Barrett Solar Facility

Preliminary Geotechnical Engineering Report

September 5, 2023 | Terracon Project No. 94235249-R3

Prepared for:

Cobra Industrial Activities, Inc.
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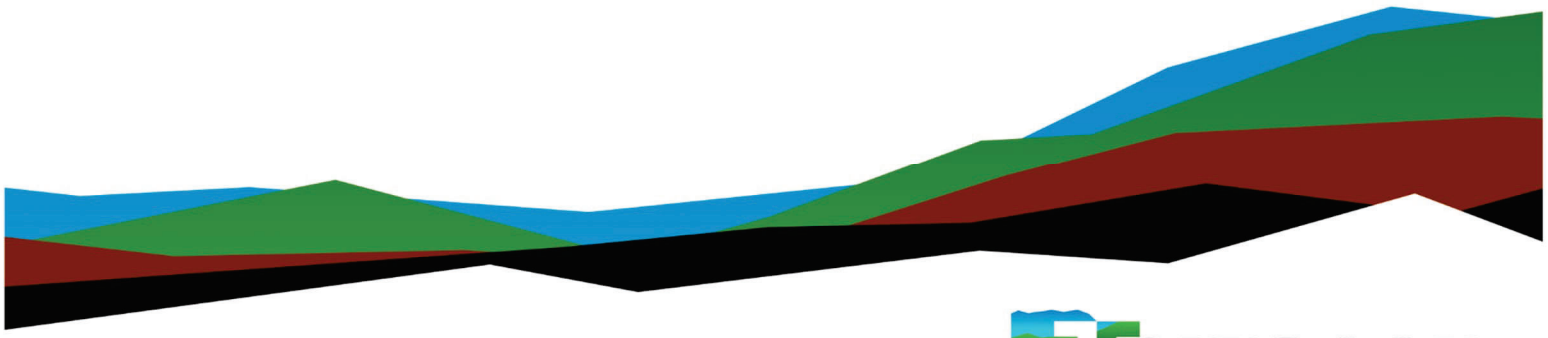
Houston, Texas 77056



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September 5, 2023

Cobra Industrial Activities, Inc.
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Attn: Ignacio Fernandez
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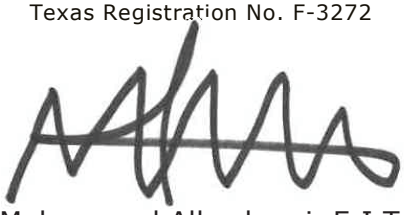
Re: Preliminary Geotechnical Engineering Report
Barrett Solar Facility
Near W US Hwy 69 and FM 2737
Point, Rains County, Texas
Terracon Project No. 94235249-R3

Dear Mr. Fernandez:

This geotechnical report provides a description of observed subsurface conditions and preliminary recommendations for design of pile foundations, earthworks, and access roads. This report has been updated to address comments received on our previous report submittals. Our services were provided in general accordance with Terracon Proposal No. P94235249 dated June 2, 2023.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.
Texas Registration No. F-3272



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Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the terracon logo will bring you back to this page. For more interactive features, please view your project online at **client.terracon.com**. Refer to each individual Attachment for a listing of contents.

INTRODUCTION

This report provides preliminary geotechnical engineering recommendations for the proposed Barrett Solar Facility. The solar facility is planned near West US Hwy 69 and FM 2737 near City of Point in Rains County, Texas. This report includes findings and geotechnical engineering recommendations for:

- Subsurface soil conditions
- Groundwater observations
- Seismic site classification per IBC
- Pile Drivability discussion
- Preliminary PV Array pile design recommendations
- Subgrade preparation/earthwork
- Aggregate surfaced and native soil access road
- This report does not include preliminary recommendations for substation or switchyard foundations and earthwork

Our Scope of Services:

- 18 borings to depths of about 20 feet
- Four bulk samples for standard proctor and thermal resistivity testing
- Field electrical resistivity testing at nine locations
- Laboratory testing on soil samples
- Preliminary geotechnical engineering report

The preliminary design recommendations presented in this report are based on the data obtained from widely spaced soil borings and the project information provided to us. Additional borings, laboratory testing, and full-scale pile load tests are recommended to develop final geotechnical recommendations.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs in the **Exploration Results** section.

SITE CONDITIONS AND PROJECT INFORMATION

Item	Description
Project Location	The project is located near West US. Hwy 69 and FM 2737 northwest of the City of Point, Texas. The site has a total area of about 914 acres. We have assumed the whole area to be used for development. General site location: Latitude/Longitude 32.96963, -95.91490, See **Site Location**
Existing Improvements	The site includes farmland, grass land with dense wooded areas along creeks. Small stock ponds are scattered over the project site.

Item	Description
Current Ground Cover	Soil, grass and scattered trees
Project Description	The project site is expected to be developed as solar facility on about 914 acres.
Proposed PV Array Foundations	The wide flange steel pile foundations are anticipated for the solar arrays
Pile Loads	Structural loads were not provided but have been estimated based on our experience on projects using single axis tracking rack systems. The design loads will be racking system dependent. ■ Downward: 2 to 5 kips ■ Lateral 2 to 4 kips ■ Uplift: 2.5 to 6 kips
Grading in Array Area	Grading details were not provided. We have assumed site grades will generally follow existing grades within the solar panel area with cuts and fills of less than two feet.
Access Roads	■ Access roads to support post-construction traffic consisting primarily of light maintenance vehicles and will have a maximum fire truck vehicle load of 80,000 lbs. ■ We understand it is acceptable for the access roads to require ongoing maintenance during their design life

GEOTECHNICAL CHARACTERIZATION

Site Geology

The site is situated in the outcrop of Wills Point Formation. The Willis Point Formation mainly consists of stratified clays of various colors and interbedded with sand layers and some limestone concretions. Estimated thickness 250 to 500 feet. A rosette limestone layer is present near middle section of the formation.

Subsurface Condition

Subsurface conditions were explored by 18 borings sampled to depths of 20 feet. The observed soils are described on the boring logs. Note that the soil boundaries between soil types may be more transitional than indicated on the boring logs. The boring logs are presented in the **Exploration Results** section of the report.

In addition to borings, four bulk samples were collected for thermal resistivity testing from four-foot-deep pits. Electrical resistivity tests were performed at nine locations. The locations of the bulk sampling pits, and the electrical resistivity surveys are

presented **Exploration Plan** and the test results are included in **Exploration Results** report section.

Soil conditions were found to consist of cohesive clay soils. Clay soil samples are more desirable to be obtained from push tubes for direct measurement of soil unconfined compressive strengths rather than estimates based on Standard Penetration Test (SPT) correlations presented in the **Figures** report section. The soil unconfined compressive strengths were used to develop pile skin friction, end bearing and lateral soil parameters for developing preliminary design values recommendations.

In addition to unconfined compression tests, other tests to characterize subsurface conditions included Atterberg Limits, water content, soil unit weight measurements, and Standard Proctor tests. Other tests to evaluate soil corrosion potential and thermal resistivity were performed. The results of the soil classification and strength tests are listed on the boring logs and table in the **Exploration Results** section of the report. Plots of the standard Proctor tests and thermal resistivity dry out curves and corrosion result table are also presented in the **Exploration Results** section.

We have developed a general characterization of the subsurface conditions termed GeoModel. The GeoModel forms the basis of our geotechnical calculations and preliminary recommendations. The GeoModel is in the **Figures** report section. The GeoModel has been divided into the layers listed in the following table.

Model Layer	Layer Name	General Description
1	**Sandy Clay and Clay (CH)**	dark brown and light brown, very stiff to hard, expansive
2	**Lean Clay (CL)**	brown and light brown, very stiff to hard

Groundwater Conditions

Dry auger drilling techniques were used to drill the borings, which allows short-term groundwater observations. Groundwater was observed in boring B-17 at depth of 17 feet. Groundwater was not observed in any of the other borings while drilling or for the short duration the borings remained open. However, this does not necessarily mean the borings terminated above groundwater. Due to the low permeability of the soils encountered in the borings, a relatively long period may be necessary for a groundwater level to develop and stabilize in a borehole. Long term observations in piezometers or observation wells sealed from the influence of surface water are often required to define groundwater levels in materials of this type.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore,

groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs.

GEOTECHNICAL OVERVIEW

Driven piles are being considered to be used to support the solar panel arrays. Our preliminary design recommendations are based on the area around the piles supporting the solar panel arrays does not pond water and the piles are not bearing in thick fills.

Very stiff to hard clays, sandy clays and lean clays are present. Pile driving may experience prolong drive times to reach the planned pile embedment depths due to presence of hard soil. Predrilling may be required to expedite pile installation. A pile load testing program is required to confirm the need for predrilling.

The **Driven Pile Foundations** section present geotechnical recommendations for solar panel array support and **Access Road** section addresses preliminary pavement section for access roads.

The **General Comments** section provides an understanding of the report limitations.

DRIVEN PILE FOUNDATIONS

The pile design parameters for axial and lateral pile capacity analyses were developed using the following steps:

1- Plots of the soil unconfined compressive strength and factored hand penetrometer tests with depth to were created to evaluate the soil strength variation with depth.

2- Design soil strengths with depth were selected using engineering judgement

3- The design soil strengths were used in conjunction with the pile design procedures provided in FHWA GEC 012 - Pile Design and Construction of Drive Pile Foundations – Volume 1 publication number FHWA-NHI-16-009, dated July 2016 to estimate pile design values.

4- Design parameters for lateral pile load analyses were developed in accordance with guidelines presented in Ensoft's technical and user manuals.

The following tables include the summary pocket penetrometer and the unconfined compressive strength tests results

UNCONFINED COMPRESSION STRENGTH DATA

Boring	Depth (ft.)	Compressive Strength (tsf)	Strain (%)	Boring	Depth (ft.)	Compressive Strength (tsf)	Strain (%)
B-1	2 – 4	9.19	9	B-11	2 – 4	4.01	11.5
	4 – 6	2.74	5.8		8 – 10	2.61	8.0
	8 – 10	2.73	5.5				
B-2	4 – 6	9.64	11.8	B-12	2 – 4	6.25	11
B-3	2 – 4	3.39	15		6 – 8	11.10	6.5
	6 – 8	16.33	4.2	B-13	2 – 4	7.38	9.8
B-4	4 – 6	4.60	7.5		6 – 8	11.64	7.3
	8 – 10	3.01	5.3	B-14	4 – 6	2.49	9.3
B-5	2 – 4	9.03	5.0		8 – 10	4.00	7.0
	6 – 8	2.78	6.0	B-15	2 – 4	3.14	3.6
B-6	2 – 4	9.51	4.0		6 – 8	12.89	5.3
	8 – 10	2.56	6.5		10 – 12	6.25	2.7
B-7	4 – 6	2.89	13	B-16	2 – 4	3.02	9.5
	8 – 10	2.74	7.5		6 – 8	6.08	9.8
B-8	2 – 4	2.65	9.5	B-17	2 – 4	3.41	8.5
	6 – 8	15.40	9.5		8 – 10	1.61	5.5
B-9	2 – 4	1.02	14.5	B-18	2 – 4	4.90	12.3
	8 – 10	2.83	4.7		6 – 8	10.62	4.6
B-10	2 – 4	3.14	14.8	**Unconfined Compressive Strengths are listed on the boring logs with sample unit weight and moisture content**			
	8 – 10	5.44	6.0				

HAND PENETROMETER TEST RESULT (HP)								
Boring	**Depth (ft.)**	**HP (tsf)**	**Boring**	**Depth (ft.)**	**HP (tsf)**	**Boring**	**Depth (ft.)**	**HP (tsf)**
B-1	0 – 2	4.5+	**B-4**	0 – 2	3.5	**B-7**	0 – 2	2
	2 – 4	4.5+		2 – 4	4		2 – 4	3
	4 – 6	2.5		4 – 6	4		4 – 6	2.5
	6 – 8	3.5		6 – 8	4.5		6 – 8	3.5
	8 – 10	2.5		8 – 10	4.5		8 – 10	4.5
	13 – 15	4.5		13 – 15	4.5		13 – 15	4.5
	18 – 20	4.5+		18 – 20	4.5+		18 – 20	4.5
B-2	0 – 2	4.5	**B-5**	0 – 2	4.5	**B-8**	0 – 2	3.5
	2 – 4	4.5		2 – 4	4.5		2 – 4	4.5
	4 – 6	4.5		4 – 6	4.5		4 – 6	4.5
	6 – 8	4.5		6 – 8	4.5		6 – 8	4.5
	8 – 10	4.5		8 – 10	4.5		8 – 10	4.5
	13 – 15	4.5		13 – 15	4.5		13 – 15	4.5
	18 – 20	4.5		18 – 20	4.5		18 – 20	4.5
B-3	0 – 2	0.5	**B-6**	0 – 2	4.5+	**B-9**	0 – 2	2.5
	2 – 4	4.5		2 – 4	4.5+		2 – 4	2
	4 – 6	4.5		4 – 6	4.5+		4 – 6	4
	6 – 8	4.5		6 – 8	4.5+		6 – 8	4.5
	8 – 10	3		8 – 10	3.5		8 – 10	3
	13 – 15	4.5		13 – 15	4.5+		13 – 15	4.5
	18 – 20	4.5		18 – 20	4.5+		18 – 20	4.5

HAND PENETROMETER TEST RESULT (HP)								
Boring	**Depth (ft.)**	**HP (tsf)**	**Boring**	**Depth (ft.)**	**HP (tsf)**	**Boring**	**Depth (ft.)**	**HP (tsf)**
B-10	0 – 2	1	**B-13**	0 – 2	4.5+	**B-16**	0 – 2	2
	2 – 4	2.5		2 – 4	4.5+		2 – 4	2
	4 – 6	4.5		4 – 6	4.5+		4 – 6	2.5
	6 – 8	4.5		6 – 8	4.5+		6 – 8	4.5
	8 – 10	3.5		8 – 10	4.5+		8 – 10	4.5
	13 – 15	4.5		13 – 15	4.5+		13 – 15	4.5
	18 – 20	4.5		18 – 20	4.5+		18 – 20	3.5
B-11	0 – 2	4.5	**B-14**	0 – 2	4.5+	**B-17**	0 – 2	3.5
	2 – 4	3		2 – 4	3.5		2 – 4	4
	4 – 6	4		4 – 6	2		4 – 6	4.5
	6 – 8	4		6 – 8	4		6 – 8	4.5
	8 – 10	3		8 – 10	4.5		8 – 10	3.5
	13 – 15	3		13 – 15	4.5+		13 – 15	3
	18 – 20	4.5		18 – 20	4.5+		18 – 20	2.5
B-12	0 – 2	4.5	**B-15**	0 – 2	4.5	**B-18**	0 – 2	4.5+
	2 – 4	4.5+		2 – 4	4.5		2 – 4	3
	4 – 6	4.5+		4 – 6	4.5		4 – 6	4.5+
	6 – 8	4.5+		6 – 8	4.5		6 – 8	4.5+
	8 – 10	4.5+		8 – 10	4.5		8 – 10	4.5+
	13 – 15	4.5		13 – 15	4.5		13 – 15	4.5+
	18 – 20	4.5+		18 – 20	4.5		18 – 20	4.5+

Driven Pile Construction Considerations

Based on our preliminary borings, steel piles can be driven to support the solar panel racking system. Very stiff to hard clays were encountered within the upper ten feet. The hard clay layers will likely impede the rate of pile advancement.

The table below provides our estimated depths where more than two minutes may be required to advance the pile one foot using a PD10 pile driving equipment. The driving penetration rate could be increased during periods of prolonged rainfall or decreased for drought conditions. Pile driving equipment can also be a factor. Pile driving tests will be needed to confirm pile driving times.

Boring	Estimated Depth of Where Driving Time May Exceed 2 minutes/foot	Boring	Estimated Depth of Where Diving Time May Exceed 2 minutes/foot
B-1	3 to 4 feet	B-10	6 to 7 feet
B-2	3 to 4 feet	B-11	Below 18 feet
B-3	6 to 7 feet	B-12	3 to 4 feet
B-4	Below 15 feet	B-13	2 to 3 feet
B-5	3 to 4 feet	B-14	Below 18 feet
B-6	3 to4 feet	B-15	6 to 7 feet
B-7	Below 15 feet	B-16	6 to 7 feet
B-8	6 to 7 feet	B-17	Below 20 feet
B-9	Below 15 feet	B-18	6 to 7 feet

Figure 1 shows an approximate area where direct driving is anticipated to encountered increased driving resistance. It should be noticed that the boring coverage in this preliminary study was not sufficient to develop enough certainty to zone the site based on the refusal depth, additional borings and pile load testing is required during the final study to confirm or modify the findings of this study.

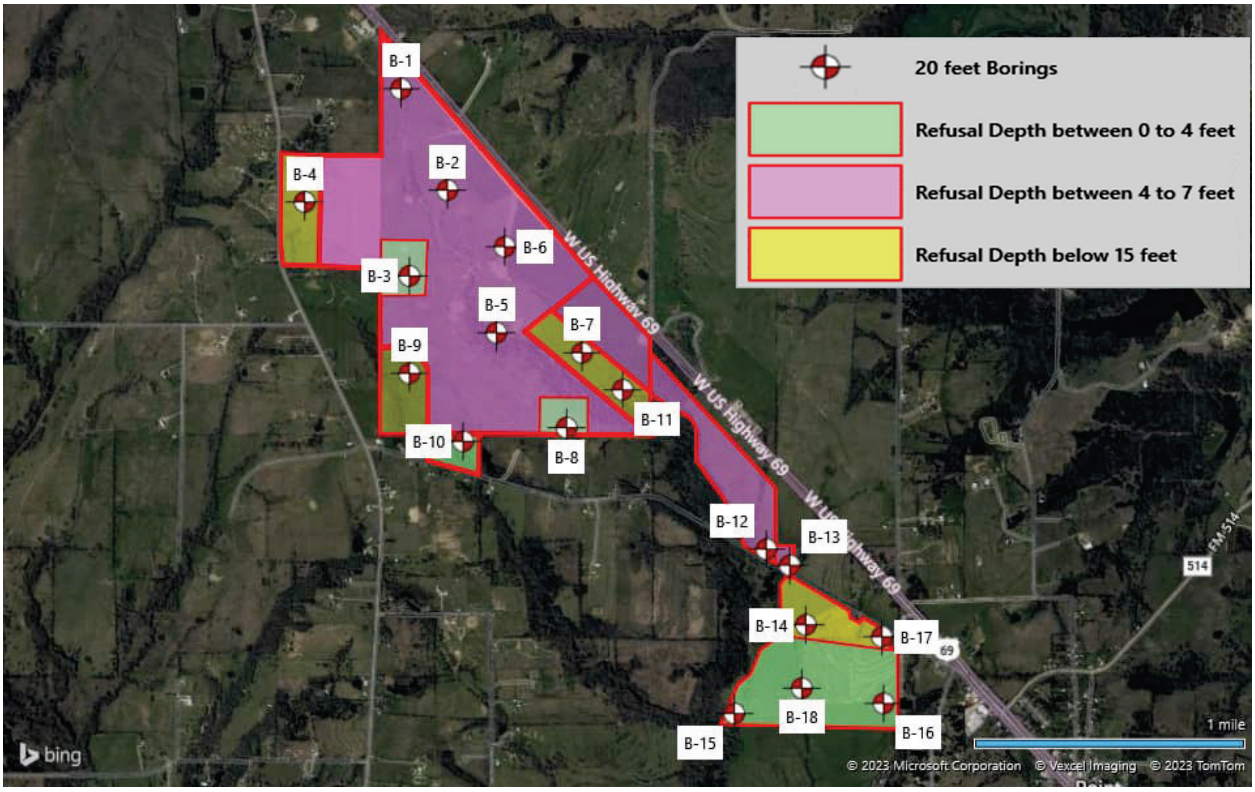


Figure 1 Possible Areas Where Driving Time Could Exceed 2 Minutes per foot at Depths Less than 10 feet

Preliminary Pile Driving Recommendations

A pile testing program is recommended to evaluate pile driving rates and axial and lateral capacity for direct drive piles and driven piles installed in predrilled holes. We recommend piles be installed where high driving resistance is anticipated based on the soil unconfined compressive strength and at locations where pile driving rate is likely to be acceptable.

At each pile test location where hard soils are expected, we recommend two piles be driven without predrilling, two piles driven in nominal four-inch diameter, and two piles driven in nominal six-inch diameter holes. Predrilled holes would be backfilled with excavated soil and the pile driven into the predrilled hole. Manual rod tamping of the soil cutting as they are placed back in the holes. Where hard soils conditions are not expected to be present, install two piles for testing by driving only. Pile embedment depths of 6 and 9 feet are recommended for testing axial and lateral capacity.

Preliminary Driven Pile Axial Capacity Design Recommendations

The following preliminary geotechnical parameters can be used to estimate the capacity of driven W-section pile foundations. A full-scale pile load testing program is

recommended as part of the overall project design. Design values derived from pile load tests may vary from the preliminary estimates below.

Soil strength conditions indicate the borings can be subdivided into at least two groups for developing pile ultimate skin friction and end bearing preliminary design values for direct drive piles. These two groups are listed in the following table and approximate limits of these zones is shown on Figure 2. The boundary limits of the design Zones A and B are very approximate.

Groups	Group Borings
A	B-1, B-4, B-5, B-7, B-8, B-9, B-10, B-11, B-14, B-15, B-16, B-17
B	B-2, B-3, B-6, B-12, B-13, B-18

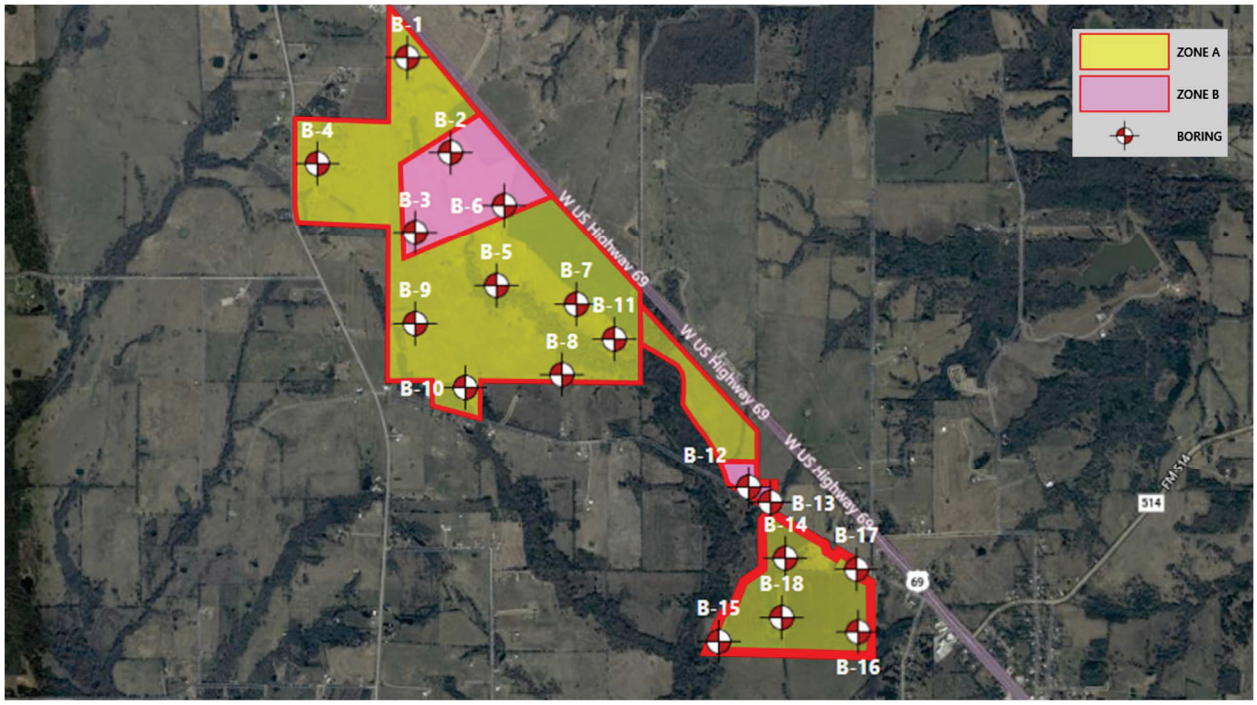


Figure 2 – Approximate Limits of Design Zones A and B

The ultimate skin friction values should be neglected in the upper three feet when calculating the ultimate axial uplift capacity from skin friction due to presence of expansive soil. The upper three feet can be included for computing axial compression capacity. The preliminary design values are only intended for planning purposes and not for final design.

GROUP A SOIL CONDITIONS FOR DRIVEN PILES WITHOUT PREDRILLING		
Embedment Depth	**Ultimate Skin Friction, (f_s)**	**Ultimate End Bearing (q_s)**
0 to 20 feet	700 psf	450 lbs.

GROUP B SOIL CONDITIONS FOR DRIVEN PILES WITHOUT PREDRILLING		
Embedment Depth	**Ultimate Skin Friction, (f_s)**	**Ultimate End Bearing (q_s)**
0 to 6 feet	750 psf	600 lbs.
6 to 20 feet	1,500 psf	1,300 lbs.

The above values are to be used in the following equations to estimate the ultimate uplift or compression load capacity of a pile:

Ultimate Compressive Resistance (lbs.), $Q_{ult} = q_s + H \times P \times f_s$
Ultimate Uplift Resistance (lbs.), $Q_{ult} = H \times P \times f_s$
H = Depth of pile embedment (ft.)
P = Perimeter area/ft. of pile. (i.e., W6x9 = 1.64 sf/ft.)
f_s = Ultimate skin friction (psf)
q_s = unit end-bearing resistance pounds

A factor of safety of two is recommended to be applied to the preliminary ultimate skin friction and end bearing values. The pile design values are for piles with a minimum center-to-center spacing of at least three times their largest cross-sectional dimension. Closer pile spacing needs to include group effects.

Preliminary Lateral Capacity for Driven Piles

Parameters for lateral load analysis are provided in the following table for use in Ensoft LPILE program for driven piles in support of solar panel arrays. Due to the potential for the development of shrinkage crack, we recommend reducing lateral resistance of the top two feet. This can be modeled as using zero for undrained shear strength at the ground surface and increasing linearly to the full soil undrained shear strength value provided in the lateral load analyses design table at two feet.

GROUP A - SOIL CONDITIONS FOR DRIVEN PILES WITHOUT PREDRILLING		
Depth Range, feet	**0 to 3**	**3 to 20**
LPILE Model	Mod. Stiff Clay w/o Free Water	Mod. Stiff Clay w/o Free Water
Effective Unit Weight, pcf	125	125
Undrained Cohesion, psf	0 at Surface 3,000 at 2 feet	3000
Strain Factor, E50	Default	Default
Deformation Modulus, pci	500	500

GROUP B - SOIL CONDITIONS FOR DRIVEN PILES WITHOUT PREDRILLING			
Depth Range, feet	**0 to 3**	**3 to 6**	**6 to 20**
LPILE Model	Mod. Stiff Clay w/o Free Water	Mod. Stiff Clay w/o Free Water	Mod. Stiff Clay w/o Free Water
Effective Unit Weight, pcf	125	125	130
Undrained Cohesion, psf	0 at Surface 4,000 at 2 feet	4,000	9,000
Strain Factor, E50	Default	Default	Default
Deformation Modulus, pci	500	500	800

Group effects for lateral loading conditions should be included for shafts spaced closer than six diameters center to center. Group effect P-multipliers recommended by ENSOFT are recommended for use in design.

Driven Pile Design – Soil Induced Uplift

The expansive clays are present at the site are expected to undergo volume change with changes in soil moisture contents. These volume changes have the potential to lift driven piles as a result of soil heave. The magnitude of these loads varies with the perimeter area of the pile, soil parameters, and particularly the change in soil moisture levels following periods of rainfall or droughts.

An estimate of the potential uplift load can be computed using a uniform adheave value of 450 psf over the block perimeter of the pile to a depth of three feet. The depth range to include the uplift adheave value is not likely to prevent uplift of the pile but is

intended to reduce differential movements of the piles that could disrupt the rotation of the PV arrays. The adheave skin friction values and design depth are based on load tests on shallow piles in soils similar to the ones at this site.

Potential Vertical Movement

The expansive soils present on the project site have the potential to swell and shrink due to moisture fluctuations between dry and wet periods. The magnitude of the moisture induced potential vertical movement at this site is dependent on several factors including the thickness of active clay soils and moisture changes with depth. Potential vertical movements were estimated based on the Plasticity Index of the soil using TxDOT 124-E method. Estimated ground surface movements are between 3 to 5 inches.

RECOMMENDATIONS FOR FINAL DESIGN

The preliminary design recommendations presented in this report are based on the data obtained from widely spaced soil borings and our experience with the recommended pile installation methods. Additional borings, laboratory testing, and pile load tests should be performed to develop final design. We recommend that the geotechnical exploration on site include the following:

1. Additional borings within the solar panel array field to depths of 20 feet (about one boring per 25 acres of development)

2. Pile load test with various installation methods to determine axial tension, axial compression, and lateral pile capacity as described previously.

EARTHWORK

Earthwork is anticipated to include clearing and grubbing, excavations, and fill placement for access roads and substation structures. The following sections provide recommendations for use as a general guide for the preparation of specifications for earthwork.

Access road subgrades should be stripped of vegetation, debris, and other deleterious materials. Stripped top soil can be used to re-vegetate filled areas or disposed of on-site in designated areas.

The subgrade for the access roads must be proof rolled. The proof rolling must be performed with a fully loaded, tandem-axle dump truck or other equipment providing an equivalent subgrade loading. A axial gross weight that is representative of delivery and construction vehicles to be used for this project is recommended for the proof rolling equipment.

Stock pond must be dewatered, and soft sediments removed before backfilling. Pushing fill into water to fill stock ponds should be prohibited where solar array piling will be installed or crossed by an access road. Soft sediments in the stock pond side slopes and base must be excavated to relatively stiff layer.

Soft subgrades that impede equipment movement due to rutting and pumping of the soil surface require improvements. The following measures are some means that can be used to improve the subgrade for equipment.

1. Drying by natural means of wind rowing with disc harrows.
2. Blending soils with cement or lime to increase the stability of the subgrade. Cement is expected to be more weather resistant than lime, or
3. Removal and replacement with fill borrowed from site with soil water contents suitable for compaction.

ACCESS ROADWAYS

We recommend the design team consider the use of crushed stone flexible base for access roads to reduce down times due to wet weather. The following table provides a preliminary design for light duty access road section to support passenger cars, pickup trucks, and light maintenance trucks.

Access Road Section		
Appropriate Use	**Material**	**Recommended Thickness, inches**
Light Duty Access Road in Well Drained Areas	TxDOT Item 247 Thickness, inches	4
	Compacted Subgrade	6
Light Duty Access Road in Poorly Drained Areas	TxDOT Item 247 Thickness, inches	6
	Compacted Subgrade	8

Soft access road subgrades may require chemical stabilization to support operations and maintenance vehicles. Cement and/or lime mixed with the soils can greatly improve the support capacity of the access road.

SEISMIC SITE CLASS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7 and the International Building Code (IBC).

Based on the soil properties observed at the site and as described on the boring logs and results, our professional opinion is for that a Seismic Site Classification of **D** be considered for the project. Subsurface explorations at this site were extended to a maximum depth of 20 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

For preliminary seismic assessment, available public information from **https://www.seismicmaps.org/** can be used for reference. A sample of this assessment is presented in **Figure** section of this report with an assumption of Risk Category III. A comprehensive seismic study should be conducted during the final stage of the project.

CORROSIVITY

The table below lists the results of laboratory tests to characterize the corrosive properties of the soils to steel and concrete.

Boring	Sample Depth (feet)	Soil Description	Soluble Sulfate (mg/kg)	Sulfides (mg/kg)	Soluble Chloride (mg/kg)	RedOx (mV)	Electrical Resistivity (Ω-cm)	pH
B-1	0 – 2	Fat Clay (CH)	22	nil	31	+476	3,614	7.9
B-3	0 – 2	Fat Clay (CH)	25	nil	38	+375	2,581	6.1
B-4	0 – 2	Fat Clay (CH)	7	nil	31	+419	3,820	6.1
B-6	0 – 2	Lean Clay (CL)	2	nil	38	+389	2,788	5.8
B-7	0 – 2	Fat Clay (CH)	8	nil	63	+363	1,239	7.4

Boring	Sample Depth (feet)	Soil Description	Soluble Sulfate (mg/kg)	Sulfides (mg/kg)	Soluble Chloride (mg/kg)	RedOx (mV)	Electrical Resistivity (Ω-cm)	pH
B-9	0 – 2	Fat Clay (CH)	7	nil	31	+346	4,750	6.6
B-11	0 – 2	Fat Clay (CH)	13	nil	44	+446	3,924	6.4
B-12	0 – 2	Fat Clay (CH)	20	nil	50	+417	3,407	6.7

These test results are provided to assist in determining the type and degree of corrosion protection required. As discussed in Section 10.7.5 of the AASHTO LRFD Bridge Manual, 8th Edition, 2017, the following soil or site conditions should be considered as indicative of potential deterioration or corrosion situation for steel piles:

- Soil electrical resistivity less than 2,000 ohm-cm
- pH less than 5.5
- pH between 5.5 and 8.5 with high organic content
- Sulfate concentration greater than 1,000 ppm (mg/kg)

Based on the laboratory test results, on-site soil may be classified as low to moderately corrosive for steel piles. The field electrical resistivity tests indicate a moderately to high corrosion rate. We recommend that a certified corrosion engineer be retained to analyze the need for corrosion protection and to design appropriate protective measures.

FIELD ELECTRICAL RESISTIVITY

Electrical resistivity surveys were conducted at nine locations with two perpendicular pairs at each location. The locations of the electrical resistivity tests are shown in report section **Exploration Results**. Maximum electrode spacing of 100 feet was used. The tests were performed in general accordance with Wenner 4-Pin method described in ASTM G57-06 (2012) and IEEE 81-2012.

THERMAL RESISTIVITY

Soil thermal resistivity tests were performed on two bulk samples by Geotherm USA. These tests were conducted in accordance with the IEEE standards 442-2017. Thermal resistivity test samples were prepared for moisture contents near optimum at 90 percent of maximum dry density obtained from Standard Proctor tests. The results of the thermal resistivity tests and dryout curves are presented in report section **Exploration Results**. The table below summarize the thermal results.

Sample ID	Sample Depth (feet)	Effort (%)	Soil Description	Thermal Resistivity (°C-cm/W)		Test Moisture Content (%)	Test Dry Density (pcf)
				Wet	Dry		
B-1/Bulk-1	0 – 4	90	Fat Clay (CH)	65	125	18	96
B-10/Bulk-2	0 – 4	90	Fat Clay (CH)	58	145	17	96
B-12/Bulk-3	0 – 4	90	Fat Clay (CH)	67	138	17	97
B-16/Bulk-4	0 – 4	90	Lean Clay (CL)	56	138	14	99

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Preliminary pile design parameters are presented in this report for evaluating site for a solar facility. Additional borings, electrical resistivity surveys, thermal resistivity tests, corrosion test, and pile load tests are recommended to finalize the project design.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for preliminary design purposes. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation,

as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered applicable to the new project unless we review the changes and either verify or modify our conclusions in writing.

Figures

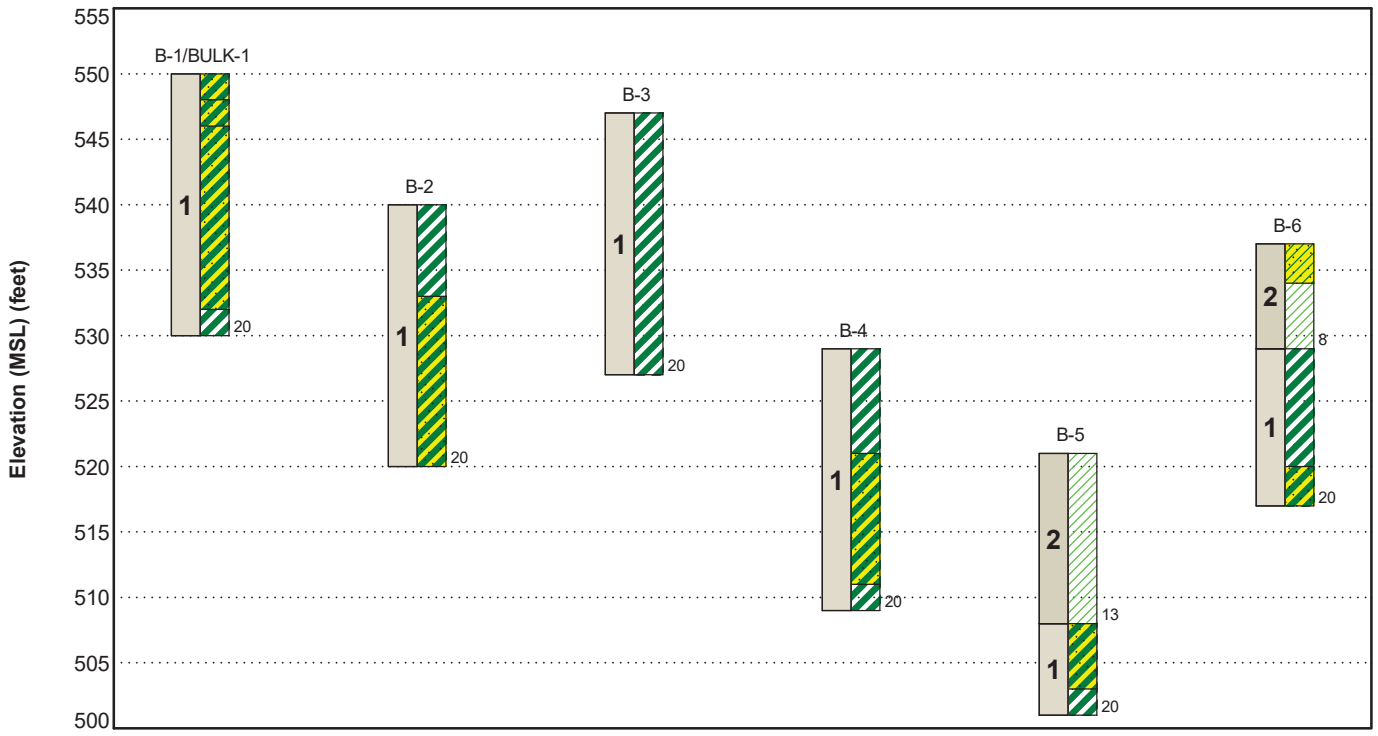
Contents:

GeoModel (3 pages)
FHWA SPT and Undrained Compressive Strength Correlation Table
U.S. Seismic Design Maps

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

GeoModel



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Fat Clay (CH)**	dark brown and light brown, soft to hard
2	**Lean Clay (CL)**	brown and light brown, very stiff to hard

LEGEND

Sandy Fat Clay
Sandy Lean Clay
Fat Clay
Lean Clay

▽ First Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

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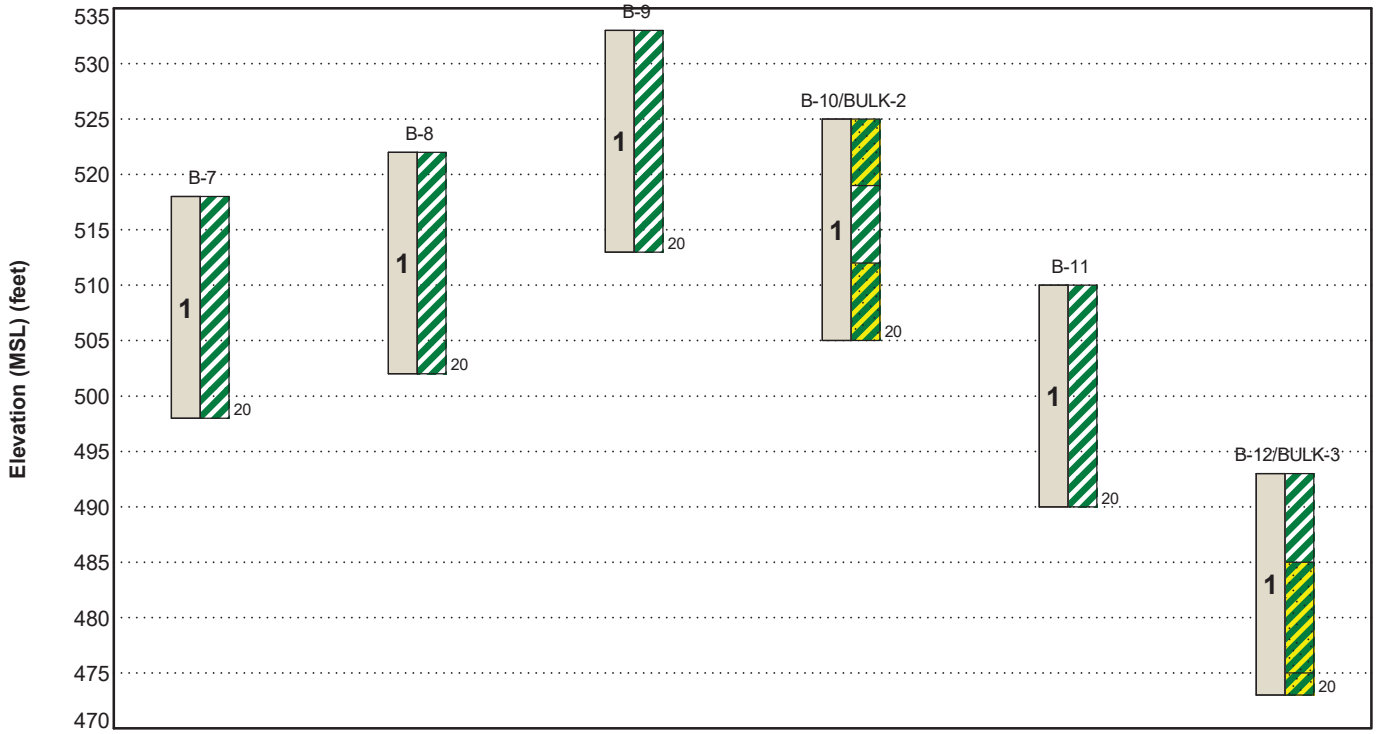

This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fat Clay (CH)	dark brown and light brown, soft to hard
2	Lean Clay (CL)	brown and light brown, very stiff to hard

LEGEND

Fat Clay

Sandy Fat Clay

▽ First Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

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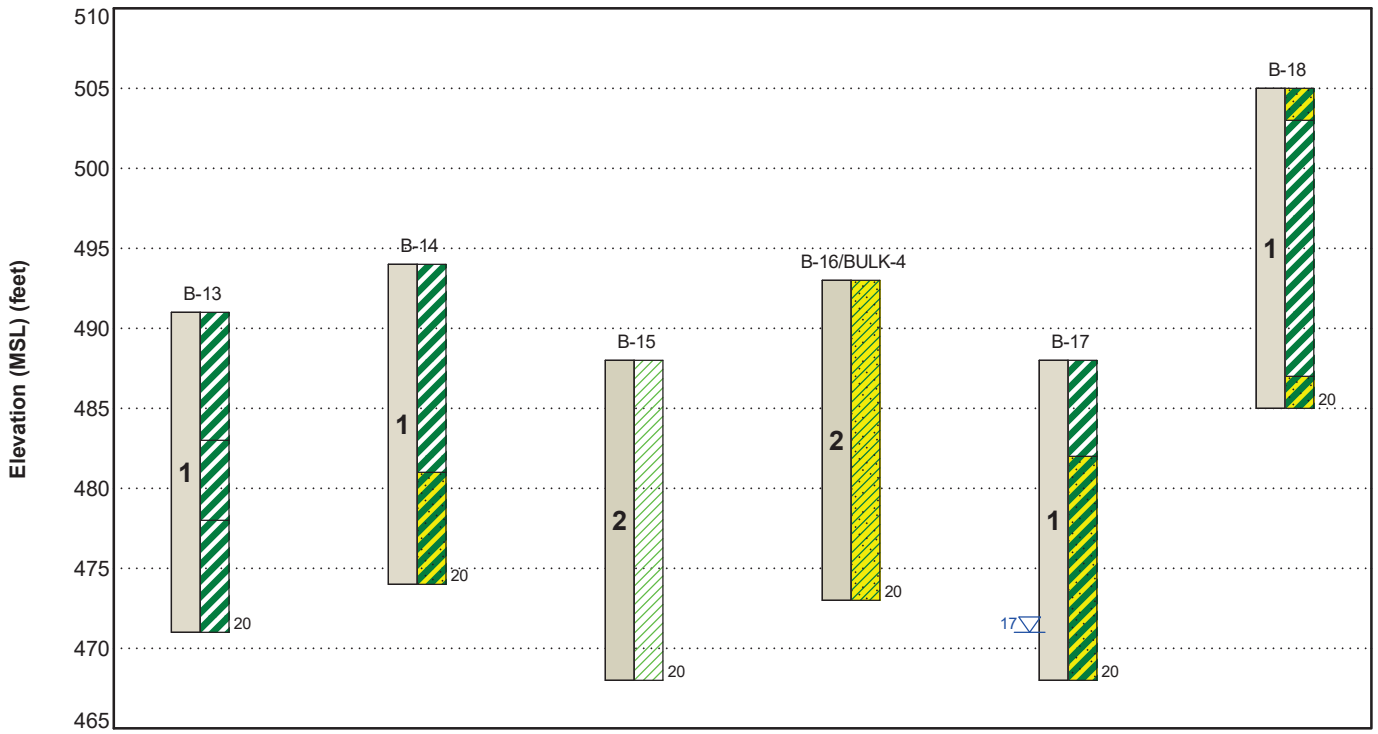


This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Fat Clay (CH)	dark brown and light brown, soft to hard
2	Lean Clay (CL)	brown and light brown, very stiff to hard

LEGEND

- Fat Clay
- Sandy Lean Clay
- Sandy Fat Clay
- Lean Clay

▽ First Water Observation

The groundwater levels shown are representative of the date and time of our exploration. Significant changes are possible over time.
Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

3.8.1.3 SPT Correlations

Soil Properties Correlated with Standard Penetration Test Values (after Peck *et alia*, 1974)

Sands (Reliable)	
N_{60}	Relative Density
0–4	Very loose
5–10	Loose
11–30	Medium dense
31–50	Dense
Over 50	Very dense

Silts and Clays (Unreliable)	
N_{60}	Consistency
Below 2	Very soft
2–4	Soft
5–8	Medium
9–15	Stiff
16–30	Very stiff
Over 30	Hard

Source: Federal Highway Administration. National Highway Institute. *Soils and Foundations, Reference Manual*. Vol. I. FHWA-NHI-06-088. Washington, DC: U.S. Department of Transportation, December 2006, Table 3-9, p. 3-58. www.fhwa.dot.gov/engineering/geotech/pubs/nhi06088.pdf.

Evaluation of the Consistency of Fine-Grained Soils (after Peck *et alia*, 1974)

N_{60}	Consistency	Unconfined Compressive Strength, q_u, ksf (kPa)	Results of Manual Manipulation
< 2	Very soft	< 0.5 (< 25)	Specimen (height = twice the diameter) sags under its own weight; extrudes between fingers when squeezed.
2–4	Soft	0.5–1 (25–50)	Specimen can be pinched in two between the thumb and forefinger; remolded by light finger pressure.
4–8	Medium stiff	1–2 (50–100)	Can be imprinted easily with fingers; remolded by strong finger pressure.
8–15	Stiff	2–4 (100–200)	Can be imprinted with considerable pressure from fingers or indented by thumbnail.
15–30	Very stiff	4–8 (200–400)	Can barely be imprinted by pressure from fingers or indented by thumbnail.
> 30	Hard	> 8 (> 400)	Cannot be imprinted by fingers or difficult to indent by thumbnail.

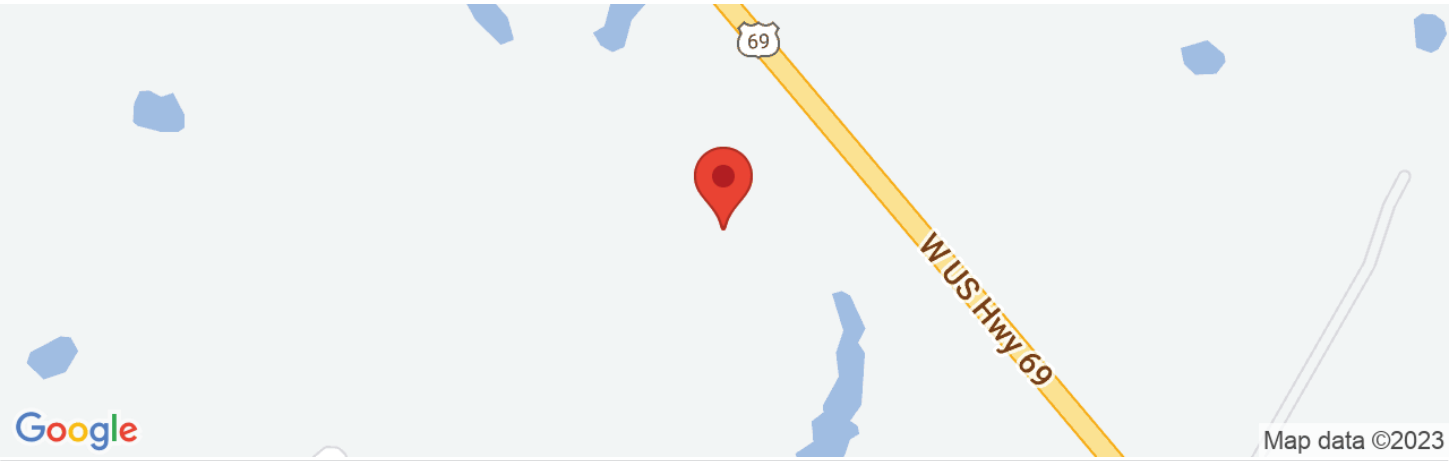
Note: N_{60} values should **not** be used to determine the design strength of fine-grained soils.

Source: Federal Highway Administration. National Highway Institute. *Soils and Foundations, Reference Manual*. Vol. I. FHWA-NHI-06-088. Washington, DC: U.S. Department of Transportation, December 2006, Table 4-2, p. 4-5. www.fhwa.dot.gov/engineering/geotech/pubs/nhi06088.pdf.

USGS web services were down for some period of time and as a result this tool wasn't operational, resulting in *timeout* error.
USGS web services are now operational so this tool should work as expected.

Barret Solar

Latitude, Longitude: 32.96963, -95.91490



Date	8/30/2023, 9:59:05 AM
Design Code Reference Document	ASCE7-16
Risk Category	III
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	0.108	MCE_R ground motion. (for 0.2 second period)
S_1	0.061	MCE_R ground motion. (for 1.0s period)
S_{MS}	0.173	Site-modified spectral acceleration value
S_{M1}	0.146	Site-modified spectral acceleration value
S_{DS}	0.115	Numeric seismic design value at 0.2 second SA
S_{D1}	0.097	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	B	Seismic design category
F_a	1.6	Site amplification factor at 0.2 second
F_v	2.4	Site amplification factor at 1.0 second
PGA	0.052	MCE_G peak ground acceleration
F_{PGA}	1.6	Site amplification factor at PGA
PGA_M	0.083	Site modified peak ground acceleration
T_L	12	Long-period transition period in seconds
SsRT	0.108	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	0.114	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.061	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.068	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)

Type	Value	Description
PGA_{UH}	0.052	Uniform-hazard (2% probability of exceedance in 50 years) Peak Ground Acceleration
C_{RS}	0.946	Mapped value of the risk coefficient at short periods
C_{R1}	0.894	Mapped value of the risk coefficient at a period of 1 s
C_V	0.7	Vertical coefficient

DISCLAIMER

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Attachments

Exploration and Testing Procedures

Exploration

Number of Borings	Approximate Boring Depth (feet)	Location
18	20	Solar Panel Array

Boring Layout and Elevations: Terracon personnel staked the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±15 feet) and referencing existing site features. Approximate ground surface elevations were estimated using Google Earth. If elevations and a more precise boring layout are desired, we recommend borings be surveyed.

Subsurface Exploration Procedures: Borings were drilled using both truck-mounted drill rig and All-Terrain Vehicle on June 22 and 23, 2023. Borings were sampled using thin-walled tube samplers in clays. The borings were sampled continuously to a depth of 10 feet and in 5-foot intervals thereafter.

Four bulk sample was obtained from 0 to 4 feet for Standard Proctor test and a laboratory thermal resistivity test.

Upon the completion of drilling, the boreholes were backfilled with soil cuttings to depth of 5 feet, and the next 3 feet with bentonite chips. The last 2 feet was backfilled with soil cuttings.

The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepared field boring logs as part of the drilling operations. Final boring logs were prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory. The boring logs are presented.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to characterize the engineering properties of the soils. Liquid and Plastic Limits tests, and moisture content tests were performed to aid in classifying the soils in accordance with the Unified Soil Classification System (USCS). Our laboratory procedures were based on applicable ASTM procedure. Results of the laboratory tests are listed on the boring logs in the report section **Exploration Results**. The USCS is summarized in **Supporting Information**.

Standard Proctor Tests: The standard Proctor compaction test is a laboratory method of experimentally determining the optimal moisture content at which a given soil type will become most dense and achieve its maximum dry density. Four standard Proctor tests were performed on the bulk samples in accordance with ASTM D 698. Standard Proctor curves for the bulk samples are presented in report section **Exploration Results**. Maximum dry density and optimum moisture content for the soil are presented on these exhibits.

Soil Thermal Resistivity Test: Soil thermal resistivity tests were performed on two bulk samples by Geotherm USA. These tests were conducted in accordance with the IEEE standards 442-2017. Thermal resistivity test samples were prepared for moisture contents near optimum at 90 percent of maximum dry density obtained from Standard Proctor tests. The results of the thermal resistivity tests and dryout curves are presented in report section **Exploration Results**.

The following table represents a summary of the laboratory tests performed in this study

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-1/BULK-1	0 - 2			dark brown									11		
B-1/BULK-1	2 - 4			dark brown	58	17	41						16		
B-1/BULK-1	4 - 6			light brown									24		
B-1/BULK-1	6 - 8														
B-1/BULK-1	8 - 10												24		
B-1/BULK-1	13 - 15												21		
B-1/BULK-1	18 - 20			light brown											
B-2	0 - 2			brown									16		
B-2	2 - 4														
B-2	4 - 6												19		
B-2	6 - 8				53	16	37								
B-2	8 - 10														
B-2	13 - 15												17		
B-2	18 - 20														
B-3	0 - 2			brown									15		
B-3	2 - 4			brown	62	18	44						19		
B-3	4 - 6												15		
B-3	6 - 8												14		
B-3	8 - 10												13		
B-3	13 - 15														
B-3	18 - 20														
B-4	0 - 2			dark brown									20		
B-4	2 - 4														
B-4	4 - 6												21		
B-4	6 - 8														

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

PROJECT: Barrett Solar Facility

SITE: W US Hwy 69 and FM 2737
Point, TX

Terracon
8901 John W Carpenter Fwy Ste 100
Dallas, TX
PH. 214-630-1010 FAX. 214-630-7070

PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-1

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-4	8 - 10			light brown	57	17	40						25		
B-4	13 - 15														
B-4	18 - 20			light brown											
B-5	0 - 2			brown											
B-5	2 - 4				46	15	31						14		
B-5	4 - 6														
B-5	6 - 8												20		
B-5	8 - 10												18		
B-5	13 - 15			light brown											
B-5	18 - 20			gray									18		
B-6	0 - 2			brown											
B-6	2 - 4												11		
B-6	4 - 6				46	15	31						14		
B-6	6 - 8														
B-6	8 - 10			brown									23		
B-6	13 - 15												19		
B-6	18 - 20														
B-7	0 - 2			brown									20		
B-7	2 - 4														
B-7	4 - 6				56	16	40						21		
B-7	6 - 8												22		
B-7	8 - 10												20		
B-7	13 - 15												20		
B-7	18 - 20														
B-8	0 - 2			brown									15		

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

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PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-2

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-8	2 - 4												22		
B-8	4 - 6												14		
B-8	6 - 8												14		
B-8	8 - 10												13		
B-8	13 - 15														
B-8	18 - 20												17		
B-9	0 - 2			brown									21		
B-9	2 - 4												21		
B-9	4 - 6												21		
B-9	6 - 8			brown	57	16	41						18		
B-9	8 - 10												22		
B-9	13 - 15														
B-9	18 - 20												20		
B-10/BULK-2	0 - 2			brown, light brown											
B-10/BULK-2	2 - 4			brown, light brown	57	16	41						20		
B-10/BULK-2	4 - 6												19		
B-10/BULK-2	6 - 8			light brown									18		
B-10/BULK-2	8 - 10												20		
B-10/BULK-2	13 - 15			light brown									20		
B-10/BULK-2	18 - 20														
B-11	0 - 2			brown									16		
B-11	2 - 4												18		
B-11	4 - 6														
B-11	6 - 8														
B-11	8 - 10				51	16	35						20		

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

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Dallas, TX
PH. 214-630-1010 FAX. 214-630-7070

PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-3

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-11	13 - 15												27		
B-11	18 - 20														
B-12/BULK-3	0 - 2			dark brown											
B-12/BULK-3	2 - 4												17		
B-12/BULK-3	4 - 6				53	16	37						16		
B-12/BULK-3	6 - 8												17		
B-12/BULK-3	8 - 10			light brown									13		
B-12/BULK-3	13 - 15														
B-12/BULK-3	18 - 20			brown									19		
B-13	0 - 2			dark brown									15		
B-13	2 - 4												12		
B-13	4 - 6												9		
B-13	6 - 8				52	14	38						15		
B-13	8 - 10			light brown											
B-13	13 - 15			light brown									21		
B-13	18 - 20														
B-14	0 - 2			dark brown											
B-14	2 - 4												13		
B-14	4 - 6				52	15	37						20		
B-14	6 - 8												19		
B-14	8 - 10												19		
B-14	13 - 15			light brown											
B-14	18 - 20														
B-15	0 - 2			brown									13		
B-15	2 - 4												16		

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

PROJECT: Barrett Solar Facility

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Terracon
8901 John W Carpenter Fwy Ste 100
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PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-4

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-15	4 - 6												16		
B-15	6 - 8				49	14	35						14		
B-15	8 - 10												12		
B-15	10 - 12												25		
B-15	18 - 20												19		
B-16/BULK-4	0 - 2			brown											
B-16/BULK-4	2 - 4				27	15	12						14		
B-16/BULK-4	4 - 6												17		
B-16/BULK-4	6 - 8												18		
B-16/BULK-4	8 - 10												17		
B-16/BULK-4	13 - 15														
B-16/BULK-4	18 - 20												26		
B-17	0 - 2			brown									21		
B-17	2 - 4												19		
B-17	4 - 6														
B-17	6 - 8			light brown									24		
B-17	8 - 10				55	14	41						21		
B-17	13 - 15												22		
B-17	18 - 20														
B-18	0 - 2			brown									12		
B-18	2 - 4			dark brown	63	17	46						18		
B-18	4 - 6												17		
B-18	6 - 8												15		
B-18	8 - 10														
B-18	13 - 15												20		

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

PROJECT: Barrett Solar Facility

SITE: W US Hwy 69 and FM 2737
Point, TX

Terracon
8901 John W Carpenter Fwy Ste 100
Dallas, TX
PH. 214-630-1010 FAX. 214-630-7070

PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-5

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth	USCS Classification and Soil Description	AASHTO Class.	Munsell Color	Liquid Limit	Plastic Limit	Plasticity Index	% <#200 Sieve	% Gravel	% Sand	% Silt	% Clay	Water Content (%)	Optimum Moisture Content (%)	Maximum Dry Density, (pcf)*
B-18	18 - 20			light brown											

*Per IDOT Matls. IM 309, Single-Point Method.
**Soil of Glacial Origin

PROJECT: Barrett Solar Facility

SITE: W US Hwy 69 and FM 2737
Point, TX

Terracon
8901 John W Carpenter Fwy Ste 100
Dallas, TX
PH. 214-630-1010 FAX. 214-630-7070

PROJECT NUMBER: 94235249

CLIENT: Cobra Industrial Activities Inc
Houston, TX

EXHIBIT: B-6

Site Location and Exploration Plans

Contents:

Site Location Plan
Exploration Plan

Note: All attachments are one page unless noted above.

Site Location

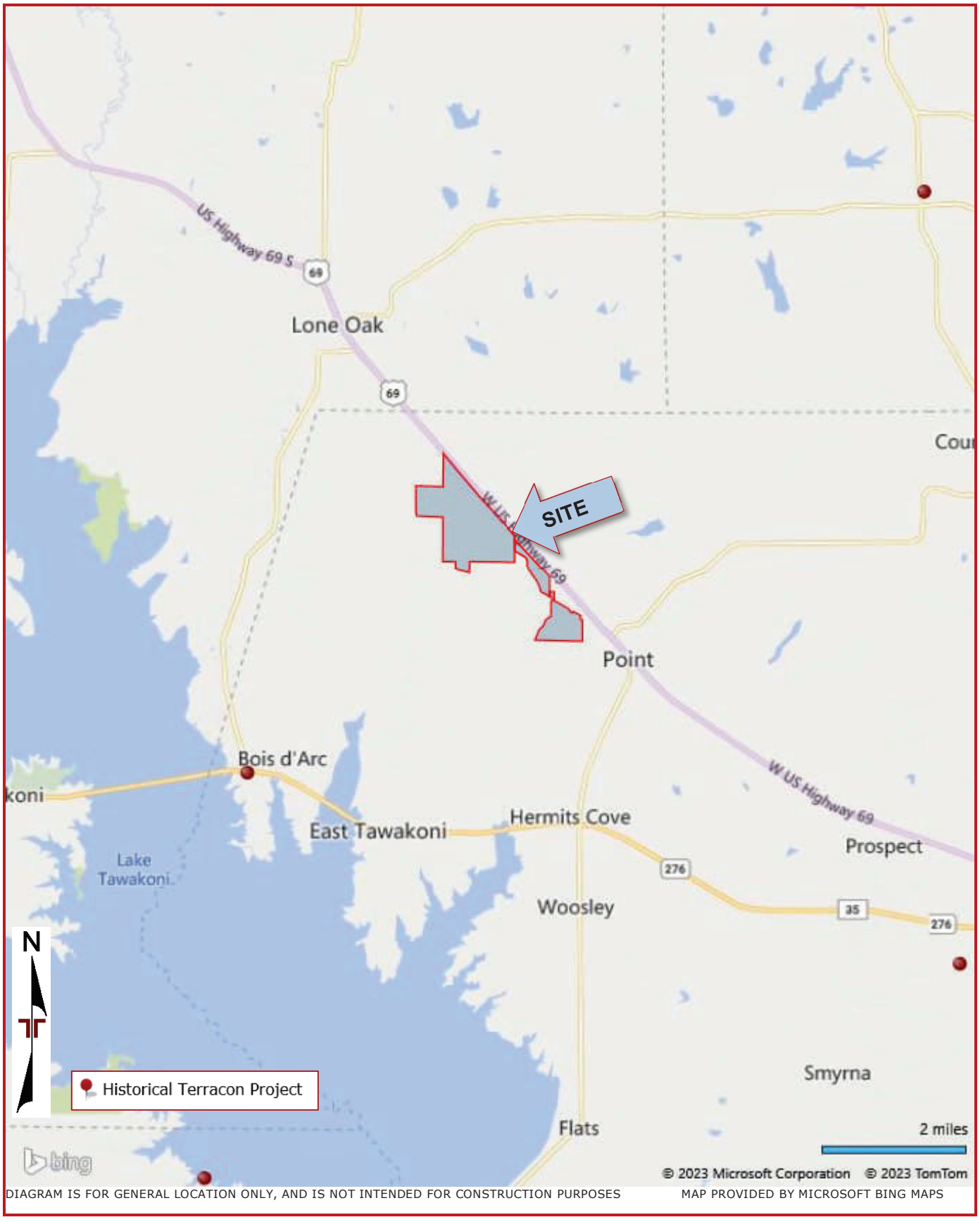


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Soil Borings and Bulk Samples Locations Plan

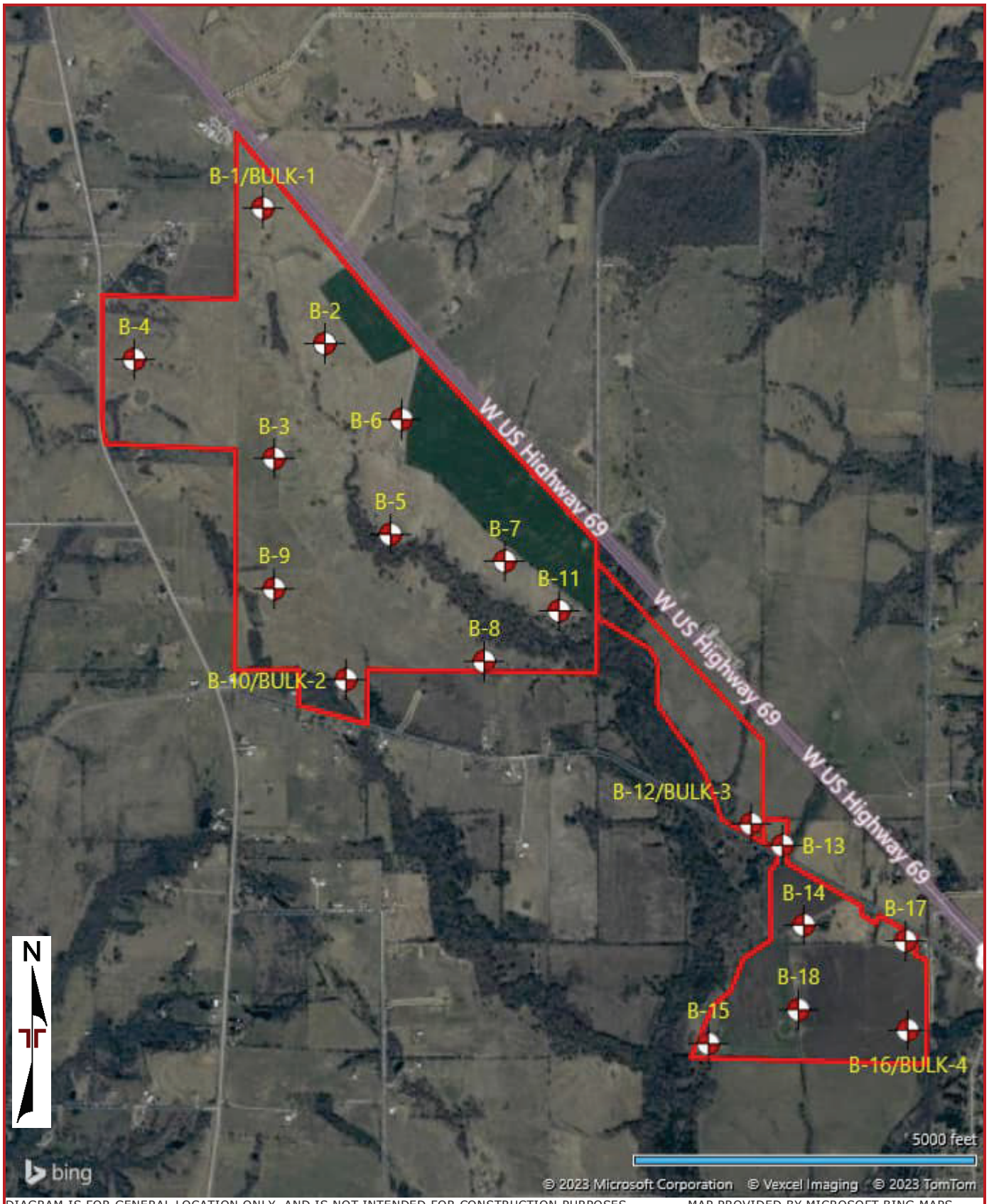


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES MAP PROVIDED BY MICROSOFT BING MAPS

Electrical Resistivity Locations Plan

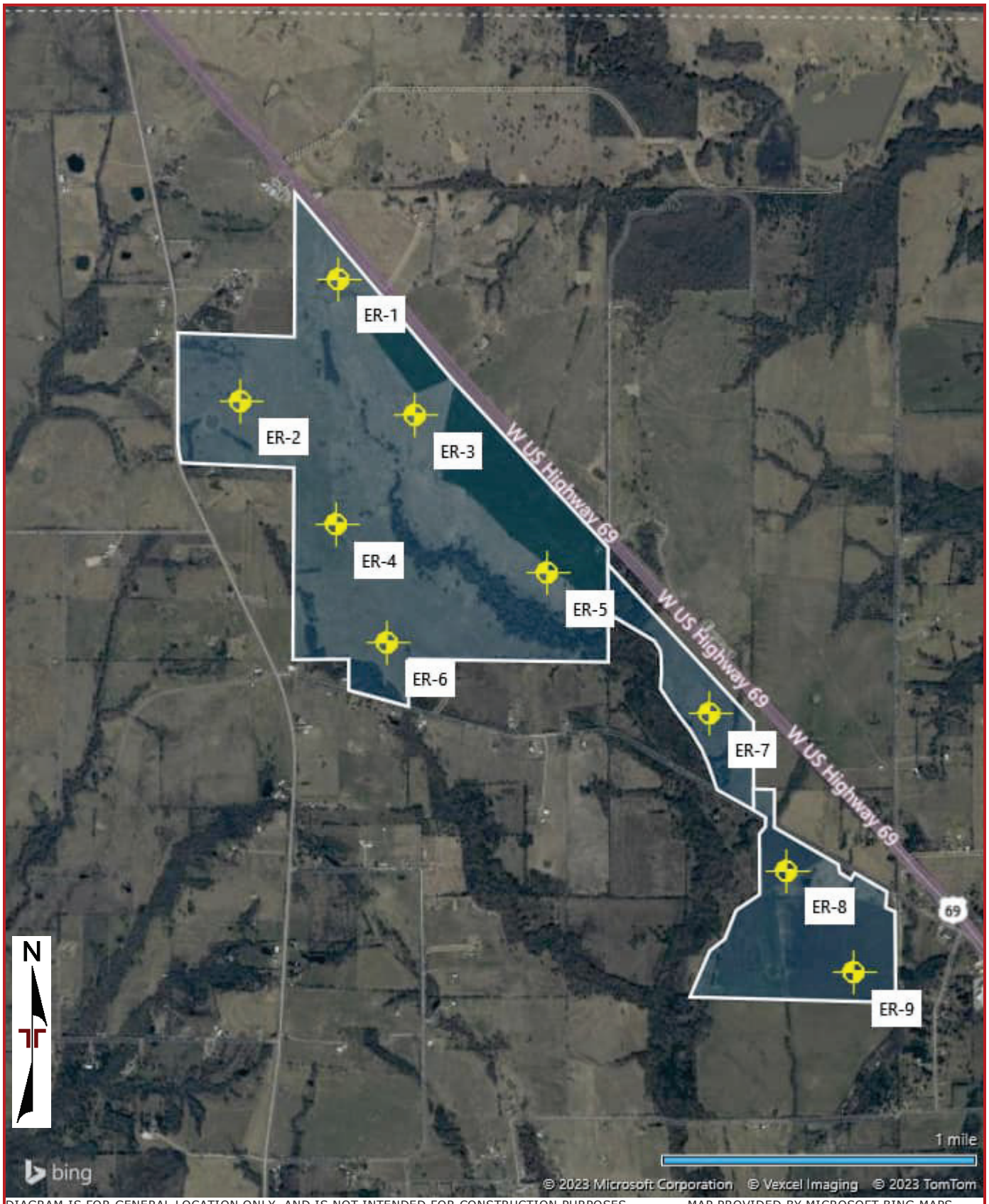


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES MAP PROVIDED BY MICROSOFT BING MAPS

Exploration and Laboratory Results

Contents:

Boring Logs (B-1 through B-18) (18 pages)
Field Electrical Resistivity Tests (9 pages)
Standard Proctor Test Results (4 pages)
Thermal Resistivity Test Results (4 pages)

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-1/BULK-1

Location: See Exploration Plan

Latitude: 32.9685° Longitude: -95.9142°

Depth (Ft.) Elevation.: 550 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**SANDY FAT CLAY (CH)**, dark brown, very stiff to hard 2.0 548			(HP)=4.5+ (SPT)*=34+				10.5			
		SANDY FAT CLAY (CH), dark brown, very stiff to hard 4.0 546			(HP)=4.5+ (SPT)*=34+		9.19	9	16.2	113	58-17-41	
		SANDY FAT CLAY (CH), light brown, stiff to very stiff			(HP)=2.5 (SPT)*=19	UC	2.74	5.8	24.2	107		
					(HP)=3.5 (SPT)*=27							
					(HP)=2.5 (SPT)*=19		2.73	5.5	23.8	100		
					(HP)=4.5 (SPT)*=34				21.4			
		18.0 532 **FAT CLAY (CH)**, light brown, very stiff to hard 20.0 530			(HP)=4.5+ (SPT)*=34+							
		Boring Terminated at 20 Feet										

5 10 15 20

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-2

Location: See Exploration Plan

Latitude: 32.9631° Longitude: -95.9112°

Depth (Ft.) Elevation.: 540 (Ft.)

Model Layer	Depth (Ft.)	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1	0	(HP)=4.5 (SPT)*=34				16.3			
		(HP)=4.5 (SPT)*=34	UC						
	5	(HP)=4.5 (SPT)*=34		9.64	11.8	18.9	113		
	7.0 533	(HP)=4.5 (SPT)*=34	UC					53-16-37	
		(HP)=4.5 (SPT)*=34							
	10								
		(HP)=4.5 (SPT)*=34				16.8			
	15								
		(HP)=4.5 (SPT)*=34							
	20.0 520								
	20	***Boring Terminated at 20 Feet***							

SANDY FAT CLAY (CH), brown, very stiff to hard

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-3

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 32.9585° Longitude: -95.9136° Depth (Ft.) / Elevation.: 547 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, brown and tan, soft				(HP)=0.5 (SPT)*=5				14.9			
		2.0 / 545											
		FAT CLAY (CH), brown and tan, very stiff to hard				(HP)=4.5 (SPT)*=34		3.39	15	18.7	106	62-18-44	
			5			(HP)=4.5 (SPT)*=34				15.3			
						(HP)=4.5 (SPT)*=34		16.33	4.2	14.2	116		
						(HP)=3 (SPT)*=23				13.2			
			10										
						(HP)=4.5 (SPT)*=34							
			15										
						(HP)=4.5 (SPT)*=34							
		20.0 / 527	20										
		Boring Terminated at 20 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-4

Location: See Exploration Plan

Latitude: 32.9624° Longitude: -95.9203°

Depth (Ft.) Elevation.: 529 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
		FAT CLAY (CH), dark brown and light brown, very stiff to hard			(HP)=3.5 (SPT)*=27				19.7			
					(HP)=4 (SPT)*=30							
		5			(HP)=4 (SPT)*=30		4.60	7.5	21.3	105		
					(HP)=4.5 (SPT)*=34							
		8.0 521										
1		**SANDY FAT CLAY (CH)**, light brown, very stiff to hard			(HP)=4.5 (SPT)*=34		3.01	5.3	25.2	101	57-17-40	
		10										
					(HP)=4.5 (SPT)*=34							
		15										
		18.0 511										
		FAT CLAY (CH), shaley, light brown and gray, very stiff to hard			(HP)=4.5+ (SPT)*=34+							
		20.0 509										
		20										
		Boring Terminated at 20 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-5

Location: See Exploration Plan

Latitude: 32.9554° Longitude: -95.9081°

Depth (Ft.) Elevation.: 521 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2		**LEAN CLAY (CL)**, brown and light brown, very stiff to hard			(HP)=4.5 (SPT)*=34							
					(HP)=4.5 (SPT)*=34		9.03	5	14.0	114	46-15-31	
		5			(HP)=4.5 (SPT)*=34							
					(HP)=4.5 (SPT)*=34		2.78	6	19.9	107		
					(HP)=4.5 (SPT)*=34				17.9			
		10										
1		13.0 508 **SANDY FAT CLAY (CH)**, light brown, very stiff to hard			(HP)=4.5 (SPT)*=34							
		15										
		18.0 503 **FAT CLAY (CH)**, shaley, gray, very stiff to hard			(HP)=4.5 (SPT)*=34				18.1			
		20.0 501 20 ***Boring Terminated at 20 Feet***										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-6

Location: See Exploration Plan

Latitude: 32.9600° Longitude: -95.9075°

Depth (Ft.) Elevation.: 537 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2		**SANDY LEAN CLAY (CL)**, brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+							
		3.0 534			(HP)=4.5+ (SPT)*=34+		9.51	4	11.2	116		
		LEAN CLAY (CL), brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+				14.5		46-15-31	
		8.0 529			(HP)=4.5+ (SPT)*=34+							
1		**FAT CLAY (CH)**, brown and gray, very stiff to hard			(HP)=3.5 (SPT)*=27		2.56	6.5	22.9	103		
					(HP)=4.5+ (SPT)*=34+				19.4			
		17.0 520										
		SANDY FAT CLAY (CH), light brown and gray, very stiff to hard			(HP)=4.5+ (SPT)*=34+							
		20.0 517										
		Boring Terminated at 20 Feet										

5 10 15 20

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-7

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 32.9544° Longitude: -95.9026° Depth (Ft.) Elevation.: 518 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, brown and tan, stiff to very stiff				(HP)=2 (SPT)*=16				20.1			
						(HP)=3 (SPT)*=23							
			5			(HP)=2.5 (SPT)*=19		2.89	13	21.2	106	56-16-40	
						(HP)=3.5 (SPT)*=27				21.9			
						(HP)=4.5 (SPT)*=34		2.74	7.5	20.5	103		
			10										
						(HP)=4.5 (SPT)*=34				19.7			
			15										
						(HP)=4.5 (SPT)*=34							
		20.0 498	20										
		Boring Terminated at 20 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-8

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 32.9504° Longitude: -95.9036° Depth (Ft.) Elevation.: 522 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, brown and tan, very stiff to hard				(HP)=3.5 (SPT)*=27				14.6			
						(HP)=4.5 (SPT)*=34		2.65	9.5	21.8	103		
			5			(HP)=4.5 (SPT)*=34				14.4			
						(HP)=4.5 (SPT)*=34		15.40	9.5	14.0	121		
						(HP)=4.5 (SPT)*=34				13.2			
			10										
						(HP)=4.5 (SPT)*=34							
			15										
						(HP)=4.5 (SPT)*=34				16.6			
		20.0 502	20										
		Boring Terminated at 20 Feet											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-9

Location: See Exploration Plan

Latitude: 32.9533° Longitude: -95.9136°

Depth (Ft.) Elevation.: 533 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, brown and tan, stiff to very stiff			(HP)=2.5 (SPT)*=19				21.5			
					(HP)=2 (SPT)*=16	UC	1.02	14.5	21.0	97		
		5			(HP)=4 (SPT)*=30				21.3			
		6.0 527										
		FAT CLAY (CH), brown and tan, very stiff to hard			(HP)=4.5 (SPT)*=34				18.5		57-16-41	
					(HP)=3 (SPT)*=23		2.83	4.7	21.6	102		
		10										
					(HP)=4.5 (SPT)*=34							
		15										
					(HP)=4.5 (SPT)*=34				19.8			
		20.0 513										
		Boring Terminated at 20 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-10/BULK-2

Location: See Exploration Plan

Latitude: 32.9496° Longitude: -95.9102°

Depth (Ft.) Elevation.: 525 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**SANDY FAT CLAY (CH)**, brown, light brown and gray, soft to medium stiff			(HP)=1 (SPT)*=8							
		2.0 523										
		SANDY FAT CLAY (CH), brown, light brown and gray, very stiff to hard			(HP)=2.5 (SPT)*=19		3.14	14.8	19.9	107	57-16-41	
					(HP)=4.5 (SPT)*=34				18.5			
		6.0 519										
		FAT CLAY (CH), light brown and gray, very stiff			(HP)=4.5 (SPT)*=34		5.44	6	17.7	113		
					(HP)=3.5 (SPT)*=27				19.8			
		13.0 512										
		SANDY FAT CLAY (CH), light brown and gray, very stiff			(HP)=4.5 (SPT)*=34				20.2			
					(HP)=4.5 (SPT)*=34							
		20.0 505										
		Boring Terminated at 20 Feet										

5 10 15 20

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-11

Location: See Exploration Plan

Latitude: 32.9516° Longitude: -95.8959°

Depth (Ft.) Elevation.: 510 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		0			(HP)=4.5 (SPT)*=34				15.6			
					(HP)=3 (SPT)*=23		4.01	11.5	18.5	109		
		5			(HP)=4 (SPT)*=30							
					(HP)=4 (SPT)*=30							
					(HP)=3 (SPT)*=23		2.61	8	20.4	107	51-16-35	
		10										
					(HP)=3 (SPT)*=23				26.7			
		15										
					(HP)=4.5 (SPT)*=34							
		20										

20.0 490

Boring Terminated at 20 Feet

FAT CLAY (CH), brown and tan, stiff to hard

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-12/BULK-3

Location: See Exploration Plan

Latitude: 32.9480° Longitude: -95.8938°

Depth (Ft.) Elevation.: 493 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, dark brown and brown, very stiff to hard			(HP)=4.5 (SPT)*=34							
					(HP)=4.5+ (SPT)*=34+	UC	6.25	11	16.6	113		
		5			(HP)=4.5+ (SPT)*=34+				15.9		53-16-37	
					(HP)=4.5+ (SPT)*=34+		11.10	6.5	16.6	114		
		8.0 485			(HP)=4.5+ (SPT)*=34+				12.5			
		SANDY FAT CLAY (CH), light brown, very stiff to hard										
		10										
					(HP)=4.5 (SPT)*=34							
		15										
		18.0 475										
		SANDY FAT CLAY (CH), brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+				18.8			
		20.0 473										
		20 ***Boring Terminated at 20 Feet***										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-22-2023

Boring Completed
06-22-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-13

Location: See Exploration Plan

Latitude: 32.9436° Longitude: -95.8897°

Depth (Ft.) Elevation.: 491 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**FAT CLAY (CH)**, dark brown and brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+				15.0			
					(HP)=4.5+ (SPT)*=34+	UC	7.38	9.8	12.4	118		
		5			(HP)=4.5+ (SPT)*=34+				9.3			
					(HP)=4.5+ (SPT)*=34+		11.64	7.3	14.6	116	52-14-38	
		8.0 483										
		FAT CLAY (CH), shaley, light brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+							
		10										
		13.0 478										
		FAT CLAY (CH), light brown, very stiff to hard			(HP)=4.5+ (SPT)*=34+				20.6			
		15										
		20.0 471			(HP)=4.5+ (SPT)*=34+							
		20										
		Boring Terminated at 20 Feet										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-22-2023

Boring Completed
06-22-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-14

Location: See Exploration Plan

Latitude: 32.9398° Longitude: -95.8883°

Depth (Ft.) Elevation.: 494 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1					(HP)=4.5+ (SPT)*=34+							
					(HP)=3.5 (SPT)*=27				13.4			
		5			(HP)=2 (SPT)*=16		2.49	9.3	19.9	105	52-15-37	
					(HP)=4 (SPT)*=30				19.3			
					(HP)=4.5 (SPT)*=34		4.00	7	18.6	131		
		10										
					(HP)=4.5+ (SPT)*=34+							
		15										
					(HP)=4.5+ (SPT)*=34+							
		20										

FAT CLAY (CH), dark brown and light brown, very stiff to hard

13.0 481

SANDY FAT CLAY (CH), light brown, very stiff to hard

20.0 474

Boring Terminated at 20 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-15

Model Layer	Graphic Log	Location: See Exploration Plan Latitude: 32.9350° Longitude: -95.8929° Depth (Ft.) Elevation.: 488 (Ft.)	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2		**LEAN CLAY (CL)**, brown and tan, very stiff to hard				(HP)=4.5 (SPT)*=34				13.2			
						(HP)=4.5 (SPT)*=34		3.14	3.6	15.5	112		
			5			(HP)=4.5 (SPT)*=34				15.7			
						(HP)=4.5 (SPT)*=34		12.89	5.3	13.5	118	49-14-35	
						(HP)=4.5 (SPT)*=34				12.4			
			10			(HP)=4.5 (SPT)*=34		6.25	2.7	24.6	102		
			15										
		20.0 468				(HP)=4.5 (SPT)*=34				19.4			
		Boring Terminated at 20 Feet	20										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes
Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-16/BULK-4

Location: See Exploration Plan

Latitude: 32.9356° Longitude: -95.8834°

Depth (Ft.) Elevation.: 493 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
2		0			(HP)=2 (SPT)*=16							
					(HP)=2 (SPT)*=16		3.02	9.5	14.2	109	27-15-12	
		5			(HP)=2.5 (SPT)*=19				16.9			
					(HP)=4.5 (SPT)*=34		6.08	9.8	17.6	112		
					(HP)=4.5 (SPT)*=34				16.7			
		10										
					(HP)=4.5 (SPT)*=34							
		15										
					(HP)=3.5 (SPT)*=27				26.3			
		20										

SANDY LEAN CLAY (CL), brown and light brown, very stiff to hard

20.0 473

Boring Terminated at 20 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-23-2023

Boring Completed
06-23-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-17

Location: See Exploration Plan

Latitude: 32.9392° Longitude: -95.8835°

Depth (Ft.) Elevation.: 488 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
					(HP)=3.5 (SPT)*=27				21.5			
					(HP)=4 (SPT)*=30	UC	3.41	8.5	19.0	107		
		5			(HP)=4.5 (SPT)*=34							
					(HP)=4.5 (SPT)*=34				23.6			
					(HP)=3.5 (SPT)*=27		1.61	5.5	21.3	98	55-14-41	
1		10										
					(HP)=3 (SPT)*=23				21.7			
		15	▽									
					(HP)=2.5 (SPT)*=19							
		20										

FAT CLAY (CH), brown, very stiff to hard

6.0 482

SANDY FAT CLAY (CH), light brown, stiff to very stiff

20.0 468

Boring Terminated at 20 Feet

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations

▽ While drilling

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-22-2023

Boring Completed
06-22-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

Barrett Solar Facility
W US Hwy 69 and FM 2737 | Point, TX
Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Boring Log No. B-18

Location: See Exploration Plan

Latitude: 32.9364° Longitude: -95.8886°

Depth (Ft.) Elevation.: 505 (Ft.)

Model Layer	Graphic Log	Depth (Ft.)	Water Level Observations	Sample Type	Field Test Results	Strength Test: Test Type	Strength Test: Compressive Strength (tsf)	Strength Test: Strain (%)	Water Content (%)	Dry Unit Weight (pcf)	Atterberg Limits: LL-PL-PI	Percent Fines
1		**SANDY FAT CLAY (CH)**, brown, very stiff			(HP)=4.5+ (SPT)*=34+				12.2			
		2.0 503										
		FAT CLAY (CH), dark brown and light brown, very stiff to hard			(HP)=3 (SPT)*=23		4.90	12.3	18.3	108	63-17-46	
					(HP)=4.5+ (SPT)*=34+				16.8			
					(HP)=4.5+ (SPT)*=34+		10.62	4.6	15.2	117		
					(HP)=4.5+ (SPT)*=34+							
					(HP)=4.5+ (SPT)*=34+				19.8			
		18.0 487										
		SANDY FAT CLAY (CH), light brown, stiff to very stiff			(HP)=4.5+ (SPT)*=34+							
		20.0 485										
		Boring Terminated at 20 Feet										

5 10 15 20

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
No seepage encountered
Dry at completion

Drill Rig
All-Terrain Vehicle

Driller
CoreCo

Logged by

Boring Started
06-22-2023

Boring Completed
06-22-2023

Notes

Latitude and longitude were obtained from a handheld GPS device. Elevations were estimated from Google Earth.

*SPT N values were estimated from correlations with Pocket Penetrometer and unconfined compressive strength tests and should be considered to be approximate.

Advancement Method
Dry Auger

Abandonment Method
Boring backfilled with soil cuttings upon completion.

FIELD ELECTRICAL RESISTIVITY TEST DATA

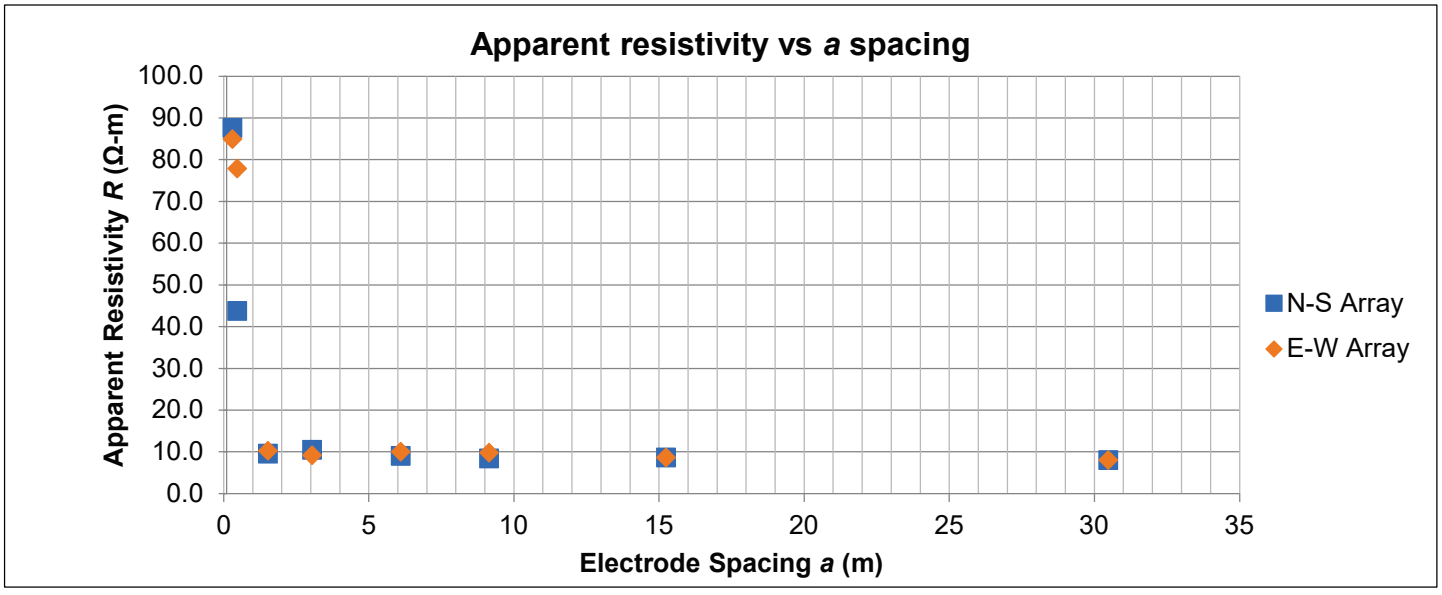
Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Array Loc.	ER-1 (32.967481,-95.912946)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	45.700	87.63	44.300	84.94
1.5	0	1.8	0.05	14.852	43.80	26.400	77.85
5	2	6	0.15	0.985	9.57	1.060	10.29
10	3	12	0.30	0.537	10.46	0.472	9.20
20	6	12	0.30	0.235	9.04	0.261	10.05
30	9	12	0.30	0.146	8.40	0.171	9.84
50	15	12	0.30	0.090	8.62	0.090	8.62
100	30	12	0.30	0.042	8.04	0.042	8.04



FIELD ELECTRICAL RESISTIVITY TEST DATA

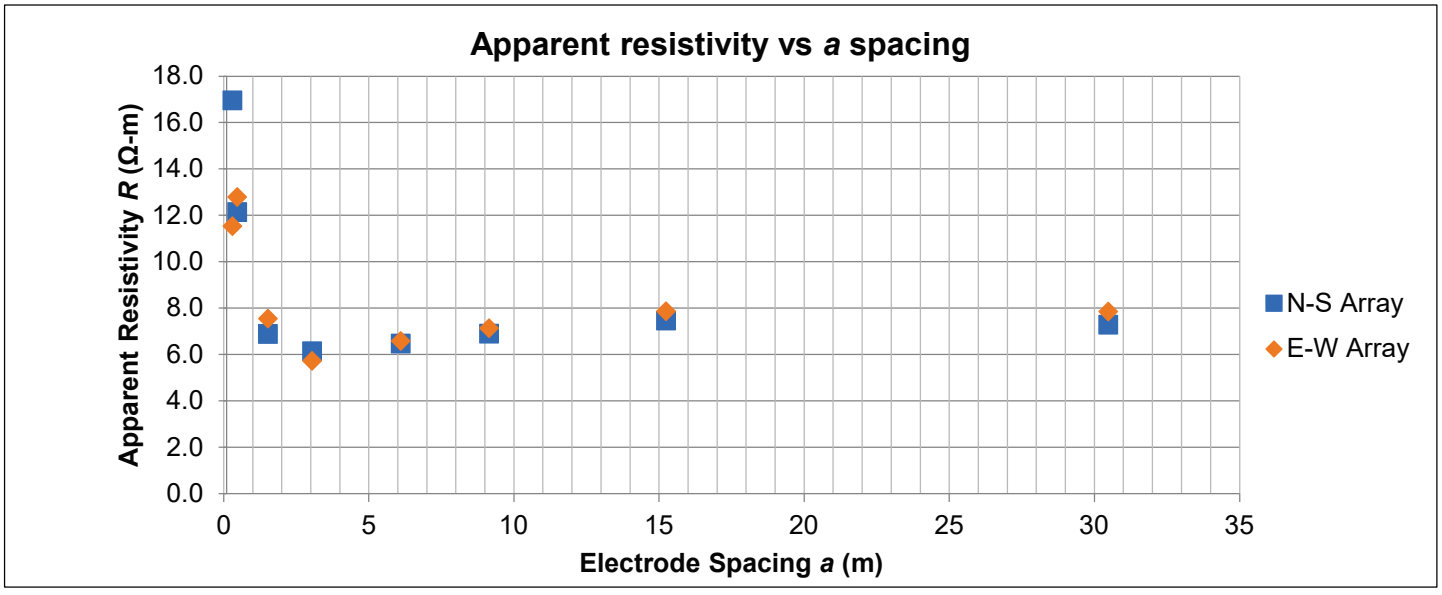
Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Array Loc.	ER-2 (32.961874,-95.918316)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	8.844	16.96	6.017	11.54
1.5	0	1.8	0.05	4.118	12.14	4.336	12.79
5	2	6	0.15	0.710	6.89	0.777	7.55
10	3	12	0.30	0.315	6.14	0.294	5.73
20	6	12	0.30	0.168	6.47	0.171	6.58
30	9	12	0.30	0.120	6.90	0.124	7.13
50	15	12	0.30	0.078	7.47	0.082	7.86
100	30	12	0.30	0.038	7.28	0.041	7.85



FIELD ELECTRICAL RESISTIVITY TEST DATA

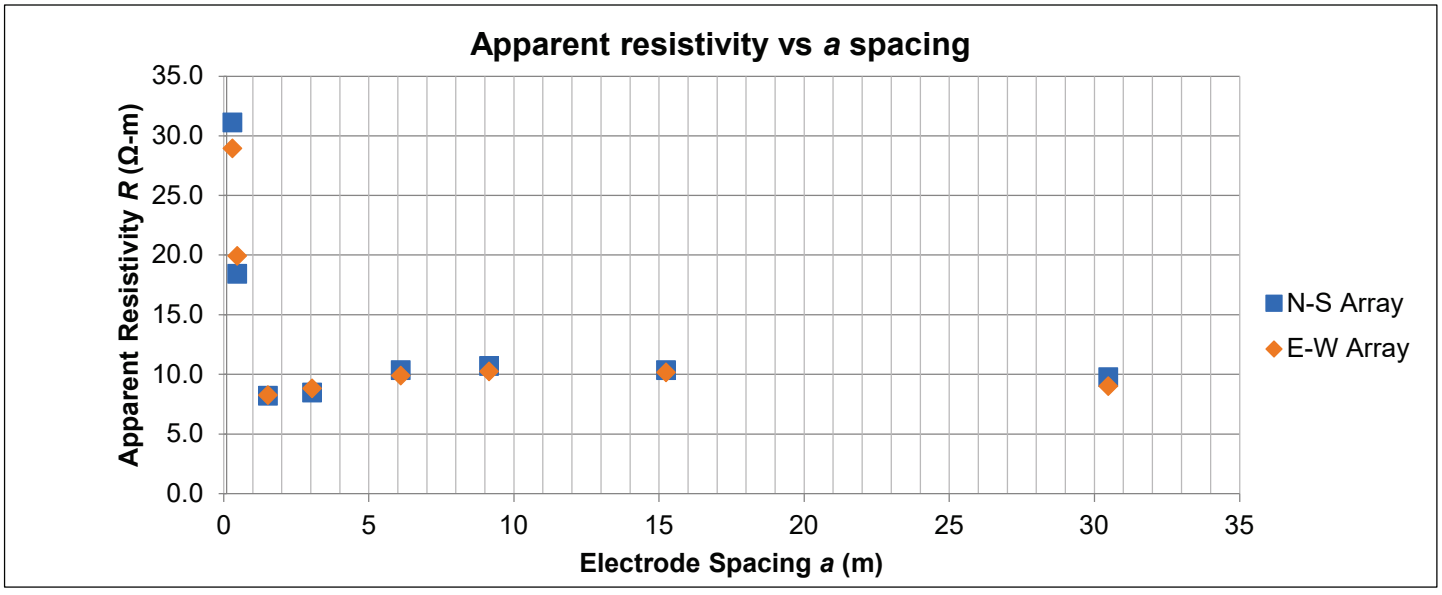
Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Array Loc.	ER-3 (32.961245,-95.908747)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	16.225	31.11	15.096	28.95
1.5	0	1.8	0.05	6.249	18.43	6.754	19.92
5	2	6	0.15	0.845	8.21	0.850	8.25
10	3	12	0.30	0.435	8.48	0.453	8.83
20	6	12	0.30	0.269	10.35	0.257	9.89
30	9	12	0.30	0.186	10.70	0.178	10.24
50	15	12	0.30	0.108	10.35	0.106	10.16
100	30	12	0.30	0.051	9.77	0.047	9.00



FIELD ELECTRICAL RESISTIVITY TEST DATA

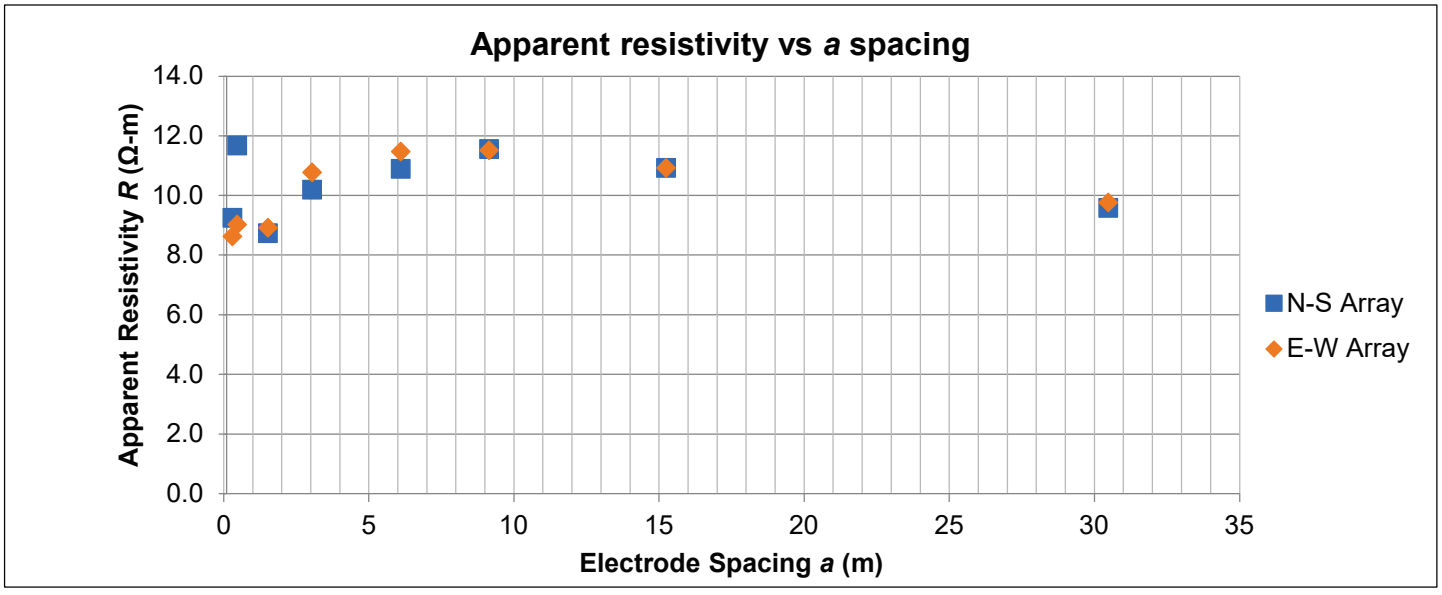
Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Array Loc.	ER-4 (32.956215,-95.913069)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $\rho = \dfrac{4\pi aR}{1 + \dfrac{2a}{\sqrt{a^2+4b^2}} - \dfrac{a}{\sqrt{a^2+b^2}}}$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	4.824	9.25	4.502	8.63
1.5	0	1.8	0.05	3.960	11.68	3.060	9.02
5	2	6	0.15	0.900	8.74	0.919	8.92
10	3	12	0.30	0.523	10.19	0.553	10.77
20	6	12	0.30	0.283	10.89	0.298	11.47
30	9	12	0.30	0.201	11.56	0.200	11.51
50	15	12	0.30	0.114	10.92	0.114	10.92
100	30	12	0.30	0.050	9.58	0.051	9.77



FIELD ELECTRICAL RESISTIVITY TEST DATA

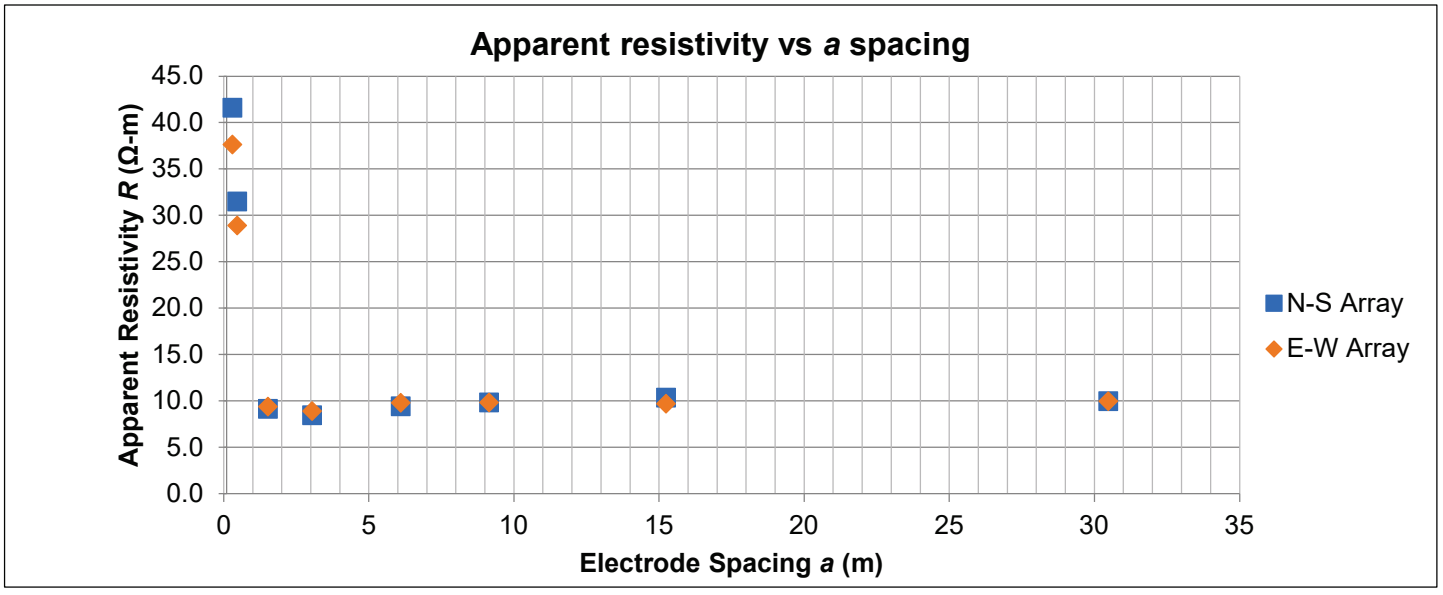
Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Terracon
8901 John W Carpenter Fwy
Ste 100
Dallas, TX

Array Loc.	ER-5 (32.953992,-95.901496)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	21.700	41.61	19.625	37.63
1.5	0	1.8	0.05	10.676	31.48	9.797	28.89
5	2	6	0.15	0.940	9.13	0.966	9.38
10	3	12	0.30	0.434	8.46	0.457	8.90
20	6	12	0.30	0.245	9.43	0.255	9.81
30	9	12	0.30	0.171	9.84	0.171	9.84
50	15	12	0.30	0.108	10.35	0.101	9.68
100	30	12	0.30	0.052	9.96	0.052	9.96



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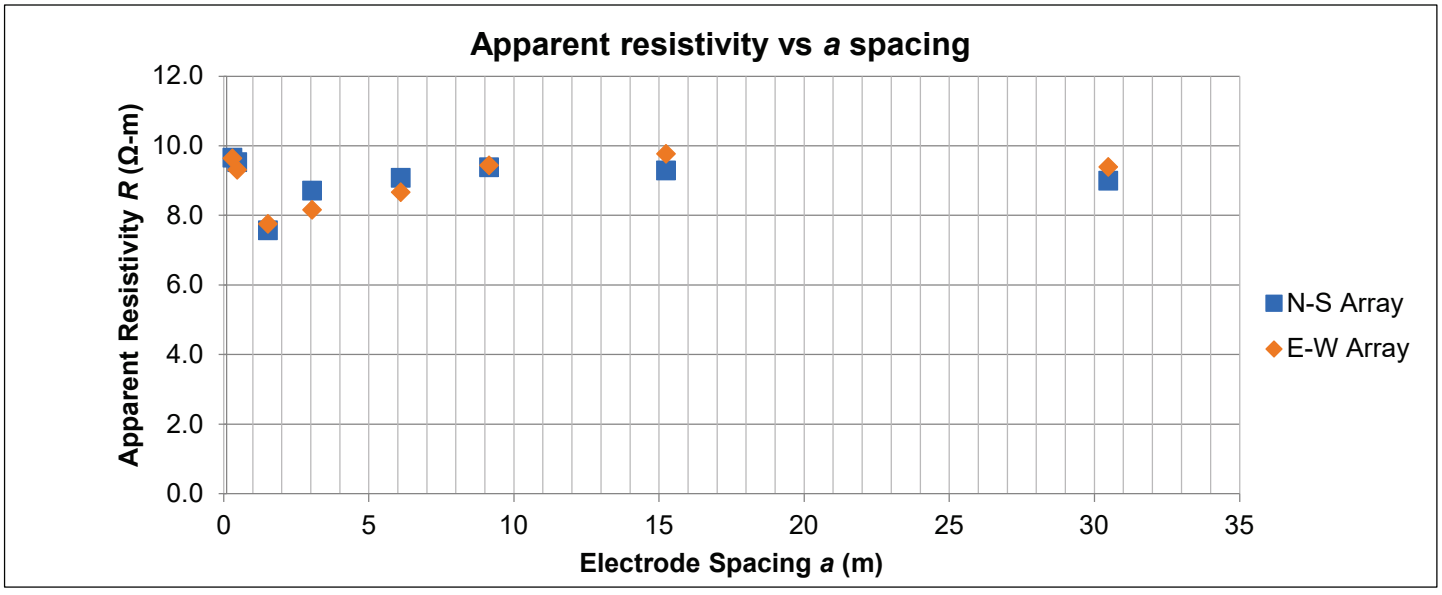
FIELD ELECTRICAL RESISTIVITY TEST DATA

Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Array Loc.	ER-6 (32.950774,-95.91028)		
Instrument	MiniRes	**Weather**	Sunny, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 12, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	5.038	9.66	5.025	9.64
1.5	0	1.8	0.05	3.232	9.53	3.156	9.31
5	2	6	0.15	0.780	7.57	0.798	7.75
10	3	12	0.30	0.447	8.71	0.419	8.16
20	6	12	0.30	0.236	9.08	0.225	8.66
30	9	12	0.30	0.163	9.38	0.164	9.44
50	15	12	0.30	0.097	9.29	0.102	9.77
100	30	12	0.30	0.047	9.00	0.049	9.39



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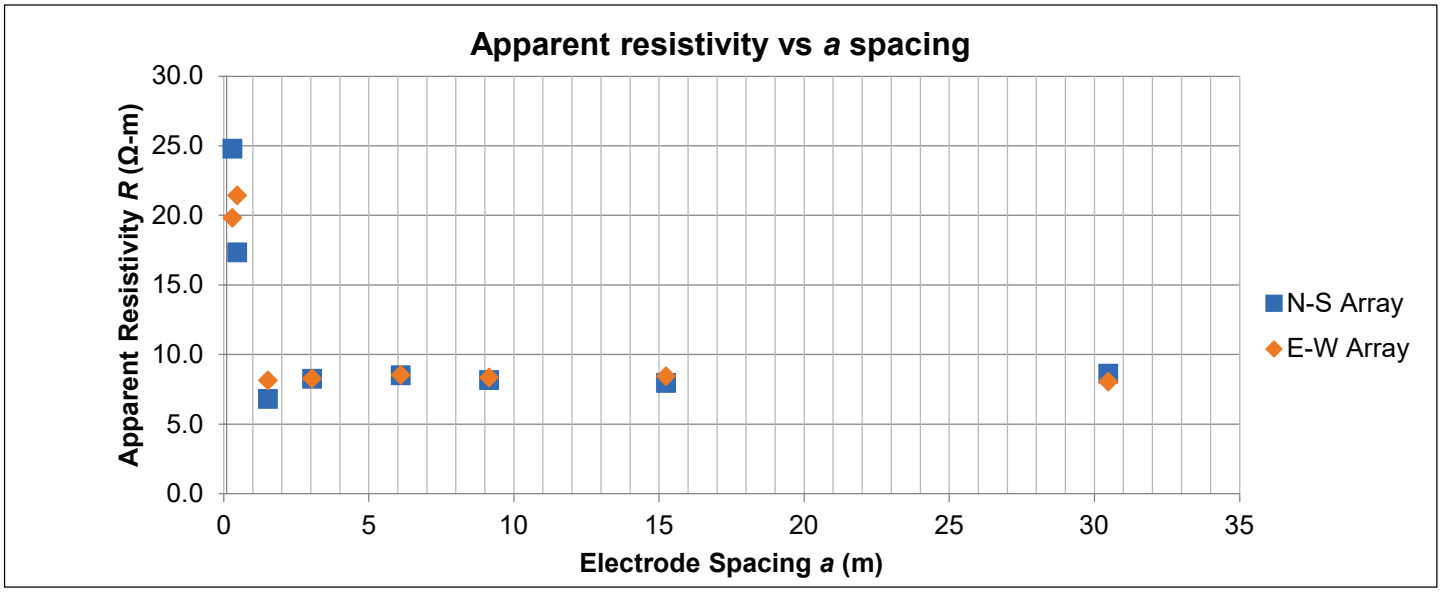
FIELD ELECTRICAL RESISTIVITY TEST DATA

Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Array Loc.	ER-7 (32.947517,-95.892598)		
Instrument	MiniRes	**Weather**	Cloudy, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 13, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	12.921	24.78	10.330	19.81
1.5	0	1.8	0.05	5.877	17.33	7.264	21.42
5	2	6	0.15	0.701	6.81	0.839	8.15
10	3	12	0.30	0.424	8.26	0.425	8.28
20	6	12	0.30	0.221	8.51	0.222	8.54
30	9	12	0.30	0.142	8.17	0.145	8.34
50	15	12	0.30	0.083	7.95	0.088	8.43
100	30	12	0.30	0.045	8.62	0.042	8.04



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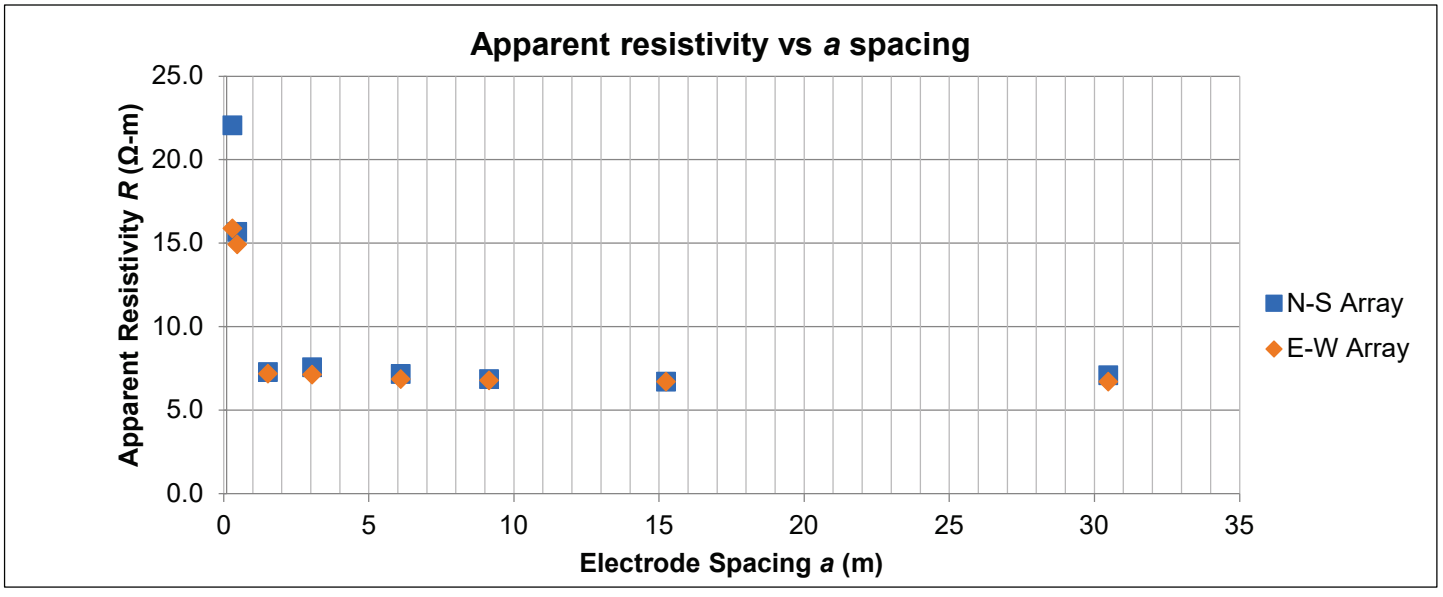
FIELD ELECTRICAL RESISTIVITY TEST DATA

Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

Array Loc.	ER-8 (32.940264,-95.888378)		
Instrument	MiniRes	**Weather**	Cloudy, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 13, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	11.505	22.06	8.285	15.89
1.5	0	1.8	0.05	5.313	15.67	5.058	14.92
5	2	6	0.15	0.751	7.29	0.739	7.18
10	3	12	0.30	0.388	7.56	0.366	7.13
20	6	12	0.30	0.186	7.16	0.178	6.85
30	9	12	0.30	0.119	6.85	0.118	6.79
50	15	12	0.30	0.070	6.71	0.070	6.71
100	30	12	0.30	0.037	7.09	0.035	6.70



FIELD ELECTRICAL RESISTIVITY TEST DATA

Barrett Solar Facility ■ Point, Texas
July 2023 ■ Terracon Project No. 94235249

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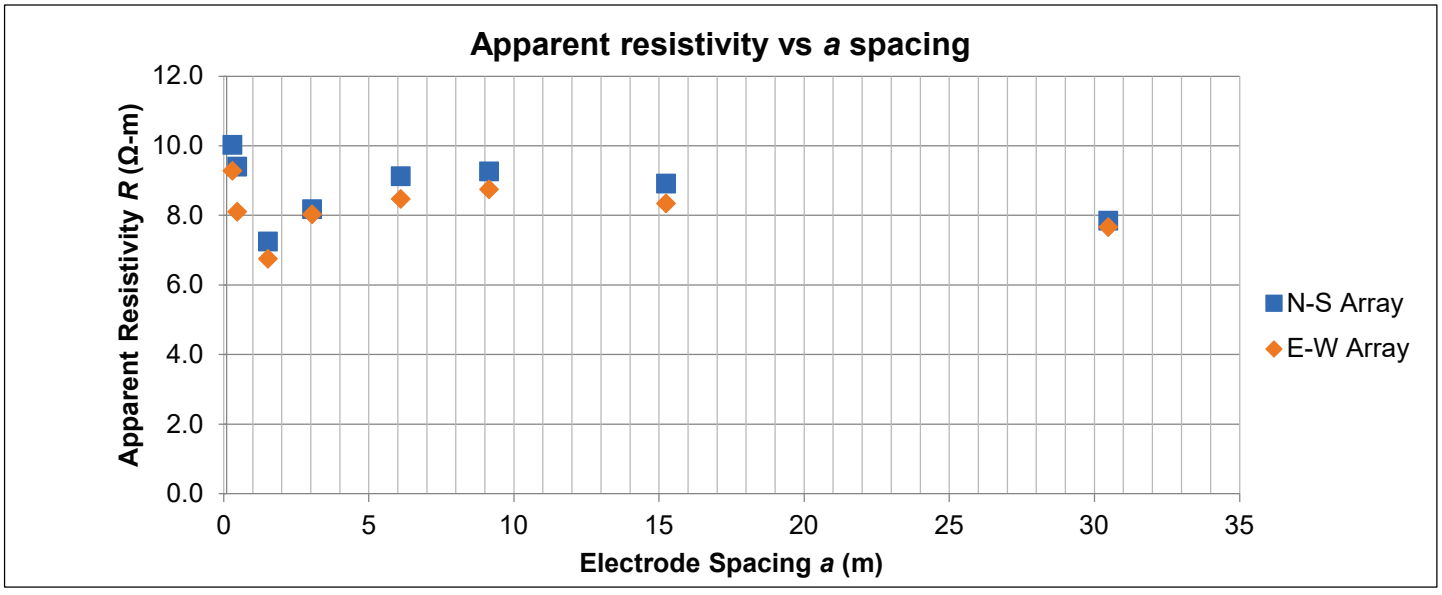
Array Loc.	ER-9 (32.9356103,-95.884691)		
Instrument	MiniRes	**Weather**	Cloudy, Hot
Serial #	SN 333	**Ground Cond.**	Moist, Hard
Cal. Check	Yes	**Tested By**	Cameron
Test Date	July 13, 2023	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

Apparent resistivity ρ is calculated as : $$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2+4b^2}} - \frac{a}{\sqrt{a^2+b^2}}}$$

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
(feet)	(meters)	(inches)	(meters)	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	(Ω-m)	Ω	(Ω-m)
1	0	1.2	0.03	5.232	10.03	4.839	9.28
1.5	0	1.8	0.05	3.186	9.40	2.747	8.10
5	2	6	0.15	0.747	7.25	0.695	6.75
10	3	12	0.30	0.420	8.18	0.412	8.03
20	6	12	0.30	0.237	9.12	0.220	8.47
30	9	12	0.30	0.161	9.26	0.152	8.75
50	15	12	0.30	0.093	8.91	0.087	8.34
100	30	12	0.30	0.041	7.85	0.040	7.66



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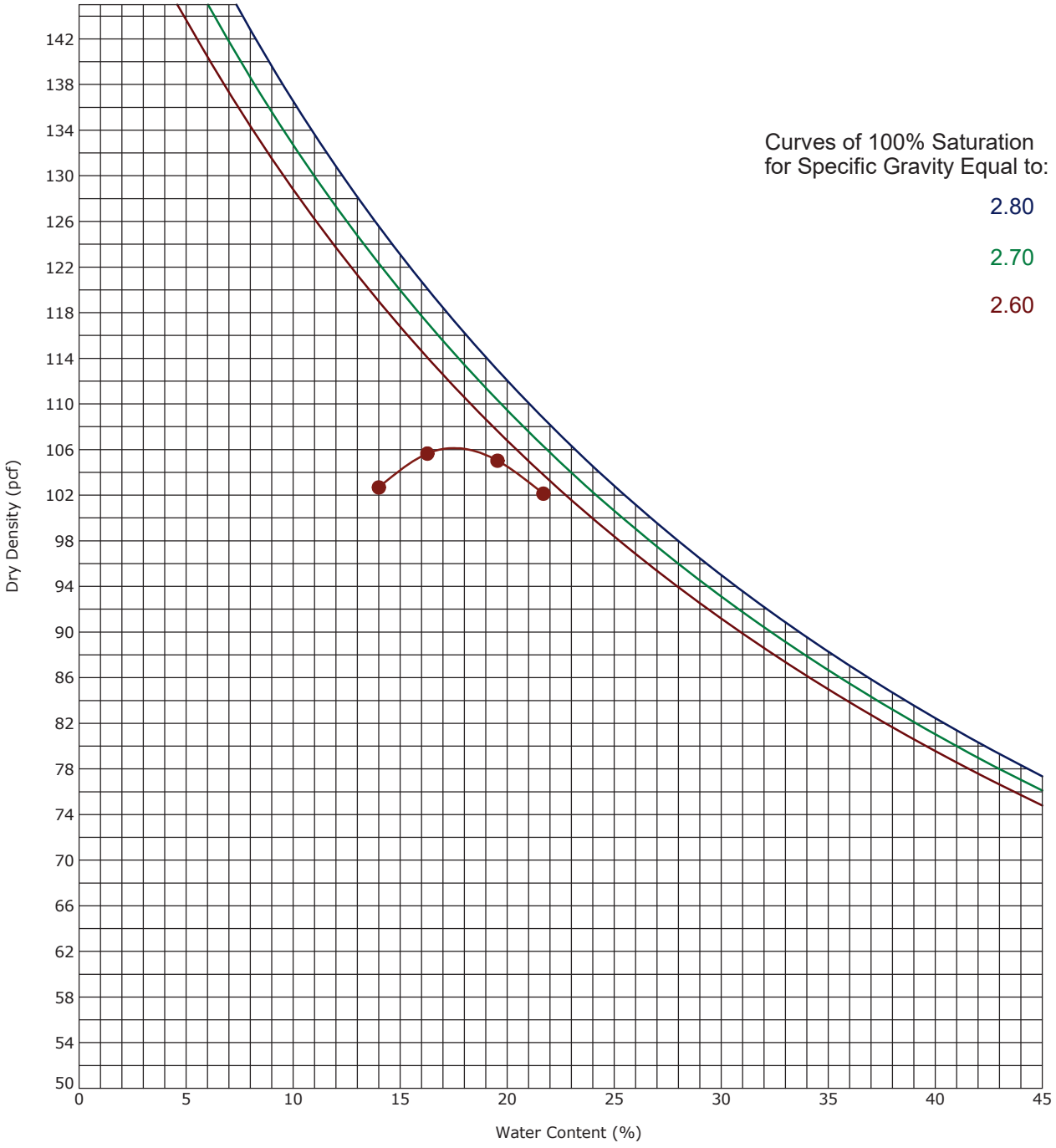
Moisture-Density Relationship

ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Bulk-1	0 - 4	Brown and Dark Brown Fat Clay (CH)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
96	0.0	58	19	39	ASTM D698-Method A	106.1	17.5

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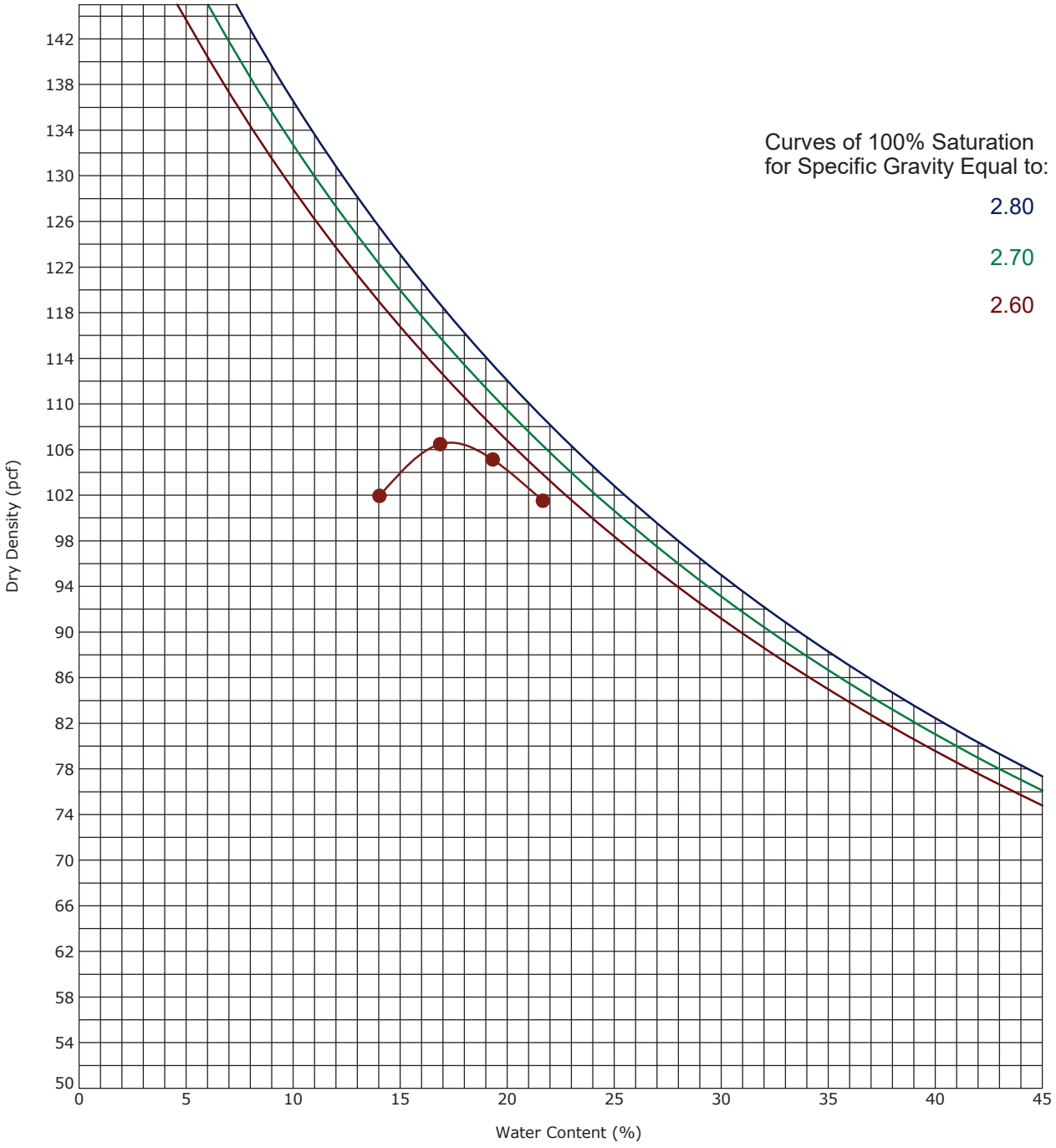
Moisture-Density Relationship

ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Bulk-2	0 - 4	Brown Fat Clay (CH)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
96	0.0	54	18	36	ASTM D698-Method A	106.6	17.4

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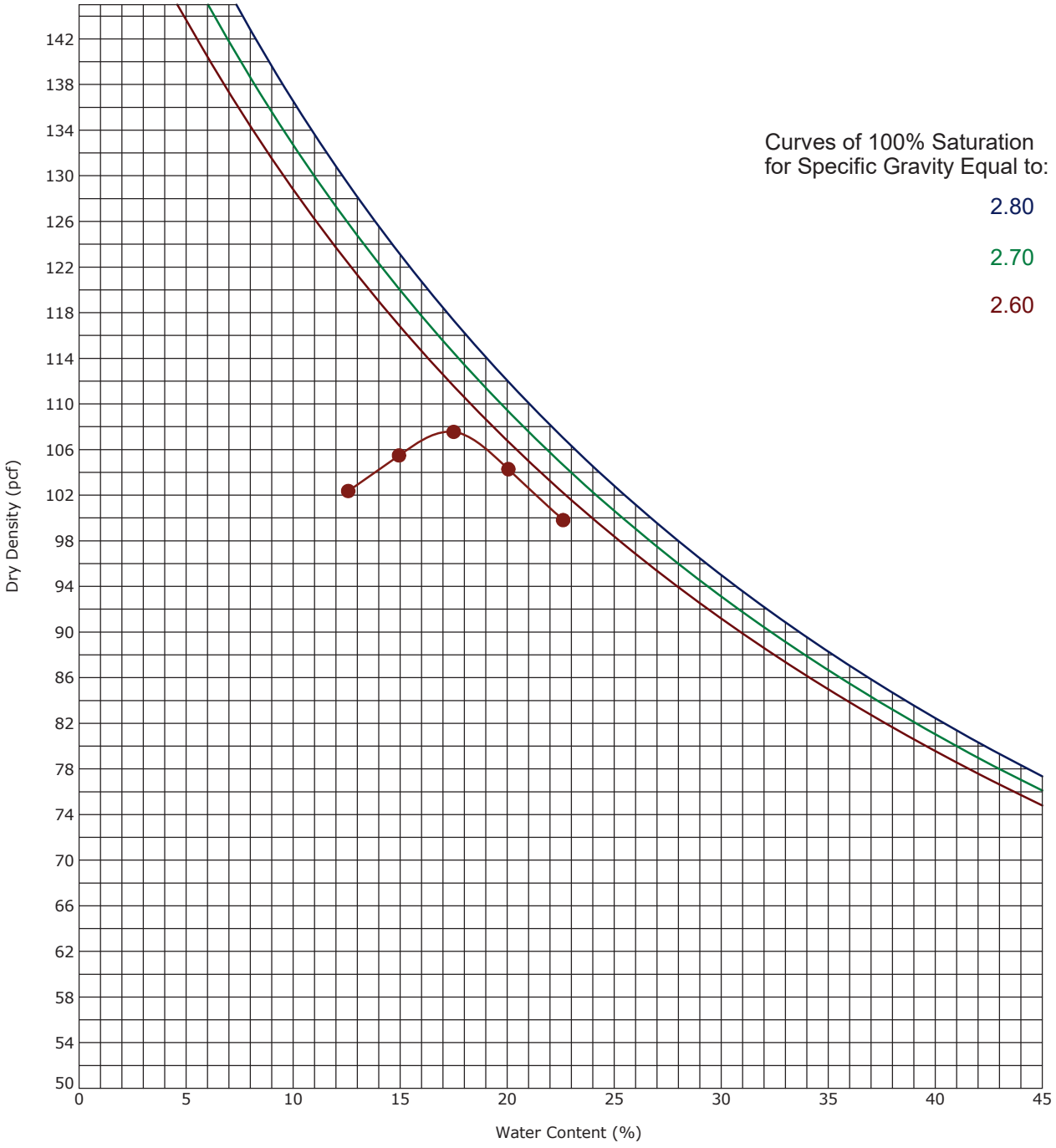
Moisture-Density Relationship

ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Bulk-3	0 - 4	Dark Brown Fat Clay (CH)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
95	0.0	56	19	37	ASTM D698-Method A	107.6	17.2

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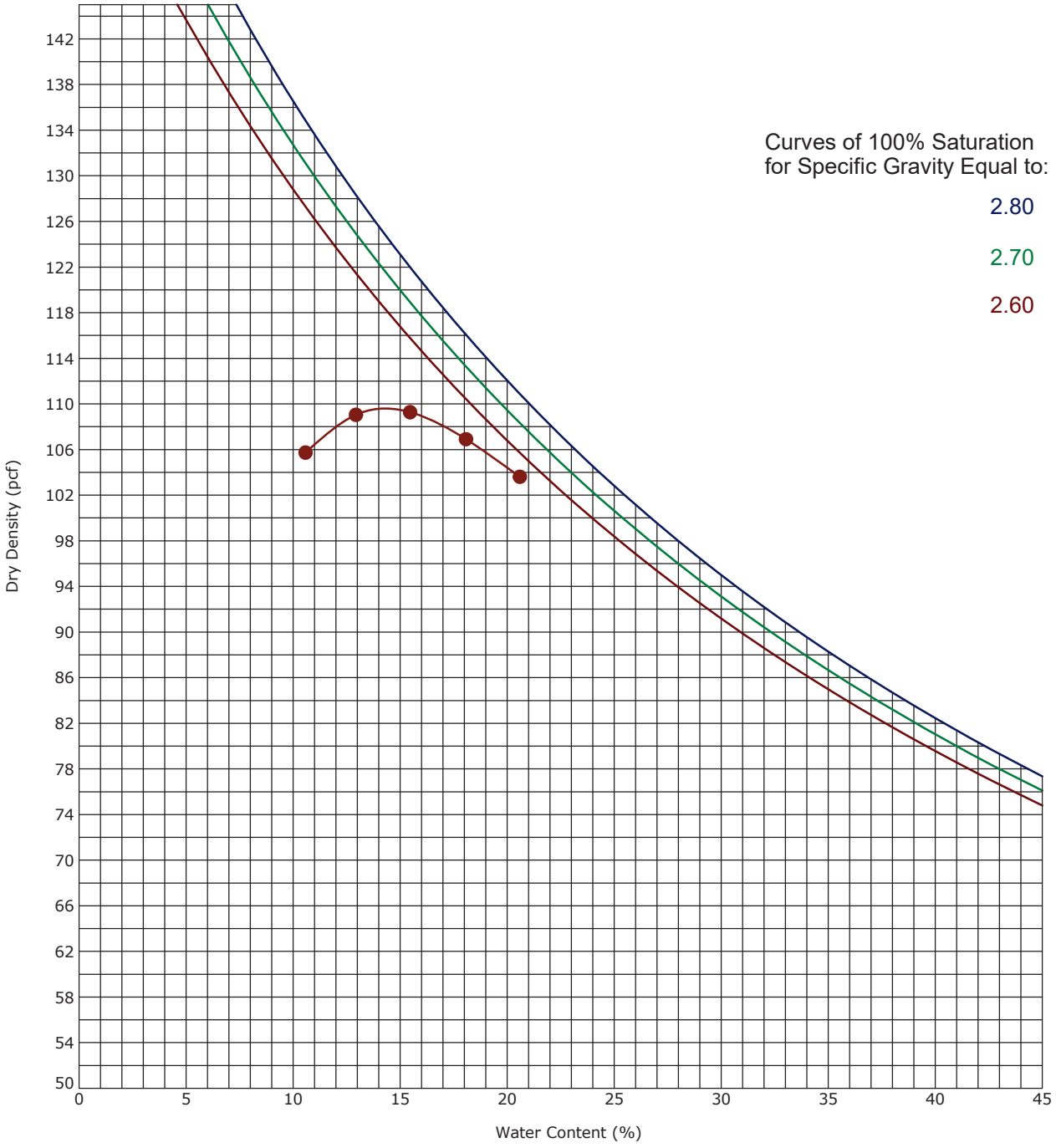
Moisture-Density Relationship

ASTM D698-Method A



Boring ID	Depth (Ft)	Description of Materials
Bulk-4	0 - 4	Light Brown Lean Clay (CL)

Fines (%)	Fraction > mm size	LL	PL	PI	Test Method	Maximum Dry Density (pcf)	Optimum Water Content (%)
89	0.0	49	16	33	ASTM D698-Method A	109.6	14.3

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Fax: 832-427-1752
info@geothermusa.com
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July 12, 2023

Terracon
8901 John W. Carpenter Fwy, Suite 100
Dallas, TX 75247
Attn: Mohammed Alhachami, E.I.T.

Re: Thermal Analysis of Native Soil Samples
Barrett Solar Facility – Point, TX (Project No. 94235249)

The following is the report of thermal dryout characterization tests conducted on four (4) native soil samples from the referenced project sent to our laboratory.

Thermal Resistivity Tests: The samples were tested at the 'optimum' moisture content and at 90% of the standard Proctor dry density ***provided by Terracon***. The tests were conducted in accordance with the IEEE standard 442-2017. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 4.**

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

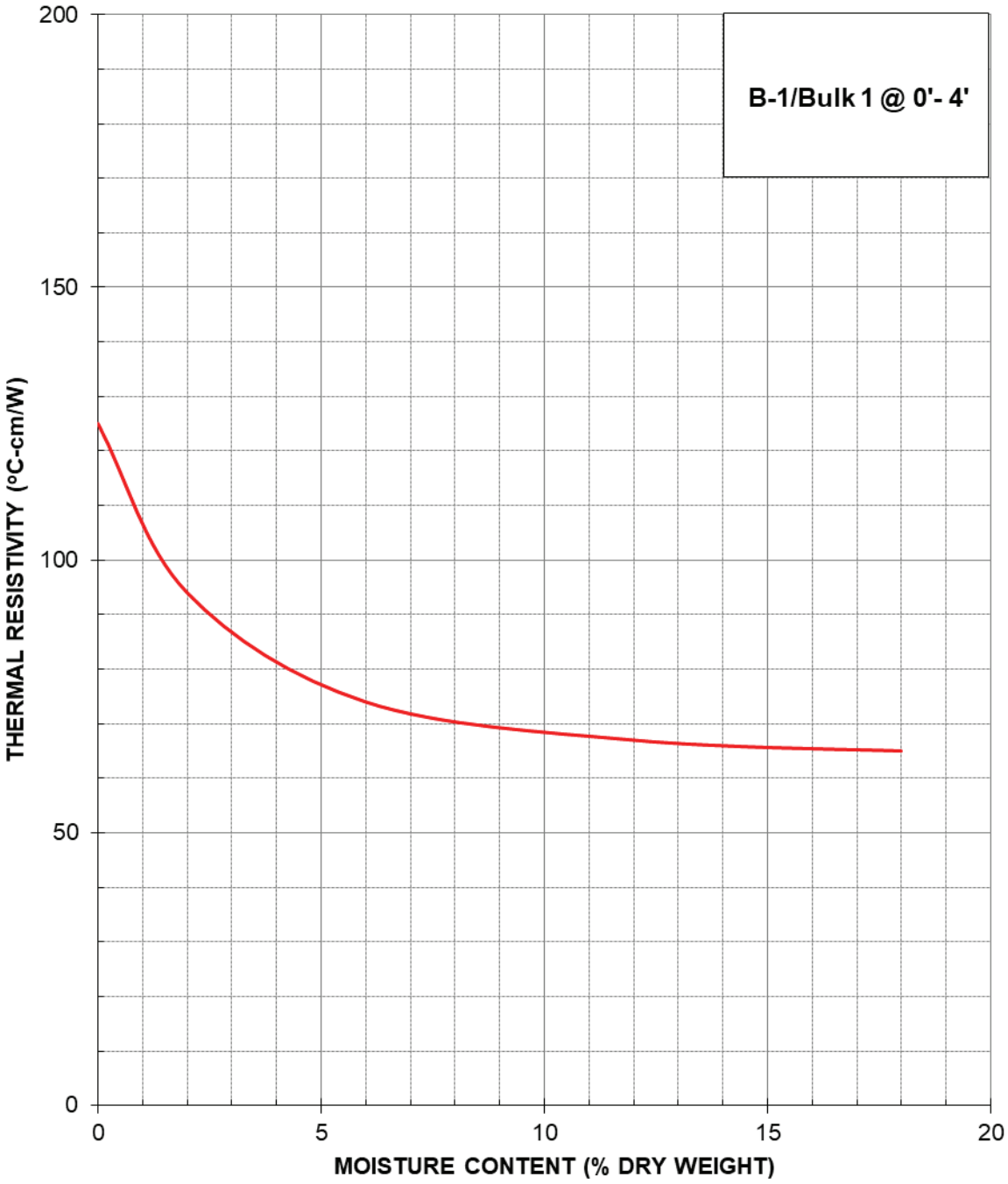
Sample ID	Depth (ft)	Effort (%)	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
				Wet	Dry		
B-1/ Bulk 1	0-4	90	Brown, dark Brown Fat Clay	65	125	18	96
B-10/ Bulk 2	0-4	90	Brown Fat Clay	58	145	17	96
B-12/ Bulk 3	0-4	90	Dark Brown Fat Clay	67	138	17	97
B-16/ Bulk 4	0-4	90	Light Brown Lean Clay	56	138	14	99

Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA
Nimesh Patel

THERMAL DRYOUT CURVE



Terracon (Project No. 94235249)

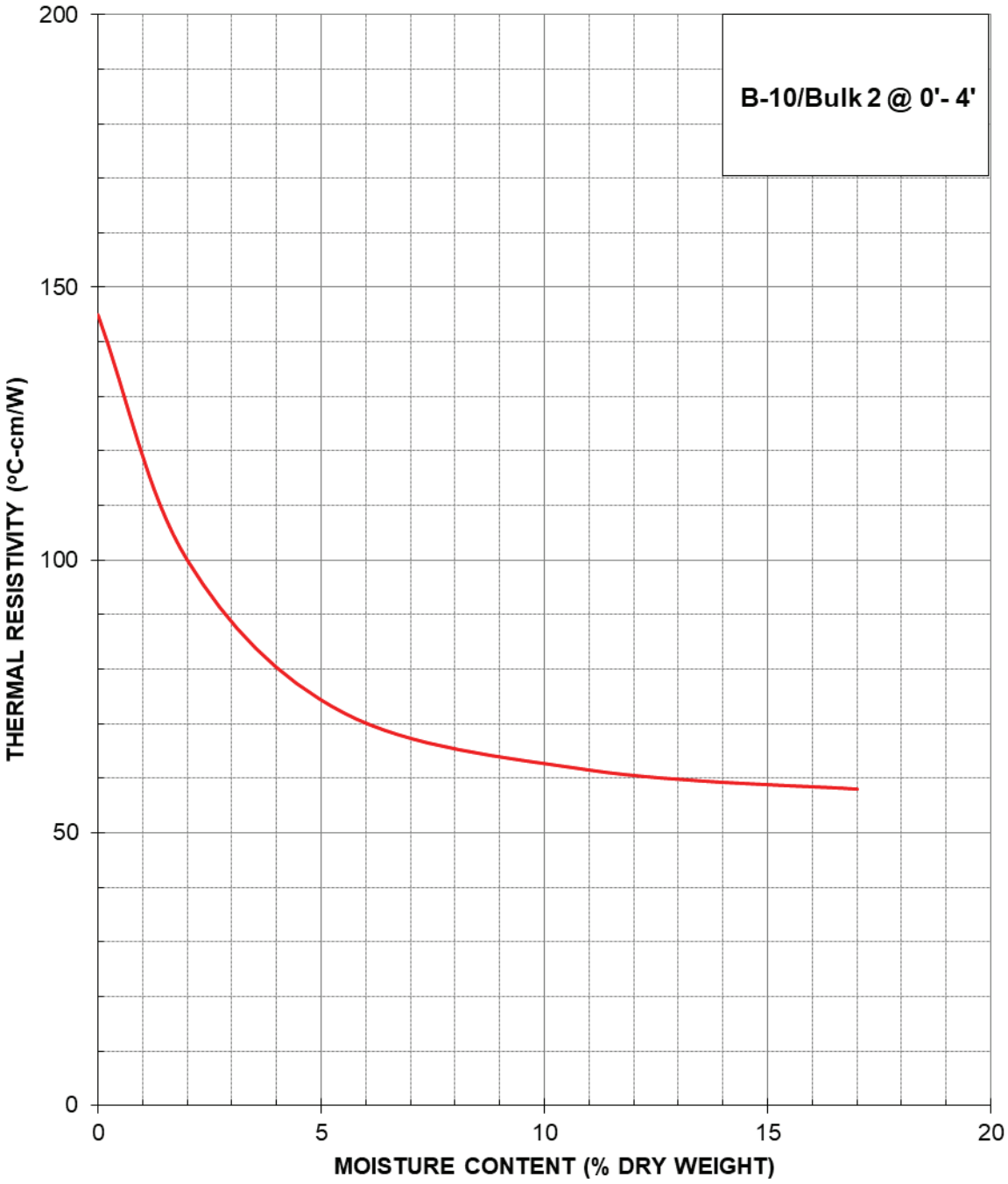
Barrett Solar Facility – Point, TX

Thermal Analysis of Native Soil Samples

July 2023

Figure 1

THERMAL DRYOUT CURVE



Terracon (Project No. 94235249)

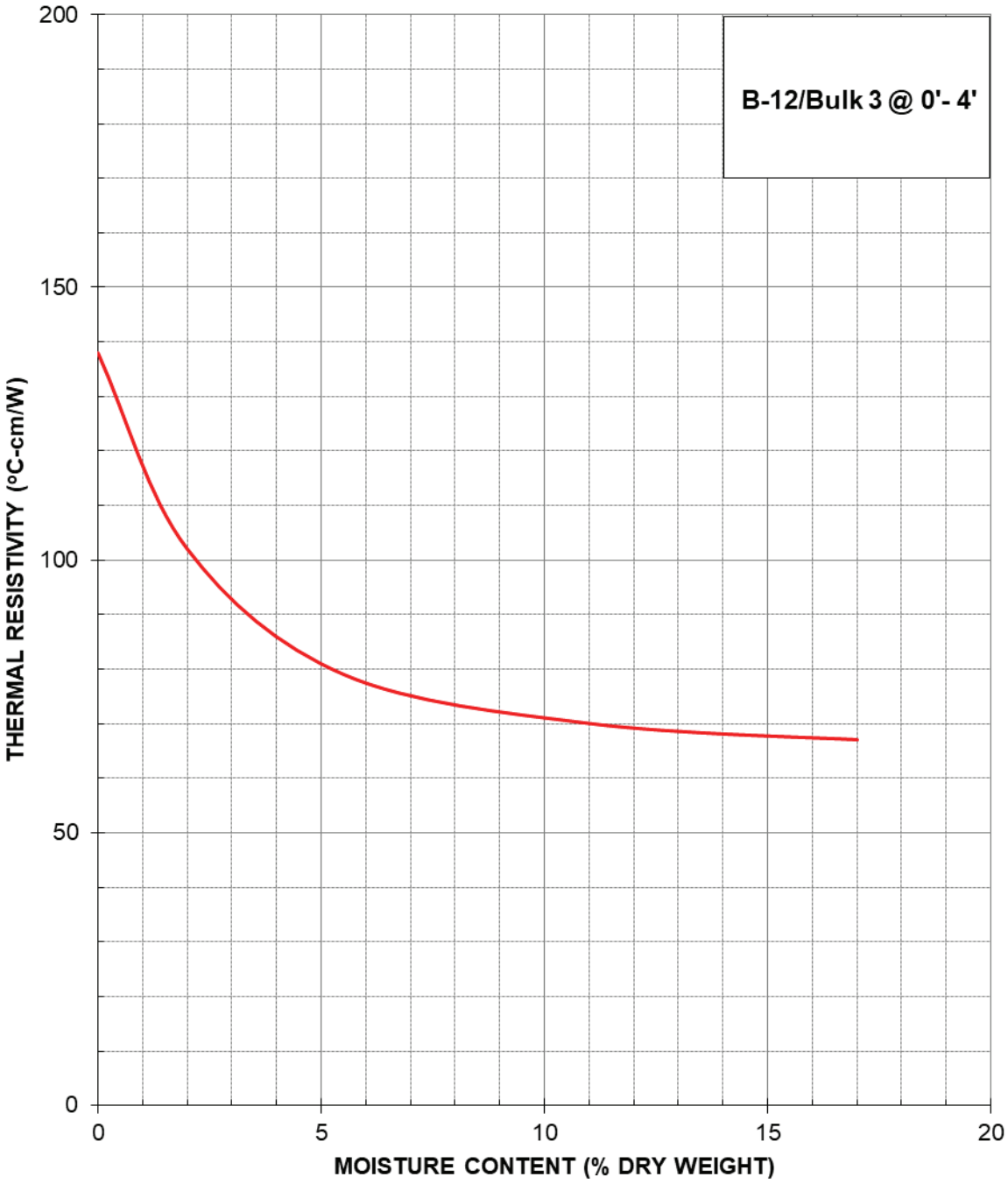
Barrett Solar Facility – Point, TX

Thermal Analysis of Native Soil Samples

July 2023

Figure 2

THERMAL DRYOUT CURVE



Terracon (Project No. 94235249)

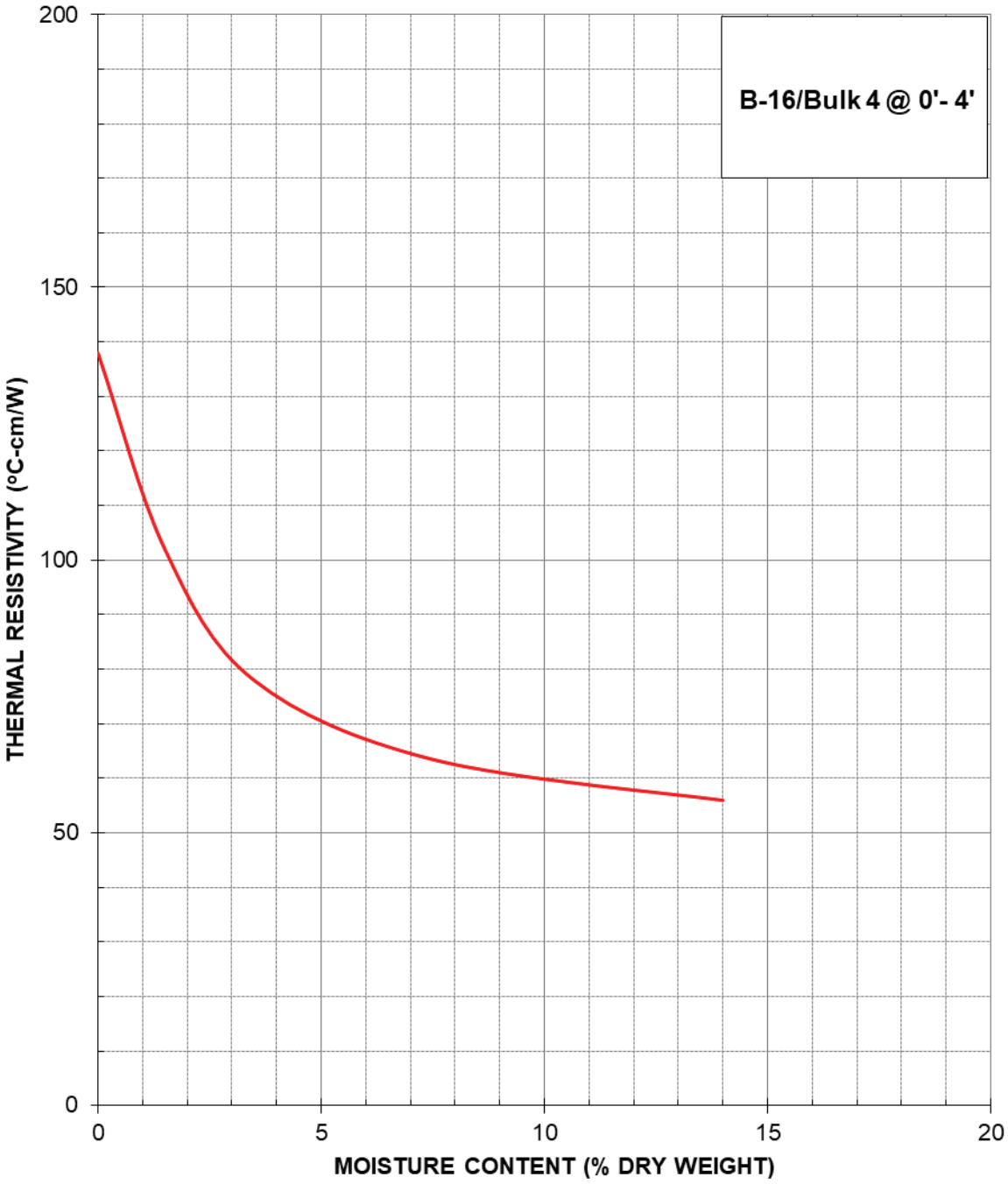
Barrett Solar Facility – Point, TX

Thermal Analysis of Native Soil Samples

July 2023

Figure 3

THERMAL DRYOUT CURVE



Terracon (Project No. 94235249)

Barrett Solar Facility – Point, TX

Thermal Analysis of Native Soil Samples

July 2023

Figure 4

Supporting Information

Contents:

General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

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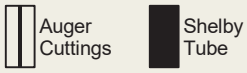
General Notes

Sampling



Water Level

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Cave In Encountered

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

Field Tests

N	Standard Penetration Test Resistance (Blows/Ft.)
(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
UC	Unconfined Compressive Strength
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils
(More than 50% retained on No. 200 sieve.)
Density determined by Standard Penetration Resistance

Relative Density	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3
Loose	4 - 9
Medium Dense	10 - 29
Dense	30 - 50
Very Dense	> 50

Consistency of Fine-Grained Soils
(50% or more passing the No. 200 sieve.)
Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance

Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Soft	less than 0.25	0 - 1
Soft	0.25 to 0.50	2 - 4
Medium Stiff	0.50 to 1.00	4 - 8
Stiff	1.00 to 2.00	8 - 15
Very Stiff	2.00 to 4.00	15 - 30
Hard	> 4.00	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried} < 0.75$	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.