Appendix 10-1

Geotechnical Report

Geotechnical Report

AES – Riverside Solar Project

May 11, 2021

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ANS GEO

Table of Contents

1 Introduction

ANS Geo, Inc. is pleased to provide this Geotechnical Report (Report) to AES to summarize the results of our geotechnical field investigation in support of the proposed Riverside Solar Energy Generation project located in Chaumont, New York. To guide the design and construction of the proposed solar facility, ANS Geo developed and implemented a geotechnical investigation program which encompassed a desktop study of local geologic conditions, soil borings, field electrical resistivity testing, pile load testing, laboratory thermal resistivity and corrosion testing, California Bearing Ratio (CBR) and laboratory soil material testing.

2 Methodology

2.1 Soil Borings

ANS Geo retained Earth Dimensions, Inc., (EDI) of Elma, New York to advance 38 soil borings (B-01 through B-38) completed at select locations across the project site between February 22 and 27, 2021. The soil boring locations are depicted in the Investigation Location Plan, provided as **Attachment A**.

The 38 array-area soil borings were advanced to approximately 20 feet below ground surface (BGS) or until practical refusal, whichever was encountered first. A CME-550 ATV-mounted drill rig was used to collect soil samples using the Standard Penetration Test (SPT) Method through hollow-stem augers in accordance with ASTM Standard D1586. Soil samples were generally collected continuously within the upper 10 feet in each boring, then in five-foot intervals thereafter to the termination depth. In four (4) locations, rock coring was conducted in accordance with ASTM D2113 to confirm the presence, type, and quality of bedrock. Soil borings, proposed by ANS Geo and confirmed by AES review, were located at relatively evenly spread locations throughout the project's array area(s). All soil borings were overseen and logged by an ANS Geo representative under the direction of a Professional Engineer licensed in the State of New York. Typed soil boring logs are presented as **Attachment B**.

At select soil boring locations, auger cuttings were collected one (1) and five (5) feet below grade with the purpose of obtaining bulk soil samples for laboratory California Bearing Ratio (CBR), thermal resistivity testing (TRT), and corrosivity testing. Upon completion, each borehole was backfilled to its existing grade with soil cuttings.

2.2 Electrical Resistivity Testing

As part of our field investigation program, ANS Geo performed field Electrical Resistivity Tomography (ERT) testing between May 2 and 3, 2021. Testing was conducted at 12 locations within the proposed array area(s). In-situ soil resistivity measurements were obtained by utilizing the Wenner 4-Pin Method in accordance with ASTM G57 and IEEE Standard 80. Two (2) mutually perpendicular traverses were collected at each location utilizing "a"-spacings of 2, 5, 10, 25, and 50 feet. Test results are presented as **Attachment C**.

2.3 Pile Load Testing

2.3.1 Test Pile Installation

As part of our scope of work, ANS Geo conducted pile load testing at 40 accessible locations across the proposed solar array area(s) between March 15 and April 7, 2021. Each test location included a pair of test piles, totaling 80 piles tested for both uplift and lateral capacities. At each test location, W6x9x15 steel sections ("piles") were installed to varying depths between five (5) and 11 feet BGS through the overburden via direct push to significant resistance, then driven to their targeted depths using a GAYK HRE 4000 Pile Driver. Installation rates varied up to 71.8 seconds per foot, with an average of approximately 19 seconds per foot. The installation and load testing program was overseen and logged by an ANS Geo geotechnical representative under the direction of a Professional Engineer licensed in the State of New York.

2.3.2 Shallow Rock Pre-Drilling

ANS Geo observed shallow rock within approximately half of the advanced soil borings at depths less than 9.5 feet below grade. As such, prior to pile installations where shallow rock was observed (less than 9.5 feet below grade), ANS Geo retained Hayduck Enterprises of Factoryville, Pennsylvania to pre-drill six-inch diameter holes to 10 feet below grade in order to advance the piles into bedrock. Pre-drilling was completed using an Ingersoll-Rand ECM-350 percussive hammer drill rig. A total of 20 test pile locations (half of the tested locations) were pre-drilled using this method.

2.3.3 Uplift Load Testing

Once driven to the targeted embedment depth, an uplift load test was performed on each test pile in accordance with the ASTM D3689 (uplift) test method. The tension load was generally applied through hydraulic load cell attached to a rigid tripod reaction frame. Uplift loads were generally applied in one-minute, 1,000-pound increments up to 10,000 pounds. Once achieved, the load was then unloaded to measure residual deflection. After the tension was fully released, the piles were reloaded up to a maximum uplift load of roughly 13,000 pounds or one-inch of deflection.

2.3.4 Lateral Load Testing

A lateral load test was also performed at each test location, following each uplift load test, in accordance with ASTM D3966 (lateral) test method. Horizontal loads were applied at approximately three (3) feet above grade on each pile with the pulling force a hydraulic load cell. Test loads were applied cyclically in one-minute, 500-pound increments up to 4,000 pounds, where feasible. Once achieved, the load was immediately released and reloaded up to a maximum deflection of approximately one-inch, if not already achieved.

The location of each pile load test is depicted in the Investigation Location Plan, provided as **Attachment A**. Results of the pile load testing program are summarized within **Section 5**.

3 Geology and Subsurface Conditions

ANS Geo conducted a brief, desktop review of surficial and bedrock geology maps and reports made available by the New York State Geological Survey (NYSGS) and the New York State Education Department (NYSED) prior to conducting our field investigation. The available mapping indicates that the native surficial soils are predominantly classified as “lacustrine silt and clay” which are described as laminated, calcareous, silts and clays. A small portion (approximately 5 percent) of the project resides within soils classified as “recent alluvium” which are described as fine sand to gravel-sized material. Bedrock geological mapping indicates the project site is underlain entirely by the Black River Group formation which predominantly consists of limestone bedrock.

ANS Geo additional reviewed overburden soil information made available by the USDA’s Natural Resources Conservation Service (NRCS). The NRCS classifies the upper six (6) feet of soil primarily as material of the Vergennes silty clay loam, Kinsburg silty clay, and Covington silty clay units. The full NRCS soil report is provided as **Attachment G**.

ANS Geo has provided the generalized subsurface conditions within Table 1 below based upon the observations made during our geotechnical investigation for the solar project. ANS Geo notes that this profile is highly generalized and that soil boring logs, been provided as **Attachment B**, should be reviewed for location-specific subsurface conditions.

Table 1 – Generalized Subsurface Profile

Avg. Depth (ft)	Material	Avg. Consistency	Description
0' – 0.5'	Topsoil	-	Four (4) to eight (8) inches of topsoil existed at surface across most of the project.
0.5 – 8.5'	Clay	Stiff	Clays, ranging from low to high plasticity, were encountered as the primary soil type across the project site. Soil consistency typically ranged between medium and very stiff, and maintained average pocket penetrometer measurements around 2.5 tons per square foot. A lesser degree of silt was typically observed within the recovered samples, as well as occasional sand inclusions.
8.5' +	Bedrock / Boulders	Very dense	Refusal on dense material, typically limestone bedrock or the occasional boulder, was encountered in each boring location between 3.3 and 15.0 feet below grade. Rock coring was completed in four (4) soil boring locations which confirmed the presence of medium strong to strong limestone bedrock.

The mapped soil formations identified within our desktop study are consistent with the findings of our field investigations. It should be noted that bedrock was observed within our investigation program throughout the site as shallow as three (3) feet below grade. A refusal "heat map" has been generated and included within **Attachment A** which depicts the approximate depth to bedrock and/or boulder refusal throughout the project's extents.

4 Laboratory Results

4.1 Soil Index Testing

Representative soil samples were collected during our investigation and submitted to ANS's accredited materials testing laboratory. A summary of the index laboratory test results is provided within Table 2. As-received laboratory test results are included within **Attachment D**.

Table 2 – Soil Index Testing Summary

Sieve Analysis Samples							
Boring ID	Sample ID	Depth (feet)	% Gravel	% Sand	% Fines		% Moisture
					% Silt	% Clay	
B-03	S-3	4 – 6	0.0	4.7	95.3		27.7
B-06	S-2	2 – 4	0.0	7.7	38.4	53.9	26.0
B-10	S-4	6 – 8	0.0	3.7	96.3		32.6
B-12	S-3	4 – 6	0.0	1.3	98.7		29.0
B-15	S-4	6 – 8	29.1	28.0	29.7	13.2	8.6
B-17	S-5	8 – 10	24.0	33.8	29.2	13.0	9.3
B-22	S-5	8 – 10	0.0	0.9	99.1		31.2
B-25	S-2	2 – 4	8.7	1.2	90.1		27.4
B-27	S-5	8 – 10	0.0	1.3	98.7		30.6
B-29	S-5	8 – 10	10.2	43.3	46.5		8.7
B-34	S-4	6 – 8	2.0	1.9	38.5	57.6	30.3
B-36	S-2	2 – 4	0.0	4.7	95.3		27.3

Atterberg Samples							
Boring ID	Sample ID	Depth (feet)	Liquid Limit	Plastic Limit	Plasticity Index	% Moisture	USCS Symbol
B-05	S-2	2 – 4	33.5	20.0	13.5	30.6	CL
B-08	S-3	4 – 6	34.0	21.3	12.7	28.9	CL
B-13	S-1	0 – 2	34.3	22.0	12.3	35.1	CL
B-16	S-4	6 – 8	36.6	21.7	14.9	29.6	CL
B-20	S-3	4 – 6	39.8	22.9	16.9	30.0	CL
B-30	S-4	6 – 8	41.9	22.9	19.0	31.2	CL
B-38	S-2	2 – 4	39.9	22.3	17.6	32.0	CL

4.2 Thermal Resistivity Testing

ANS Geo collected bulk samples from three (3) locations throughout the project area from three (3) to five (5) feet below grade for laboratory testing of Thermal Resistivity. Soils were collected in a five-gallon bucket and delivered to ANS Consultants' accredited laboratory for testing. The soil was compacted to 85 percent of its Standard Proctor Density in accordance with ASTM D698, and Thermal Resistivity Testing was conducted in accordance with IEEE Standard 442-2017. Results of the thermal testing are summarized within Table 3. Complete, as-received results have been provided within **Attachment D**.

Table 3 – Thermal Resistivity Testing Summary

Location ID	Material Type	Thermal Resistivity Values at Various Moisture Contents					Received Moisture Content (%)	Re-Molded Dry Density (lb/ft^3)
		% water	% water	% water	% water	% water		
		(°C-cm/W)	(°C-cm/W)	(°C-cm/W)	(°C-cm/W)	(°C-cm/W)		
B-05	Silty Clay	0.0	4.5	9.0	13.5	18.4	29.9	77.0
		749	**328**	**198**	**159**	**135**		
B-18	Silty Clay	0.0	5.0	10.0	15.0	19.5	26.6	76.1
		739	**325**	**196**	**153**	**130**		
B-30	Silty Clay	0.0	5.0	10.0	15.0	20.3	31.1	80.9
		730	**320**	**192**	**148**	**125**		

4.3 Corrosivity Testing

ANS Geo collected additional samples from two (2) to four (4) feet below grade at five (5) locations for corrosivity testing. The results of the testing, completed by ANS Consultants, have been summarized within Table 4 and are detailed within **Attachment D**.

Table 4 – Corrosivity Testing Summary

Location ID	pH	Sulfate (mg/kg)	Chloride (mg/kg)	Soil Box (Calculated Resistivity) (Ω/cm)	Redox Potential (average) (mV)
B-04	6.79	28	45	6,500	151
B-07	6.78	26	40	5,500	135
B-14	6.82	23	35	6,000	121
B-20	6.90	14	25	5,000	106
B-36	7.01	17	30	5,000	111

4.4 California Bearing Ratio

ANS Geo collected an additional sample from one (1) to three (3) feet below grade at three (3) locations for testing of California Bearing Ratio (CBR) in accordance with ASTM D1883 at approximately 90 percent of its Standard Proctor Density (ASTM D698). The results of the testing, completed by ANS Consultants, have been summarized within Table 5 and are detailed within **Attachment D**.

Table 5 – California Bearing Ratio Summary

Location ID	CBR Ratio (%)
B-10	0.7
B-19	1.0
B-32	0.8

4.5 Rock Testing

Representative rock core samples were also submitted to ANS for testing of Unconfined Compressive Strength of Rock in accordance with ASTM D7012. The results of the testing have been summarized within Table 6. Complete testing results are provided within **Attachment D**.

Table 6 – Rock Testing Results

Boring ID	Run	Depth (feet)	Compressive Strength (psi)	Rock Classification
B-03	R-1	12.1 – 13.1	7,200	Limestone
B-20	R-1	11.8 – 12.9	6,240	Limestone

5 Pile Load Testing Results

Table 7 presents the summarized results of the pile load testing program at each test location. Complete Load Testing Logs are provided as **Attachment E** and should be referenced for detailed information.

Table 7 – Pile Load Testing Summary

Load Test ID	Embedment Depth (ft.)	Average Pile Installation Rate (sec/ft)	Approx. **Uplift** Load at 1-inch Deflection (lbs)	Approx. **Lateral** Load at 1-inch Deflection (lbs)
PT-01A	8	8.8	> 13,000	4,300
PT-01B	8	6.5	> 13,000	4,100
PT-02A	9.5	19.7	> 13,000	4,000
PT-02B	9.4	19.2	> 13,000	3,900
PT-03A	9	7.0	> 13,000	4,250
PT-03B	9	6.1	> 13,000	3,900
PT-04A	10	11.9	> 13,000	4,000
PT-04B	10	8.8	> 13,000	4,000
PT-05A	8.5	19.0	> 13,000	4,200
PT-05B	8.5	19.1	12,500	4,200
PT-06A*	9.9	13.2	> 13,000	3,460
PT-06B*	9.8	13.8	> 13,000	3,780
PT-07A*	9.5	16.5	10,150	1,980
PT-07B*	9.7	13.8	> 13,000	2,120
PT-08A*	9.9	12.8	> 13,000	4,000
PT-08B*	9.4	13.8	7,250	4,000
PT-09A	9.4	18.9	> 13,000	4,500
PT-09B	9.5	18.3	> 13,000	4,500
PT-10A	9.5	19.5	> 13,000	4,150
PT-10B	9.3	19.2	> 13,000	4,400
PT-11A*	9.6	13.3	6,250	3,500
PT-11B*	9.6	12.8	7,200	3,200
PT-12A	8	7.2	> 13,000	3,800
PT-12B	8	6.3	> 13,000	4,600
PT-13A*	9.6	13.0	> 13,000	2,150
PT-13B*	9	0.3	9,000	1,500
PT-14A*	9	1.4	12,700	2,400
PT-14B*	9	1.7	8,000	2,350
PT-15A*	9.6	12.8	> 10,400	4,000
PT-15B	8.1	19.1	> 13,000	3,200
PT-16A	8	6.5	> 13,000	> 4,780
PT-16B	8	6.0	> 13,000	> 4,220
PT-17A	9	4.7	> 13,000	> 4,600
PT-17B	9	9.6	> 13,000	> 4,120
PT-18A*	7	2.8	> 13,000	3,340
PT-18B*	7	1.4	> 13,000	3,340
PT-19A*	7	2.5	> 13,000	> 4,000
PT-19B*	7	2.5	> 13,000	> 4,000
PT-20A	9	4.9	> 13,000	4,800
PT-20B	9	5.6	> 13,000	4,550
PT-21A	8	7.9	> 13,000	> 6,200
PT-21B	8	7.2	> 13,000	> 6,020
PT-22A	10.3	18.5	> 13,000	5,640
PT-22B	10.3	18.1	> 13,000	7,080
PT-23A*	6	5.1	> 13,000	3,800
PT-23B*	7	3.9	> 13,000	2,480
PT-24A	11	33.7	> 13,000	4,340
PT-24B	11	37.1	> 13,000	4,000

Table 7 (cont.) – Pile Load Testing Summary

Load Test ID	Embedment Depth (ft.)	Average Pile Installation Rate (sec/ft)	Approx. **Uplift** Load at 1-inch Deflection (lbs)	Approx. **Lateral** Load at 1-inch Deflection (lbs)
PT-25A*	9.8	4.8	> 13,000	2,000
PT-25B*	7.1	26.3	1,500	280
PT-26A*	8.3	15.7	3,180	1,750
PT-26B*	8.9	11.7	3,500	2,740
PT-27A	11	38.5	> 13,000	N/A
PT-27B	11	37.1	> 13,000	3,900
PT-28A*	8.7	14.4	3,040	1,460
PT-28B*	8.3	16.8	2,980	1,320
PT-29A	7.5	23.9	> 13,000	4,250
PT-29B	7.5	60.5	> 13,000	4,050
PT-30A	6	33.4	12,600	4,550
PT-30B	6	30.0	12,100	4,500
PT-31A	9	38.6	> 13,000	4,150
PT-31B	9	33.3	> 13,000	4,400
PT-32A	7.5	26.7	> 13,000	4,000
PT-32B	7.5	17.3	> 13,000	4,000
PT-33A*	9.1	13.3	1,300	2,100
PT-33B*	8.6	44.5	> 13,000	4,650
PT-34A	7	46.2	> 13,000	4,800
PT-34B	7	58.6	12,500	4,900
PT-35A	10	57.4	> 13,000	4,100
PT-35B	10	71.8	> 13,000	4,300
PT-36A*	10	12.6	> 13,000	2,340
PT-36B	5	14.3	11,250	3,780
PT-37A*	9.5	13.9	> 13,000	3,480
PT-37B*	9.5	12.0	> 13,000	2,660
PT-38A*	10	15.9	> 13,000	3,760
PT-38B*	10	21.1	> 13,000	2,500
PT-39A	8	32.7	> 13,000	4,560
PT-39B	8	45.1	> 13,000	4,720
PT-40A	7	30.7	> 13,000	3,640
PT-40B	7	37.3	> 13,000	3,860

*** - denotes pile location was installed within pre-drilled hole into bedrock**

6 Seismic Site Classification

Based on the observations recorded within our subsurface investigation program and utilizing the N-Value method as prescribed in Chapter 20 of ASCE 7-16, Site Class C can be assumed as the average condition across the project site.

The following Site Class C seismic ground motion values were obtained from the USGS Seismic Hazard Maps, referenced in ASCE 7-16 Standard, for this site:

- 0.2 second spectral response acceleration, S_S= 0.173 g
- 1 second spectral response acceleration, S_1= 0.060 g
- Maximum spectral acceleration for short periods, S_{MS}= 0.225 g
- Maximum spectral acceleration for a 1-second period, S_{M1}= 0.090 g
- 5% damped design spectral acceleration at short periods, S_{DS}= 0.150 g
- 5% damped design spectral acceleration at 1-second period, S_{D1}= 0.060 g

6.1 Preliminary Seismic Evaluation

The designated seismic site class is anticipated based on results from our investigation program and using select areas of the site which have been investigated by ANS Geo. Seismic support data is provided as **Attachment F**. Based on our observation of subsurface conditions, estimated Site Class ratings, and review of USGS's 2018 National Seismic Hazard Map, ANS Geo concludes that there is a low risk of significant seismic activity which may impact the proposed solar facility.

7 Foundation Considerations

ANS Geo anticipates that, as typical with solar farm construction, embedded posts, such as W6x9 H-piles, will be used to support the proposed solar panels. Conventional shallow foundations such as sonotubes, spread footings, or similar systems may also be utilized for equipment pads and associated support structures.

7.1 Corrosion Considerations

Given limited testing results measuring the soil's measured acidity, sulfate and chloride concentrations, resistivity, and redox potential summarized in **Section 4.3** (Table 3), in consideration with the soil and moisture conditions observed, the in-situ soil conditions are anticipated to be "moderately" corrosive to embedded steel piles. Typically, a zinc coating of 1.7 oz/ft^2 (3 mil, or approximately 75 micrometers) is the minimum thickness for Grade 75 steel (W6x9) as specified by ASTM A123. As such, we expect that such piles would generally maintain an approximate lifespan of 30 to 40 years.

In addition, the average chloride concentration obtained from soil testing across five discrete samples (as indicated in Table 4) is 35 parts-per-million (ppm, or mg/kg). The concentration of chloride ions effect the corrosion rate of embedded steel[1]. Based on empirical studies performed, the relationship between corrosion rate and chloride concentrations can be estimated as:

$$CR = 16.28 * \ln(CL) - 83.8$$

[1] J. B. Decker, K.M. Rollins, J.C. Ellsworth, "Corrosion Rate Evaluation and Prediction for Piles Based on Long-Term Field Performance", American Society of Civil Engineers Journal of Geotechnical and Geoenvironmental Engineering, 134(4), pp. 341-351 (2008)

Where CR is defined as the "corrosion rate" of steel (in micrometers per year), and CL is the chloride concentration in parts-per-million. Using the equation above, and considering an average chloride concentration of 45 ppm, the corrosion rate is nearly zero across the planned service life of the facility.

7.2 Frost & Adfreeze Considerations

Given the location of the project and soils encountered, the potential for frost heave against post foundations should be considered. Fine-grained soils, or granular soils with greater than 10 percent fine-grained content are frost-susceptible due to the inability of entrapped moisture from infiltrating or evaporating prior to freezing. Trapped moisture will begin to create ice lenses, which will grip the steel posts or embedded structures, followed by ice-jacking due to frost heave. The phenomenon is more commonly referred to as "adfreeze stress", which can be considered as an external, upward force applied to the post. The magnitude of the upward force will depend on the depth/thickness of the frost zone, the interface bond stress between embedded structure/material and the surrounding area, and the surface area of the structure/material in contact with this bond stress.

Several methods exist to evaluate frost susceptibility of soils, including determination of fine-grained content of near-surface soils, evaluation of air freezing index, and local, empirical correlations such as the Atlas of Soil Freezing Depth Extremes for the Northeastern United States.

The first evaluation is to determine frost susceptibility of the site soils. The earliest method was developed by Arthur Casagrande that uses percentage of fine fraction less than 0.02 mm by weight, in which silts and very fine sands are considered to have medium to very high frost susceptibility. The method was further expanded by the US Army Corps of Engineers (1965) into a widely-used classification system which categorizes soils into frost groups F1 through F4. Classification is made in order of increasing frost-susceptibility (ie. worse soils are F4), and loss of strength during thaw. Based on the predominant, near-surface soil type at the site (clay), the site can be classified as frost group F4.

Frost penetration depth may be calculated in multiple ways, including local, County, or State building code frost depths, the US Army Corps of Engineers method using the modified Berggren Equation, and empirical data.

Within central Jefferson County, New York, frost depth is mapped to exist at approximately 60 inches below grade. However, we recognize that fluctuations in air temperature, snow cover and insulation, and historic freezing indices have shown empirical correlations of shallower frost depth. Based on the Atlas of Soil Freezing Depth Extremes for the Northeastern United States, for a return period of 25 years, the maximum depth of freezing under sod is approximately 38 inches.

Using the modified Berggren Equation, frost penetration depth can also be calculated as follows:

$$X = \lambda \sqrt{\frac{48\, k_f\, nF}{L_s}}$$

Where each variable is defined as follows:

X = depth of frost penetration [m]
λ = dimensionless coefficient based on dry density and water content
n = dimensionless conversion factor from air index to surface freezing index
k_f = thermal conductivity of frozen soil [BTU/ft-hr-°F]
F = air freezing index [°F-days]
L_s = volumetric latent heat of soil [BTU/ft^3]

Using this relationship, it is recognized that frost penetration depth is directly proportional to the square root of thermal conductivity of the frozen soil and surface freezing index, and inversely proportional to the square root of volumetric latent heat of the soil. The thermal conductivity of frozen soil is a function of soil type (ie. fine-

grained or coarse-grained), moisture content, and dry density. The following assumptions are made to calculate frost depth at this site:

1. Mean annual air temperature (MAAT) of 45.1 °F from the 1981 – 2020 Climate Normals data taken from the National Oceanic and Atmospheric Administration (NOAA)
2. The average annual number of frost days assumed was 131 days
3. An air freezing index of 1,553 °F-days for a 25-year return period using NOAA data (Watertown Airport)
4. The ratio of surface index to air index (*n*) of 0.7 for bare soil without any overlying soil or ice
5. A dry density of 95 lb/ft^3 for fine-grained, near-surface soils
6. An average water content of 30% based on laboratory results for samples within the frost zone

Using the assumptions above, and input into the modified Berggren Equation, the calculated frost penetration depth for a 25-year return period is approximately 40 inches.

Based on our evaluation, since conditions may exist where snow cover is not present during low temperature extremes, and using a calculated depth of frost penetration, ANS Geo recommends that all structural foundations be founded at 40 inches (3.3 feet) below grade or deeper, for a 25-year design life, to ensure adequate protection from frost conditions which may jeopardize the integrity of subgrade soils and associated substructure.

As predominantly clayey soils were observed near grade, ANS Geo recommends that an unfactored adfreeze (uplift) stress of 1,500 pounds per square foot (10.4 psi) be considered within the 40-inch frost penetration depth of posts for panel foundation sizing and design.

7.3 Soil Shrink & Swell Potential

Shrinkage and swelling of soils refer to the volumetric change (decrease and increase) exhibited in primarily fine-grained soils due to a change in moisture conditions. The extent of shrinking and swelling is largely influenced by the type and amount of clay present in the native near-surface soils. Higher-risk soils generally include fine-grained material with a high clay content, greater than 50 percent by weight, and liquid limits of 50 percent or higher (fat clays). Based on our observed soil conditions and results of laboratory testing, it is our professional opinion that the native on-site soils exhibit a low to negligible shrink and/or swell potential in the event of significant moisture fluctuation.

7.4 Recommended Soil Parameters for Pile Design

Based on our interpretation of the subsurface conditions observed within our investigation programs and results of pile load testing, ANS Geo recommends that the soil parameters, as depicted within Tables 8 and 9, be considered for foundation post design purposes. As bedrock was observed at varying depths throughout our investigation program, ANS Geo has provided recommended parameters for both the soil embedment condition (Table 8) as well as the condition for piles installed through pre-drilled holes into rock (Table 9).

Table 8 – Recommended LPILE Soil Parameters (For Piles Embedded in Only Soil)

Depth	Material	Effective Unit Weight	Internal Friction Angle	Cohesion	Soil Modulus (k)	Soil Strain (E_{50})	Allowable Bearing Capacity	Allowable Side Resistance
0' – 0.5'	Topsoil *(Soft Clay [Matlock])*	95 lb/ft^3	---	100 lb/ft^2	---	0.015	---	---
0.5' – 2'	Clay *(Mod Stiff Clay w/o Free Water)*	105 lb/ft^3	---	750 lb/ft^2	120 lb/in^3	0.010	500 lb/ft^2	---
2' – 6'	Clay *(Mod Stiff Clay w/o Free Water)*	115 lb/ft^3	---	2,500 lb/ft^2	400 lb/in^3	0.005	1,500 lb/ft^2	500 lb/ft^2
6' – 10'	Clay *(Mod Stiff Clay w/o Free Water)*	120 lb/ft^3	---	3,000 lb/ft^2	500 lb/in^3	0.005	2,500 lb/ft^2	650 lb/ft^2

Note: Italicized material types represent our recommended LPILE soil models.

Table 9 – Recommended LPILE Soil Parameters (For Piles Pre-Drilled into Bedrock)

Depth	Material	Effective Unit Weight	Internal Friction Angle	Cohesion	Soil Modulus (k)	Soil Strain (E_{50})	Allowable Bearing Capacity	Allowable Side Resistance
0' – 0.5'	Topsoil *(Soft Clay [Matlock])*	95 lb/ft^3	---	100 lb/ft^2	---	0.020	---	---
0.5' – 2'	Clay *(Mod Stiff Clay w/o Free Water)*	100 lb/ft^3	---	300 lb/ft^2	50 lb/in^3	0.015	500 lb/ft^2	---
2' – X'	Clay *(Mod Stiff Clay w/o Free Water)*	105 lb/ft^3	---	750 lb/ft^2	150 lb/in^3	0.009	1,500 lb/ft^2	400 lb/ft^2
X' +	Bedrock *(Stiff Clay w/o Free Water)*	150 lb/ft^3	---	3,000 lb/ft^2	---	0.001	5,000 lb/ft^2	750 lb/ft^2

Note: Italicized material types represent our recommended LPILE soil models.

ANS Geo recommends that allowable side resistance within the upper 3.3 feet be neglected due to frost impact, and adfreeze stresses, as noted in Section 7.2, be considered. Pile load testing results and subsurface observations were evaluated by ANS Geo using LPILE software to provide these refined soil parameters. ANS Geo notes that the soil parameters depicted within Tables 8 and 9 represent values calibrated to curve-fit our lateral load test data; these parameters (effective unit weight and internal friction angle) should not be relied upon for other site foundation designs.

It should also be noted that the overburden (soil) parameters depicted for the pre-drilled rock condition (Table 9) are intentionally low, as the pre-drilled holes limit the ability of the overburden soils to be in full contact with the pile's surface area. It is our recommendation that verification load testing and detailed structural calculations be performed prior to construction to confirm these recommendations.

8 Construction Recommendations

8.1 Excavation

Depending on proposed foundation configurations, degree of earthwork, and depth of utilities, some excavations may extend deeper than four feet below grade. Excavations deeper than four feet should be shored or sloped and benched, in accordance with OSHA regulations, to ensure safe working conditions within the excavations. For benching purposes, overburden clay soil may be considered as "Type A" material and should be sloped no steeper than ¾H:1V (horizontal to vertical). Intact bedrock, if stable, may be cut vertically for temporary excavations, however, all OSHA soil classifications should be field-determined by the contractor's "competent person" prior to excavation. Any proposed shoring systems should be designed by the contractor's "competent person", be certified by a Professional Engineer licensed in the State of New York, and should be submitted to the engineer for review.

The contractor should expect shallow bedrock and potentially cobbles or boulders within excavations and earthwork activities. ANS Geo notes that pre-drilling for post locations to clear rock material should also be expected and is further discussed in **Section 8.6**.

8.2 Dewatering

ANS Geo did not observe groundwater at the time of our investigation program. Notwithstanding, the contractor should be prepared to manage shallow groundwater, perched water, and/or infiltrated stormwater as needed using localized pump-and-sump, wellpoint, or similar techniques to allow for concrete foundation construction in-the-dry. Water discharge should be managed in compliance with applicable state and local regulations. The contractor should be sure to grade the surface as necessary to divert stormwater away from open excavation to the extent possible.

8.3 Subgrade Preparation

Prior to the installation of shallow concrete foundations, ANS Geo recommends overexcavating the subgrade by at least six (6) inches, lining the exposed material with a geotextile separation fabric, and bringing the subgrade back up to the design foundation elevation with compacted structural fill as specified within Table 10. Native material beneath the separation fabric should be inspected for unsatisfactory conditions such as standing water, frozen soil, organics, protruding cobbles or boulders, or deleterious materials. Should any unsatisfactory conditions exist within the native subgrade, the excavation should be undercut an additional six inches (12 total inches beneath proposed foundation depth) prior to placement of the geotextile separation fabric.

Table 10 – Recommended Gradation of Structural Fill

Sieve Size	Percent Passing
3-inch	100
1 ½-inch	60 – 100
No. 4	30 – 60
No. 200	0 – 10

Structural fill material should be placed in loose lifts not exceeding eight (8) inches in height and be compacted to at least 95 percent of its Modified Proctor Density in accordance with ASTM D1557. For excavations into bedrock which are required in order to support foundations on rock, the exposed rock face should be broom-cleaned to remove fines, power-washed or cleaned of any infilling or surface detritus, followed by concrete foundations cast directly onto the prepared bedrock. The use of rock anchors or other positive connection may be required if the foundations are installed shallower than the recommended foundation depth, and if drainage is not provided to prevent the build up of water which may form ice lenses beneath proposed structures.

8.4 Backfilling and Re-use of Native Soils

ANS Geo notes that native fine-grained soils (clays) on site will likely be difficult to handle, place, and compact without proper moisture conditioning and protection. ANS Geo recommends the following measures be considered to reduce the adverse impacts of moisture-sensitive soils:

- Positive measure should be implemented and maintained to intercept and direct surface water away from moisture-sensitive subgrade surfaces.
- Subgrade surfaces should be sloped and, as appropriate, seal-rolled to facilitate proper drainage. Surfaces should be properly prepared in anticipation of inclement weather. Moisture should not be allowed to collect on subgrade surfaces.
- To the extent practical, the limits of exposed subgrade soils should be minimized.
- Construction traffic should be limited to properly constructed haul roads.
- Disturbed soils should be removed and replaced with compacted controlled fill material.
- In place moisture contents should be maintained with two percent wet/dry of the optimum moisture content as determined by the Modified Proctor Test (ASTM D1557).

These soils may be re-used across the project area for fill in landscaped areas; however, it should not be used under or above foundations or load-bearing structures where typically imported structural fill is used. Native material used as backfill for cable trenches should be handled and placed at a moisture content at or above its optimum value to ensure representative thermal properties are maintained.

In areas around and above installed foundations, large utilities, and other buried site features, ANS Geo recommends importing a clean granular material with less than 15 percent fine-grained content for use as general backfill. General backfill material should be screened of any cobbles, boulders, and any particles larger than 3 inches in diameter, and should not be used beneath any load-bearing structures. General backfill should be placed in loose lift thicknesses not exceeding 12 inches and be compacted to at least 95 percent of its Modified Proctor Density (ASTM D1557). Soil used as backfill should not be handled when frozen and should be free of excessive moisture, organics, and deleterious material.

In fill areas beneath foundations, access roads, and load-bearing structures, ANS Geo recommends structural fill as described in **Section 8.3** and Table 10.

8.5 Access Roads

ANS Geo understands that an access road will likely be required to enter and exit the project site as well as provide access to the equipment pad locations. It is also our understanding that this access road will likely be unpaved, to accommodate occasional light vehicular traffic such as utility pickup truck or similar vehicle. As such, ANS Geo recommends that access roads be constructed with at least 10 inches of compacted crushed stone as specified within Table 11.

Table 11 – Recommended Gradation of Crushed Stone

Sieve Size	Percent Passing
1 ½-inch	100
¾-inch	55 – 90
No. 4	25 – 50
No. 50	5 – 20
No. 200	3 – 10

Prior to roadway construction, the subgrade should be stripped of vegetation and topsoil, and be proof-rolled with at least four (4) roundtrip passes of a smooth-drum roller with a minimum operating weight of eight (8) tons. The prepared subgrade should be confirmed to maintain a minimum CBR value of 10. If required, additional stabilization may be obtained through installation of geotextile reinforcement (“geogrid”, or similar)

or chemical treatment of the subgrade including introduction of lime or cement. Crushed stone should be placed in loose lifts not exceeding eight (8) inches in height and be compacted to at least 95 percent of its Modified Proctor Density (ASTM D1557).

8.6 Pile Drivability

ANS Geo anticipates that, as typical with solar farm construction, solar panels will be supported by steel H-Piles (wide-flanged sections) driven to approximately 9 to 10 feet below grade. It is ANS Geo's professional opinion that the parameters provided in **Section 7.3** may be used to preliminarily size the proposed piles, however, we recommend verification load testing prior to construction using final design loads, the intended pile profile, and the planned pile depth. These steel piles are typically installed via direct-push, vibration, and/or percussive hammer methods.

Based on our observations within our limited investigation program, we expect that frequent refusals (bedrock) will be encountered at the foundation post locations within the anticipated embedment depths. Based on the expectation of shallow bedrock, we anticipate that the approximate rate of pile refusals during construction will be approximately 40 to 50 percent when pile embedments are 9-feet or shallower; however, the potential for shallow pile refusal will increase to approximately 70 to 80 percent for piles which are planned to have greater than 9-feet of embedment. It should be noted that these are high-level estimates based on a limited number of soil borings across the site. This refusal estimate is required to be further calibrated by a pile load testing program.

As such, ANS Geo recommends that the contractor be prepared to pre-drill at proposed post locations. We recommend that pre-drilled holes be completed to a diameter slightly smaller than the diagonal dimension of the proposed pile section to ensure a tight fit once the pile is driven to its targeted depth. For example, a six (6)-inch diameter hole may be drilled and utilized for W6x9 section (approx. 7.1-inch diagonal measurement). The contractor should be aware, however, that heavier sections (ie. W6x12 or W6x15) may have limiting "bending" capacity in its flanges, and therefore require a hole of a slightly larger proportion. ANS Geo has prepared a refusal "heat map" depicting the recorded depth of drilling refusal within the completed soil borings, provided within **Attachment A**.

9 Limitations

ANS Geo notes that the findings and recommendations presented within this Geotechnical Report are based on our investigation program conducted in February through April 2021 and our engineering judgment. Should the scope of the project or proposed site layout change, ANS Geo should be given the opportunity to review the applicability of the collected information and modify our recommendations, as needed.

We sincerely appreciate the opportunity to support this project, and please feel free to contact us should you have any questions regarding the findings of this Report.

Attachments

Attachment A – Location Plans

Attachment B – Soil Boring Logs

Attachment C – Electrical Resistivity Testing Results

Attachment D – Laboratory Results

Attachment E – Pile Load Testing Logs

Attachment F – Seismic Support Data

Attachment G – NRCS Soil Report

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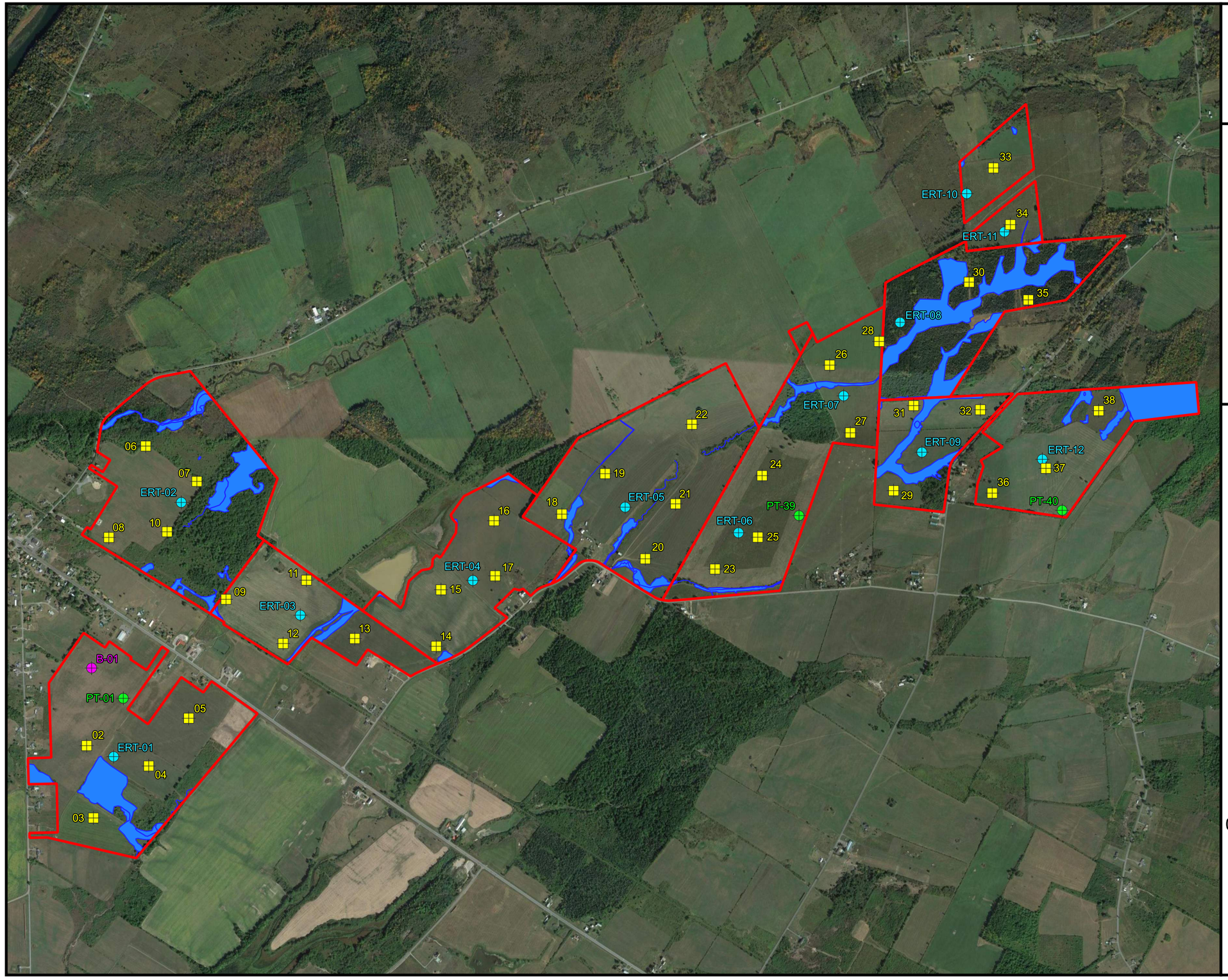
Attachment A

Location Plans



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Client:

aes

INVESTIGATION LOCATION PLAN

AES
RIVERSIDE SOLAR PROJECT
JEFFERSON COUNTY,
NEW YORK

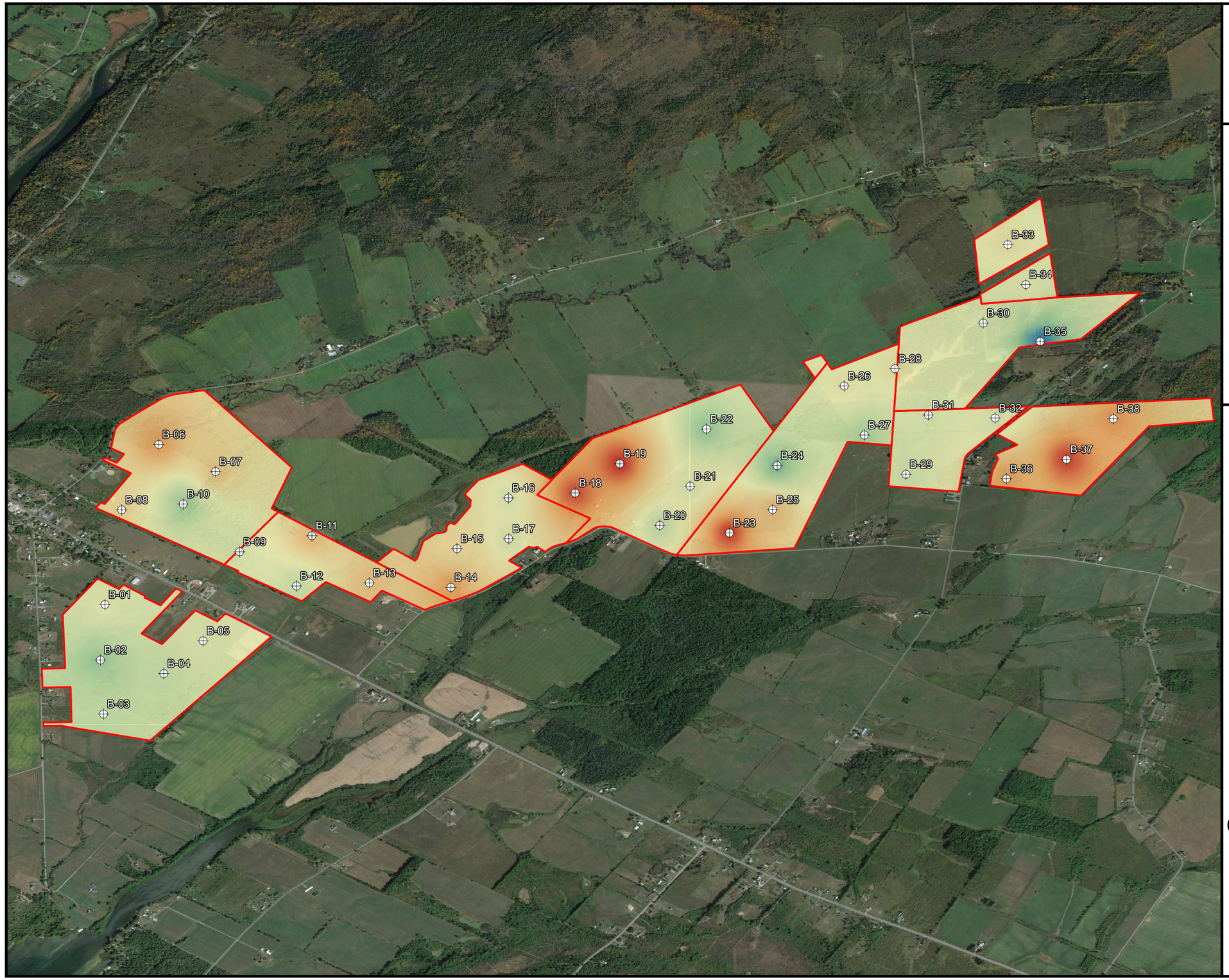
Legend

- Site Boundary
- Delineated Wetland/Water Feature
- Soil Boring and Pile Load Test
- Soil Boring Only
- Pile Load Test Only
- Electrical Resistivity Test

0 1,500 3,000 4,500 ft

Reference Scale: 1:25,000
Absolute Scale: 1 inch = 1,500 feet
Scale at 11" x 17" AS SHOWN

Prepared by: Kyle Hansen
Date: April 9, 2021
Drawing Number: ILP-1 Rev.0



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Client:

aes

REFUSAL HEAT MAP

AES
RIVERSIDE SOLAR PROJECT
CHAUMONT, NEW YORK

Legend

- Site Boundaries
- Soil Boring Location

Approx. Depth to Refusal (ft)

- 3 - 6
- 6 - 9
- 9 - 12
- 12 - 15
- > 15

0 1,500 3,000 4,500 ft

Absolute Scale: 1 inch = 1,500 feet
Scale at 11" x 17" AS SHOWN

Prepared by: Kyle Hansen
Date: April 9, 2021
Drawing Number: RHM-1 Rev.0

ANS GEO

Attachment B

Soil Boring Logs

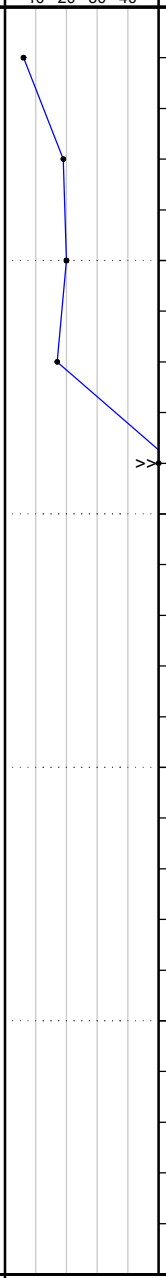
Soil Boring Log

B-01

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.0583134 N, -76.120883 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 6": Topsoil				
	S-1	14	3 3 3 4	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	3.5	-
	S-2	24	4 7 12 14	19		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	-
5	S-3	24	8 9 11 13	20		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist to wet (CH)	H	H	>4.5	-
	S-4	24	4 7 10 12	17		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	-
	S-5	8	8 50/4"	> 50		Hard, brown to gray Silty CLAY, little fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	2.5	-
10						End of Boring at 9.5 feet BGS Borehole backfilled with soil cuttings				
15										
20										



Drilling & Strata Notes

- Frozen to 14 inches BGS
- Root present to 2.5 feet BGS
- Auger Refusal at 9.5 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

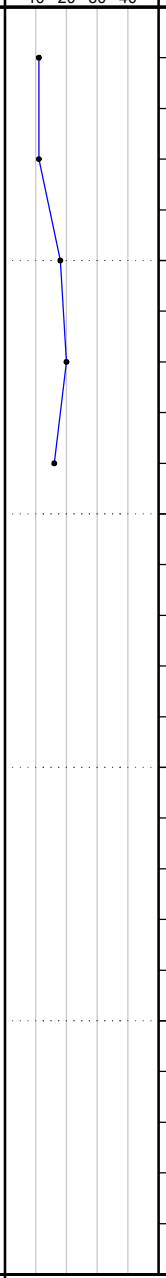
Soil Boring Log

B-02

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.05506 N, -76.121153 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 4": Topsoil				
	S-1	12	3 7 4 4	11	CH	Stiff, brown Silty CLAY wet (CH)	H	H	3.5	-
	S-2	21	4 4 7 12	11		Stiff, brown Silty CLAY, moist (CH)	H	H	2	-
5	S-3	24	5 8 10 13	18		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>	-
	S-4	24	6 9 11 12	20		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	4.5	-
	S-5	24	6 7 9 11	16		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	2.5	-
10						End of boring at 12.3 feet BGS Borehole backfilled with soil cuttings				
15										
20										



Drilling & Strata Notes

Frozen to 14 inches BGS
Roots present to 12 inches BGS

Auger grinding from 10.5 to 12.3feet BGS

Auger refusal at 12.3 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

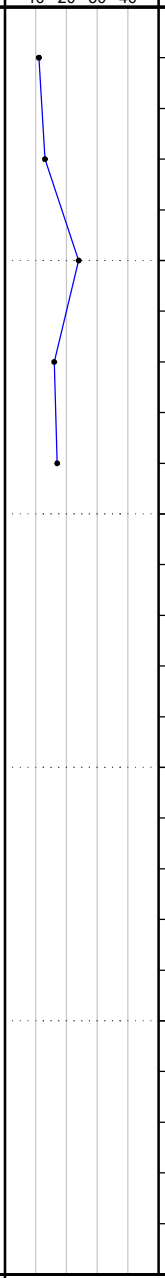
Soil Boring Log

B-03

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.051892 N, -76.120971 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/22/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/22/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 8 inches BGS
	S-1	13	10 5 6 4	11	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	2.75	-	
	S-2	24	6 4 9 13	13		Stiff, brown Silty CLAY, wet (CH)	H	H	4	-	
5	S-3	24	5 10 14 16	24		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	4	-	
	S-4	24	7 7 9 14	16		Very stiff, brown to gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
	S-5	24	6 7 10 13	17		Very stiff, gray Silty CLAY, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
10						End of boring at 10.5 feet BGS Beginning of rock coring					Auger refusal at 10.5 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Core Boring Log

B-03

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.051892 N, -76.120971 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/22/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/22/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Casing Type:**	HSA	**Core Barrel Type:**		**Core Bit Type:**	Diamond
Rig Type:	Track	**Casing Length:**	5 feet	**Core Barrel Length:**	5 feet	**Core Bit Length:**	
Drill Method:	Hollow Stem Auger	**Casing I.D.:**	2.25 inches	**Core Barrel I.D.:**	2 inches	**Core Bit I.D.:**	2 inches

Depth (ft)	Avg Core Rate (min/ft)	Run No.	Recovery (in. / %)	RQD (in. / %)	Hardness	Weathering	Graphic Log	Visual Classification	Depth (ft.)	Discontinuities: Type	Dip Angle	Roughness	Weathering	Aperture	Infilling	Drilling & Strata Notes
	3.53							Limestone, gray, fine-grained, fresh, strong, moderate spacing	11.1	J	65	P,R	DS	T	N	Medium Weathered from 10.5 to 12 feet BGS
	2.43								12.1	J	10	P,R	DS	O	N	
	2.78	R-1	60 100%	60 100%	R4	FR			13.1	J	5	S,R	DS	PO	N	
	2.60															
15	3.02															
								End of rock coring at 15.5 feet BGS Borehole backfilled with soil cuttings								
20																
25																
30																

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)

No water encountered

BGS = Below Ground Surface

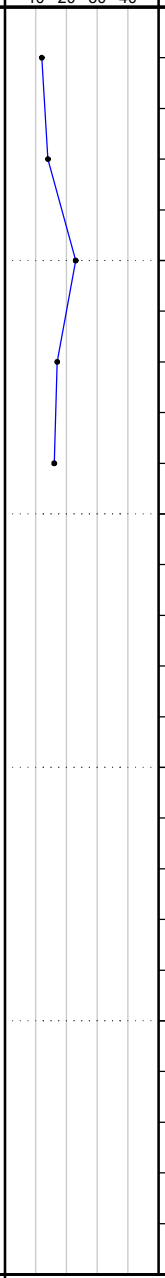
Soil Boring Log

B-04

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.054261 N, -76.117435 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 6": Topsoil				
	S-1	15	14 9 3 3	12	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-
	S-2	24	4 5 9 12	14		Stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
5	S-3	24	7 9 14 14	23		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
	S-4	24	5 7 10 14	17		Very stiff, brown to gray Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
	S-5	24	4 7 9 14	16		Very stiff, gray Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
10						End of boring at 10.5 feet BGS Borehole backfilled with soil cuttings				
15										
20										



Drilling & Strata Notes

- Frozen to 18 inches BGS
- Roots present to 3 feet BGS
- Auger refusal at 10.5 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-05

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.056184 N, -76.115133 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Graphic Log	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
							Top 6": Topsoil					Frozen to 14 inches BGS
	S-1	9	6 7 4 5	11	CL		Stiff, brown Silty CLAY, moist (CL)	H	M	2.75	-	
	S-2	24	4 7 12 17	19			Very stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	3	-	Roots present to 3 feet BGS
5	S-3	24	5 9 12 13	21			Very stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	4	-	
	S-4	24	4 6 9 13	15	CH		Very stiff, gray Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-	
	S-5	13	4 7 50/3"	> 50			Hard, gray Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-	Limestone fragments in spoon tip
10							End of boring at 9.5 feet BGS Borehole backfilled with soil cuttings					Auger refusal at 9.5 feet BGS
15												
20												

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

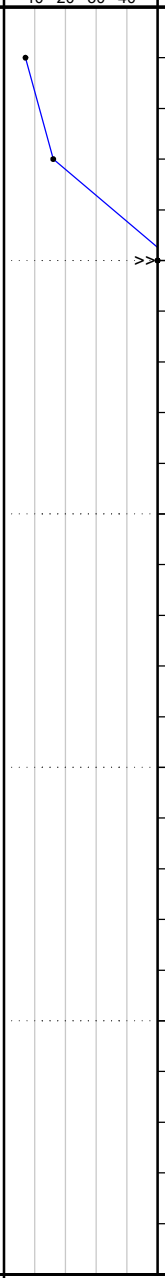
Soil Boring Log

B-06

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.067697 N, -76.117728 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Graphic Log	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
							Top 6": Topsoil				
	S-1	13	2 2 5 6	7	CH		Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-
	S-2	24	3 7 9 13	16			Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
5	S-3	16	6 14 50/4"	> 50			Hard, brown Silty CLAY, some coarse to fine Sand, trace coarse to fine Gravel, moist (CH)	H	H	>4.5	-
							End of boring at 5.9 feet BGS Beginning of rock coring				



Drilling & Strata Notes

Frozen to 8 inches BGS

Auger refusal at 5.9 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Core Boring Log

B-06

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.067697 N, -76.117728 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Casing Type:**	HSA	**Core Barrel Type:**		**Core Bit Type:**	Diamond
Rig Type:	Track	**Casing Length:**	5 feet	**Core Barrel Length:**	5 feet	**Core Bit Length:**	
Drill Method:	Hollow Stem Auger	**Casing I.D.:**	2.25 inches	**Core Barrel I.D.:**	2 inches	**Core Bit I.D.:**	

Depth (ft)	Avg Core Rate (min/ft)	Run No.	Recovery (in. / %)	RQD (in. / %)	Hardness	Weathering	Graphic Log	Visual Classification	Depth (ft.)	Discontinuities: Type	Dip Angle	Roughness	Weathering	Aperture	Infilling	Drilling & Strata Notes
	2.93							Limestone, gray, fine-grained, fresh, strong, moderate spacing								
	3.22								6.9	J	0	P,R	DS	T	N	
	3.35	R-1	48 80%	28 47%	R4	FR			8.2	J	20	S,R	DS	PO	N	
	3.75								9	J	0	U,R	FR	PO	N	
10	3.73								10.6	J	5	P,R	FR	T	N	
	2.63							Limestone, gray, fine-grained, fresh, strong, moderate spacing								
	2.38								12.3	J	10	P,R	DS	T	N	
	2.47	R-2	60 100%	48 80%	R4	FR										
	2.18								14.1	J	0	P,R	DS	PO	N	
15	1.77								15.2	J	0	P,R	FR	PO	N	
								End of rock coring at 15.9 feet BGS Borehole backfilled with soil cuttings								
20																
25																

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)

No water encountered

BGS = Below Ground Surface

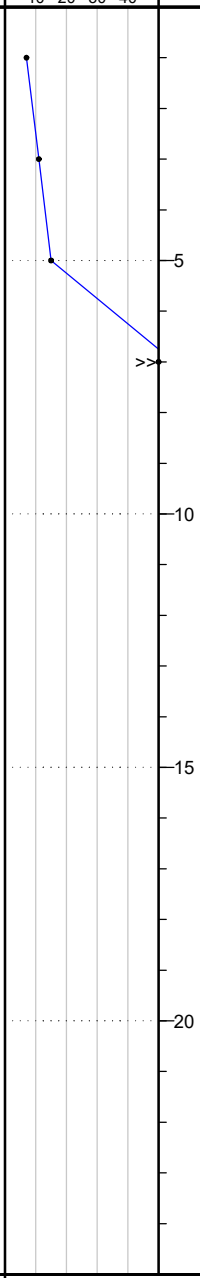
Soil Boring Log

B-07

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.06611 N, -76.114395 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 6 inches BGS Roots present to 11 inches BGS
	S-1	11	2 3 4 6	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	2.25	4	
	S-2	24	2 4 7 4	11		Stiff, brown Silty CLAY, moist (CH)	H	H	4.5	4	
5	S-3	24	4 6 9 11	15		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	5.5	
	S-4	14	4 6 50/2"	> 50		Hard, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
						End of boring at 7.4 feet BGS Borehole backfilled with soil cuttings					Auger refusal at 7.4 feet BGS
10											
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

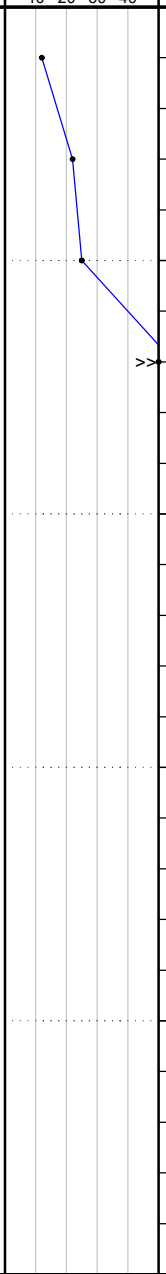
Soil Boring Log

B-08

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.063866 N, -76.119904 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 4": Topsoil				
	S-1	11	6 7 5 8	12	CL	Stiff, brown Silty CLAY, moist (CL)	H	M	2.5	-
	S-2	24	4 9 13 21	22		Very stiff, brown Silty CLAY, moist (CL)	H	M	2.75	-
5	S-3	24	7 12 13 17	25		Very stiff, brown Silty CLAY, moist (CL)	H	M	>4.5	-
	S-4	18	4 8 8 50/1"	> 50		Very stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CL)	H	M	>4.5	-
						End of boring at 7.9 feet BGS Borehole backfilled with soil cuttings				
10										
15										
20										



Drilling & Strata Notes

Frozen to 8 inches BGS
Roots present to 11 inches BGS

Auger refusal at 7.9 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

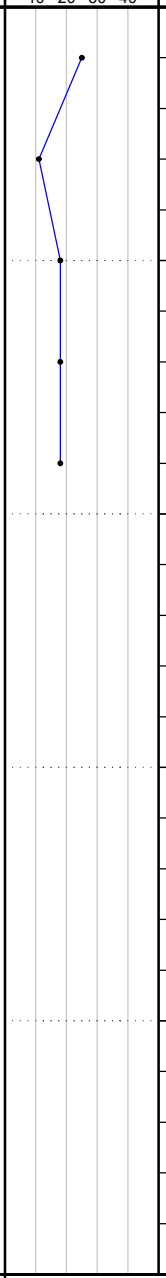
Soil Boring Log

B-09

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.061405 N, -76.112987 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 15 inches BGS
	S-1	20	5 18 7 6	25	CH	Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	4.5	
	S-2	22	4 4 7 13	11		Medium stiff, brown Silty CLAY, mosit (CH)	H	H	3	4.5	Roots to 2.5 feet BGS
5	S-3	24	5 8 10 13	18		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	9	5
	S-4	24	5 8 10 14	18		Very stiff, brown to gray Silty CLAY, moist (CH)	H	H	>4.5	9	
	S-5	24	6 8 10 6	18		Very stiff, gray Silty CLAY, moist (CH)	H	H	>4.5	9	
10						End of boring at 9.8 feet BGS Borehole backfilled with cuttings					10 Auger refusal at 9.8 feet BGS
15											15
20											20



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

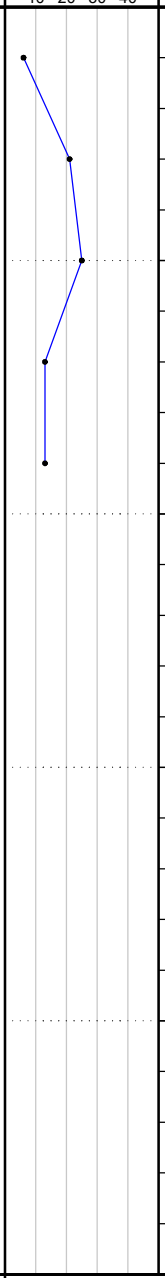
Soil Boring Log

B-10

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.064209 N, -76.116299 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/23/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/23/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 8": Topsoil				
	S-1	15	2 3 3 3	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	2.75	-
	S-2	24	3 6 15 21	21		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	-
5	S-3	24	6 10 15 21	25		Very stiff, brown Silty CLAY, trace fine Gravel, moist (CH)	H	H	>4.5	-
	S-4	24	4 6 7 10	13		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	-
	S-5	24	3 7 6 15	13		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	-
10										
						End of boring at 11.9 feet BGS Borehole backfilled with cuttings				
15										
20										



Drilling & Strata Notes

Frost to 10 inches BGS
Roots present to 24 inches BGS

Auger refusal at 11.9 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-11

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.062348 N, -76.108746 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 6 inches BGS
	S-1	15	3 3 5 5	8	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.5	3.5	
	S-2	15	3 4 6 9	10		Stiff, brown Silty CLAY, moist (CH)	H	H	2.75	5	Roots present to 2.5 feet BGS
5	S-3	19	4 7 11 12	18		Very stiff, gray Silty CLAY, moist (CH)	H	H	4	4.5	
	S-4	3	50/4"	> 50		Hard, brown Silty CLAY, some fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	-	-	Auger grinding from 6 to 6.9 feet BGS Auger refusal at 6.9 feet BGS
						End of boring at 6.9 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40 (>> at 6.9 ft)

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-12

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.059403 N, -76.10965 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
0						Top 6": Topsoil					Frozen to 8 inches BGS
	S-1	18	7 4 5 5	9	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.75	1	
	S-2	24	4 6 8 14	14		Stiff, brown Silty CLAY, moist (CH)	H	H	4	-	Roots present to 28 inches BGS
5	S-3	24	6 8 9 13	17		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	8	
	S-4	24	5 6 9 12	15		Very stiff, gray Silty CLAY, moist (CH)	H	H	>4.5	9	
	S-5	24	6 8 8 12	16		Very stiff, gray Silty CLAY, moist (CH)	H	H	>4.5	9	
10						End of boring at 10.5 feet BGS Borehole backfilled with cuttings					Auger grinding from 10.3 - 10.5 feet BGS Auger refusal at 10.5 feet BGS
15											
20											

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-13

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.059584 N, -76.105374 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 12 inches BGS
	S-1	18	2 5 5 5	10	CL	Stiff, brown Silty CLAY, moist (CL)	H	M	3	4.5	
	S-2	18	5 5 8 9	13		Stiff, brown Silty CLAY, moist (CL)	H	M	3.25	4	
5	S-3	24	6 6 9 13	15	CH	Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	5	
	S-4	8	5 50/4"	> 50		Hard, brown Silty CLAY, trace coarse to fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	4.25	Auger grinding from 6.8 to 7.3 feet BGS Auger refusal at 7.3 feet BGS
						End of boring at 7.3 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40 (>> at 7.3 ft)

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

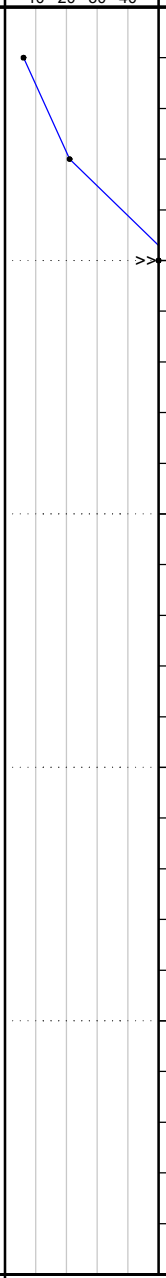
Soil Boring Log

B-14

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.05932 N, -76.100597 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 10 inches BGS
	S-1	15	5 3 3 9	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	3	-	
	S-2	24	5 9 12 20	21		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	-	Roots present to 2.5 feet BGS
5	S-3	16	5 9 12 50/0"	> 50		Very stiff, brown Silty CLAY, little coarse to fine Gravel, little coarse to fine Sand, moist (CH)	H	H	>4.5	-	Limestone fragments in spoon tip Auger refusal at 5.8 feet BGS
						End of boring at 5.8 feet BGS Borehole backfilled with cuttings					Auger refusal at 5.8 feet BGS



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-15

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.06159 N, -76.100237 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 6 inches BGS
	S-1	12	1 4 4 7	8	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	-	-	
	S-2	20	3 6 8 12	14		Stiff, brown Silty CLAY, moist (CH)	H	H	-	-	Roots present to 2.5 feet BGS
5	S-3	24	4 6 7 10	13		Stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	-	-	
	S-4	21	5 5 6 50/5"	> 50	ML	Stiff, light brown SILT, some coarse to fine Gravel, some coarse to fine Sand, little Clay, moist (ML)	H	M	-	-	Auger grinding from 7.9 to 8.2 feet BGS Auger refusal at 8.2 feet BGS
						End of boring at 8.2 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40 (>> at S-4)

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

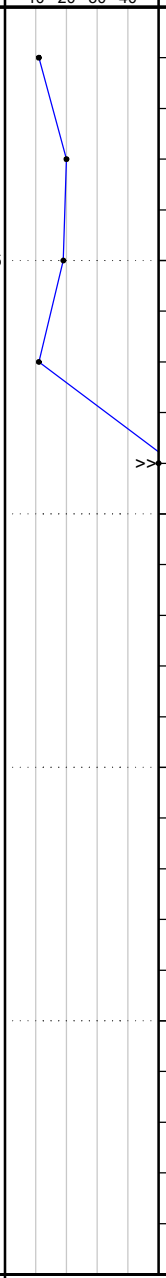
Soil Boring Log

B-16

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.064562 N, -76.09722 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 6 inches BGS
	S-1	16	6 5 6 8	11	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	2.25	2.5	
	S-2	20	4 7 13 14	20		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	3	2.5	Roots present to 2.5 feet BGS
5	S-3	24	7 8 11 13	19	CL	Very stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	4.25	4.25	
	S-4	24	5 5 6 9	11		Stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	4	5	
	S-5	16	5 7 50/4"	> 50		Hard, brown Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CL)	H	M	4	5	
10						End of boring at 9.6 feet BGS Borehole backfilled with cuttings					Auger refusal at 9.6 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

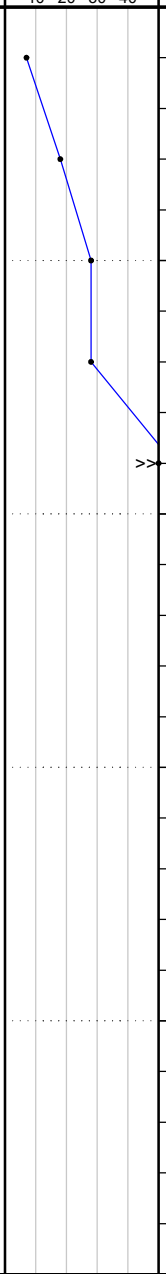
Soil Boring Log

B-17

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.062171 N, -76.097202 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/24/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/24/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 8": Topsoil				
	S-1	8	3 4 3 4	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	2	5
	S-2	21	4 8 10 20	18		Very stiff, brown Sandy CLAY, little coarse to fine Gravel, little Silt, moist (CH)	H	H	1.5	-
5	S-3	24	6 11 17 22	28		Very stiff, light brown Sandy CLAY, little coarse to fine Gravel, little Silt, moist (CH)	H	H	4	-
	S-4	24	8 10 18 16	28		Very stiff, light brown Sandy CLAY, little coarse to fine Gravel, little Silt, moist (CH)	H	H	>4.5	-
	S-5	16	8 13 50/5"	> 50	SM	Very dense, light brown coarse to fine SAND, some Silt, some fine Gravel, little Clay, moist (SM)				
10						End of boring at 9.8 feet BGS Borehole backfilled with cuttings				
15										
20										



Drilling & Strata Notes

Frozen to 4 inches BGS
Roots present to 8 inches BGS

10 Auger refusal at 9.8 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-18

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.064855 N, -76.09331 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 5 inches BGS Roots present to 12 inches BGS
	S-1	12	2 3 4 6	7	CH	Medium stiff, brown Sitly CLAY, moist (CH)	H	H	2	6.75	
	S-2	18	4 6 8 11	14		Stiff, brown Sitly CLAY, trace fine Sand, moist (CH)	H	H	4.5	3.75	
						End of boring at 4 feet BGS Borehole backfilled with cuttings					Auger refusal at 4.0 feet BGS

N-Value: 10 20 30 40

5 10 15 20

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-19

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.066566 N, -76.09069 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Graphic Log	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	N-Value (10 20 30 40)	Drilling & Strata Notes
							Top 6": Topsoil						Frozen to 2 inches BGS Roots present to 15 inches BGS
	S-1	15	1 1 3 6	4	CH		Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.75	2.5		
	S-2	4	3 50/1"	> 50			Hard, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	3	5	>>	Auger grinding from 2.1 to 3.3 feet BGS Auger refusal at 3.3 feet BGS
							End of boring at 3.3 feet BGS Borehole backfilled with cuttings						

5 — 10 — 15 — 20

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

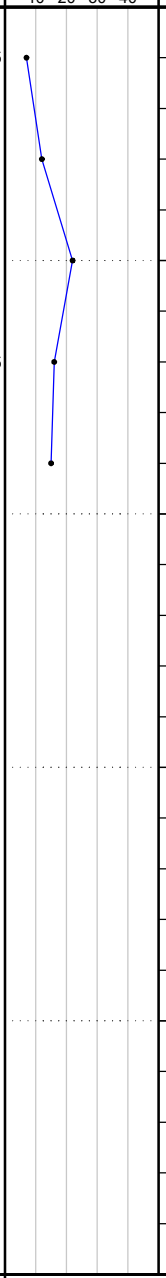
Soil Boring Log

B-20

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.062958 N, -76.088347 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 8 inches BGS Roots present to 17 inches BGS
	S-1	17	4 3 4 5	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.75	6.75	
	S-2	20	3 5 7 12	12	CL	Very stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	3.25	8.5	
5	S-3	24	6 8 14 16	22		Very stiff, brown Silty CLAY, trace fine Sand, moist (CL)	H	M	>4.5	12	
	S-4	24	4 7 9 13	16		Very stiff, gray Silty CLAY, trace fine Sand, moist (CL)	H	M	>4.5	12.5	
	S-5	24	4 6 9 13	15		Very stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CL)	H	M	>4.5	15	
10						End of boring at 10.6 feet BGS Beginning of rock coring					Auger refusal at 10.6 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Core Boring Log

B-20

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.062958 N, -76.088347 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Casing Type:**	HSA	**Core Barrel Type:**		**Core Bit Type:**	Diamond
Rig Type:	Track	**Casing Length:**	5 feet	**Core Barrel Length:**	5 feet	**Core Bit Length:**	
Drill Method:	Hollow Stem Auger	**Casing I.D.:**	2.25 inches	**Core Barrel I.D.:**	2 inches	**Core Bit I.D.:**	

Depth (ft)	Avg Core Rate (min/ft)	Run No.	Recovery (in. / %)	RQD (in. / %)	Hardness	Weathering	Graphic Log	Visual Classification	Depth (ft.)	Discontinuities: Type	Dip Angle	Roughness	Weathering	Aperture	Infilling	Drilling & Strata Notes
	3.52							Limestone, gray, fine-grained, fresh, medium strong, moderate spacing	11.2	J	5	P,R	FR	W	N	
	3.13								11.8	J	60	P,R	FR	T	N	
	2.87	R-1	47 78%	41 68%	R3	FR			12.9	J	0	P,R	FR	O	N	
	3.18								13.9	J	0	P,R	FR	PO	N	
15	2.70															
								End of rock coring at 15.6 feet BGS Borehole backfilled with soil cuttings								
20																
25																
30																

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)

No water encountered

BGS = Below Ground Surface

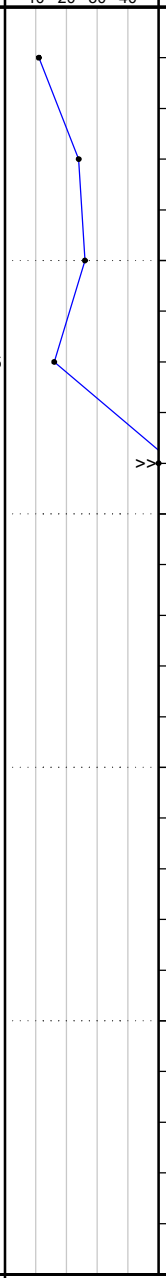
Soil Boring Log

B-21

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.065255 N, -76.086567 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 4": Topsoil					Frozen to 12 inches BGS Roots present to 17 inches BGS
	S-1	19	7 6 5 7	11	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	3.5	5	
	S-2	24	8 10 14 18	24		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	2.5	
5	S-3	24	8 12 14 16	26		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	2.5	
	S-4	24	4 7 9 14	16		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	2.5	1.25	
	S-5	14	5 9 50/3"	> 50		Hard, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	-	-	
10						End of boring at 9.7 feet BGS Borehole backfilled with cuttings					Auger refusal at 9.7 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

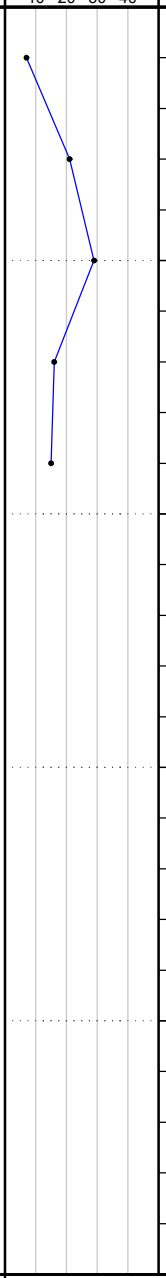
B-22

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.068605 N, -76.085606 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 6": Topsoil				
	S-1	17	2 3 4 7	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	2.5	2.5
	S-2	24	4 8 13 19	21		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	2.5
5	S-3	24	7 14 15 22	29		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	8
	S-4	24	4 6 10 13	16		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	>4.5	20
	S-5	24	5 6 9 14	15		Very stiff, brown Silty CLAY, moist (CH)	H	H	>4.5	12
10										
						End of boring at 12.4 feet BGS Borehole backfilled with cuttings				
15										
20										

N-Value



Drilling & Strata Notes

Frozen to 4 inches BGS
Roots present to 16 inches BGS

Auger refusal at 12.4 feet BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-23

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.062513 N, -76.084257 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
0						Top 4": Topsoil					Frozen to 8 inches BGS Roots present to 13 inches BGS
	S-1	13	2 3 3 5	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	2.25	3.75	
	S-2	13	5 9 50/6	> 50		Hard, gray Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CH)	H	H	3.5	6.25	Auger refusal at 3.5 feet BGS
5						End of boring at 3.5 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40 (>> at S-2)

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-24

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.066462 N, -76.081458 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 4 inches BGS
	S-1	13	5 5 8 6	13	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.5	1.75	
	S-2	19	3 7 12 21	19		Very stiff, brown Silty CLAY, moist (CH)	H	H	3.5	1.25	Roots present to 2.5 feet BGS
5	S-3	24	7 11 14 17	25		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	8.25	
	S-4	24	4 6 7 11	13		Stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	13.75	
	S-5	24	5 6 8 12	14		Stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	8.75	
10											
						End of boring at 12.9 feet BGS Borehole backfilled with cuttings					Auger refusal at 12.9 feet BGS
15											
20											

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-25

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.063879 N, -76.081727 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/25/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/25/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 5 inches BGS Roots present to 9 inches BGS
	S-1	9	4 4 5 4	9	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	2	1.25	
	S-2	21	4 4 10 15	14		Stiff, brown Silty CLAY, trace coarse to fine Gravel, trace fine Sand, moist (CH)	H	H	>4.5	10	
5	S-3	24	5 8 10 16	18		Very stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	11	
	S-4	3	50/4"	> 50		Hard, gray to brown Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CH)	H	H	>4.5	-	Auger refusal at 7 feet BGS
						End of boring at 7 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-26

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.071132 N, -76.07753 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 4 inches BGS Roots present to 14 inches BGS
	S-1	14	1 2 4 4	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	3	5	
	S-2	19	4 8 11 18	19		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	4.25	8.75	
5	S-3	24	7 8 9 17	17		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4	10	
	S-4	24	5 5 9 12	14		Stiff, gray Silty CLAY, trace coarse to fine Sand, moist (CH)	H	H	3.5	10	
	S-5	7	5 50/2"	> 50		Hard, gray Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CH)	H	H	1.25	2.5	Auger grinding from 7.8 to 8.7 feet BGS Auger refusal at 8.7 feet BGS
10						End of boring at 8.7 feet BGS Borehole backfilled with cuttings					
15											
20											

N-Value: 10 20 30 40 (>>> at 8.7 ft)

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

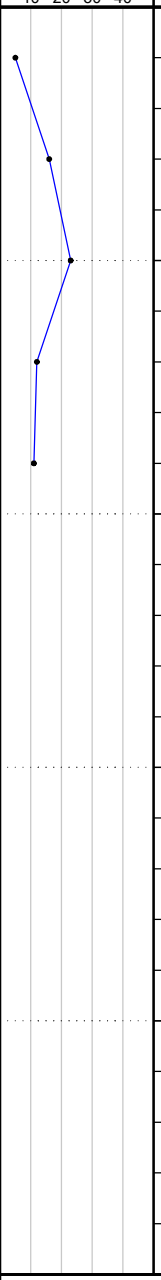
Soil Boring Log

B-27

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.068255 N, -76.076341 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)
						Top 6": Topsoil				
	S-1	18	4 2 3 4	5	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1	-
	S-2	21	5 6 10 17	16		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	3	-
5	S-3	18	6 9 14 19	23		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	4.25	-
	S-4	20	5 5 7 9	12		Stiff, brownish gray Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4	-
	S-5	24	5 5 6 9	11		Stiff, gray Silty CLAY, trace fine Sand, moist (CH)	H	H	4	-
10										
						End of boring at 11.5 feet BGS Borehole backfilled with cuttings				
15										
20										



Drilling & Strata Notes

Frozen to 10 inches BGS
Roots present to 18 inches BGS

Auger refusal at 11.5 BGS

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

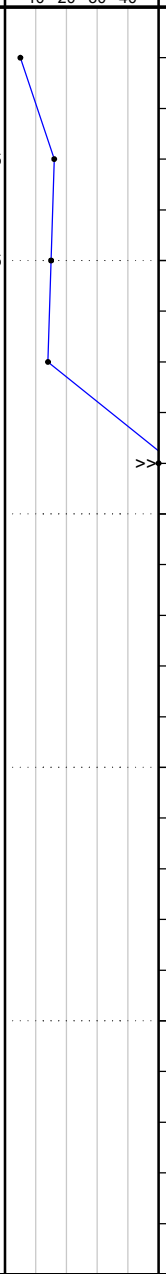
Soil Boring Log

B-28

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.072141 N, -76.074552 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Roots present to 17 inches BGS
	S-1	17	1 2 3 5	5	CH	Medium stiff, gray to brown Silty CLAY, moist (CH)	H	H	2	7.5	
	S-2	20	4 6 10 11	16		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	3	8.75	
5	S-3	24	1 6 9 10	15		Very stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	3	8.75	
	S-4	24	5 6 8 10	14		Stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	4.25	10	
	S-5	0	50/1"	> 50		No Recovery - Assume same as above End of boring at 8.5 feet BGS Borehole backfilled with cuttings					Auger refusal at 8.5 feet BGS
10											
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

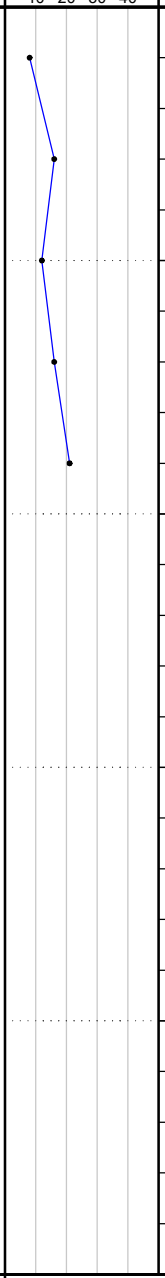
Soil Boring Log

B-29

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.065953 N, -76.073903 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 4 inches BGS
	S-1	17	4 3 5 8	8	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	20	5 7 9 13	16		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	>4.5	-	Roots present to 3.5 feet BGS
5	S-3	24	4 10 2 16	12		Very stiff, brown to gray, Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	>4.5	-	
	S-4	20	5 7 9 14	16	CL	Very stiff, brown to gray Silty CLAY, trace medium to fine Sand, moist (CL)	H	M	>4.5	-	
	S-5	24	5 8 13 16	21		Very stiff, brown Sandy CLAY, little fine Gravel, trace Silt, moist (CL)	H	M	2.5	-	
10						End of boring at 10.1 feet BGS Borehole backfilled with cuttings					Auger refusal at 10.1 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

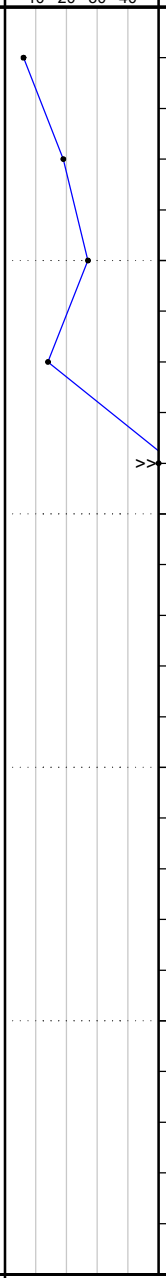
Soil Boring Log

B-30

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.074822 N, -76.069375 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 5": Topsoil					Frozen to 3 inches BGS Roots present to 9 inches BGS
	S-1	9	1 2 4 6	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	17	6 9 10 17	19		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	3.5	-	
5	S-3	20	8 12 15 16	27	CL	Hard, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CL)	H	M	3.5	-	
	S-4	24	4 6 8 10	14		Stiff, brown to gray Silty CLAY, trace coarse to fine Sand, moist (CL)	H	M	3.5	-	
	S-5	11	6 50/6"	> 50		Stiff, brown to gray Silty CLAY, trace coarse to fine Sand, moist (CL)	H	M	>4.5	-	
10						End of boring at 9.7 feet BGS Borehole backfilled with cuttings					Auger refusal at 9.7 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-31

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.069428 N, -76.072594 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 10 inches BGS Roots present to 10 inches BGS
	S-1	18	3 4 4 4	8	CH	Stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	2	5	
	S-2	22	3 7 9 13	16		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	4.25	12.5	
5	S-3	24	5 9 10 13	19		Very stiff, gray Silty CLAY, trace coarse to fine Sand, moist (CH)	H	H	>4.5	18.5	
	S-4	24	6 6 7 10	13		Stiff, gray Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
	S-5	12	4 6 50/3"	> 50		Hard, gray Silty CLAY, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	Auger grinding from 9.5 to 9.9 feet BGS
10						End of boring at 9.9 feet BGS Borehole backfilled with cuttings					Auger refusal at 9.9 feet BGS
15											
20											

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

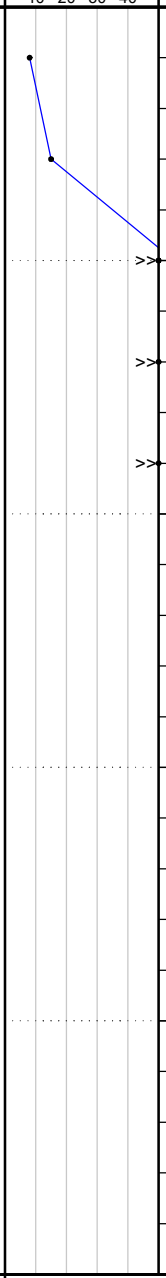
Soil Boring Log

B-32

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.069251 N, -76.068676 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 5": Topsoil					Frozen to 1 inch BGS Roots present to 14 inches BGS
	S-1	14	2 3 5 4	8	CH	Stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	24	2 7 8 12	15		Very stiff, brown Silty CLAY, trace fine Sand, moist (CH)	H	H	4.5	-	
5	S-3	13	5 14 50/2"	> 50		Hard, brown Gravelly CLAY, little Silt, little coarse to fine Sand, moist (CH)	H	H	>4.5	-	
	S-4	0	50/2"	> 50		No Recovery					
	S-5	0	50/1"	> 50		No Recovery					
10						End of boring at 9.9 feet BGS Beginning of rock coring					Auger refusal at 9.9 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Core Boring Log

B-32

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.069251 N, -76.068676 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/26/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/26/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Casing Type:**	HSA	**Core Barrel Type:**		**Core Bit Type:**	Diamond
Rig Type:	Track	**Casing Length:**	5 feet	**Core Barrel Length:**	5 feet	**Core Bit Length:**	
Drill Method:	Hollow Stem Auger	**Casing I.D.:**	2.25 inches	**Core Barrel I.D.:**	2 inches	**Core Bit I.D.:**	

Depth (ft)	Avg Core Rate (min/ft)	Run No.	Recovery (in. / %)	RQD (in. / %)	Hardness	Weathering	Graphic Log	Visual Classification	Depth (ft.)	Discontinuities: Type	Dip Angle	Roughness	Weathering	Aperture	Infilling	Drilling & Strata Notes
	1.78							Limestone, gray, fine-grained, fresh, strong, moderate spacing								
	1.60	R-1	48 100%	26 54%	R4	FR			12	J	15	U,R	DS	O	N	
	2.93								12.4	J	5	P,R	FR	T	N	
	2.42								13.1	J	0	S,R	DE	PO	N	
									13.5	J	0	P,R	DS	PO	N	
	3.97							Limestone, gray, fine-grained, fresh, strong, moderate spacing								
15	2.58	R-2	20 83%	20 83%	R4	FR			14.8	J	0	U,R	FR	VW	N	
								End of rock coring at 15.9 feet BGS Borehole backfilled with soil cuttings								
20																
25																

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)

BGS = Below Ground Surface

No water encountered

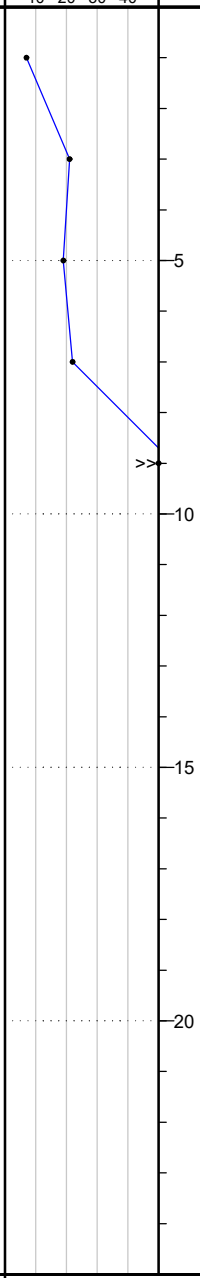
Soil Boring Log

B-33

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.079419 N, -76.067927 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 4 inches BGS Roots present to 11 inches BGS
	S-1	11	4 3 4 8	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	20	7 8 13 16	21		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
5	S-3	24	6 8 11 13	19		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
	S-4	22	6 9 13 13	22		Very stiff, brown Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CH)	H	H	>4.5	-	
	S-5	4	50/6"	> 50		Very stiff, brown Silty CLAY, little fine Gravel, little coarse to fine Sand, moist (CH) End of boring at 8.5 feet BGS Borehole backfilled with cuttings	H	H			Weatherd Limestone fragmets in spoon tip Auger refusal at 8.5 feet BGS
10											
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

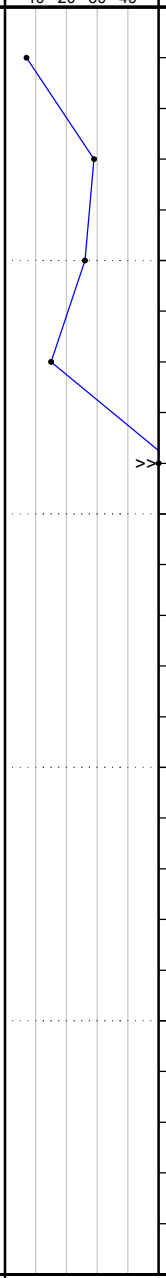
Soil Boring Log

B-34

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.077075 N, -76.066878 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 5": Topsoil					Frozen to 3 inch BGS Roots present to 16 inches BGS
	S-1	16	2 3 4 6	7	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.25	-	
	S-2	20	3 11 18 31	29		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4.5	-	
5	S-3	24	5 10 16 17	26		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4	-	
	S-4	24	7 6 9 9	15		Very stiff, brown Silty CLAY, trace fine Sand, trace fine Gravel, moist (CH)	H	H	3.5	-	
	S-5	8	7 50/4"	> 50		Hard, brown Silty CLAY, little coarse to fine Sand, moist (CH)	H	H	>4.5	-	
10						End of boring at 9.4 feet BGS Borehole backfilled with cuttings					Auger refusal at 9.4 feet BGS
15											
20											



In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-35

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.073741 N, -76.066032 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 1 inch BGS Roots present to 15 inches BGS
	S-1	15	1 2 3 5	5	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.25	-	
	S-2	20	4 11 14 19	25		Very stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	4.5	-	
5	S-3	24	5 10 10 13	20		Very stiff, gray Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4.5	-	
	S-4	24	5 4 6 7	10		Stiff, gray Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	4	-	
	S-5	24	3 6 7 8	13		Stiff, light brown to gray Gravelly CLAY, some coarse to fine Sand, trace Silt, moist (CH)	H	H	4	-	
10											
	S-6	21	4 5 6 50/3"	> 50		Stiff, light brown Gravelly CLAY, some coarse to fine Sand, trace Silt, moist (CH)	H	H	1.5	-	
15						End of boring at 15 feet BGS Borehole backfilled with cuttings					Auger refusal at 15 feet BGS
20											

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-36

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.065691 N, -76.068011 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 8": Topsoil					Frozen to 7 inches BGS Roots present to 14 inches BGS
	S-1	14	6 2 4 5	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	17	6 7 9 14	16		Very stiff, brown Silty CLAY, trace medium to fine Sand, moist (CH)	H	H	>4.5	-	
5	S-3	13	6 8 50/6"	> 50		Hard, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	Auger refusal at 5.9 feet BGS
						End of boring at 5.9 feet BGS Borehole backfilled with cuttings					
10											
15											
20											

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-37

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.066825 N, -76.064493 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
						Top 6": Topsoil					Frozen to 8 inches BGS
	S-1	12	6 2 4 4	6	CH	Medium stiff, brown Silty CLAY, moist (CH)	H	H	1.5	-	
	S-2	12	3 8 50/6"	> 50		Hard, brown Silty CLAY, trace coarse to fine Gravel, trace coarse to fine Sand, moist (CH)	H	H	>4.5	-	
						End of boring at 3.7 feet BGS Borehole backfilled with cuttings					Auger refusal at 3.7 feet BGS

N-Value: 10 20 30 40 (>> at S-2)

5 10 15 20

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

Soil Boring Log

B-38

Client:	AES	**Drilling Firm:**	Earth Dimension LLC	**Coordinates:**	44.06921 N, -76.061734 E
Project:	Riverside Solar Project	**Drill Crew:**	Phil / Jason	**Horiz. Datum:**	NAD 83
Location:	Chaumont, New York	**Boring Start:**	2/27/2021	**Elevation:**	Grade
Inspector:	Conan Cullen	**Boring End:**	2/27/2021	**Vert. Datum:**	N/A

Rig Model:	CME 550	**Sampler Type:**	Split Spoon	**Casing Type:**	HSA
Rig Type:	Track	**Sampler Length:**	24 inches	**Casing Length:**	5 feet
Drill Method:	Hollow Stem Auger	**Sampler I.D.:**	1.375 inches	**Casing I.D.:**	2.25 inches
Hammer Type:	Safety	**Hammer Wt.:**	140 pounds	**Hammer Wt.:**	N/A
Drilling Fluid:	None	**Hammer Fall:**	30 inches	**Hammer Fall:**	N/A

Depth (ft)	Sample No.	Rec. (in)	Blows per 6"	N-Value	USCS Symbol	Graphic Log	Visual Classification	Toughness	Plasticity	PP (tsf)	TV (tsf)	Drilling & Strata Notes
							Top 6": Topsoil					Frozen to 4 inches BGS Roots present to 13 inches BGS
	S-1	13	2 2 2 4	4	CL		Medium stiff, brown Silty CLAY, moist (CL)	H	M	1.5	-	
	S-2	20	3 4 6 9	10			Stiff, brown Silty CLAY, trace fine Gravel, trace coarse to fine Sand, moist (CL)	H	M	2.75	-	
5	S-3	10	6 50/6"	> 50			Hard, brown Silty CLAY, some coarse to fine Sand, trace fine Gravel, moist (CL)	H	M	>4.5	-	
							End of boring at 5.7 feet BGS Borehole backfilled with cuttings					Auger refusal at 5.7 feet BGS
10												
15												
20												

N-Value: 10 20 30 40

In-Borehole Water Levels

Date / Time	Casing Tip (ft)	Bot. of Hole (ft)	Water Lvl (ft)

General Notes

▼ = Water Level (if observed)
BGS = Below Ground Surface
No water encountered

Toughness: Low (L), Medium (M), High (H)
Plasticity: Non-Plastic (NP), Low (L), Medium (M), High (H)
PP = Pocket Penetrometer, measured in tons per square ft.
TV = Torvane (Shear Vane), measured in tons per square ft.

ANS GEO

Attachment C

Electrical Resistivity Testing Results

Soil Resistivity Results

Client:	AES	Date:	5/2/2021 - 5/3/2021
Project Name:	Riverside Solar Project	Weather:	Overcast
Project Location:	Chaumont, New York	Temperature:	50°F
Equipment:	AGI MiniSting		
Test Method:	Wenner 4 Electrode Array		

Array		Data	Array spacing (ft)				
			2	5	10	25	50
ERT-01	N-S	Measured Resistance (Ω)	7.781	2.637	1.643	1.454	1.44
		Apparent Resistivity (Ω-m)	29.80	25.25	31.46	69.62	137.86
	E-W	Measured Resistance (Ω)	7.459	2.609	1.675	1.451	1.451
		Apparent Resistivity (Ω-m)	28.57	24.98	32.06	69.49	138.99
ERT-02	N-S	Measured Resistance (Ω)	9.971	3.209	2.542	2.395	2.318
		Apparent Resistivity (Ω-m)	38.19	30.72	48.68	114.67	221.99
	E-W	Measured Resistance (Ω)	8.601	3.152	2.462	2.379	2.242
		Apparent Resistivity (Ω-m)	32.95	30.18	47.15	113.90	214.67
ERT-03	N-S	Measured Resistance (Ω)	7.611	6.521	6.361	6.41	5.957
		Apparent Resistivity (Ω-m)	29.15	62.45	121.83	306.93	570.28
	E-W	Measured Resistance (Ω)	8.349	6.548	6.692	6.464	6.175
		Apparent Resistivity (Ω-m)	31.97	62.70	128.17	309.37	591.31
ERT-04	N-S	Measured Resistance (Ω)	9.519	3.176	2.471	2.176	2.052
		Apparent Resistivity (Ω-m)	36.45	30.41	47.34	104.18	196.50
	E-W	Measured Resistance (Ω)	10.28	3.219	2.331	2.012	1.95
		Apparent Resistivity (Ω-m)	39.38	30.82	44.62	96.32	186.69
ERT-05	N-S	Measured Resistance (Ω)	7.921	2.845	1.639	1.382	1.516
		Apparent Resistivity (Ω-m)	30.34	27.24	31.39	66.20	145.18
	E-W	Measured Resistance (Ω)	10.11	2.827	1.695	1.41	1.514
		Apparent Resistivity (Ω-m)	38.71	27.07	32.46	67.54	144.99
ERT-06	N-S	Measured Resistance (Ω)	9.456	3.093	2.515	2.523	2.627
		Apparent Resistivity (Ω-m)	36.21	29.62	48.16	120.79	251.55
	E-W	Measured Resistance (Ω)	9.335	3.304	2.46	2.46	2.787
		Apparent Resistivity (Ω-m)	35.75	31.64	47.12	117.77	266.88
ERT-07	N-S	Measured Resistance (Ω)	9.36	2.886	1.962	1.757	1.787
		Apparent Resistivity (Ω-m)	35.84	27.64	37.58	84.12	171.15
	E-W	Measured Resistance (Ω)	9.01	2.921	1.926	1.746	1.785
		Apparent Resistivity (Ω-m)	34.50	27.97	36.88	83.61	170.93
ERT-08	N-S	Measured Resistance (Ω)	11.62	2.611	1.794	1.608	1.624
		Apparent Resistivity (Ω-m)	44.50	25.00	34.35	76.96	155.48
	E-W	Measured Resistance (Ω)	10.61	2.781	1.865	1.61	1.629
		Apparent Resistivity (Ω-m)	40.66	26.63	35.72	77.08	155.97
ERT-09	N-S	Measured Resistance (Ω)	6.627	2.545	1.508	1.159	1.178
		Apparent Resistivity (Ω-m)	25.38	24.37	19.74	55.47	112.81
	E-W	Measured Resistance (Ω)	5.444	2.504	1.542	1.186	1.156
		Apparent Resistivity (Ω-m)	20.85	23.97	29.54	56.81	110.67
ERT-10	N-S	Measured Resistance (Ω)	8.841	2.999	2.275	2.177	2.302
		Apparent Resistivity (Ω-m)	33.86	28.72	43.56	104.24	220.43
	E-W	Measured Resistance (Ω)	8.431	3.051	2.271	2.156	2.226
		Apparent Resistivity (Ω-m)	32.31	29.22	43.49	103.24	213.12
ERT-11	N-S	Measured Resistance (Ω)	10.82	2.957	1.975	1.724	1.736
		Apparent Resistivity (Ω-m)	41.42	28.31	37.83	82.54	166.24
	E-W	Measured Resistance (Ω)	10.06	3.021	1.991	1.754	1.744
		Apparent Resistivity (Ω-m)	38.53	28.93	38.13	83.97	166.94
ERT-12	N-S	Measured Resistance (Ω)	9.136	6.329	5.973	5.69	5.197
		Apparent Resistivity (Ω-m)	34.99	60.59	114.39	272.40	497.74
	E-W	Measured Resistance (Ω)	8.408	6.328	6.041	5.69	5.33
		Apparent Resistivity (Ω-m)	32.22	60.59	115.70	272.43	510.54
		Site Average (Ω)	**8.95**	**3.50**	**2.73**	**2.53**	**2.49**
		Site Average (Ω-m)	**34.27**	**33.54**	**51.97**	**121.24**	**238.29**

ANS GEO

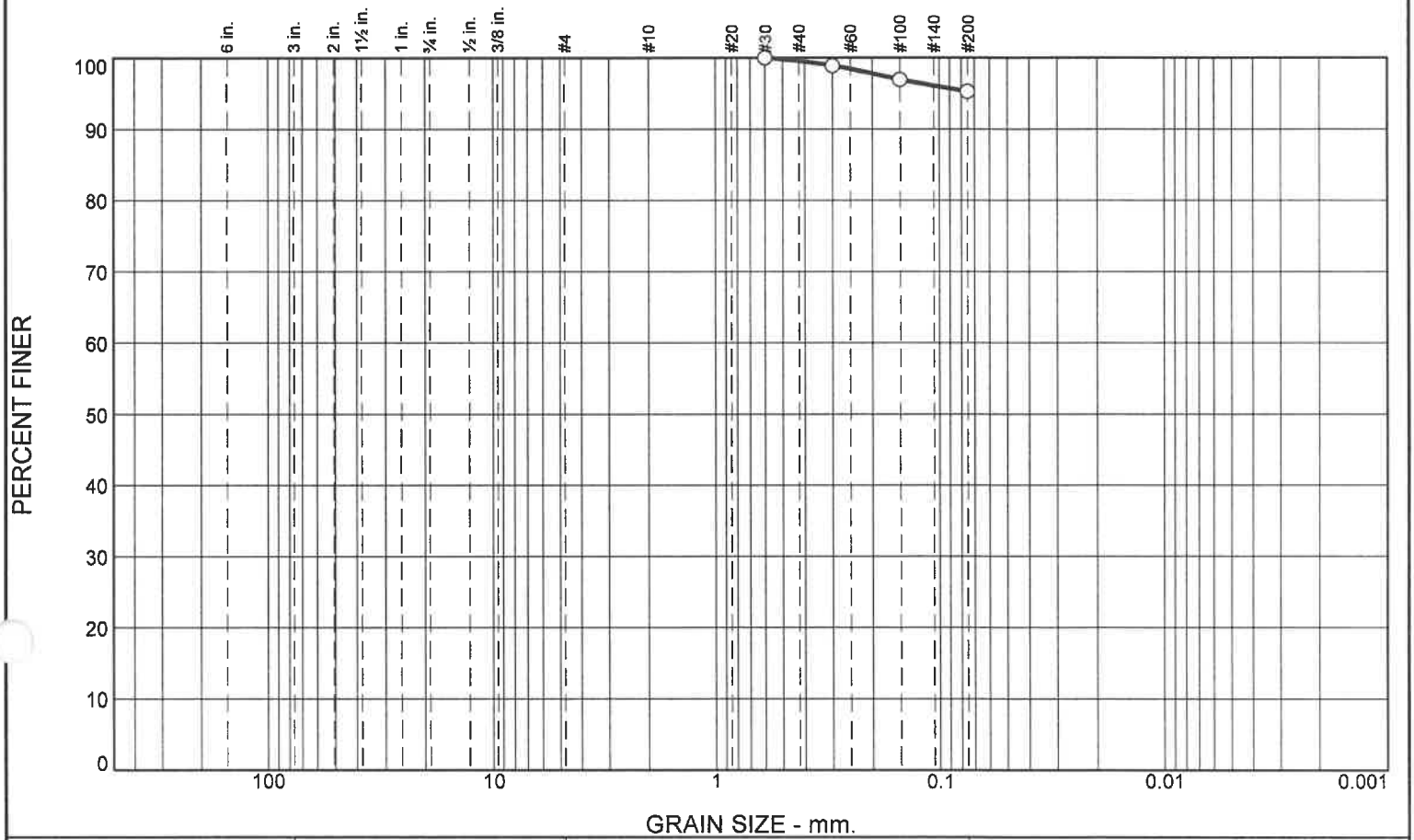
Attachment D

Laboratory Results

SIEVE ANALYSIS

RESULTS

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	4.2	95.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#30	100.0		
#50	98.9		
#100	96.9		
#200	95.3		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=27.7
F.M.=0.04

Location: B-3, S-3
Sample Number: S-1 **Depth:** 4'-6 **Date:**

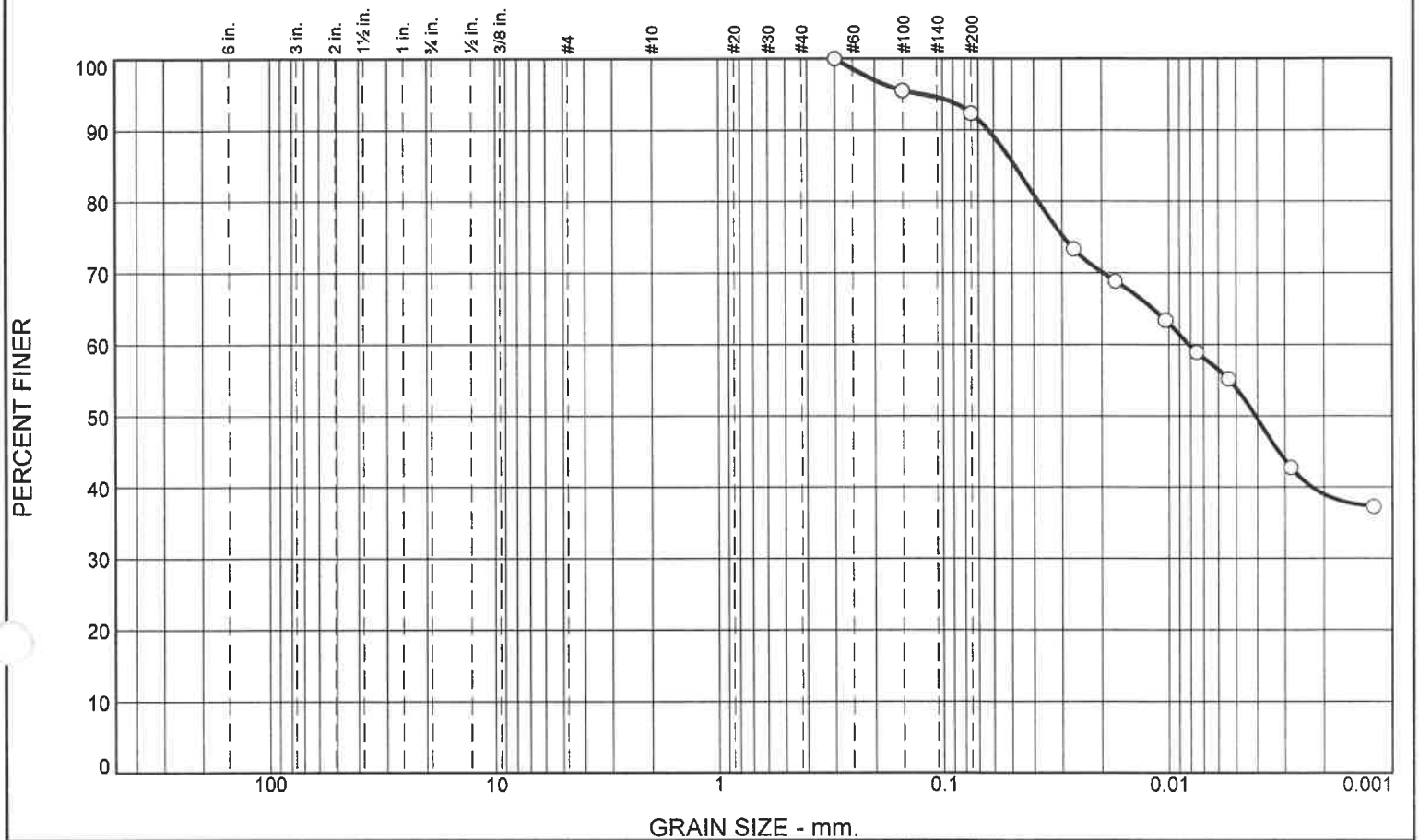
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 1 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	7.7	38.4	53.9

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#50	100.0		
#100	95.5		
#200	92.3		

* (no specification provided)

Material Description

silt. Silty clay loam

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.0634 D_{85}= 0.0486 D_{60}= 0.0082
D_{50}= 0.0041 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=26.0
F.M.=0.04

Location: B-6, S-2
Sample Number: S-16 **Depth:** 2'-4' **Date:**

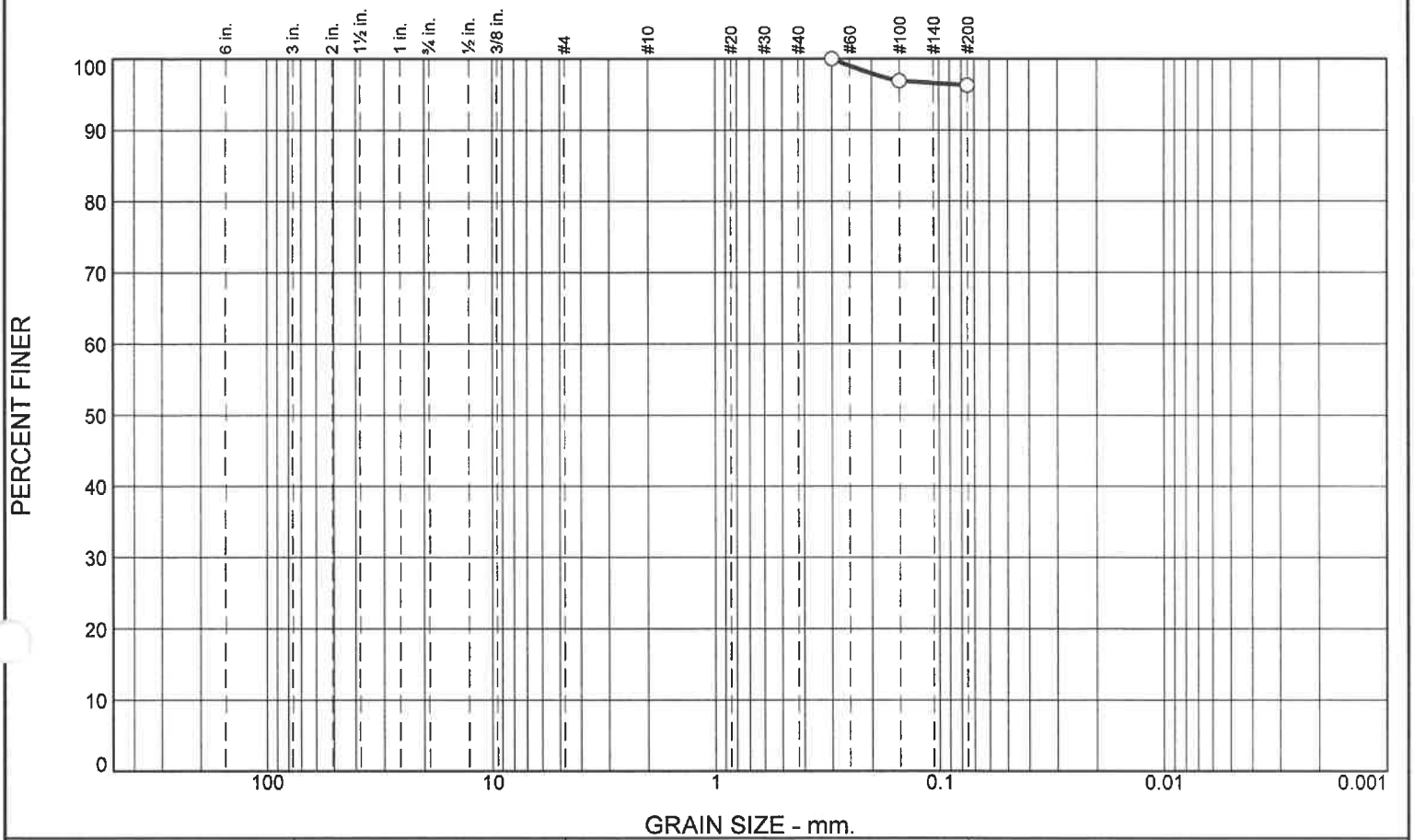
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 16 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	3.7	96.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#50	100.0		
#100	96.9		
#200	96.3		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=32.6
F.M.=0.03

Location: B-10, S-4
Sample Number: S-2 **Depth:** 6'-8' **Date:**

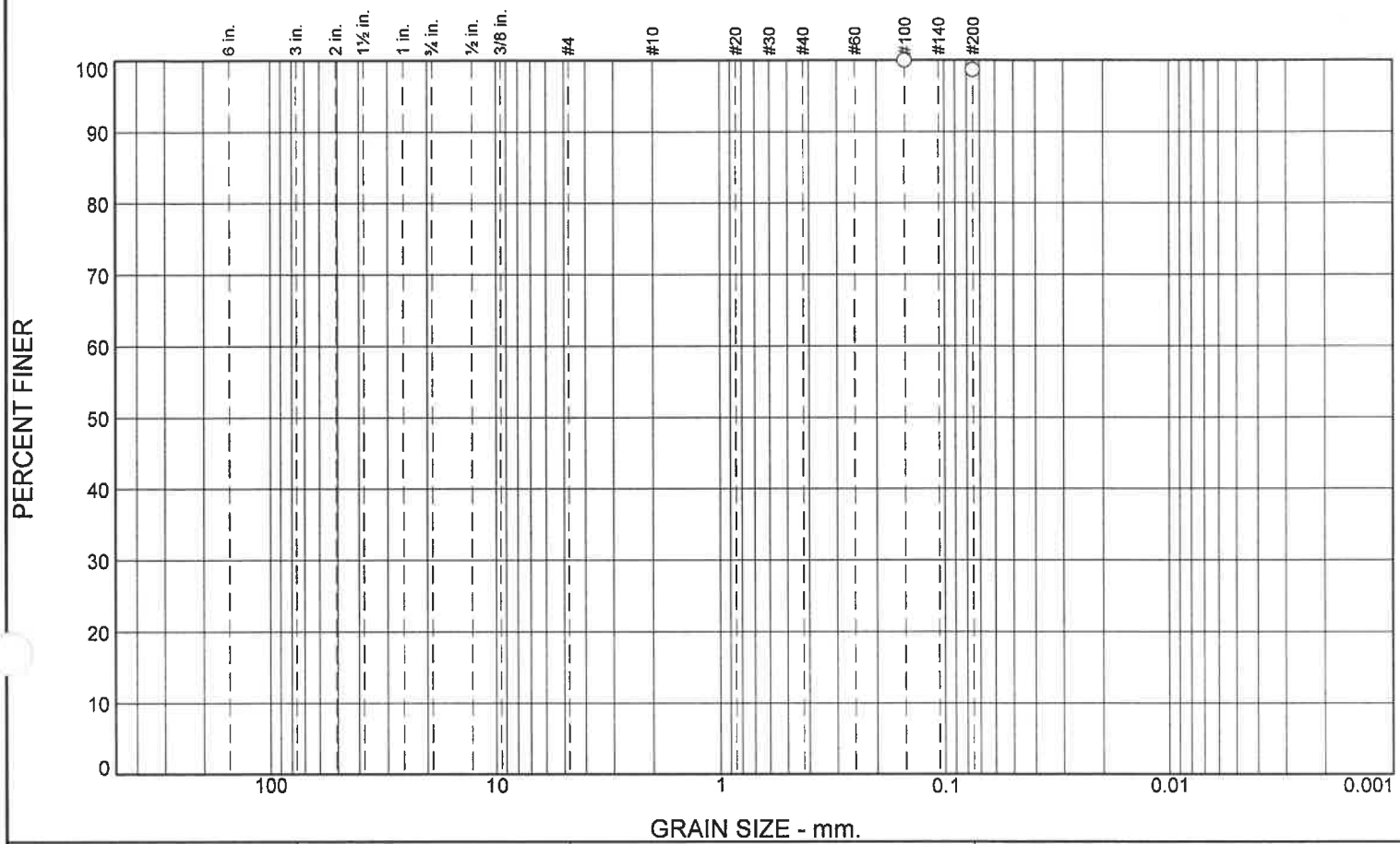
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 2 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	1.3	98.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#100	100.0		
#200	98.7		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=29.0
F.M.=0.00

Location: B-12, S-3
Sample Number: S-3 **Depth:** 4'-6' **Date:**

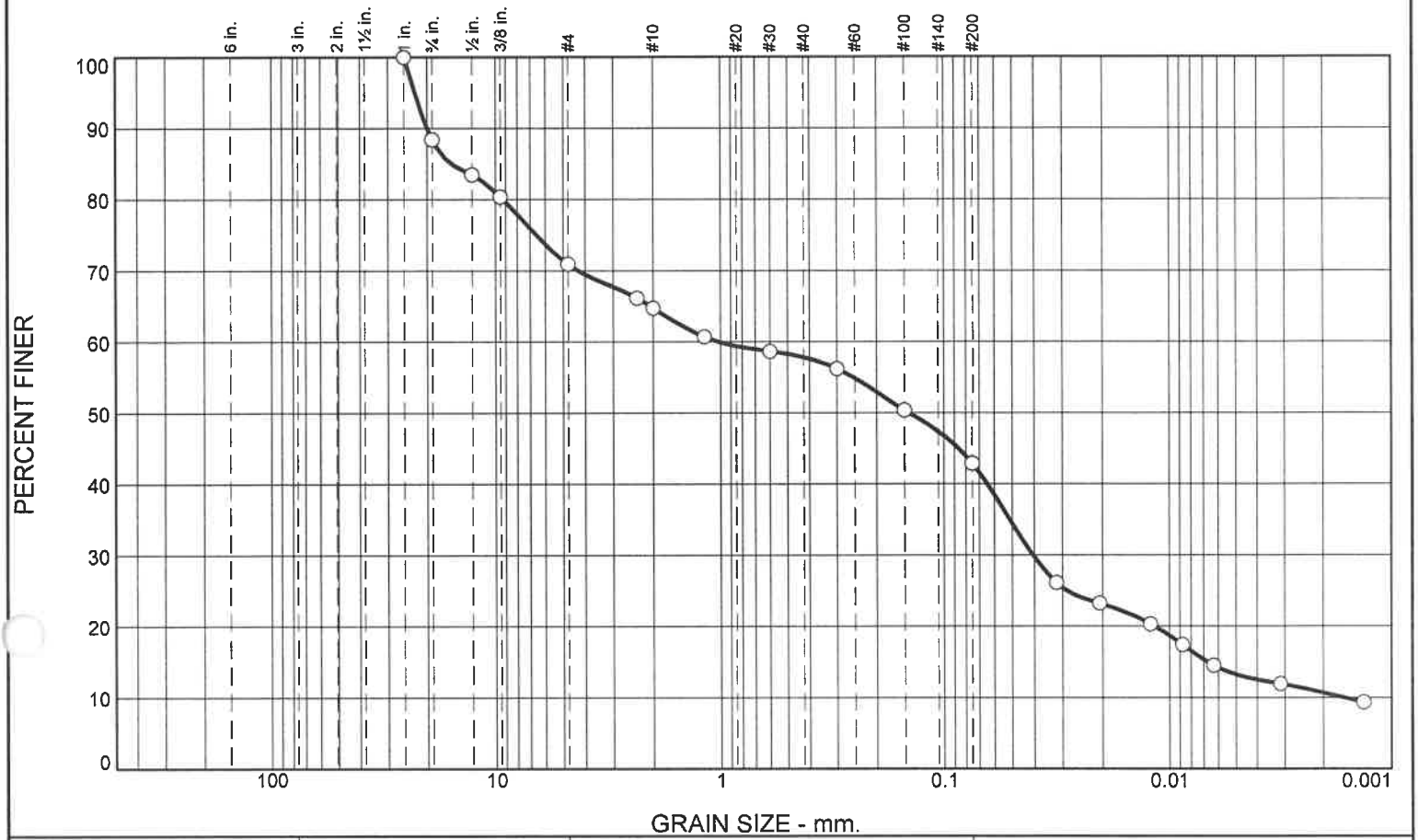
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 3 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	11.6	17.5	6.1	7.0	14.9	29.7	13.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4	88.4		
1/2	83.5		
3/8	80.4		
#4	70.9		
#8	66.2		
#10	64.8		
#16	60.7		
#30	58.6		
#50	56.2		
#100	50.3		
#200	42.9		

* (no specification provided)

Material Description

silty gravel with sand. Loam,

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 20.0466 D_{85}= 15.6745 D_{60}= 1.0241
D_{50}= 0.1441 D_{30}= 0.0406 D_{15}= 0.0067
D_{10}= 0.0016 C_u= 632.07 C_c= 0.99

Classification

USCS= GM AASHTO= A-4(0)

Remarks

In-Situ %MC=8.6
F.M.=2.68

Location: B-15, S-4
Sample Number: S-18 **Depth:** 6'-8' **Date:**

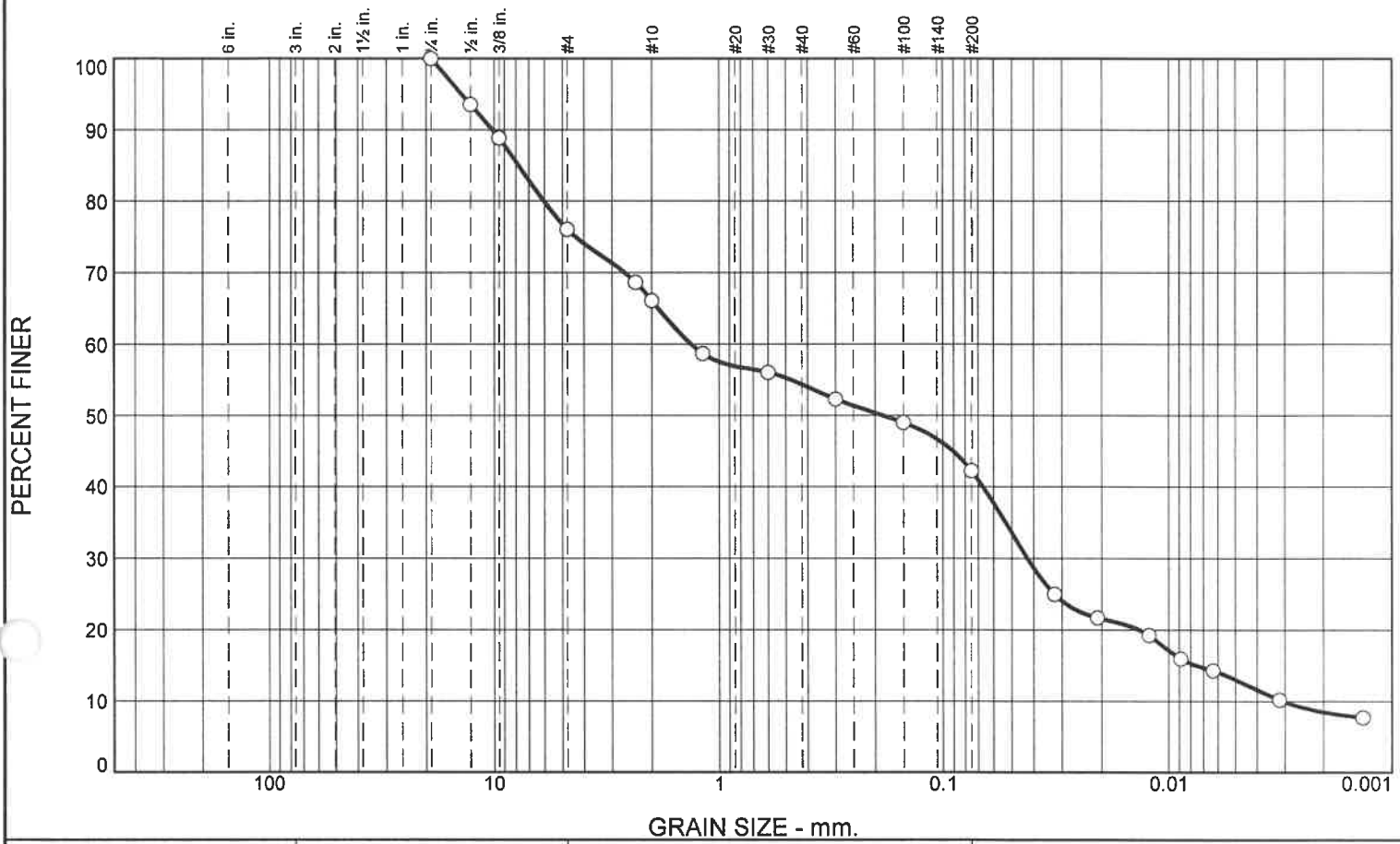
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 18 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	24.0	9.9	11.7	12.2	29.2	13.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	93.5		
3/8	88.8		
#4	76.0		
#8	68.6		
#10	66.1		
#16	58.7		
#30	56.0		
#50	52.3		
#100	49.0		
#200	42.2		

* (no specification provided)

Material Description

silty sand with gravel. Loam

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 10.1884 D_{85}= 7.7920 D_{60}= 1.3369
D_{50}= 0.1856 D_{30}= 0.0426 D_{15}= 0.0075
D_{10}= 0.0031 C_u= 436.81 C_c= 0.44

Classification

USCS= SM AASHTO= A-4(0)

Remarks

In-Situ %MC=9.3
F.M.=2.51

Location: B-17, S-5
Sample Number: S-17 **Depth:** 8'-10' **Date:**

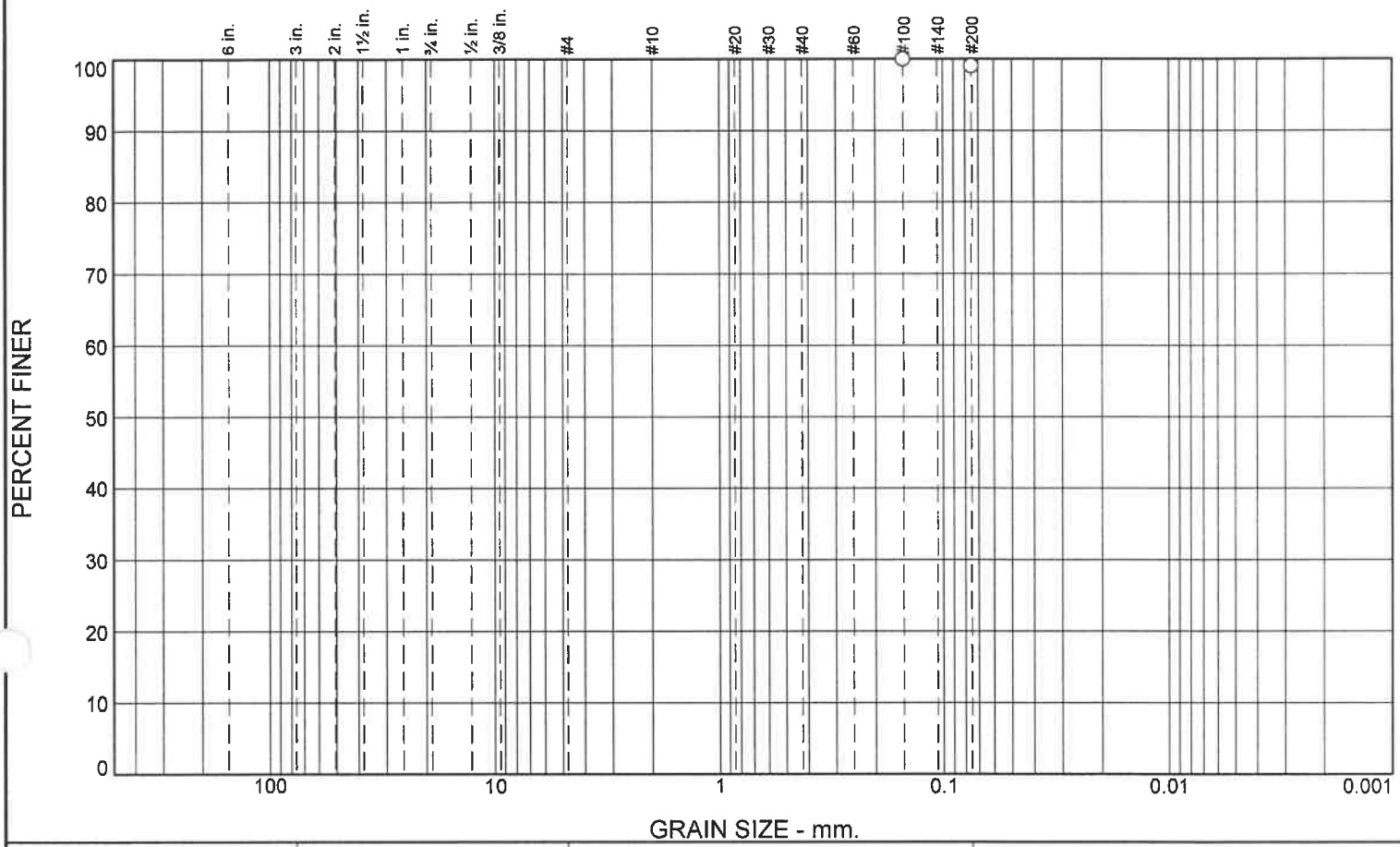
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 17 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	0.9	99.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#100	100.0		
#200	99.1		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=31.2
F.M.=0.00

Location: B-22, S-5
Sample Number: S-4 **Depth:** 8'-10' **Date:**

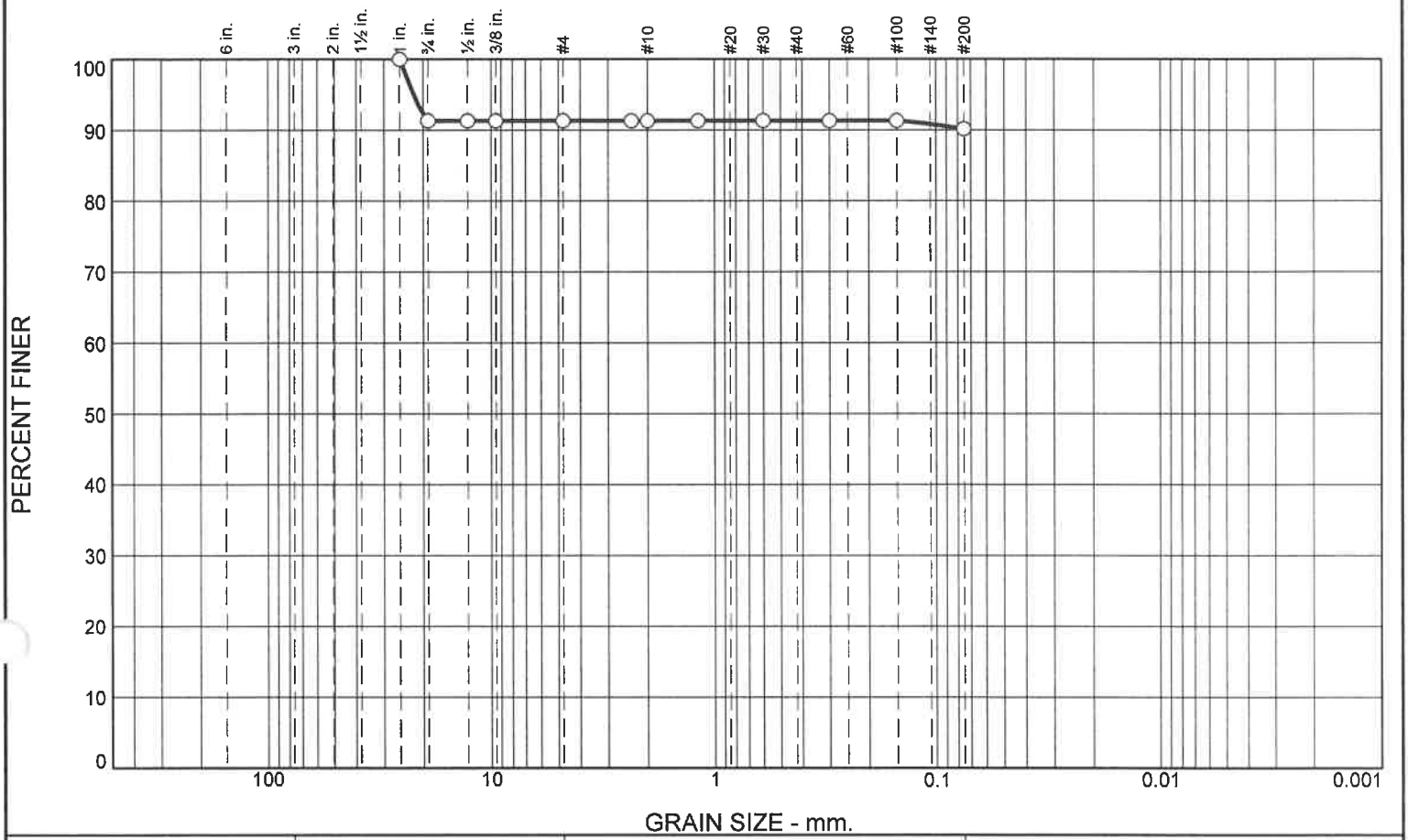
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 4 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	8.7	0.0	0.0	0.0	1.2	90.1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1	100.0		
3/4	91.3		
1/2	91.3		
3/8	91.3		
#4	91.3		
#8	91.3		
#10	91.3		
#16	91.3		
#30	91.3		
#50	91.3		
#100	91.3		
#200	90.1		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=27.4
F.M.=0.70

Location: B-25, S-2
Sample Number: S-5 **Depth:** 2'-4' **Date:**

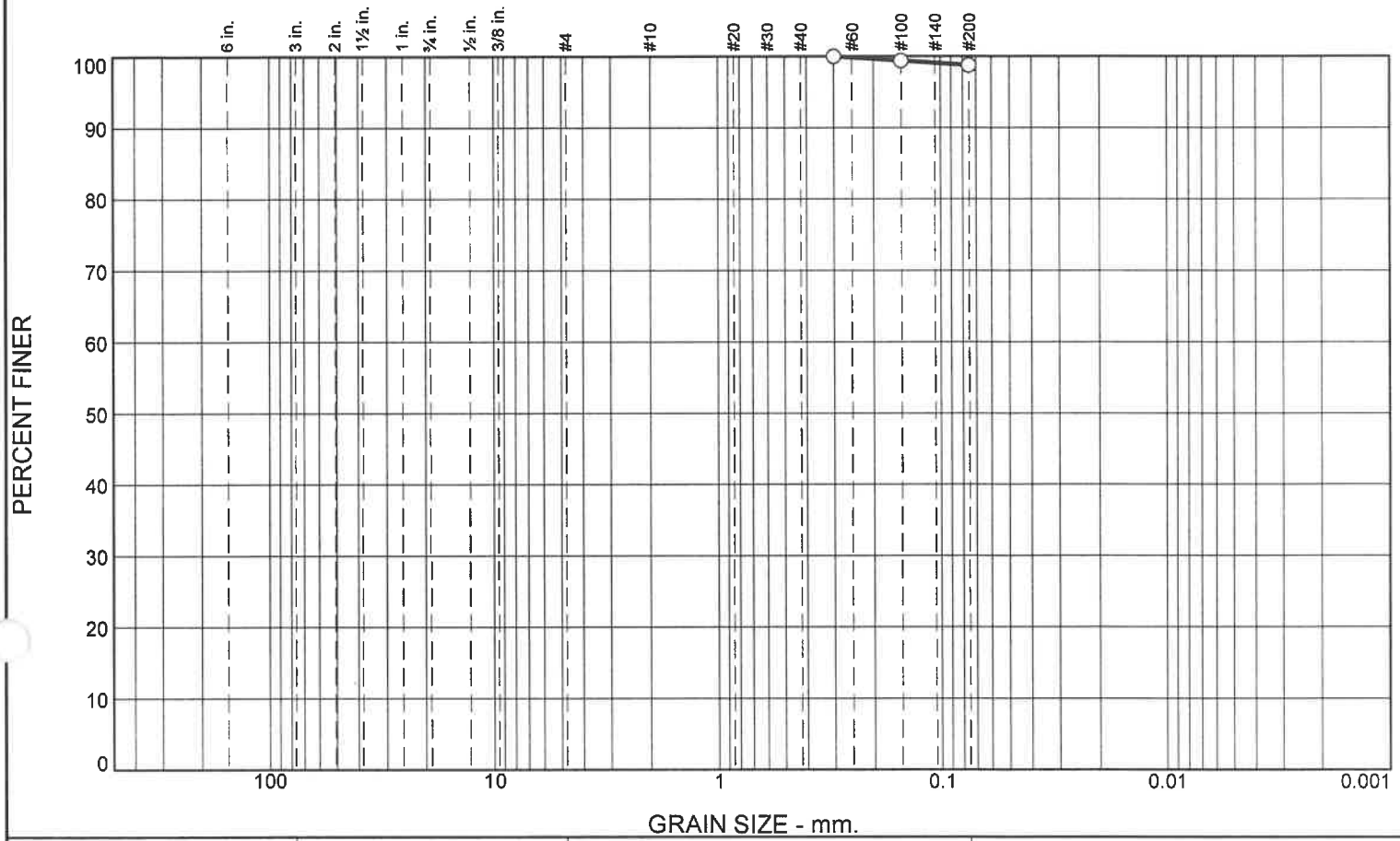
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 5 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.0	1.3	98.7	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#50	100.0		
#100	99.4		
#200	98.7		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=30.6
F.M.=0.01

Location: B-27, S-5
Sample Number: S-6 **Depth:** 8'-10' **Date:**

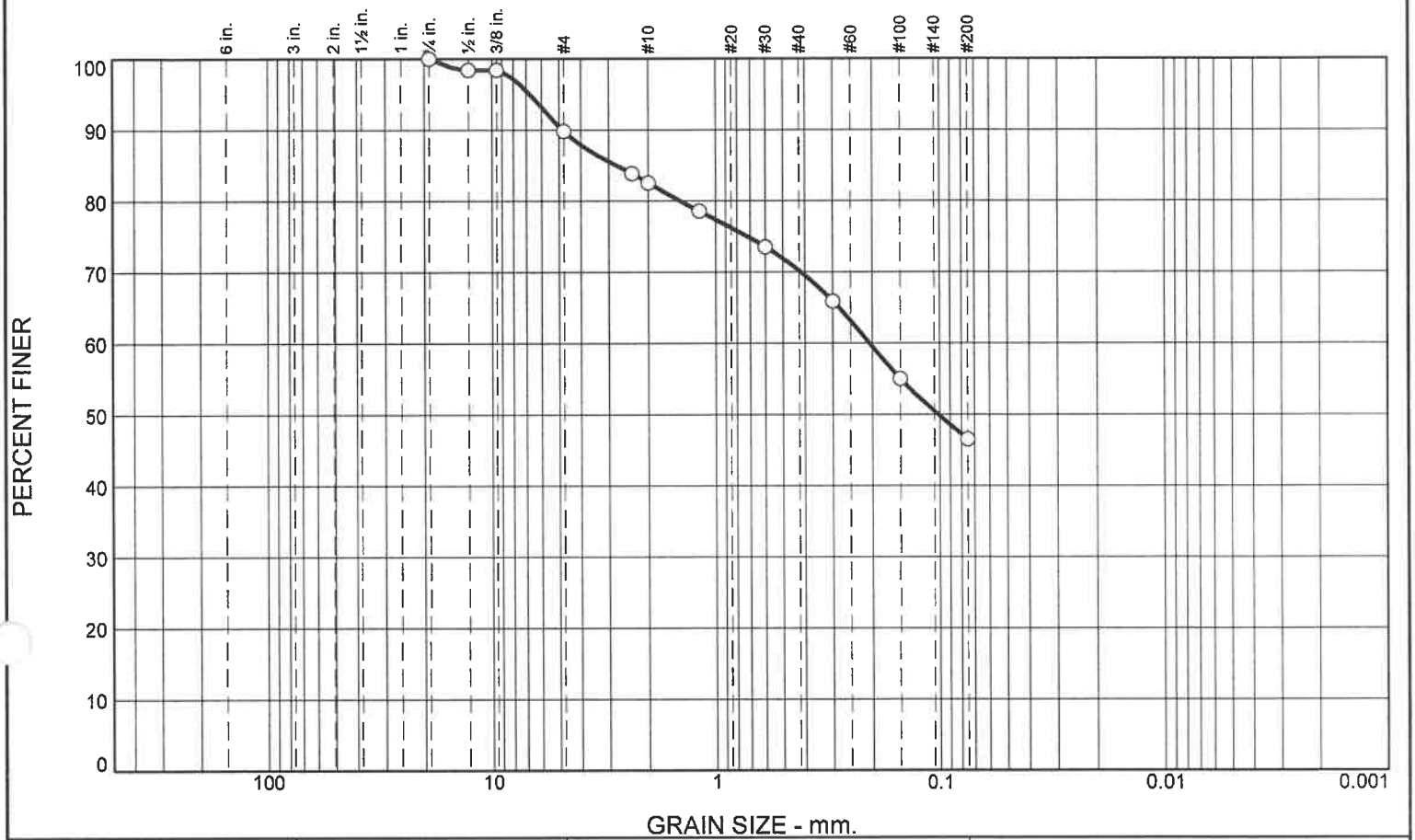
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 6 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	10.2	7.3	12.3	23.7	46.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
1/2	98.4		
3/8	98.4		
#4	89.8		
#8	83.8		
#10	82.5		
#16	78.5		
#30	73.5		
#50	65.9		
#100	55.0		
#200	46.5		

* (no specification provided)

Material Description

silty sand

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 4.8199 D_{85}= 2.7734 D_{60}= 0.2064
D_{50}= 0.1022 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

In-Situ %MC=8.7
F.M.=1.55

Location: B-29, S-5
Sample Number: S-7 **Depth:** 8'-10' **Date:**

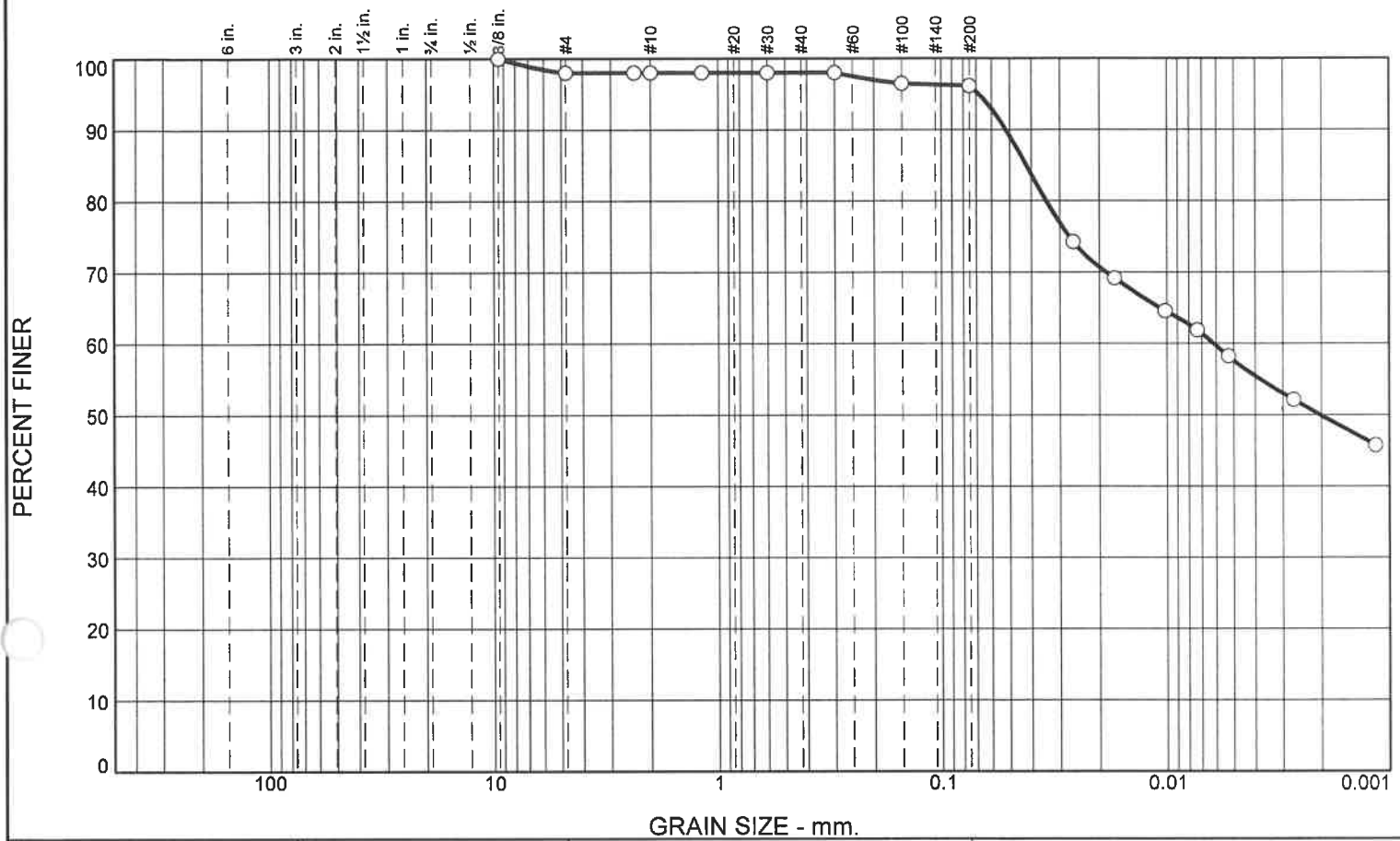
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 7 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.0	0.0	0.0	1.9	38.5	57.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	98.0		
#8	98.0		
#10	98.0		
#16	98.0		
#30	98.0		
#50	98.0		
#100	96.5		
#200	96.1		

* (no specification provided)

Material Description

silt. Silty loam.

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= 0.0521 D_{85}= 0.0422 D_{60}= 0.0062
D_{50}= 0.0020 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=30.3
F.M.=0.14

Location: B-34, S-4
Sample Number: S-19 **Depth:** 6'-8' **Date:**

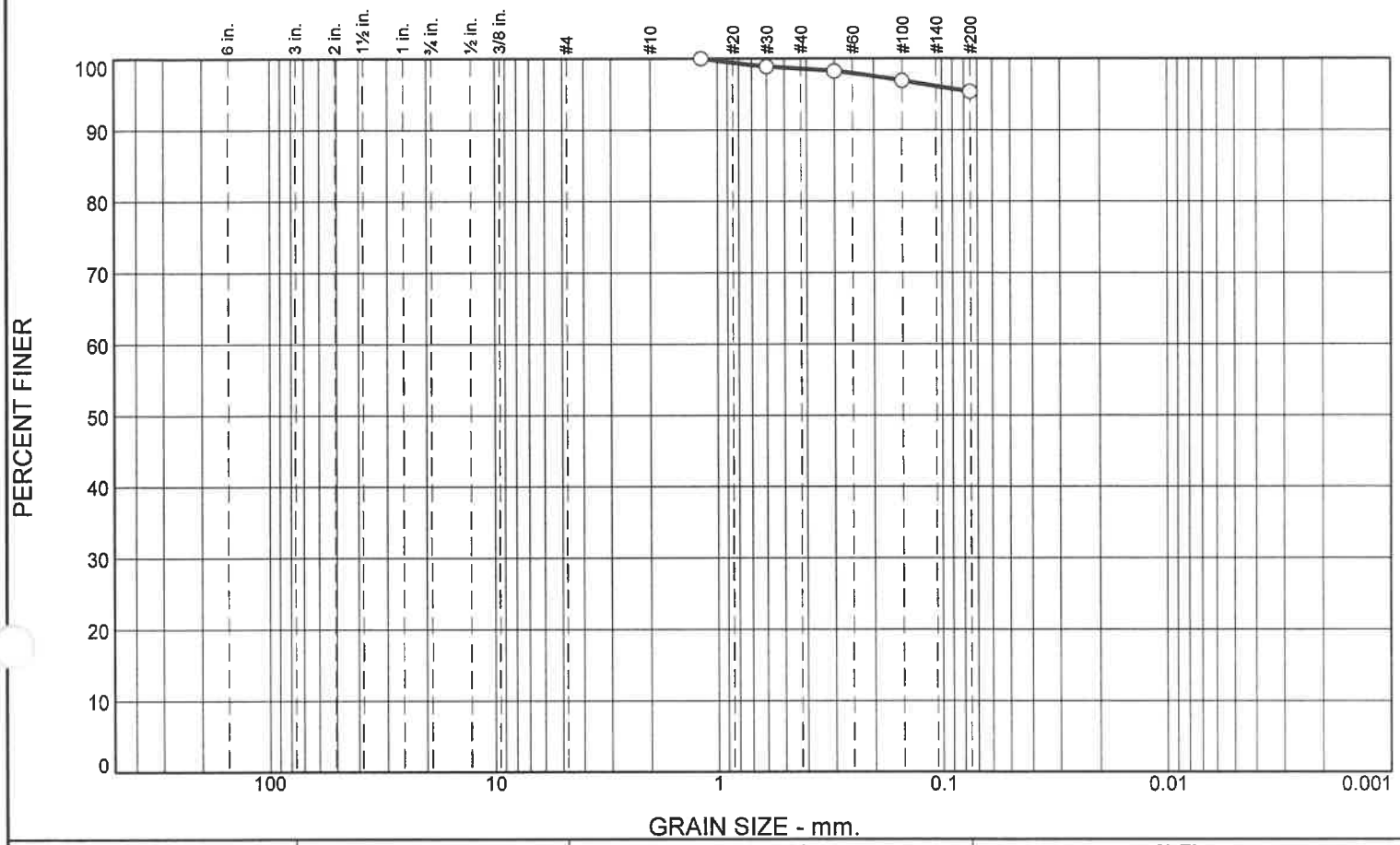
ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 19 F 1**

Particle Size Distribution Report As per ASTM D-422



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	1.4	3.3	95.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#16	100.0		
#30	98.9		
#50	98.2		
#100	96.9		
#200	95.3		

* (no specification provided)

Material Description

silt

Atterberg Limits

PL= NP LL= NV PI= NP

Coefficients

D_{90}= D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

In-Situ %MC=27.3
F.M.=0.06

Location: B-36, S-2
Sample Number: S-8 **Depth:** 2'-4' **Date:**

ANS CONSULTANTS, INC.

South Plainfield, New Jersey

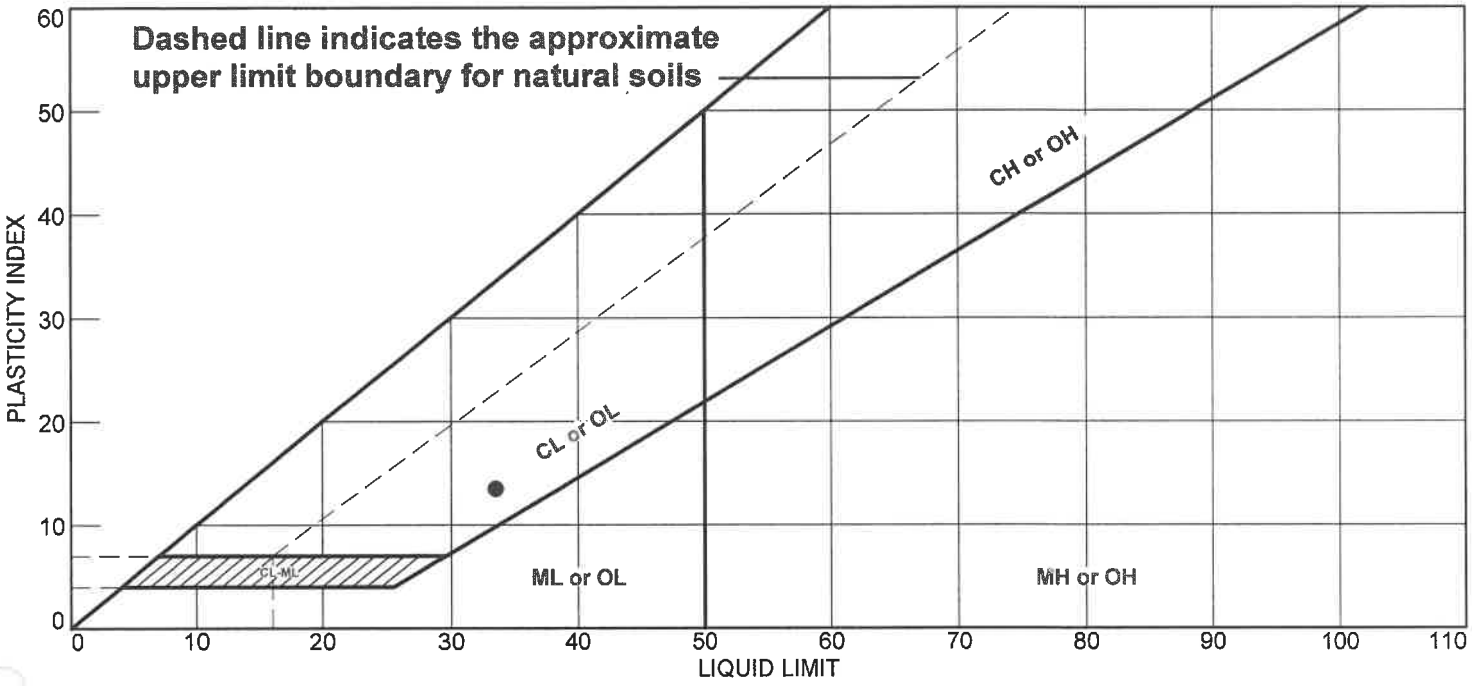
Client: ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

Project No: AOP-5632 **Figure 8 F 1**

ATTERBERG LIMITS

RESULTS

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		33.5	20.0	13.5			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-5, S-2
Sample Number: S-9 **Depth:** 2'-4'

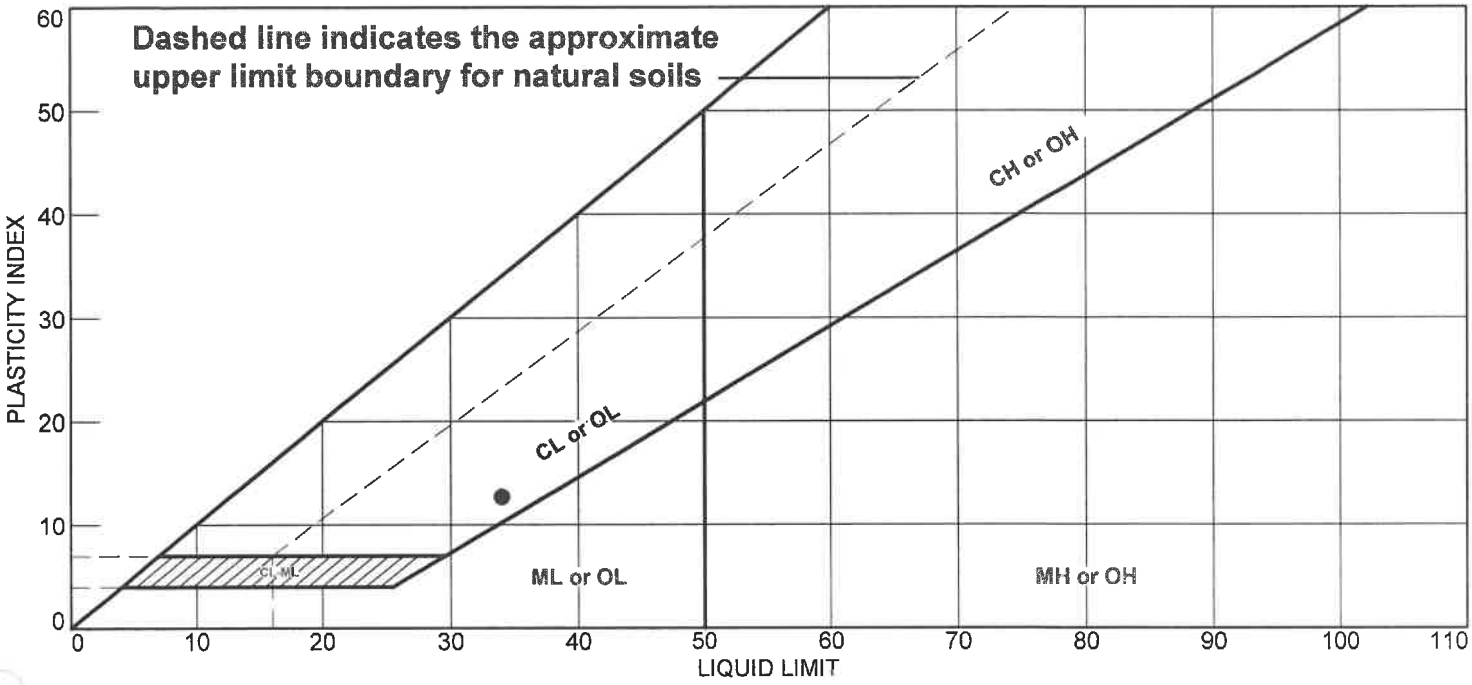
ANS CONSULTANTS, INC.

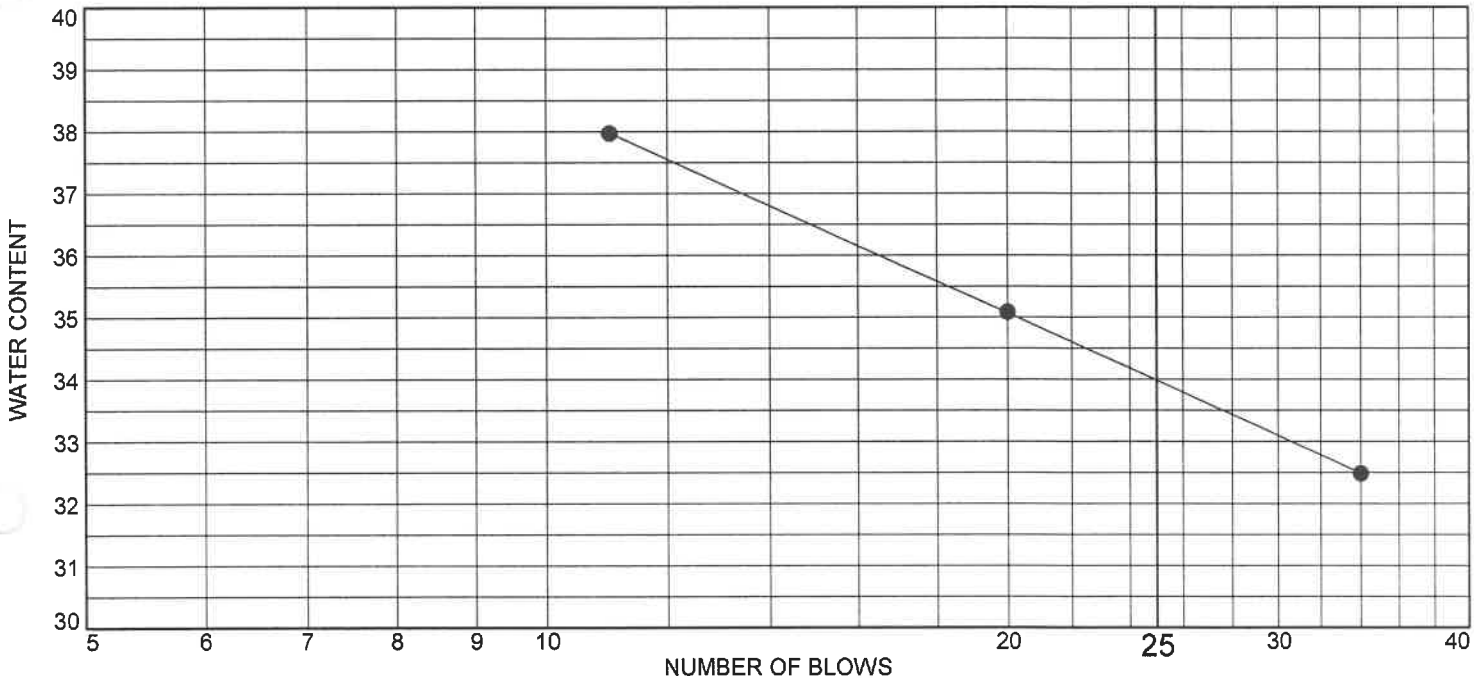
South Plainfield, New Jersey

Remarks:
● In-Situ %MC=30.6

Figure 9 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		34.0	21.3	12.7			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-8, S-3
Sample Number: S-10 **Depth:** 4'-6'

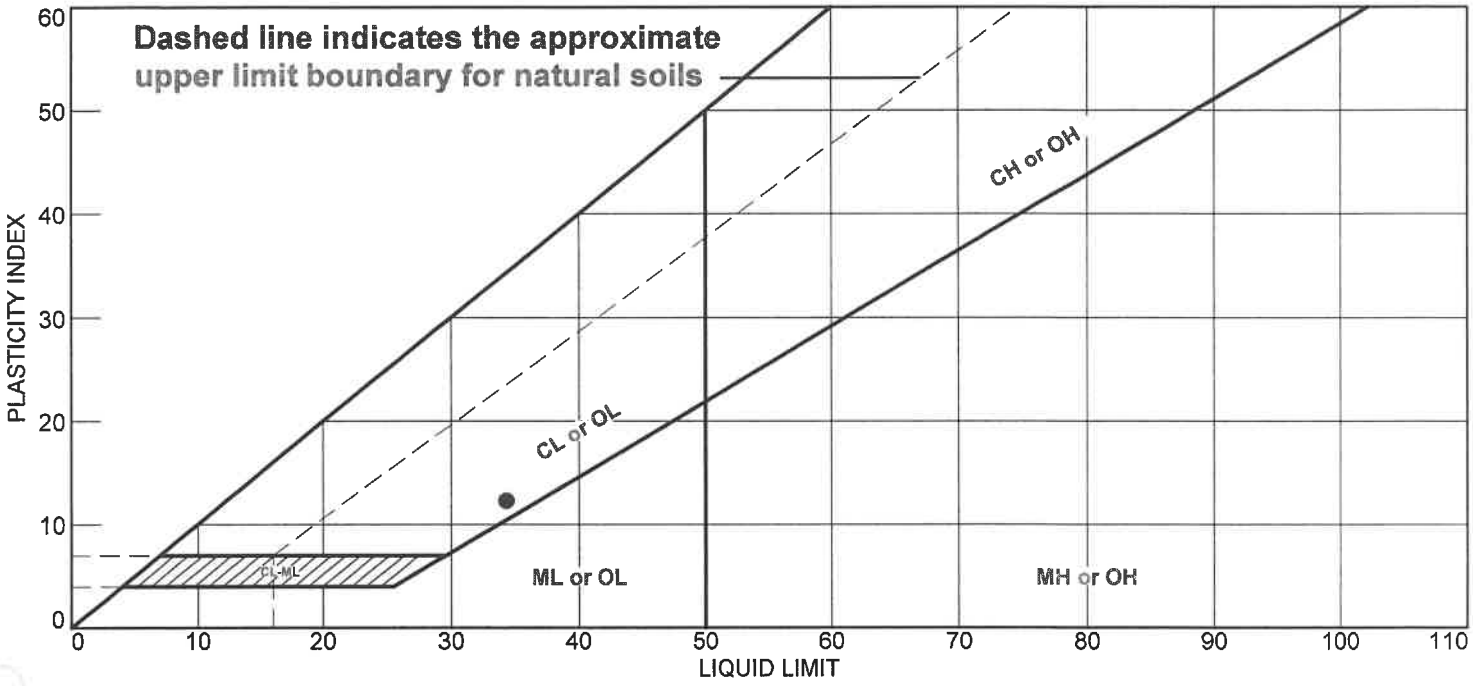
ANS CONSULTANTS, INC.

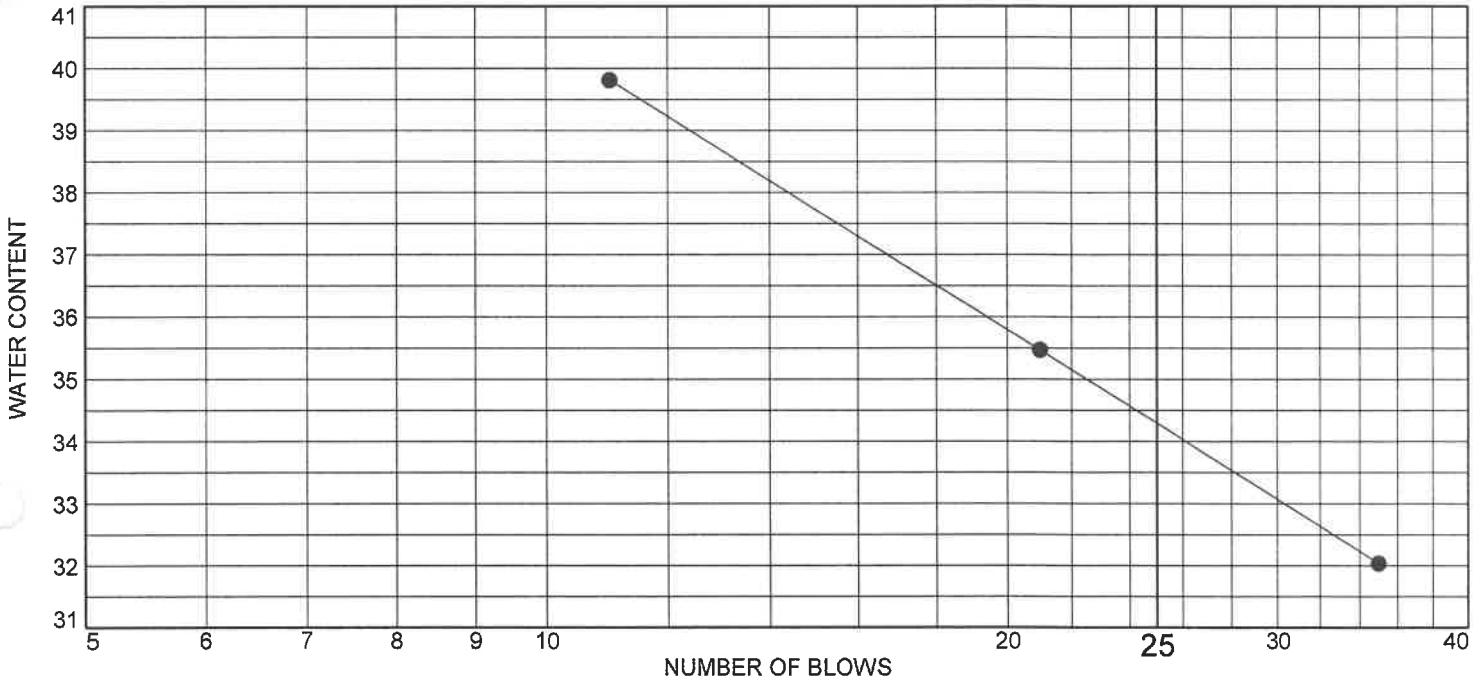
South Plainfield, New Jersey

Remarks:
● In-Situ %Mc=28.9

Figure 10 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		34.3	22.0	12.3			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-13, S-1
Sample Number: S-11 **Depth:** 0-2'

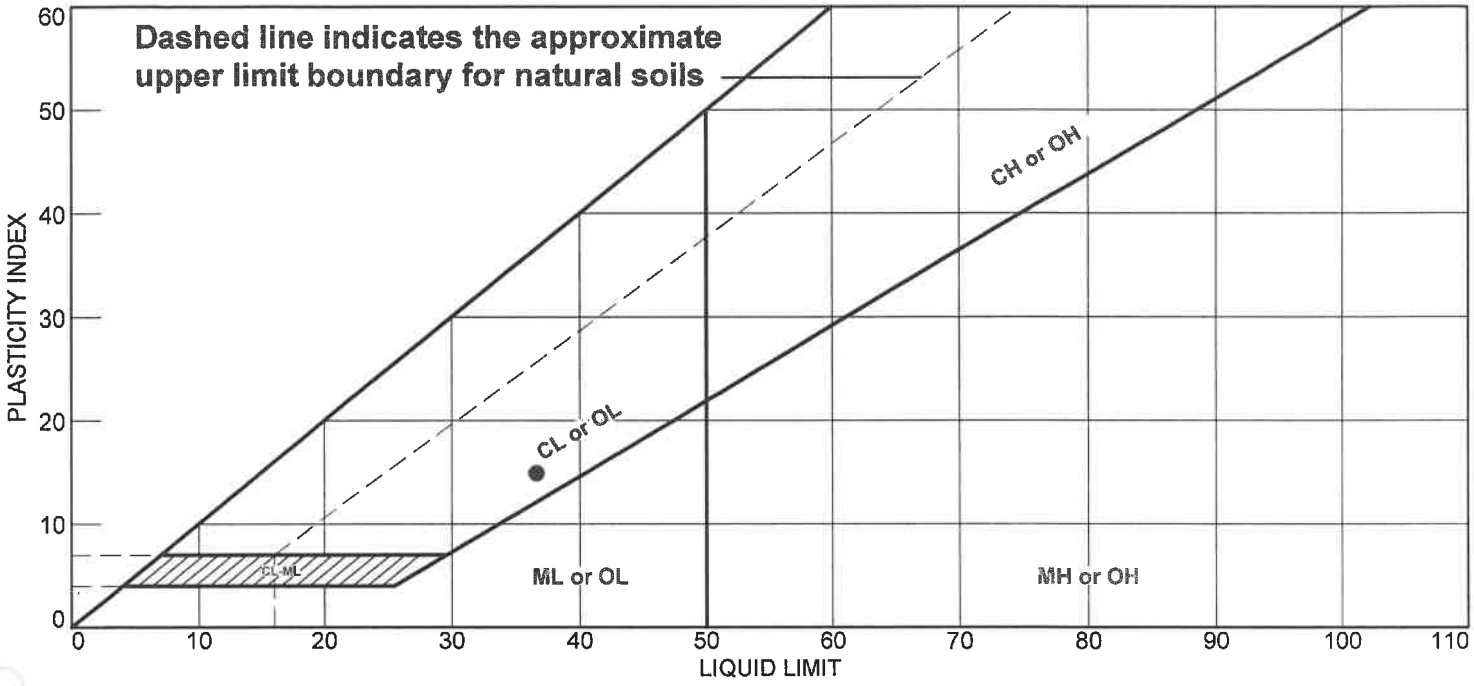
ANS CONSULTANTS, INC.

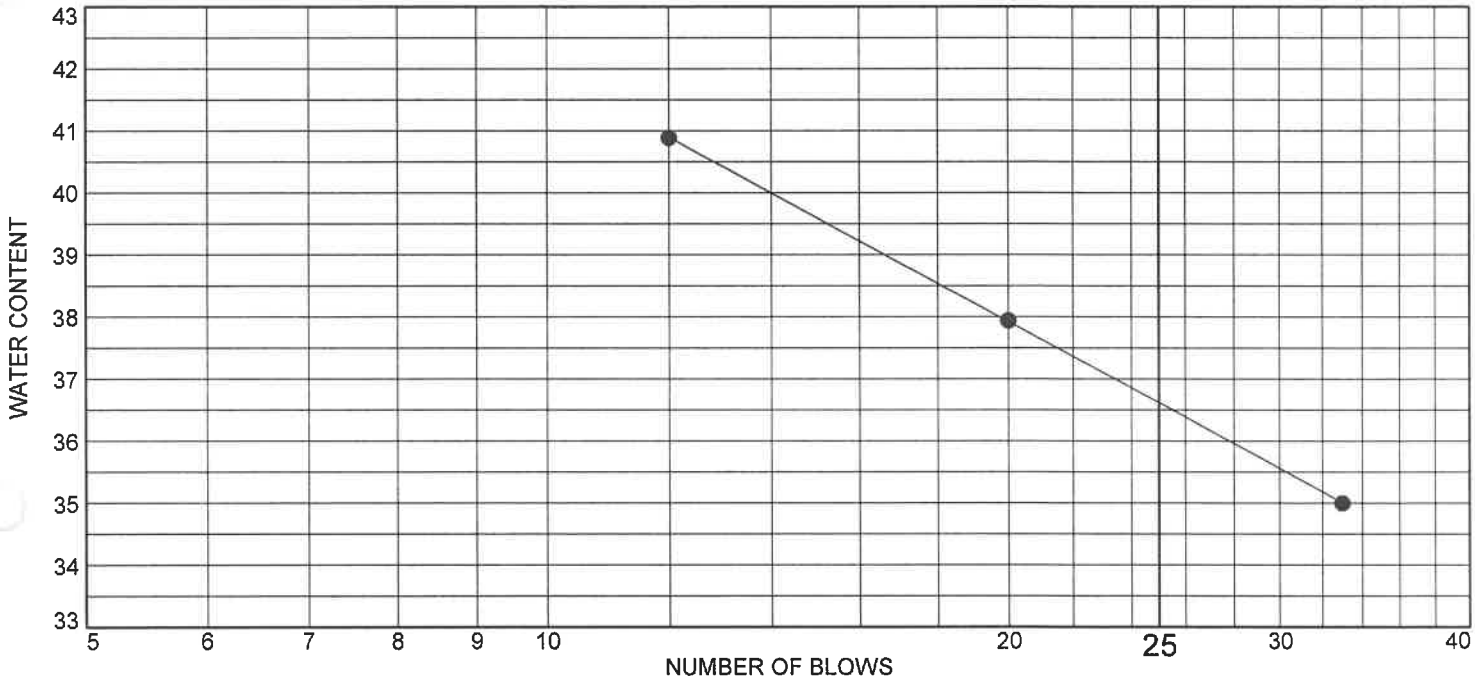
South Plainfield, New Jersey

Remarks:
● In-Situ %MC=35.1

Figure 11 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		36.6	21.7	14.9			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-16, S-4
Sample Number: S-12 **Depth:** 6'-8'

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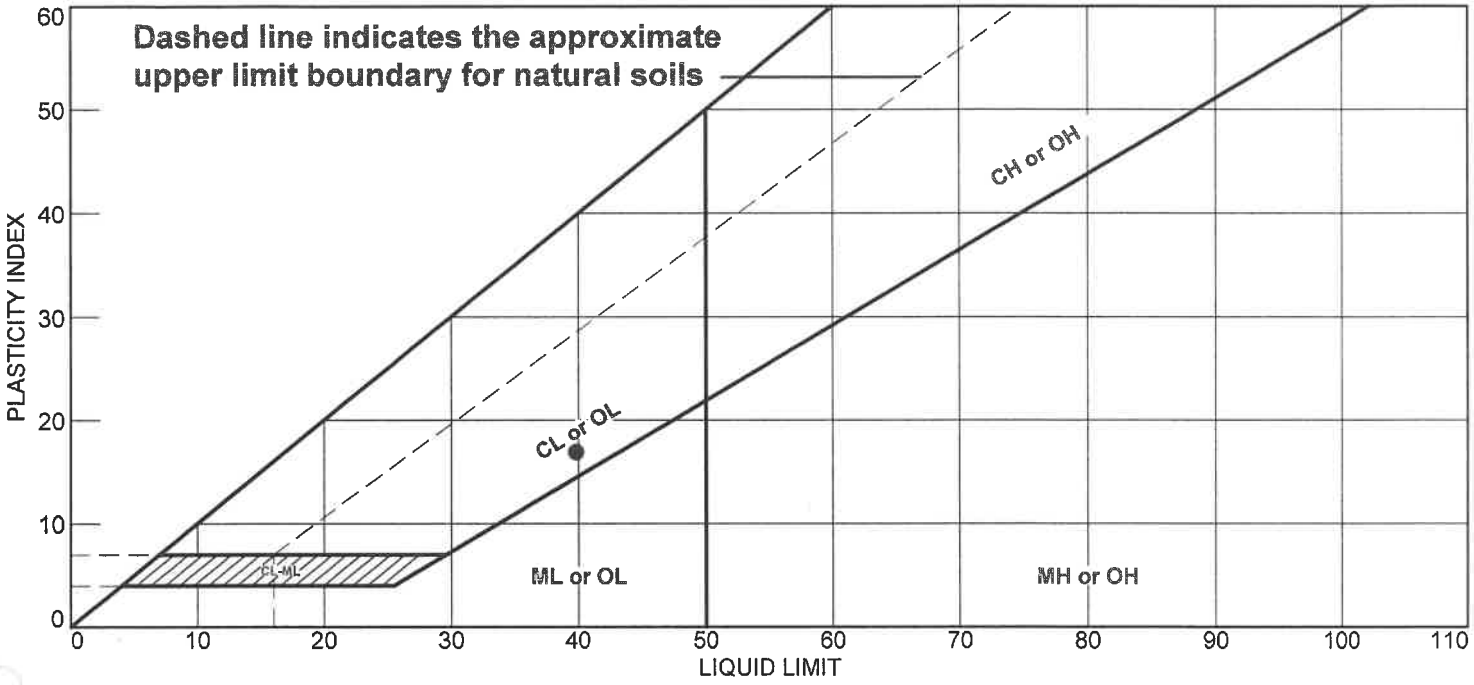
South Plainfield, New Jersey

Remarks:
● In-Situ %MC=29.6

Figure 12 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		39.8	22.9	16.9			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-20, S-3
Sample Number: S-13 **Depth:** 4'-6'

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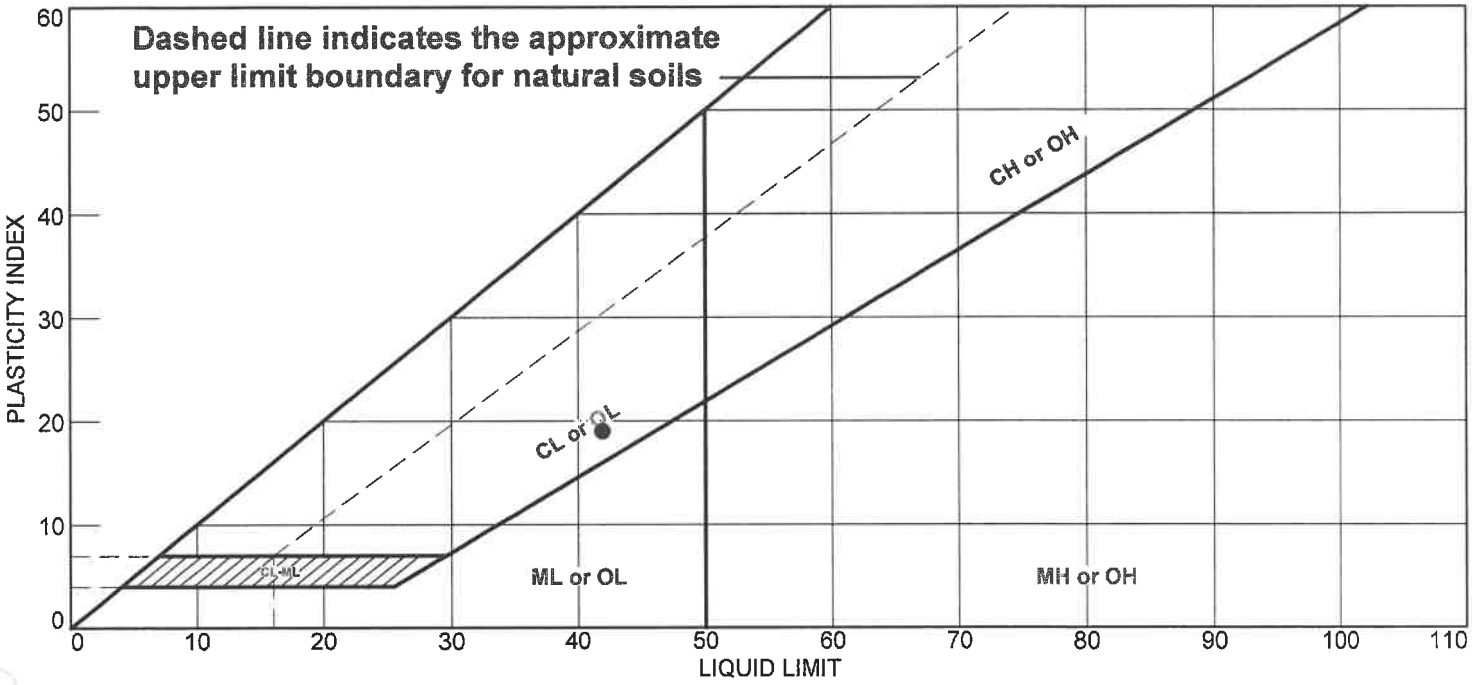
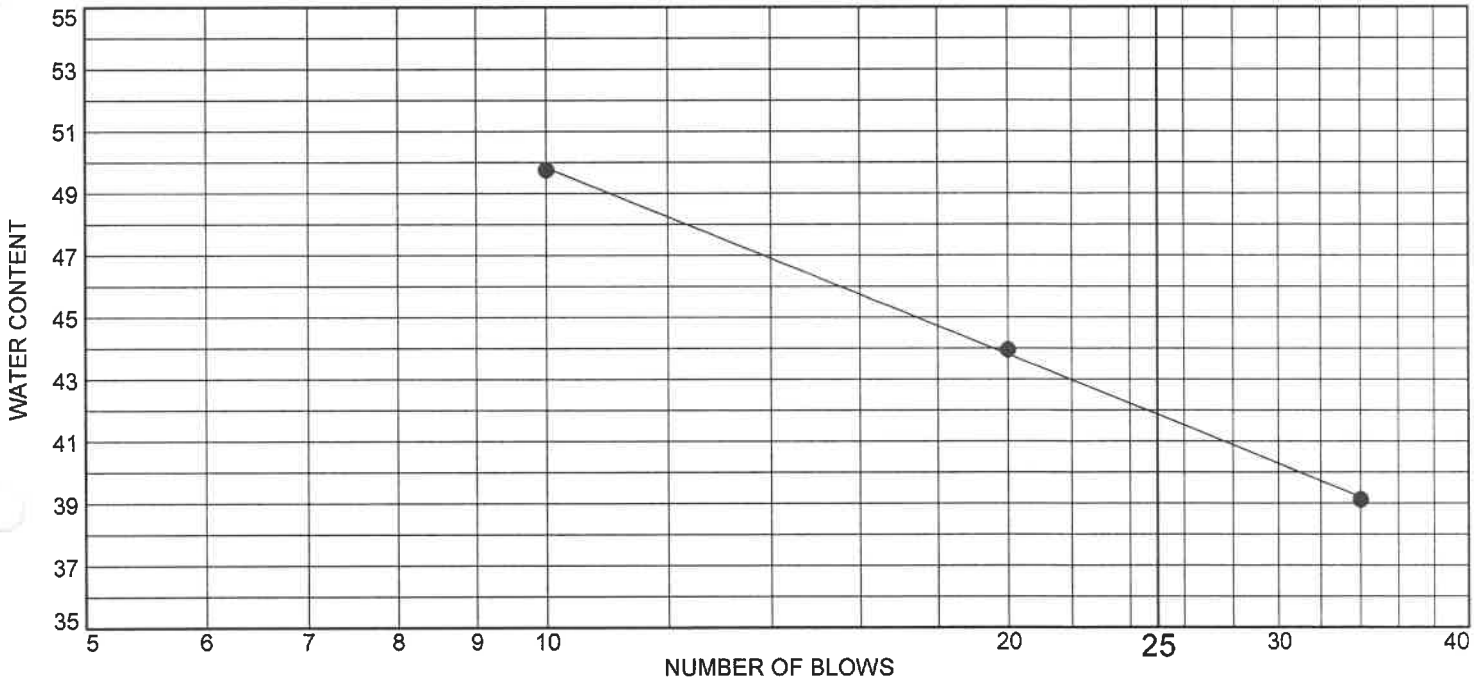
South Plainfield, New Jersey

Remarks:
● In-Situ %MC=30.0

Figure 13 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		41.9	22.9	19.0			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-30,S-4
Sample Number: S-14 **Depth:** 6'-8'

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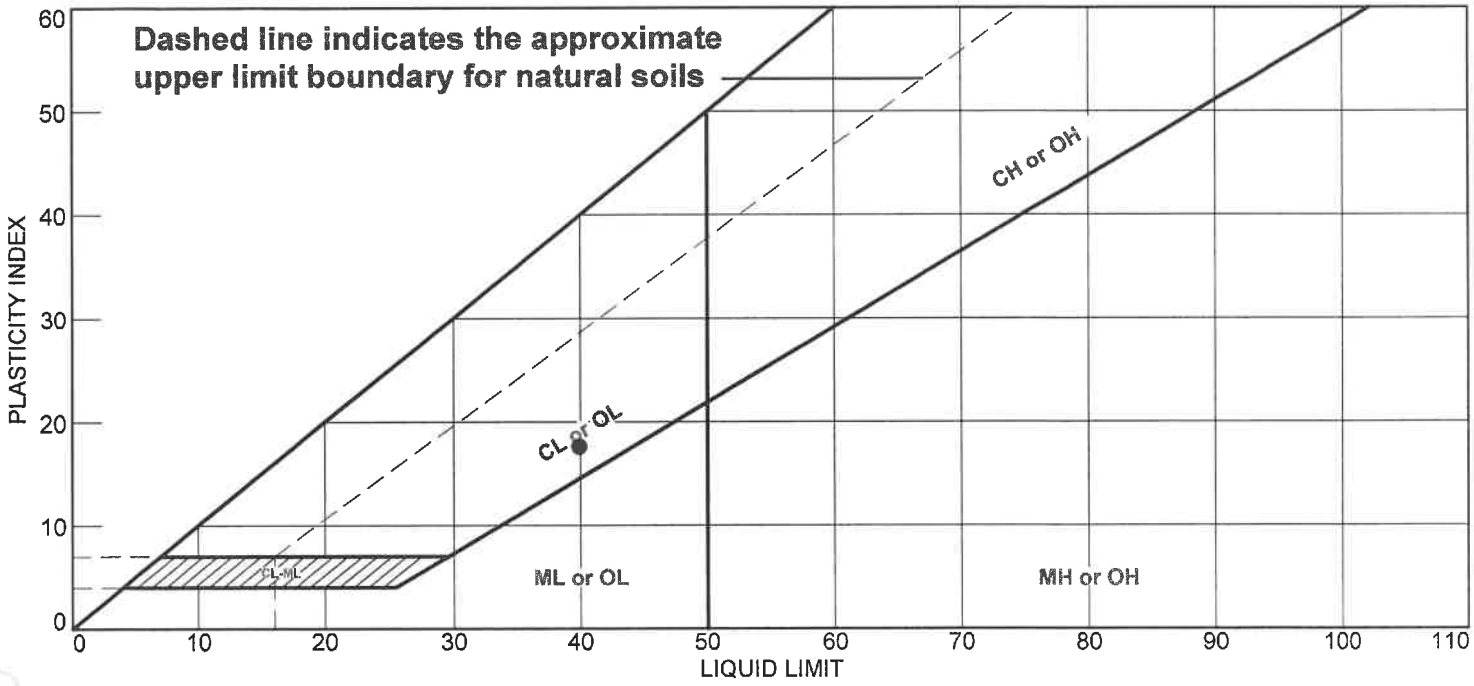
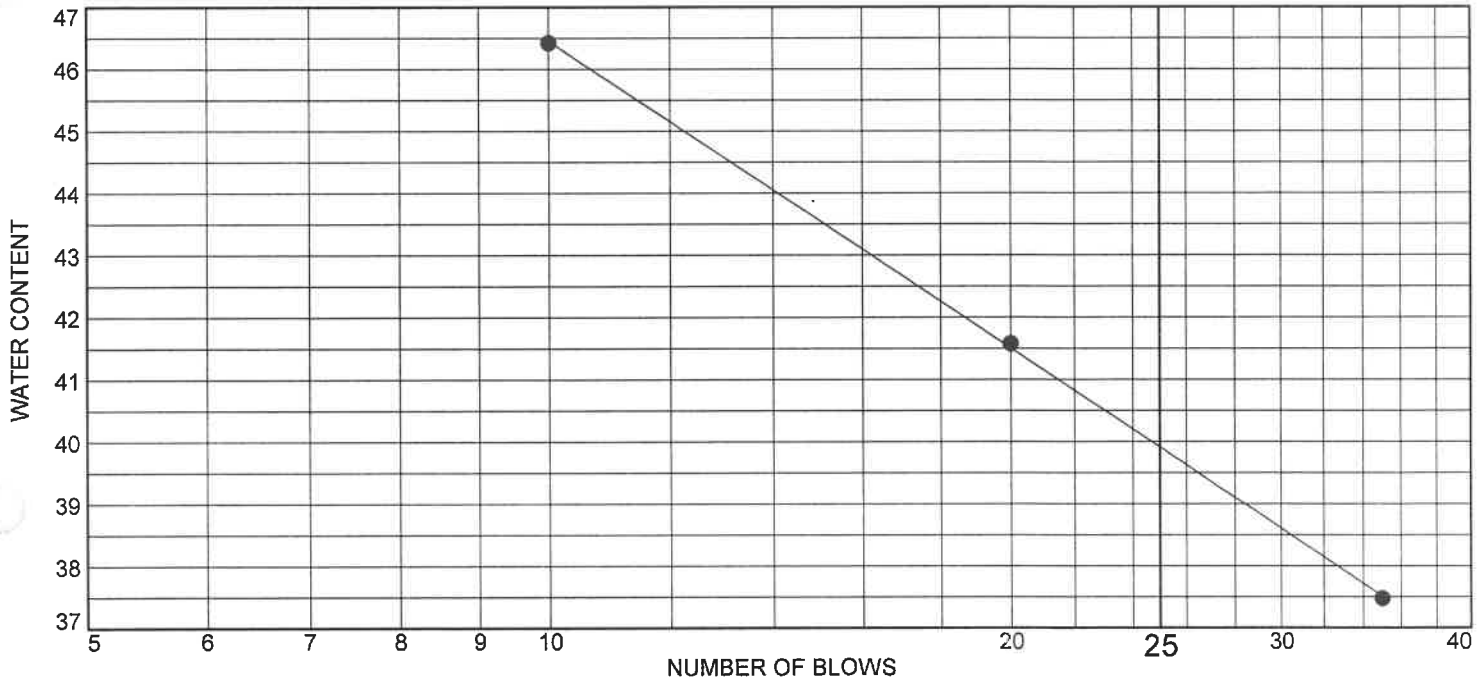
South Plainfield, New Jersey

Remarks:
● In-Situ %Mc=31.2

Figure 14 F 3

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●		39.9	22.3	17.6			

Project No. AOP-5632 **Client:** ANS GEO, Inc.

Project: AES-Riverside, Chaumont, NY

Location: B-38, S-2
Sample Number: S-15 **Depth:** 2'-4'

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South Plainfield, New Jersey

Remarks:
● In-Situ %MC=32.0

Figure 15 F 3

THERMAL RESISTIVITY

RESULTS

CONSULTANTS, INC.
4405 South Clinton Avenue
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Tel: (800) 545-ATUL
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THERMAL CONDUCTIVITY OF SOIL & SOFT ROCK BY THERMAL NEEDLE PROBE -IEEE 442

CLIENT: ANS Geo, Inc.
4405 South Clinton Avenue, Suite#A
South Plainfield, NJ 07080

DATE: 03-17-2021

Kind Attn: Dr. Vatsal A. Shah. PE. Ph. D, D.GE

FILE NO: AOP-5632

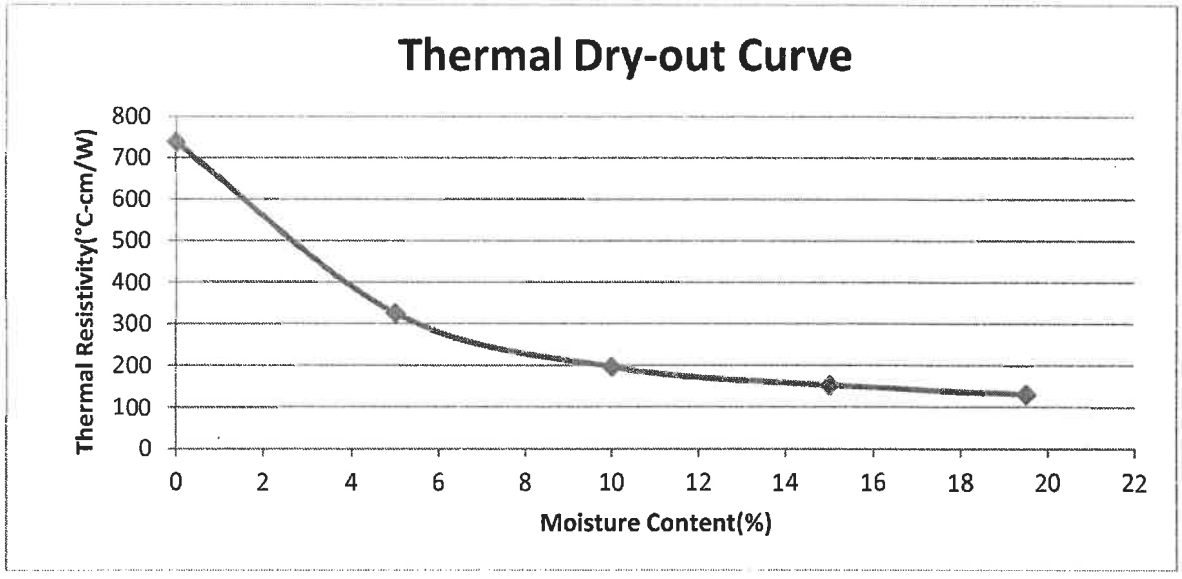
PROJECT: AES - Riverside
Chaumont, NY

REPORT NO: S-25

Test Data- Sample No. S-25 (B-18, Ther., 3'- 5')

Standard Proctor Value: 89.5
Optimum Moisture Content: 19.5%
Remolded Dry Density: 76.075 (85%)
In-Situ Moisture Content: 26.6%

Moisture Content (%)	Initial Soil Temperature (°C)	Thermal Resistivity (°C-cm/W)
0	26.5	739
5	26.2	325
10	25.9	196
15	25.8	153
19.5	25.7	130



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THERMAL CONDUCTIVITY OF SOIL & SOFT ROCK BY THERMAL NEEDLE PROBE -IEEE 442

CLIENT: ANS Geo, Inc.
4405 South Clinton Avenue, Suite#A
South Plainfield, NJ 07080

DATE: 03-17-2021

Kind Attn: Dr. Vatsal A. Shah. PE. Ph. D, D.GE

FILE NO: AOP-5632

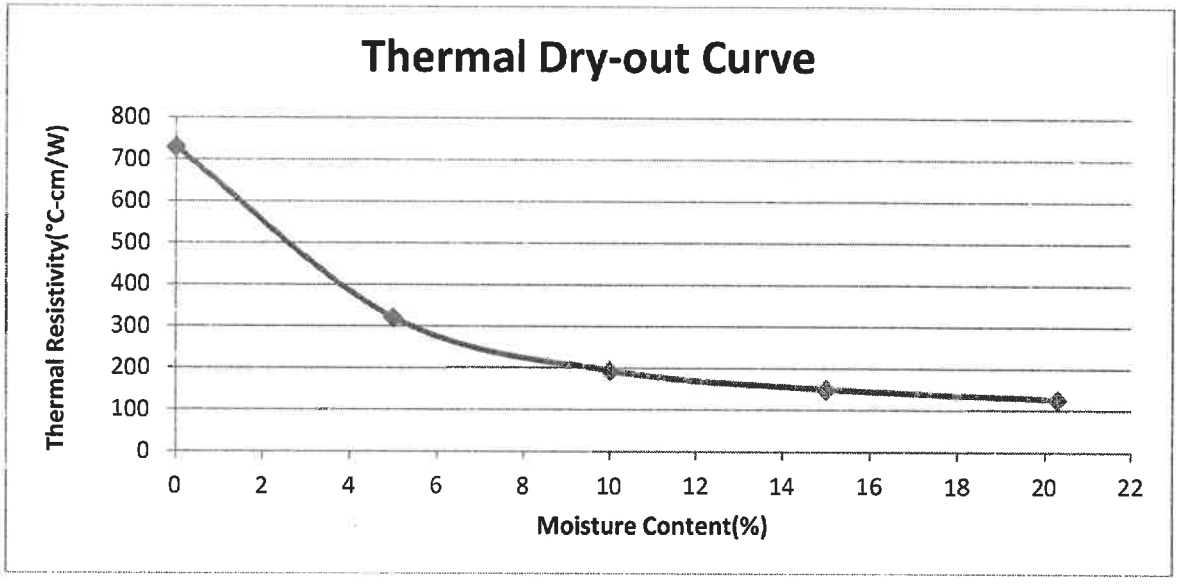
PROJECT: AES - Riverside
Chaumont, NY

REPORT NO: S-26

Test Data- Sample No. S-26 (B-30, Ther., 3'- 5')

Standard Proctor Value: 95.2
Optimum Moisture Content: 20.3%
Remolded Dry Density: 80.92 (85%)
In-Situ Moisture Content: 31.1%

Moisture Content (%)	Initial Soil Temperature (°C)	Thermal Resistivity (°C-cm/W)
0	27.1	730
5	26.6	320
10	26.3	192
15	26.2	148
20.3	26.1	125



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(908) 754-8383
Fax: (908) 754-8633

THERMAL CONDUCTIVITY OF SOIL & SOFT ROCK BY THERMAL NEEDLE PROBE -IEEE 442

CLIENT: ANS Geo, Inc.
4405 South Clinton Avenue, Suite#A
South Plainfield, NJ 07080

DATE: 03-17-2021

Kind Attn: Dr. Vatsal A. Shah. PE. Ph. D, D.GE

FILE NO: AOP-5632

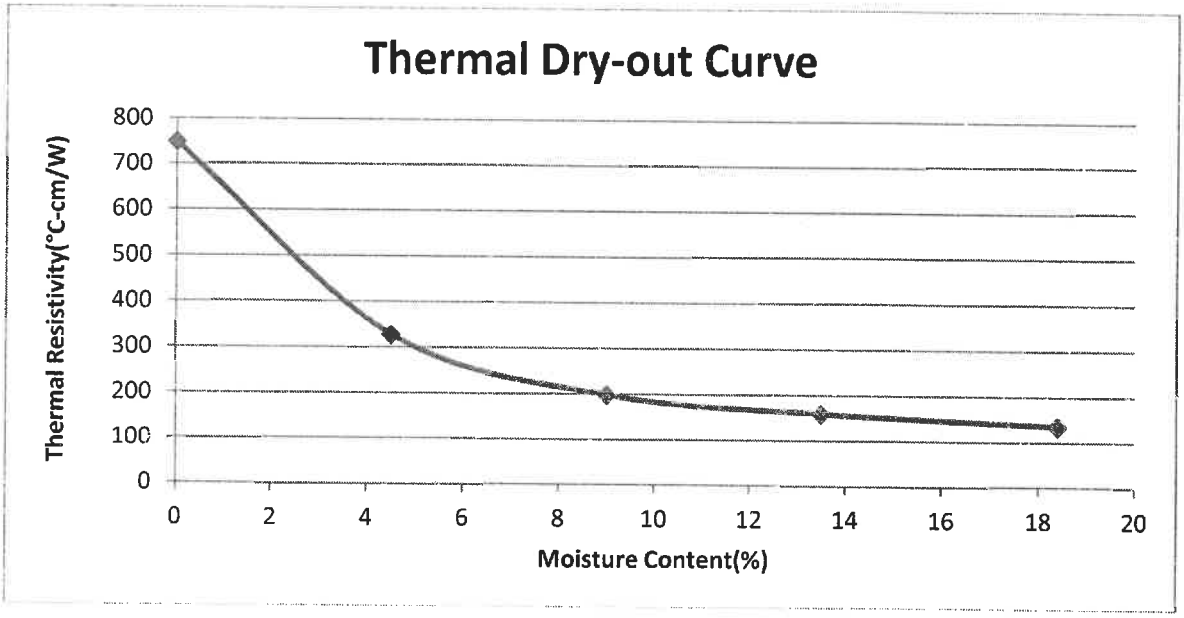
PROJECT: AES - Riverside
Chaumont, NY

REPORT NO: S-27

Test Data- Sample No. S-27 (B-05, Ther., 3'- 5')

Standard Proctor Value: 90.6
Optimum Moisture Content: 18.4%
Remolded Dry Density: 77.01 (85%)
In-Situ Moisture Content: 29.92%

Moisture Content (%)	Initial Soil Temperature (°C)	Thermal Resistivity (°C-cm/W)
0	26.1	749
4.5	25.7	328
9	25.5	198
13.5	25.3	159
18.4	25.1	135



CORROSIVITY SUITE

RESULTS

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CERTIFICATE OF TEST - CORROSION ANALYSIS

CLIENT: ANS Geo, Inc.
4405 South Clinton Avenue
South Plainfield, NJ 07080

DATE: 03/17/2021

FILE NO: AOP-5632

Kind Attn: Dr. Vatsal A. Shah. PE. Ph. D, D.GE

PROJECT: AES - Riverside
Chaumont, NY

REPORT NO: S-20 to S-24

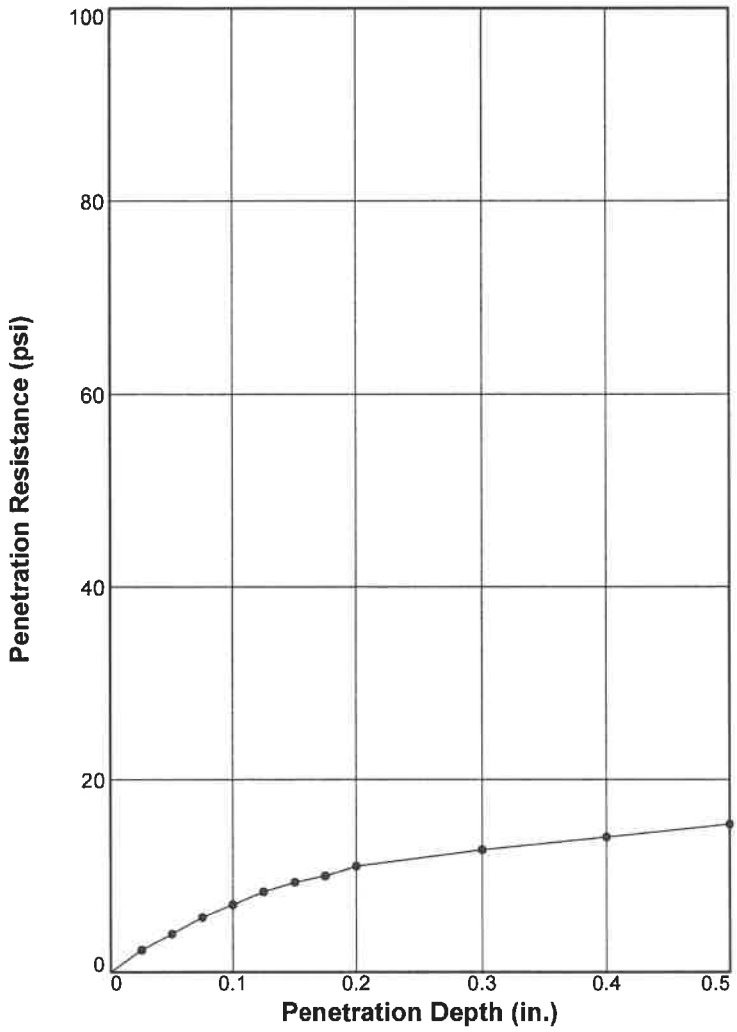
TEST PERFORMED: 1) Standard Test Method for Water Soluble Sulfate in Soil AS PER ASTM C-1580
2) Standard Test Method for measuring pH of Soil for use in Corrosion Testing AS PER ASTM G51-18
3) Standard Test Method for Measurement of Oxidation-Reduction Potential (ORP) of Soil AS PER ASTM G-200
4) Standard Method for Test for Determining Water Soluble Chloride Ion AS PER AASHTO T-291
5) Standard Test Method for Measuring Soil Resistivity using two-Electrode AS PER ASTM G187-18

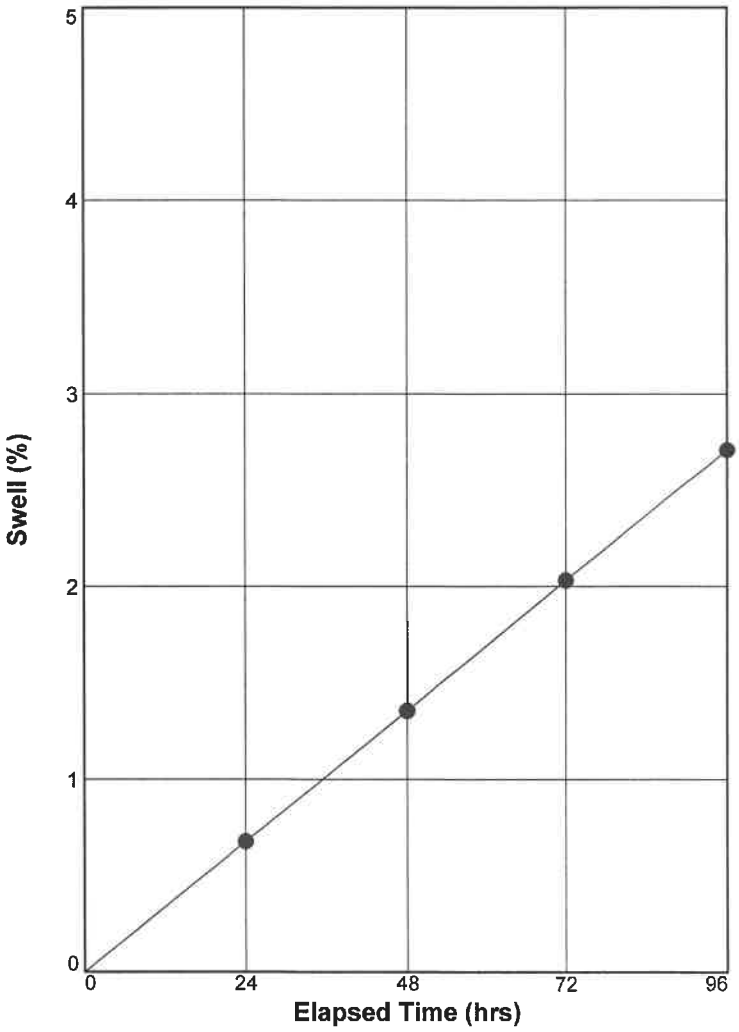
Sample No.	Sample ID	Sulfate (mg/Kg)	pH	ORP (mV)	Chloride (mg/Kg)	Resistivity (Ohm-cm)
S-20	B-36, Corr., 2'-3'	17	7.01	+111	30	5,000
S-21	B-20, Corr., 2'-3'	14	6.90	+106	25	5,000
S-22	B-04, Corr., 2'-3'	28	6.79	+151	45	6,500
S-23	B-07, Corr., 2'-3'	26	6.78	+135	40	5,500
S-24	B-14, Corr., 2'-3'	23	6.82	+121	35	6,000

CALIFORNIA BEARING RATIO

RESULTS

BEARING RATIO TEST REPORT
ASTM D 1883-07





	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	78.2	89.8	23.1	76.1	87.4	49.5	0.7	0.7	0.000	10	2.7
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
		87.1	23.3		

Project No: AOP-5632

Project: AES-Riverside, Chaumont, NY

Location: CBR, B-10

Sample Number: S-29 **Depth:** 1'-3'

Date:

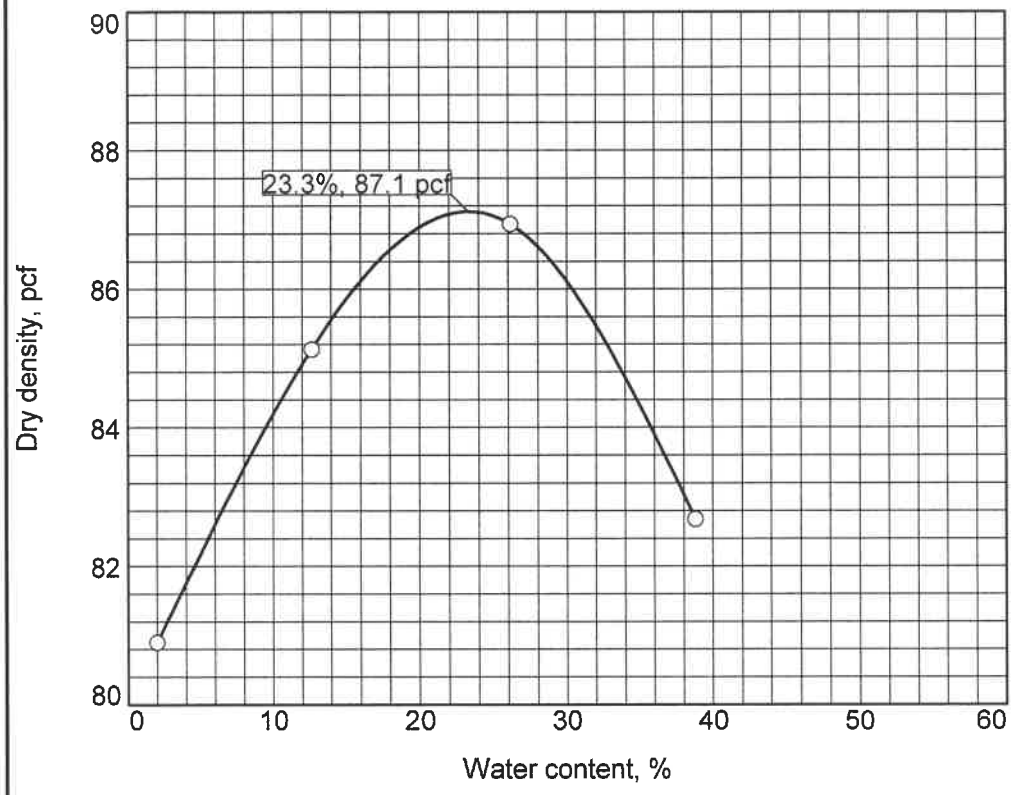
Test Description/Remarks:

BEARING RATIO TEST REPORT

ANS CONSULTANTS, INC.

Figure 29 F 4

COMPACTION TEST REPORT



Curve No.
S-31

Test Specification:
ASTM D 698-12 Method B Standard

Preparation Method _____
Hammer Wt. 5.5 lb.
Hammer Drop 12 in.
Number of Layers three
Blows per Layer 25
Mold Size 0.03333 cu. ft.

Test Performed on Material Passing 3/8 in. **Sieve**

NM _____ **LL** _____ **PI** _____
Sp.G. (ASTM D 854) _____
%>3/8 in. _____ **%<No.200** _____
USCS _____ **AASHTO** _____
Date Sampled _____
Date Tested _____
Tested By _____

TESTING DATA

	1	2	3	4	5	6
WM + WS	12.18	12.62	13.08	13.25		
WM	9.43	9.43	9.43	9.43		
WW + T #1	587.8	728.1	748.0	910.5		
WD + T #1	576.3	646.3	592.9	656.0		
TARE #1	0.0	0.0	0.0	0.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	2.0	12.7	26.2	38.8		
DRY DENSITY	80.9	85.1	86.9	82.7		

TEST RESULTS

Maximum dry density = 87.1 pcf

Optimum moisture = 23.3 %

Material Description

Remarks:

Project No. AOP-5632 **Client:** ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

○ **Location:** CBR, B-10 **Depth:** 1'-3' **Sample Number:** S-29

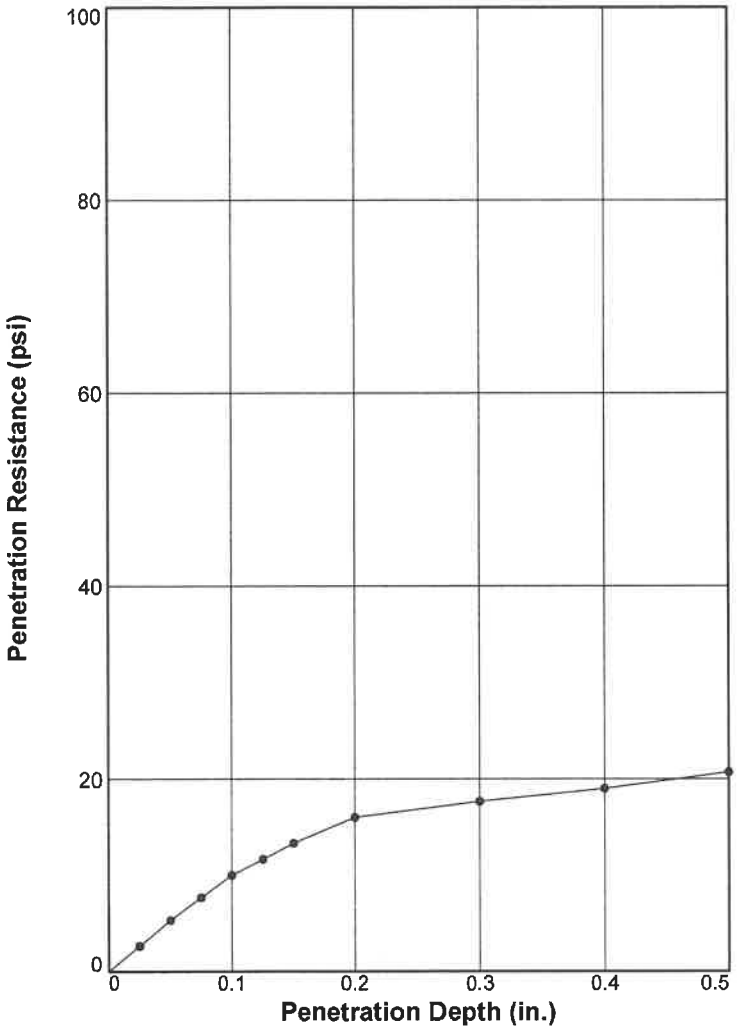
ANS CONSULTANTS, INC.

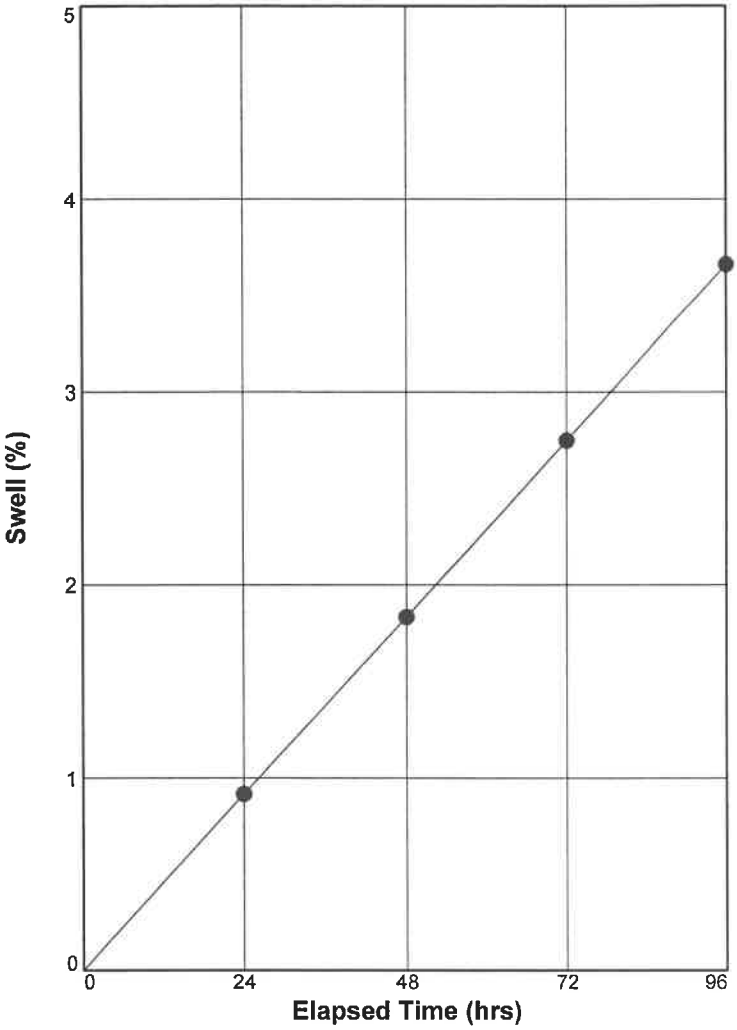
South Plainfield, New Jersey

Checked by:
Title:

Figure 29 F 2

BEARING RATIO TEST REPORT
ASTM D 1883-07





	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	81.8	90	23.7	78.9	86.8	47.9	1.0	1.1	0.000	10	3.7
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
		90.9	23.7		

Project No: AOP-5632

Project: AES-Riverside, Chaumont, NY

Location: CBR, B-19

Sample Number: S-30 **Depth:** 1'-3'

Date:

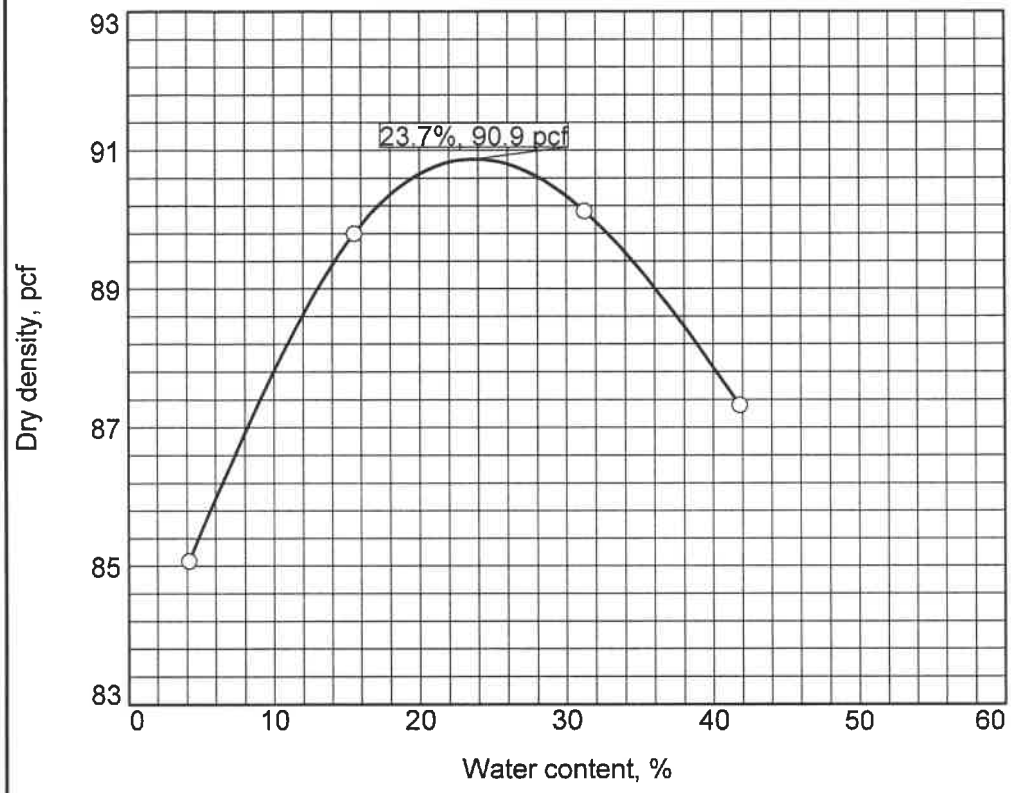
Test Description/Remarks:

BEARING RATIO TEST REPORT

ANS CONSULTANTS, INC.

Figure 30 F 4

COMPACTION TEST REPORT



Curve No.
S-30

Test Specification:
ASTM D 1557-12 Method C Modified

Preparation Method _____
Hammer Wt. 10 lb.
Hammer Drop 18 in.
Number of Layers five
Blows per Layer 56
Mold Size 0.075 cu. ft.

Test Performed on Material Passing 3/4 in. **Sieve**

NM _____ **LL** _____ **PI** _____
Sp.G. (ASTM D 854) _____
%>3/4 in. _____ **%<No.200** _____
USCS _____ **AASHTO** _____
Date Sampled _____
Date Tested _____
Tested By _____

TESTING DATA

	1	2	3	4	5	6
WM + WS	20.39	21.53	22.62	23.03		
WM	13.75	13.75	13.75	13.75		
WW + T #1	723.8	734.3	1031.0	1057.6		
WD + T #1	695.0	635.6	785.6	745.9		
TARE #1	0.0	0.0	0.0	0.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	4.1	15.5	31.2	41.8		
DRY DENSITY	85.1	89.8	90.1	87.3		

TEST RESULTS

Maximum dry density = 90.9 pcf

Optimum moisture = 23.7 %

Material Description

Remarks:

Project No. AOP-5632 **Client:** ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

○ **Location:** CBR, B-19 **Depth:** 1'-3' **Sample Number:** S-30

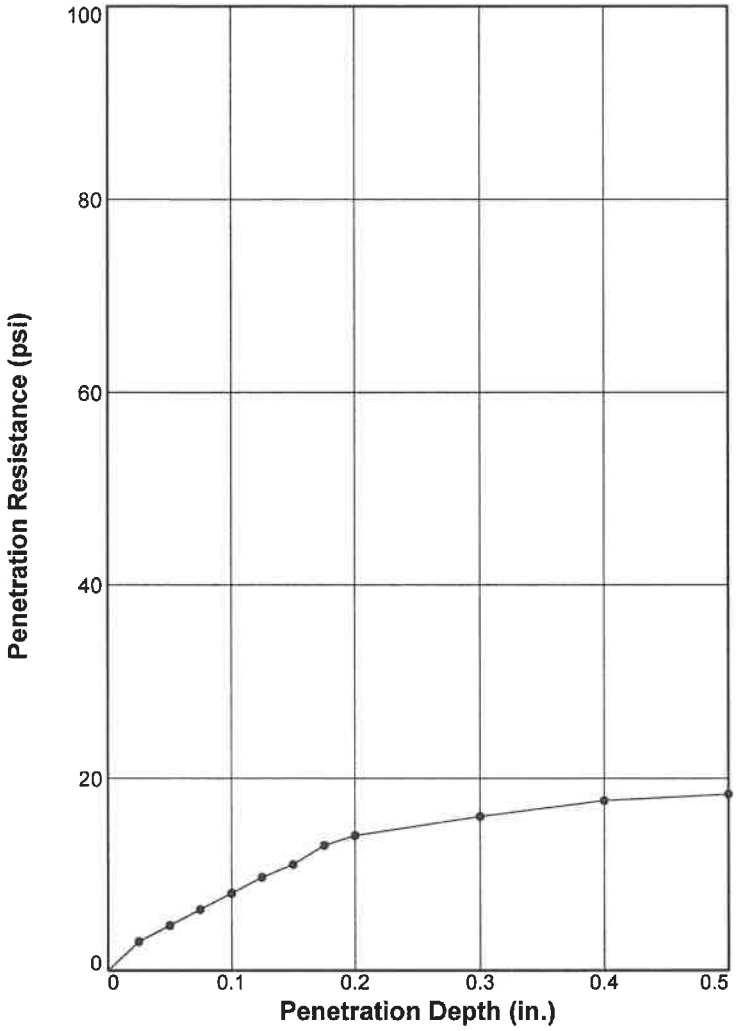
ANS CONSULTANTS, INC.

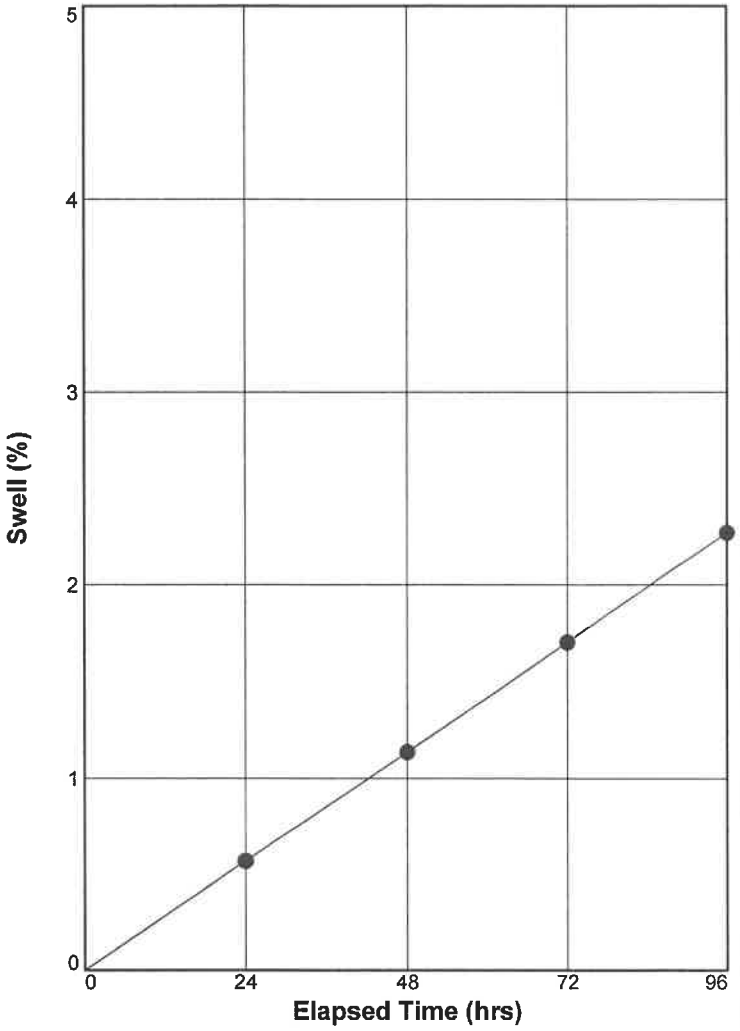
South Plainfield, New Jersey

Checked by:
Title:

Figure 30 F 2

BEARING RATIO TEST REPORT
ASTM D 1883-07





	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	83.7	89.9	22.7	81.8	87.9	59.8	0.8	0.9	0.000	10	2.3
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
		93.1	22.7		

Project No: AOP-5632

Project: AES-Riverside, Chaumont, NY

Location: CBR, B-32

Sample Number: S-31 **Depth:** 1'-3'

Date:

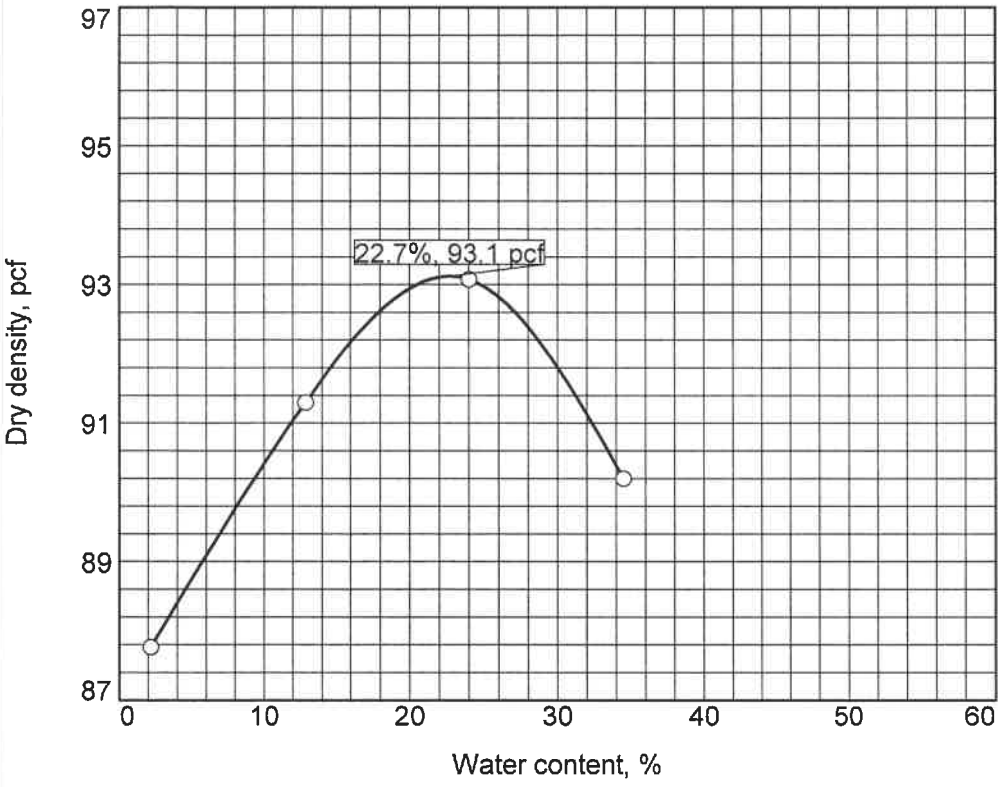
Test Description/Remarks:

BEARING RATIO TEST REPORT

ANS CONSULTANTS, INC.

Figure 31 F 4

COMPACTION TEST REPORT



Curve No.
S-29

Test Specification:
ASTM D 1557-12 Method C Modified

Preparation Method _____
Hammer Wt. 10 lb.
Hammer Drop 18 in.
Number of Layers five
Blows per Layer 56
Mold Size 0.075 cu. ft.
Test Performed on Material Passing 3/4 in. **Sieve**

NM _____ **LL** _____ **PI** _____
Sp.G. (ASTM D 854) _____
%>3/4 in. _____ **%<No.200** _____
USCS _____ **AASHTO** _____
Date Sampled _____
Date Tested _____
Tested By _____

TESTING DATA

	1	2	3	4	5	6
WM + WS	20.47	21.48	22.40	22.85		
WM	13.75	13.75	13.75	13.75		
WW + T #1	668.3	855.6	756.4	855.4		
WD + T #1	654.2	758.1	609.9	635.9		
TARE #1	0.0	0.0	0.0	0.0		
WW + T #2						
WD + T #2						
TARE #2						
MOISTURE	2.2	12.9	24.0	34.5		
DRY DENSITY	87.8	91.3	93.1	90.2		

TEST RESULTS

Maximum dry density = 93.1 pcf

Optimum moisture = 22.7 %

Material Description

Remarks:

Project No. AOP-5632 **Client:** ANS GEO, Inc.
Project: AES-Riverside, Chaumont, NY

○ **Location:** CBR, B-32 **Depth:** 1'-3' **Sample Number:** S-31

Checked by:
Title:

ANS CONSULTANTS, INC.

South Plainfield, New Jersey

Figure 31 F 2

ROCK STRENGTH TESTING

RESULTS

CONSULTANTS, INC.
4405 South Clinton Avenue
South Plainfield, NJ 07080

Tel: (800) 545-ATUL
(908) 754-8383
Fax: (908) 754-8633

CLIENT : ANS GEO, Inc.
AES -Riverside
Chaumont, NY

DATE : 03/13/2021

FILE NO. : AOP-5632

Attn. : Mr. Dr. Vatsal A. Shah, PE, Ph D, DGE

PROJECT : AES - Riverside
Chaumont, NY

REPORT No. : 28

TEST REQUIRED : Unconfined Compression Strength of intact Rock Core
AS PER ASTM D 2938

DATE RECEIVED: 03/07/2021

DATE TESTED : 03/13/2021

IDENTIFICATION	B - 03	B - 20		
Depth (feet)	1.1 -13.1	1.8 - 12.9		
Length of Core Drilled (in) :	9.500	12.000		
Length of Core Prepared (in) :	3.7195	3.8540		
Diameter (in) :	1.9780	1.9780		
Area (sq. in.) :	3.0732	3.0732		
Ratio H to D :	2.0000	2.0000		
Correction Factor :	1.0000	1.0000		
Crushing Load (lbs) :	22,140	28,400		
P. S. I. :	7,204	6,240		
Corrected P. S. I. :	**7,200**	**6,240**		
Density pcf	166.90	178.80		

REMARKS :

1. Average compressive strength of two (2) cores was 8,220 psi.
2. Rock core was conventional weight with density (unit weight) of ± 172.9 lb./ft³.
3. Compression testing machine of 500,000 lb. Capacity, manufactured by Test Mark Industries, Sr. No. 10897, Model # CM-5000 EBS (Extended Frame) was utilized for testing cores.

ANS GEO

Attachment E

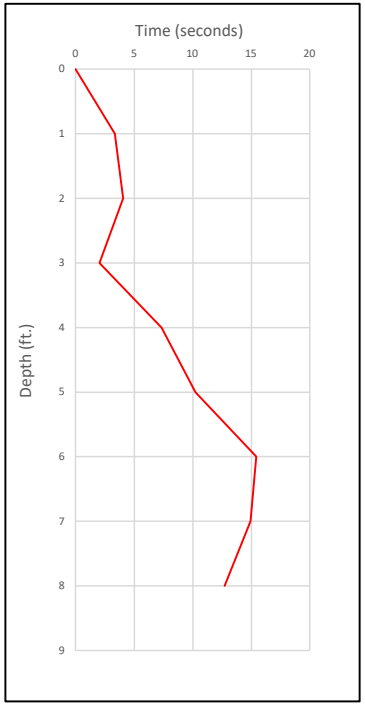
Pile Load Testing Logs

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-01A
Date/Time Installed:	3/17/21 8:20 AM	Date/Time Tested:	4/6/21 3:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	70.08
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.00	Avg. Installation Rate (sec/ft)	8.76

Embedment Data

Depth (ft.)	Time (s)
0	0
1	3.35
2	4.06
3	2.02
4	7.34
5	10.22
6	15.44
7	14.93
8	12.72
Total Time (s) =	70.08



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	1,500	0.0000	0.0000	0.0000
1	1,500	1,500	0.0060	0.0045	0.0053
1	3,000	3,000	0.0085	0.0105	0.0095
1	4,000	4,000	0.0100	0.0165	0.0133
1	5,000	5,400	0.0120	0.0235	0.0178
1	6,000	6,000	0.0140	0.0285	0.0213
1	7,000	7,020	0.0155	0.0360	0.0258
1	8,000	8,000	0.0170	0.0465	0.0318
1	9,000	9,000	0.0235	0.0590	0.0413
1	10,000	10,060	0.0370	0.0790	0.0580
Unload					
1	0	0	0.0330	0.0380	0.0355
Reload					
1	Max.	13,080	0.2120	0.2790	0.2455
Unload					
1	0	0	0.1990	0.2095	0.2043

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	5,000	0.0510	0.0490	0.0500
1	1,000	1,120	0.1330	0.1545	0.1438
1	1,500	1,580	0.2345	0.2655	0.2500
1	0	0	0.0080	0.0605	0.0343
1	500	640	0.0975	0.1215	0.1095
1	1,000	1,020	0.1570	0.1770	0.1670
1	1,500	1,500	0.2380	0.2620	0.2500
1	2,000	2,000	0.3475	0.3825	0.3650
1	2,500	2,480	0.4360	0.4825	0.4593
1	0	0	0.0270	0.0955	0.0613
1	2,500	2,560	0.4710	0.5365	0.5038
1	3,000	3,020	0.5675	0.6405	0.6040
1	3,500	3,460	0.6650	0.7565	0.7108
1	4,000	4,000	0.7960	0.9175	0.8568
Unload					
1	0	0	0.0450	0.1865	0.1158
Reload					
1	Max.	4,340	0.9100	1.0705	0.9903
Unload					
1	0	0	0.0300	0.2315	0.1308

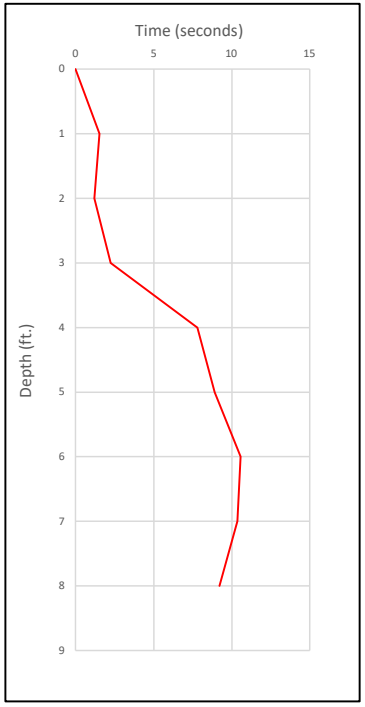
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-01B
Date/Time Installed:	3/17/21 8:30 AM	Date/Time Tested:	4/6/21 3:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	51.75
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.00	Avg. Installation Rate (sec/ft)	6.47

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.52
2	1.19
3	2.24
4	7.79
5	8.89
6	10.57
7	10.35
8	9.20
Total Time (s) =	51.75



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0030	0.0050	0.0040
1	3,000	3,060	0.0040	0.0115	0.0078
1	4,000	3,960	0.0045	0.0165	0.0105
1	5,000	5,000	0.0045	0.0225	0.0135
1	6,000	6,000	0.0045	0.0295	0.0170
1	7,000	7,000	0.0050	0.0405	0.0228
1	8,000	8,000	0.0065	0.0540	0.0303
1	9,000	9,000	0.0130	0.0700	0.0415
1	10,000	10,000	0.0230	0.0905	0.0568
Unload					
1	0	0	0.0315	0.0425	0.0370
Reload					
1	Max.	13,000	0.1905	0.2960	0.2433
Unload					
1	0	0	0.1945	0.2160	0.2053

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	5,000	0.0515	0.0530	0.0523
1	1,000	1,120	0.1520	0.1510	0.1515
1	1,500	1,580	0.2585	0.2520	0.2553
1	0	0	0.0330	0.0360	0.0345
1	500	640	0.1160	0.1140	0.1150
1	1,000	1,020	0.1730	0.1675	0.1703
1	1,500	1,500	0.2565	0.2525	0.2545
1	2,000	2,000	0.3810	0.3640	0.3725
1	2,500	2,480	0.4750	0.4540	0.4645
1	0	0	0.0820	0.0615	0.0718
1	2,500	2,560	0.5335	0.5030	0.5183
1	3,000	3,020	0.6475	0.6165	0.6320
1	3,500	3,460	0.7740	0.7310	0.7525
1	4,000	4,000	0.9345	0.8760	0.9053
Unload					
1	0	0	0.1515	0.1250	0.1383
Reload					
1	Max.	4,340	1.1110	1.0430	1.0770
Unload					
1	0	0	0.1775	0.1475	0.1625

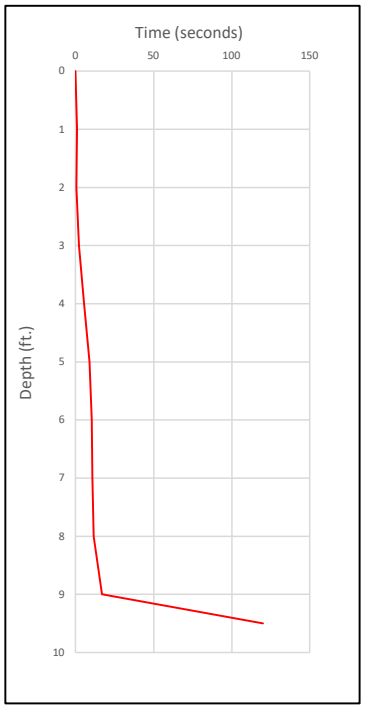
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-02A
Date/Time Installed:	3/16/21	Date/Time Tested:	4/7/21 9:00 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	186.76
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9.50	Avg. Installation Rate (sec/ft)	19.66

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0.76
2	0.45
3	1.97
4	5.33
5	8.93
6	10.24
7	10.67
8	11.59
9	16.82
9.5	120
Total Time (s) =	186.76



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	0.0070	-0.0005	0.0033
1	3,000	3,080	0.0110	0.0015	0.0063
1	4,000	4,080	0.0120	0.0050	0.0085
1	5,000	5,020	0.0130	0.0095	0.0113
1	6,000	6,040	0.0140	0.0140	0.0140
1	7,000	6,980	0.0140	0.0215	0.0178
1	8,000	8,000	0.0140	0.0280	0.0210
1	9,000	9,000	0.0165	0.0350	0.0258
1	10,000	9,980	0.0195	0.0435	0.0315
Unload					
1	0	0	0.0095	0.0140	0.0118
Reload					
1	Max.	13,160	0.0435	0.0820	0.0628
Unload					
1	0	0	0.0275	0.0365	0.0320

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	580	0.0475	0.0845	0.0660
1	1,000	1,040	0.1075	0.2085	0.1580
1	1,500	1,500	0.1885	0.3330	0.2608
1	0	0	0.0725	-0.0060	0.0333
1	500	520	0.0995	0.1010	0.1003
1	1,000	1,020	0.1475	0.2210	0.1843
1	1,500	1,500	0.2235	0.3535	0.2885
1	2,000	2,000	0.3090	0.5090	0.4090
1	2,500	2,580	0.4175	0.6720	0.5448
1	0	0	0.1770	-0.0620	0.0575
1	2,500	2,500	0.4660	0.7195	0.5928
1	3,000	3,000	0.5705	0.8575	0.7140
1	3,500	3,540	0.7035	1.0385	0.8710
1	4,000	4,000	0.8345	1.2075	1.0210
Unload					
1	0	0	0.3165	-0.0725	0.1220

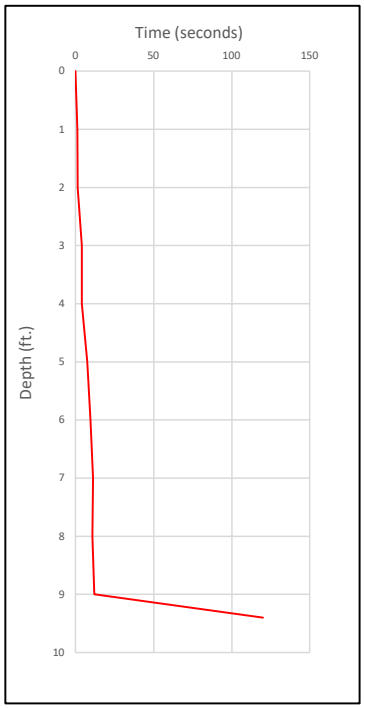
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-02B
Date/Time Installed:	3/16/21	Date/Time Tested:	4/7/21 8:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	180.53
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9.40	Avg. Installation Rate (sec/ft)	19.21

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.01
2	1.19
3	3.95
4	3.98
5	7.32
6	9.44
7	11.1
8	10.66
9	11.88
9.4	120.00
Total Time (s) =	180.53



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0050	0.0010	0.0030
1	3,000	3,000	0.0120	-0.0010	0.0055
1	4,000	4,020	0.0175	-0.0030	0.0073
1	5,000	5,040	0.0240	-0.0060	0.0090
1	6,000	6,060	0.0315	-0.0085	0.0115
1	7,000	7,000	0.0385	-0.0100	0.0143
1	8,000	8,040	0.0475	-0.0105	0.0185
1	9,000	9,100	0.0555	-0.0100	0.0228
1	10,000	10,000	0.0675	-0.0075	0.0300
Unload					
1	0	0	0.0135	0.0080	0.0108
Reload					
1	Max.	13,080	0.1085	0.0130	0.0608
Unload					
1	0	0	0.0365	0.0280	0.0323

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1285	0.0475	0.0880
1	1,000	1,000	0.2540	0.1265	0.1903
1	1,500	1,500	0.3805	0.2195	0.3000
1	0	0	0.0730	0.0270	0.0500
1	500	500	0.1830	0.0835	0.1333
1	1,000	1,000	0.2935	0.1550	0.2243
1	1,500	1,500	0.4205	0.2505	0.3355
1	2,000	2,000	0.5565	0.3685	0.4625
1	2,500	2,500	0.7060	0.8075	0.7568
1	0	0	0.1250	0.0645	0.0948
1	2,500	2,500	0.7610	0.5605	0.6608
1	3,000	3,000	0.8865	0.6835	0.7850
1	3,500	3,500	1.050	0.8455	0.9478
1	4,000	4,000	1.2040	0.9980	1.1010
Unload					
1	0	0	0.2025	0.1535	0.1780

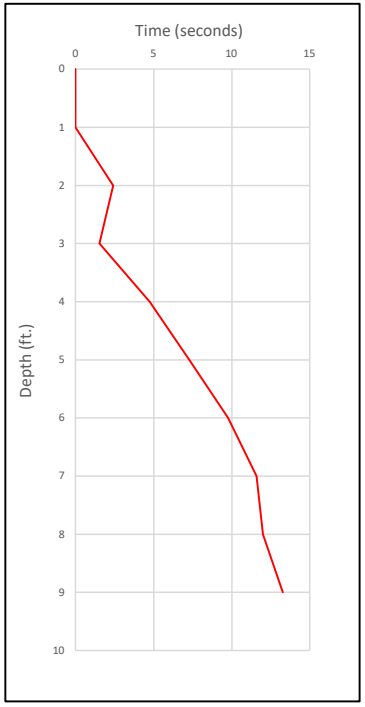
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-03A
Date/Time Installed:	3/16/21	Date/Time Tested:	4/7/21 10:10 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	62.55
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	6.95

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	2.4
3	1.51
4	4.73
5	7.28
6	9.77
7	11.59
8	12
9	13.27
Total Time (s) =	62.55



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0105	-0.0050	0.0028
1	3,000	3,060	0.0160	-0.0070	0.0045
1	4,000	4,000	0.0195	-0.0070	0.0063
1	5,000	5,040	0.0220	-0.0060	0.0080
1	6,000	6,240	0.0255	-0.0030	0.0113
1	7,000	7,040	0.0280	0.0010	0.0145
1	8,000	8,080	0.0315	0.0045	0.0180
1	9,000	9,060	0.0360	0.0010	0.0185
1	10,000	10,020	0.0400	0.0150	0.0275
Unload					
1	0	0	0.0110	0.0070	0.0090
Reload					
1	Max.	13,080	0.0600	0.0400	0.0500
Unload					
1	0	0	0.0230	0.0180	0.0205

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.4300	0.1340	0.2820
1	1,000	1,220	0.1030	0.2395	0.1713
1	1,500	1,560	0.1525	0.3270	0.2398
1	0	0	0.0105	0.0215	0.0160
1	500	540	0.0375	0.1445	0.0910
1	1,000	1,140	0.0980	0.2625	0.1803
1	1,500	1,680	0.1660	0.3645	0.2653
1	2,000	2,000	0.2250	0.4510	0.3380
1	2,500	2,480	0.3140	0.5675	0.4408
1	0	0	0.0305	0.0565	0.0435
1	2,500	2,640	0.3650	0.6570	0.5110
1	3,000	3,020	0.4465	0.7525	0.5995
1	3,500	3,500	0.5620	0.8815	0.7218
1	4,000	3,980	0.6990	1.0340	0.8665
Unload					
1	0	0	0.0825	0.1050	0.0938
Reload					
1	Max.	4,260	0.8250	1.1805	1.0028
Unload					
1	0	0	0.1085	0.1080	0.1083

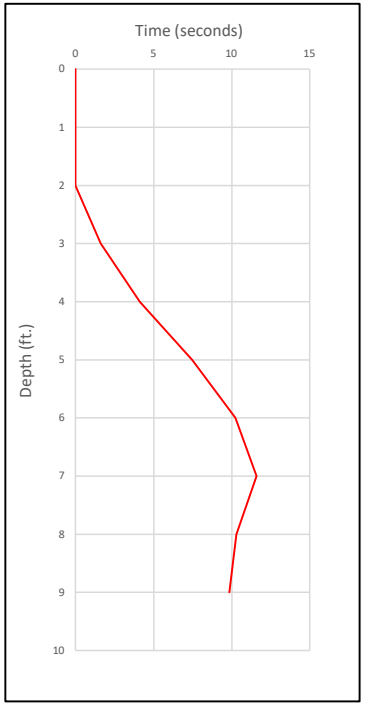
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-03B
Date/Time Installed:	3/16/21	Date/Time Tested:	4/7/21 9:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	55.16
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	6.13

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	1.61
4	4.11
5	7.47
6	10.24
7	11.59
8	10.3
9	9.84
Total Time (s) =	55.16



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0140	0.0065	-0.0038
1	3,000	3,000	-0.0140	0.0105	-0.0018
1	4,000	4,020	-0.0125	0.0120	-0.0003
1	5,000	5,020	-0.0105	0.0140	0.0018
1	6,000	6,040	-0.0060	0.0160	0.0050
1	7,000	7,080	-0.0200	0.0165	-0.0018
1	8,000	8,020	0.0030	0.0195	0.0113
1	9,000	9,000	0.0085	0.0225	0.0155
1	10,000	10,000	0.0155	0.0270	0.0213
Unload					
1	0	0	-0.0085	0.0111	0.0013
Reload					
1	Max.	13,000	0.0555	0.0605	0.0580
Unload					
1	0	0	0.0235	0.0380	0.0308

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0825	0.0565	0.0695
1	1,000	1,260	0.1970	0.1555	0.1763
1	1,500	1,660	0.2880	0.2485	0.2683
1	0	0	0.0350	0.0235	0.0293
1	500	600	0.1220	0.0870	0.1045
1	1,000	1,120	0.2090	0.1655	0.1873
1	1,500	1,700	0.3070	0.2600	0.2835
1	2,000	2,040	0.3675	0.3325	0.3500
1	2,500	2,560	0.5085	0.4825	0.4955
1	0	0	0.0665	0.0600	0.0633
1	2,500	2,640	0.5375	0.5140	0.5258
1	3,000	3,040	0.6370	0.6325	0.6348
1	3,500	3,580	0.7665	0.7975	0.7820
1	4,000	4,060	0.8955	0.9640	0.9298
Unload					
1	0	0	0.0900	0.1265	0.1083
Reload					
1	Max.	3,940	0.9470	1.0605	1.0038
Unload					
1	0	0	0.0945	0.1425	0.1185

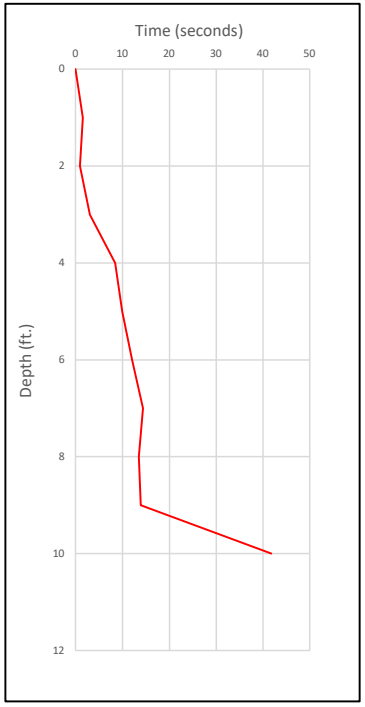
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-04A
Date/Time Installed:	3/17/21 9:30 AM	Date/Time Tested:	4/6/21 2:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	119.28
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	11.93

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.53
2	0.9
3	3.01
4	8.44
5	9.91
6	12.05
7	14.33
8	13.46
9	13.85
10	41.8
Total Time (s) =	119.28



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0000	0.0010	0.0005
1	3,000	3,020	-0.0015	0.0060	0.0023
1	4,000	4,060	-0.0020	0.0080	0.0030
1	5,000	5,040	-0.0015	0.0095	0.0040
1	6,000	6,020	0.0000	0.0115	0.0058
1	7,000	7,080	0.0030	0.0135	0.0083
1	8,000	8,060	0.0055	0.0155	0.0105
1	9,000	9,020	0.0095	0.0185	0.0140
1	10,000	1,080	0.0140	0.0220	0.0180
Unload					
1	0	0	0.0095	0.0105	0.0100
Reload					
1	Max.	13,080	0.0375	0.0440	0.0408
Unload					
1	0	0	0.0260	0.0265	0.0263

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0405	0.0605	0.0505
1	1,000	1,000	0.1455	0.1680	0.1568
1	1,500	1,500	0.2405	0.2785	0.2595
1	0	0	0.0550	0.0475	0.0513
1	500	600	0.1200	0.1340	0.1270
1	1,000	1,020	0.1830	0.2060	0.1945
1	1,500	1,540	0.2660	0.2995	0.2828
1	2,000	2,060	0.3735	0.4120	0.3928
1	2,500	2,520	0.4845	0.5285	0.5065
1	0	0	0.0945	0.0925	0.0935
1	2,500	2,540	0.5295	0.5690	0.5493
1	3,000	2,940	0.6390	0.6845	0.6618
1	3,500	3,500	0.7790	0.8205	0.7998
1	4,000	4,020	0.9160	0.9505	0.9333
Unload					
1	0	0	0.1690	0.1200	0.1445
Reload					
1	Max.	4,160	1.0335	1.0630	1.0483
Unload					
1	0	0	0.1935	0.1600	0.1768

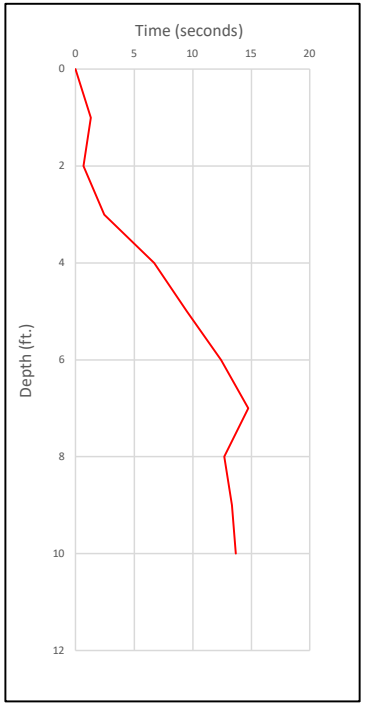
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-04B
Date/Time Installed:	3/17/21 9:35 AM	Date/Time Tested:	4/6/21 2:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	87.46
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	8.75

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.29
2	0.66
3	2.44
4	6.71
5	9.49
6	12.41
7	14.76
8	12.68
9	13.35
10	13.67
Total Time (s) =	87.46



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0040	0.0030	0.0035
1	3,000	3,080	0.0040	0.0085	0.0063
1	4,000	4,060	0.0040	0.0130	0.0085
1	5,000	5,000	0.0030	0.0190	0.0110
1	6,000	6,080	0.0015	0.0245	0.0130
1	7,000	7,040	-0.0010	0.0315	0.0153
1	8,000	8,060	-0.0025	0.0400	0.0188
1	9,000	9,020	-0.0030	0.0415	0.0193
1	10,000	10,080	-0.0030	0.0565	0.0268
Unload					
1	0	0	0.0085	0.0115	0.0100
Reload					
1	Max.	13,000	0.0045	0.0920	0.0483
Unload					
1	0	0	0.0230	0.0290	0.0260

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0305	0.0615	0.0460
1	1,000	1,000	0.1040	0.1775	0.1408
1	1,500	1,500	0.1985	0.2900	0.2443
1	0	0	0.0035	0.0470	0.0253
1	500	600	0.0645	0.1350	0.0998
1	1,000	1,020	0.1290	0.2140	0.1715
1	1,500	1,540	0.2135	0.3135	0.2635
1	2,000	2,060	0.3215	0.4295	0.3755
1	2,500	2,520	0.4350	0.5470	0.4910
1	0	0	0.0125	0.0885	0.0505
1	2,500	2,540	0.4695	0.5885	0.5290
1	3,000	2,940	0.5910	0.7010	0.6460
1	3,500	3,500	0.7360	0.8310	0.7835
1	4,000	4,020	0.7915	0.8990	0.8453
Unload					
1	0	0	0.0375	0.1400	0.0888
Reload					
1	Max.	4,160	1.0010	1.0660	1.0335
Unload					
1	0	0	0.0640	0.1675	0.1158

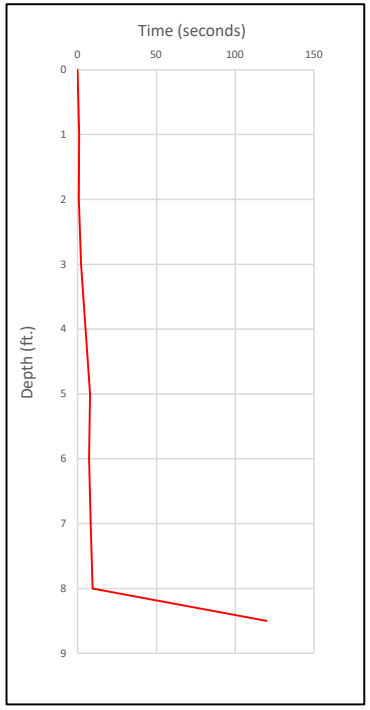
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-05A
Date/Time Installed:	3/17/21 10:00 AM	Date/Time Tested:	4/6/21 1:10 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	161.67
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.50	Avg. Installation Rate (sec/ft)	19.02

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.00
2	0.82
3	2.16
4	5.10
5	7.80
6	7.22
7	8.17
8	9.40
8.5	120.00
Total Time (s) =	161.67



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0000	0.0025	0.0013
1	3,000	3,080	0.0020	0.0040	0.0030
1	4,000	4,060	0.0045	0.0045	0.0045
1	5,000	5,060	0.0075	0.0045	0.0060
1	6,000	6,040	0.0130	0.0045	0.0088
1	7,000	7,020	0.0200	0.0050	0.0125
1	8,000	8,060	0.0280	0.0075	0.0178
1	9,000	9,040	0.0395	0.0150	0.0273
1	10,000	10,000	0.0545	0.0250	0.0398
Unload					
1	0	0	0.2700	0.0180	0.1440
Reload					
1	Max.	13,000	0.1985	0.1595	0.1790
Unload					
1	0	0	0.1660	0.1485	0.1573

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	580	0.0480	0.1195	0.0838
1	1,000	1,020	0.1120	0.1970	0.1545
1	1,500	1,580	0.2140	0.3060	0.2600
1	0	0	0.0065	0.0660	0.0363
1	500	560	0.0650	0.1525	0.1088
1	1,000	1,060	0.1415	0.2415	0.1915
1	1,500	1,660	0.2350	0.3375	0.2863
1	2,000	2,100	0.3270	0.4290	0.3780
1	2,500	2,600	0.4345	0.5330	0.4838
1	0	0	0.0450	0.1095	0.0773
1	2,500	2,580	0.4750	0.5745	0.5248
1	3,000	3,040	0.5830	0.6815	0.6323
1	3,500	3,520	0.6990	0.7945	0.7468
1	4,000	4,000	0.8355	0.9315	0.8835
Unload					
1	0	0	0.0865	0.1595	0.1230
Reload					
1	Max.	4,540	1.0455	1.1385	1.0920
Unload					
1	0	0	0.1135	0.2095	0.1615

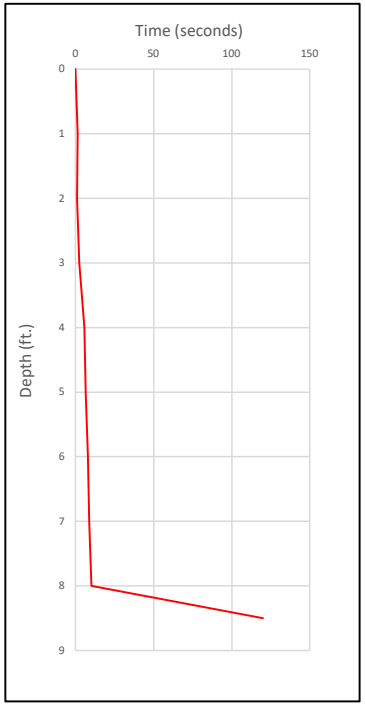
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-05B
Date/Time Installed:	3/17/21 10:10 AM	Date/Time Tested:	4/6/21 1:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	162.63
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.50	Avg. Installation Rate (sec/ft)	19.13

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.25
2	0.93
3	2.23
4	5.56
5	6.34
6	7.81
7	8.53
8	9.98
8.5	120.00
Total Time (s) =	162.63



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0010	0.0005	0.0008
1	3,000	3,000	0.0050	0.0010	0.0030
1	4,000	4,080	0.0105	0.0010	0.0058
1	5,000	5,060	0.0175	0.0025	0.0100
1	6,000	6,100	0.0280	0.0055	0.0168
1	7,000	7,020	0.0420	0.0110	0.0265
1	8,000	8,060	0.0620	0.0210	0.0415
1	9,000	9,040	0.0915	0.0405	0.0660
1	10,000	10,060	0.1295	0.0705	0.1000
Unload					
1	0	0	0.0735	0.0630	0.0683
Reload					
1	Max.	12,780	1.0605	0.9945	1.0275
Unload					
1	0	0	0.9980	0.9900	0.9940

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	580	0.0050	0.1610	0.0830
1	1,000	1,020	0.0440	0.2675	0.1558
1	1,500	1,580	0.1255	0.4025	0.2640
1	0	0	0.0350	0.0770	0.0560
1	500	560	0.0145	0.2050	0.1098
1	1,000	1,060	0.0675	0.3230	0.1953
1	1,500	1,660	0.1440	0.4425	0.2933
1	2,000	2,100	0.2320	0.5475	0.3898
1	2,500	2,600	0.3425	0.6640	0.5033
1	0	0	0.0325	0.1195	0.0760
1	2,500	2,580	0.3775	0.7140	0.5458
1	3,000	3,040	0.4935	0.8255	0.6595
1	3,500	3,520	0.6165	0.9415	0.7790
1	4,000	4,000	0.7605	1.0700	0.9153
Unload					
1	0	0	0.0905	0.1640	0.1273
Reload					
1	Max.	4,540	0.9920	1.2760	1.1340
Unload					
1	0	0	0.1385	0.1975	0.1680

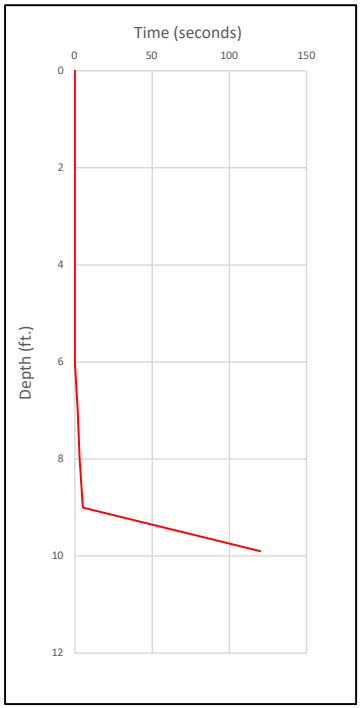
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-06A
Date/Time Installed:	3/16/2021	Date/Time Tested:	3/19/21 10:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	130.18
Pushed to Depth (ft.):	6	Embedment Depth (ft.):	9.9	Avg. Installation Rate (sec/ft)	13.15

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	1.92
8	3.18
9	5.08
9.9	120.00
Total Time (s) =	130.18



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	0.0020	0.0130	0.0075
1	3,000	3,060	0.0045	0.0290	0.0168
1	4,000	4,060	0.0045	0.0350	0.0198
1	5,000	5,000	0.0045	0.0040	0.0043
1	6,000	6,120	0.0045	0.0455	0.0250
1	7,000	7,140	0.0050	0.0495	0.0273
1	8,000	8,000	0.0050	0.0530	0.0290
1	9,000	9,120	0.0055	0.0575	0.0315
1	10,000	10,180	0.0065	0.0600	0.0333
Unload					
1	0	0	0.0255	0.0330	0.0293
Reload					
1	Max.	13,200	0.0130	0.0670	0.0400
Unload					
1	0	0	0.0290	0.0375	0.0333

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0560	0.0540	0.0550
1	1,000	1,000	0.1520	0.1080	0.1300
1	1,500	1,520	0.2575	0.2124	0.2350
1	0	0	0.0255	0.0535	0.0395
1	500	640	0.1455	0.1730	0.1593
1	1,000	1,040	0.1930	0.2085	0.2008
1	1,500	1,500	0.2615	0.2780	0.2698
1	2,000	2,000	0.3545	0.4035	0.3790
1	2,500	2,520	0.5110	0.6480	0.5795
1	0	0	0.1065	0.1845	0.1455
1	2,500	2,540	0.5430	0.7425	0.6428
1	3,000	3,020	0.6785	1.0220	0.8503
1	3,500	3,460	0.7960	1.2640	1.0300
1	4,000	3,780	0.8730	1.4660	1.1695
Unload					
1	0	0	0.0935	0.3445	0.2190

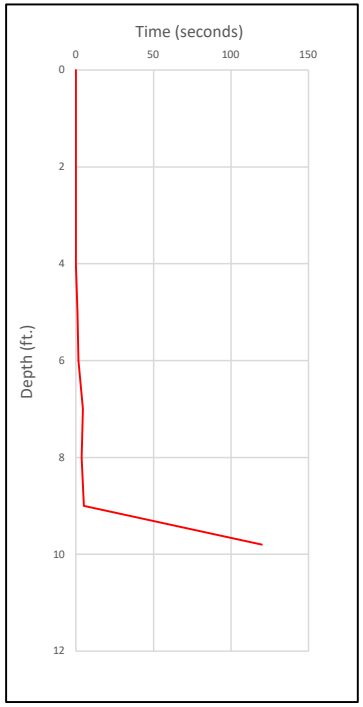
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-06B
Date/Time Installed:	3/16/2021	Date/Time Tested:	3/19/21 11:00 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	135.46
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	9.8	Avg. Installation Rate (sec/ft)	13.82

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	1.00
6	1.46
7	4.47
8	3.55
9	4.98
9.8	120.00
Total Time (s) =	135.46



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0115	0.0000	0.0058
1	3,000	3,040	0.0215	0.0020	0.0118
1	4,000	4,280	0.0325	0.0070	0.0198
1	5,000	5,060	0.0385	0.0085	0.0235
1	6,000	6,040	0.0440	0.0100	0.0270
1	7,000	7,320	0.0495	0.0105	0.0300
1	8,000	8,000	0.0540	0.0125	0.0333
1	9,000	9,140	0.0585	0.0150	0.0368
1	10,000	10,200	0.0630	0.0160	0.0395
Unload					
1	0	0	0.0415	0.0370	0.0393
Reload					
1	Max.	13,150	0.0750	0.0250	0.0500
Unload					
1	0	0	0.0525	0.0450	0.0488

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0700	0.1055	0.0878
1	1,000	1,000	0.1645	0.2380	0.2013
1	1,500	1,520	0.2755	0.3640	0.3198
1	0	0	0.0450	0.0345	0.0398
1	500	640	0.2005	0.1595	0.1800
1	1,000	1,040	0.2590	0.2510	0.2550
1	1,500	1,500	0.3225	0.3670	0.3448
1	2,000	2,000	0.4350	0.4605	0.4478
1	2,500	2,520	0.5990	0.5990	0.5990
1	0	0	0.1085	-0.0400	0.0343
1	2,500	2,540	0.6270	0.6575	0.6423
1	3,000	3,020	0.7735	0.7985	0.7860
1	3,500	3,460	0.9185	0.9320	0.9253
1	4,000	3,780	1.0125	1.0220	1.0173
Unload					
1	0	0	0.1560	-0.0400	0.0580

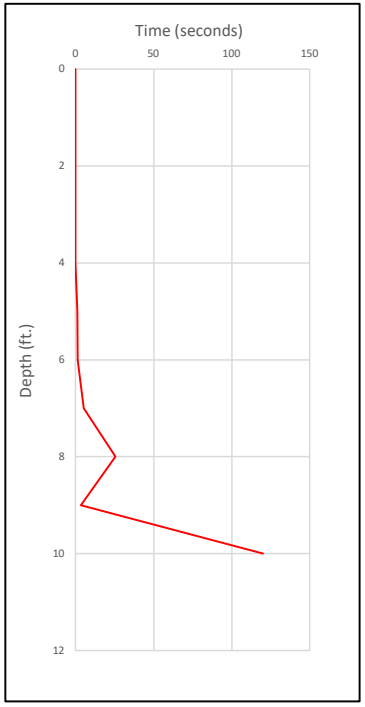
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-07A
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 11:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	156.29
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	9.50	Avg. Installation Rate (sec/ft)	16.45

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	1.07
6	1.21
7	5.12
8	25.51
9	3.38
10	120.00
Total Time (s) =	156.29



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0080	0.0100	0.0010
1	3,000	3,020	0.0205	0.0075	0.0140
1	4,000	4,040	0.0255	0.0085	0.0170
1	5,000	5,060	0.0290	0.0090	0.0190
1	6,000	6,060	0.0280	0.0085	0.0183
1	7,000	7,120	0.0290	0.0060	0.0175
1	8,000	7,960	0.0220	0.0110	0.0165
1	9,000	9,000	0.3765	0.4125	0.3945
1	10,000	10,000	0.5510	0.5875	0.5693
Unload					
1	0	0	0.5865	0.5840	0.5853
Reload					
1	Max.	10,300	1.0435	1.0830	1.0633
Unload					
1	0	0	1.0830	1.0800	1.0815

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0070	0.2960	0.1515
1	1,000	1,000	0.2235	0.5650	0.3943
1	1,500	1,500	0.5050	0.8740	0.6895
1	0	0	0.2535	0.1230	0.1883
1	500	500	0.2845	0.4695	0.3770
1	1,000	1,040	0.4095	0.7020	0.5558
1	1,500	1,560	0.5970	0.9190	0.7580
1	2,000	1,980	0.9235	1.1855	1.0545
Unload					
1	0	0	0.3795	0.1895	0.2845

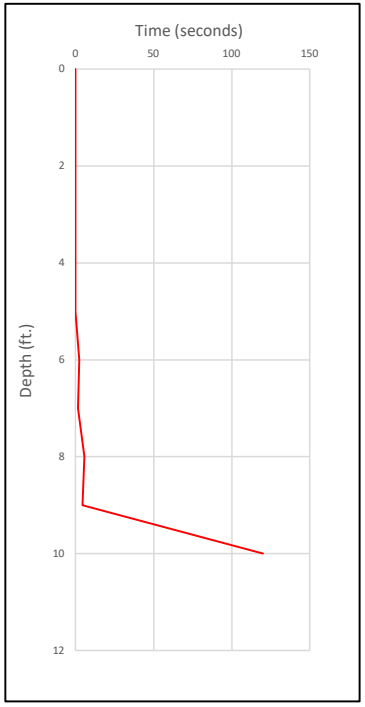
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-07B
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 11:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	133.57
Pushed to Depth (ft.):	5	Embedment Depth (ft.):	9.70	Avg. Installation Rate (sec/ft)	13.77

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	2.28
7	1.44
8	5.60
9	4.25
10	120.00
Total Time (s) =	133.57



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0650	0.0125	-0.0263
1	3,000	3,120	-0.0245	0.0290	0.0023
1	4,000	4,060	-0.0325	0.0385	0.0030
1	5,000	5,080	-0.0405	0.0470	0.0033
1	6,000	6,080	-0.0470	0.0540	0.0035
1	7,000	7,120	-0.0535	0.0610	0.0038
1	8,000	8,060	-0.0580	0.0675	0.0048
1	9,000	9,080	-0.0620	0.0750	0.0065
1	10,000	10,200	-0.0655	0.0825	0.0085
Unload					
1	0	0	-0.0165	0.0290	0.0063
Reload					
1	Max.	12,660	-0.0805	0.1025	0.0110
Unload					
1	0	0	-0.0205	0.0380	0.0088

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0725	0.1825	0.1275
1	1,000	1,000	0.2935	0.3410	0.3173
1	1,500	1,580	0.6065	0.5345	0.5705
1	0	0	0.2160	0.2170	0.2165
1	500	520	0.3290	0.3620	0.3455
1	1,000	1,060	0.4790	0.4675	0.4733
1	1,500	1,500	0.6770	0.5990	0.6380
1	2,000	2,040	1.0400	0.7960	0.9180
1	2,500	2,120	1.1475	0.8510	0.9993
Unload					
1	0	0	0.3305	0.2030	0.2668

Field Notes

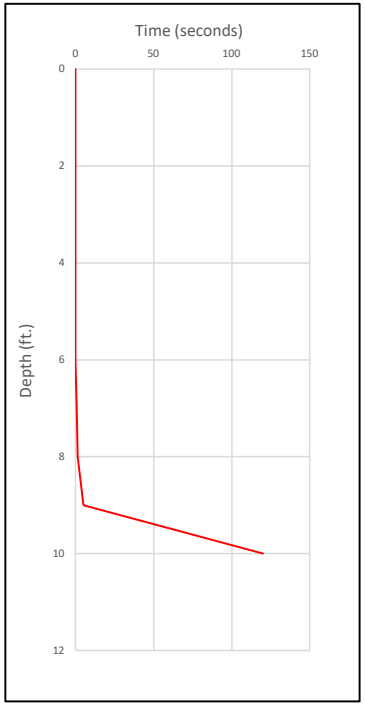
Ram maxed out at 12,660 lbs. during tensile testing prior to 1-inch deflection

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-08A
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 2:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	126.71
Pushed to Depth (ft.):	6.5	Embedment Depth (ft.):	9.90	Avg. Installation Rate (sec/ft)	12.80

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0.71
8	1.15
9	4.85
10	120.00
Total Time (s) =	126.71



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0010	0.0040	0.0025
1	3,000	3,020	0.0040	0.0025	0.0033
1	4,000	4,100	0.0065	-0.0010	0.0028
1	5,000	5,000	0.0115	-0.0045	0.0035
1	6,000	6,060	0.0160	-0.0065	0.0048
1	7,000	7,100	0.0190	-0.0075	0.0058
1	8,000	8,080	0.0220	-0.0100	0.0060
1	9,000	9,060	0.0255	-0.0115	0.0070
1	10,000	10,120	0.0285	-0.0120	0.0083
Unload					
1	0	0	0.0075	-0.0035	0.0020
Reload					
1	Max.	12,140	0.0355	0.0005	0.0180
Unload					
1	0	0	0.0185	0.0030	0.0108

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0030	0.1635	0.0833
1	1,000	1,000	0.0640	0.3070	0.1855
1	1,500	1,540	0.1630	0.4510	0.3070
1	0	0	0.0800	0.0560	0.0680
1	500	500	0.0595	0.2460	0.1528
1	1,000	1,040	0.1130	0.3725	0.2428
1	1,500	1,520	0.1825	0.4730	0.3278
1	2,000	2,000	0.2765	0.5655	0.4210
1	2,500	2,500	0.4000	0.6640	0.5320
1	0	0	0.1655	0.1080	0.1368
1	2,500	2,500	0.4345	0.7005	0.5675
1	3,000	3,000	0.5550	0.7920	0.6735
1	3,500	3,520	0.7120	0.8965	0.8043
1	4,000	4,020	0.8745	0.8965	0.8855
Unload					
1	0	0	0.3135	0.0745	0.1940
Reload					
1	Max.	4,000	0.9660	1.0450	1.0055
Unload					
1	0	0	0.3720	0.0430	0.2075

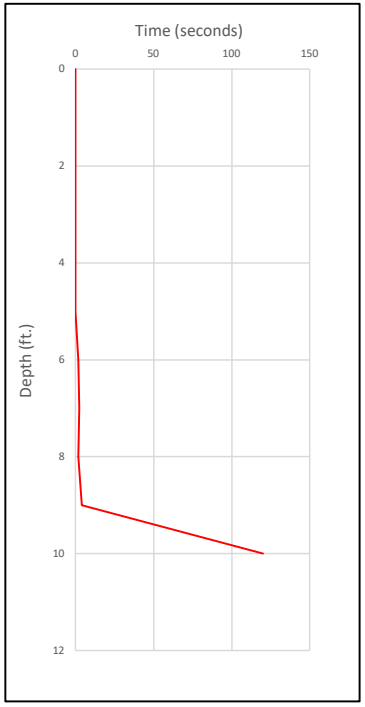
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-08B
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 3:00 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	129.52
Pushed to Depth (ft.):	5.5	Embedment Depth (ft.):	9.40	Avg. Installation Rate (sec/ft)	13.78

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	1.66
7	2.21
8	1.68
9	3.97
10	120.00
Total Time (s) =	129.52



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0015	0.0015	0.0000
1	3,000	3,020	-0.0010	0.0120	0.0055
1	4,000	4,080	0.0010	0.0110	0.0060
1	5,000	5,000	0.0050	0.0110	0.0080
1	6,000	6,080	0.0070	0.0130	0.0100
1	7,000	7,120	0.0100	0.0145	0.0123
1	8,000	5,320	1.0465	1.0715	1.0590
Unload					
1	0	0	1.0630	1.0500	1.0565

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	-0.0215	0.1340	0.0563
1	1,000	1,000	-0.0035	0.2715	0.1340
1	1,500	1,540	0.0640	0.4360	0.2500
1	0	0	-0.0045	0.1345	0.0650
1	500	500	-0.0175	0.2525	0.1175
1	1,000	1,040	0.0215	0.3600	0.1908
1	1,500	1,520	0.0750	0.4660	0.2705
1	2,000	2,000	0.1635	0.5825	0.3730
1	2,500	2,500	0.2935	0.7090	0.5013
1	0	0	0.0580	0.2460	0.1520
1	2,500	2,500	0.3240	0.7590	0.5415
1	3,000	3,000	0.4570	0.8700	0.6635
1	3,500	3,520	0.6400	0.9835	0.8118
1	4,000	4,020	0.8555	1.0800	0.9678
Unload					
1	0	0	0.1565	0.2870	0.2218
Reload					
1	Max.	4,000	0.9855	1.0845	1.0350
Unload					
1	0	0	0.2010	0.2650	0.2330

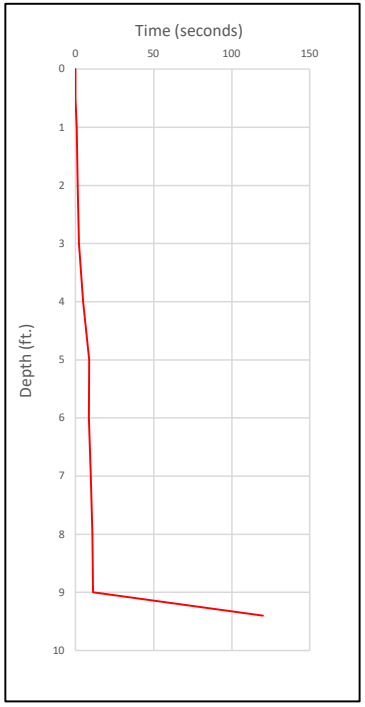
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-09A
Date/Time Installed:	3/17/21 12:45 PM	Date/Time Tested:	4/2/21 12:10 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	177.17
Pushed to Depth (ft.):	0.5	Embedment Depth (ft.):	9.40	Avg. Installation Rate (sec/ft)	18.85

Embedment Data

Depth (ft.)	Time (s)
0	0
0.5	0.00
1	0.66
2	1.19
3	2.08
4	4.78
5	8.56
6	8.50
7	9.64
8	10.65
9	11.11
9.4	120.00
Total Time (s) =	177.17



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0220	-0.0120	0.0050
1	3,000	3,040	0.0435	-0.0220	0.0108
1	4,000	4,000	0.0535	-0.0270	0.0133
1	5,000	5,100	0.0620	-0.0305	0.0158
1	6,000	6,000	0.0700	-0.0325	0.0188
1	7,000	7,120	0.0805	-0.0345	0.0230
1	8,000	8,100	0.0895	-0.0355	0.0270
1	9,000	9,160	0.1000	-0.0345	0.0328
1	10,000	10,200	0.1125	-0.0315	0.0405
Unload					
1	0	0	0.0250	0.0205	0.0228
Reload					
1	Max.	13,000	0.1620	-0.0015	0.0803
Unload					
1	0	0	0.0605	0.0505	0.0555

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0425	0.0730	0.0578
1	1,000	1,000	0.1060	0.1550	0.1305
1	1,500	1,540	0.1960	0.2450	0.2205
1	0	0	0.0160	0.0365	0.0263
1	500	500	0.0640	0.1045	0.0843
1	1,000	1,020	0.1335	0.1785	0.1560
1	1,500	1,540	0.2120	0.2540	0.2330
1	2,000	2,000	0.3190	0.3525	0.3358
1	2,500	2,520	0.4345	0.4580	0.4463
1	0	0	0.0460	0.0655	0.0558
1	2,500	2,500	0.4735	0.4890	0.4813
1	3,000	3,000	0.5990	0.6010	0.6000
1	3,500	3,580	0.7350	0.7190	0.7270
1	4,000	4,020	0.8815	0.8465	0.8640
Unload					
1	0	0	0.1025	0.1045	0.1035
Reload					
1	Max.	4,680	1.1830	1.0775	1.1303
Unload					
1	0	0	0.4265	0.8185	0.6225

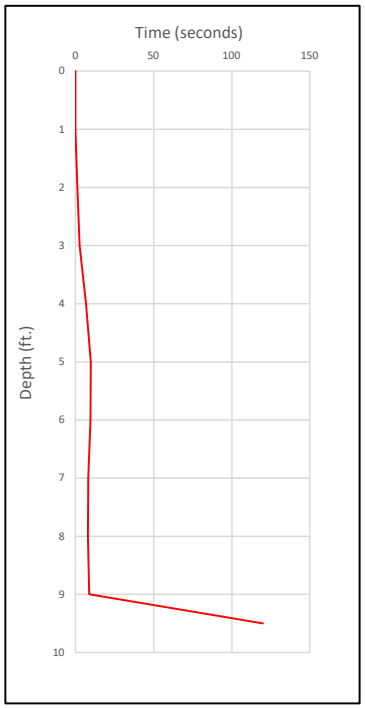
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-09B
Date/Time Installed:	3/17/21 12:50 PM	Date/Time Tested:	4/2/21 12:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	173.55
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	9.50	Avg. Installation Rate (sec/ft)	18.27

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0.95
3	2.57
4	6.64
5	9.59
6	9.45
7	8.04
8	7.74
9	8.57
9.5	120.00
Total Time (s) =	173.55



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0010	0.0095	0.0053
1	3,000	3,000	0.0045	0.0140	0.0093
1	4,000	4,000	0.0085	0.0160	0.0123
1	5,000	5,080	0.0135	0.0170	0.0153
1	6,000	6,000	0.0195	0.0175	0.0185
1	7,000	7,020	0.0250	0.0175	0.0213
1	8,000	8,060	0.0335	0.0190	0.0263
1	9,000	9,020	0.0435	0.0215	0.0325
1	10,000	10,000	0.055	0.026	0.0405
Unload					
1	0	0	0.0225	0.0185	0.0205
Reload					
1	Max.	13,080	0.1195	0.0590	0.0893
Unload					
1	0	0	0.0630	0.0510	0.0570

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0110	0.1560	0.0835
1	1,000	1,000	0.0190	0.2880	0.1535
1	1,500	1,540	0.0810	0.4180	0.2495
1	0	0	0.0110	0.0950	0.0530
1	500	500	0.0100	0.2230	0.1165
1	1,000	1,020	0.0440	0.3330	0.1885
1	1,500	1,540	0.1020	0.4325	0.2673
1	2,000	2,000	0.1925	0.5415	0.3670
1	2,500	2,520	0.2985	0.6510	0.4748
1	0	0	0.0620	0.1465	0.1043
1	2,500	2,500	0.3305	0.6945	0.5125
1	3,000	3,000	0.4495	0.8020	0.6258
1	3,500	3,580	0.5935	0.9125	0.7530
1	4,000	4,020	0.7540	1.0255	0.8898
Unload					
1	0	0	0.1425	0.2250	0.1838
Reload					
1	Max.	4,680	1.0740	1.2325	1.1533
Unload					
1	0	0	0.2275	0.2525	0.2400

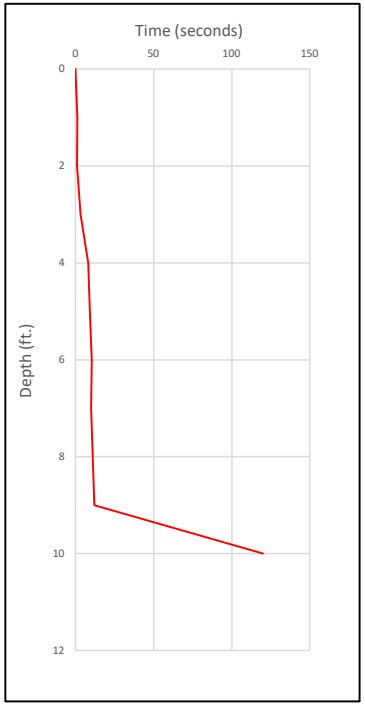
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-10A
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 12:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	184.89
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	18.49

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0.99
2	0.76
3	3.08
4	8.04
5	8.95
6	10.21
7	9.96
8	10.97
9	11.93
10	120.00
Total Time (s) =	184.89



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	-0.0080	0.0095	0.0008
1	3,000	3,020	-0.0080	0.0210	0.0065
1	4,000	4,080	-0.0080	0.0285	0.0103
1	5,000	5,040	-0.0085	0.0280	0.0098
1	6,000	6,160	-0.0075	0.0310	0.0118
1	7,000	7,120	-0.0080	0.0345	0.0133
1	8,000	8,160	-0.0090	0.0380	0.0145
1	9,000	9,160	-0.0085	0.0415	0.0165
1	10,000	10,160	-0.0080	0.0455	0.0188
Unload					
1	0	0	0.0150	0.0045	0.0098
Reload					
1	Max.	12,980	-0.0060	0.0685	0.0313
Unload					
1	0	0	0.0220	0.0110	0.0165

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0290	0.0990	0.0640
1	1,000	1,080	0.0805	0.2135	0.1470
1	1,500	1,520	0.1460	0.3345	0.2403
1	0	0	0.0125	0.0530	0.0328
1	500	580	0.0365	0.1520	0.0943
1	1,000	1,020	0.0805	0.2480	0.1643
1	1,500	1,500	0.1405	0.3345	0.2375
1	2,000	2,000	0.2270	0.4485	0.3378
1	2,500	2,520	0.3250	0.5630	0.4440
1	0	0	0.0435	0.0880	0.0658
1	2,500	2,500	0.3625	0.5620	0.4623
1	3,000	3,220	0.5420	0.7580	0.6500
1	3,500	3,600	0.5670	0.7825	0.6748
1	4,000	4,000	0.7205	0.9445	0.8325
Unload					
1	0	0	0.1300	0.1525	0.1413
Reload					
1	Max.	4,100	0.8350	1.0550	0.9450
Unload					
1	0	0	0.1175	0.1560	0.1368

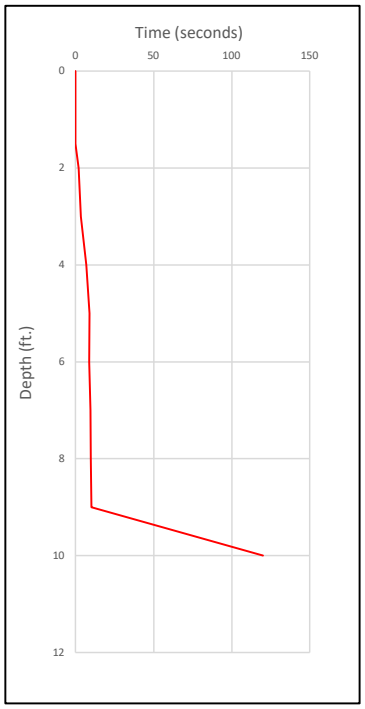
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-10B
Date/Time Installed:	3/16/21	Date/Time Tested:	3/25/21 12:45 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	178.58
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	9.30	Avg. Installation Rate (sec/ft)	19.20

Embedment Data

Depth (ft.)	Time (s)
0	0
1.5	0
2	1.82
3	3.28
4	6.73
5	8.85
6	8.72
7	9.51
8	9.69
9	9.98
10	120.00
Total Time (s) =	178.58



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	-0.0045	0.0160	0.0058
1	3,000	3,000	-0.0145	0.0310	0.0083
1	4,000	4,000	-0.0215	0.0390	0.0088
1	5,000	5,020	-0.0265	0.0450	0.0093
1	6,000	6,080	-0.0325	0.0525	0.0100
1	7,000	7,000	-0.0350	0.0565	0.0108
1	8,000	8,100	-0.0385	0.0615	0.0115
1	9,000	9,120	-0.0415	0.0660	0.0123
1	10,000	10,020	-0.0440	0.0705	0.0133
Unload					
1	0	0	0.0085	0.0150	0.0118
Reload					
1	Max.	13,060	-0.0460	0.0835	0.0188
Unload					
1	0	0	0.0120	0.0140	0.0130

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0500	0.1045	0.0773
1	1,000	1,000	0.1270	0.2150	0.1710
1	1,500	1,500	0.2160	0.3290	0.2725
1	0	0	0.0140	0.0440	0.0290
1	500	500	0.0520	0.1505	0.1013
1	1,000	1,020	0.1225	0.2505	0.1865
1	1,500	1,520	0.2060	0.3455	0.2758
1	2,000	2,040	0.3005	0.4435	0.3720
1	2,500	2,500	0.4065	0.5475	0.4770
1	0	0	0.0220	0.0405	0.0313
1	2,500	2,540	0.3920	0.5500	0.4710
1	3,000	3,020	0.5190	0.6945	0.6068
1	3,500	3,500	0.6640	0.7920	0.7280
1	4,000	4,000	0.8250	0.8905	0.8578
Unload					
1	0	0	0.0645	0.0795	0.0720
Reload					
1	Max.	4,440	0.9735	1.0355	1.0045
Unload					
1	0	0	0.0820	0.0690	0.0755

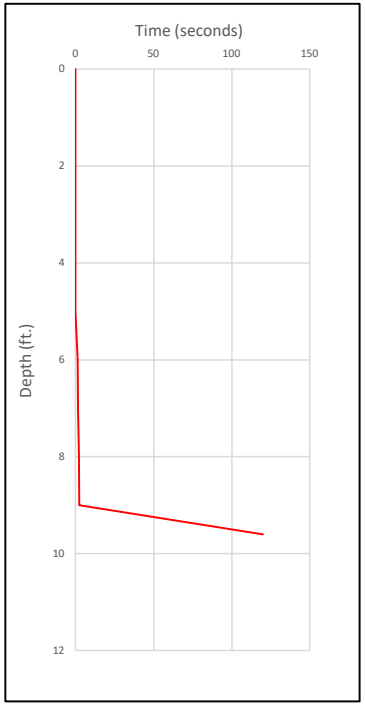
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-11A
Date/Time Installed:	3/17/21 1:15 PM	Date/Time Tested:	4/2/21 1:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	127.16
Pushed to Depth (ft.):	5	Embedment Depth (ft.):	9.60	Avg. Installation Rate (sec/ft)	13.25

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	1.30
7	1.45
8	2.06
9	2.35
9.6	120.00
Total Time (s) =	127.16



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0105	0.0150	0.0128
1	3,000	3,060	0.0195	0.0245	0.0220
1	4,000	4,120	0.0260	0.0280	0.0270
1	5,000	5,080	0.0335	0.0285	0.0310
1	6,000	6,020	0.1348	0.0585	0.0967
1	7,000	6,480	1.2225	1.1180	1.1703
Unload					
1	0	0	1.1970	1.1185	1.1578

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	540	0.0790	0.0965	0.0878
1	1,000	1,060	0.2040	0.1935	0.1988
1	1,500	1,540	0.3325	0.2695	0.3010
1	0	0	0.1125	0.0560	0.0843
1	500	540	0.1660	0.1435	0.1548
1	1,000	1,000	0.2565	0.2200	0.2383
1	1,500	1,600	0.3770	0.2965	0.3368
1	2,000	2,000	0.5040	0.3675	0.4358
1	2,500	2,500	0.7235	0.4620	0.5928
1	0	0	0.2445	0.0990	0.1718
1	2,500	2,500	0.8165	0.4890	0.6528
1	3,000	3,000	1.0180	0.6090	0.8135
1	3,500	3,500	1.3360	0.6700	1.0030
Unload					
1	0	0	0.4570	0.1355	0.2963

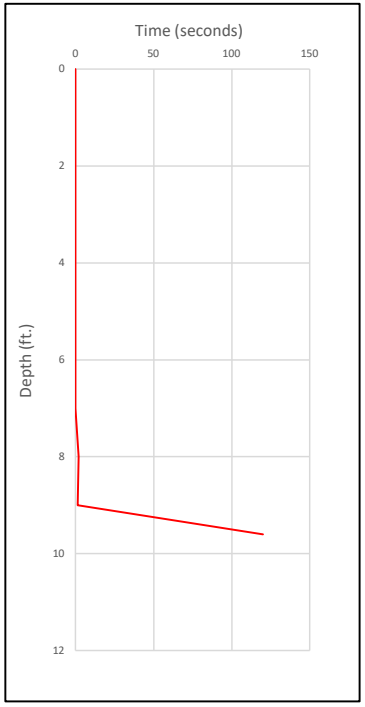
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-11B
Date/Time Installed:	3/17/21 1:30 PM	Date/Time Tested:	4/2/21 2:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	123.18
Pushed to Depth (ft.):	7	Embedment Depth (ft.):	9.60	Avg. Installation Rate (sec/ft)	12.83

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	1.92
9	1.26
9.6	120.00
Total Time (s) =	123.18



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0140	-0.0010	0.0065
1	3,000	3,200	0.0220	-0.0010	0.0105
1	4,000	4,000	0.0250	0.0005	0.0128
1	5,000	5,000	0.0285	0.0050	0.0168
1	6,000	6,020	0.0320	0.0115	0.0218
1	7,000	7,000	0.0475	0.0325	0.0400
1	8,000	7,220	1.0480	1.0430	1.0455
Unload					
1	0	0	1.0340	1.0565	1.0453

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	600	0.2260	-0.0090	0.1085
1	1,000	1,000	0.4215	0.0475	0.2345
1	1,500	1,500	0.5490	0.1900	0.3695
1	0	0	0.0330	0.0435	0.0383
1	500	600	0.2525	0.0330	0.1428
1	1,000	1,000	0.3900	0.0875	0.2388
1	1,500	1,500	0.6080	0.3125	0.4603
1	2,000	2,000	0.7045	0.4345	0.5695
1	2,500	2,500	0.8175	0.5890	0.7033
1	0	0	0.1000	0.2345	0.1672
1	2,500	2,540	0.8140	0.6775	0.7458
1	3,000	3,080	0.9400	0.8805	0.9103
1	3,500	3,220	1.0215	0.9980	1.0098
Unload					
1	0	0	0.2455	0.4250	0.3353

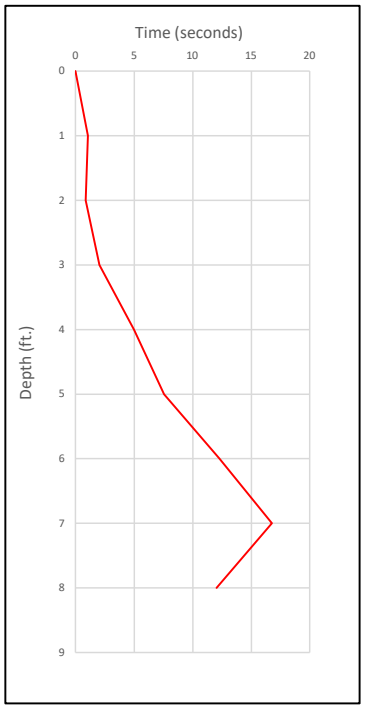
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-12A
Date/Time Installed:	3/17/21 1:45 PM	Date/Time Tested:	4/2/21 10:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	57.48
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.00	Avg. Installation Rate (sec/ft)	7.19

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.04
2	0.84
3	2.02
4	4.97
5	7.54
6	12.28
7	16.76
8	12.03
Total Time (s) =	57.48



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0135	-0.0005	0.0065
1	3,000	3,000	0.0235	-0.0025	0.0105
1	4,000	4,040	0.0305	-0.0030	0.0138
1	5,000	5,000	0.0380	0.0005	0.0193
1	6,000	6,020	0.0395	0.0015	0.0205
1	7,000	7,000	0.0435	0.0050	0.0243
1	8,000	8,060	0.0505	0.0110	0.0308
1	9,000	9,120	0.0565	0.0170	0.0368
1	10,000	10,000	0.0660	0.0255	0.0458
Unload					
1	0	0	0.0250	0.0305	0.0278
Reload					
1	Max.	13,000	0.1490	0.1110	0.1300
Unload					
1	0	0	0.1025	0.1060	0.1043

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0665	0.0000	0.0333
1	1,000	1,020	0.1490	0.1845	0.1668
1	1,500	1,500	0.2275	0.2895	0.2585
1	0	0	0.0365	0.0540	0.0453
1	500	500	0.1055	0.1275	0.1165
1	1,000	1,000	0.1825	0.2190	0.2008
1	1,500	1,600	0.2480	0.3030	0.2755
1	2,000	2,000	0.5245	0.6105	0.5675
1	2,500	2,460	0.6510	0.7150	0.6830
1	0	0	0.2420	0.4275	0.3348
1	2,500	2,540	0.6615	0.9095	0.7855
1	3,000	3,080	0.7585	1.0160	0.8873
1	3,500	3,580	0.8545	1.1260	0.9903
1	4,000	3,840	0.9430	1.2250	1.0840
Unload					
1	0	0	0.2835	0.4560	0.3698

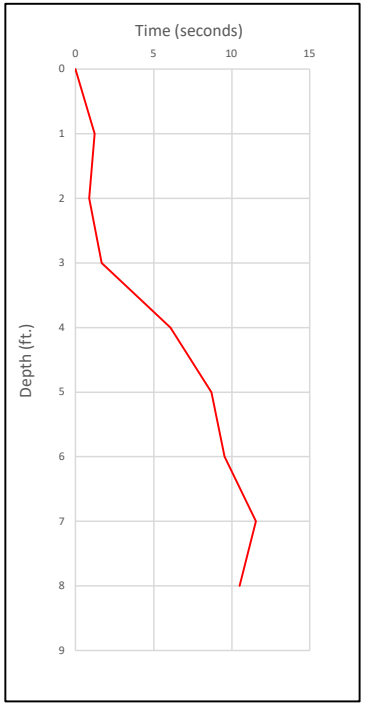
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-12B
Date/Time Installed:	3/17/21 1:55 PM	Date/Time Tested:	4/2/21 11:00 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	50.1
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.00	Avg. Installation Rate (sec/ft)	6.26

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.21
2	0.87
3	1.67
4	6.06
5	8.69
6	9.54
7	11.56
8	10.50
Total Time (s) =	50.1



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	-0.0065	0.0130	0.0033
1	3,000	3,040	-0.0170	0.0220	0.0025
1	4,000	4,060	-0.0120	0.0270	0.0075
1	5,000	5,080	-0.0120	0.0310	0.0095
1	6,000	6,100	-0.0095	0.0360	0.0133
1	7,000	7,260	-0.0050	0.0405	0.0178
1	8,000	8,300	0.0005	0.0480	0.0243
1	9,000	9,060	0.0065	0.0545	0.0305
1	10,000	10,000	0.0160	0.064	0.0400
Unload					
1	0	0	0.0250	0.0245	0.0248
Reload					
1	Max.	13,020	0.0955	0.1460	0.1208
Unload					
1	0	0	0.0935	0.0970	0.0953

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0680	0.0530	0.0605
1	1,000	1,020	0.1490	0.1220	0.1355
1	1,500	1,500	0.2220	0.2230	0.2225
1	0	0	0.0080	0.0290	0.0185
1	500	500	0.0640	0.0920	0.0780
1	1,000	1,000	0.1440	0.1720	0.1580
1	1,500	1,600	0.2280	0.2445	0.2363
1	2,000	3,000	0.5355	0.5245	0.5300
1	2,500	3,460	0.6140	0.6445	0.6293
1	0	0	0.0395	0.0710	0.0553
1	2,500	2,540	0.5040	0.5180	0.5110
1	3,000	3,080	0.6120	0.6160	0.6140
1	3,500	3,580	0.7160	0.7165	0.7163
1	4,000	3,840	0.8535	0.8400	0.8468
Unload					
1	0	0	0.0510	0.0885	0.0698
Reload					
1	Max.	4,620	1.0600	1.0205	1.0403
Unload					
1	0	0	0.0935	0.1360	0.1148

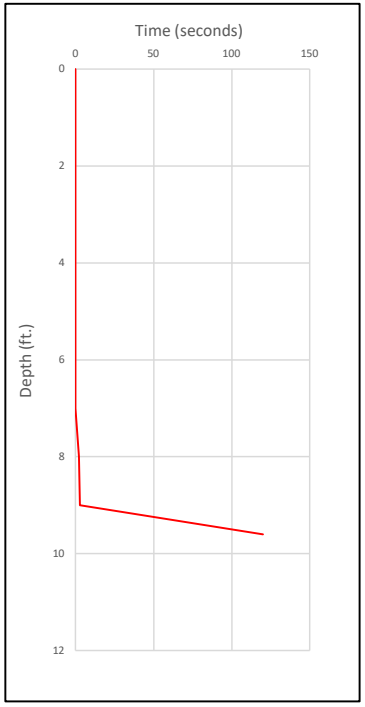
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-13A
Date/Time Installed:	3/17/21 3:30 PM	Date/Time Tested:	4/2/21 9:45 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	124.6
Pushed to Depth (ft.):	7	Embedment Depth (ft.):	9.60	Avg. Installation Rate (sec/ft)	12.98

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	2.00
9	2.60
9.6	120.00
Total Time (s) =	124.6



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0035	0.0090	0.0063
1	3,000	3,000	0.0060	0.0140	0.0100
1	4,000	4,000	0.0105	0.0165	0.0135
1	5,000	5,000	0.0125	0.0180	0.0153
1	6,000	6,000	0.0170	0.0180	0.0175
1	7,000	7,000	0.0225	0.0185	0.0205
1	8,000	8,000	0.0270	0.0017	0.0143
1	9,000	9,000	0.0330	0.0150	0.0240
1	10,000	10,000	0.0390	0.0120	0.0255
Unload					
1	0	0	0.0135	0.0090	0.0113
Reload					
1	Max.	13,000	0.0545	0.0065	0.0305
Unload					
1	0	0	0.0150	0.0080	0.0115

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0420	0.1205	0.0813
1	1,000	1,000	0.2025	0.3120	0.2573
1	1,500	1,540	0.5270	0.5935	0.5603
1	0	0	0.3400	0.1305	0.2353
1	500	540	0.3660	0.3510	0.3585
1	1,000	1,000	0.4815	0.4975	0.4895
1	1,500	1,520	0.6130	0.6645	0.6388
1	2,000	2,080	0.6140	0.9180	0.7660
1	2,500	2,400	1.3225	1.1755	1.2490
Unload					
1	0	0	0.5545	0.1345	0.3445

Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-13B
Date/Time Installed:	3/17/21 3:35 PM	Date/Time Tested:	4/2/21 9:00 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	2.95
Pushed to Depth (ft.):	7	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	0.33

Embedment Data

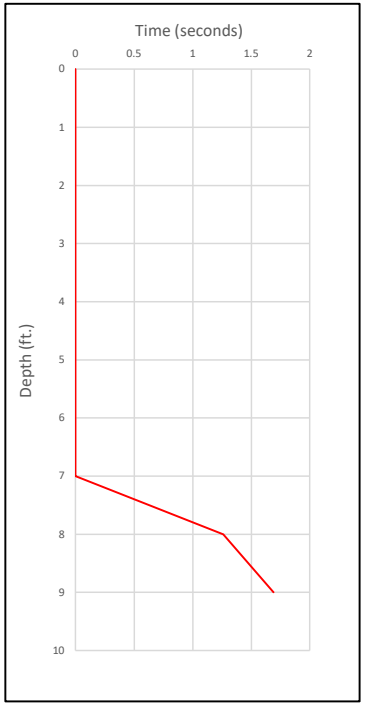
Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	1.26
9	1.69
Total Time (s) =	2.95

Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,580	0.0180	-0.0095	0.0043
1	3,000	3,000	0.0325	-0.0165	0.0080
1	4,000	4,020	0.0400	-0.0205	0.0098
1	5,000	5,000	0.0455	-0.0230	0.0113
1	6,000	6,000	0.0515	-0.0250	0.0133
1	7,000	7,040	0.0560	-0.0270	0.0145
1	8,000	8,080	0.0665	-0.0230	0.0218
1	9,000	8,340	1.0935	1.0125	1.0530
Unload					
1	0	0	1.0705	1.0440	1.0573

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.3205	0.3740	0.3473
1	1,000	1,000	0.6125	0.6445	0.6285
1	1,500	1,500	0.9250	0.9840	0.9545
1	0	0	0.1465	0.2895	0.2180
1	500	520	0.5420	0.6680	0.6050
1	1,000	1,100	0.8070	0.9290	0.8680
1	1,500	1,500	0.9880	1.0935	1.0408
Unload					
1	0	0	0.1870	0.2605	0.2238



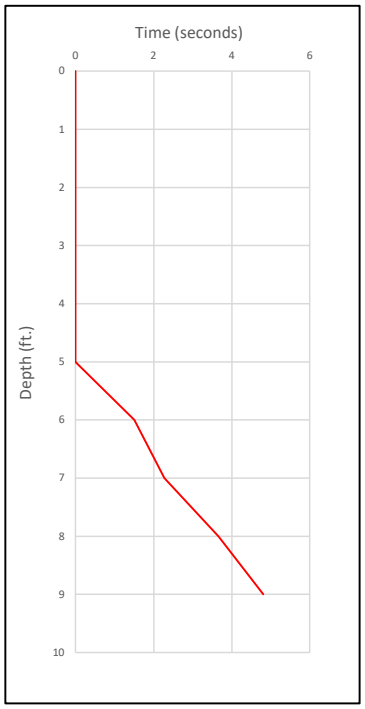
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-14A
Date/Time Installed:	3/17/21 4:00 PM	Date/Time Tested:	4/1/21	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	12.24
Pushed to Depth (ft.):	5.5	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	1.36

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	1.5
7	2.27
8	3.66
9	4.81
Total Time (s) =	12.24



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0065	0.0095	0.0080
1	3,000	3,000	0.0145	0.0160	0.0153
1	4,000	4,060	0.0225	0.0280	0.0253
1	5,000	5,020	0.0455	0.0505	0.0480
1	6,000	6,020	0.0725	0.0765	0.0745
1	7,000	7,040	0.1105	0.1195	0.1150
1	8,000	8,020	0.1550	0.1755	0.1653
1	9,000	9,100	0.2020	0.2215	0.2118
1	10,000	10,040	0.3555	0.3795	0.3675
Unload					
1	0	0	0.3005	0.3120	0.3063
Reload					
1	Max.	12,700	1.0205	1.0455	1.0330
Unload					
1	0	0	0.9655	0.9755	0.9705

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0975	0.1120	0.1048
1	1,000	1,000	0.2025	0.2335	0.2180
1	1,500	1,520	0.3255	0.3650	0.3453
1	0	0	0.0855	0.0925	0.0890
1	500	500	0.1755	0.1965	0.1860
1	1,000	1,040	0.2765	0.3025	0.2895
1	1,500	1,520	0.5875	0.6345	0.6110
1	2,000	2,020	0.7925	0.8450	0.8188
1	2,500	2,460	1.0305	1.1220	1.0763
Unload					
1	0	0	0.3255	0.3560	0.3408

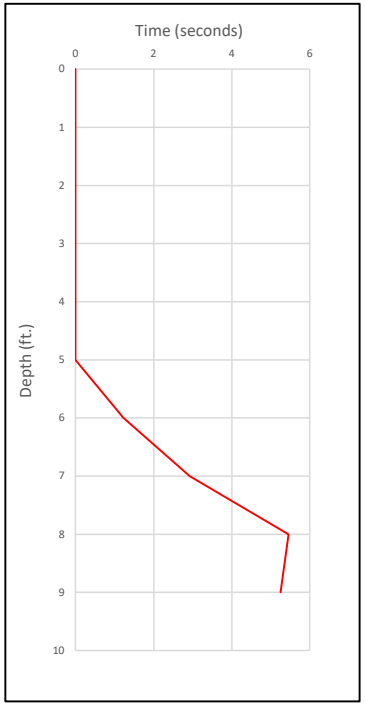
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-14B
Date/Time Installed:	3/17/21 4:05 PM	Date/Time Tested:	4/1/21	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	14.85
Pushed to Depth (ft.):	5	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	1.65

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	1.22
7	2.92
8	5.46
9	5.25
Total Time (s) =	14.85



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0045	0.0675	0.0360
1	3,000	3,040	0.0155	0.0205	0.0180
1	4,000	4,020	0.0565	0.0660	0.0613
1	5,000	5,120	0.1220	0.1400	0.1310
1	6,000	6,060	0.2350	0.2555	0.2453
1	7,000	7,020	0.4550	0.4730	0.4640
1	8,000	8,000	1.0500	1.0835	1.0668
Unload					
1	0	0	1.0005	1.0210	1.0108

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0925	0.0725	0.0825
1	1,000	1,020	0.2140	0.1975	0.2058
1	1,500	1,500	0.3720	0.3400	0.3560
1	0	0	0.0765	0.0690	0.0728
1	500	520	0.1430	0.1200	0.1315
1	1,000	1,060	0.2855	0.2680	0.2768
1	1,500	1,520	0.5540	0.5225	0.5383
1	2,000	2,000	0.8550	0.8255	0.8403
1	2,500	2,360	1.0425	1.0140	1.0283
Unload					
1	0	0	0.3450	0.3330	0.3390

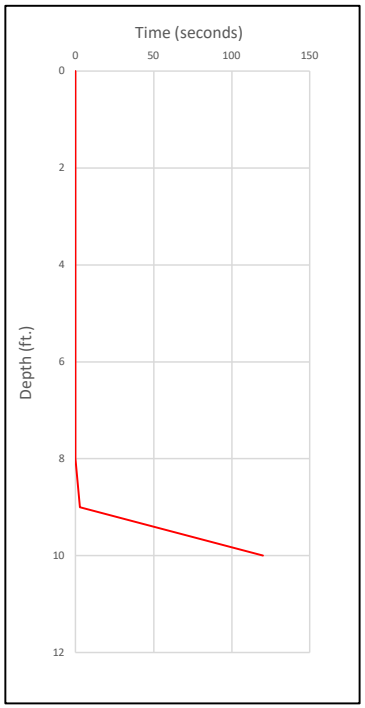
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-15A
Date/Time Installed:	3/17/21 4:25 PM	Date/Time Tested:	3/31/21	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	122.6
Pushed to Depth (ft.):	8	Embedment Depth (ft.):	9.60	Avg. Installation Rate (sec/ft)	12.77

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	2.60
10	120.00
Total Time (s) =	122.6



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0		
1	1,500	1,500	-0.0045	0.0065	0.0010
1	3,000	3,040	-0.0045	0.0095	0.0100
1	4,000	4,020	0.0105	0.0225	0.0180
1	5,000	5,100	0.0135	0.0325	0.0243
1	6,000	6,000	0.0160	0.0370	0.0295
1	7,000	7,000	0.0220	0.0465	0.0405
1	8,000	8,080	0.0345	0.0555	0.0605
1	9,000	9,020	0.0655	0.0830	0.1003
1	10,000	10,000	0.1175	0.1320	0.1248
Unload					
1	0	0	0.0995	0.1105	0.1050
Reload					
1	Max.	10,400	0.1225	0.1490	0.1358
Unload					
1	0	0	0.1105	0.1290	0.1198

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0920	0.0725	0.0823
1	1,000	1,000	0.1550	0.1035	0.1293
1	1,500	1,520	0.2950	0.2340	0.2645
1	0	0	0.1020	0.0655	0.0838
1	500	520	0.1225	0.0960	0.1093
1	1,000	1,040	0.1770	0.1560	0.1665
1	1,500	1,560	0.3665	0.3215	0.3440
1	2,000	2,060	0.4850	0.4220	0.4535
1	2,500	2,520	0.5880	0.5355	0.5618
1	0	0	0.3330	0.2845	0.3088
1	2,500	2,540	0.6550	0.6025	0.6288
1	3,000	3,040	0.7740	0.7215	0.7478
1	3,500	3,500	0.9155	0.8785	0.8970
1	4,000	4,000	1.0895	1.0110	1.0503
Unload					
1	0	0	0.4010	0.2995	0.3503

Field Notes

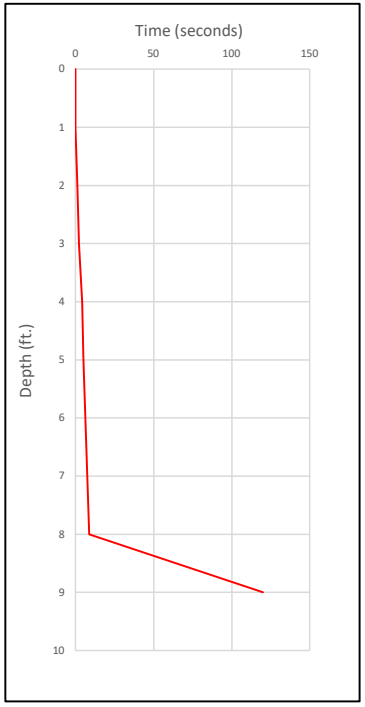
PT-15A could not exceed 10,400 pounds during uplift due to insufficient ram caused by soft ground conditions.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-15B
Date/Time Installed:	3/17/21 4:30 PM	Date/Time Tested:	3/31/21	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	154.3
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	8.10	Avg. Installation Rate (sec/ft)	19.05

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	1.07
3	2.02
4	4.02
5	5.00
6	6.27
7	7.39
8	8.53
9	120.00
Total Time (s) =	154.3



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	60	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0025	0.0040	0.0008
1	3,000	3,000	-0.0065	0.0165	0.0050
1	4,000	4,000	-0.0085	0.0275	0.0095
1	5,000	5,080	0.0010	0.0670	0.0340
1	6,000	6,000	0.0025	0.0855	0.0440
1	7,000	7,020	0.0040	0.0960	0.0500
1	8,000	8,100	0.0065	0.1220	0.0643
1	9,000	9,060	0.0105	0.1405	0.0755
1	10,000	10,020	0.0205	0.1640	0.0923
Unload					
1	0	0	0.0225	0.1220	0.0723
Reload					
1	Max.	13,020	0.0360	0.1855	0.1108
Unload					
1	0	0	0.0300	0.1650	0.0975

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0550	0.0680	0.0615
1	1,000	1,040	0.1880	0.2055	0.1968
1	1,500	1,520	0.2895	0.3110	0.3003
1	0	0	0.0855	0.1005	0.0930
1	500	500	0.1015	0.1220	0.1118
1	1,000	1,020	0.2365	0.2570	0.2468
1	1,500	1,540	0.3060	0.3225	0.3143
1	2,000	2,040	0.4110	0.4450	0.4280
1	2,500	2,540	0.5955	0.6185	0.6070
1	0	0	0.2255	0.2400	0.2328
1	2,500	2,560	0.6225	0.6545	0.6385
1	3,000	3,020	0.8405	0.8865	0.8635
1	3,500	3,240	1.0155	1.0755	1.0455
Unload					
1	0	0	0.3305	0.3460	0.3383

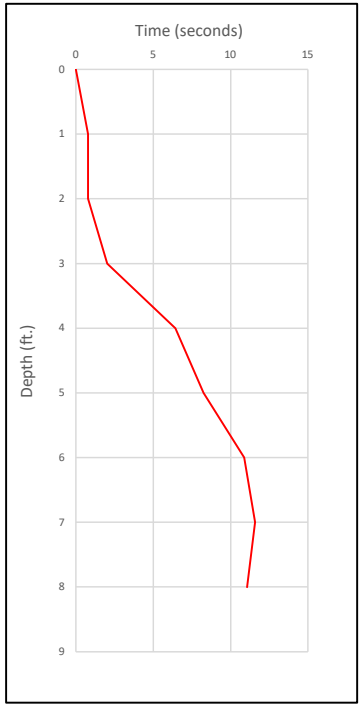
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-16A
Date/Time Installed:	3/17/21 4:50 PM	Date/Time Tested:	3/21/21 12:50 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	51.81
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	6.48

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0.79
2	0.79
3	2.02
4	6.42
5	8.25
6	10.88
7	11.59
8	11.07
Total Time (s) =	51.81



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0045	0.0030	0.0038
1	3,000	3,120	0.0075	0.0080	0.0078
1	4,000	4,000	0.0095	0.0120	0.0108
1	5,000	5,080	0.0120	0.0185	0.0153
1	6,000	6,100	0.0140	0.0250	0.0195
1	7,000	7,020	0.0160	0.0345	0.0253
1	8,000	8,100	0.0195	0.0455	0.0325
1	9,000	9,140	0.0255	0.0620	0.0438
1	10,000	10,120	0.0385	0.0825	0.0605
Unload					
1	0	0	0.0405	0.0525	0.0465
Reload					
1	Max.	13,160	0.2140	0.2765	0.2453
Unload					
1	0	0	0.2085	0.2245	0.2165

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	540	0.0440	0.0850	0.0645
1	1,000	1,000	0.0965	0.1620	0.1293
1	1,500	1,500	0.1685	0.2560	0.2123
1	0	0	0.0265	0.0490	0.0378
1	500	540	0.0705	0.1305	0.1005
1	1,000	1,100	0.1350	0.2150	0.1750
1	1,500	1,500	0.1840	0.2750	0.2295
1	2,000	2,000	0.2530	0.3520	0.3025
1	2,500	2,500	0.3325	0.4385	0.3855
1	0	0	0.0455	0.0805	0.0630
1	2,500	2,520	0.3515	0.4505	0.4010
1	3,000	3,020	0.4290	0.5350	0.4820
1	3,500	3,520	0.5120	0.6270	0.5695
1	4,000	4,040	0.6150	0.7425	0.6788
Unload					
1	0	0	0.0770	0.1110	0.0940
Reload					
1	Max.	4,780	0.8160	0.9430	0.8795
Unload					
1	0	0	0.1120	0.1435	0.1278

Field Notes

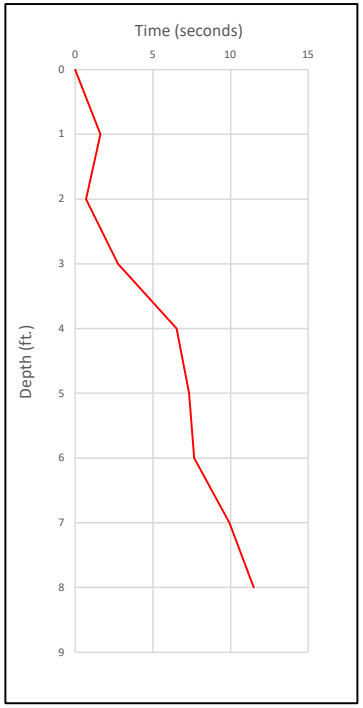
Ran out of ram during lateral test; cannot exceed 4,780 lbs. Lateral test ended at 4,780 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-16B
Date/Time Installed:	3/17/21 4:55 PM	Date/Time Tested:	3/21/21 1:45 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	47.97
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	6.00

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.61
2	0.68
3	2.74
4	6.53
5	7.33
6	7.65
7	9.93
8	11.50
Total Time (s) =	47.97



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	-0.0015	0.0070	0.0028
1	3,000	3,100	-0.0030	0.0160	0.0065
1	4,000	4,040	-0.0020	0.0200	0.0090
1	5,000	5,020	-0.0005	0.0245	0.0120
1	6,000	6,160	0.0025	0.0305	0.0165
1	7,000	7,120	0.0070	0.0365	0.0218
1	8,000	8,100	0.0140	0.0435	0.0288
1	9,000	9,020	0.0270	0.0545	0.0408
1	10,000	10,160	0.0445	0.0695	0.0570
Unload					
1	0	0	0.0400	0.0415	0.0408
Reload					
1	Max.	12,920	0.2545	0.2775	0.2660
Unload					
1	0	0	0.2350	0.2340	0.2345

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0310	0.0975	0.0643
1	1,000	1,040	0.0880	0.2085	0.1483
1	1,500	1,500	0.1520	0.3060	0.2290
1	0	0	0.0140	0.0450	0.0295
1	500	580	0.0530	0.1580	0.1055
1	1,000	1,040	0.1025	0.2425	0.1725
1	1,500	1,520	0.1585	0.3195	0.2390
1	2,000	2,040	0.2345	0.4170	0.3258
1	2,500	2,520	0.3250	0.5190	0.4220
1	0	0	0.0400	0.0675	0.0538
1	2,500	2,500	0.3420	0.5490	0.4455
1	3,000	3,000	0.4315	0.6420	0.5368
1	3,500	3,500	0.5290	0.7485	0.6388
1	4,000	4,020	0.6470	0.8735	0.7603
Unload					
1	0	0	0.0750	0.0965	0.0858
Reload					
1	Max.	4,220	0.7715	0.9860	0.8788
Unload					
1	0	0	0.0955	0.0845	0.0900

Field Notes

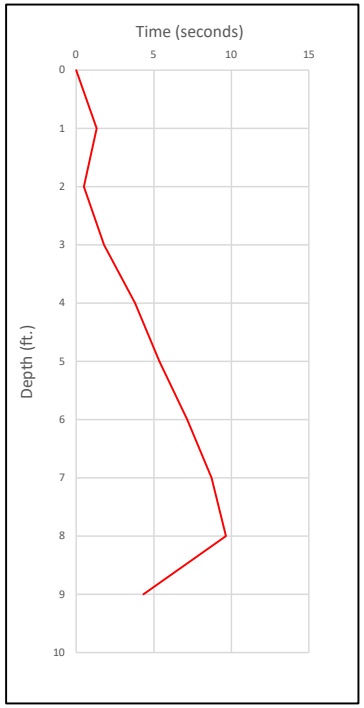
Unable to increase lateral load above 4,220 lbs. due to Gayk being pulled by load. Lateral test ended at 4,220 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-17A
Date/Time Installed:	3/18/21 8:30 AM	Date/Time Tested:	3/21/21 3:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	42.60
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9	Avg. Installation Rate (sec/ft)	4.73

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.31
2	0.50
3	1.79
4	3.80
5	5.36
6	7.15
7	8.72
8	9.65
9	4.32
Total Time (s) =	42.60



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0040	-0.0005	0.0018
1	3,000	3,180	0.0075	0.0000	0.0038
1	4,000	4,100	0.0100	0.0005	0.0053
1	5,000	5,080	0.0120	0.0020	0.0070
1	6,000	6,000	0.0140	0.0030	0.0085
1	7,000	7,060	0.0160	0.0045	0.0103
1	8,000	8,060	0.0185	0.0065	0.0125
1	9,000	9,080	0.0195	0.0090	0.0143
1	10,000	10,060	0.0210	0.0110	0.0160
Unload					
1	0	0	0.0040	0.0030	0.0035
Reload					
1	Max.	13,200	0.0240	0.0210	0.0225
Unload					
1	0	0	0.0055	0.0055	0.0055

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	540	0.0500	0.0840	0.0670
1	1,000	1,060	0.1310	0.1895	0.1603
1	1,500	1,500	0.2235	0.2890	0.2563
1	0	0	0.0640	0.0535	0.0588
1	500	640	0.1235	0.1605	0.1420
1	1,000	1,020	0.1715	0.2270	0.1993
1	1,500	1,560	0.2435	0.3085	0.2760
1	2,000	2,040	0.3235	0.3820	0.3528
1	2,500	2,520	0.4180	0.4670	0.4425
1	0	0	0.1140	0.0545	0.0843
1	2,500	2,560	0.4450	0.4960	0.4705
1	3,000	3,060	0.5260	0.5720	0.5490
1	3,500	3,540	0.6100	0.6550	0.6325
1	4,000	4,020	0.7000	0.7455	0.7228
Unload					
1	0	0	0.1475	0.0625	0.1050
Reload					
1	Max.	4,600	0.8455	0.8845	0.8650
Unload					
1	0	0	0.1575	0.0665	0.1120

Field Notes

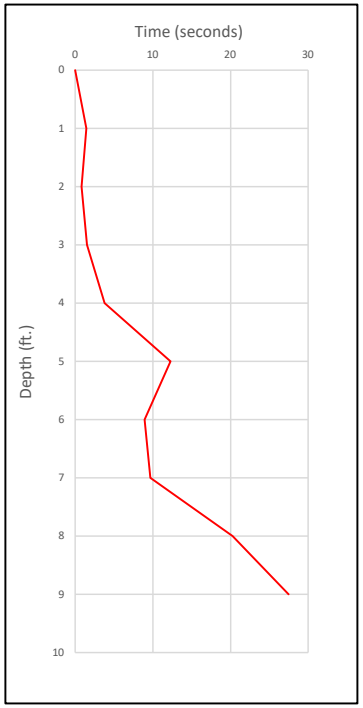
Unable to increase lateral load above 4,600 lbs. due to Gayk being pulled by load. Lateral test ended at 4,600 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-17B
Date/Time Installed:	3/18/21 8:35 AM	Date/Time Tested:	3/21/21 2:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	86.12
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9	Avg. Installation Rate (sec/ft)	9.57

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.42
2	0.81
3	1.50
4	3.76
5	12.26
6	8.93
7	9.67
8	20.26
9	27.51
Total Time (s) =	86.12



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	-0.0095	0.0125	0.0015
1	3,000	3,080	-0.0185	0.0250	0.0033
1	4,000	4,180	-0.0235	0.0310	0.0038
1	5,000	5,120	-0.0260	0.0360	0.0050
1	6,000	6,060	-0.0290	0.0405	0.0058
1	7,000	7,060	-0.0310	0.0455	0.0073
1	8,000	8,100	-0.0330	0.0500	0.0085
1	9,000	9,120	-0.0350	0.0540	0.0095
1	10,000	10,080	-0.0360	0.0595	0.0118
Unload					
1	0	0	0.0030	0.0075	0.0053
Reload					
1	Max.	13,260	-0.0370	0.0810	0.0220
Unload					
1	0	0	0.0120	0.0185	0.0153

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	560	0.0355	0.0955	0.0655
1	1,000	1,080	0.0900	0.2225	0.1563
1	1,500	1,540	0.1405	0.3255	0.2330
1	0	0	0.0675	0.0065	0.0370
1	500	520	0.0965	0.1010	0.0988
1	1,000	1,100	0.1370	0.2375	0.1873
1	1,500	1,580	0.1750	0.3290	0.2520
1	2,000	2,040	0.2175	0.4015	0.3095
1	2,500	2,560	0.2840	0.4805	0.3823
1	0	0	0.1345	-0.0155	0.0595
1	2,500	2,540	0.3215	0.4740	0.3978
1	3,000	3,100	0.3830	0.5290	0.4560
1	3,500	3,540	0.4525	0.5820	0.5173
1	4,000	4,000	0.5420	0.6455	0.5938
Unload					
1	0	0	0.2265	-0.0605	0.0830
Reload					
1	Max.	4,120	0.6420	0.6670	0.6545
Unload					
1	0	0	0.2585	-0.0965	0.0810

Field Notes

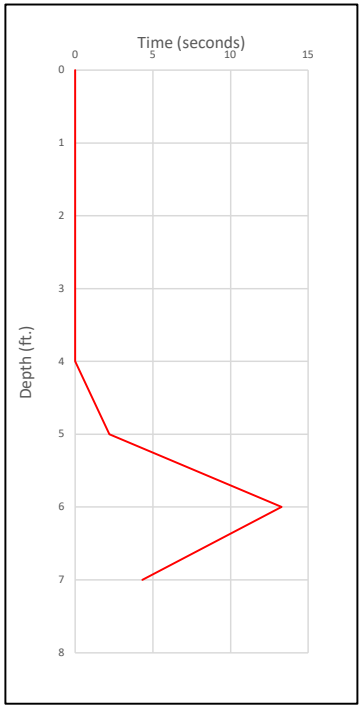
Unable to increase lateral load above 4,120 lbs. due to Gayk being pulled by load. Lateral test ended at 4,120 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-18A
Date/Time Installed:	3/18/21 9:20 AM	Date/Time Tested:	3/21/21 10:55 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	19.82
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	7	Avg. Installation Rate (sec/ft)	2.83

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	2.20
6	13.30
7	4.32
Total Time (s) =	19.82



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0010	0.0045	0.0028
1	3,000	3,060	0.0010	0.0120	0.0065
1	4,000	4,060	0.0010	0.0165	0.0088
1	5,000	5,060	0.0000	0.0205	0.0103
1	6,000	6,020	-0.0010	0.0250	0.0120
1	7,000	7,160	-0.0025	0.0305	0.0140
1	8,000	8,040	-0.0035	0.0360	0.0163
1	9,000	9,060	-0.0030	0.0410	0.0190
1	10,000	10,040	-0.0045	0.0455	0.0205
Unload					
1	0	0	0.0130	0.0160	0.0145
Reload					
1	Max.	12,040	-0.0070	0.0585	0.0258
Unload					
1	0	0	0.0160	0.0205	0.0183

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.1485	0.0030	0.0758
1	1,000	1,000	0.3100	0.0470	0.1785
1	1,500	1,500	0.4750	0.1465	0.3108
1	0	0	0.0235	0.0045	0.0140
1	500	520	0.1900	0.0035	0.0968
1	1,000	1,020	0.3400	0.0565	0.1983
1	1,500	1,520	0.4745	0.1605	0.3175
1	2,000	2,000	0.6345	0.2665	0.4505
1	2,500	2,500	0.8305	0.4235	0.6270
1	0	0	0.1010	0.0170	0.0590
1	2,500	2,520	0.8310	0.4440	0.6375
1	3,000	3,000	1.0545	0.6400	0.8473
1	3,500	3,340	1.2305	0.8145	1.0225
Unload					
1	0	0	0.1710	0.0730	0.1220

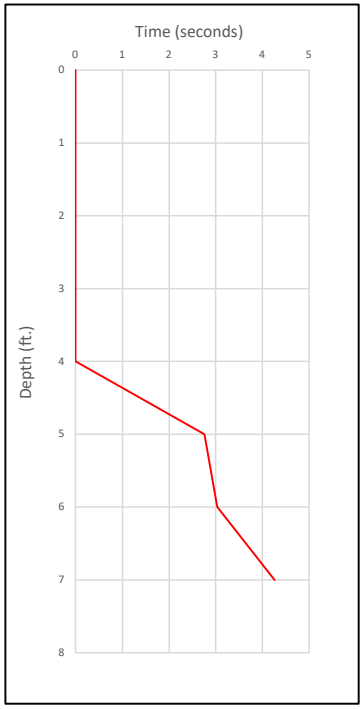
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-18B
Date/Time Installed:	3/18/21 9:25 AM	Date/Time Tested:	3/21/21 10:20 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	10.05
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	7	Avg. Installation Rate (sec/ft)	1.44

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	2.76
6	3.03
7	4.26
Total Time (s) =	10.05



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	0.0045	0.0015	0.0030
1	3,000	3,040	0.0095	-0.0010	0.0043
1	4,000	4,160	0.0085	0.0175	0.0130
1	5,000	5,040	0.0120	0.0125	0.0123
1	6,000	6,080	0.0145	0.0055	0.0100
1	7,000	7,160	0.0175	-0.0005	0.0085
1	8,000	8,080	0.0185	-0.0040	0.0073
1	9,000	9,040	0.0195	-0.0085	0.0055
1	10,000	10,080	0.0195	-0.0120	0.0038
Unload					
1	0	0	0.0275	0.0325	0.0300
Reload					
1	Max.	13,000	0.0435	0.0510	0.0473
Unload					
1	0	0	0.0435	0.0510	0.0473

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0580	0.1510	0.1045
1	1,000	1,000	0.1480	0.2835	0.2158
1	1,500	1,500	0.2530	0.4840	0.3685
1	0	0	0.0500	0.0860	0.0680
1	500	520	0.1300	0.2260	0.1780
1	1,000	1,020	0.2280	0.3560	0.2920
1	1,500	1,520	0.3120	0.4820	0.3970
1	2,000	2,000	0.4040	0.6200	0.5120
1	2,500	2,500	0.5400	0.8000	0.6700
1	0	0	0.1420	0.1940	0.1680
1	2,500	2,520	0.6085	0.8165	0.7125
1	3,000	3,000	0.7440	0.9890	0.8665
1	3,500	3,340	0.8820	1.1250	1.0035
Unload					
1	0	0	0.3140	0.2690	0.2915

Field Notes

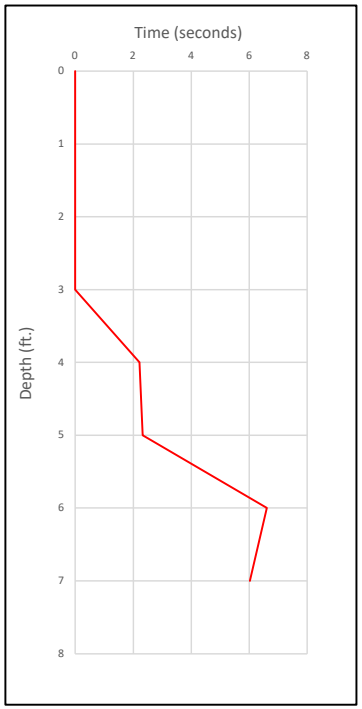
Gayk adjusted during uplift testing at 4,000-lb. load target in order to re-align pulling equipment. Tri-pod settled with increasing load and caused slight misalignment.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-19A
Date/Time Installed:	3/18/21 9:40 AM	Date/Time Tested:	3/21/21 8:35 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	17.17
Pushed to Depth (ft.):	3	Embedment Depth (ft.):	7	Avg. Installation Rate (sec/ft)	2.45

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	2.21
5	2.33
6	6.61
7	6.02
Total Time (s) =	17.17



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,580	0.0070	0.0055	0.0063
1	3,000	3,140	0.0017	0.0145	0.0081
1	4,000	4,080	0.0230	0.0200	0.0215
1	5,000	5,000	0.0285	0.0245	0.0265
1	6,000	6,360	0.0365	0.0270	0.0318
1	7,000	7,160	0.0425	0.0285	0.0355
1	8,000	8,300	0.0520	0.0290	0.0405
1	9,000	9,120	0.0580	0.0325	0.0453
1	10,000	10,120	0.0650	0.0360	0.0505
Unload					
1	0	0	0.0415	0.0490	0.0453
Reload					
1	Max.	13,100	0.0875	0.0605	0.0740
Unload					
1	0	0	0.0580	0.0685	0.0633

Lateral Testing

Lateral Load Height Above Grade (ft):		2.4	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0475	0.0435	0.0455
1	1,000	1,000	0.1035	0.0845	0.0940
1	1,500	1,520	0.1675	0.1285	0.1480
1	0	0	0.0085	0.0175	0.0130
1	500	520	0.0695	0.0675	0.0685
1	1,000	1,020	0.1215	0.1165	0.1190
1	1,500	1,500	0.1640	0.1480	0.1560
1	2,000	2,000	0.2275	0.1970	0.2123
1	2,500	2,500	0.2925	0.2550	0.2738
1	0	0	0.0475	0.0425	0.0450
1	2,500	2,520	0.3185	0.2660	0.2923
1	3,000	3,020	0.3620	0.3085	0.3353
1	3,500	3,500	0.4695	0.3880	0.4288
1	4,000	3,890	0.5120	0.4560	0.4840
Unload					
1	0	0	0.0580	0.0990	0.0785

Field Notes

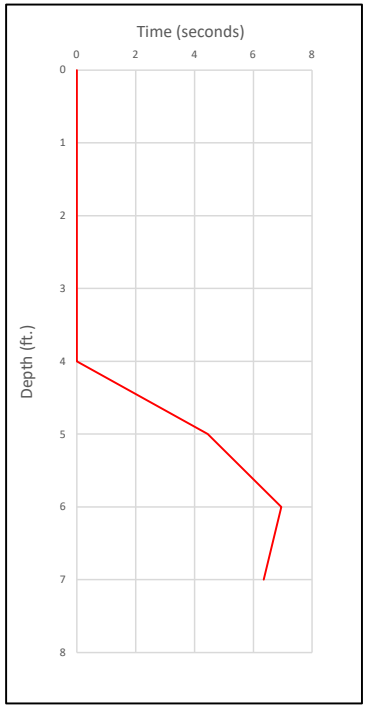
Unable to increase lateral load above 3,890 lbs. due to Gayk being pulled by load caused by soft ground conditions. Lateral test ended at 3,890 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-19B
Date/Time Installed:	3/18/21 9:45 AM	Date/Time Tested:	3/21/21 9:25 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	17.76
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	7	Avg. Installation Rate (sec/ft)	2.54

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	4.45
6	6.96
7	6.35
Total Time (s) =	17.76



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,580	0.0085	0.0105	0.0095
1	3,000	3,020	0.0140	0.0165	0.0153
1	4,000	4,060	0.0175	0.0210	0.0193
1	5,000	5,040	0.0220	0.0240	0.0230
1	6,000	6,180	0.0260	0.0280	0.0270
1	7,000	7,100	0.0295	0.0320	0.0308
1	8,000	8,160	0.0325	0.0360	0.0343
1	9,000	9,120	0.0350	0.0400	0.0375
1	10,000	10,020	0.0380	0.0450	0.0415
Unload					
1	0	0	0.0475	0.0430	0.0453
Reload					
1	Max.	12,760	0.0580	0.0665	0.0623
Unload					
1	0	0	0.0660	0.0605	0.0633

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0520	0.0590	0.0555
1	1,000	1,000	0.0990	0.1175	0.1083
1	1,500	1,520	0.1530	0.1880	0.1705
1	0	0	0.0265	0.0060	0.0163
1	500	520	0.0625	0.0680	0.0653
1	1,000	1,020	0.1120	0.1325	0.1223
1	1,500	1,500	0.1570	0.1920	0.1745
1	2,000	2,020	0.2040	0.2625	0.2333
1	2,500	2,780	0.2160	0.2820	0.2490
1	0	0	0.0095	0.0380	0.0238
1	2,500	2,520	0.2210	0.2995	0.2603
1	3,000	3,040	0.2445	0.4360	0.3403
1	3,500	3,440	0.2685	0.5225	0.3955
Unload					
1	0	0	0.0085	0.0625	0.0355

Field Notes

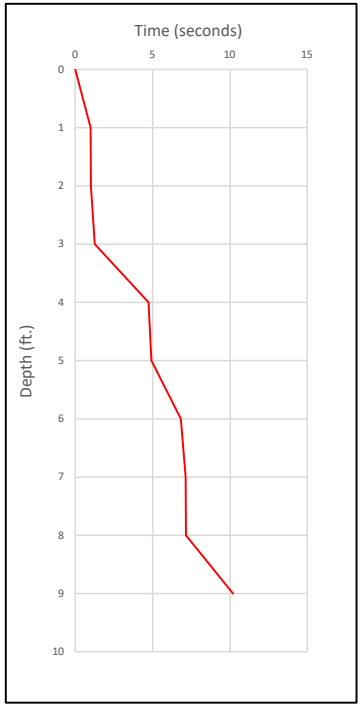
Unable to increase lateral load above 3,440 lbs. due to Gayk being pulled by load caused by soft ground conditions. Lateral test ended at 3,440 lbs.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-20A
Date/Time Installed:	3/18/21 10:50 AM	Date/Time Tested:	3/22/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	10.21
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9	Avg. Installation Rate (sec/ft)	1.13

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0.99
2	1.01
3	1.26
4	4.73
5	4.91
6	6.83
7	7.14
8	7.16
9	10.21
Total Time (s) =	44.24



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0000	0.0030	0.0015
1	3,000	3,040	-0.0010	0.0110	0.0050
1	4,000	4,040	-0.0020	0.0185	0.0083
1	5,000	5,060	-0.0025	0.0270	0.0123
1	6,000	6,040	-0.0040	0.0380	0.0170
1	7,000	7,000	-0.0045	0.0475	0.0215
1	8,000	8,120	-0.0015	0.0570	0.0278
1	9,000	9,280	0.0020	0.0685	0.0353
1	10,000	10,060	0.0085	0.0805	0.0445
Unload					
1	0	0	0.0180	0.0195	0.0188
Reload					
1	Max.	13,300	0.0420	0.1375	0.0898
Unload					
1	0	0	0.0525	0.0545	0.0535

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in): 4		
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0640	0.0700	0.0670
1	1,000	1,020	0.1245	0.1400	0.1323
1	1,500	1,540	0.1995	0.2265	0.2130
1	0	0	0.0565	0.0515	0.0540
1	500	540	0.1075	0.1145	0.1110
1	1,000	1,040	0.1680	0.1920	0.1800
1	1,500	1,540	0.2215	0.2560	0.2388
1	2,000	2,060	0.2920	0.3325	0.3123
1	2,500	2,520	0.3625	0.4140	0.3883
1	0	0	0.0805	0.0695	0.0750
1	2,500	2,540	0.3970	0.4515	0.4243
1	3,000	3,020	0.4825	0.5365	0.5095
1	3,500	3,520	0.5885	0.6375	0.6130
1	4,000	4,020	0.7160	0.7620	0.7390
Unload					
1	0	0	0.1640	0.1030	0.1335
Reload					
1	Max.	4,820	1.0040	1.0470	1.0255
Unload					
1	0	0	0.1700	0.0715	0.1208

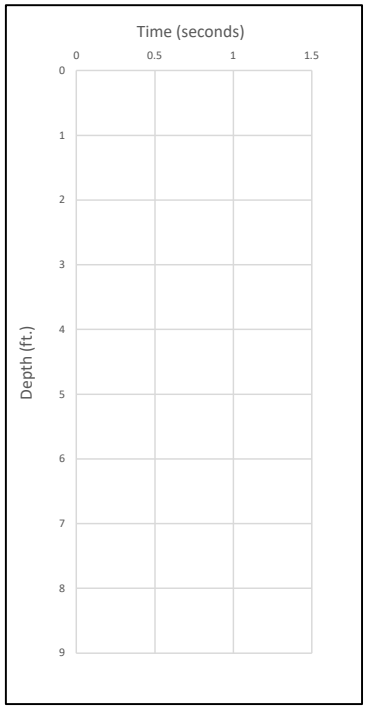
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-20B
Date/Time Installed:	3/18/21 11:00 AM	Date/Time Tested:	3/22/21 9:50 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	50
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	9	Avg. Installation Rate (sec/ft)	5.56

Embedment Data

Depth (ft.)	Time (s)
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
Total Time (s) =	50



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,620	0.0030	0.0060	0.0045
1	3,000	3,200	0.0045	0.0155	0.0100
1	4,000	4,200	0.0060	0.0220	0.0140
1	5,000	5,080	0.0065	0.0285	0.0175
1	6,000	6,060	0.0085	0.0360	0.0223
1	7,000	7,020	0.0100	0.0435	0.0268
1	8,000	8,120	0.0125	0.0530	0.0328
1	9,000	9,180	0.0160	0.0620	0.0390
1	10,000	10,040	0.0195	0.0715	0.0455
Unload					
1	0	0	0.0175	0.0260	0.0218
Reload					
1	Max.	13,240	0.0370	0.1205	0.0788
Unload					
1	0	0	0.0365	0.0510	0.0438

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.1100	0.0455	0.0778
1	1,000	1,020	0.1985	0.1070	0.1528
1	1,500	1,540	0.3095	0.1900	0.2498
1	0	0	0.0970	0.0440	0.0705
1	500	540	0.1760	0.0880	0.1320
1	1,000	1,040	0.2635	0.1510	0.2073
1	1,500	1,540	0.3380	0.2100	0.2740
1	2,000	2,060	0.4380	0.2885	0.3633
1	2,500	2,520	0.5435	0.3745	0.4590
1	0	0	0.1225	0.0720	0.0973
1	2,500	2,540	0.5895	0.4090	0.4993
1	3,000	3,020	0.6930	0.4985	0.5958
1	3,500	3,520	0.8120	0.6045	0.7083
1	4,000	4,020	0.9510	0.7355	0.8433
Unload					
1	0	0	0.1915	0.1360	0.1638
Reload					
1	Max.	4,580	1.1530	0.9175	1.0353
Unload					
1	0	0	0.1345	0.1665	0.1505

Field Notes

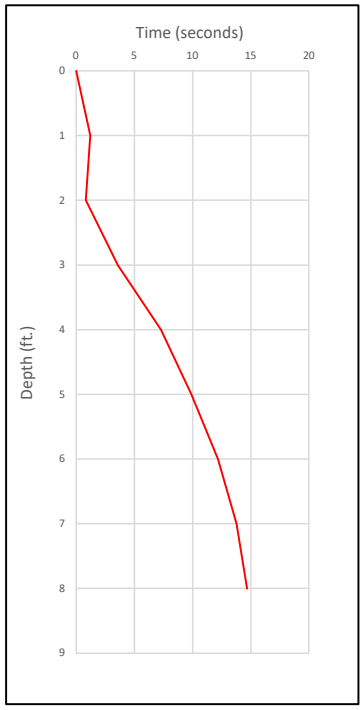
Pile installation time was not recorded due to stopwatch being reset before times were documented. Install time was similar to PT-20A at approximately 50 seconds for total drive time.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-21A
Date/Time Installed:	3/18/21 10:30 AM	Date/Time Tested:	3/20/21 1:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	63.38
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	7.92

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.21
2	0.83
3	3.56
4	7.27
5	9.90
6	12.16
7	13.77
8	14.68
Total Time (s) =	63.38



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0015	0.0030	0.0023
1	3,000	3,060	0.0020	0.0085	0.0053
1	4,000	4,120	0.0030	0.0120	0.0075
1	5,000	5,040	0.0050	0.0160	0.0105
1	6,000	6,080	0.0080	0.0195	0.0138
1	7,000	7,200	0.0115	0.0250	0.0183
1	8,000	8,080	0.0150	0.0290	0.0220
1	9,000	9,500	0.0205	0.0355	0.0280
1	10,000	10,200	0.0255	0.0410	0.0333
Unload					
1	0	0	0.0130	0.0160	0.0145
Reload					
1	Max.	13,160	0.0545	0.0730	0.0638
Unload					
1	0	0	0.0345	0.0385	0.0365

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0200	0.0395	0.0298
1	1,000	1,000	0.0465	0.0780	0.0623
1	1,500	1,500	0.0770	0.1235	0.1003
1	0	0	0.0140	0.0200	0.0170
1	500	500	0.0345	0.0665	0.0505
1	1,000	1,040	0.0585	0.1045	0.0815
1	1,500	1,500	0.0825	0.1365	0.1095
1	2,000	2,000	0.1130	0.1815	0.1473
1	2,500	2,520	0.1565	0.2360	0.1963
1	0	0	0.0270	0.0325	0.0298
1	2,500	2,540	0.1660	0.2540	0.2100
1	3,000	3,020	0.2065	0.3010	0.2538
1	3,500	3,500	0.2575	0.3590	0.3083
1	4,000	4,000	0.3085	0.4150	0.3618
Unload					
1	0	0	0.0545	0.0435	0.0490
Reload					
1	Max.	6,200	0.6145	0.7235	0.6690
Unload					
1	0	0	0.1030	0.0530	0.0780

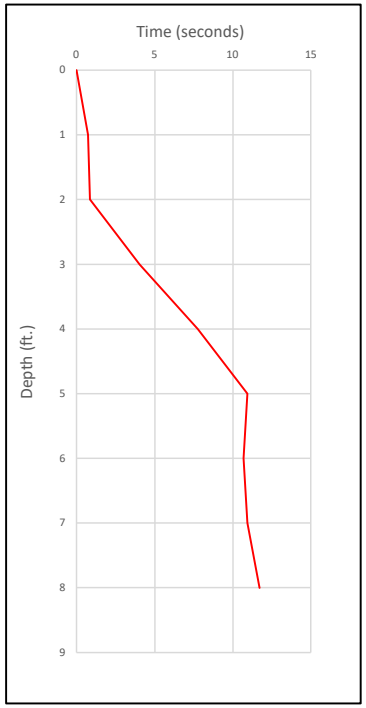
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-21B
Date/Time Installed:	3/18/21 10:40 AM	Date/Time Tested:	3/20/21 12:50 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	57.61
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	7.20

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0.72
2	0.85
3	4.03
4	7.75
5	10.93
6	10.68
7	10.93
8	11.72
Total Time (s) =	57.61



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0000	0.0085	0.0043
1	3,000	3,100	-0.0015	0.0195	0.0090
1	4,000	4,000	-0.0020	0.0285	0.0133
1	5,000	5,060	-0.0025	0.0360	0.0168
1	6,000	6,020	-0.0020	0.0440	0.0210
1	7,000	7,080	-0.0010	0.0540	0.0265
1	8,000	8,100	0.0010	0.0655	0.0333
1	9,000	9,080	0.0030	0.0760	0.0395
1	10,000	10,080	0.0085	0.0915	0.0500
Unload					
1	0	0	0.0215	0.0315	0.0265
Reload					
1	Max.	13,180	0.0535	0.1770	0.1153
Unload					
1	0	0	0.0715	0.0895	0.0805

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0060	0.0675	0.0368
1	1,000	1,020	0.0285	0.1380	0.0833
1	1,500	1,520	0.0640	0.2030	0.1335
1	0	0	0.0045	0.0275	0.0160
1	500	520	0.0160	0.1105	0.0633
1	1,000	1,000	0.0410	0.1665	0.1038
1	1,500	1,520	0.0700	0.2210	0.1455
1	2,000	2,040	0.1105	0.2785	0.1945
1	2,500	2,540	0.1640	0.3425	0.2533
1	0	0	0.0135	0.0475	0.0305
1	2,500	2,740	0.1940	0.3715	0.2828
1	3,000	3,020	0.2240	0.4065	0.3153
1	3,500	3,520	0.3100	0.4880	0.3990
1	4,000	4,200	0.3865	0.5635	0.4750
Unload					
1	0	0	0.0360	0.0860	0.0610
Reload					
1	Max.	6,020	0.6960	0.8385	0.7673
Unload					
1	0	0	0.0560	0.0770	0.0665

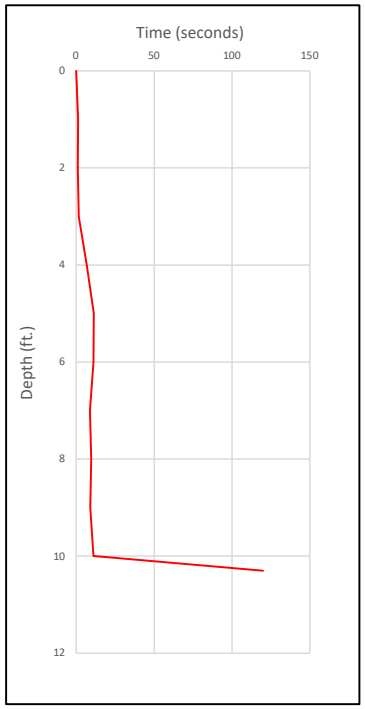
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-22A
Date/Time Installed:	3/18/21 10:05 AM	Date/Time Tested:	3/20/21 3:10 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	190.55
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	10.3	Avg. Installation Rate (sec/ft)	18.50

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.06
2	0.92
3	1.51
4	6.67
5	11.22
6	10.97
7	8.76
8	9.50
9	8.92
10	11.02
10.3	120.00
Total Time (s) =	190.55



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0030	0.0030	0.0030
1	3,000	3,120	0.0075	0.0075	0.0075
1	4,000	4,060	0.0095	0.0100	0.0098
1	5,000	5,140	0.0120	0.0155	0.0138
1	6,000	6,020	0.0135	0.0210	0.0173
1	7,000	7,040	0.0155	0.0255	0.0205
1	8,000	8,020	0.0185	0.0305	0.0245
1	9,000	9,060	0.0215	0.0350	0.0283
1	10,000	10,000	0.0250	0.0390	0.0320
Unload					
1	0	0	0.0120	0.0120	0.0120
Reload					
1	Max.	13,080	0.0400	0.0510	0.0455
Unload					
1	0	0	0.0180	0.0175	0.0178

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0590	0.0645	0.0618
1	1,000	1,040	0.1335	0.1325	0.1330
1	1,500	1,520	0.2145	0.2105	0.2125
1	0	0	0.0375	0.0305	0.0340
1	500	520	0.0865	0.0870	0.0868
1	1,000	1,040	0.1545	0.1545	0.1545
1	1,500	1,520	0.2200	0.2185	0.2193
1	2,000	2,000	0.3010	0.2965	0.2988
1	2,500	2,560	0.3965	0.3875	0.3920
1	0	0	0.0675	0.0545	0.0610
1	2,500	2,520	0.4100	0.3990	0.4045
1	3,000	3,000	0.4870	0.4715	0.4793
1	3,500	3,520	0.5890	0.5635	0.5763
1	4,000	4,020	0.6755	0.6500	0.6628
Unload					
1	0	0	0.1085	0.0785	0.0935
Reload					
1	Max.	5,640	1.0515	0.9990	1.0253
Unload					
1	0	0	0.2990	0.2165	0.2578

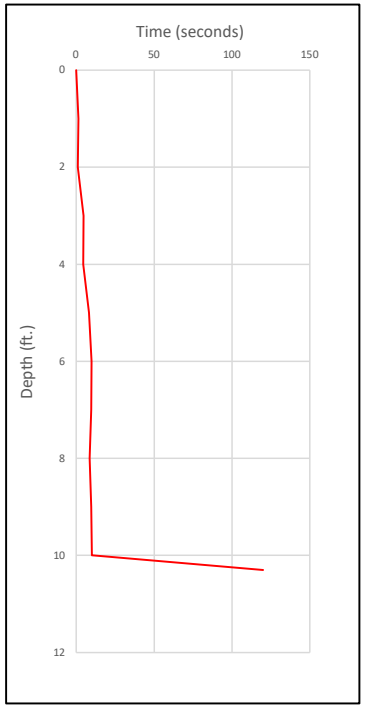
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-22B
Date/Time Installed:	3/18/21 10:10 AM	Date/Time Tested:	3/20/21 3:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	186.56
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	10.3	Avg. Installation Rate (sec/ft)	18.11

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.31
2	0.86
3	4.54
4	4.47
5	8.11
6	9.76
7	9.44
8	8.61
9	9.54
10	9.92
10.3	120.00
Total Time (s) =	186.56



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0015	0.0055	0.0035
1	3,000	3,000	0.0010	0.0120	0.0065
1	4,000	4,100	0.0005	0.0170	0.0088
1	5,000	5,020	-0.0005	0.0220	0.0108
1	6,000	6,020	-0.0010	0.0270	0.0130
1	7,000	7,140	-0.0010	0.0325	0.0158
1	8,000	8,080	-0.0005	0.0380	0.0188
1	9,000	9,120	0.0000	0.0440	0.0220
1	10,000	10,000	0.0010	0.0500	0.0255
Unload					
1	0	0	0.0125	0.0200	0.0163
Reload					
1	Max.	13,140	0.0095	0.0695	0.0395
Unload					
1	0	0	0.0215	0.0305	0.0260

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.0940	0.0270	0.0605
1	1,000	1,040	0.1545	0.0700	0.1123
1	1,500	1,520	0.2010	0.1120	0.1565
1	0	0	0.0270	0.0055	0.0163
1	500	520	0.1070	0.0420	0.0745
1	1,000	1,040	0.1785	0.0885	0.1335
1	1,500	1,520	0.2100	0.1285	0.1693
1	2,000	2,000	0.2480	0.1640	0.2060
1	2,500	2,560	0.2930	0.2130	0.2530
1	0	0	0.0400	0.0100	0.0250
1	2,500	2,520	0.3110	0.2235	0.2673
1	3,000	3,000	0.3510	0.2675	0.3093
1	3,500	3,520	0.4140	0.3325	0.3733
1	4,000	4,020	0.4675	0.3865	0.4270
Unload					
1	0	0	0.0495	0.0230	0.0363
Reload					
1	Max.	7,080	1.0300	0.9910	1.0105
Unload					
1	0	0	0.0910	0.1395	0.1153

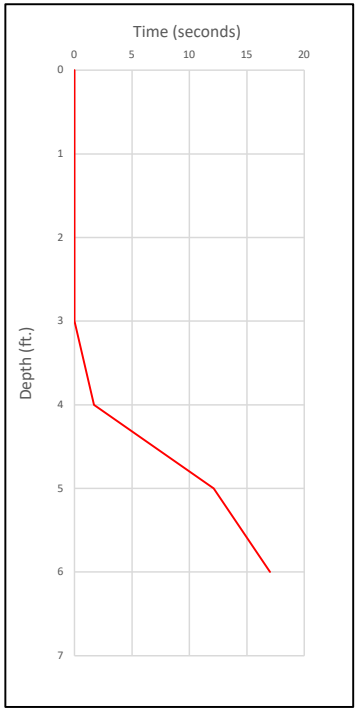
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-23A
Date/Time Installed:	3/19/20 12:45 PM	Date/Time Tested:	3/22/21 11:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	30.81
Pushed to Depth (ft.):	3.5	Embedment Depth (ft.):	6	Avg. Installation Rate (sec/ft)	5.14

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	1.70
5	12.09
6	17.02
Total Time (s) =	30.81



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0065	0.0105	0.0020
1	3,000	3,040	-0.0140	0.0235	0.0048
1	4,000	4,000	-0.0180	0.0300	0.0060
1	5,000	5,080	-0.0215	0.0355	0.0070
1	6,000	6,000	-0.0250	0.0405	0.0078
1	7,000	7,020	-0.0285	0.0460	0.0088
1	8,000	8,060	-0.0305	0.0500	0.0098
1	9,000	9,080	-0.0330	0.0540	0.0105
1	10,000	1,060	-0.0360	0.0595	0.0118
Unload					
1	0	0	-0.0110	0.0125	0.0008
Reload					
1	Max.	13,040	-0.0345	0.0680	0.0168
Unload					
1	0	0	-0.0140	0.0175	0.0018

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0050	0.0010	0.0030
1	500	500	0.0085	0.2045	0.1065
1	1,000	1,000	0.0720	0.3745	0.2233
1	1,500	1,520	0.1715	0.5325	0.3520
1	0	0	0.0080	0.0665	0.0373
1	500	500	0.0330	0.2465	0.1398
1	1,000	1,040	0.1010	0.4065	0.2538
1	1,500	1,520	0.1825	0.5270	0.3548
1	2,000	2,020	0.2905	0.6760	0.4833
1	2,500	2,500	0.4140	0.8220	0.6180
1	0	0	0.0305	0.0820	0.0563
1	2,500	2,500	0.4400	0.8180	0.6290
1	3,000	3,000	0.5605	0.9565	0.7585
1	3,500	3,500	0.7065	1.1060	0.9063
1	4,000	3,800	0.7985	1.2150	1.0068
Unload					
1	0	0	0.0845	0.1770	0.1308

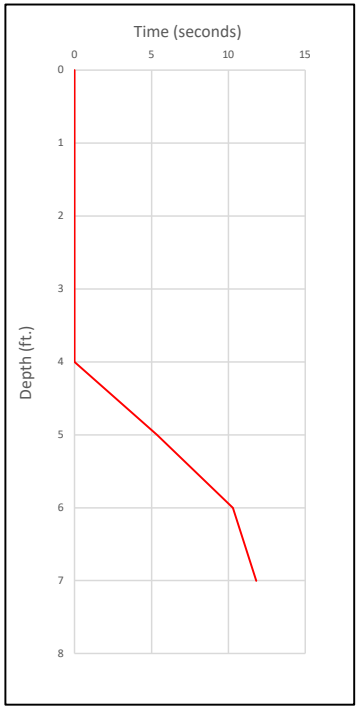
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-23B
Date/Time Installed:	3/19/21 12:50 PM	Date/Time Tested:	3/22/21 12:40 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	27.46
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	7	Avg. Installation Rate (sec/ft)	3.92

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	5.36
6	10.28
7	11.82
Total Time (s) =	27.46



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0015	0.0005	0.0010
1	1,500	1,540	0.0005	0.0045	0.0025
1	3,000	3,140	0.0055	0.0055	0.0055
1	4,000	4,000	0.0090	0.0135	0.0113
1	5,000	5,100	0.0115	0.0155	0.0135
1	6,000	6,020	0.0135	0.0175	0.0155
1	7,000	7,020	0.0160	0.0150	0.0155
1	8,000	8,000	0.0170	0.0205	0.0188
1	9,000	8,860	0.0180	0.0220	0.0200
1	10,000	10,000	0.0190	0.0230	0.0210
Unload					
1	0	0	0.0075	0.0060	0.0068
Reload					
1	Max.	13,020	0.0225	0.0300	0.0263
Unload					
1	0	0	0.0115	0.0115	0.0115

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1010	0.2030	0.1520
1	1,000	1,000	0.2805	0.4040	0.3423
1	1,500	1,520	0.4790	0.5995	0.5393
1	0	0	0.0805	0.0960	0.0883
1	500	500	0.1770	0.3190	0.2480
1	1,000	1,040	0.3205	0.4910	0.4058
1	1,500	1,500	0.4965	0.6325	0.5645
1	2,000	2,000	0.7065	0.8180	0.7623
1	2,500	2,500	0.9400	1.0235	0.9818
1	0	0	0.1910	0.2645	0.2278
1	2,500	2,480	0.9455	1.0545	1.0000
Unload					
1	0	0	0.1910	0.2275	0.2093

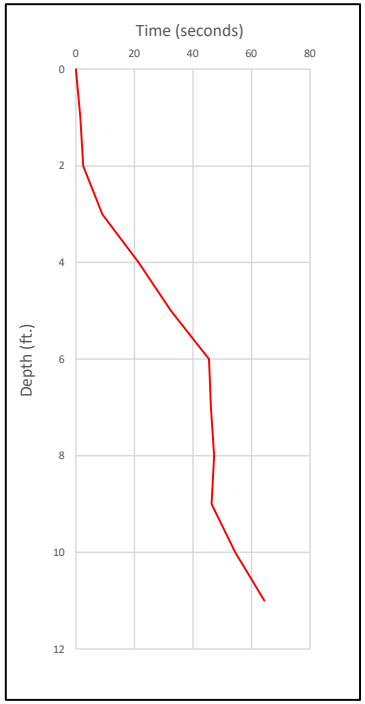
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-24A
Date/Time Installed:	3/19/21 1:25 PM	Date/Time Tested:	3/23/21 8:00 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	370.51
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	11	Avg. Installation Rate (sec/ft)	33.68

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.5
2	2.44
3	8.99
4	21.35
5	32.43
6	45.47
7	46.07
8	47.20
9	46.34
10	54.37
11	64.35
Total Time (s) =	370.51



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0030	0.0215	0.0093
1	3,000	3,020	-0.0050	0.0345	0.0148
1	4,000	4,100	-0.0050	0.0395	0.0173
1	5,000	5,060	-0.0030	0.0435	0.0203
1	6,000	6,020	-0.0010	0.0475	0.0233
1	7,000	7,100	-0.0050	0.0495	0.0223
1	8,000	8,000	-0.0090	0.0530	0.0220
1	9,000	9,160	0.0125	0.0565	0.0345
1	10,000	10,120	0.0175	0.0595	0.0385
Unload					
1	0	0	0.0305	0.0365	0.0335
Reload					
1	Max.	13,020	0.0365	0.0660	0.0513
Unload					
1	0	0	0.0380	0.0445	0.0413

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0555	0.0630	0.0593
1	1,000	1,000	0.1345	0.1530	0.1438
1	1,500	1,500	0.2320	0.2710	0.2515
1	0	0	0.0385	0.0400	0.0393
1	500	500	0.0945	0.1150	0.1048
1	1,000	1,000	0.1675	0.1995	0.1835
1	1,500	1,500	0.2400	0.2850	0.2625
1	2,000	2,000	0.3325	0.3965	0.3645
1	2,500	2,500	0.4400	0.5255	0.4828
1	0	0	0.0595	0.0545	0.0570
1	2,500	2,500	0.4685	0.5495	0.5090
1	3,000	3,000	0.5650	0.6620	0.6135
1	3,500	3,500	0.6825	0.7965	0.7395
1	4,000	4,000	0.8245	0.9585	0.8915
Unload					
1	0	0	0.1285	0.1330	0.1308
Reload					
1	Max.	4,340	0.9410	1.0720	1.0065
Unload					
1	0	0	0.1185	0.1455	0.1320

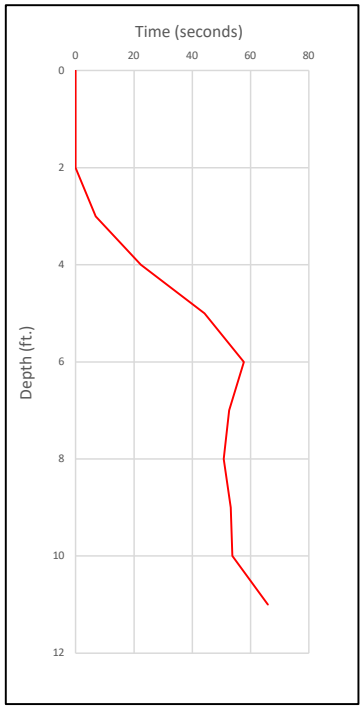
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-24A
Date/Time Installed:	3/19/21 1:35 PM	Date/Time Tested:	3/23/21 8:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	407.62
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	11	Avg. Installation Rate (sec/ft)	37.06

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	6.89
4	22.35
5	44.19
6	57.74
7	52.66
8	50.80
9	53.23
10	53.77
11	65.99
Total Time (s) =	407.62



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	-0.0065	0.0175	0.0055
1	3,000	3,000	-0.0115	0.0305	0.0095
1	4,000	3,960	-0.0130	0.0385	0.0128
1	5,000	5,020	-0.0125	0.0455	0.0165
1	6,000	6,020	-0.0120	0.0510	0.0195
1	7,000	7,020	-0.0100	0.0575	0.0238
1	8,000	8,000	-0.0085	0.0635	0.0275
1	9,000	9,020	-0.0065	0.0700	0.0318
1	10,000	10,000	-0.0040	0.0755	0.0358
Unload					
1	0	0	0.0165	0.0265	0.0215
Reload					
1	Max.	13,020	0.0065	0.0930	0.0498
Unload					
1	0	0	0.0250	0.0345	0.0298

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1105	0.0515	0.0810
1	1,000	1,000	0.2345	0.1315	0.1830
1	1,500	1,500	0.3640	0.2210	0.2925
1	0	0	0.0385	0.0135	0.0260
1	500	500	0.1585	0.0685	0.1135
1	1,000	1,000	0.2730	0.1470	0.2100
1	1,500	1,500	0.3765	0.2385	0.3075
1	2,000	2,000	0.5080	0.3285	0.4183
1	2,500	2,500	0.6375	0.4610	0.5493
1	0	0	0.0390	0.0100	0.0245
1	2,500	2,500	0.6725	0.4290	0.5508
1	3,000	3,000	0.7860	0.5510	0.6685
1	3,500	3,500	0.9120	0.7055	0.8088
1	4,000	4,000	1.0685	0.8885	0.9785
Unload					
1	0	0	0.1065	0.0500	0.07825
Reload					
1	Max.	4,000	1.1170	0.9105	1.0138
Unload					
1	0	0	0.0835	0.0545	0.069

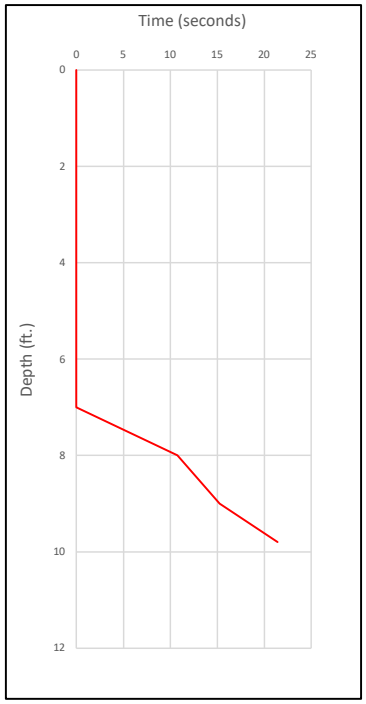
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-25A
Date/Time Installed:	3/19/21 1:05 PM	Date/Time Tested:	3/22/21 1:45 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	47.41
Pushed to Depth (ft.):	7	Embedment Depth (ft.):	9.8	Avg. Installation Rate (sec/ft)	4.84

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	10.74
9	15.24
9.8	21.43
Total Time (s) =	47.41



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0165	-0.0085	0.0040
1	3,000	3,000	0.0255	-0.0145	0.0055
1	4,000	4,000	0.0335	-0.0175	0.0080
1	5,000	5,000	0.0400	-0.2050	-0.0825
1	6,000	6,000	0.0455	-0.0225	0.0115
1	7,000	7,020	0.0490	-0.0225	0.0133
1	8,000	8,020	0.0535	-0.0235	0.0150
1	9,000	8,980	0.0575	-0.0250	0.0163
1	10,000	10,000	0.0620	-0.0240	0.0190
Unload					
1	0	0	0.0120	-0.0010	0.0055
Reload					
1	Max.	13,080	0.0700	-0.0215	0.0243
Unload					
1	0	0	0.0140	0.0000	0.0070

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.4105	0.3065	0.3585
1	1,000	1,000	0.6860	0.5445	0.6153
1	1,500	1,420	0.8865	0.7140	0.8003
1	0	0	0.0380	0.0620	0.0500
1	500	500	0.5085	0.4780	0.4933
1	1,000	1,000	0.8010	0.6730	0.7370
1	1,500	1,500	0.9715	0.7735	0.8725
1	2,000	2,000	1.2035	0.9085	1.0560
Unload					
1	0	0	0.0545	0.1605	0.1075

Field Notes

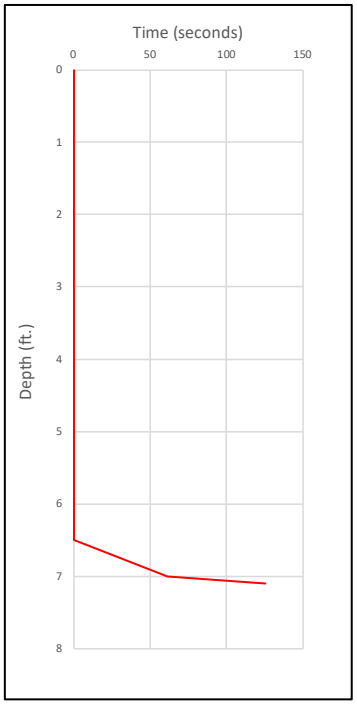
Pile hit refusal during installation at 7.1 feet below grade. Rock was encountered at ~6.5 feet below grade. Pile embedded into rock approx. 0.6 feet. Low uplift and lateral loads attributed to shallow refusal into bedrock.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-25B
Date/Time Installed:	3/19/21 1:10 PM	Date/Time Tested:	3/22/21 2:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	186.65
Pushed to Depth (ft.):	6.5	Embedment Depth (ft.):	7.1	Avg. Installation Rate (sec/ft)	26.29

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6.5	0
7	61.40
7.1	125.25
Total Time (s) =	186.65



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.3200	0.3490	0.3345
1	3,000	1,500	1.0575	1.0955	1.0765
Unload					
1	0	0	0.8865	0.9120	0.8993

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	280	0.9642	1.1505	1.0574
Unload					
1	0	0	0.8080	0.9060	0.8570

Field Notes

Pile hit refusal during installation at 7.1 feet below grade. Rock was encountered at ~6.5 feet below grade. Pile embedded into rock approx. 0.6 feet. Low uplift and lateral loads attributed to shallow refusal into bedrock.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-26A
Date/Time Installed:	3/19/21 4:35 PM	Date/Time Tested:	3/29/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	130.16
Pushed to Depth (ft.):	6	Embedment Depth (ft.):	8.30	Avg. Installation Rate (sec/ft)	15.68

Embedment Data

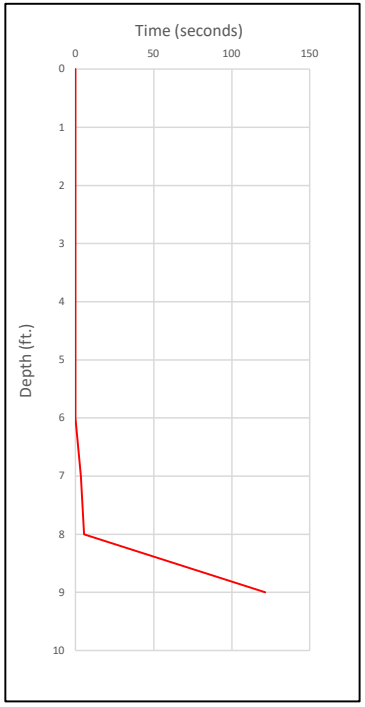
Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	3.30
8	5.33
9	121.53
Total Time (s) =	130.16

Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0410	0.0445	0.0428
1	3,000	3,260	0.5775	0.5875	0.5825
1	4,000	3,180	1.1745	0.8695	1.0220
Unload					
1	0	0	1.1340	0.8695	1.0018

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.2435	0.1490	0.1963
1	1,000	1,000	0.5420	0.3820	0.4620
1	1,500	1,500	0.9415	0.6360	0.7888
1	0	0	0.4765	0.3740	0.4253
1	500	500	0.6430	0.4350	0.5390
1	1,000	1,040	0.8385	0.5585	0.6985
1	1,500	1,500	1.0900	0.7125	0.9013
1	2,000	1,780	1.2490	0.8080	1.0285
Unload					
1	0	0	0.7005	0.4720	0.5863



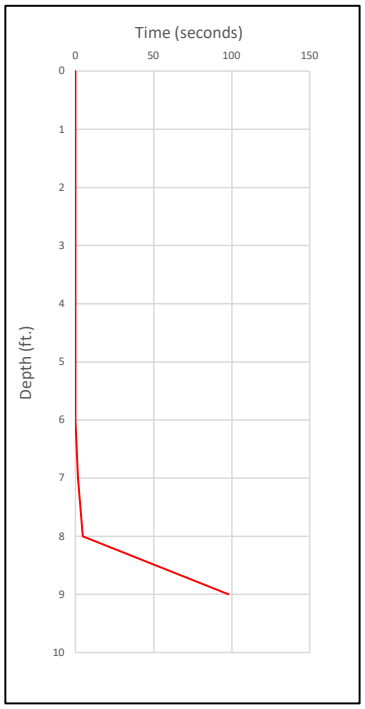
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-28B
Date/Time Installed:	3/19/21 4:40 PM	Date/Time Tested:	3/29/21 10:45 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	103.81
Pushed to Depth (ft.):	6.5	Embedment Depth (ft.):	8.90	Avg. Installation Rate (sec/ft)	11.66

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	1.37
8	4.61
9	97.83
Total Time (s) =	103.81



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0565	0.0420	0.0493
1	3,000	3,300	0.5435	0.5050	0.5243
1	4,000	3,620	1.1840	1.1050	1.1445
Unload					
1	0	0	1.1270	1.0685	1.0978

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	520	0.1525	0.2265	0.1895
1	1,000	1,100	0.4395	0.6065	0.5230
1	1,500	2,740	0.9215	1.0865	1.0040
Unload					
1	0	0	0.5510	0.6070	0.5790

Field Notes

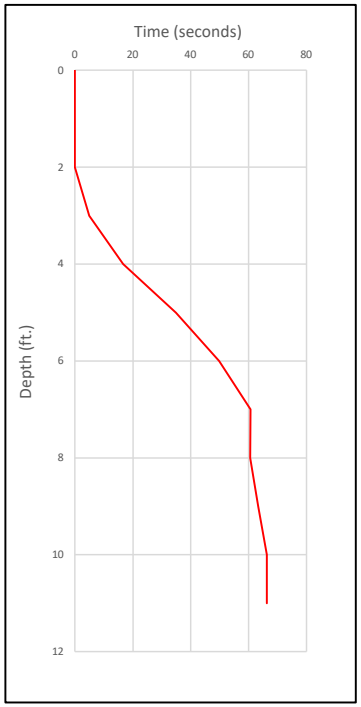
Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-27A
Date/Time Installed:	3/19/21 2:35 PM	Date/Time Tested:	3/23/21 9:40 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	423.26
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	11	Avg. Installation Rate (sec/ft)	38.48

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	4.88
4	16.62
5	34.84
6	49.81
7	60.60
8	60.56
9	63.30
10	66.35
11	66.30
Total Time (s) =	423.26

Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	0.0090	0.0260	0.0175
1	3,000	3,020	0.0145	0.0380	0.0263
1	4,000	4,020	0.0210	0.0435	0.0323
1	5,000	5,120	0.0280	0.0470	0.0375
1	6,000	6,040	0.0365	0.0485	0.0425
1	7,000	7,020	0.0460	0.0485	0.0473
1	8,000	8,120	0.0555	0.0490	0.0523
1	9,000	9,180	0.0650	0.0495	0.0573
1	10,000	10,140	0.0735	0.0515	0.0625
Unload					
1	0	N/A	N/A	N/A	N/A



Field Notes

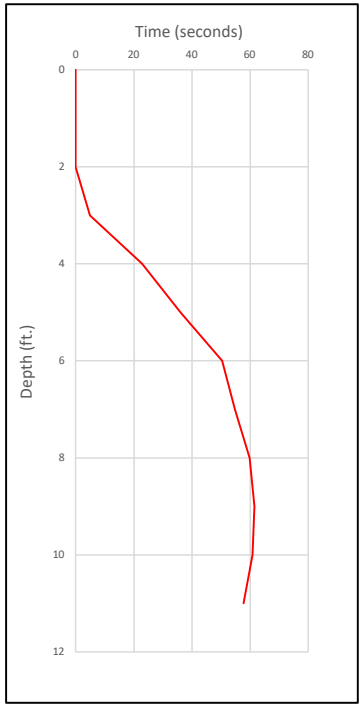
Hydraulic load cell experienced "hydrolock" during uplift test and would not increase or unload pressure at 10,000 pound load interval. Pile had to be extracted in order to free pump and realease pressure. Lateral test was not performed due to pile extraction.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-27B
Date/Time Installed:	3/19/21 2:50 PM	Date/Time Tested:	3/23/21 9:20 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	408.48
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	11	Avg. Installation Rate (sec/ft)	37.13

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	4.86
4	22.76
5	35.99
6	50.31
7	54.70
8	59.79
9	61.54
10	60.83
11	57.70
Total Time (s) =	408.48



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,480	0.0005	0.0125	0.0065
1	3,000	3,020	0.0060	0.0220	0.0140
1	4,000	4,000	0.0125	0.0270	0.0198
1	5,000	5,040	0.0195	0.0300	0.0248
1	6,000	6,020	0.0270	0.0330	0.0300
1	7,000	7,080	0.0350	0.0350	0.0350
1	8,000	8,020	0.0455	0.0385	0.0420
1	9,000	9,020	0.0540	0.0405	0.0473
1	10,000	10,400	0.0640	0.0430	0.0535
Unload					
1	0	0	0.0425	0.0425	0.0425
Reload					
1	Max.	13040	0.0955	0.0590	0.0773
Unload					
1	0	0	0.0635	0.0605	0.0620

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0965	0.0805	0.0885
1	1,000	1,000	0.2135	0.2015	0.2075
1	1,500	1,500	0.3345	0.3290	0.3318
1	0	0	0.0305	0.0395	0.0350
1	500	500	0.1345	0.1400	0.1373
1	1,000	1,000	0.2345	0.2400	0.2373
1	1,500	1,520	0.3400	0.3530	0.3465
1	2,000	2,000	0.4470	0.4805	0.4638
1	2,500	2,500	0.5695	0.6295	0.5995
1	0	0	0.0790	0.0620	0.0705
1	2,500	2,500	0.5860	0.6615	0.6238
1	3,000	3,020	0.6975	0.7990	0.7483
1	3,500	3,500	0.8255	0.9545	0.8900
1	4,000	3,900	0.9325	1.0770	1.0048
Unload					
1	0	0	0.0925	0.1140	0.10325

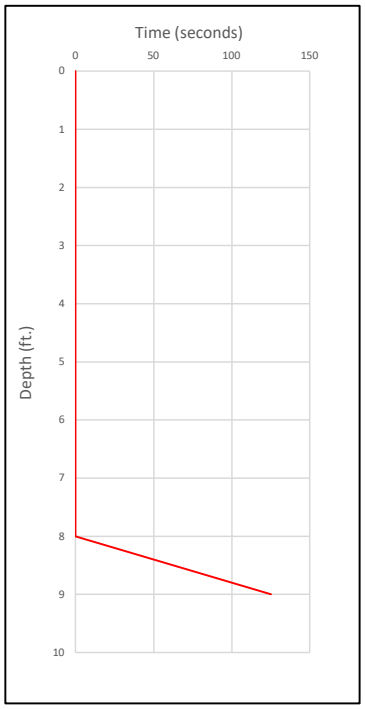
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-28A
Date/Time Installed:	3/19/21 4:15 PM	Date/Time Tested:	3/29/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	125.23
Pushed to Depth (ft.):	8	Embedment Depth (ft.):	8.70	Avg. Installation Rate (sec/ft)	14.39

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	125.23
Total Time (s) =	125.23



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,480	0.3235	0.2410	0.2823
1	3,000	3,040	0.8625	1.1595	1.0110
Unload					
1	0	0	0.8095	1.0050	0.9073

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1150	0.0520	0.0835
1	1,000	1,080	0.6895	0.4915	0.5905
1	1,500	1,460	1.1480	0.8835	1.0158
Unload					
1	0	0	1.0845	0.8750	0.9798

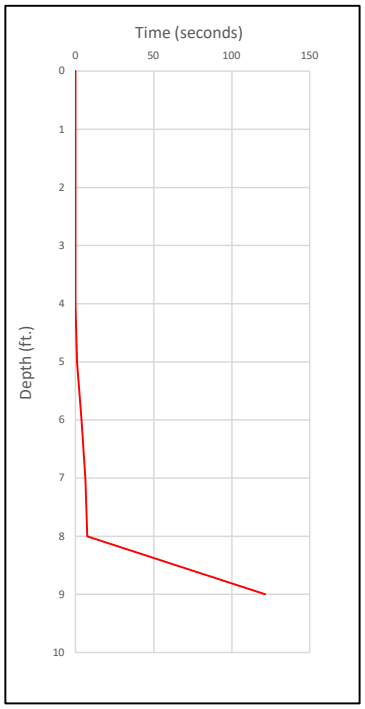
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-28B
Date/Time Installed:	3/19/21 4:20 PM	Date/Time Tested:	3/29/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	139.61
Pushed to Depth (ft.):	4.5	Embedment Depth (ft.):	8.30	Avg. Installation Rate (sec/ft)	16.82

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0.88
6	3.61
7	6.26
8	7.45
9	121.41
Total Time (s) =	139.61



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0880	0.0755	0.0818
1	3,000	2,980	1.1120	0.8995	1.0058
Unload					
1	0	0	1.0290	0.8355	0.9323

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0755	0.0470	0.0613
1	1,000	1,040	0.5925	0.6450	0.6188
1	1,500	1,320	0.9645	1.0920	1.0283
Unload					
1	0	0	0.9700	1.0695	1.0198

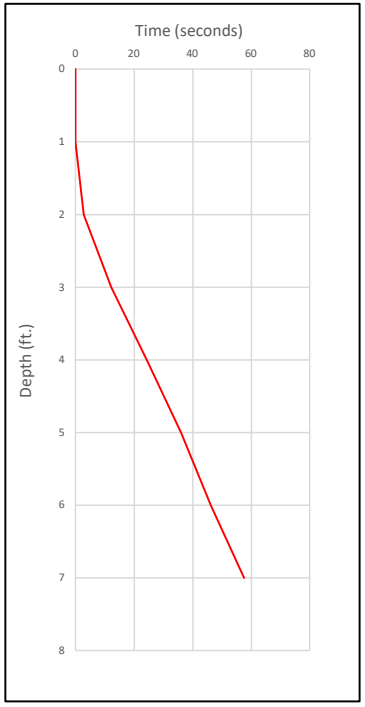
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-29A
Date/Time Installed:	3/24/21 8:00 AM	Date/Time Tested:	3/27/21 1:45 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	178.9
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	7.50	Avg. Installation Rate (sec/ft)	23.85

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	2.78
3	12.19
4	24.24
5	36.02
6	46.14
7	57.53
Total Time (s) =	178.9



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0075	0.0090	0.0008
1	3,000	3,020	-0.0175	0.0190	0.0007
1	4,000	4,000	-0.0225	0.0220	-0.0003
1	5,000	4,980	-0.0255	0.0240	-0.0007
1	6,000	6,040	-0.0270	0.0240	-0.0015
1	7,000	7,060	-0.0260	0.0225	-0.0018
1	8,000	8,000	-0.0250	0.0195	-0.0028
1	9,000	9,040	-0.0240	0.0190	-0.0025
1	10,000	10,080	-0.0240	0.0100	-0.0070
Unload					
1	0	0	0.0035	0.0115	0.0075
Reload					
1	Max.	13,000	-0.0220	0.0055	-0.0083
Unload					
1	0	0	0.0085	0.0135	0.0110

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0305	0.0870	0.0588
1	1,000	1,000	0.0915	0.1835	0.1375
1	1,500	1,500	0.1675	0.2805	0.2240
1	0	0	0.0205	0.0450	0.0328
1	500	540	0.0505	0.1230	0.0868
1	1,000	1,060	0.1210	0.2210	0.1710
1	1,500	1,520	0.1880	0.3015	0.2448
1	2,000	2,000	0.2800	0.4040	0.3420
1	2,500	2,500	0.3880	0.5175	0.4528
1	0	0	0.0495	0.0750	0.0623
1	2,500	2,520	0.4120	0.5430	0.4775
1	3,000	3,000	0.5250	0.6520	0.5885
1	3,500	3,540	0.6655	0.7880	0.7268
1	4,000	4,060	0.8195	0.9255	0.8725
Unload					
1	0	0	0.1030	0.1325	0.1178
Reload					
1	Max.	4,280	0.9610	1.0645	1.0128
Unload					
1	0	0	0.1365	0.1480	0.1423

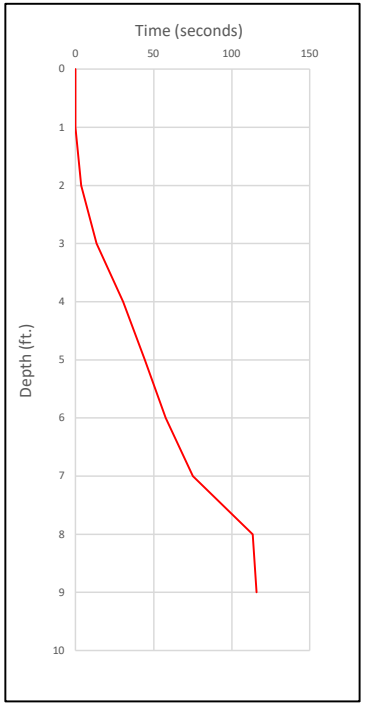
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-29B
Date/Time Installed:	3/24/21 8:00 AM	Date/Time Tested:	3/27/21 1:20 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	453.51
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	7.50	Avg. Installation Rate (sec/ft)	60.47

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	3.46
3	13.36
4	30.38
5	44.37
6	57.58
7	75.02
8	113.41
9	115.93
Total Time (s) =	453.51



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0005	0.0003
1	1,500	1,500	-0.0105	0.0110	0.0002
1	3,000	3,080	-0.0235	0.0220	-0.0008
1	4,000	4,180	-0.0325	0.0285	-0.0020
1	5,000	5,080	-0.0380	0.0330	-0.0025
1	6,000	6,000	-0.0420	0.0375	-0.0023
1	7,000	7,120	-0.0475	0.0475	0.0000
1	8,000	8,180	-0.0525	0.0465	-0.0030
1	9,000	9,100	-0.0560	0.0505	-0.0028
1	10,000	10,100	-0.0600	0.0545	-0.0028
Unload					
1	0	0	-0.0025	0.0085	0.0030
Reload					
1	Max.	13,140	-0.0670	0.0660	-0.0005
Unload					
1	0	0	-0.0010	0.0105	0.0048

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0735	0.0580	0.0658
1	1,000	1,000	0.1595	0.1360	0.1478
1	1,500	1,500	0.2605	0.2250	0.2428
1	0	0	0.0130	0.0505	0.0318
1	500	540	0.0815	0.0995	0.0905
1	1,000	1,060	0.1885	0.1740	0.1813
1	1,500	1,520	0.2795	0.2480	0.2638
1	2,000	2,000	0.3940	0.3490	0.3715
1	2,500	2,500	0.5250	0.4645	0.4948
1	0	0	0.0065	0.0860	0.0463
1	2,500	2,520	0.5515	0.4955	0.5235
1	3,000	3,000	0.6795	0.6045	0.6420
1	3,500	3,540	0.8305	0.7430	0.7868
1	4,000	4,060	0.9965	0.8925	0.9445
Unload					
1	0	0	0.0030	0.1775	0.0903
Reload					
1	Max.	4,060	1.0585	0.9750	1.0168
Unload					
1	0	0	0.0010	0.2355	0.1183

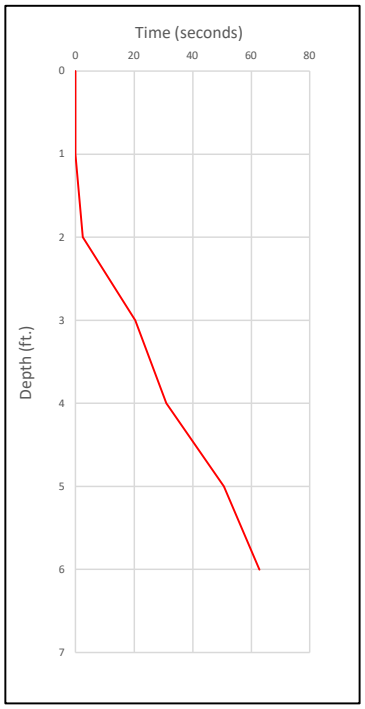
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-30A
Date/Time Installed:	3/23/21 2:20 PM	Date/Time Tested:	4/6/21 10:20 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	167.16
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	6.00	Avg. Installation Rate (sec/ft)	27.86

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	2.44
3	20.30
4	30.96
5	50.61
6	62.85
Total Time (s) =	167.16



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	0.0030	0.0015	0.0023
1	3,000	3,000	0.0065	0.0025	0.0045
1	4,000	4,000	0.0405	0.0030	0.0218
1	5,000	5,000	0.0155	0.0030	0.0093
1	6,000	6,020	0.0215	0.0045	0.0130
1	7,000	7,080	0.0300	0.0065	0.0183
1	8,000	8,040	0.0410	0.0105	0.0258
1	9,000	9,040	0.0560	0.0180	0.0370
1	10,000	10,080	0.0830	0.0380	0.0605
Unload					
1	0	0	0.0420	0.0360	0.0390
Reload					
1	Max.	12,620	1.0250	1.0085	1.0168
Unload					
1	0	0	1.0060	0.9920	0.9990

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	540	0.0365	0.0620	0.0493
1	1,000	1,000	0.0945	0.1490	0.1218
1	1,500	1,540	0.1615	0.2325	0.1970
1	0	0	0.0175	0.0270	0.0223
1	500	580	0.0605	0.0970	0.0788
1	1,000	1,000	0.1235	0.1835	0.1535
1	1,500	1,560	0.1780	0.2525	0.2153
1	2,000	2,080	0.2570	0.3405	0.2988
1	2,500	2,540	0.3490	0.4375	0.3933
1	0	0	0.0585	0.0615	0.0600
1	2,500	2,560	0.3840	0.4695	0.4268
1	3,000	3,020	0.4725	0.5850	0.5288
1	3,500	3,520	0.5950	0.6755	0.6353
1	4,000	4,040	0.7330	0.8020	0.7675
Unload					
1	0	0	0.1710	0.1485	0.1598
Reload					
1	Max.	4,580	1.0080	1.0585	1.0333
Unload					
1	0	0	0.2755	0.1855	0.2305

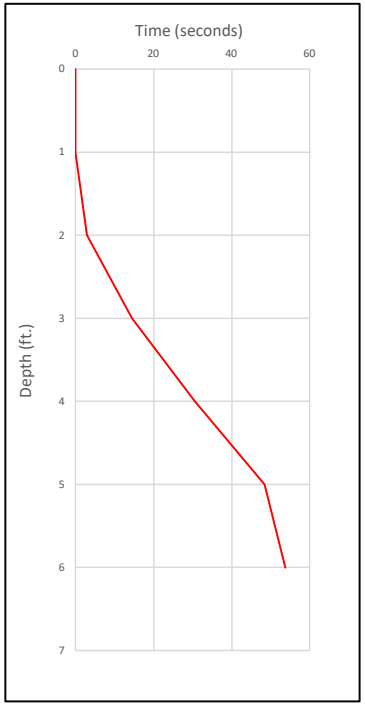
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-30B
Date/Time Installed:	3/23/21 2:25 PM	Date/Time Tested:	4/6/21 10:45 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	150
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	6.00	Avg. Installation Rate (sec/ft)	25.00

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	2.91
3	14.42
4	30.49
5	48.39
6	53.79
Total Time (s) =	150.00



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0190	-0.0160	0.0015
1	3,000	3,080	0.0380	-0.0275	0.0053
1	4,000	4,040	0.0430	-0.0305	0.0063
1	5,000	5,080	0.0480	-0.0320	0.0080
1	6,000	6,060	0.0580	-0.0310	0.0135
1	7,000	7,020	0.0645	-0.0290	0.0178
1	8,000	8,020	0.0790	-0.0225	0.0283
1	9,000	9,020	0.1060	-0.0065	0.0498
1	10,000	10,080	0.1460	0.0270	0.0865
Unload					
1	0	0	0.0755	0.0620	0.0688
Reload					
1	Max.	12,160	1.1420	0.9525	1.0473
Unload					
1	0	0	1.0690	1.0585	1.0638

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	540	0.0670	0.0415	0.0543
1	1,000	1,000	0.1590	0.1085	0.1338
1	1,500	1,540	0.2490	0.1805	0.2148
1	0	0	0.0290	0.0210	0.0250
1	500	580	0.1055	0.0695	0.0875
1	1,000	1,000	0.1975	0.1375	0.1675
1	1,500	1,560	0.2705	0.1960	0.2333
1	2,000	2,080	0.3710	0.2770	0.3240
1	2,500	2,540	0.4800	0.3630	0.4215
1	0	0	0.0900	0.0480	0.0690
1	2,500	2,560	0.5175	0.3935	0.4555
1	3,000	3,020	0.6105	0.4815	0.5460
1	3,500	3,520	0.7460	0.5960	0.6710
1	4,000	4,040	0.8835	0.7290	0.8063
Unload					
1	0	0	0.2220	0.1140	0.1680
Reload					
1	Max.	4,520	1.1100	0.9360	1.0230
Unload					
1	0	0	0.2870	0.2290	0.2580

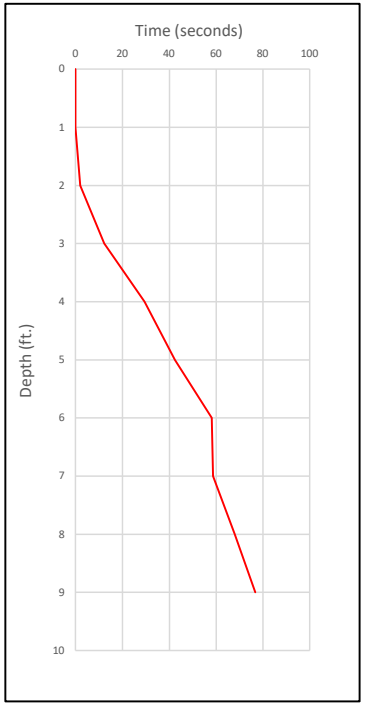
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-31A
Date/Time Installed:	3/19/21 2:00 PM	Date/Time Tested:	3/29/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	347.23
Pushed to Depth (ft.):	1	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	38.58

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	1.95
3	12.17
4	29.36
5	42.43
6	58.10
7	58.62
8	67.92
9	76.68
Total Time (s) =	347.23



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	-0.0005	0.0070	0.0033
1	3,000	3,080	-0.0030	0.0100	0.0035
1	4,000	4,120	-0.0040	0.0105	0.0033
1	5,000	5,040	-0.0040	0.0105	0.0033
1	6,000	6,000	-0.0040	0.0110	0.0035
1	7,000	7,000	-0.0010	0.0110	0.0050
1	8,000	8,000	-0.0010	0.0175	0.0083
1	9,000	9,000	0.0035	0.0120	0.0078
1	10,000	10,060	0.0065	0.0130	0.0098
Unload					
1	0	0	0.0040	0.0080	0.0060
Reload					
1	Max.	13,020	0.0175	0.0170	0.0173
Unload					
1	0	40	0.0100	0.0105	0.0103

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0510	0.0845	0.0678
1	1,000	1,000	0.1300	0.1820	0.1560
1	1,500	1,500	0.2245	0.2915	0.2580
1	0	0	0.0250	0.0420	0.0335
1	500	500	0.0795	0.1345	0.1070
1	1,000	1,020	0.1545	0.2150	0.1848
1	1,500	1,520	0.2375	0.3060	0.2718
1	2,000	2,040	0.3395	0.4130	0.3763
1	2,500	2,520	0.4585	0.5330	0.4958
1	0	0	0.0625	0.0975	0.0800
1	2,500	2,500	0.4820	0.5580	0.5200
1	3,000	3,000	0.5970	0.6725	0.6348
1	3,500	3,540	0.7265	0.8015	0.7640
1	4,000	4,000	0.8925	0.9580	0.9253
Unload					
1	0	0	0.1150	0.1250	0.1200
Reload					
1	Max.	4,180	0.9780	1.0545	1.0163
Unload					
1	0	0	0.1530	0.1560	0.1545

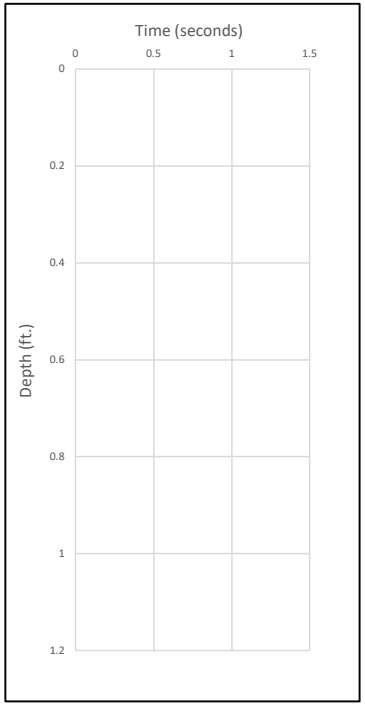
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-31B
Date/Time Installed:	3/19/21 2:10 PM	Date/Time Tested:	3/29/21 9:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	300
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	9.00	Avg. Installation Rate (sec/ft)	33.33

Embedment Data

Depth (ft.)	Time (s)
Total Time (s) =	300



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	-0.0055	0.0120	0.0033
1	3,000	3,000	-0.0140	0.0175	0.0018
1	4,000	4,020	-0.0170	0.0200	0.0015
1	5,000	5,000	-0.0100	0.0215	0.0058
1	6,000	6,040	-0.0180	0.0215	0.0018
1	7,000	7,040	-0.0185	0.0215	0.0015
1	8,000	8,040	-0.0185	0.0220	0.0018
1	9,000	9,100	-0.0175	0.0220	0.0023
1	10,000	10,020	-0.0145	0.0220	0.0038
Unload					
1	0	0	0.0060	0.0100	0.0080
Reload					
1	Max.	13,160	0.0010	0.0260	0.0135
Unload					
1	0	0	0.0105	0.0145	0.0125

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	-0.0040	0.1160	0.0560
1	1,000	1,000	0.0485	0.2145	0.1315
1	1,500	1,500	0.1200	0.3200	0.2200
1	0	0	0.0235	0.0570	0.0403
1	500	500	0.0140	0.1580	0.0860
1	1,000	1,020	0.0710	0.2450	0.1580
1	1,500	1,520	0.1360	0.3360	0.2360
1	2,000	2,040	0.2240	0.4420	0.3330
1	2,500	2,520	0.3330	0.5490	0.4410
1	0	0	0.0090	0.1110	0.0600
1	2,500	2,500	0.3490	0.5780	0.4635
1	3,000	3,000	0.4530	0.6820	0.5675
1	3,500	3,540	0.5790	0.7980	0.6885
1	4,000	4,000	0.7330	0.9400	0.8365
Unload					
1	0	0	0.0530	0.1470	0.1000
Reload					
1	Max.	4,440	0.9290	1.0965	1.0128
Unload					
1	0	0	0.0920	0.1810	0.1365

Field Notes

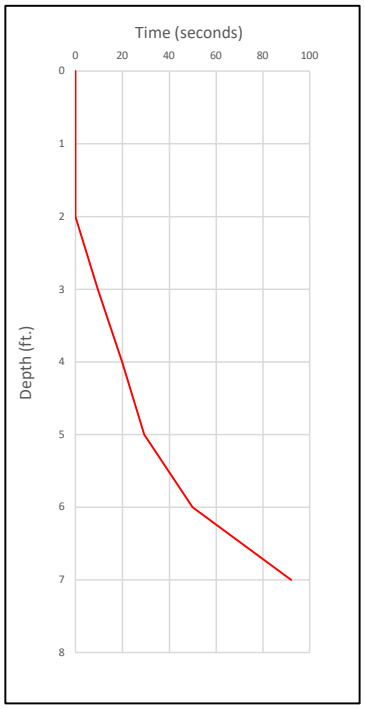
Installation rates were not recorded due to stopwatch being reset before times recorded. Full installation time was approximately five (5) minutes.

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-32A
Date/Time Installed:	3/24/21 8:30 AM	Date/Time Tested:	3/27/21 10:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	200.27
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	7.50	Avg. Installation Rate (sec/ft)	26.70

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	9.41
4	19.79
5	29.2
6	49.84
7	92.03
Total Time (s) =	200.27



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0000	0.0105	0.0053
1	3,000	3,060	-0.0045	0.0150	0.0053
1	4,000	4,040	-0.0075	0.0195	0.0060
1	5,000	5,100	-0.0100	0.0230	0.0065
1	6,000	6,100	-0.0125	0.0255	0.0065
1	7,000	7,080	-0.0145	0.0290	0.0073
1	8,000	8,200	-0.0160	0.0315	0.0078
1	9,000	9,000	-0.0175	0.0345	0.0085
1	10,000	10,000	-0.0185	0.0375	0.0095
Unload					
1	0	0	0.0085	0.0105	0.0095
Reload					
1	Max.	13,040	-0.024	0.0425	0.0093
Unload					
1	0	0	0.0100	0.0120	0.0110

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1020	0.0375	0.0698
1	1,000	1,000	0.2195	0.1105	0.1650
1	1,500	1,500	0.3325	0.2060	0.2693
1	0	0	0.0250	0.0230	0.0240
1	500	520	0.1470	0.0550	0.1010
1	1,000	1,020	0.2520	0.1260	0.1890
1	1,500	1,520	0.3530	0.2115	0.2823
1	2,000	2,020	0.4670	0.3180	0.3925
1	2,500	2,500	0.5940	0.4450	0.5195
1	0	0	0.0740	0.0710	0.0725
1	2,500	2,520	0.6235	0.4725	0.5480
1	3,000	3,000	0.7490	0.6045	0.6768
1	3,500	3,500	0.9065	0.7680	0.8373
1	4,000	4,000	1.0825	0.9490	1.0158
Unload					
1	0	0	0.1920	0.1915	0.1918

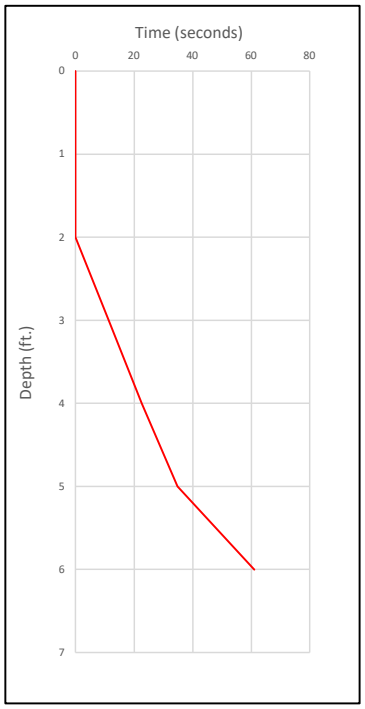
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-32B
Date/Time Installed:	3/24/21 8:00 AM	Date/Time Tested:	3/27/21 1:20 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	129.7
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	7.50	Avg. Installation Rate (sec/ft)	17.29

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	11.25
4	22.54
5	34.82
6	61.09
Total Time (s) =	129.7



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0020	0.0030	0.0025
1	3,000	3,020	0.0020	0.0045	0.0033
1	4,000	4,060	0.0035	0.0065	0.0050
1	5,000	5,100	0.0070	0.0085	0.0078
1	6,000	6,080	0.0120	0.0105	0.0113
1	7,000	7,040	0.0175	0.0115	0.0145
1	8,000	8,060	0.0250	0.0130	0.0190
1	9,000	9,000	0.0395	0.0205	0.0300
1	10,000	10,060	0.0605	0.0355	0.0480
Unload					
1	0	0	0.0375	0.0275	0.0325
Reload					
1	Max.	13,040	-0.0240	0.0425	0.0093
Unload					
1	0	0	0.7010	0.6130	0.6570

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0660	0.0700	0.0680
1	1,000	1,000	0.1540	0.1650	0.1595
1	1,500	1,500	0.2545	0.2715	0.2630
1	0	0	0.0400	0.0090	0.0245
1	500	520	0.1005	0.1010	0.1008
1	1,000	1,020	0.1795	0.1920	0.1858
1	1,500	1,520	0.2650	0.2880	0.2765
1	2,000	2,020	0.3705	0.3975	0.3840
1	2,500	2,500	0.4920	0.5200	0.5060
1	0	0	0.0750	0.4050	0.2400
1	2,500	2,520	0.5195	0.5430	0.5313
1	3,000	3,000	0.6405	0.6625	0.6515
1	3,500	3,500	0.7775	0.8075	0.7925
1	4,000	4,000	0.9235	0.9570	0.9403
Unload					
1	0	0	0.1335	0.0915	0.1125
Reload					
1	Max.	4,040	0.9865	1.0335	1.0100
Unload					
1	0	0	0.1610	0.1095	0.1353

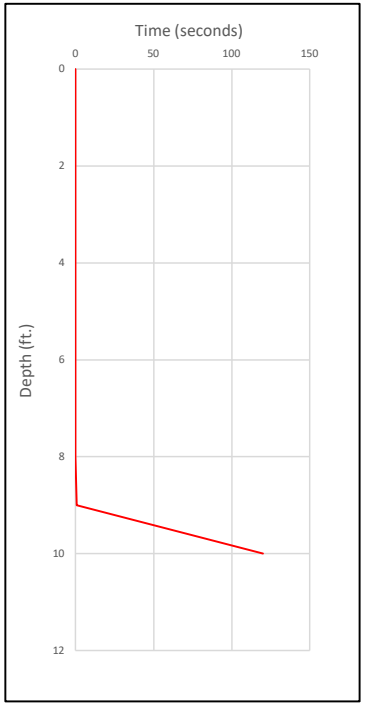
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-33A
Date/Time Installed:	3/20/21 8:55 AM	Date/Time Tested:	4/6/21 8:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	120.69
Pushed to Depth (ft.):	8.5	Embedment Depth (ft.):	9.10	Avg. Installation Rate (sec/ft)	13.26

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0.69
10	120.00
Total Time (s) =	120.69



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,420	1.1675	1.1680	1.1678
Unload					
1	0	0	1.1400	1.1410	1.1405

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0255	0.2110	0.1183
1	1,000	1,040	0.0515	0.4420	0.2468
1	1,500	1,540	0.2050	0.6990	0.4520
1	0	0	0.1345	0.1645	0.1495
1	500	580	0.1050	0.4215	0.2633
1	1,000	1,080	0.1600	0.5885	0.3743
1	1,500	1,500	0.2815	0.7945	0.5380
1	2,000	2,020	0.5535	1.1080	0.8308
1	2,500	2,180	0.7765	1.3405	1.0585
Unload					
1	0	0	0.5425	0.7455	0.6440

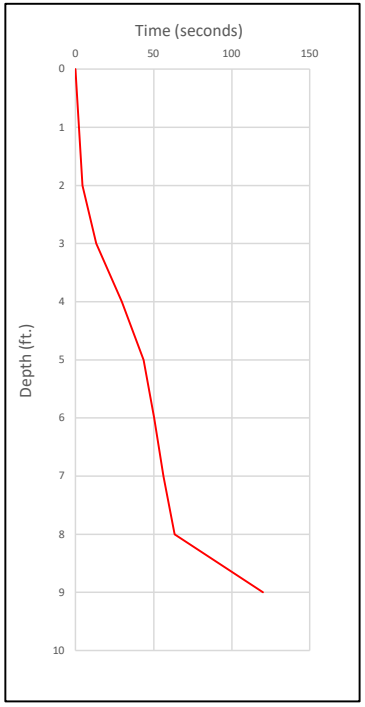
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-33B
Date/Time Installed:	3/20/21 8:55 AM	Date/Time Tested:	4/6/21 9:10 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	382.49
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	8.60	Avg. Installation Rate (sec/ft)	44.48

Embedment Data

Depth (ft.)	Time (s)
0	0
1	1.99
2	4.41
3	13.23
4	29.51
5	43.56
6	50.22
7	56.28
8	63.29
9	120.00
Total Time (s) =	382.49



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,600	0.0060	-0.0005	0.0028
1	3,000	3,160	0.0085	-0.0005	0.0040
1	4,000	4,040	0.0100	0.0000	0.0050
1	5,000	5,000	0.0110	0.0010	0.0060
1	6,000	6,040	0.0120	0.0020	0.0070
1	7,000	7,000	0.0130	0.0045	0.0088
1	8,000	8,200	0.0145	0.0065	0.0105
1	9,000	9,000	0.0160	0.0085	0.0123
1	10,000	10,040	0.0175	0.0105	0.0140
Unload					
1	0	0	0.0060	0.0070	0.0065
Reload					
1	Max.	13,040	0.0285	0.0220	0.0253
Unload					
1	0	0	0.0120	0.0130	0.0125

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1065	0.0520	0.0793
1	1,000	1,100	0.1855	0.1045	0.1450
1	1,500	1,520	0.2845	0.1870	0.2358
1	0	0	0.0355	0.0080	0.0218
1	500	500	0.1440	0.0765	0.1103
1	1,000	1,120	0.2215	0.1390	0.1803
1	1,500	1,560	0.2925	0.2040	0.2483
1	2,000	2,040	0.3845	0.2895	0.3370
1	2,500	2,580	0.4860	0.3870	0.4365
1	0	0	0.0610	0.0290	0.0450
1	2,500	2,640	0.5165	0.4100	0.4633
1	3,000	3,020	0.6060	0.4930	0.5495
1	3,500	3,560	0.7180	0.6175	0.6678
1	4,000	4,060	0.8340	0.7835	0.8088
Unload					
1	0	0	0.0975	0.0660	0.0818
Reload					
1	Max.	4,680	1.0425	0.9665	1.0045
Unload					
1	0	0	0.1140	0.1100	0.1120

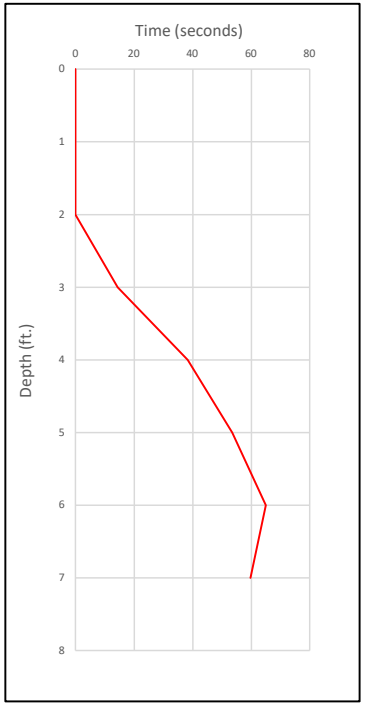
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-34A
Date/Time Installed:	3/23/21 1:00 PM	Date/Time Tested:	4/5/21 4:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	230.78
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	7.00	Avg. Installation Rate (sec/ft)	32.97

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	14.30
4	38.31
5	53.51
6	64.98
7	59.68
Total Time (s) =	230.78



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0015	0.0095	0.0140
1	3,000	3,080	-0.0010	0.0145	0.0165
1	4,000	4,000	0.0015	0.0175	0.0155
1	5,000	5,080	0.0065	0.0210	0.0183
1	6,000	6,060	0.0130	0.0250	0.0208
1	7,000	7,080	0.0215	0.0290	0.0250
1	8,000	8,040	0.0315	0.0360	0.0310
1	9,000	9,080	0.0480	0.0475	0.0405
1	10,000	10,100	0.0780	0.0750	0.0575
Unload					
1	0	0	0.0545	0.0260	0.0403
Reload					
1	Max.	13,020	0.4675	0.4185	0.4430
Unload					
1	0	0	0.4395	0.4080	0.4238

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0485	0.0880	0.0683
1	1,000	1,020	0.1175	0.1670	0.1423
1	1,500	1,580	0.1845	0.2545	0.2195
1	0	0	0.0235	0.0310	0.0273
1	500	560	0.0860	0.1270	0.1065
1	1,000	1,000	0.1360	0.1940	0.1650
1	1,500	1,560	0.1925	0.2660	0.2293
1	2,000	2,080	0.3970	0.4735	0.4353
1	2,500	2,520	0.4375	0.5125	0.4750
1	0	0	0.0910	0.1030	0.0970
1	2,500	2,560	0.4250	0.5045	0.4648
1	3,000	3,000	0.5060	0.5955	0.5508
1	3,500	3,500	0.6035	0.7100	0.6568
1	4,000	4,000	0.7120	0.8345	0.7733
Unload					
1	0	0	0.1380	0.1360	0.1370
Reload					
1	Max.	4,880	0.9850	1.1850	1.0850
Unload					
1	0	0	0.1825	0.2175	0.2000

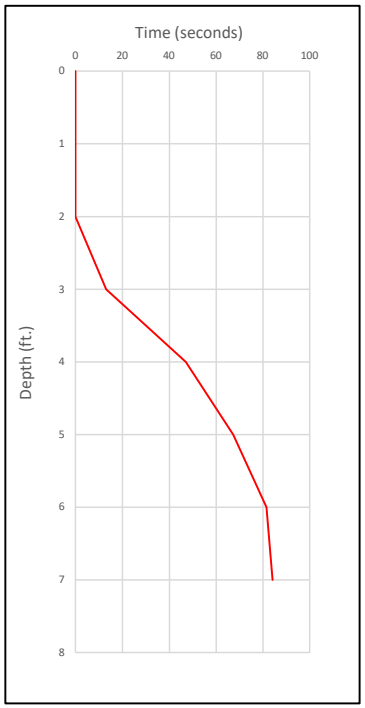
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-34B
Date/Time Installed:	3/23/21 1:15 PM	Date/Time Tested:	4/5/21 4:00 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	292.78
Pushed to Depth (ft.):	0	Embedment Depth (ft.):	7.00	Avg. Installation Rate (sec/ft)	41.83

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	12.95
4	46.97
5	67.28
6	81.46
7	84.12
Total Time (s) =	292.78



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0265	0.0015	0.0040
1	3,000	3,080	0.0290	0.0040	0.0068
1	4,000	4,060	0.0250	0.0060	0.0095
1	5,000	5,080	0.0300	0.0065	0.0138
1	6,000	6,060	0.0350	0.0065	0.0190
1	7,000	7,060	0.0415	0.0085	0.0253
1	8,000	8,100	0.0500	0.0120	0.0338
1	9,000	9,020	0.0615	0.0195	0.0478
1	10,000	10,080	0.0805	0.0345	0.0765
Unload					
1	0	0	0.0585	0.0545	0.0565
Reload					
1	Max.	12,800	1.0450	1.0215	1.0333
Unload					
1	0	0	1.0195	1.0155	1.0175

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0835	0.0565	0.0700
1	1,000	1,020	0.1645	0.1200	0.1423
1	1,500	1,580	0.2620	0.1975	0.2298
1	0	0	0.0290	0.0260	0.0275
1	500	560	0.1290	0.0895	0.1093
1	1,000	1,000	0.1970	0.1475	0.1723
1	1,500	1,560	0.2735	0.2110	0.2423
1	2,000	2,080	0.5045	0.4250	0.4648
1	2,500	2,520	0.5425	0.4645	0.5035
1	0	0	0.0955	0.0915	0.0935
1	2,500	2,560	0.5385	0.4525	0.4955
1	3,000	3,000	0.5660	0.5465	0.5563
1	3,500	3,500	0.5600	0.6135	0.5868
1	4,000	4,000	0.8720	0.7805	0.8263
Unload					
1	0	0	0.1350	0.1255	0.1303
Reload					
1	Max.	5,020	1.1735	1.0935	1.1335
Unload					
1	0	0	0.1955	0.1935	0.1945

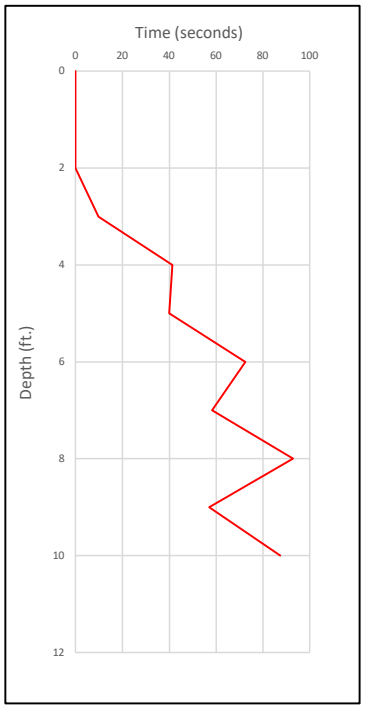
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-35A
Date/Time Installed:	3/23/21 1:45 PM	Date/Time Tested:	4/5/21 2:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	458.84
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	45.88

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	9.73
4	41.23
5	39.93
6	72.43
7	58.28
8	92.82
9	57.05
10	87.37
Total Time (s) =	458.84



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0100	-0.0030	0.0035
1	3,000	3,120	0.0160	-0.0045	0.0058
1	4,000	4,020	0.0195	-0.0045	0.0075
1	5,000	5,000	0.0215	-0.0030	0.0093
1	6,000	6,040	0.0230	-0.0010	0.0110
1	7,000	7,000	0.0235	0.0075	0.0155
1	8,000	8,040	0.0250	0.0085	0.0168
1	9,000	9,040	0.0260	0.0105	0.0183
1	10,000	10,000	0.0270	0.0130	0.0200
Unload					
1	0	0	0.0230	0.0135	0.0183
Reload					
1	Max.	13,100	0.0430	0.0220	0.0325
Unload					
1	0	0	0.0275	0.0175	0.0225

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	560	0.0330	0.0915	0.0623
1	1,000	1,100	0.1105	0.1905	0.1505
1	1,500	1,560	0.1955	0.3015	0.2485
1	0	0	0.0160	0.0155	0.0158
1	500	500	0.0885	0.1575	0.1230
1	1,000	1,060	0.1305	0.2160	0.1733
1	1,500	1,540	0.2055	0.3065	0.2560
1	2,000	2,020	0.3010	0.4115	0.3563
1	2,500	2,580	0.4225	0.5315	0.4770
1	0	0	0.0360	0.0410	0.0385
1	2,500	2,520	0.4325	0.5215	0.4770
1	3,000	3,080	0.5905	0.6715	0.6310
1	3,500	3,580	0.7125	0.7885	0.7505
1	4,000	4,120	0.9805	1.0315	1.0060
Unload					
1	0	0	0.1325	0.1150	0.1238

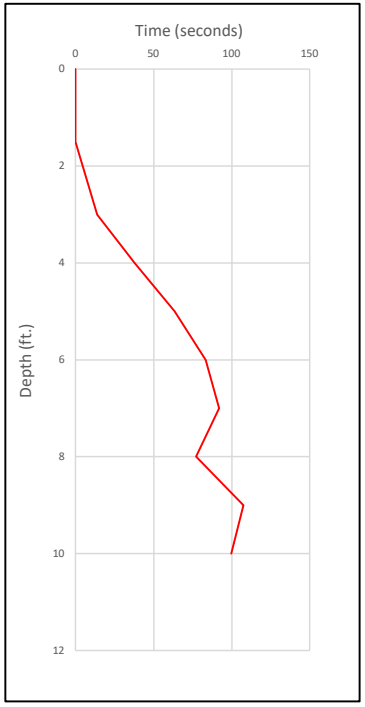
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-35B
Date/Time Installed:	3/23/21 2:00 PM	Date/Time Tested:	4/5/21 3:10 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	574.32
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	57.43

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
1.5	0
3	13.74
4	37.66
5	63.28
6	83.31
7	91.94
8	77.05
9	107.61
10	99.73
Total Time (s) =	574.32



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,580	0.0015	0.0050	0.0033
1	3,000	3,020	0.0040	0.0060	0.0050
1	4,000	4,060	0.0070	0.0050	0.0060
1	5,000	5,000	0.0085	0.0040	0.0063
1	6,000	6,020	0.0115	0.0015	0.0065
1	7,000	7,080	0.0145	0.0000	0.0073
1	8,000	8,000	0.0170	-0.0005	0.0083
1	9,000	9,000	0.0205	-0.0010	0.0098
1	10,000	10,080	0.0230	-0.0030	0.0100
Unload					
1	0	0	0.0055	0.0030	0.0043
Reload					
1	Max.	13,000	0.0345	-0.0055	0.0145
Unload					
1	0	0	0.0105	0.0065	0.0085

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	580	0.0975	0.0505	0.0740
1	1,000	1,000	0.2035	0.0955	0.1495
1	1,500	1,580	0.3440	0.1810	0.2625
1	0	0	0.0420	0.0050	0.0235
1	500	520	0.1300	0.0600	0.0950
1	1,000	1,060	0.2410	0.1210	0.1810
1	1,500	1,560	0.3475	0.1930	0.2703
1	2,000	2,140	0.4800	0.2975	0.3888
1	2,500	2,560	0.5855	0.3980	0.4918
1	0	0	0.0690	0.0305	0.0498
1	2,500	2,520	0.7000	0.4925	0.5963
1	3,000	3,000	0.7955	0.5765	0.6860
1	3,500	3,520	0.8965	0.6670	0.7818
1	4,000	3,980	1.0160	0.7770	0.8965
Unload					
1	0	0	0.0975	0.0935	0.0955
Reload					
1	Max.	4,320	1.1230	0.8925	1.0078
Unload					
1	0	0	0.1280	0.1300	0.1290

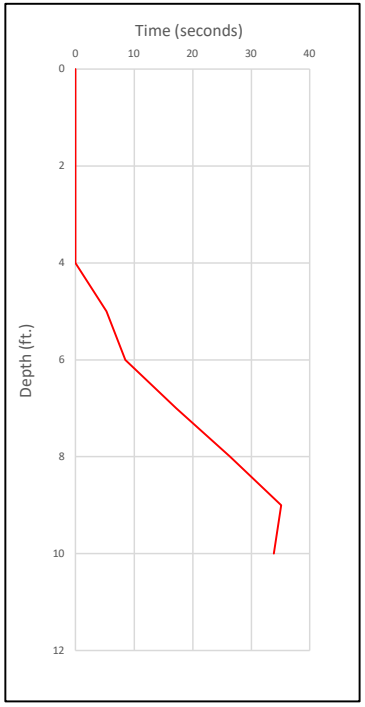
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-36A
Date/Time Installed:	3/24/21 9:10 AM	Date/Time Tested:	3/25/21 8:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	126.31
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	10.00	Avg. Installation Rate (sec/ft)	12.63

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	5.24
6	8.48
7	17.19
8	26.38
9	35.15
10	33.87
Total Time (s) =	126.31



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0485	0.0660	0.0088
1	3,000	3,120	-0.0785	0.1105	0.0160
1	4,000	4,000	-0.0880	0.1290	0.0205
1	5,000	5,040	-0.0955	0.1445	0.0245
1	6,000	6,220	-0.0995	0.1500	0.0253
1	7,000	7,040	-0.1005	0.1675	0.0335
1	8,000	8,000	-0.1010	0.1755	0.0373
1	9,000	9,100	-0.1000	0.1845	0.0423
1	10,000	10,080	-0.1000	0.1920	0.0460
Unload					
1	0	0	-0.0010	0.0195	0.0093
Reload					
1	Max.	13,040	-0.0955	0.2100	0.0573
Unload					
1	0	0	0.0010	0.0195	0.0103

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0500	0.3400	0.1950
1	1,000	1,000	0.2050	0.6345	0.4198
1	1,500	1,500	0.4000	0.8635	0.6318
1	0	0	0.0075	0.0195	0.0135
1	500	500	0.0475	0.4250	0.2363
1	1,000	1,000	0.2180	0.6825	0.4503
1	1,500	1,500	0.4190	0.8860	0.6525
1	2,000	2,000	0.6275	1.0715	0.8495
1	2,500	2,340	0.7695	1.2605	1.0150
Unload					
1	0	0	0.0140	0.0120	0.0130

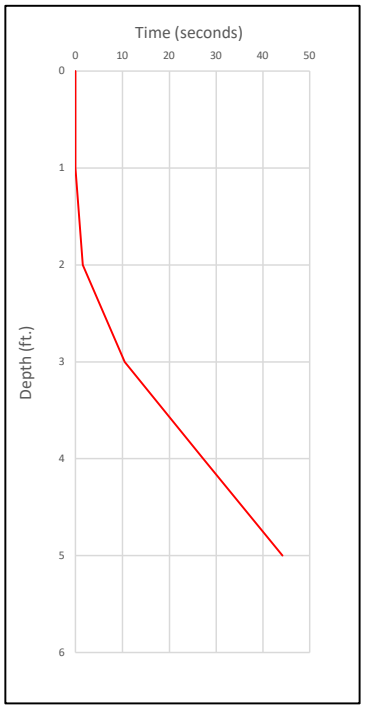
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-36B
Date/Time Installed:	3/24/21 9:20 AM	Date/Time Tested:	3/25/21 9:30 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	71.37
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	5.00	Avg. Installation Rate (sec/ft)	14.27

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	1.5
3	10.43
4	27.20
5	44.17
Total Time (s) =	71.37



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0095	0.0145	0.0025
1	3,000	3,060	0.0185	0.0265	0.0225
1	4,000	3,960	-0.0245	0.0320	0.0038
1	5,000	5,060	-0.0255	0.0380	0.0063
1	6,000	6,080	-0.0235	0.0445	0.0105
1	7,000	7,060	-0.0175	0.0545	0.0185
1	8,000	8,080	0.0045	0.0750	0.0398
1	9,000	9,180	0.0355	0.1210	0.0783
1	10,000	10,120	0.1085	0.2035	0.1560
Unload					
1	0	0	0.1235	0.1345	0.1290
Reload					
1	Max.	11,420	1.0290	1.1260	1.0775
Unload					
1	0	0	1.0130	0.1032	0.5581

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0050	0.1490	0.0770
1	1,000	1,000	0.0405	0.3010	0.1708
1	1,500	1,500	0.1275	0.4445	0.2860
1	0	0	0.0220	0.0885	0.0553
1	500	500	0.0305	0.2135	0.1220
1	1,000	1,000	0.0715	0.3305	0.2010
1	1,500	1,500	0.1365	0.4365	0.2865
1	2,000	2,000	0.2505	0.5790	0.4148
1	2,500	2,520	0.4030	0.7580	0.5805
1	0	0	0.0990	0.2040	0.1515
1	2,500	2,500	0.4325	0.8075	0.6200
1	3,000	3,000	0.6120	0.9785	0.7953
1	3,500	3,460	0.8065	1.1715	0.9890
1	4,000	3,780	0.8990	1.1520	1.0255
Unload					
1	0	0	0.3430	0.3580	0.3505

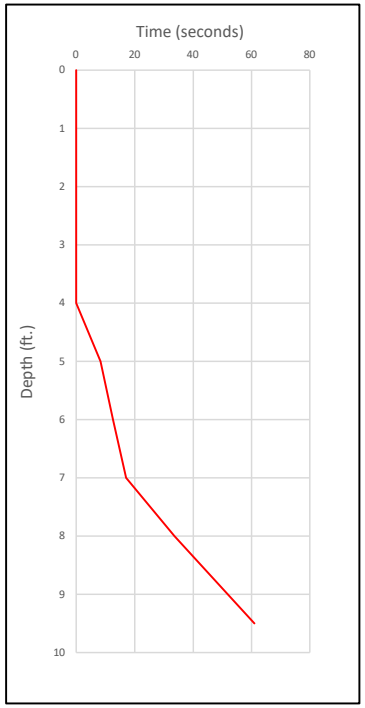
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-37A
Date/Time Installed:	3/24/21 10:00 AM	Date/Time Tested:	3/24/21 3:00 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	132.38
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	9.5	Avg. Installation Rate (sec/ft)	13.93

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	8.30
6	12.55
7	16.99
8	33.54
9.5	61.00
Total Time (s) =	132.38



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0015	0.0090	0.0053
1	3,000	3,000	0.0015	0.0105	0.0060
1	4,000	4,020	0.0020	0.0125	0.0073
1	5,000	5,000	0.0020	0.0130	0.0075
1	6,000	6,100	0.0005	0.0120	0.0063
1	7,000	7,200	0.0035	0.0100	0.0068
1	8,000	8,040	0.0060	0.0075	0.0068
1	9,000	9,000	0.0085	0.0050	0.0068
1	10,000	10,000	0.0100	0.0035	0.0068
Unload					
1	0	0	0.0085	0.0045	0.0065
Reload					
1	Max.	13,160	0.0165	0.0025	0.0095
Unload					
1	0	0	0.0175	0.0060	0.0118

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1000	0.1460	0.1230
1	1,000	1,020	0.2345	0.2885	0.2615
1	1,500	1,500	0.3725	0.4435	0.4080
1	0	0	0.0310	0.0170	0.0240
1	500	500	0.1085	0.1775	0.1430
1	1,000	1,040	0.2420	0.3180	0.2800
1	1,500	1,520	0.3835	0.4530	0.4183
1	2,000	2,020	0.5380	0.6180	0.5780
1	2,500	2,560	0.6805	0.7810	0.7308
1	0	0	0.0560	0.0300	0.0430
1	2,500	2,500	0.7005	0.7725	0.7365
1	3,000	3,040	0.8345	0.9225	0.8785
1	3,500	3,480	0.9620	1.0505	1.0063
Unload					
1	0	0	0.0825	0.0425	0.0625

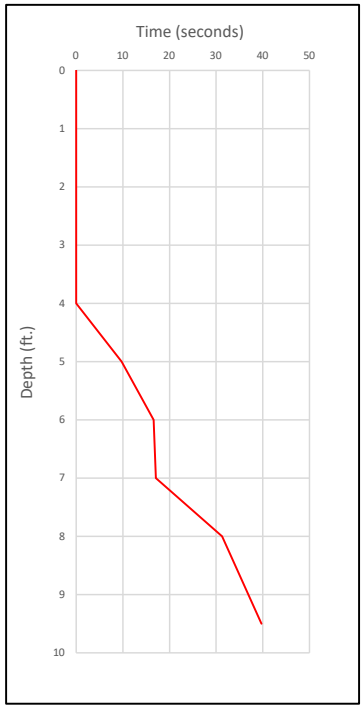
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-37B
Date/Time Installed:	3/24/21 10:05 AM	Date/Time Tested:	3/24/21 3:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	114.38
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	9.5	Avg. Installation Rate (sec/ft)	12.04

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	9.70
6	16.57
7	17.10
8	31.30
9.5	39.71
Total Time (s) =	114.38



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,560	0.0195	0.0210	0.0203
1	3,000	3,060	0.0380	0.0305	0.0343
1	4,000	4,180	0.0435	0.0360	0.0398
1	5,000	5,160	0.0475	0.0385	0.0430
1	6,000	5,980	0.0505	0.0400	0.0453
1	7,000	7,000	0.0540	0.0415	0.0478
1	8,000	8,040	0.0550	0.0420	0.0485
1	9,000	9,100	0.0605	0.0430	0.0518
1	10,000	9,980	0.0630	0.0435	0.0533
Unload					
1	0	0	0.0045	0.00455	0.0045
Reload					
1	Max.	13,060	0.0675	0.0475	0.0575
Unload					
1	0	0	0.0045	0.0085	0.0065

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1065	0.1860	0.1463
1	1,000	1,020	0.2540	0.3825	0.3183
1	1,500	1,500	0.4140	0.5735	0.4938
1	0	0	0.0695	0.0620	0.0658
1	500	500	0.1515	0.2430	0.1973
1	1,000	1,040	0.2740	0.4085	0.3413
1	1,500	1,520	0.4140	0.5775	0.4958
1	2,000	2,000	0.6115	0.7780	0.6948
1	2,500	2,540	0.8145	1.0050	0.9098
1	0	0	0.1395	0.0970	0.1183
1	2,500	2,480	0.8540	1.0950	0.9745
1	3,000	2,660	0.9455	1.0690	1.0073
Unload					
1	0	0	0.1665	0.1520	0.1593

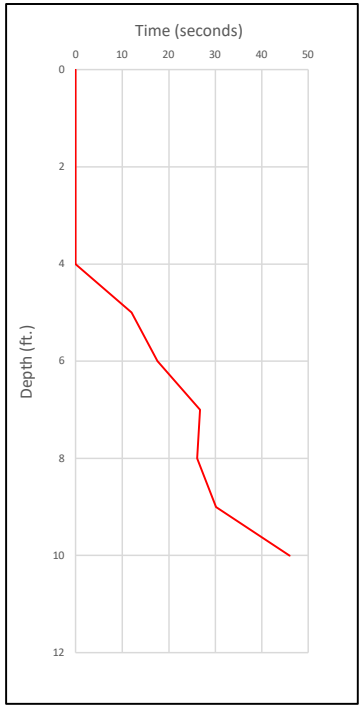
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-38A
Date/Time Installed:	3/24/21 10:20 AM	Date/Time Tested:	3/24/21 1:45 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	158.54
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	10	Avg. Installation Rate (sec/ft)	15.85

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	12.01
6	17.56
7	26.74
8	26.10
9	30.15
10	45.98
Total Time (s) =	158.54



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	-0.0110	0.0120	0.0005
1	3,000	3,000	-0.0170	0.0130	-0.0020
1	4,000	4,020	-0.0195	0.0120	-0.0038
1	5,000	5,060	-0.0205	0.0100	-0.0053
1	6,000	6,120	-0.0195	0.0075	-0.0060
1	7,000	7,040	-0.0160	0.0045	-0.0058
1	8,000	8,080	-0.0140	0.0025	-0.0058
1	9,000	9,120	-0.0120	0.0005	-0.0058
1	10,000	10,060	-0.0105	0.0015	-0.0045
Unload					
1	0	0	0.0085	0.0045	0.0065
Reload					
1	Max.	13,000	0.0160	0.0015	0.0088
Unload					
1	0	0	0.0105	0.0065	0.0085

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0605	0.1490	0.1048
1	1,000	1,000	0.1465	0.2680	0.2073
1	1,500	1,500	0.2335	0.4500	0.3418
1	0	0	0.0505	0.0405	0.0455
1	500	500	0.0780	0.2065	0.1423
1	1,000	1,000	0.1450	0.3345	0.2398
1	1,500	1,500	0.2365	0.4590	0.3478
1	2,000	2,000	0.3580	0.5865	0.4723
1	2,500	2,500	0.4705	0.7130	0.5918
1	0	0	0.0585	0.0565	0.0575
1	2,500	2,500	0.4345	0.6950	0.5648
1	3,000	3,000	0.5635	0.8675	0.7155
1	3,500	3,500	0.7125	1.0615	0.8870
1	4,000	3,760	0.7985	1.2135	1.0060
Unload					
1	0	0	0.0065	0.1675	0.0870

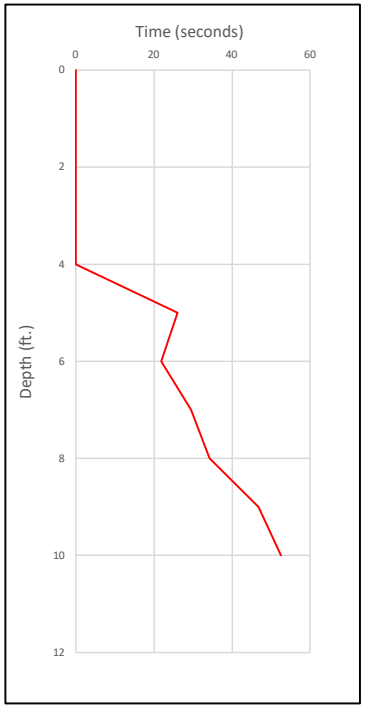
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-38B
Date/Time Installed:	3/24/21 10:30 AM	Date/Time Tested:	3/24/21 2:30 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	Pre-Drill	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	10	Pre-Drill Diameter (in):	6	Total Drive Time (sec):	210.73
Pushed to Depth (ft.):	4	Embedment Depth (ft.):	10	Avg. Installation Rate (sec/ft)	21.07

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	0
4	0
5	26.02
6	21.83
7	29.44
8	34.21
9	46.75
10	52.48
Total Time (s) =	210.73



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,500	0.0065	0.0005	0.0035
1	3,000	3,020	0.0180	0.0140	0.0160
1	4,000	4,040	0.0250	0.0265	0.0258
1	5,000	5,000	0.0290	0.0350	0.0320
1	6,000	6,080	0.0340	0.0435	0.0388
1	7,000	7,000	0.0435	0.0525	0.0480
1	8,000	8,040	0.0470	0.0605	0.0538
1	9,000	9,040	0.0530	0.0675	0.0603
1	10,000	1,020	0.0580	0.0750	0.0665
Unload					
1	0	0	0.0085	0.0020	0.0053
Reload					
1	Max.	13,060	0.0655	0.0895	0.0775
Unload					
1	0	0	0.0100	0.0005	0.0053

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1420	0.2870	0.2145
1	1,000	1,000	0.2075	0.4845	0.3460
1	1,500	1,520	0.3035	0.7865	0.5450
1	0	0	0.0165	0.3125	0.1645
1	500	500	0.1120	0.4620	0.2870
1	1,000	1,000	0.2090	0.6375	0.4233
1	1,500	1,500	0.2965	0.8145	0.5555
1	2,000	2,000	0.3605	1.1805	0.7705
1	2,500	2,500	0.4355	1.5655	1.0005
Unload					
1	0	0	0.2265	1.0545	0.6405

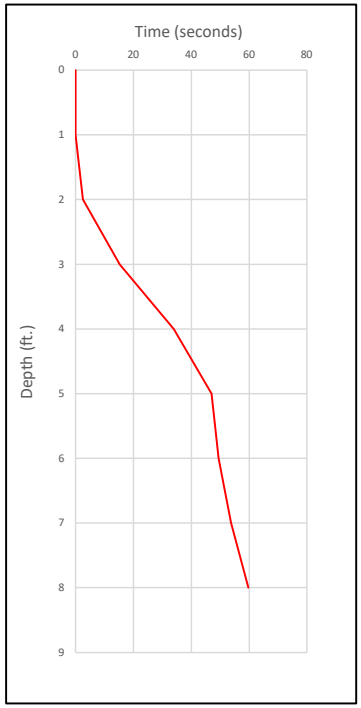
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-39A
Date/Time Installed:	3/19/21 3:40 PM	Date/Time Tested:	3/22/21 3:15 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N/A	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	261.28
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	32.66

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	2.49
3	15.23
4	33.87
5	46.94
6	49.35
7	53.68
8	59.72
Total Time (s) =	261.28



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	0.0030	0.0040	0.0035
1	3,000	3,080	0.0050	0.0080	0.0065
1	4,000	4,000	0.0065	0.0105	0.0085
1	5,000	5,060	0.0085	0.0140	0.0113
1	6,000	6,080	0.0105	0.0180	0.0143
1	7,000	7,060	0.0130	0.0235	0.0183
1	8,000	8,080	0.0170	0.0305	0.0238
1	9,000	9,000	0.0235	0.0410	0.0323
1	10,000	10,020	0.0325	0.0530	0.0428
Unload					
1	0	0	0.0305	0.0300	0.0303
Reload					
1	Max.	13,040	0.3860	0.4295	0.4078
Unload					
1	0	0	0.3830	0.3900	0.3865

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0500	0.0845	0.0673
1	1,000	1,020	0.1180	0.1775	0.1478
1	1,500	1,520	0.2000	0.2775	0.2388
1	0	0	0.0175	0.0540	0.0358
1	500	520	0.0695	0.1265	0.0980
1	1,000	1,020	0.1365	0.2055	0.1710
1	1,500	1,520	0.2110	0.2915	0.2513
1	2,000	2,000	0.2925	0.3845	0.3385
1	2,500	2,520	0.4005	0.5095	0.4550
1	0	0	0.0365	0.1100	0.0733
1	2,500	2,500	0.4105	0.5370	0.4738
1	3,000	3,000	0.5065	0.6465	0.5765
1	3,500	3,500	0.6230	0.7735	0.6983
1	4,000	4,040	0.7500	0.9125	0.8313
Unload					
1	0	0	0.0510	0.1650	0.1515
Reload					
1	Max.	4,560	0.9400	1.1145	1.0455
Unload					
1	0	0	0.0790	0.2105	0.1675

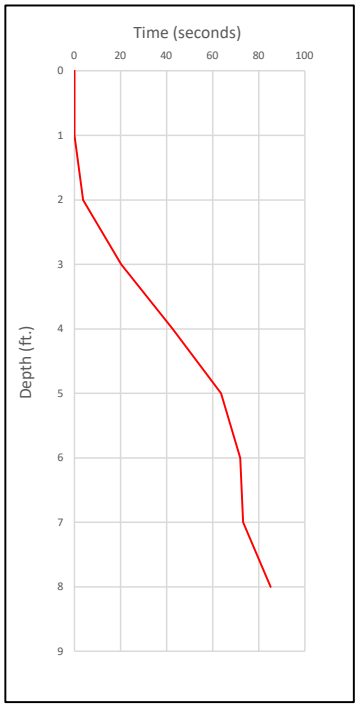
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-39B
Date/Time Installed:	3/19/21 3:50 PM	Date/Time Tested:	3/22/21 3:00 PM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length (ft):	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	360.62
Pushed to Depth (ft.):	1.5	Embedment Depth (ft.):	8	Avg. Installation Rate (sec/ft)	45.08

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	3.67
3	20.28
4	42.57
5	63.64
6	71.99
7	73.21
8	85.26
Total Time (s) =	360.62



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,540	-0.0010	0.0045	0.0018
1	3,000	3,000	0.0005	0.0090	0.0048
1	4,000	4,000	0.0000	0.0130	0.0065
1	5,000	5,020	0.0000	0.0160	0.0080
1	6,000	6,040	0.0000	0.0205	0.0103
1	7,000	7,040	0.0020	0.0250	0.0135
1	8,000	8,060	0.0055	0.0295	0.0175
1	9,000	9,240	0.0135	0.0360	0.0248
1	10,000	10,100	0.0230	0.0455	0.0343
Unload					
1	0	0	0.0215	0.0235	0.0225
Reload					
1	Max.	13,040	0.2160	0.2360	0.2260
Unload					
1	0	0	0.2050	0.2080	0.2065

Lateral Testing

Lateral Load Height Above Grade (ft):		3	Deflection Gauge Height (in):		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1010	0.0255	0.0633
1	1,000	1,020	0.1900	0.0920	0.1410
1	1,500	1,520	0.2825	0.1715	0.2270
1	0	0	0.0380	0.0245	0.0313
1	500	520	0.1345	0.0455	0.0900
1	1,000	1,020	0.2165	0.1065	0.1615
1	1,500	1,520	0.2980	0.1785	0.2383
1	2,000	2,000	0.3855	0.2560	0.3208
1	2,500	2,520	0.5030	0.3590	0.4310
1	0	0	0.0870	0.0450	0.0660
1	2,500	2,500	0.5270	0.3725	0.4498
1	3,000	3,000	0.6215	0.4735	0.5475
1	3,500	3,500	0.7290	0.5955	0.6623
1	4,000	4,040	0.8455	0.7315	0.7885
Unload					
1	0	0	0.1515	0.0580	0.1048
Reload					
1	Max.	4,720	1.0455	0.9795	1.0125
Unload					
1	0	0	0.1675	0.0905	0.1290

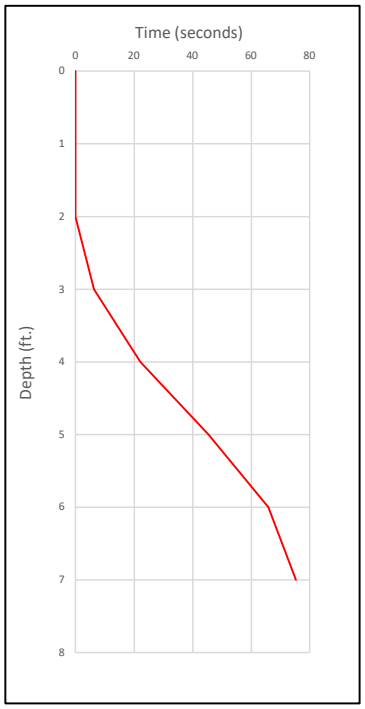
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-40A
Date/Time Installed:	3/24/21	Date/Time Tested:	3/27/21 11:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	214.78
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	7.00	Avg. Installation Rate (sec/ft)	30.68

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	6.21
4	22.14
5	45.39
6	65.79
7	75.25
Total Time (s) =	214.78



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,580	-0.0045	0.0120	0.0038
1	3,000	3,020	-0.0145	0.0245	0.0050
1	4,000	4,060	-0.0175	0.0315	0.0070
1	5,000	5,040	-0.0185	0.0375	0.0095
1	6,000	6,040	-0.0185	0.0425	0.0120
1	7,000	7,240	-0.0160	0.0490	0.0165
1	8,000	8,120	-0.0135	0.0560	0.0213
1	9,000	9,100	-0.0085	0.0640	0.0278
1	10,000	10,020	-0.0015	0.0745	0.0365
Unload					
1	0	0	0.0195	0.0250	0.0223
Reload					
1	Max.	12940	0.1290	0.2190	0.1740
Unload					
1	0	0	0.1440	0.1540	0.1490

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.1105	0.0810	0.0958
1	1,000	1,000	0.2270	0.2100	0.2185
1	1,500	1,520	0.3420	0.3370	0.3395
1	0	0	0.0585	0.0305	0.0445
1	500	520	0.1460	0.1305	0.1383
1	1,000	1,000	0.2510	0.2410	0.2460
1	1,500	1,500	0.3550	0.3550	0.3550
1	2,000	2,080	0.4770	0.4970	0.4870
1	2,500	2,520	0.6145	0.6570	0.6358
1	0	0	0.0880	0.0800	0.0840
1	2,500	2,580	0.6380	0.6940	0.6660
1	3,000	3,000	0.7745	0.8565	0.8155
1	3,500	3,440	0.9195	1.0350	0.9773
1	4,000	3,640	0.9900	1.1170	1.0535
Unload					
1	0	0	0.1600	0.1925	0.1763

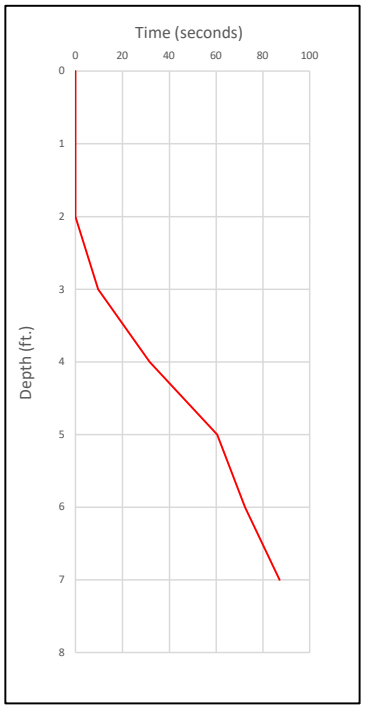
Field Notes

ANS GEO

Project:	AES - Riverside Solar	Site Location	Chaumont, NY	Pile ID:	PT-40B
Date/Time Installed:	3/24/21	Date/Time Tested:	3/27/21 11:15 AM	Pile Type/Size:	W6x9
Pre-Auger/Pre-Drill (Y/N)?:	N	Pre-Auger Depth (ft):	N/A	Pile Length:	15
Pre-Drill Depth (ft):	N/A	Pre-Drill Diameter (in):	N/A	Total Drive Time (sec):	260.93
Pushed to Depth (ft.):	2	Embedment Depth (ft.):	7.00	Avg. Installation Rate (sec/ft)	37.28

Embedment Data

Depth (ft.)	Time (s)
0	0
1	0
2	0
3	9.53
4	31.60
5	60.42
6	72.28
7	87.10
Total Time (s) =	260.93



Tensile Testing

Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	1,500	1,520	-0.0125	0.0185	0.0030
1	3,000	3,060	-0.0250	0.0350	0.0050
1	4,000	4,020	-0.0295	0.0435	0.0070
1	5,000	5,100	-0.0340	0.0510	0.0085
1	6,000	6,180	-0.0360	0.0570	0.0105
1	7,000	7,040	-0.0390	0.0620	0.0115
1	8,000	8,040	-0.0420	0.0675	0.0128
1	9,000	8,980	-0.0450	0.0790	0.0170
1	10,000	10,080	-0.0470	0.0890	0.0210
Unload					
1	0	0	0.0065	0.0230	0.0148
Reload					
1	Max.	10820	-0.0430	0.1045	0.0308
Unload					
1	0	0	0.0130	0.0310	0.0220

Lateral Testing

Lateral Load Height Above Grade (ft):		3	**Deflection Gauge Height (in):**		4
Hold Time (min)	Target Load (lbs)	Load (lbs)	Deflection 1 (in.)	Deflection 2 (in.)	Average Deflection (in.)
1	0	0	0.0000	0.0000	0.0000
1	500	500	0.0950	0.0670	0.0810
1	1,000	1,000	0.2100	0.1615	0.1858
1	1,500	1,520	0.3250	0.2605	0.2928
1	0	0	0.0525	0.0320	0.0423
1	500	520	0.1400	0.0950	0.1175
1	1,000	1,000	0.2420	0.1810	0.2115
1	1,500	1,500	0.3415	0.2705	0.3060
1	2,000	2,080	0.4660	0.3825	0.4243
1	2,500	2,520	0.6075	0.5110	0.5593
1	0	0	0.0935	0.0645	0.0790
1	2,500	2,580	0.6380	0.5435	0.5908
1	3,000	3,000	0.7740	0.6745	0.7243
1	3,500	3,440	0.9200	0.8160	0.8680
1	4,000	3,860	1.0640	0.9565	1.0103
Unload					
1	0	0	0.1760	0.1360	0.1560

Field Notes

ANS GEO

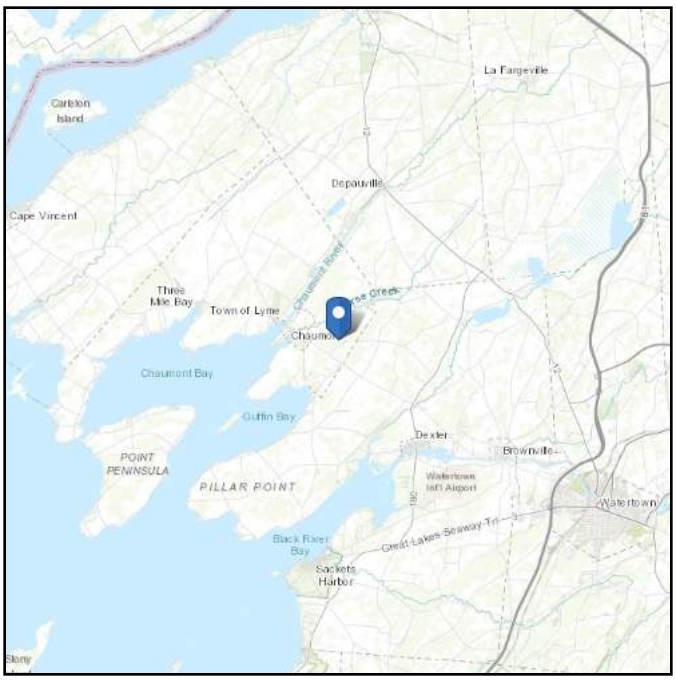
Attachment F

Seismic Support Data

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	291.15 ft (NAVD 88)
Risk Category:	II	**Latitude:**	44.061657
Soil Class:	C - Very Dense Soil and Soft Rock	**Longitude:**	-76.100341



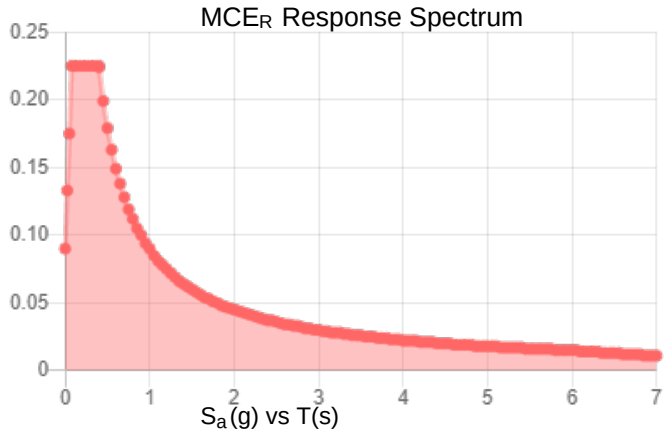
Seismic

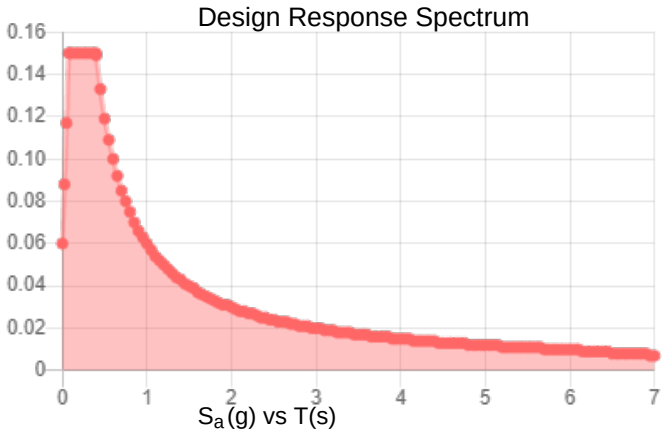
Site Soil Class: C - Very Dense Soil and Soft Rock

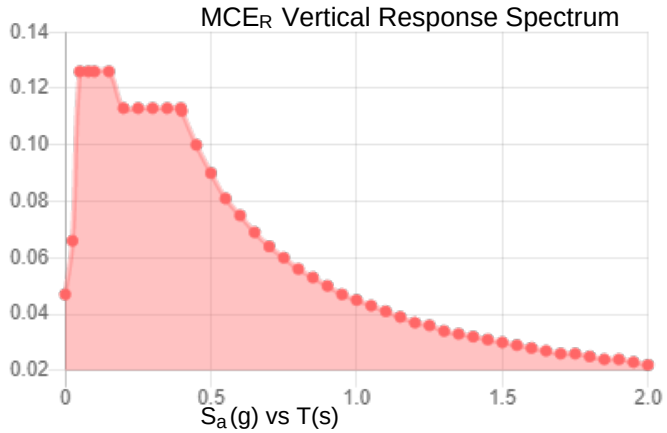
Results:

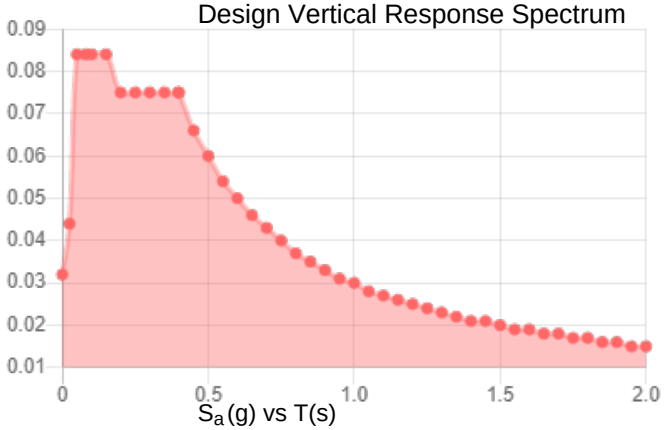
S_S :	0.173	S_{D1} :	0.06
S_1 :	0.06	T_L :	6
F_a :	1.3	PGA :	0.088
F_v :	1.5	PGA_M :	0.114
S_{MS} :	0.225	F_{PGA} :	1.3
S_{M1} :	0.09	I_e :	1
S_{DS} :	0.15	C_v :	0.7

Seismic Design Category A









Data Accessed: Tue Apr 06 2021

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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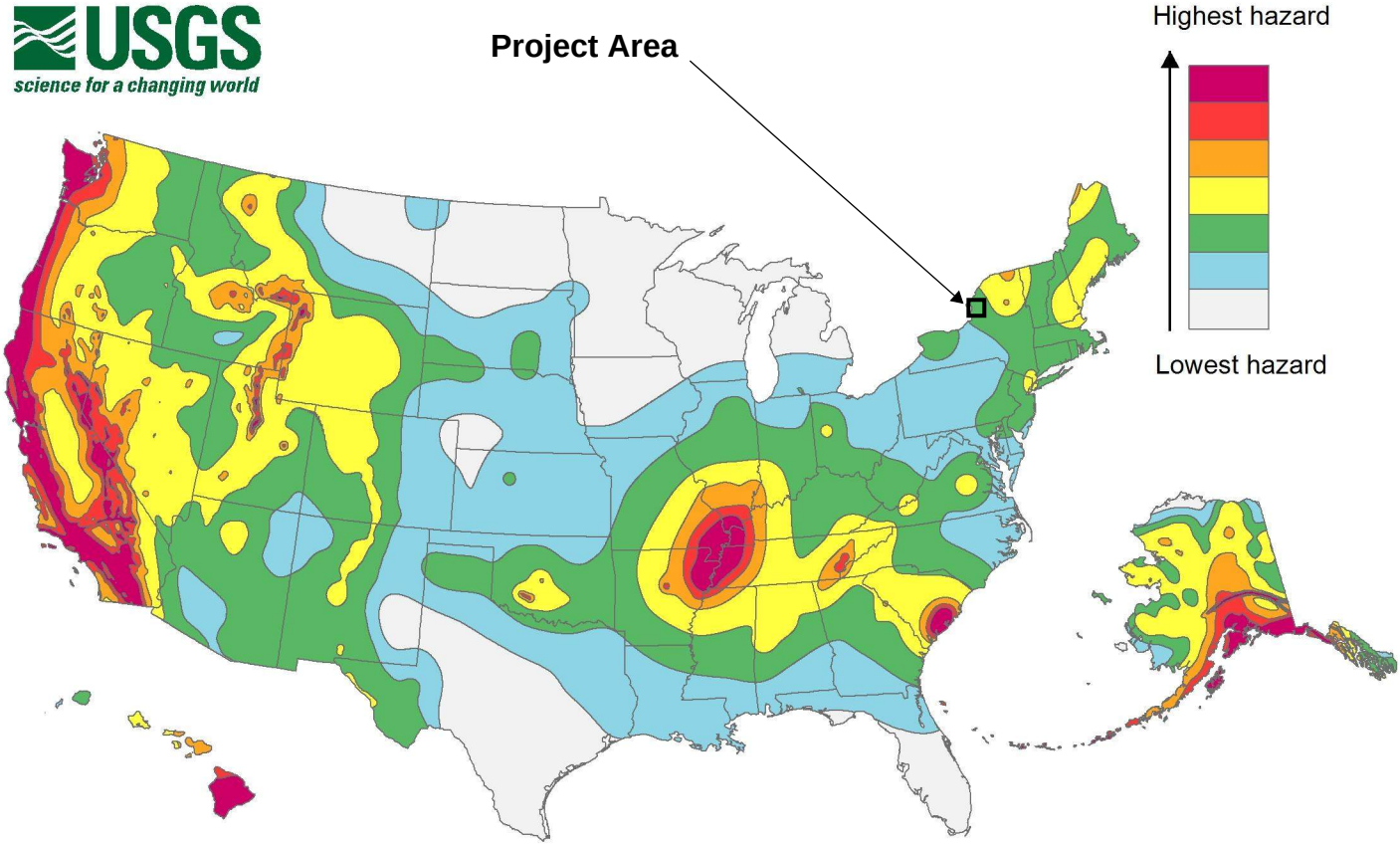
USGS
science for a changing world
Project Area
Highest hazard
Lowest hazard

ANS GEO

Attachment G

NRCS Soil Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Jefferson County, New York

AES - Riverside Solar

March 24, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

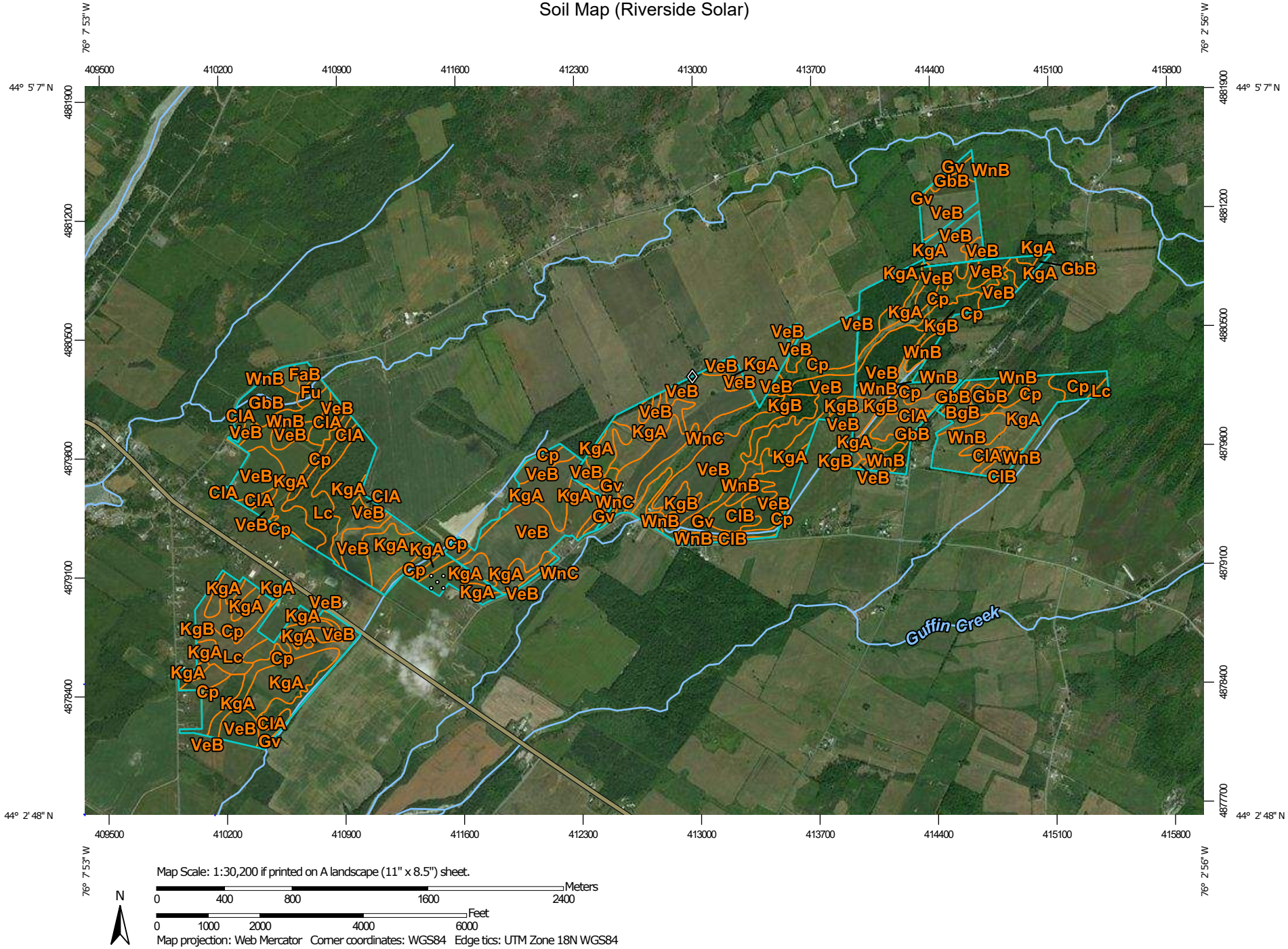
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (Riverside Solar)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jefferson County, New York
Survey Area Data: Version 20, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Apr 1, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (Riverside Solar)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BgB	Benson-Galoo complex, very rocky, 0 to 8 percent slopes	3.9	0.4%
ClA	Chaumont silty clay, 0 to 3 percent slopes	27.4	2.5%
ClB	Chaumont silty clay, 3 to 8 percent slopes	13.2	1.2%
Cp	Covington silty clay	124.1	11.5%
FaB	Farmington loam, 0 to 8 percent slopes	3.2	0.3%
Fu	Fluvaquents-Udifluvents complex, frequently flooded	4.2	0.4%
GbB	Galoo-Rock outcrop complex, 0 to 8 percent slopes	34.4	3.2%
Gv	Guffin clay	29.9	2.8%
KgA	Kingsbury silty clay, 0 to 2 percent slopes	273.9	25.3%
KgB	Kingsbury silty clay, 2 to 6 percent slopes	30.2	2.8%
Lc	Livingston mucky silty clay	39.9	3.7%
VeB	Vergennes silty clay loam, 3 to 8 percent slopes	392.7	36.2%
WnB	Wilpoint silty clay loam, 3 to 8 percent slopes	79.4	7.3%
WnC	Wilpoint silty clay loam, 8 to 15 percent slopes	27.3	2.5%
Totals for Area of Interest		**1,083.7**	**100.0%**

Map Unit Descriptions (Riverside Solar)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made

up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jefferson County, New York

BgB—Benson-Galoo complex, very rocky, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sly
Elevation: 90 to 1,250 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Benson and similar soils: 55 percent
Galoo and similar soils: 35 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Benson

Setting

Landform: Till plains, benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Channery loamy till underlain by limestone or calcareous shale

Typical profile

H1 - 0 to 3 inches: channery silt loam
H2 - 3 to 12 inches: extremely channery loam
H3 - 12 to 16 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XB010NY - Shallow Rich Till Upland
Hydric soil rating: No

Description of Galoo

Setting

Landform: Benches, ridges, till plains

Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: A thin layer of loamy till that overlies limestone or calcareous sandstone bedrock

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 7 inches: channery silt loam
H3 - 7 to 11 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 2 to 10 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XB010NY - Shallow Rich Till Upland
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Farmington

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 1 percent
Hydric soil rating: No

Galway

Percent of map unit: 1 percent
Hydric soil rating: No

Newstead

Percent of map unit: 1 percent
Hydric soil rating: No

ClA—Chaumont silty clay, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9sms
Elevation: 250 to 1,020 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Chaumont and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chaumont

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Clayey glaciolacustrine deposits or glaciomarine deposits

Typical profile

H1 - 0 to 5 inches: silty clay
H2 - 5 to 11 inches: clay
H3 - 11 to 22 inches: clay
H4 - 22 to 27 inches: silty clay
H5 - 27 to 31 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Covington
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Kingsbury
Percent of map unit: 5 percent
Hydric soil rating: No

Wilpoint
Percent of map unit: 5 percent
Hydric soil rating: No

Guffin
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Unnamed soils, rock outcrop and fragments
Percent of map unit: 3 percent

Livingston
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

ClB—Chaumont silty clay, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9smt
Elevation: 250 to 950 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Chaumont and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chaumont

Setting
Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear

Parent material: Clayey glaciolacustrine deposits or glaciomarine deposits

Typical profile

H1 - 0 to 5 inches: silty clay
H2 - 5 to 11 inches: clay
H3 - 11 to 22 inches: clay
H4 - 22 to 27 inches: silty clay
H5 - 27 to 31 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Kingsbury

Percent of map unit: 5 percent
Hydric soil rating: No

Wilpoint

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils, rock fragments and rock outcrops

Percent of map unit: 3 percent

Covington

Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: Yes

Guffin

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Livingston

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Cp—Covington silty clay

Map Unit Setting

National map unit symbol: 9sn1
Elevation: 50 to 1,000 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Covington and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Covington

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Calcareous clayey glaciolacustrine deposits or glaciomarine deposits

Typical profile

H1 - 0 to 6 inches: silty clay
H2 - 6 to 32 inches: clay
H3 - 32 to 64 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: D
Ecological site: F142XB007VT - Wet Clayplain Depression
Hydric soil rating: Yes

Minor Components

Livingston
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Guffin
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Unnamed soils, sandy areas and stony areas
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Kingsbury
Percent of map unit: 5 percent
Hydric soil rating: No

Chaumont
Percent of map unit: 5 percent
Hydric soil rating: No

FaB—Farmington loam, 0 to 8 percent slopes

Map Unit Setting
National map unit symbol: 9sng
Elevation: 100 to 900 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Farmington and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Farmington

Setting
Landform: Till plains, benches, ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till or congeliturbate derived from limestone, dolomite, shale, and sandstone, and in many places mixed with wind and water deposits

Typical profile

H1 - 0 to 8 inches: loam
H2 - 8 to 19 inches: loam
H3 - 19 to 23 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: F142XB010NY - Shallow Rich Till Upland
Hydric soil rating: No

Minor Components

Benson

Percent of map unit: 5 percent
Hydric soil rating: No

Galway

Percent of map unit: 5 percent
Hydric soil rating: No

Galoo

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils, stony, clayey, sandy areas, wet spots

Percent of map unit: 5 percent
Hydric soil rating: Yes

Fu—Fluvaquents-Udifluvents complex, frequently flooded

Map Unit Setting

National map unit symbol: 9snh
Elevation: 100 to 3,000 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents, frequently flooded, and similar soils: 46 percent
Udifluvents and similar soils: 44 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents, Frequently Flooded

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium with highly variable texture

Typical profile

H1 - 0 to 5 inches: mucky silt loam
H2 - 5 to 72 inches: very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Available water capacity: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Udifluvents

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium with a wide range of texture

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 70 inches: very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)
Depth to water table: About 24 to 72 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hamlin

Percent of map unit: 3 percent
Hydric soil rating: No

Teel

Percent of map unit: 3 percent
Hydric soil rating: No

Wayland

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

Podunk

Percent of map unit: 2 percent
Hydric soil rating: No

GbB—Galoo-Rock outcrop complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9snl
Elevation: 250 to 1,250 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Galoo and similar soils: 55 percent
Rock outcrop: 25 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Galoo

Setting

Landform: Ridges, till plains, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: A thin layer of loamy till that overlies limestone or calcareous sandstone bedrock

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 7 inches: channery silt loam
H3 - 7 to 11 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 2 to 10 inches to lithic bedrock
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water capacity: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F142XB010NY - Shallow Rich Till Upland
Hydric soil rating: No

Description of Rock Outcrop

Typical profile

H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to lithic bedrock
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.60 in/hr)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydric soil rating: Unranked

Minor Components

Benson

Percent of map unit: 5 percent
Hydric soil rating: No

Galway
Percent of map unit: 5 percent
Hydric soil rating: No

Farmington
Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils, stony areas, wet spots
Percent of map unit: 5 percent
Hydric soil rating: Yes

Gv—Guffin clay

Map Unit Setting
National map unit symbol: 9sp0
Elevation: 250 to 800 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Guffin and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Guffin

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey glaciolacustrine deposits or glaciomarine deposits

Typical profile
H1 - 0 to 7 inches: clay
H2 - 7 to 19 inches: clay
H3 - 19 to 22 inches: clay
H4 - 22 to 26 inches: unweathered bedrock

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches

Frequency of flooding: None
Frequency of ponding: Occasional
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Ecological site: F142XB007VT - Wet Clayplain Depression
Hydric soil rating: Yes

Minor Components

Kingsbury

Percent of map unit: 5 percent
Hydric soil rating: No

Chaumont

Percent of map unit: 5 percent
Hydric soil rating: No

Livingston

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Covington

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Unnamed soils

Percent of map unit: 3 percent

Wilpoint

Percent of map unit: 2 percent
Hydric soil rating: No

KgA—Kingsbury silty clay, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 9spq
Elevation: 80 to 600 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Kingsbury and similar soils: 80 percent
Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kingsbury

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous, clayey glaciomarine deposits or glaciolacustrine deposits

Typical profile

H1 - 0 to 12 inches: silty clay
H2 - 12 to 28 inches: clay
H3 - 28 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Livingston

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Chaumont

Percent of map unit: 5 percent
Hydric soil rating: No

Vergennes

Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 4 percent

Guffin

Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

KgB—Kingsbury silty clay, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 9spr
Elevation: 80 to 600 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Kingsbury and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kingsbury

Setting

Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous, clayey glaciomarine deposits or glaciolacustrine deposits

Typical profile

H1 - 0 to 12 inches: silty clay
H2 - 12 to 28 inches: clay
H3 - 28 to 60 inches: silty clay

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Vergennes
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed soils
Percent of map unit: 4 percent

Chaumont
Percent of map unit: 3 percent
Hydric soil rating: No

Rhinebeck
Percent of map unit: 3 percent
Hydric soil rating: No

Livingston
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Guffin
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Madalin
Percent of map unit: 2 percent
Hydric soil rating: Yes

Lc—Livingston mucky silty clay

Map Unit Setting
National map unit symbol: 9spx
Elevation: 50 to 1,000 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition
Livingston and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Livingston

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread

Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey estuarine deposits or glaciolacustrine deposits

Typical profile

H1 - 0 to 6 inches: mucky silty clay
H2 - 6 to 16 inches: clay
H3 - 16 to 30 inches: clay
H4 - 30 to 72 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Kingsbury

Percent of map unit: 10 percent
Hydric soil rating: No

Guffin

Percent of map unit: 6 percent
Landform: Depressions
Hydric soil rating: Yes

Chaumont

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 4 percent
Landform: Depressions
Hydric soil rating: Yes

VeB—Vergennes silty clay loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2rvsk

Elevation: 100 to 510 feet
Mean annual precipitation: 31 to 59 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 175 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Vergennes and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Vergennes

Setting

Landform: Lake terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous clayey estuarine deposits derived from limestone and/or calcareous clayey glaciolacustrine deposits derived from limestone

Typical profile

Ap - 0 to 8 inches: silty clay loam
B/E - 8 to 10 inches: clay
Bt - 10 to 22 inches: clay
BC - 22 to 29 inches: silty clay
C1 - 29 to 37 inches: silty clay
C2 - 37 to 45 inches: silty clay
C3 - 45 to 79 inches: silty clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Available water capacity: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Cayuga

Percent of map unit: 5 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Kingsbury

Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Wilpoint

Percent of map unit: 3 percent
Landform: Lake terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Farmington

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

WnB—Wilpoint silty clay loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9ss9
Elevation: 250 to 720 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Wilpoint and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wilpoint

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Clayey glaciolacustrine or glaciomarine deposits

Typical profile

Ap - 0 to 6 inches: silty clay loam
H2 - 6 to 9 inches: silty clay
H3 - 9 to 22 inches: clay
C - 22 to 29 inches: clay
2R - 29 to 33 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Chaumont

Percent of map unit: 7 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: Yes

Guffin

Percent of map unit: 3 percent
Hydric soil rating: Yes

WnC—Wilpoint silty clay loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9ssb
Elevation: 250 to 560 feet
Mean annual precipitation: 33 to 50 inches
Mean annual air temperature: 45 to 46 degrees F
Frost-free period: 110 to 170 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Wilpoint and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wilpoint

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Clayey glaciolacustrine or glaciomarine deposits

Typical profile

Ap - 0 to 6 inches: silty clay loam
H2 - 6 to 9 inches: silty clay
H3 - 9 to 22 inches: clay
C - 22 to 29 inches: clay
2R - 29 to 33 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 15 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water capacity: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Chaumont

Percent of map unit: 7 percent
Hydric soil rating: No

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: Yes

Guffin

Percent of map unit: 3 percent
Hydric soil rating: Yes

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