.382	-1.242	0.382	1.242	
3,000	2 min	-0.492	-1.549	0.492	1.549	
3,500	2 min	-0.637	-1.926	0.637	1.926	
0	0.5 min	-0.075	-0.154	0.075	0.154	

Notes:



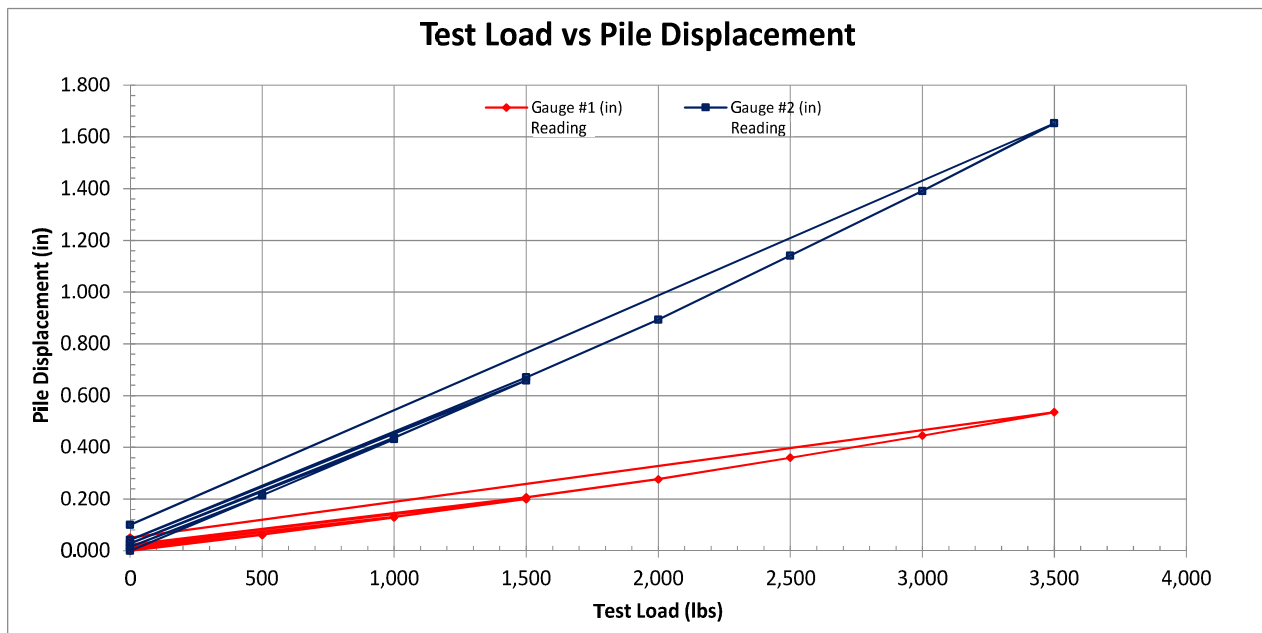


Pile Load Test - Lateral

Project Name:	Scioto Farms Solar	Pile Install Date:	11/19/2021
Project No.:	GE2110047	Pile Test Date:	12/3/2021
Client:	Candela	Tested by:	Jake Alexander
Pile No.:	PLT-B-19-L	Weather:	Sunny
Pile Type:	W6x9	Pile Embedment Depth (ft):	9.0
Pile Stickup Ht (ft):	5.0	Gauge#1 and #2 Ht above Ground (in):	4 and 48
Pile Drive Time (sec):	187.2	Load application above Ground (in):	48

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Note
		Gauge #1 (in) Reading	Gauge #2 (in) Reading	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement	
0	0 min	0.000	0.000	0.000	0.000	
500	2 min	-0.062	-0.214	0.062	0.214	
0	0.5 min	-0.009	-0.015	0.009	0.015	
500	2 min	-0.063	-0.215	0.063	0.215	
1,000	2 min	-0.129	-0.432	0.129	0.432	
0	0.5 min	-0.016	-0.029	0.016	0.029	
1,000	2 min	-0.132	-0.438	0.132	0.438	
1,500	2 min	-0.200	-0.659	0.200	0.659	
0	0.5 min	-0.023	-0.043	0.023	0.043	
1,500	2 min	-0.207	-0.671	0.207	0.671	
2,000	2 min	-0.277	-0.894	0.277	0.894	
2,500	2 min	-0.360	-1.141	0.360	1.141	
3,000	2 min	-0.446	-1.391	0.446	1.391	
3,500	2 min	-0.536	-1.653	0.536	1.653	
0	0.5 min	-0.051	-0.100	0.051	0.100	

Notes:





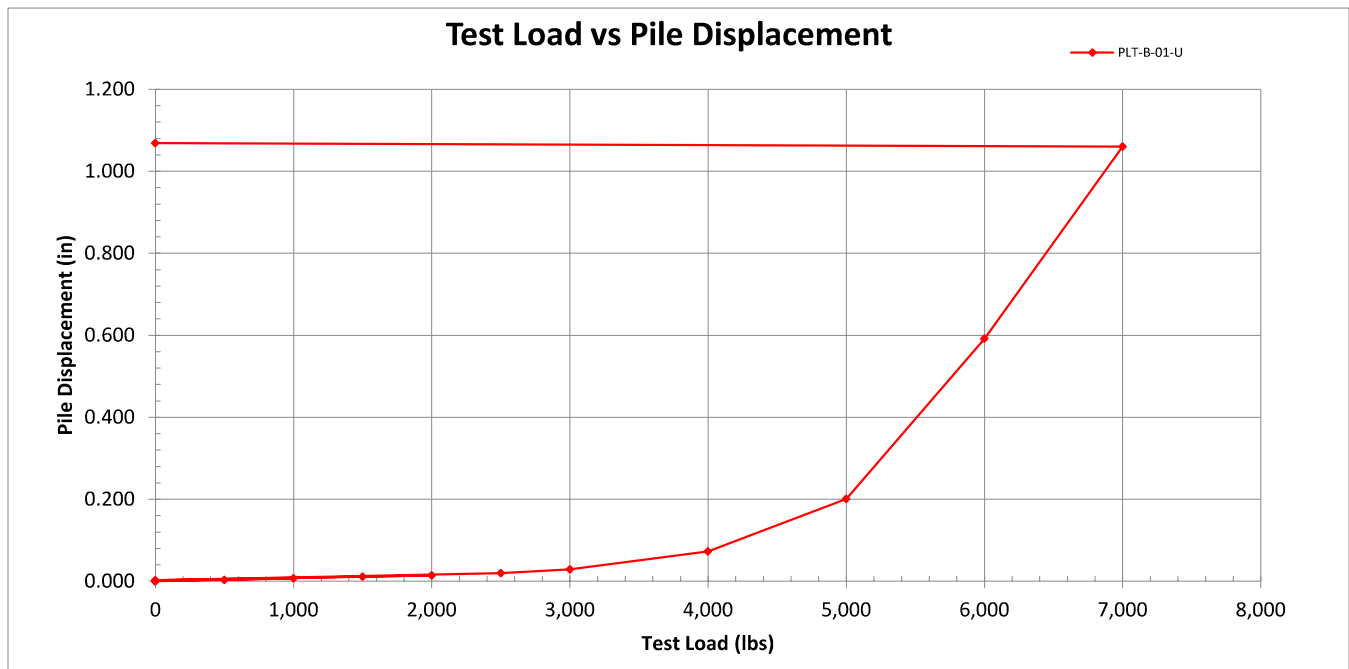
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-01-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	90.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/1/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.003	0.004	0.003	0.003	
1,000	1 min	-0.009	-0.006	0.009	0.006	0.007	
0	0.5 min	-0.001	-0.001	0.001	0.001	0.001	
1,500	1 min	-0.013	-0.010	0.013	0.010	0.011	
2,000	1 min	-0.017	-0.013	0.017	0.013	0.015	
0	0.5 min	-0.002	-0.004	0.002	0.004	0.003	
2,500	1 min	-0.027	-0.013	0.027	0.013	0.020	
3,000	1 min	-0.038	-0.021	0.038	0.021	0.030	
4,000	1 min	-0.086	-0.060	0.086	0.060	0.073	
5,000	1 min	-0.220	-0.183	0.220	0.183	0.201	
6,000	1 min	-0.613	-0.572	0.613	0.572	0.592	
7,000	1 min	-1.071	-1.050	1.071	1.050	1.060	Pile Failed
0	0.5 min	-1.070	-1.067	1.070	1.067	1.069	

Notes:





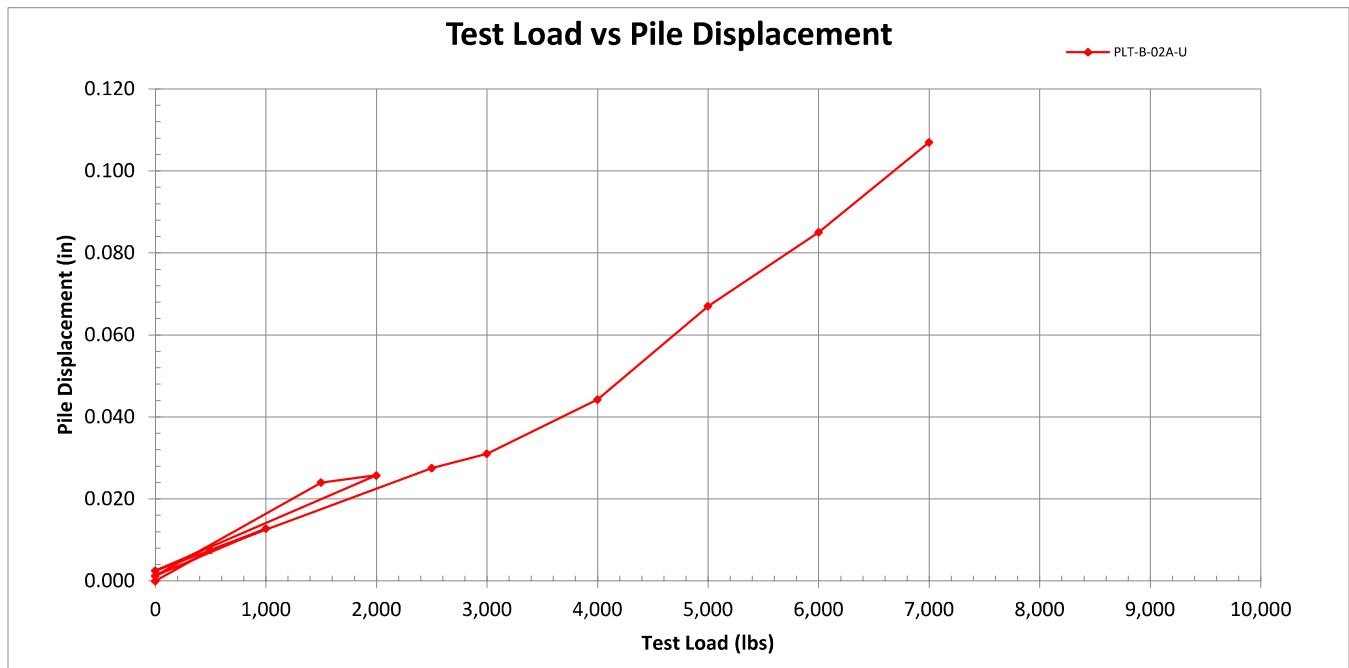
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-02A-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	81.3

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.007	-0.008	0.007	0.008	0.008	
1,000	1 min	-0.012	-0.014	0.012	0.014	0.013	
0	0.5 min	-0.002	-0.001	0.002	0.001	0.001	
1,500	1 min	-0.025	-0.023	0.025	0.023	0.024	
2,000	1 min	-0.026	-0.026	0.026	0.026	0.026	
0	0.5 min	-0.002	-0.003	0.002	0.003	0.003	
2,500	1 min	-0.028	-0.027	0.028	0.027	0.028	
3,000	1 min	-0.031	-0.032	0.031	0.032	0.031	
4,000	1 min	-0.043	-0.046	0.043	0.046	0.044	
5,000	1 min	-0.067	-0.067	0.067	0.067	0.067	
6,000	1 min	-0.086	-0.084	0.086	0.084	0.085	
7,000	1 min	-0.107	-0.107	0.107	0.107	0.107	

Notes: Stopped testing after 7000 ft because of equipment failure





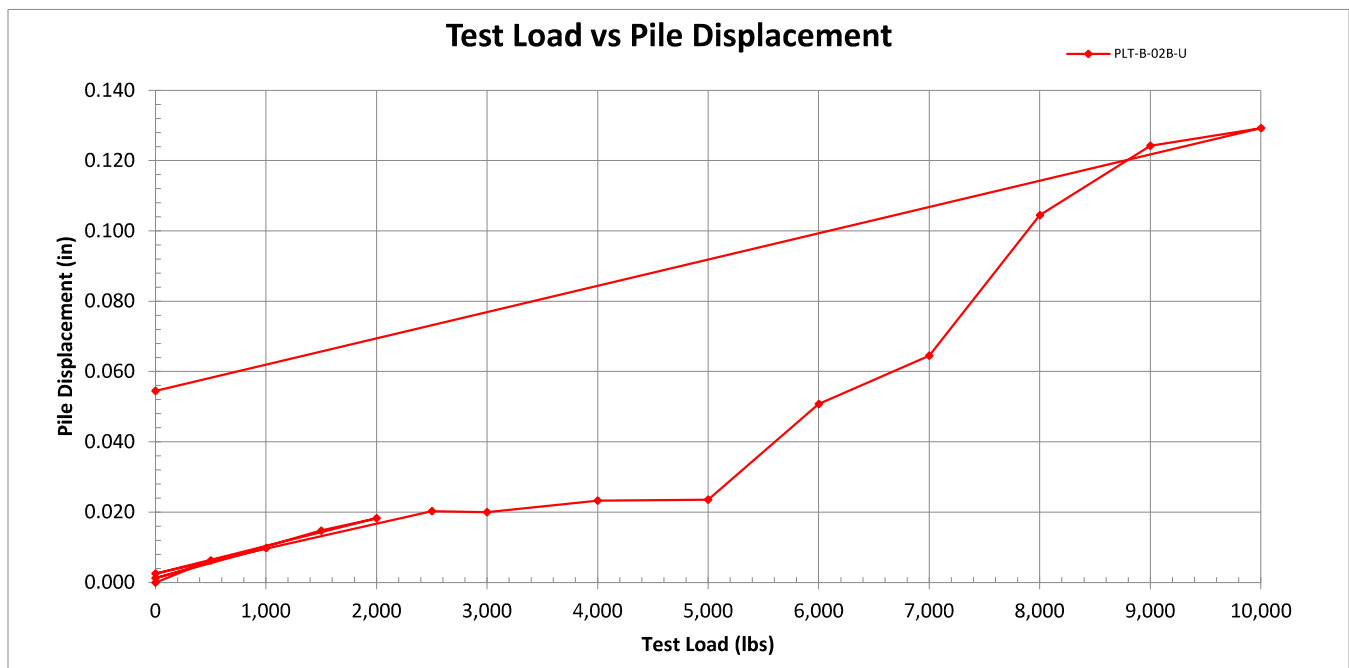
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-02B-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	136.2

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Cloudy
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.006	-0.007	0.006	0.007	0.006	
1,000	1 min	-0.009	-0.011	0.009	0.011	0.010	
0	0.5 min	-0.001	-0.002	0.001	0.002	0.001	
1,500	1 min	-0.014	-0.016	0.014	0.016	0.015	
2,000	1 min	-0.017	-0.020	0.017	0.020	0.018	
0	0.5 min	-0.002	-0.004	0.002	0.004	0.003	
2,500	1 min	-0.019	-0.022	0.019	0.022	0.020	
3,000	1 min	-0.019	-0.021	0.019	0.021	0.020	
4,000	1 min	-0.022	-0.025	0.022	0.025	0.023	
5,000	1 min	-0.025	-0.022	0.025	0.022	0.024	
6,000	1 min	-0.048	-0.054	0.048	0.054	0.051	
7,000	1 min	-0.059	-0.070	0.059	0.070	0.065	
8,000	1 min	-0.092	-0.117	0.092	0.117	0.105	
9,000	1 min	-0.108	-0.141	0.108	0.141	0.124	
10,000	1 min	-0.119	-0.140	0.119	0.140	0.129	
0	0.5 min	-0.050	-0.060	0.050	0.060	0.055	

Notes:





Pile Load Test - Uplift/Tension

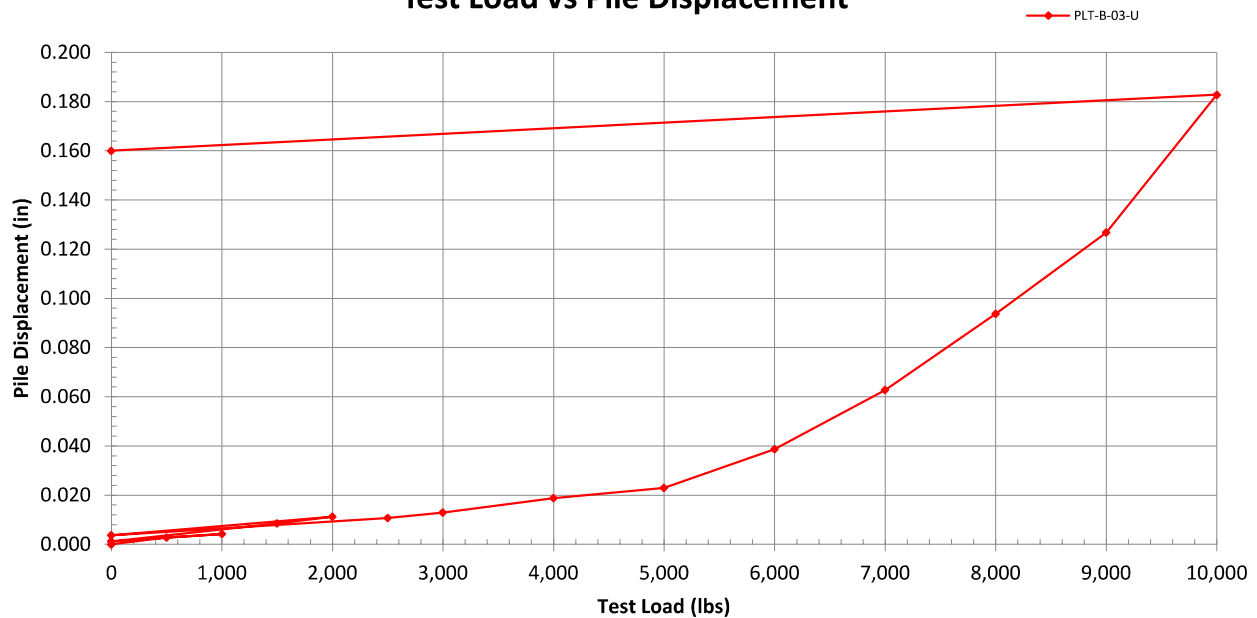
Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-03-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	101.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.003	-0.003	0.003	0.003	0.003	
1,000	1 min	-0.004	-0.005	0.004	0.005	0.004	
0	0.5 min	-0.002	-0.001	0.002	0.001	0.001	
1,500	1 min	-0.008	-0.010	0.008	0.010	0.009	
2,000	1 min	-0.009	-0.014	0.009	0.014	0.011	
0	0.5 min	-0.004	-0.004	0.004	0.004	0.004	
2,500	1 min	-0.013	-0.009	0.013	0.009	0.011	
3,000	1 min	-0.015	-0.011	0.015	0.011	0.013	
4,000	1 min	-0.017	-0.021	0.017	0.021	0.019	
5,000	1 min	-0.029	-0.018	0.029	0.018	0.023	
6,000	1 min	-0.041	-0.037	0.041	0.037	0.039	
7,000	1 min	-0.056	-0.070	0.056	0.070	0.063	
8,000	1 min	-0.086	-0.102	0.086	0.102	0.094	
9,000	1 min	-0.132	-0.122	0.132	0.122	0.127	
10,000	1 min	-0.203	-0.163	0.203	0.163	0.183	
0	0.5 min	-0.153	-0.168	0.153	0.168	0.160	

Notes:

Test Load vs Pile Displacement





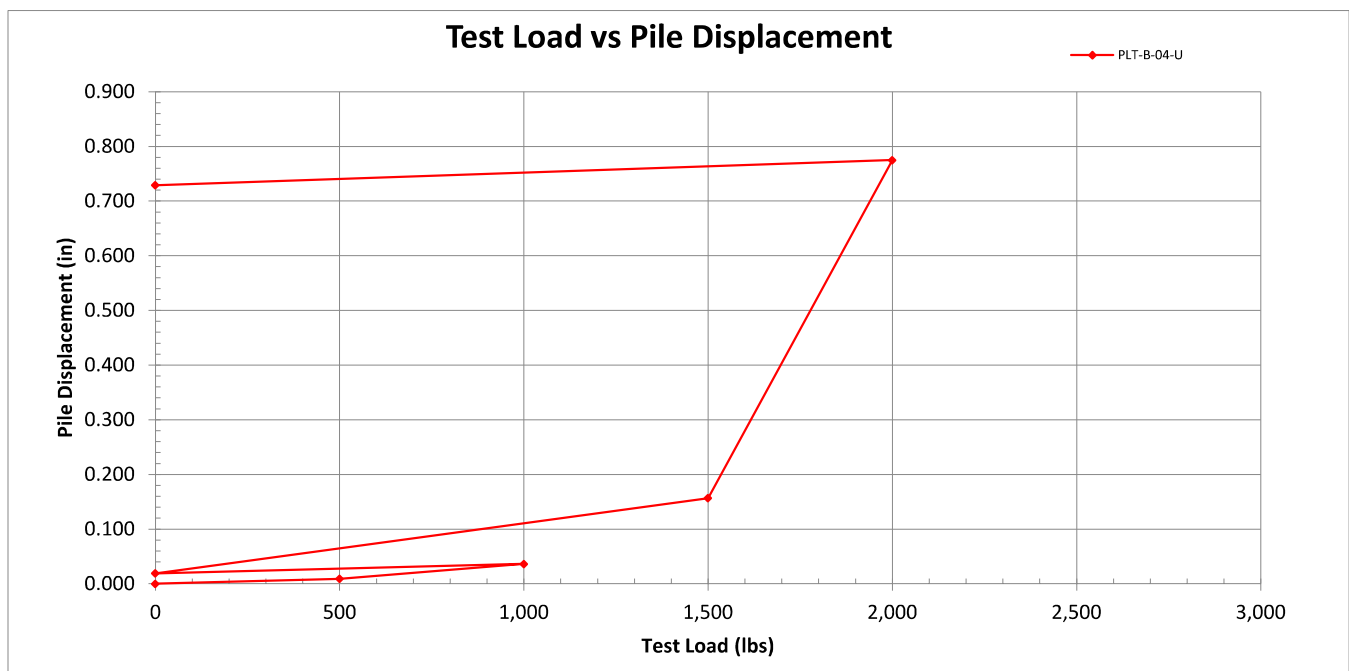
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-04-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	39.6

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.011	-0.008	0.011	0.008	0.009	
1,000	1 min	-0.037	-0.036	0.037	0.036	0.036	
0	0.5 min	-0.017	-0.022	0.017	0.022	0.019	
1,500	1 min	-0.151	-0.163	0.151	0.163	0.157	
2,000	1 min	-0.762	-0.788	0.762	0.788	0.775	Pile Failed
0	0.5 min	-0.715	-0.743	0.715	0.743	0.729	

Notes:





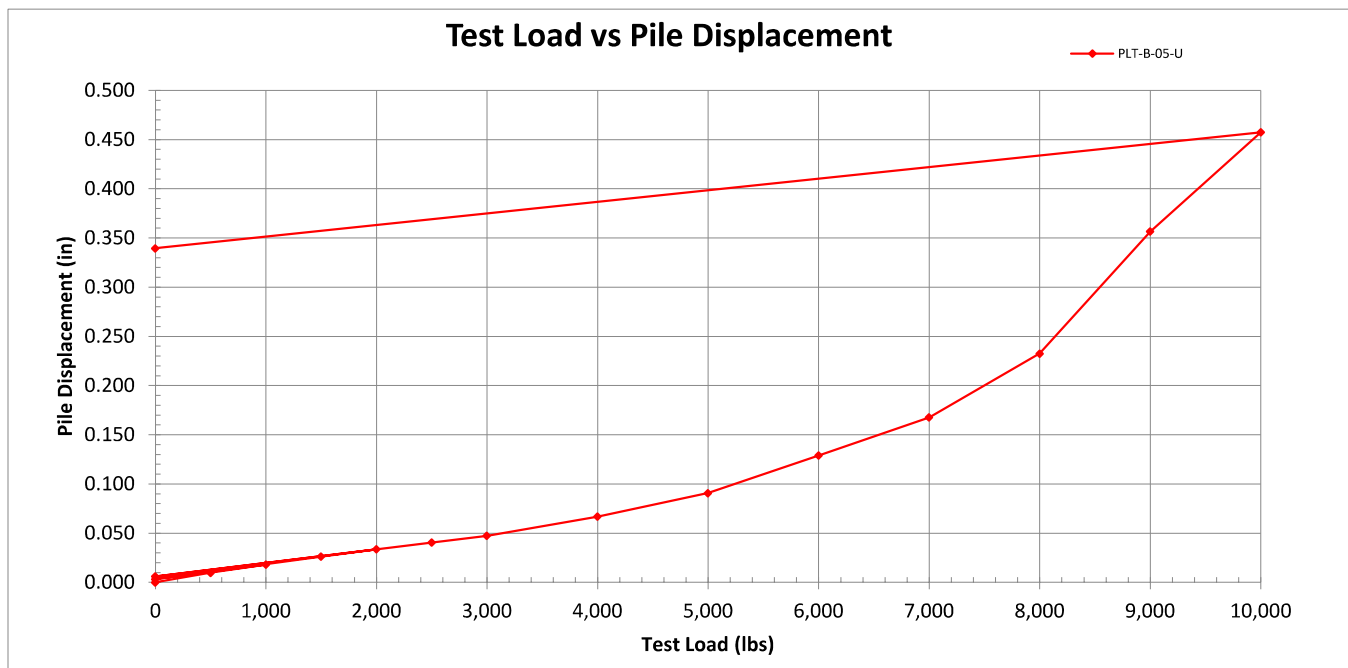
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-05-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	99.5

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.011	-0.009	0.011	0.009	0.010	
1,000	1 min	-0.020	-0.017	0.020	0.017	0.018	
0	0.5 min	-0.004	-0.003	0.004	0.003	0.003	
1,500	1 min	-0.028	-0.025	0.028	0.025	0.026	
2,000	1 min	-0.035	-0.033	0.035	0.033	0.034	
0	0.5 min	-0.007	-0.005	0.007	0.005	0.006	
2,500	1 min	-0.041	-0.041	0.041	0.041	0.041	
3,000	1 min	-0.050	-0.045	0.050	0.045	0.047	
4,000	1 min	-0.070	-0.064	0.070	0.064	0.067	
5,000	1 min	-0.095	-0.087	0.095	0.087	0.091	
6,000	1 min	-0.133	-0.125	0.133	0.125	0.129	
7,000	1 min	-0.172	-0.164	0.172	0.164	0.168	
8,000	1 min	-0.243	-0.222	0.243	0.222	0.233	
9,000	1 min	-0.392	-0.322	0.392	0.322	0.357	
10,000	1 min	-0.450	-0.465	0.450	0.465	0.457	
0	0.5 min	-0.341	-0.339	0.341	0.339	0.340	

Notes:





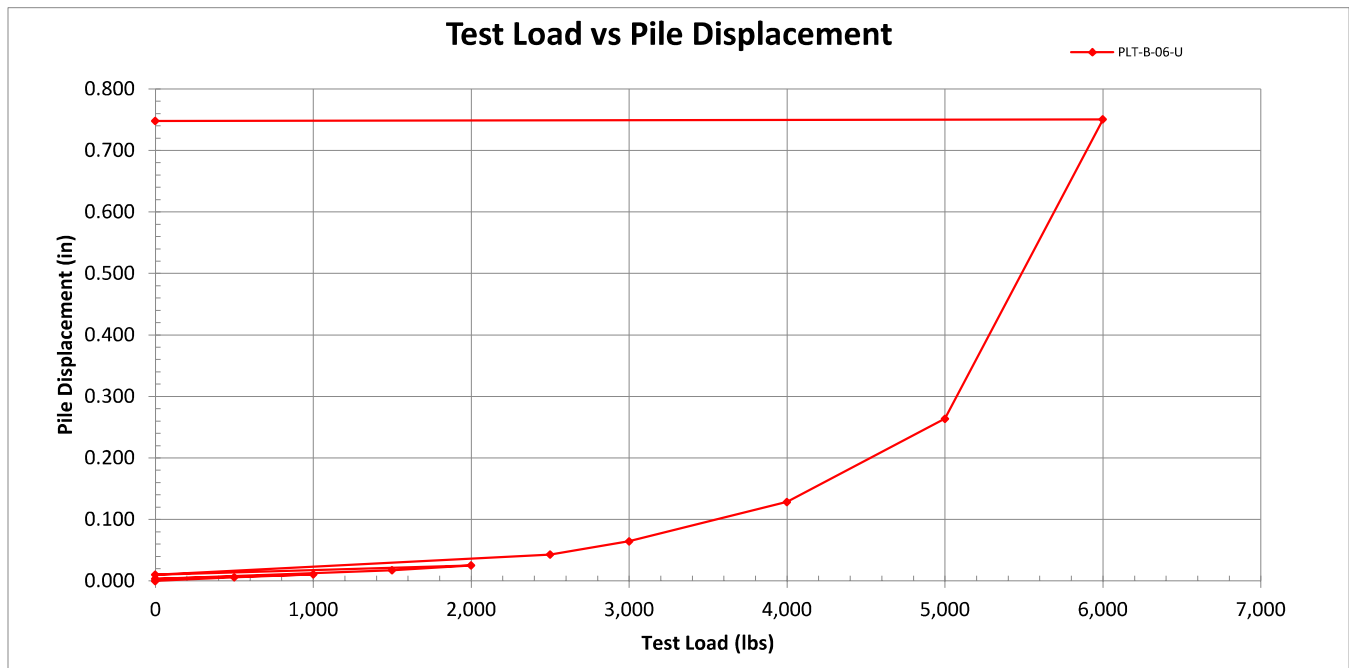
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.	PLT-B-06-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	43.7

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.006	-0.007	0.006	0.007	0.006	
1,000	1 min	-0.010	-0.012	0.010	0.012	0.011	
0	0.5 min	-0.003	-0.004	0.003	0.004	0.003	
1,500	1 min	-0.017	-0.019	0.017	0.019	0.018	
2,000	1 min	-0.023	-0.028	0.023	0.028	0.025	
0	0.5 min	-0.008	-0.013	0.008	0.013	0.010	
2,500	1 min	-0.044	-0.042	0.044	0.042	0.043	
3,000	1 min	-0.066	-0.064	0.066	0.064	0.065	
4,000	1 min	-0.128	-0.129	0.128	0.129	0.129	
5,000	1 min	-0.264	-0.264	0.264	0.264	0.264	
6,000	1 min	-0.754	-0.748	0.754	0.748	0.751	Pile Failed
0	0.5 min	-0.748	-0.748	0.748	0.748	0.748	

Notes:





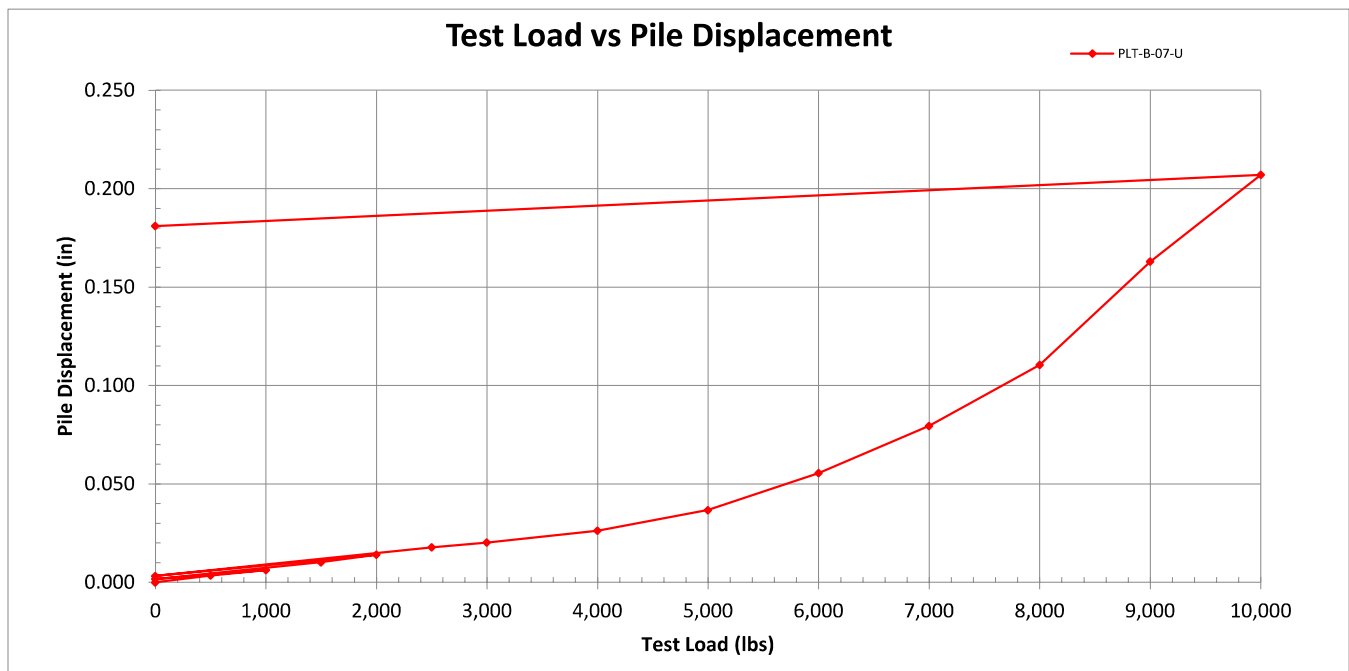
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-07-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	118.4

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.004	0.004	0.004	0.004	
1,000	1 min	-0.007	-0.006	0.007	0.006	0.006	
0	0.5 min	-0.002	-0.002	0.002	0.002	0.002	
1,500	1 min	-0.012	-0.009	0.012	0.009	0.010	
2,000	1 min	-0.016	-0.012	0.016	0.012	0.014	
0	0.5 min	-0.005	-0.002	0.005	0.002	0.003	
2,500	1 min	-0.017	-0.019	0.017	0.019	0.018	
3,000	1 min	-0.021	-0.020	0.021	0.020	0.020	
4,000	1 min	-0.028	-0.025	0.028	0.025	0.026	
5,000	1 min	-0.039	-0.035	0.039	0.035	0.037	
6,000	1 min	-0.058	-0.053	0.058	0.053	0.056	
7,000	1 min	-0.082	-0.077	0.082	0.077	0.080	
8,000	1 min	-0.114	-0.108	0.114	0.108	0.111	
9,000	1 min	-0.175	-0.152	0.175	0.152	0.163	
10,000	1 min	-0.225	-0.189	0.225	0.189	0.207	
0	0.5 min	-0.183	-0.179	0.183	0.179	0.181	

Notes:





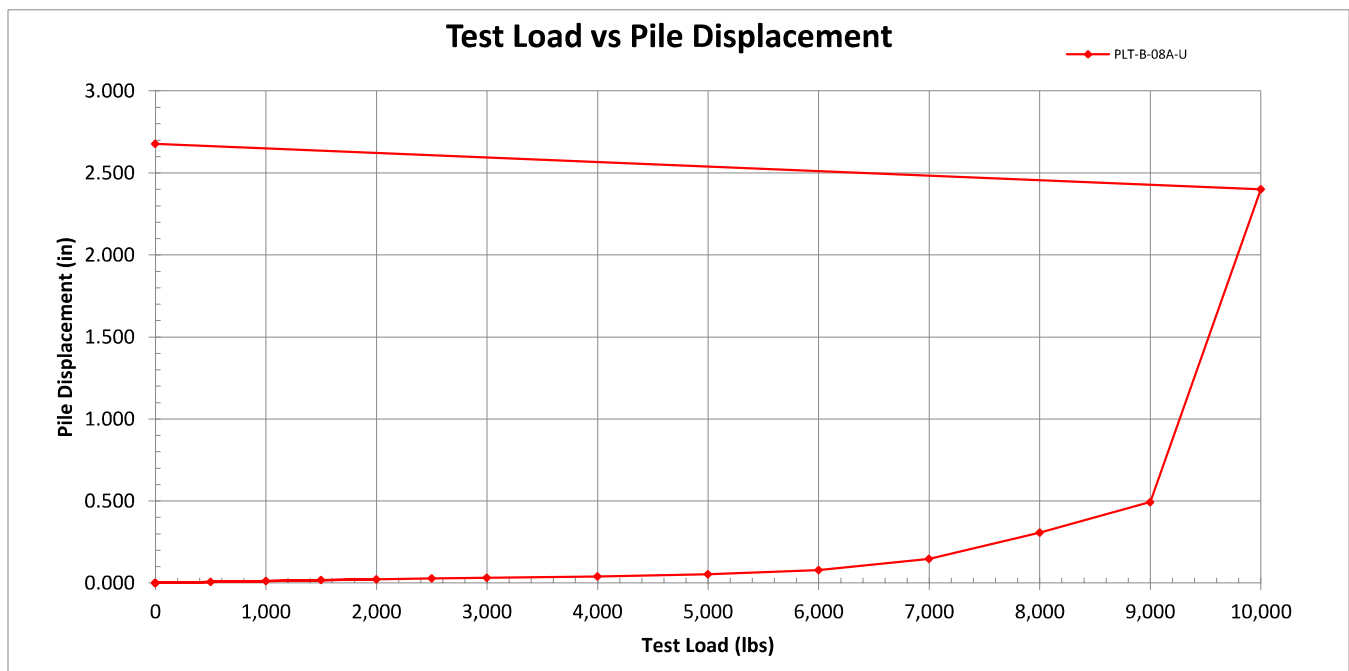
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-08A-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	65.4

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.008	-0.007	0.008	0.007	0.008	
1,000	1 min	-0.014	-0.013	0.014	0.013	0.013	
0	0.5 min	-0.001	0.000	0.001	0.000	0.001	
1,500	1 min	-0.019	-0.018	0.019	0.018	0.018	
2,000	1 min	-0.024	-0.023	0.024	0.023	0.023	
0	0.5 min	-0.001	-0.002	0.001	0.002	0.001	
2,500	1 min	-0.030	-0.028	0.030	0.028	0.029	
3,000	1 min	-0.034	-0.032	0.034	0.032	0.033	
4,000	1 min	-0.041	-0.039	0.041	0.039	0.040	
5,000	1 min	-0.054	-0.053	0.054	0.053	0.053	
6,000	1 min	-0.081	-0.076	0.081	0.076	0.078	
7,000	1 min	-0.152	-0.144	0.152	0.144	0.148	
8,000	1 min	-0.328	-0.285	0.328	0.285	0.307	
9,000	1 min	-0.490	-0.498	0.490	0.498	0.494	
10,000	1 min	-2.426	-2.376	2.426	2.376	2.401	Pile Failed
0	0.5 min	-2.738	-2.619	2.738	2.619	2.678	

Notes:





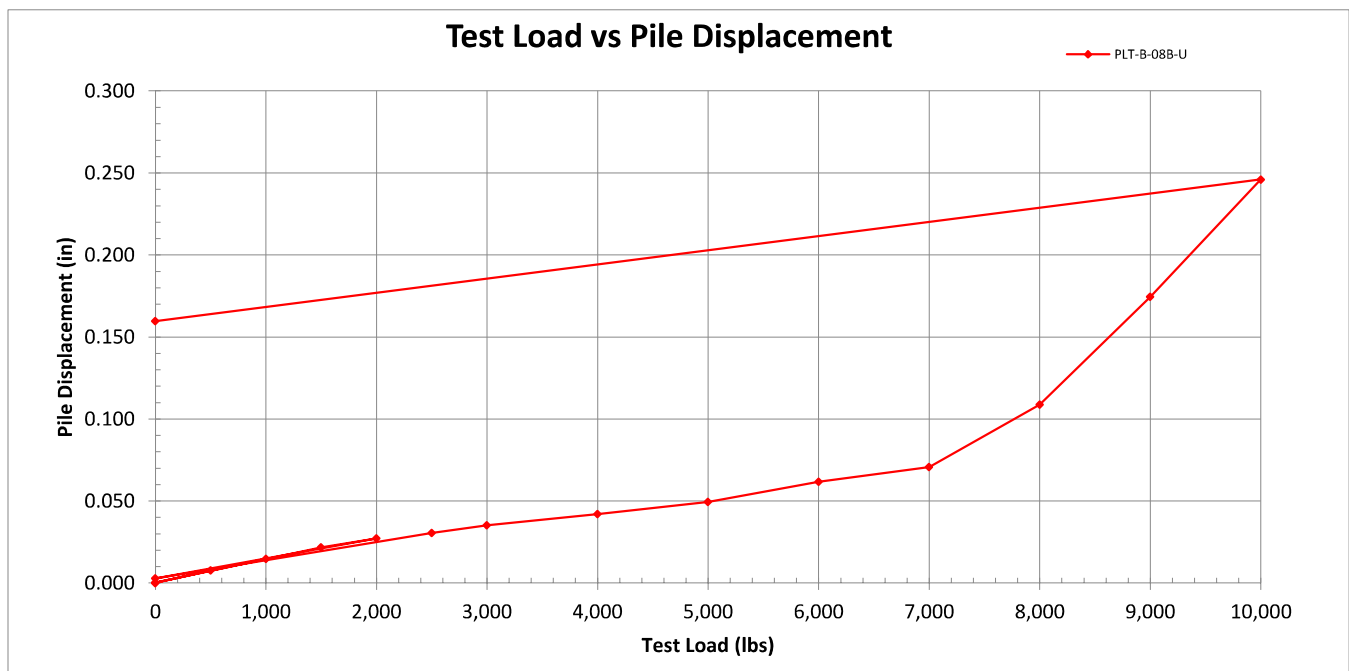
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-08B-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	137.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.008	-0.008	0.008	0.008	0.008	
1,000	1 min	-0.014	-0.016	0.014	0.016	0.015	
0	0.5 min	-0.001	0.000	0.001	0.000	0.000	
1,500	1 min	-0.020	-0.024	0.020	0.024	0.022	
2,000	1 min	-0.024	-0.031	0.024	0.031	0.027	
0	0.5 min	-0.002	-0.004	0.002	0.004	0.003	
2,500	1 min	-0.028	-0.033	0.028	0.033	0.031	
3,000	1 min	-0.032	-0.039	0.032	0.039	0.035	
4,000	1 min	-0.040	-0.045	0.040	0.045	0.042	
5,000	1 min	-0.047	-0.053	0.047	0.053	0.050	
6,000	1 min	-0.057	-0.067	0.057	0.067	0.062	
7,000	1 min	-0.065	-0.077	0.065	0.077	0.071	
8,000	1 min	-0.133	-0.085	0.133	0.085	0.109	
9,000	1 min	-0.202	-0.147	0.202	0.147	0.175	
10,000	1 min	-0.210	-0.282	0.210	0.282	0.246	
0	0.5 min	-0.156	-0.164	0.156	0.164	0.160	

Notes:





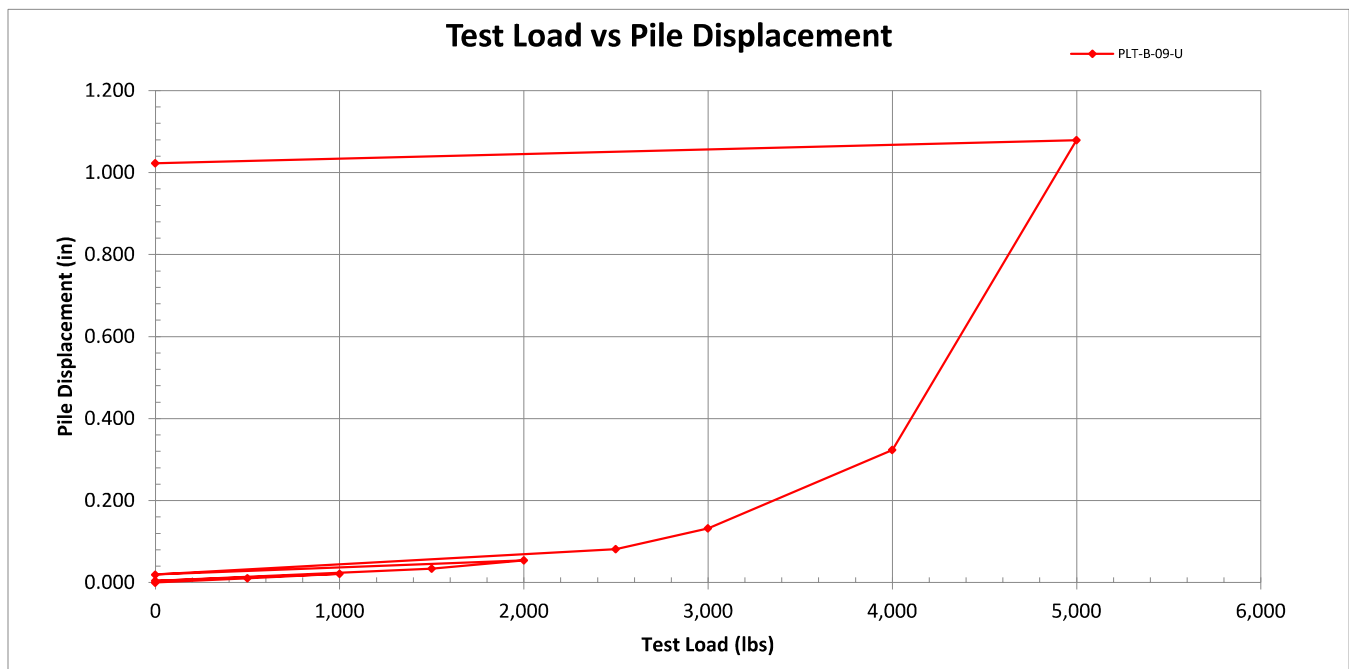
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.	PLT-B-09-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	68.4

Pile Install Date:	11/19/2021
Pile Test Date:	12/2/2021
Tested by:	Jake Alexander
Weather:	Windy
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.012	-0.010	0.012	0.010	0.011	
1,000	1 min	-0.023	-0.020	0.023	0.020	0.022	
0	0.5 min	-0.005	-0.004	0.005	0.004	0.004	
1,500	1 min	-0.036	-0.033	0.036	0.033	0.034	
2,000	1 min	-0.055	-0.054	0.055	0.054	0.054	
0	0.5 min	-0.020	-0.020	0.020	0.020	0.020	
2,500	1 min	-0.081	-0.082	0.081	0.082	0.082	
3,000	1 min	-0.131	-0.133	0.131	0.133	0.132	
4,000	1 min	-0.317	-0.331	0.317	0.331	0.324	
5,000	1 min	-1.078	-1.080	1.078	1.080	1.079	Pile Failed
0	0.5 min	-1.022	-1.024	1.022	1.024	1.023	

Notes:





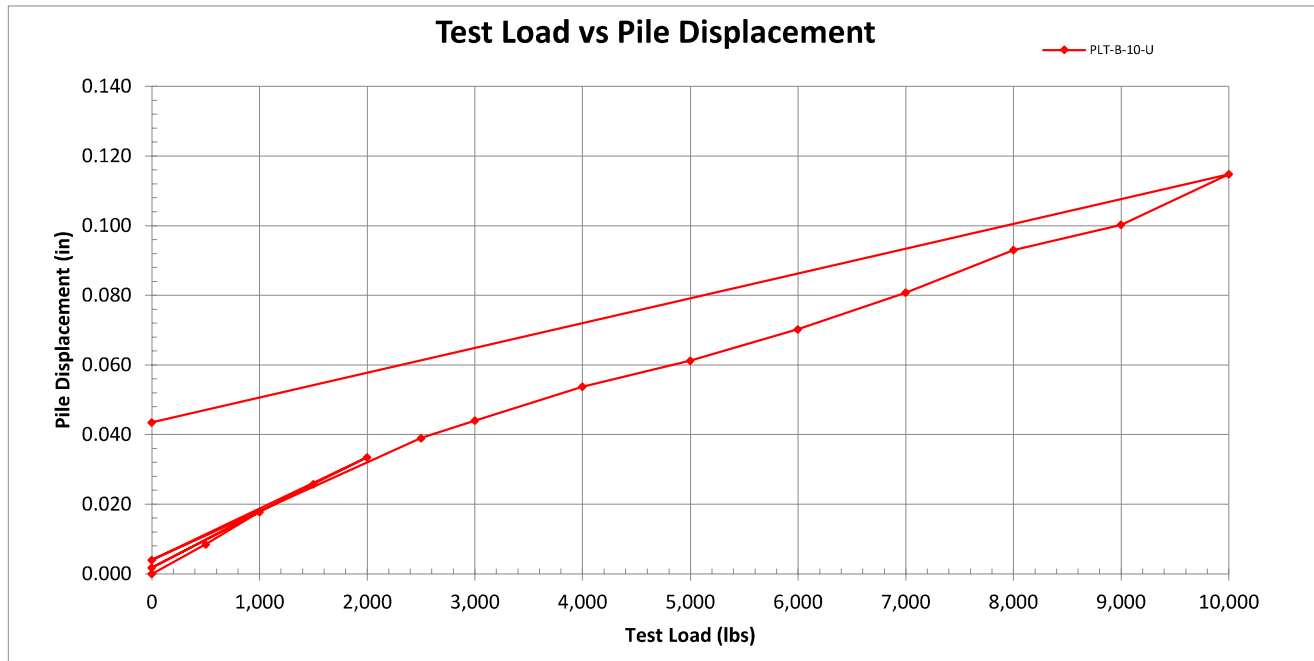
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-10-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	154.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.009	-0.009	0.009	0.009	0.009	
1,000	1 min	-0.018	-0.018	0.018	0.018	0.018	
0	0.5 min	-0.001	-0.003	0.001	0.003	0.002	
1,500	1 min	-0.024	-0.028	0.024	0.028	0.026	
2,000	1 min	-0.031	-0.037	0.031	0.037	0.034	
0	0.5 min	-0.002	-0.007	0.002	0.007	0.004	
2,500	1 min	-0.036	-0.042	0.036	0.042	0.039	
3,000	1 min	-0.040	-0.048	0.040	0.048	0.044	
4,000	1 min	-0.050	-0.058	0.050	0.058	0.054	
5,000	1 min	-0.057	-0.066	0.057	0.066	0.061	
6,000	1 min	-0.066	-0.075	0.066	0.075	0.070	
7,000	1 min	-0.076	-0.086	0.076	0.086	0.081	
8,000	1 min	-0.089	-0.098	0.089	0.098	0.093	
9,000	1 min	-0.110	-0.091	0.110	0.091	0.100	
10,000	1 min	-0.141	-0.089	0.141	0.089	0.115	
0	0.5 min	-0.042	-0.045	0.042	0.045	0.044	

Notes:





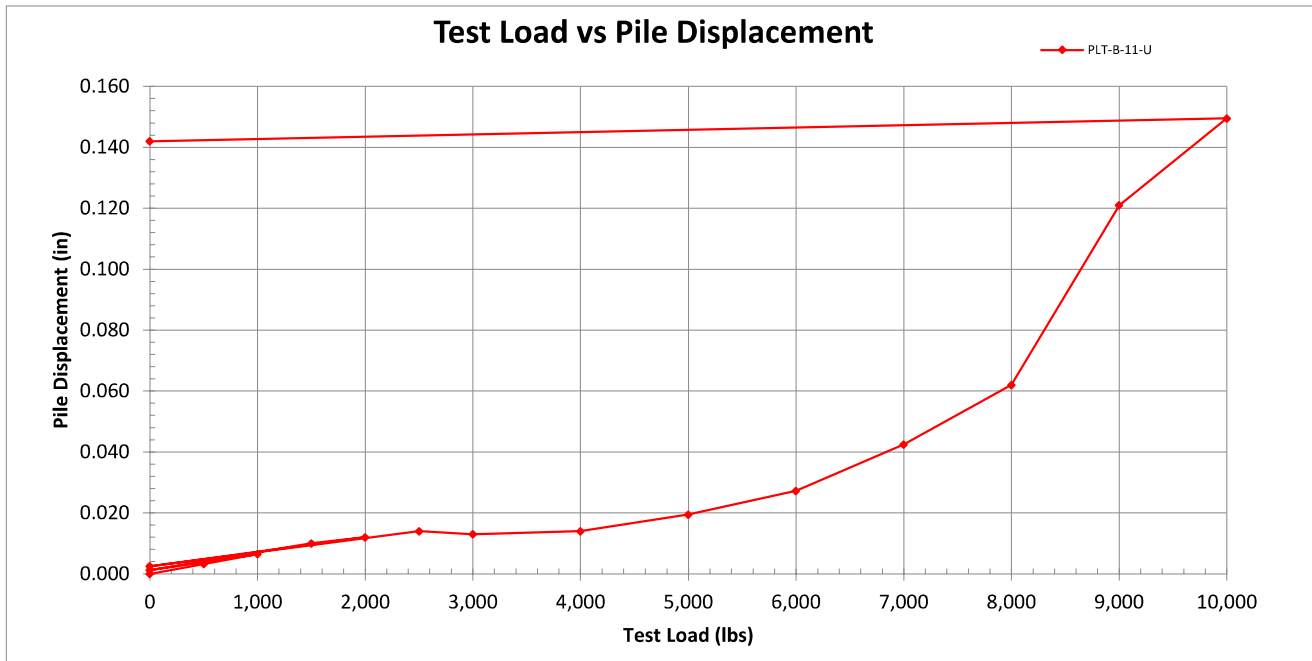
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-11-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	120.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.003	0.004	0.003	0.003	
1,000	1 min	-0.008	-0.006	0.008	0.006	0.007	
0	0.5 min	-0.002	-0.001	0.002	0.001	0.001	
1,500	1 min	-0.012	-0.009	0.012	0.009	0.010	
2,000	1 min	-0.014	-0.011	0.014	0.011	0.012	
0	0.5 min	-0.004	-0.001	0.004	0.001	0.003	
2,500	1 min	-0.015	-0.013	0.015	0.013	0.014	
3,000	1 min	-0.016	-0.011	0.016	0.011	0.013	
4,000	1 min	-0.018	-0.011	0.018	0.011	0.014	
5,000	1 min	-0.025	-0.015	0.025	0.015	0.020	
6,000	1 min	-0.033	-0.022	0.033	0.022	0.027	
7,000	1 min	-0.051	-0.034	0.051	0.034	0.043	
8,000	1 min	-0.073	-0.052	0.073	0.052	0.062	
9,000	1 min	-0.138	-0.104	0.138	0.104	0.121	
10,000	1 min	-0.165	-0.135	0.165	0.135	0.150	
0	0.5 min	-0.156	-0.128	0.156	0.128	0.142	

Notes:





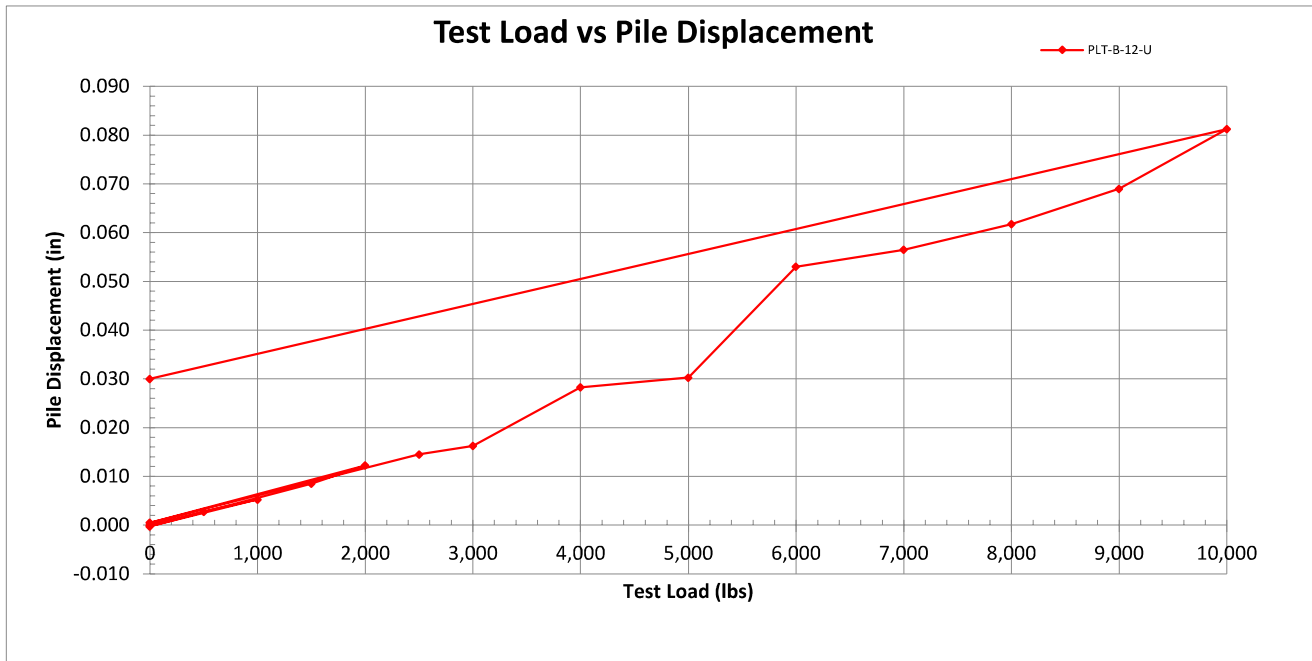
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-12-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	125.5

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.002	0.004	0.002	0.003	
1,000	1 min	-0.006	-0.005	0.006	0.005	0.005	
0	0.5 min	0.000	0.001	0.000	-0.001	0.000	
1,500	1 min	-0.009	-0.008	0.009	0.008	0.009	
2,000	1 min	-0.013	-0.012	0.013	0.012	0.012	
0	0.5 min	-0.001	-0.001	0.001	0.001	0.001	
2,500	1 min	-0.014	-0.016	0.014	0.016	0.015	
3,000	1 min	-0.015	-0.018	0.015	0.018	0.016	
4,000	1 min	-0.027	-0.030	0.027	0.030	0.028	
5,000	1 min	-0.028	-0.033	0.028	0.033	0.030	
6,000	1 min	-0.050	-0.056	0.050	0.056	0.053	
7,000	1 min	-0.052	-0.062	0.052	0.062	0.057	
8,000	1 min	-0.056	-0.068	0.056	0.068	0.062	
9,000	1 min	-0.062	-0.076	0.062	0.076	0.069	
10,000	1 min	-0.077	-0.086	0.077	0.086	0.081	
0	0.5 min	-0.028	-0.033	0.028	0.033	0.030	

Notes:





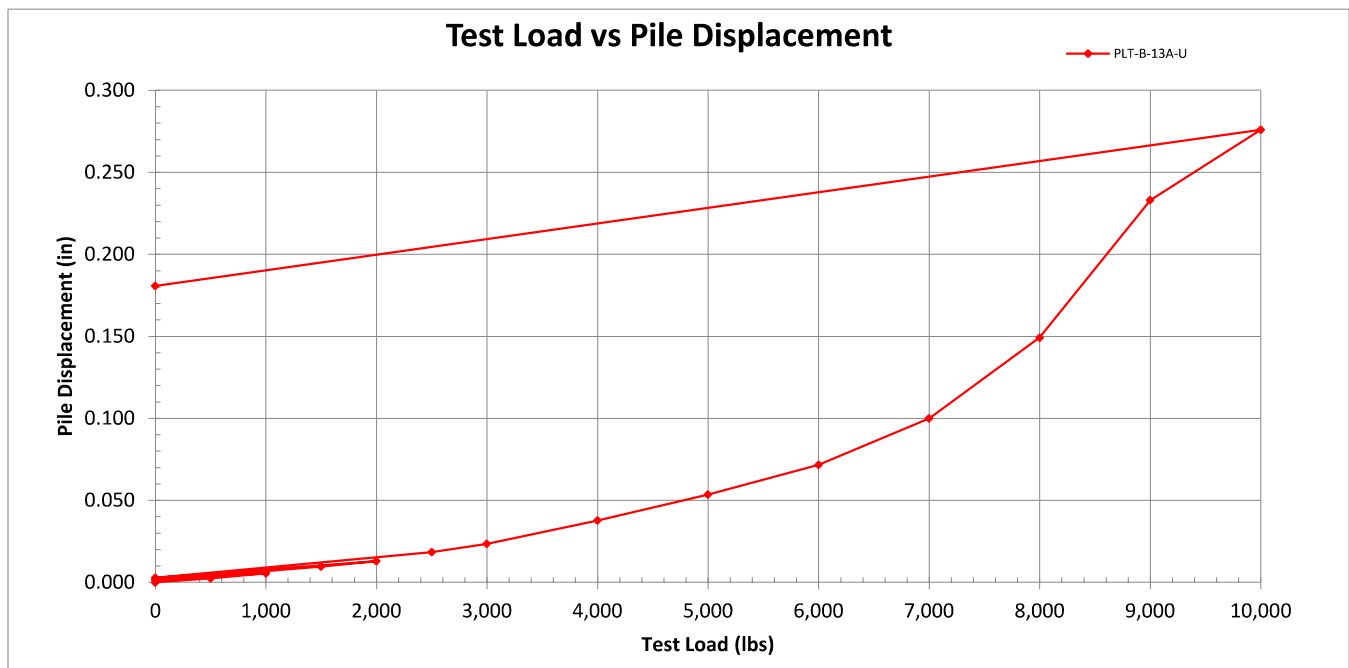
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-13A-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	103.5

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.003	-0.003	0.003	0.003	0.003	
1,000	1 min	-0.005	-0.006	0.005	0.006	0.006	
0	0.5 min	-0.001	-0.002	0.001	0.002	0.002	
1,500	1 min	-0.008	-0.012	0.008	0.012	0.010	
2,000	1 min	-0.010	-0.016	0.010	0.016	0.013	
0	0.5 min	-0.002	-0.004	0.002	0.004	0.003	
2,500	1 min	-0.020	-0.018	0.020	0.018	0.019	
3,000	1 min	-0.024	-0.024	0.024	0.024	0.024	
4,000	1 min	-0.039	-0.037	0.039	0.037	0.038	
5,000	1 min	-0.055	-0.052	0.055	0.052	0.054	
6,000	1 min	-0.075	-0.069	0.075	0.069	0.072	
7,000	1 min	-0.104	-0.097	0.104	0.097	0.100	
8,000	1 min	-0.156	-0.143	0.156	0.143	0.149	
9,000	1 min	-0.249	-0.217	0.249	0.217	0.233	
10,000	1 min	-0.276	-0.277	0.276	0.277	0.276	
0	0.5 min	-0.180	-0.182	0.180	0.182	0.181	

Notes:





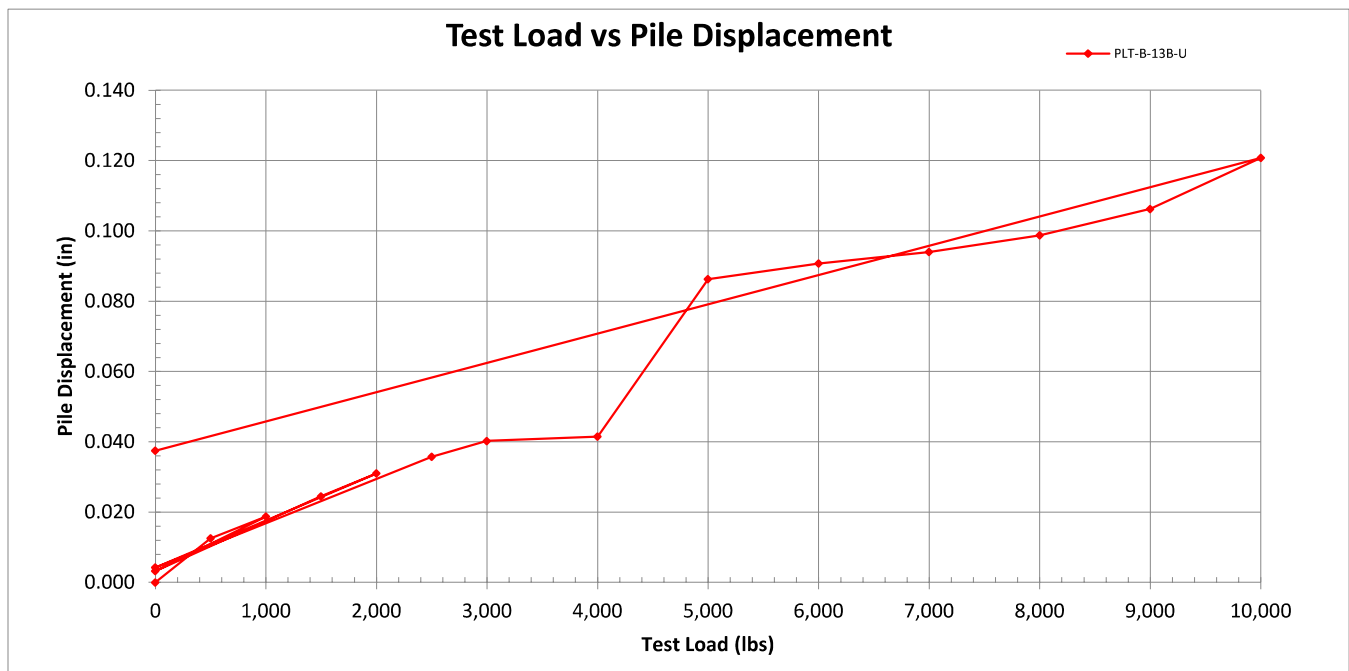
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-13B-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	170.5

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.012	-0.013	0.012	0.013	0.013	
1,000	1 min	-0.017	-0.021	0.017	0.021	0.019	
0	0.5 min	-0.003	-0.004	0.003	0.004	0.003	
1,500	1 min	-0.023	-0.027	0.023	0.027	0.025	
2,000	1 min	-0.028	-0.034	0.028	0.034	0.031	
0	0.5 min	-0.004	-0.005	0.004	0.005	0.004	
2,500	1 min	-0.032	-0.040	0.032	0.040	0.036	
3,000	1 min	-0.036	-0.045	0.036	0.045	0.040	
4,000	1 min	-0.037	-0.047	0.037	0.047	0.042	
5,000	1 min	-0.086	-0.087	0.086	0.087	0.086	
6,000	1 min	-0.089	-0.093	0.089	0.093	0.091	
7,000	1 min	-0.093	-0.096	0.093	0.096	0.094	
8,000	1 min	-0.098	-0.100	0.098	0.100	0.099	
9,000	1 min	-0.107	-0.106	0.107	0.106	0.106	
10,000	1 min	-0.119	-0.123	0.119	0.123	0.121	
0	0.5 min	-0.035	-0.040	0.035	0.040	0.038	

Notes:





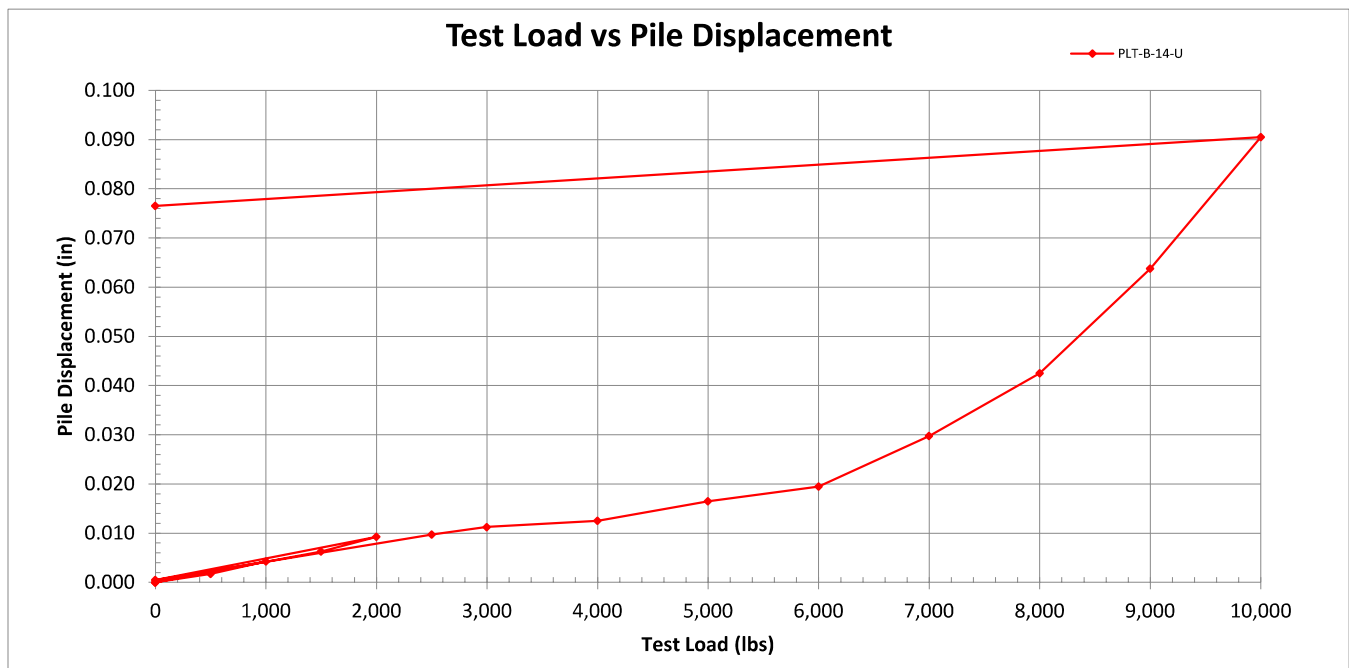
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-14-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	122.3

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.003	-0.001	0.003	0.001	0.002	
1,000	1 min	-0.005	-0.004	0.005	0.004	0.004	
0	0.5 min	0.000	0.000	0.000	0.000	0.000	
1,500	1 min	-0.007	-0.006	0.007	0.006	0.006	
2,000	1 min	-0.009	-0.010	0.009	0.010	0.009	
0	0.5 min	-0.001	-0.001	0.001	0.001	0.001	
2,500	1 min	-0.011	-0.009	0.011	0.009	0.010	
3,000	1 min	-0.012	-0.011	0.012	0.011	0.011	
4,000	1 min	-0.014	-0.012	0.014	0.012	0.013	
5,000	1 min	-0.019	-0.015	0.019	0.015	0.017	
6,000	1 min	-0.022	-0.017	0.022	0.017	0.020	
7,000	1 min	-0.034	-0.026	0.034	0.026	0.030	
8,000	1 min	-0.048	-0.037	0.048	0.037	0.043	
9,000	1 min	-0.073	-0.055	0.073	0.055	0.064	
10,000	1 min	-0.094	-0.088	0.094	0.088	0.091	
0	0.5 min	-0.077	-0.077	0.077	0.077	0.077	

Notes:





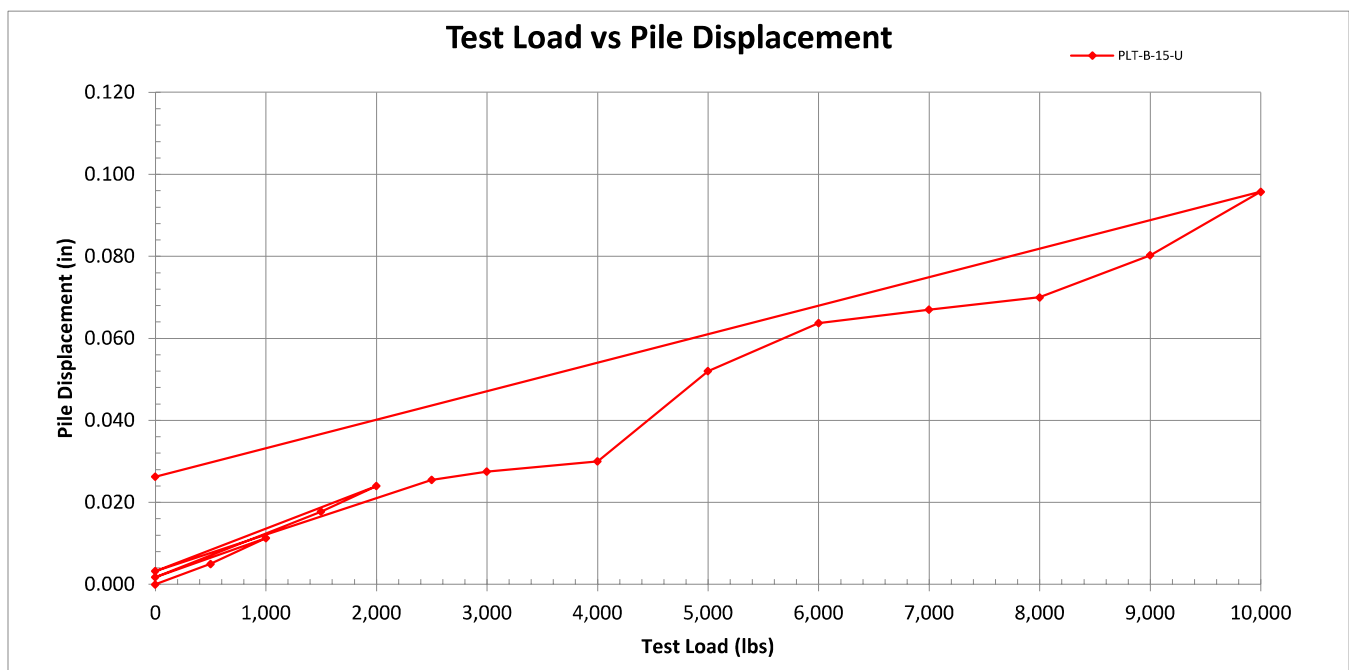
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-15-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	98.2

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.005	-0.005	0.005	0.005	0.005	
1,000	1 min	-0.012	-0.011	0.012	0.011	0.011	
0	0.5 min	-0.002	-0.002	0.002	0.002	0.002	
1,500	1 min	-0.019	-0.017	0.019	0.017	0.018	
2,000	1 min	-0.025	-0.023	0.025	0.023	0.024	
0	0.5 min	-0.004	-0.003	0.004	0.003	0.003	
2,500	1 min	-0.027	-0.024	0.027	0.024	0.026	
3,000	1 min	-0.029	-0.026	0.029	0.026	0.028	
4,000	1 min	-0.032	-0.028	0.032	0.028	0.030	
5,000	1 min	-0.045	-0.059	0.045	0.059	0.052	
6,000	1 min	-0.068	-0.060	0.068	0.060	0.064	
7,000	1 min	-0.072	-0.062	0.072	0.062	0.067	
8,000	1 min	-0.076	-0.065	0.076	0.065	0.070	
9,000	1 min	-0.090	-0.071	0.090	0.071	0.080	
10,000	1 min	-0.111	-0.081	0.111	0.081	0.096	
0	0.5 min	-0.027	-0.026	0.027	0.026	0.026	

Notes:





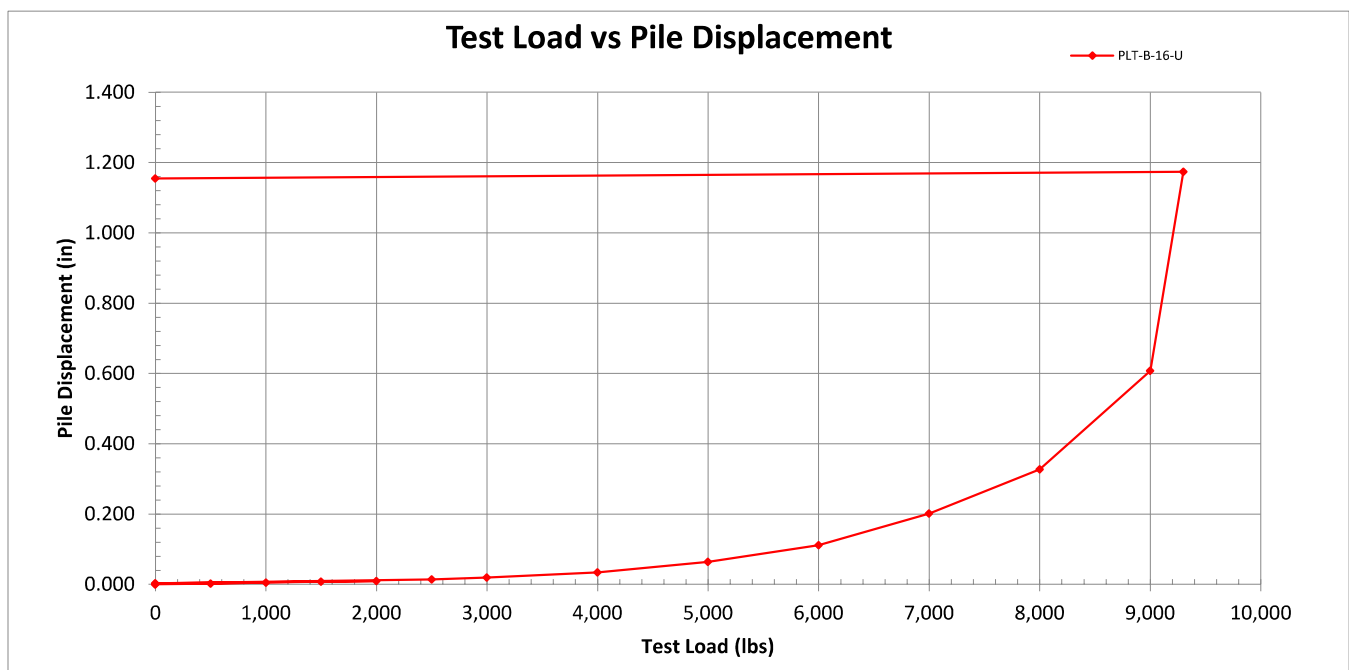
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-16-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	54.9

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.003	-0.002	0.003	0.002	0.002	
1,000	1 min	-0.005	-0.005	0.005	0.005	0.005	
0	0.5 min	-0.002	-0.002	0.002	0.002	0.002	
1,500	1 min	-0.007	-0.009	0.007	0.009	0.008	
2,000	1 min	-0.008	-0.011	0.008	0.011	0.010	
0	0.5 min	-0.003	-0.004	0.003	0.004	0.004	
2,500	1 min	-0.017	-0.012	0.017	0.012	0.014	
3,000	1 min	-0.023	-0.018	0.023	0.018	0.020	
4,000	1 min	-0.039	-0.030	0.039	0.030	0.034	
5,000	1 min	-0.072	-0.057	0.072	0.057	0.064	
6,000	1 min	-0.124	-0.100	0.124	0.100	0.112	
7,000	1 min	-0.219	-0.185	0.219	0.185	0.202	
8,000	1 min	-0.368	-0.287	0.368	0.287	0.327	
9,000	1 min	-0.624	-0.593	0.624	0.593	0.608	
9,300	1 min	-1.233	-1.115	1.233	1.115	1.174	Pile Failed
0	0.5 min	-1.165	-1.146	1.165	1.146	1.155	

Notes:





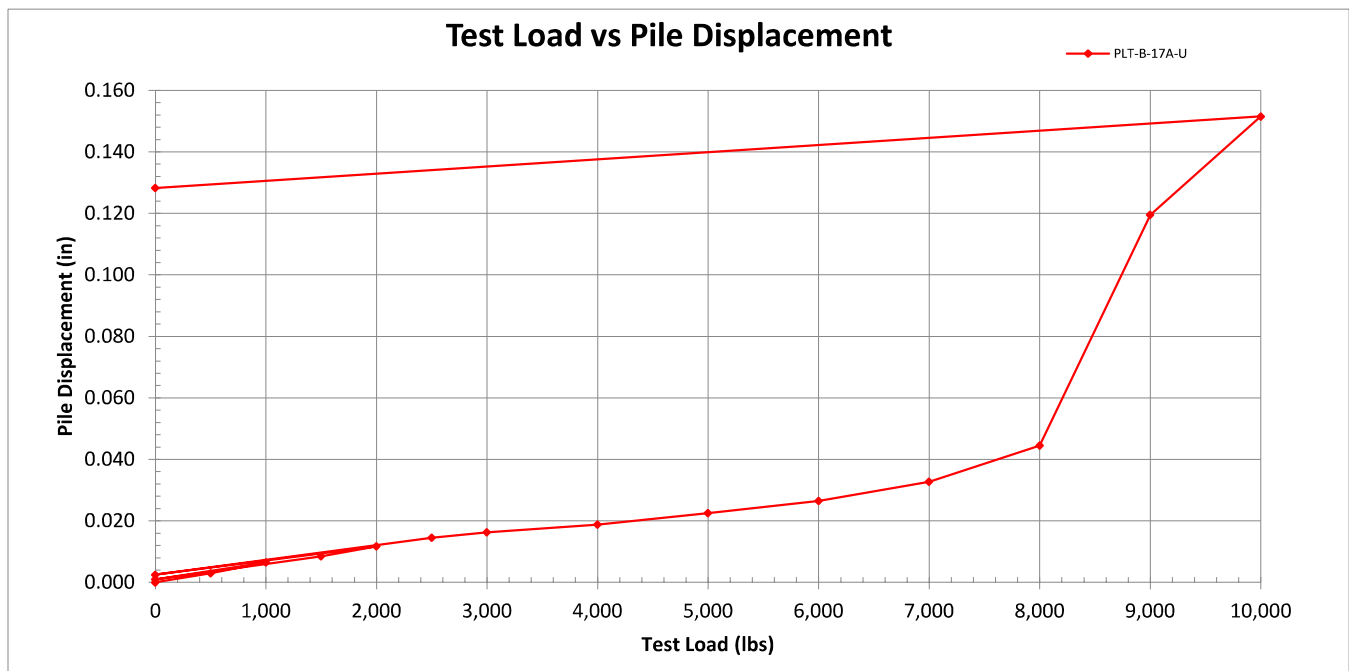
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-17A-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	73.0

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.002	0.004	0.002	0.003	
1,000	1 min	-0.008	-0.006	0.008	0.006	0.007	
0	0.5 min	-0.001	-0.002	0.001	0.002	0.001	
1,500	1 min	-0.009	-0.009	0.009	0.009	0.009	
2,000	1 min	-0.010	-0.014	0.010	0.014	0.012	
0	0.5 min	-0.002	-0.004	0.002	0.004	0.003	
2,500	1 min	-0.011	-0.019	0.011	0.019	0.015	
3,000	1 min	-0.015	-0.018	0.015	0.018	0.016	
4,000	1 min	-0.018	-0.020	0.018	0.020	0.019	
5,000	1 min	-0.023	-0.022	0.023	0.022	0.023	
6,000	1 min	-0.028	-0.025	0.028	0.025	0.027	
7,000	1 min	-0.036	-0.030	0.036	0.030	0.033	
8,000	1 min	-0.048	-0.041	0.048	0.041	0.045	
9,000	1 min	-0.133	-0.107	0.133	0.107	0.120	
10,000	1 min	-0.171	-0.133	0.171	0.133	0.152	
0	0.5 min	-0.127	-0.130	0.127	0.130	0.128	

Notes:





Pile Load Test - Uplift/Tension

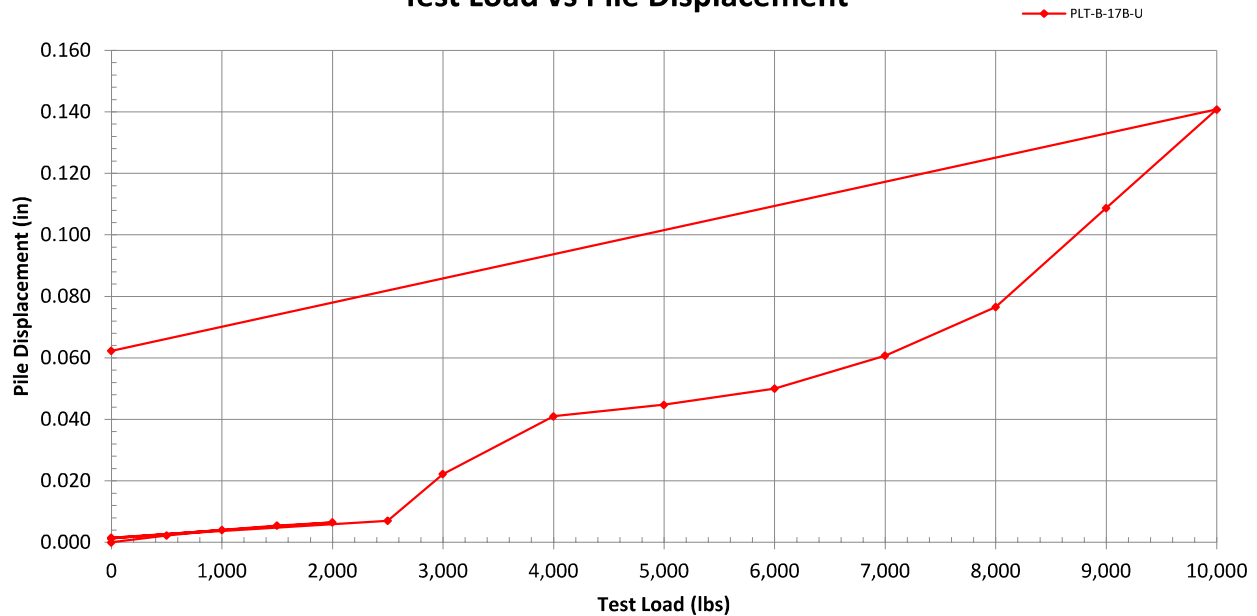
Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-17B-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	144.9

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.004	-0.001	0.004	0.001	0.002	
1,000	1 min	-0.005	-0.003	0.005	0.003	0.004	
0	0.5 min	-0.002	-0.001	0.002	0.001	0.001	
1,500	1 min	-0.008	-0.004	0.008	0.004	0.006	
2,000	1 min	-0.009	-0.005	0.009	0.005	0.007	
0	0.5 min	-0.002	-0.001	0.002	0.001	0.002	
2,500	1 min	-0.010	-0.005	0.010	0.005	0.007	
3,000	1 min	-0.020	-0.025	0.020	0.025	0.022	
4,000	1 min	-0.044	-0.038	0.044	0.038	0.041	
5,000	1 min	-0.048	-0.042	0.048	0.042	0.045	
6,000	1 min	-0.054	-0.047	0.054	0.047	0.050	
7,000	1 min	-0.067	-0.055	0.067	0.055	0.061	
8,000	1 min	-0.087	-0.066	0.087	0.066	0.077	
9,000	1 min	-0.125	-0.093	0.125	0.093	0.109	
10,000	1 min	-0.145	-0.137	0.145	0.137	0.141	
0	0.5 min	-0.062	-0.063	0.062	0.063	0.062	

Notes:

Test Load vs Pile Displacement





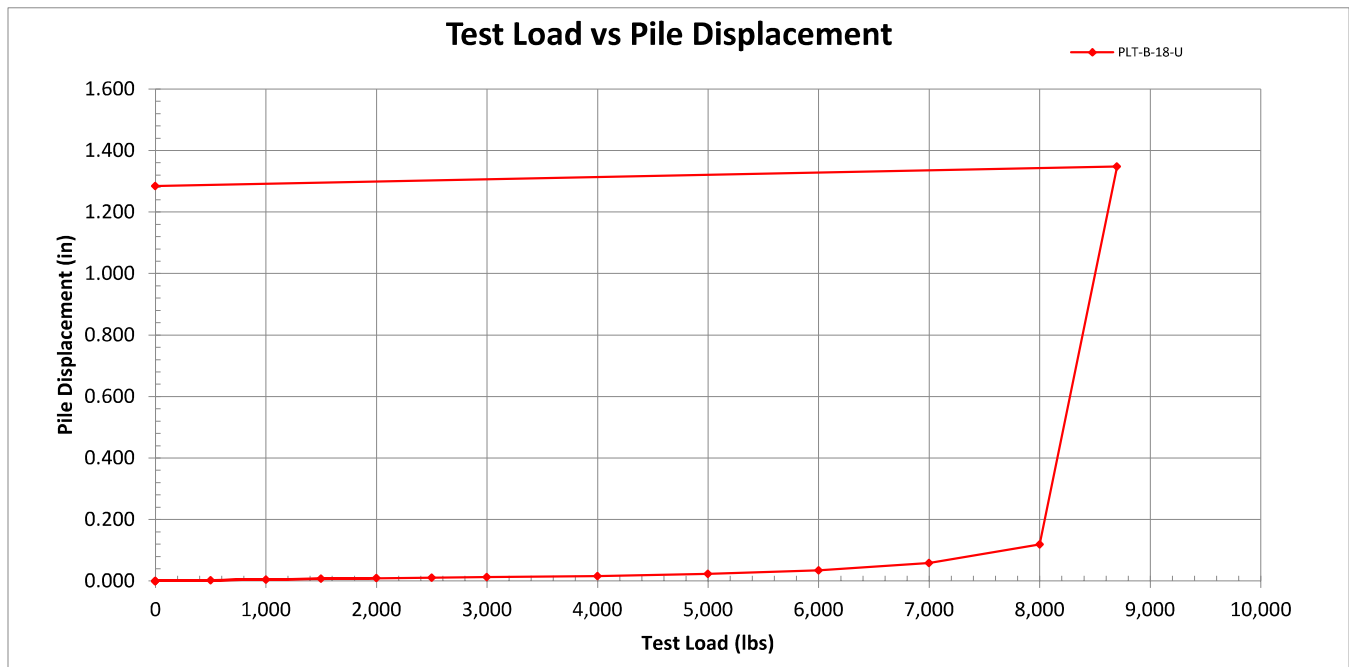
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-18-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	80.7

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	7.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.003	-0.002	0.003	0.002	0.002	
1,000	1 min	-0.005	-0.005	0.005	0.005	0.005	
0	0.5 min	0.000	0.000	0.000	0.000	0.000	
1,500	1 min	-0.008	-0.009	0.008	0.009	0.008	
2,000	1 min	-0.009	-0.011	0.009	0.011	0.010	
0	0.5 min	-0.001	-0.001	0.001	0.001	0.001	
2,500	1 min	-0.009	-0.013	0.009	0.013	0.011	
3,000	1 min	-0.010	-0.016	0.010	0.016	0.013	
4,000	1 min	-0.014	-0.019	0.014	0.019	0.016	
5,000	1 min	-0.021	-0.026	0.021	0.026	0.023	
6,000	1 min	-0.033	-0.038	0.033	0.038	0.035	
7,000	1 min	-0.057	-0.061	0.057	0.061	0.059	
8,000	1 min	-0.118	-0.120	0.118	0.120	0.119	
8,700	1 min	-1.363	-1.334	1.363	1.334	1.348	Pile Failed
0	0.5 min	-1.285	-1.285	1.285	1.285	1.285	

Notes:





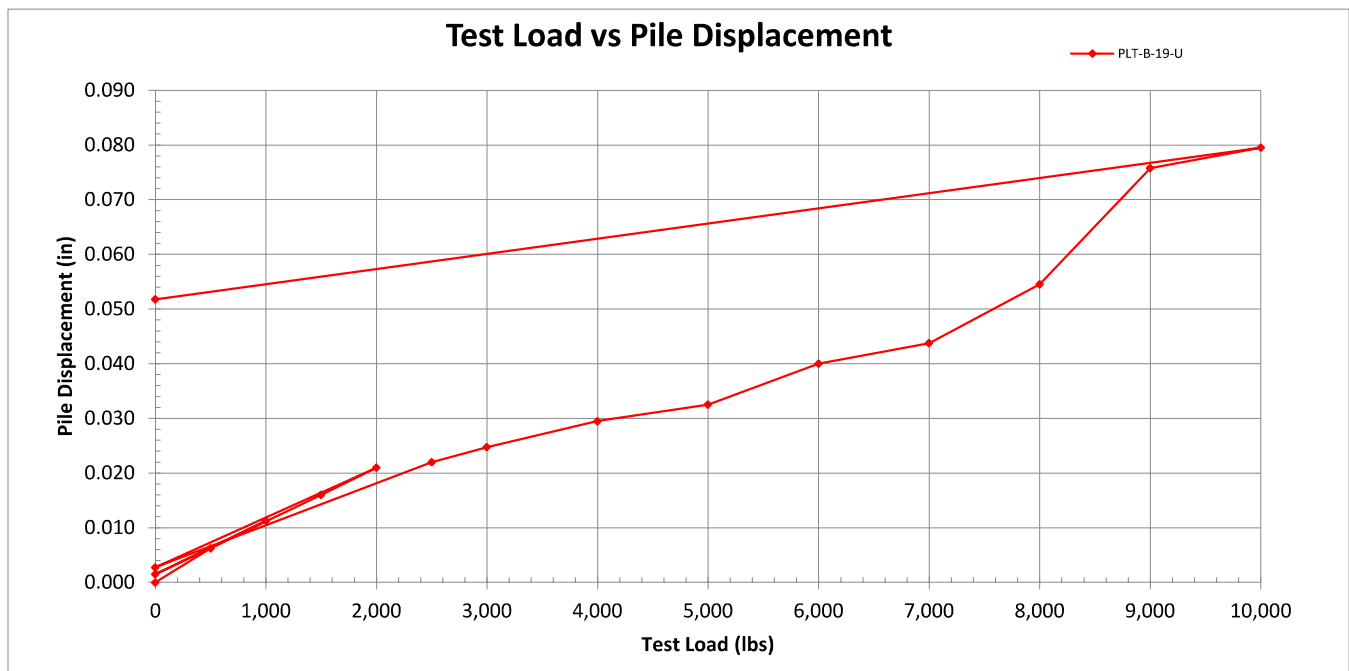
Pile Load Test - Uplift/Tension

Project Name:	Scioto Farms Solar
Project No.:	GE2110047
Client:	Candela
Pile No.:	PLT-B-19-U
Pile Type:	W6x9
Pile Stickup Ht (ft):	5.0
Pile Drive Time (sec):	187.2

Pile Install Date:	11/19/2021
Pile Test Date:	12/3/2021
Tested by:	Jake Alexander
Weather:	Sunny
Pile Embedment Depth (ft):	9.0
Gauge#1 Ht above Ground (in):	6
Gauge#2 Ht above Ground (in):	6

Load (lbs)	Hold Time (min)	Dial Gauge Reading		Dial Gauge Displacement		Ave. Gauge Displacement (in)	Notes
		Gauge #1 Reading (in)	Gauge #2 Reading (in)	Gauge #1 (in) Displacement	Gauge #2 (in) Displacement		
0		0.000	0.000	0.000	0.000	0.000	
500	1 min	-0.008	-0.005	0.008	0.005	0.006	
1,000	1 min	-0.014	-0.009	0.014	0.009	0.011	
0	0.5 min	-0.001	-0.002	0.001	0.002	0.002	
1,500	1 min	-0.019	-0.013	0.019	0.013	0.016	
2,000	1 min	-0.025	-0.017	0.025	0.017	0.021	
0	0.5 min	-0.003	-0.003	0.003	0.003	0.003	
2,500	1 min	-0.026	-0.019	0.026	0.019	0.022	
3,000	1 min	-0.028	-0.022	0.028	0.022	0.025	
4,000	1 min	-0.034	-0.026	0.034	0.026	0.030	
5,000	1 min	-0.036	-0.029	0.036	0.029	0.033	
6,000	1 min	-0.043	-0.037	0.043	0.037	0.040	
7,000	1 min	-0.047	-0.041	0.047	0.041	0.044	
8,000	1 min	-0.068	-0.041	0.068	0.041	0.055	
9,000	1 min	-0.079	-0.073	0.079	0.073	0.076	
10,000	1 min	-0.089	-0.070	0.089	0.070	0.080	
0	0.5 min	-0.050	-0.054	0.050	0.054	0.052	

Notes:





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APPENDIX F

Photographic Records of Test Pit for TP-01



Photographic Records of Test Pit for TP-02



Photographic Records of Test Pit for TP-03



Photographic Records of Test Pit for TP-04



Photographic Records of Test Pit for TP-05



Photographic Records of Test Pit for TP-06



Photographic Records of Test Pit for TP-07



Photographic Records of Test Pit for TP-08



Photographic Records of Test Pit for TP-09



Photographic Records of Test Pit for TP-10



Photographic Records of Test Pit for TP-11



**This foregoing document was electronically filed with the Public Utilities
Commission of Ohio Docketing Information System on**

4/27/2022 9:12:54 AM

in

Case No(s). 21-0868-EL-BGN

Summary: Notice of Filing Geotechnical Report electronically filed by Teresa
Orahood on behalf of Sommer Sheely