APPENDIX E

SUBSURFACE INVESTIGATION AND GEOTECHNICAL EVALUATION SERVICES

ATLANTIC TESTING LABORATORIES

DECEMBER 22, 2020

ATLANTIC TESTING LABORATORIES

WBE certified company

Canton
6431 U.S. Highway 11
Canton, NY 13617
315-386-4578 (T)
atlantictesting.com

December 22, 2020

Power Engineers, Inc.
16041 Foster, PO Box 1000
Overlook Park, Kansas 66085

Telephone: 314-851-4050
Email: Dennis.Johnson@powereng.com

Attn: Mr. Dennis Johnson, PE
Senior Project Engineer

Re: Subsurface Investigation and Geotechnical Evaluation Services
Proposed 69kV UG Transmission Circuits
Bridgehampton 9R to Buell 9E Substations
Sag Harbor to East Hampton, Suffolk County, New York
ATL No. CD4827E-01-05-20 Rev. 1

Ladies and Gentlemen:

Enclosed is one (1) electronic copy of the referenced report. ATL appreciates the opportunity to provide geotechnical services for your project.

Please note that upon completion of the subsurface investigation, the boreholes were backfilled with on-site soils. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of Power Engineers, Inc. and/or their Client. ATL assumes no liability for loss or damage resulting from borehole settlement.

The soil samples obtained during this investigation will be retained for a period of six months and subsequently discarded, unless otherwise instructed.

Please contact our office should you have any questions or comments on this information, or if we may be of further service. We look forward to our continued association to obtain a successful completion of this project.

Sincerely,
ATLANTIC TESTING LABORATORIES, Limited

Matthew T. Trodler, IE
Project Manager

MTT/mtt

Enclosures

cc: Mr. Bill Stachowiak, PE Power Engineers, Inc. bill.stachowiak@powereng.com

SUBSURFACE INVESTIGATION
AND
GEOTECHNICAL EVALUATION

PROPOSED 69KV UG TRANSMISSION CIRCUIT
BRIDGEHAMPTON 9R TO BUELL 9E SUBSTATIONS
SAG HARBOR TO EAST HAMPTON
SUFFOLK COUNTY, NEW YORK

POWER ENGINEERS, INC.

PREPARED FOR: **Power Engineers, Inc.**
16041 Foster, PO Box 1000
Overlook Park, Kansas 66085

PREPARED BY: **Atlantic Testing Laboratories, Limited**
6431 U.S. Highway 11
Canton, New York 13617

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SUFFOLK COUNTY, NEW YORK

POWER ENGINEERS, INC.

1.0 INTRODUCTION

At the request of Mr. Dennis Johnson, PE, representing Power Engineers, Inc., and in accordance with our proposal (ATL File No. CD998-2388-10-19, dated October 27, 2019), Atlantic Testing Laboratories, Limited (ATL) performed a series of subsurface investigations and a geotechnical evaluation for the referenced project.

The purpose of the investigations was to ascertain the general subsurface soil and water conditions at select locations along the proposed underground transmission route, to evaluate the engineering significance of these findings, and to provide geotechnical recommendations related to the design and installation of underground transmission circuit and vault structures.

The proposed UG transmission project is located along the existing Long Island Power Authority (PSEG-LI)-operated overhead transmission line right-of-way (ROW) between the Bridgehampton and Buell power substations in Sag Harbor and East Hampton, Suffolk County, New York. The geodetic coordinates at the approximate center of the proposed route are N 40º57′58.5″ latitude and W 72º15′12.5″ longitude. A **Site Location Plan** is included in **Appendix A**. All dimensions and elevations referenced in this report are in units of feet, unless otherwise noted.

2.0 PROJECT DESCRIPTION

It is our understanding the proposed project consists of installing 69 kV underground (UG) transmission cables, via a combination of direct burial, horizontal directional drill (HDD), and jack and bore methods along the existing PSEG-LI-operated overhead transmission line ROW. Based on information provided by Power Engineers, the proposed route is about 5.1 miles long; comprised of approximately 4.5 miles of direct burial cable, approximately ½ mile of horizontal direction drill-installed cable, and approximately 120 feet of jack and bore-installed cable.

The HDD will reportedly be utilized to install the transmission circuit below an environmentally and ecologically sensitive area between Bridgehampton-Sag Harbor Turnpike and Widow-Gavits Road. The jack and bore will facilitate the installation of the circuit, approximately 14 to 20 feet beneath the Long Island Railroad near the Buell Substation. Additionally, solid-splice, vault structures will be installed about every 2,000 lineal feet along the proposed UG transmission route. It is our understanding the precast concrete vault structures will have an approximate 84-square-foot footprint and will bear approximately 10 to 12 feet below grade on a 6-inch layer of compacted stone subbase.

3.0 SITE SURFACE CONDITIONS & GEOLOGY

The proposed underground transmission cable route will generally follow the existing east-west travelling, PSEG-LI-operated overhead transmission line ROW between Bridgehampton-Sag Harbor Turnpike and Cove Hollow Road. The ROW is generally covered with a combination of sand, grass, scrub-brush, small trees, and existing pathways. The overall surface topography fluctuates between approximately elevation 10 and 130, with localized rolling hills and valleys.

The project area is located on Long Island, New York in the Atlantic Coastal Plain Physiographic Region of New York State. Based on the Surficial Geologic Map of New York, Lower Hudson Sheet, 1989, the project area is mantled with a combination of fluvial deposits of outwash sand and gravel and till moraine soils. Outwash sands and gravels are river-born soils generally deposited adjacent to or in front of melting glacier ice. Till moraine deposits are the result of sedimentation of a glacier ice margin, and are generally variably textured in both particle size and sorting, and can exhibit variable permeability. Based on the Geologic Map of New York, Lower Hudson Sheet, 1970, the surficial geology is generally underlain by Upper Cretaceous Age, coastal plain deposits of silty clay, glauconitic sandy clay, sand, and gravel of the Monmouth, Matawan, and Magothy Groups.

Based on 2009 to 2016 tabular and spatial data compiled by the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Web Soil Survey, the project area reportedly contains the following soils:

USDA Soil Symbol	USDA Soil Unit Description
Bd	Berryland mucky sand
Bg	Bridgehampton silt loam, 0-2, 2-6% slopes
Cp	Carver and Plymouth sands, 0-3, 3-15, 15-35% slopes
Cu	Cut and Fill land, gently sloped
Ha	Haven loam, 0-2% slopes
Ma	Made Land
Pl	Plymouth , loamy sand, 0-3, 3-8, 8-15% slopes
Ps	Plymouth loamy sand, silty substratum 0-3, 3-8% slopes
Rd	Riverhead sandy loam, 0-3% slopes
Sw	Swansea muck, 0-1% slopes, coastal lowlands

These soils are generally comprised of combinations of sand, sandy loam, silt loam, loamy sand, gravelly sand, and sandy gravel with USCS soil group symbols SM, SP-SM, SP-SC SW, GP, GM, and GW and have a reported “low” to “high” potential for frost action.

Shallow excavations in the project area are generally rated as "not limited" to "somewhat limited" due to soil slope, with the exception of Carver and Plymouth Sands, which are rated "very limited" due to soil slope and unstable excavation side walls; and Berryland and Swansea muck soils due to flooding, ponding, and organic matter.

The soils are generally classified as slightly acidic with pH (soil reaction) values reportedly ranging between 3.6 and 6.0. The risk of corrosion to concrete, based on the sulfate and sodium content, texture, moisture content, and the acidity of the soils identified throughout the project are is generally "high". The risk of corrosion to uncoated steel based on soil moisture, particle-size distribution, acidity, and electrical conductivity of the soils identified throughout the project area generally ranges from "low" to "high".

Based on the USDA web soil survey data, the soils identified throughout the project area are USDA Hydrologic Soil Groups A and B, which have high to moderate infiltration rates and high to moderate rates of water transmission.

4.0 SUBSURFACE INVESTIGATION & SAMPLING METHODOLOGY

Nine (9) soil boring locations (BH-1 through BH-9) were selected and staked in the field by representatives of Power Engineers, Inc. The boring surface elevations were not provided to ATL. The **Boring Location Plans**, prepared by Power Engineers, Inc., are included in **Appendix B**.

Prior to advancing and sampling soil borings BH-1, B-2, BH-3, and BH-9, the boreholes were cleared to depths of approximately 3 to 5 feet below the surface utilizing hand excavation equipment.

Four (4) soil borings (BH-1 through BH-3 and BH-9) were advanced utilizing 4-inch inside diameter, flush-joint casing and a tri-cone roller bit using water as the drilling fluid. Four (4) soil borings (BH-4 through BH-7) were advanced using 4¼-inch inside diameter hollow-stem augers. One (1) soil boring (BH-8) was advancing utilizing 3.75-inch inside diameter flush-joint casing using direct push and percussion-impact methods (Geoprobe® GH63 Percussion Hammer). Soil sampling and standard penetration testing was performed utilizing a 2-inch outside diameter split spoon sampler and automatic drop hammer in accordance with ASTM D 1586. Soil sampling was performed continuously to a depth of approximately 16 feet and at 5-foot intervals thereafter to boring termination at depths ranging from 16 to 101 feet. A 3-inch, brass-lined split spoon sampler was utilized at boring locations BH-1 through BH-3, BH-8, and BH-9 to collect samples for laboratory thermal resistivity testing, at depths selected by Power Engineers.

Additionally, to facilitate laboratory thermal resistivity testing, bulk soil samples were collected from hollow-stem auger cuttings at each soil boring location at depths of 5 and 10 feet below the surface. Select bulk soil samples were submitted to ATL's geotechnical laboratory, with representative portions relinquished to GeoTherm USA's Houston, Texas laboratory for subsequent analyses. The laboratory thermal resistivity test results will be provided to Power Engineers by GeoTherm USA under a separate cover.

The thermal resistivity sample locations, collection method, and depths are summarized in the following table:

Thermal Resistivity Sample Location Summary Table

Boring No.	Sample No.	Sample Depth (ft)	Sample Type
BH-1	BS-1	5 – 10	Bulk(1)
	SS-8	21 – 23	3-inch SS(2)
	SS-19	74 – 76	
	SS-24	99 – 101	
BH-2	BS-1	0 – 5	Bulk(1)
	SS-14	50 – 52	3-inch SS(2)
	SS-25	100 – 102	
BH-3	BS-1	5 – 10	Bulk(1)
	SS-8	20 – 22	3-inch SS(2)
	SS-20	75 – 77	
BH-4	BS-1	0 – 5	Bulk(1)
	BS-2	5 – 10	Bulk(1)

Boring No.	Sample No.	Sample Depth (ft)	Sample Type
BH-5	BS-1	0 – 5	Bulk(1)
	BS-2	5 – 10	Bulk(1)
BH-6	BS-1	0 – 5	Bulk(1)
	BS-2	5 – 10	Bulk(1)
BH-7	BS-1	0 – 5	Bulk(1)
	BS-2	5 – 10	Bulk(1)
BH-8	BS-1	5 – 10	Bulk(1)
	SS-9	19 – 21	3-inch SS(2)
BH-9	BS-1	5 – 10	Bulk(1)
	SS-6	18 – 20	3-inch SS(2)
	SS-11	38 – 40	

(1) Bulk sample collected utilizing hollow-stem augers
(2) Sample collected utilizing 3-inch, brass-lined split spoon sampler

The soil samples were classified in the laboratory by an engineering technician in general accordance with the Burmister Soil Classification System. The 2-inch and 3-inch split spoon samplers do not recover particles larger than 1⅜-inch and 2½-inch in nominal dimension; therefore, the soil classifications may not be representative of the entire soil matrix. The laboratory classifications and the standard penetration test (SPT) results are presented on the **Subsurface Investigation Logs** included in **Appendix C**.

The boreholes were backfilled with on-site soils upon completion. It is important that the backfilled borings be monitored for settlement or subsidence. This will be the responsibility of Power Engineers, Inc. and/or their Client. ATL assumes no liability for loss or damage resulting from borehole settlement.

5.0 SITE SUBSURFACE CONDITIONS

The following description of subsurface conditions is based on the subsurface soil and water conditions encountered during these subsurface investigations performed during the periods of May 12 and 19, September 22 and 24, and November 11, 2020. Actual subsurface conditions will vary between the borehole locations in both the horizontal and vertical dimensions. Detailed subsurface descriptions are provided on the Subsurface Investigation Logs. The surficial organic material thicknesses presented on the soil boring logs should not be utilized to estimate material quantities for construction.

5.1 Soil Borings

Soil borings BH-1 through BH-9 generally encountered similar conditions across the project site. The soil borings generally encountered very loose (SPT N-values less than 4) to medium compact (SPT N-values 10 to 30) sand with lesser proportions of silt, gravel, and organic material that extended to depths ranging from 4 to 8 feet below the surface. The surficial materials were generally underlain by non-plastic, coastal plains soils comprised predominantly of loose to compact (SPT N-values 30 to 50) sand with lesser proportions of silt, gravel, and cobbles that extended to boring termination at depths ranging from 16 to 42 feet below the surface in borings BH-4 through BH-9, and to depths ranging from of approximately 22 to 42 feet in borings BH-1, BH-2, and BH-3.

Underlying the medium compact silty, gravelly sand at a depth of approximately 27 feet, soil boring BH-1 encountered medium compact silt and fine sand that extended to a depth of approximately 47 feet, followed by layers of compact (SPT N-values 30 to 50) to very compact (SPT N-values greater than 50) silty sand, and very compact sand and gravel that extended to boring termination at a depth of 101 feet below the surface. The exceptions are discrete layers of medium compact to very compact clayey sand with silt encountered between depths of approximately 52 and 57 feet, and 82 and 87 feet below the surface.

Underlying the medium compact gravelly sand with silt at a depth of approximately 22 feet, soil boring BH-2 encountered varying layers of medium compact to compact sand with intermittent zones of gravel and trace clay that extended to a depth of approximately 82 feet, underlain by compact silty sand with lesser proportions of gravel that extended to boring termination at a depth of 102 feet below the surface.

Underlying the loose to medium compact silty sand with gravel at a depth of approximately 42 feet, soil boring BH-3 encountered medium compact to compact sandy and silt containing isolated zones of trace clay that extended to a depth of approximately 78 feet below the surface, underlain by medium compact to compact silty sand with varying proportions of clay and gravel that extended to boring termination at a depth of 101 feet below the surface.

Cobbles and cobble fragments were encountered within the sand and gravel layers throughout the depths investigated.

Trace amounts of wood fragments were encountered in soil borings BH-4, BH-5, and BH-8 at depths ranging from approximately 2 to 14 feet below the surface.

5.2 Subsurface Water

Subsurface water measurements and observations were performed during the subsurface investigation through cased and open boreholes. The recovered soil samples were also classified for coloration and relative moisture conditions.

Based on water measurements, subsurface water was recorded at depths ranging from approximately 9.7 to 42.4 feet below the surface in soil borings BH-1, BH-2, BH-3, and BH-9; however, these readings were likely affected by water utilized to advance the boreholes. The recovered soil samples were generally classified as moist to wet to depths of approximately 18 and 9 feet in borings BH-2 and BH-3, respectively, and to termination in borings BH-1 and BH-9 at depths of 101 and 42 feet, respectively. Below depths of 18 and 9 feet in soil borings BH-2 and BH-3, the recovered soil samples were generally classified as wet to saturated.

Based on the driller's observations and soil moisture content, freestanding water was not encountered in soil borings BH-4 through BH-8 to the depths investigated. The recovered soil samples were generally classified as moist to the depths investigated.

Since the borings were generally backfilled upon completion, the water levels may not have had sufficient time to stabilize in the open boreholes. Perched groundwater may be encountered within foundation and utility excavations, especially during wetter periods of the year. It is anticipated that perched water encountered in shallow excavations may be controlled by pumping from sumps installed around the perimeter of the excavations.

Fluctuations in water levels may occur due to seasonal and climatic variations, changes in surface runoff patterns, tidal effects of the Atlantic Ocean, water elevation variations in Long Pond, construction activity, and subsequent development of the site along with other interrelated factors.

6.0 LABORATORY ANALYSES

Select soil samples were submitted to ATL's geotechnical laboratory for the following physical analyses:

- Twenty-Six (26) Water Content Determination of Soil (ASTM D 2216)
- Twenty-Three (23) Particle Size Analysis without Hydrometer (ASTM D 422)
- One (1) Particle Size Analysis with Hydrometer (ASTM D 422)
- Four (4) Atterberg Limits Determination of Soils (ASTM D 4318)
- Seven (7) Laboratory Compaction Characteristics of Soil using the Modified Efforts (ASTM D 1557)

The test results are presented on the subsurface investigation logs and included in **Appendix E, Laboratory Test Reports**.

7.0 GEOTECHNICAL ENGINEERING DISCUSSION

The Geotechnical Engineering Discussion is based on information provided by Power Engineers, Inc., PSEG-LI, and the subsurface conditions outlined in this report. At the time of report issuance, it is our understanding that the project will utilize a combination of direct burial, horizontal directional drill (HDD), and jack and bore methods to install the proposed 69 kV circuit.

7.1 Proposed 69kV UG Transmission Circuit

7.1.1 Site Preparation

Site work will require the removal of any surficial topsoil, organic material, scrub-brush, and trees along the proposed direct burial route, and within the footprint of the precast, concrete vault structures.

In planning excavations adjacent to existing roadways, structures and utilities, care should be taken to locate and maintain their stability. The project should be designed to minimize disturbance to existing structures and utilities.

7.1.2 Direct-Burial Cable and Solid-Splice Vault Structures

Based on our evaluation of the subsurface conditions and the information provided, the proposed solid-splice vault structures may be founded on a shallow foundation system provided the recommendations contained in this report are followed.

The proposed vault structure excavations should be advanced to the proposed depths of 10 to 12 feet below grade. Based on information disclosed through the soil borings performed for the project, it is anticipated the vault structure excavations will encounter medium compact sand with lesser proportions of gravel, silt, and cobbles.

Trace amounts of wood fragments were encountered in soil borings BH-4, BH-5, and BH-8 at depths ranging from approximately 2 to 14 feet below the surface. These materials may exist at other locations, elevations, and concentrations throughout the project site. Deleterious organic material encountered at the planned bottom of excavations for the proposed structures should be over excavated and replaced with compacted Granular Fill or other material specified by the Design Engineer. All fill should be placed and compacted in accordance with Section 7.4 of this report, or as specified by the Design Engineer.

All foundation excavations should be continuously monitored by a Geotechnical Engineer to verify subgrade stability and to ensure that adequate soil bearing capacity is obtained.

The stone subbase should be placed on stable foundation subgrade soils and compacted with a minimum of four passes of a dual-drum, walk-behind vibratory roller; a Wacker DPU 6055 vibrating plate tamper; or equivalent, under the direction of the Geotechnical Engineer. The crushed stone will provide a stable working surface and dewatering media if ground or surface water enters the excavation during foundation subgrade preparation and construction.

Shallow foundations supported on a 6-inch layer of compacted, stone subbase overlying stable, native sand soils may be designed using an allowable soil bearing capacity of 2000 psf, provided the recommendations presented in this report are followed.

A detailed settlement analysis was outside the scope of this investigation; however, total and differential post-construction settlement less than 1-inch and ½-inch, respectively, are estimated.

7.1.3 HDD and Jack/Bore Installations

The site soils in the area of the proposed horizontal directional drilling, and jack and bore installations are predominantly comprised of loose to medium compact silty sand with gravel, and medium compact, non-plastic sandy silt, underlain by compact to very compact silty sand and gravel with isolated layers of medium compact clayey sand. Cobbles and cobble fragments were encountered within the soil borings throughout the depths investigated.

The loose to medium compact, in-situ granular soils will have a tendency to flow into open excavations and collapse within uncased boreholes, especially in the presence of surface and subsurface water, without adequate excavation support and/or dewatering. Excavation support and/or dewatering methods should be designed by the contractor’s engineer to maintain the stability of the excavation sidewalls and bottom. The contractor should be responsible for the means and methods of advancing site work excavations and directional boreholes.

The empirical soil parameters contained in the **Geotechnical Design Parameters Summary Tables** included in **Appendix D** may be used for horizontal directional drill (HDD) and jack and bore design and installation.

7.2 Frost Protection

Shallow foundations requiring frost protection should be founded a minimum of 3.5 feet below final exterior grade.

7.3 Temporary Slopes

It is our understanding that temporary cut and fill slopes on the order of 6 to 7 feet high will be required in the area of ATL soil boring BH-1 and the Bridgehampton Substation to facilitate the western HDD installation pits.

Cut/fill slopes completed within the in-situ medium compact sand soils should be limited to 2H:1V or flatter for the temporary HDD work in the area of the Bridgehampton Substation.

Fill placed on existing slopes greater than 4H:1V should be benched into the existing slope to reduce the tendency of sliding along the existing slope surface. The slope face should be overbuilt and trimmed back to the final slope inclination or compacted with a hoe tamper to provide a stable slope face.

Straw matting, or other temporary stabilization measures approved by the engineer, should be placed along slope faces to minimize slope erosion.

Site surface grading should be designed to convey surface water away from slopes and open excavations. Surface and/or groundwater runoff should be collected and diverted around the slope through the use of interceptor trenches or surface swales.

Based on soil boring BH-1, groundwater appears to be below the cut depth of 6 to 7 feet; however, stone fill Rip-Rap swales may be necessary to stabilize soils, if shallow perched groundwater seepage is observed within exposed slopes. A granular bedding or non-woven geotextile fabric should be placed between stone fill and native subgrade soils to prevent migration of the soils into the stone fill.

7.4 Backfill and Compaction Requirements

The on-site soils may be utilized as transmission cable trench backfill and exterior foundation backfill, provided all deleterious organic and oversize material (particles larger than 4 inches in diameter) are removed, the material is properly moisture conditioned, and meets the thermal resistivity requirements for the UG cables, as determined by the Design Engineer. Granular Fill, or other material approved by the Design Engineer, should be utilized beneath structures.

All controlled fill and backfill should be placed and compacted in lifts not exceeding eight inches in loose thickness, at a moisture content of ± 2% of the Optimum Moisture Content, and to densities in excess of 95%, as determined by ASTM D1557, or as directed by the Geotechnical Engineer.

Compaction should be performed with vibratory rollers unless there is concern for damage to adjacent structures or underground utilities.

Granular Fill should consist of a clean, screened, crushed, or bank-run gravel conforming to the following gradation:

Sieve Size	Percent Passing
4”	100
¼”	35-65
#200	0-10

The soil parameters presented in the following table may be used for the following backfill materials.

Table of Soil Properties

Soil Property	On-site, Gravelly Sand	Granular Fill
Angle of Internal Friction (°)	30	32
Active Earth Coefficient (K_a)*	0.33	0.31
At Rest Earth Coefficient (K_o)*	0.50	0.47
Passive Earth Coefficient (K_p)*	3.00	3.25
Ultimate Coefficient of Sliding Friction	0.38	0.41
Moist Unit Weight (pcf)	120-130	130-140

*The Rankine earth pressure coefficients (ultimate values) are for level backfill placed in a fully drained condition.

7.5 General

Heavy construction vehicles should be limited on exposed subgrades, especially during wetter periods of the year.

Perched subsurface water, sloughing granular soils, and cobbles may be encountered in utility and site work excavations.

Care must be exercised to locate and maintain the stability of all adjacent structures and utilities that are to remain in-place.

It will be the contractor’s responsibility to maintain adequate water control at all times. Project specifications should clearly indicate that standing water, and/or saturated, unstable soil conditions will not be tolerated in areas to receive foundations or utilities. The project specifications should state that the contractor will not be reimbursed for extras related to the control of water.

All dewatering activities must comply with New York State Department of Environmental Conservation (NYSDEC) storm water discharge and PSEG-LI requirements for construction.

7.6 Dewatering

It will be the contractor’s responsibility to maintain adequate water control at all times. Project specifications should clearly indicate that standing water, and/or saturated, unstable soil conditions will not be tolerated in areas to receive foundations or utilities. The project specifications should state that the contractor will not be reimbursed for extras related to the control of water.

All dewatering activities must comply with New York State Department of Environmental Conservation (NYSDEC), and/or applicable federal or local storm water discharge requirements for construction.

7.7 Testing and Inspection

Subgrade preparation and foundation installations should be continuously observed by an experienced Geotechnical Engineer, and/or their representative, familiar with the subsurface conditions and analysis described in this report. The engineer will be required to assess any unusual conditions and to ensure that adequate bearing capacities and proper foundation installation requirements are achieved.

All backfilling, placement of fill, compaction of in-situ soils, and concrete construction should be inspected by an Independent Testing Laboratory, which conforms to ASTM E-329, “The Standard Practice for use in the Evaluation of Testing and Inspection Agencies as Used in Construction”. It should be the Independent Testing Laboratory's responsibility to monitor construction practices to determine if they are in accordance with the project documents.

The final site plans and project specifications should be reviewed by ATL, as the Geotechnical Engineer of Record, to verify that there has not been a misinterpretation of this report and/or ATL’s understanding of the project.

8.0 LIMITATIONS

The subsurface investigation logs and this report in its entirety should be provided to the contractors for information and interpretation. The subsurface investigation logs may not be representative of the entire site subsurface condition, but only what was encountered at the individual test locations at the time of the investigation. The subsurface soil and groundwater conditions may be different from those described on the subsurface investigation logs.

This report was prepared to present the findings of our subsurface investigation and engineering evaluation, and to outline concepts to be utilized in foundation design and construction. These concepts may require alterations to meet the specific design and economic considerations for this project.

Prepared by: Reviewed by:

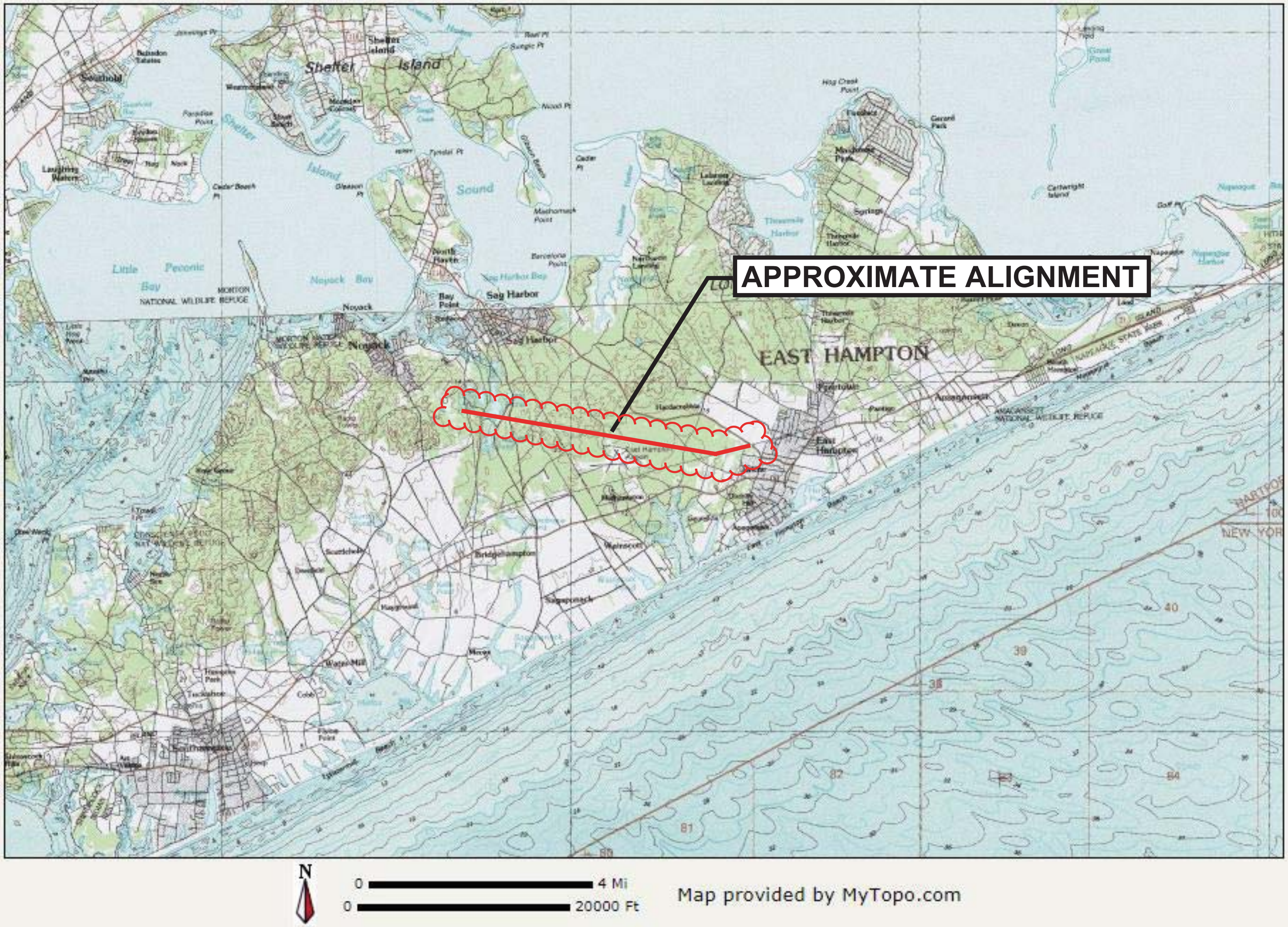
Matthew T. Trodler, IE
Project Manager

Brian T. Barnes, PE
Senior Engineer

MTT/BTB/mtt

APPENDIX A

SITE LOCATION PLAN



SITE LOCATION PLAN	Drawn by: MTT	Scale: As Noted	Project No.: CD4827	Date: May-Nov 2020

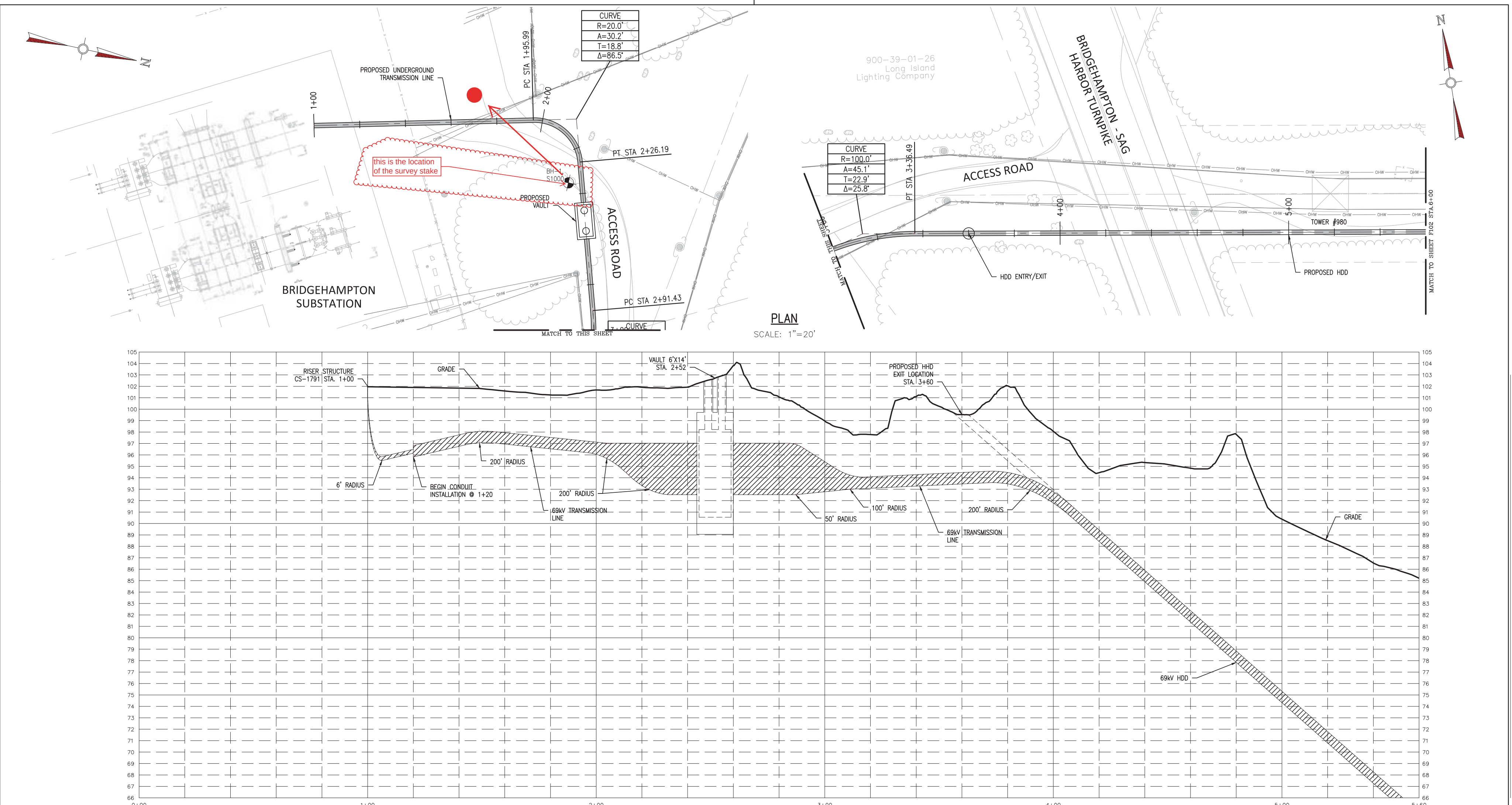
Proposed 69 kV UG Transmission Circuit
Bridgehampton 9R to Buell 9E Substations
Sag Harbor, Suffolk County, New York

***ATLANTIC TESTING LABORATORIES*, Limited**

Albany, NY · Binghamton, NY · Canton, NY · Elmira, NY · Plattsburgh, NY
Poughkeepsie, NY · Syracuse, NY · Rochester, NY · Utica, NY · Watertown, NY

APPENDIX B

BORING LOCATION PLANS



0 10 20 40 60 FEET
HORIZONTAL SCALE 1"= 20'

0 2 4 8 12 FEET
VERTICAL SCALE: 1"= 4'

NOTES:

1. THE UTILITIES AND NATURAL FEATURES SHOWN HEREON ARE BASED ON FIELD SURVEYS, AERIAL PHOTOGRAPHY AND RECORD DOCUMENTS. OTHER FACILITIES MAY EXIST NOT DISCOVERED THROUGH THE RECORD CHECK. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, BOTH HORIZONTAL AND VERTICAL, OF ALL UTILITIES THROUGH THE APPROPRIATE UTILITY COMPANIES. CALL BEFORE YOU DIG, 811 OR 1-800-272-4480.

2. VERTICAL LOCATION OF SUBSURFACE UTILITY LINES ARE BASED ON ASSUMED DEPTHS AND MAY VARY FROM THE ACTUAL VERTICAL LOCATIONS.

3. VEGETATION TO BE REMOVED BY CIVIL CONTRACTOR AS NEEDED AND RESTORED TO ORIGINAL CONDITION.

811 Know what's below. Call before you dig.

PRELIMINARY
FOR REFERENCE ONLY

POWER ENGINEERS

REV	DATE	DESCRIPTION	DRAWN	REVIEW	APPR
A	02/28/20	ISSUED FOR REVIEW	JRD	CJS	DEJ

PROJ. NO. L 99900

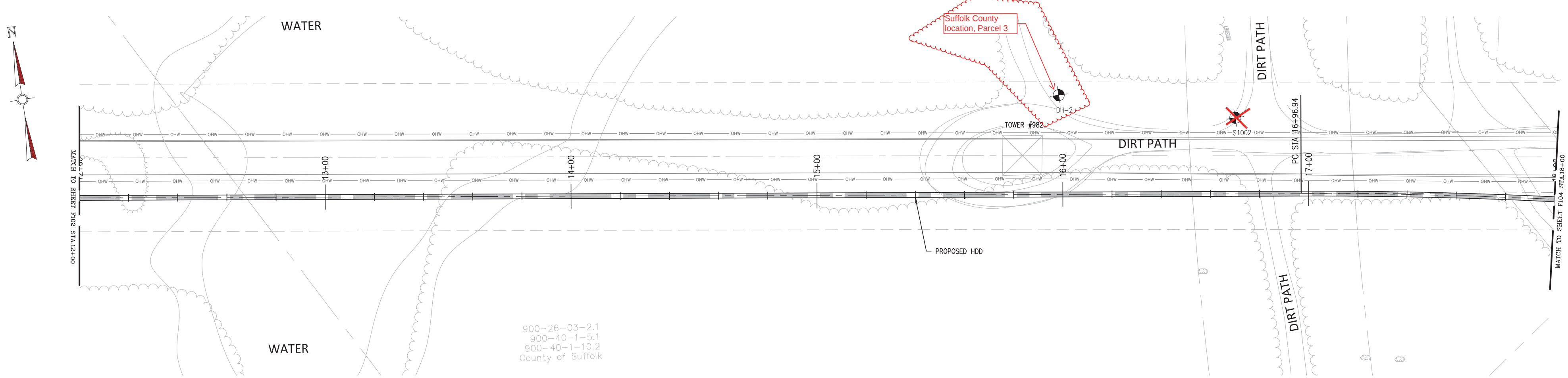
NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L	ISSUED FOR 30% REVIEW	*	*	*	*

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION
69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 1 OF 46

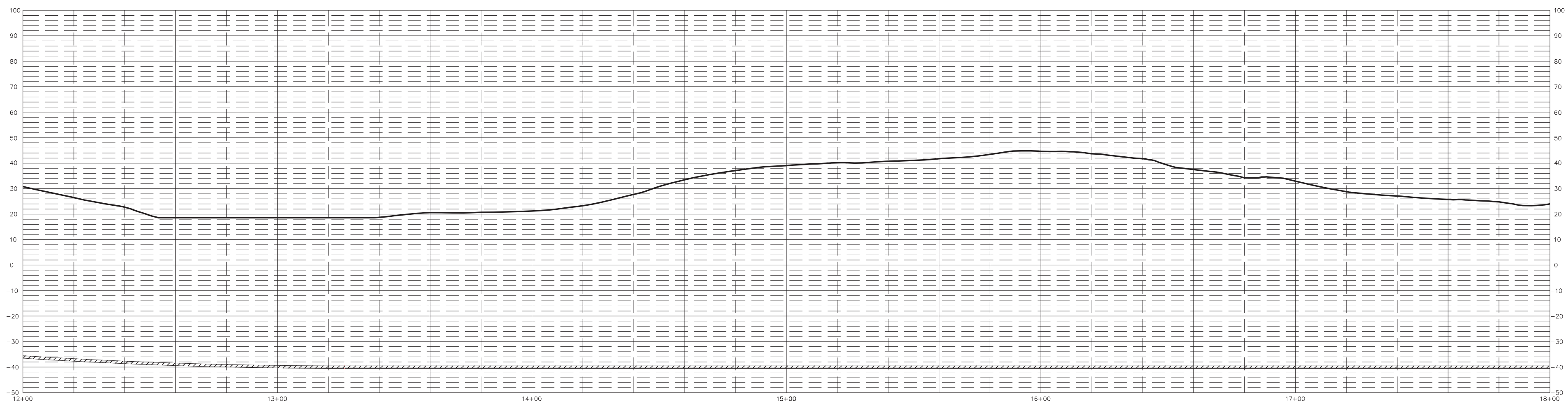
PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE: AS SHOWN
VENDOR DWG. NO.
DRAWING NO. F101
SMART NO. *
REVISION 0
SYSTEM GRID NUMBER
CABINET NO.
FOLDER NO.



PLAN

SCALE: 1"=20'



NOTES:

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3. VEGETATION TO BE REMOVED BY CIVIL CONTRACTOR AS NEEDED AND RESTORED TO ORIGINAL CONDITION.

0 10 20 40 60 FEET

HORIZONTAL SCALE 1"= 20'

0 2 4 8 12 FEET

VERTICAL SCALE: 1"= 4'

811 Know what's below. Call before you dig.

PRELIMINARY
FOR REFERENCE ONLY

POWER ENGINEERS

REV	DATE	DESCRIPTION	DRAWN	REVIEW	APPR
A	02/28/20	ISSUED FOR REVIEW	JRD	CJS	DEJ

PROJ. NO. L. 99900

ISSUE

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION

69KV TRANSMISSION LINE

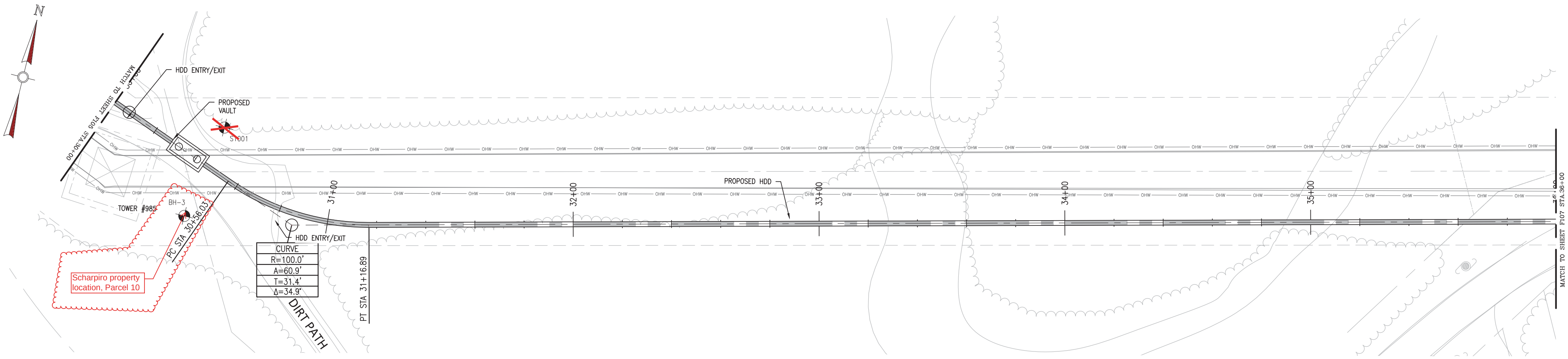
BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 3 OF 46

PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN | VENDOR DWG. NO.

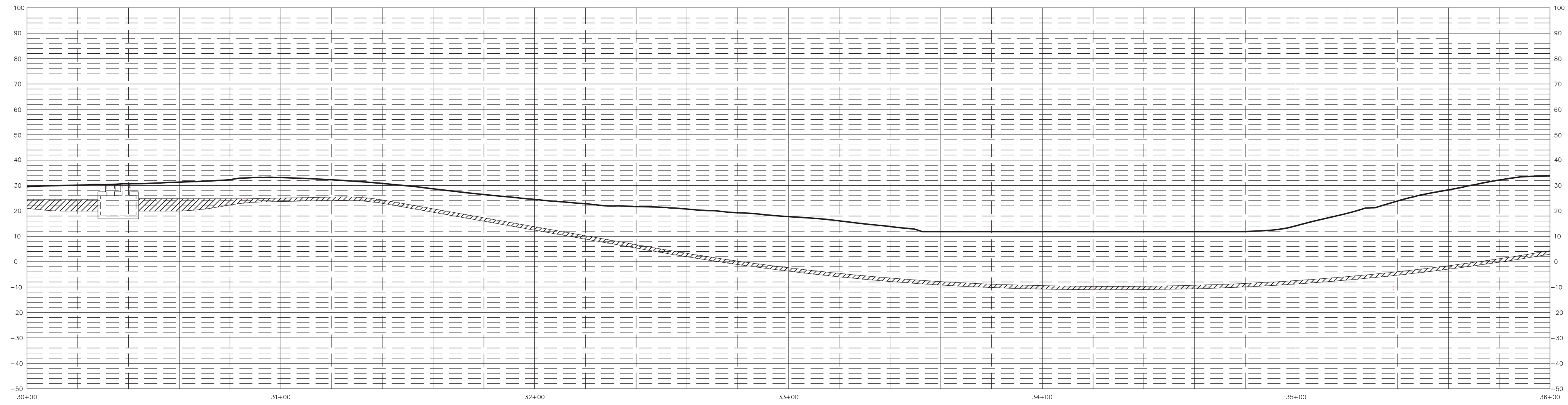
DRAWING NO. F103 | SMART NO. * | REVISION 0

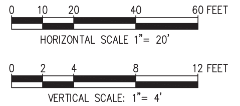
SYSTEM GRID NUMBER | CABINET NO. | FOLDER NO.



PLAN

SCALE: 1"=20'





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REV	DATE	DESCRIPTION	DRAWN	REVIEW	APPR
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PROJ. NO. L. 99900

ISSUE

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

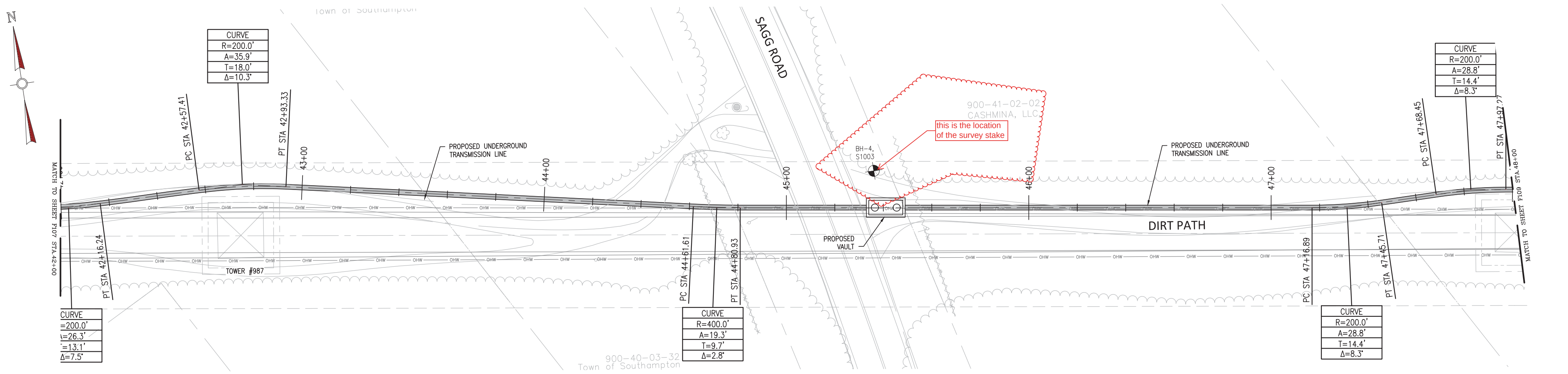
Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION

69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 6 OF 46

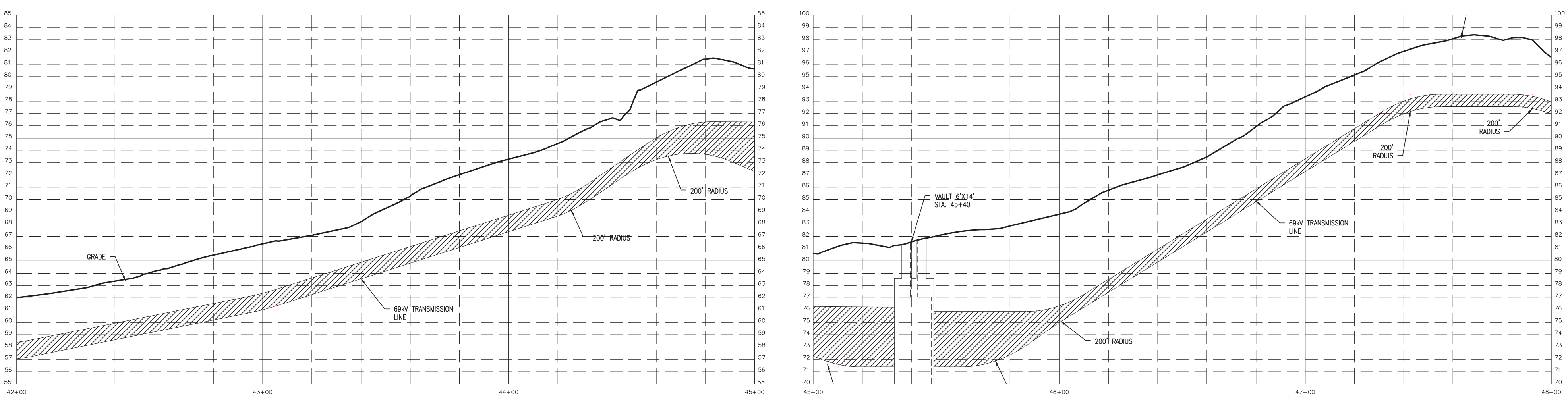
PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE: AS SHOWN
VENDOR DWG. NO.
DRAWING NO.: F106
SMART NO.: *
REVISION: 0
SYSTEM GRID NUMBER
CABINET NO.
FOLDER NO.



PLAN

SCALE: 1"=20'



HORIZONTAL SCALE 1"= 20'

VERTICAL SCALE: 1"= 4'

NOTES:

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PROJ. NO. L. 99900

ISSUE

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION

69KV TRANSMISSION LINE

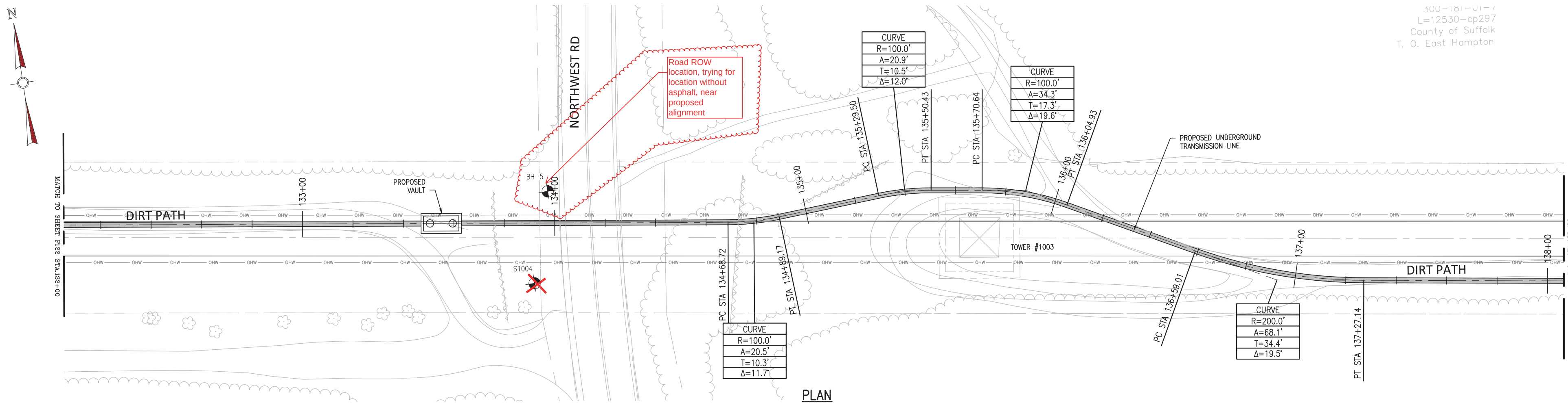
BRIDGEHAMPTON TO BUELL UNDERGROUND TRANSMISSION CIRCUIT PLAN & PROFILE SHEET 8 OF 46

PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN | VENDOR DWG. NO.

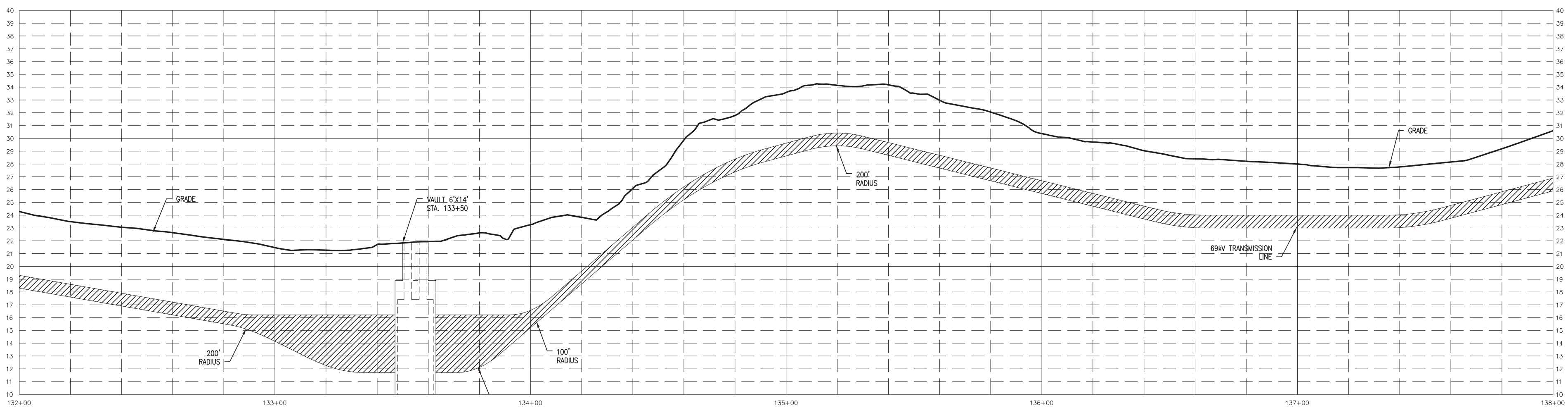
DRAWING NO. F108 | SMART NO. * | REVISION 0

SYSTEM GRID NUMBER | CABINET NO. | FOLDER NO.



PLAN

SCALE: 1"=20'



0 10 20 40 60 FEET

HORIZONTAL SCALE 1"= 20'

0 2 4 8 12 FEET

VERTICAL SCALE: 1"= 4'

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PROJ. NO. L 99900

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L-	ISSUED FOR 30% REVIEW	*	*	*	*

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION
69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL UNDERGROUND TRANSMISSION CIRCUIT PLAN & PROFILE SHEET 23 OF 46

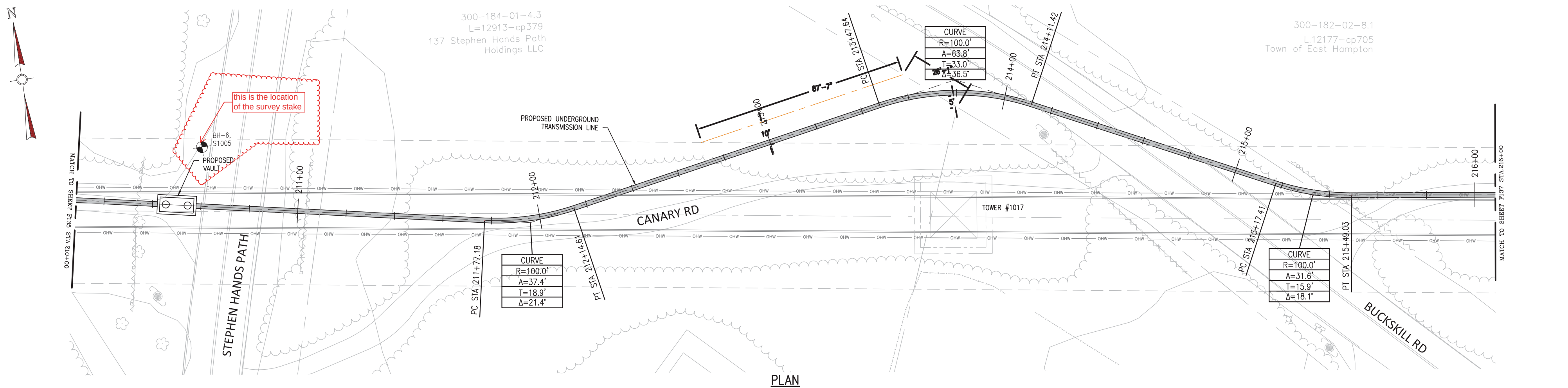
PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN

DRAWING NO. F123

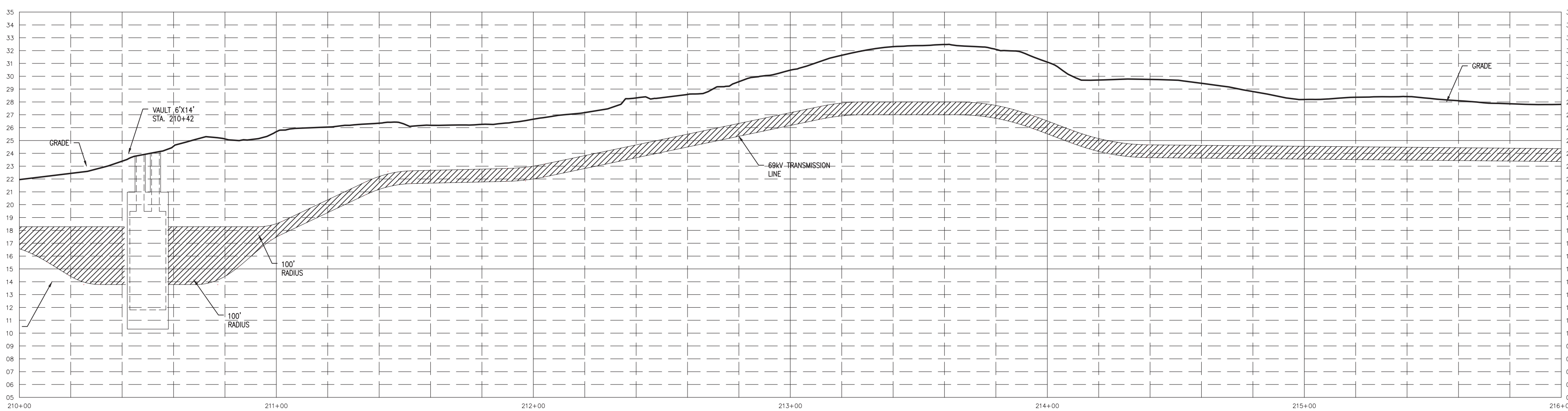
SMART NO. *

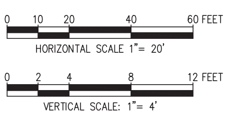
REVISION 0



PLAN

SCALE: 1"=20'





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PROJ. NO. L. 99900

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

ISSUE

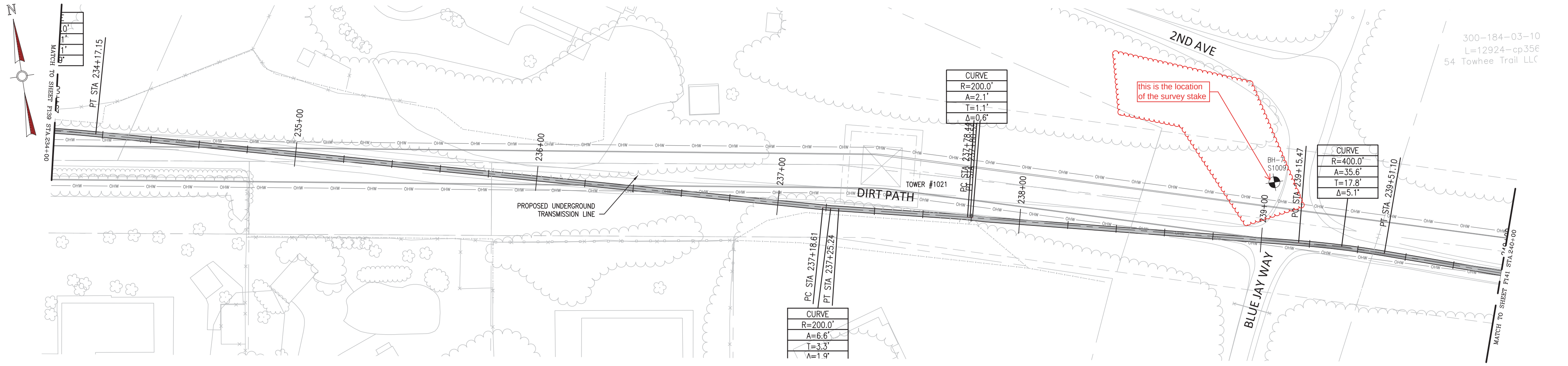
Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION

69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL UNDERGROUND TRANSMISSION CIRCUIT PLAN & PROFILE SHEET 36 OF 46

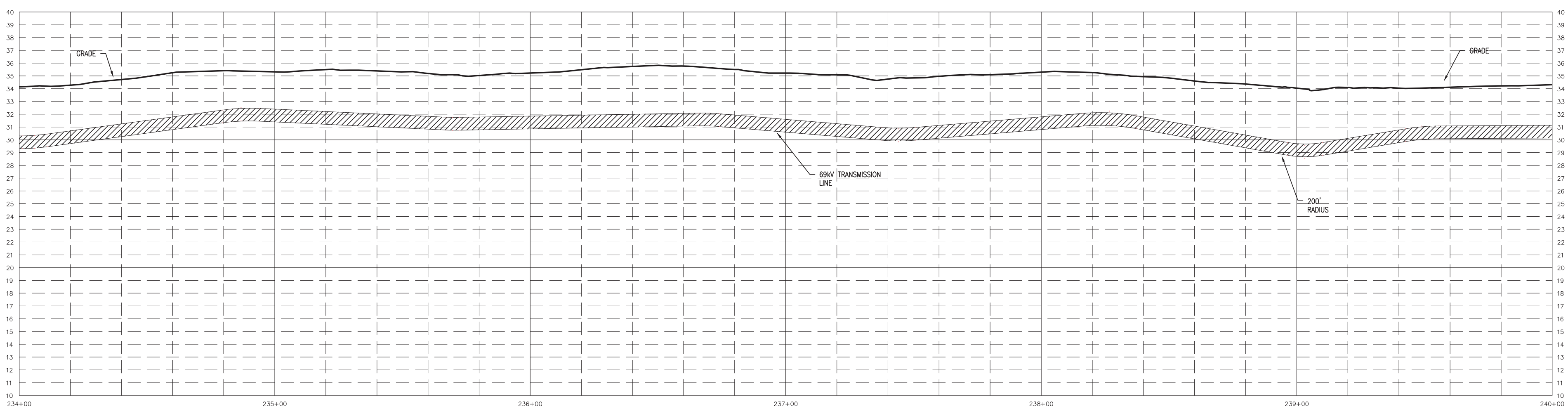
PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN
VENDOR DWG. NO.
DRAWING NO. F136
SMART NO. *
REVISION 0
SYSTEM GRID NUMBER
CABINET NO.
FOLDER NO.



PLAN

SCALE: 1"=20'



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PROJ. NO. L. 99900

NO.	DATE	W.O.	DESCRIPTION	DWN BY	CKD BY	REVIEWED	APPD
0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

ISSUE

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION

69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 40 OF 46

PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN

VENDOR DWG. NO.

DRAWING NO. F140

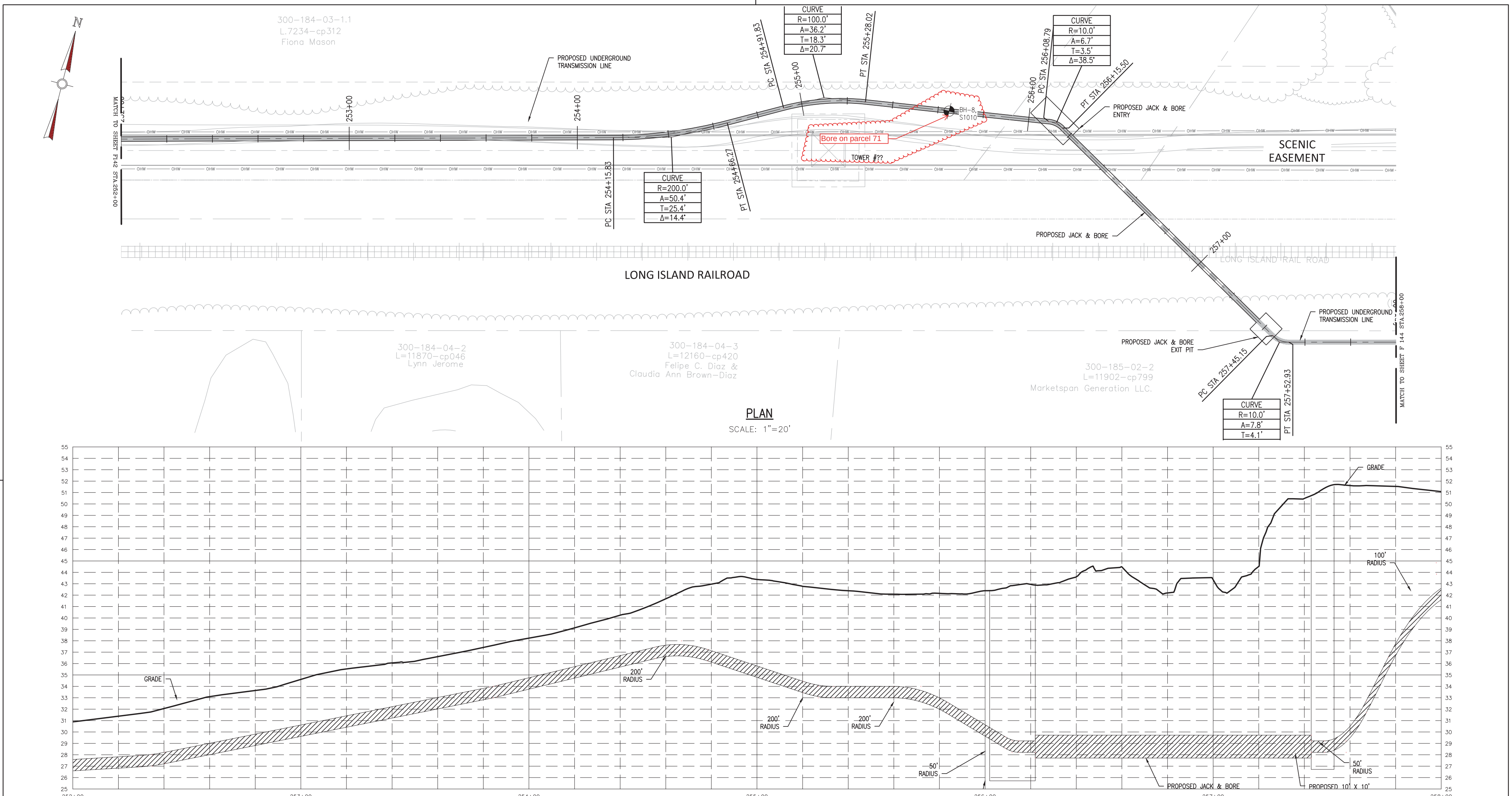
SMART NO. *

REVISION 0

SYSTEM GRID NUMBER

CABINET NO.

FOLDER NO.



0 10 20 40 60 FEET
HORIZONTAL SCALE 1"= 20'

0 2 4 8 12 FEET
VERTICAL SCALE: 1"= 4'

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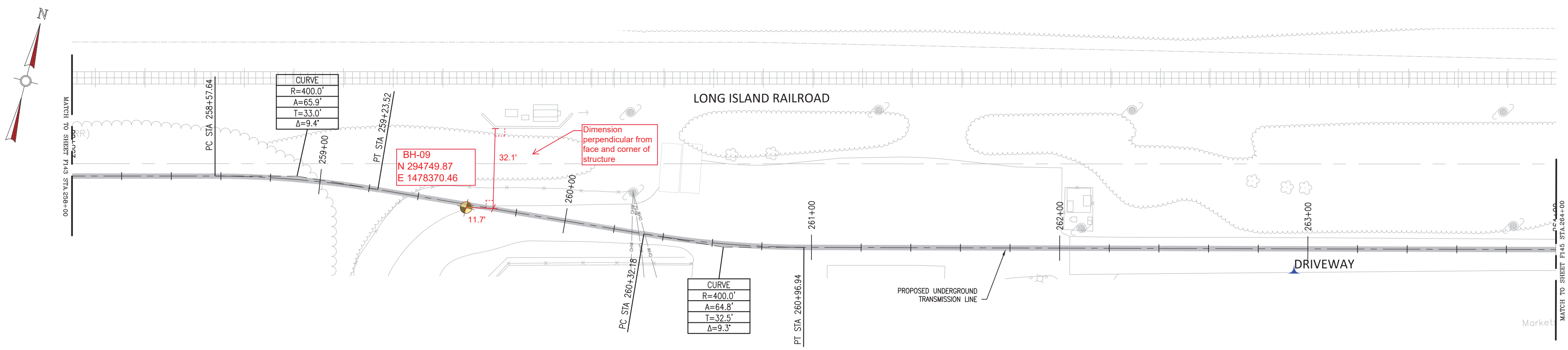
PROJ. NO. L 99900

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION
69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 43 OF 46

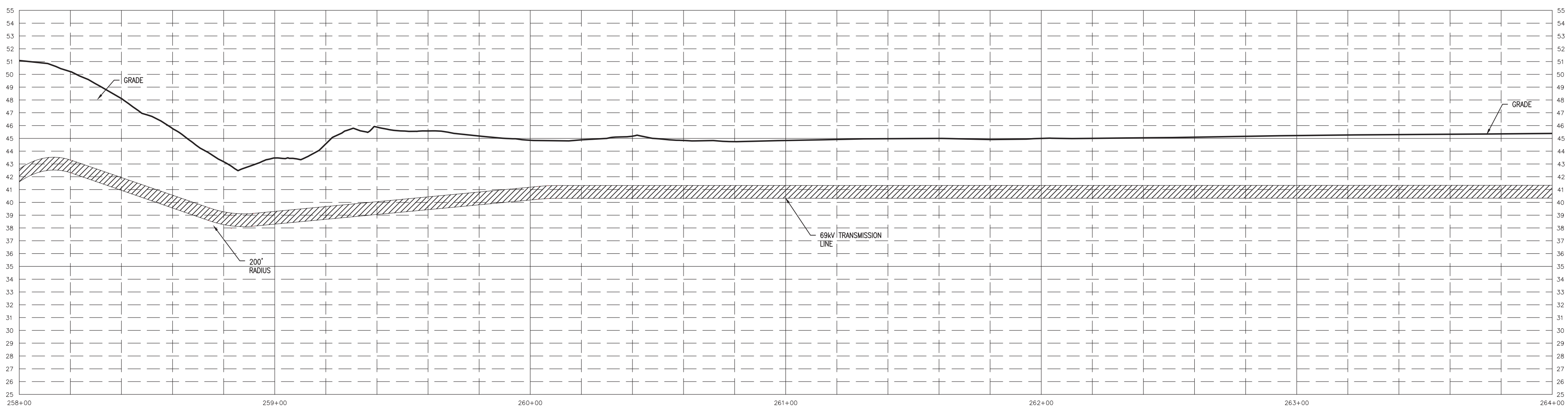
PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE AS SHOWN
DRAWING NO. F143
SMART NO. *
REVISION 0



PLAN

SCALE: 1"=20'



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0 10 20 40 60 FEET
HORIZONTAL SCALE 1"= 20'

0 2 4 8 12 FEET
VERTICAL SCALE: 1"= 4'

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PROJ. NO. L. 99900

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0	02/28/20	L*****	ISSUED FOR 30% REVIEW	*	*	*	*

Long Island Power Authority
BRIDGEHAMPTON TO BUELL SUBSTATION
69KV TRANSMISSION LINE

BRIDGEHAMPTON TO BUELL
UNDERGROUND TRANSMISSION CIRCUIT
PLAN & PROFILE SHEET 44 OF 46

PSEG LONG ISLAND
175 East Old Country Road
Hicksville, New York

SCALE: AS SHOWN
VENDOR DWG. NO.
DRAWING NO. F144
SMART NO. *
REVISION 0
SYSTEM GRID NUMBER
CABINET NO.
FOLDER NO.

APPENDIX C

SUBSURFACE INVESTIGATION LOGS

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Project: Subsurface Investigation
PSEG - L1 Bridgehampton 9R to Buell 9E Substations
Sag Harbor, New York

Boring Location: See Boring Location Plan
Offset approximately 50' southwest of original boring location due to conflict with buried utilities.

Start Date: 5/12/2020 Finish Date: 5/14/2020

Boring No.: BH-1 Sheet 1 of 4

Coordinates
Latitude ______
Longitude ______

Sampler Hammer
Weight: 140 lbs.
Fall: 30 in.
Hammer Type: Automatic

Ground Elev.: ______

Boring Advance By: HW (4") Casing/3 7/8" Wet Rotary

Groundwater Observations

Date	Time	Depth	Casing
5/12/2020	PM	*6.4'	9.0'
5/13/2020	PM	*22.3'	64.0'
5/14/2020	AM	42.4'	64.0'
5/14/2020	PM	*28.7'	64.0'
5/14/2020	PM	*17.2'	CAVED

Borehole caved at 25.7 feet. *May be affected by water utilized to advance the borehole.

CLASSIFICATION OF MATERIAL: f - fine; m - medium; c - coarse; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%

Depth	Method of Advance	Sample No.	Depth of Sample From	Depth of Sample To	Sample Type	Blows on Sampler per 6" 2" O.D. Sampler	Depth of Change	Classification of Material	Recovery (Inches)
0–3	CASING							Hand cleared to 3.0 feet and began sampling.	
3		1	3.0	5.0	SS	2 3 4 4		Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic) Encountered COBBLE fragments from 3.0 to 23.0 feet.	16
5		2	5.0	7.0	SS	4 11 14 18	5.5	Brown cmf SAND; little c+f GRAVEL; trace SILT (moist, non-plastic)	18
7		3	7.0	9.0	SS	4 13 11 12		Brown cmf SAND; little cf GRAVEL; trace SILT (moist, non-plastic)	10
9		4	9.0	11.0	SS	7 12 14 14		Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	10
11		5	11.0	13.0	SS	11 12 13 21		Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	14
13		6	13.0	15.0	SS	5 9 10 12		Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	7
17							17.0		
19		7	19.0	21.0	SS	7 4 4 7		Brownish-Reddish-Grey cmf SAND; little SILT; trace f GRAVEL (moist, non-plastic)	12
21		8	21.0	23.0	SS	8 8 11 12		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	14
24		9	24.0	26.0	SS	4 4 6 9		Light Brownish-Orangish-Grey cmf SAND; little SILT (moist,	10

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor: Bob Drake

Inspector: ______

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-1 Report No.: CD4827E-01-12-20

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
								non-plastic)	
26									
27							27.0		
28									
29		10	29.0	31.0	SS	WH 4 5 6		Black SILT; some f SAND (moist, non-plastic)	20
30									
31									
32									
33									
34		11	34.0	36.0	SS	1 5 7 12		Black SILT; some mf+ SAND (moist, non-plastic) w = 35.2%	24
35									
36									
37									
38									
39		12	39.0	41.0	SS	5 5 5 10		Black SILT; some f SAND (moist, non-plastic)	20
40									
41									
42									
43									
44		13	44.0	46.0	SS	4 8 12 10		Black and Brown cf SAND; some SILT; trace f GRAVEL (moist, non-plastic)	24
45									
46									
47							47.0		
48									
49		14	49.0	51.0	SS	10 13 21 19		Light Brown cmf SAND; trace SILT (moist, non-plastic)	18
50									
51									
52							52.0		
53								Encountered COBBLE fragments from 54.0 to 86.0 feet.	
54		15	54.0	56.0	SS	3 2 11 17		Reddish-Brown cmf SAND; some CLAY; little SILT; trace mf GRAVEL (moist, moderately plastic) w = 20.5% PL = 20, LL = 42, PI = 22	18
55									
56									
57							57.0		
58								Encountered COBBLE from 57.0 to 57.7 feet.	
59		16	59.0	60.4	SS	46 52 50/5"		Light Brown cmf SAND; some mf GRAVEL; trace SILT (moist, non-plastic)	10
60									
61									
62									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-1 | Report No.: CD4827E-01-12-20 | Sheet 3 of 4

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
63									
64		17	64.0	64.4	SS	50/5"		Rust Orange mf GRAVEL; trace cmf SAND; trace SILT (moist, non-plastic)	2
65									
66									
67							67.0		
68									
69		18	69.0	69.9	SS	38 50/5"		White mf GRAVEL; little cmf SAND; trace SILT (moist, non-plastic)	2
70									
71								Encountered COBBLE from 70.0 to 70.8 feet.	
72									
73									
74		19	74.0	76.0	SS	51 44 42 61		Greyish-White cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic) w = 13.2%	24
75									
76									
77								Advanced casing to 79.0 feet and began advancing 3 7/8" tri-cone roller bit wet rotary open hole within the borehole.	
78									
79	WET ROTARY	20	79.0	79.7	SS	37 50/3"		Greyish-White cmf SAND; and mf GRAVEL; trace SILT (moist, non-plastic)	2
80									
81									
82							82.0		
83									
84		21	84.0	85.9	SS	27 41 55 50/5"		Reddish-Brown cmf SAND; some CLAY; little SILT; trace f GRAVEL (moist, moderately plastic)	8
85									
86									
87							87.0		
88									
89		22	89.0	90.4	SS	28 49 50/5"		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	2
90									
91									
92									
93									
94		23	94.0	95.3	SS	23 42 50/4"		Light Brown mf SAND; trace SILT (moist, non-plastic)	4
95									
96									
97									
98									
99		24	99.0	101.0	SS	23 26 41 54		Light Brown SILT; some cmf+ SAND (moist, non-plastic)	10
100									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-1 | Report No.: CD4827E-01-12-20 | Sheet 4 of 4

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine; m - medium; c - course; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%)	RECOVERY (inches)
								w = 22.9%	
101							101.0	Boring terminated at 101.0 feet.	
102									
103								Notes:	
104								1. Borehole backfilled with on-site soils.	
105								2. A brass-lined 3" split spoon sampler was utilized to obtain samples S-8, S-19 and S-24. All other samples were collected with a 2" split spoon sampler.	
106									
107								3. Bulk sample BS-1 was collected from auger cuttings at a depth of 10.0 feet.	
108									
109									
110									
111									
112									
113									
114									
115									
116									
117									
118									
119									
120									
121									
122									
123									
124									
125									
126									
127									
128									
129									
130									
131									
132									
133									
134									
135									
136									
137									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Boring Location: See Boring Location Plan

Project: Subsurface Investigation

PSEG - L1 Bridgehampton 9R to Buell 9E Substations

Sag Harbor, New York

Start Date: 9/23/2020 Finish Date: 9/24/2020

Boring No.: BH-2 Sheet 1 of 4

Coordinates

Latitude

Longitude

Sampler Hammer

Weight: 140 lbs.

Fall: 30 in.

Hammer Type: Automatic

Ground Elev.:

Boring Advance By: HW (4") Casing/3 7/8" Wet Rotary

Groundwater Observations

Date	Time	Depth	Casing
9/23/2020	AM	*9.7'	9.0'
9/23/2020	PM	*11.1'	14.0'
9/24/2020	AM	*22.4'	14.0'
9/24/2020	PM	*22.9	14.0'
9/24/2020	PM	*22.8'	CAVED

Borehole caved at 101.6 feet. *May be affected by water utilized to advance the borehole.

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Recovery (Inches)
0-3	CASING							Hand cleared to 3.0 feet and began sampling.	
3		1	3.0	5.0	SS	5 6 7 6		Orange cmf SAND; little mf GRAVEL; little SILT (wet, non-plastic)	8
5		2	5.0	7.0	SS	4 4 3 7		Orange cmf SAND; little SILT; trace f GRAVEL (wet, non-plastic)	7
7		3	7.0	9.0	SS	4 5 7 5	9.0	Orangish-Brown cmf SAND; little SILT; trace f GRAVEL (wet, non-plastic)	6
9		4	9.0	11.0	SS	5 7 9 8		Brown cmf SAND; some cmf GRAVEL; little SILT (saturated, non-plastic)	9
11		5	11.0	13.0	SS	6 9 10 11		Brown cmf SAND; and mf GRAVEL; trace SILT (saturated, non-plastic) w = 7.4%	13
13		6	13.0	15.0	SS	5 7 6 7		Brown cmf SAND; little cmf GRAVEL; little SILT (wet, non-plastic)	9
14-19	WET ROTARY							Advanced casing to 14.0 feet and began advancing 3 7/8" tri-cone roller bit wet rotary open hole within the borehole.	
19		7	19.0	21.0	SS	5 5 9 9	22.0	Brown cmf SAND; little SILT; trace c GRAVEL (wet, non-plastic) COBBLE fragments in split spoon shoe	5
24		8	24.0	26.0	SS	10 10 20 16		Brown cmf SAND; little SILT; trace f GRAVEL; trace CLAY (wet,	7

ATL-LOG1 LL CD4827 POWER ENGINEERS - SAG HARBOR.GPJ ATL4-08.GDT 12/22/20

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor; Bob Drake

Inspector:

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-2 Report No.: CD4827E-01-12-20 Sheet 2 of 4

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
								very slightly plastic)	
26									
27									
28									
29		9	29.0	31.0	SS	7 8 12 9		Brown c-mf+ SAND; little SILT; trace mf GRAVEL (wet, non-plastic) w = 12.1% LL = NP, PL = NP, PI = NP	8
30									
31									
32							32.0		
33									
34		10	34.0	36.0	SS	9 9 10 12		Light Brown cmf SAND; little SILT (saturated, non-plastic)	7
35									
36									
37									
38									
39		11	39.0	41.0	SS	11 8 11 14		Light Brown cmf SAND; some mf GRAVEL; little SILT (saturated, non-plastic)	9
40									
41									
42									
43									
44		12	44.0	46.0	SS	8 7 7 12		Brown mf SAND; trace SILT (wet, non-plastic)	14
45									
46									
47									
48		13	48.0	50.0	SS	7 12 16 13		Brown cmf SAND; trace SILT (saturated, non-plastic)	8
49									
50		14	50.0	52.0	SS	14 24 29 28		Brown cmf SAND; trace SILT (saturated, non-plastic)	18
51									
52									
53									
54		15	54.0	56.0	SS	8 10 12 14		Light Brown cmf SAND; trace SILT (saturated, non-plastic)	10
55									
56									
57									
58									
59		16	59.0	61.0	SS	12 11 14 19		Light Brown cmf SAND; some f GRAVEL; little SILT (saturated, non-plastic)	17
60									
61									
62									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-2 Report No.: CD4827E-01-12-20 Sheet 3 of 4

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
63									
64		17	64.0	66.0	SS	13 12 18 18		Light Brown cmf SAND; little SILT (saturated, non-plastic)	
69		18	69.0	71.0	SS	15 15 21 18		Brown cmf SAND; little mf GRAVEL; little SILT (saturated, non-plastic)	3
74		19	74.0	76.0	SS	12 7 8 9		Light Brown c-mf+ SAND; trace SILT (saturated, non-plastic) w = 25.5%	6
79		20	79.0	81.0	SS	9 11 10 9		Light Brown cmf SAND; some mf GRAVEL; little SILT (saturated, non-plastic)	5
82							82.0		
84		21	84.0	86.0	SS	15 17 18 20		Brown cmf SAND; little SILT; trace mf GRAVEL (wet, non-plastic)	10
89		22	89.0	91.0	SS	21 21 23 27		Brown c-mf+ SAND; little c+f GRAVEL; trace CLAY; trace SILT (wet, very slightly plastic) w = 13.8%	16
94		23	94.0	96.0	SS	22 24 24 25		Light Brown cmf SAND; trace SILT (wet, non-plastic)	20
98		24	98.0	100.0	SS	24 27 22 28		Brown cmf SAND; little SILT; little c+f GRAVEL (wet, non-plastic)	24
100									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-2 Report No.: CD4827E-01-12-20

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
100-102		25	100.0	102.0	SS	34 48 54 57	102.0	Brown cmf SAND; little SILT; little c+f GRAVEL (wet, non-plastic)	24

Boring terminated at 102.0 feet.

Notes:
1. Borehole backfilled with on-site soils.
2. A brass-lined 3" split spoon sampler was utilized to obtain samples S-14 and S-25. All other samples were collected with a 2" split spoon sampler.
3. Bulk sample BS-1 was collected from auger cuttings at a depth of 5.0 feet.

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client:	Power Engineers	Report No.:	CD4827E-01-12-20
Project:	Subsurface Investigation	Boring Location:	See Boring Location Plan
	PSEG - L1 Bridgehampton 9R to Buell 9E Substations		
	Sag Harbor, New York	Start Date: 9/22/2020	Finish Date: 9/23/2020

Boring No.: BH-3   Sheet 1 of 4

Coordinates
Latitude ______
Longitude ______

Sampler Hammer
Weight: 140 lbs.
Fall: 30 in.
Hammer Type: Automatic

Ground Elev.: ______

Boring Advance By: HW (4") Casing/3 7/8" Wet Rotary

Groundwater Observations

Date	Time	Depth	Casing
9/22/2020	AM	*1[illegible].[illegible]'	4.0'
9/22/2020	AM	*18.5'	9.0'
9/22/2020	PM	*18.6'	19.0'
9/23/2020	AM	*18.1'	19.0'
9/23/2020	AM	*19.4'	19.0'

[illegible].

CLASSIFICATION OF MATERIAL

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

Depth	Method of Advance	Sample No.	Depth of Sample From	Depth of Sample To	Sample Type	Blows on Sampler per 6" 2" O.D. Sampler	Depth of Change	Classification of Material	Recovery (Inches)
0-3	CASING							Hand cleared to 3.0 feet and began sampling.	
3		1	3.0	5.0	SS	7 9 10 7		Light Brown cmf SAND; trace f GRAVEL; trace SILT; trace ORGANIC MATERIAL (leaf) (moist, non-plastic)	17
5		2	5.0	7.0	SS	8 11 9 10		Light Brown cmf SAND; trace SILT (moist, non-plastic)	15
7		3	7.0	9.0	SS	6 6 7 13		Light Brown cmf SAND; little mf GRAVEL; trace SILT (moist, non-plastic)	16
9		4	9.0	11.0	SS	8 7 8 10		Brown cmf SAND; little SILT; trace f GRAVEL (wet, non-plastic)	11
11		5	11.0	13.0	SS	9 12 13 13	13.0	Light Brown c-mf SAND; some mf+ GRAVEL; trace SILT (wet, non-plastic) w = 9.8%	12
13		6	13.0	15.0	SS	5 5 6 6		Brown cmf SAND; little SILT; trace f GRAVEL (wet, non-plastic)	10
16								Advanced casing to 19.0 feet and began advancing 3 7/8" tri-cone roller bit wet rotary open hole within the borehole.	
18		7	18.0	20.0	SS	4 4 6 8		Brown cmf SAND; trace mf GRAVEL; trace SILT (saturated, non-plastic)	10
19	WET ROTARY							Encountered loss of drilling water return at 18.7 feet.	
20		8	20.0	22.0	SS	17 19 19 18	23.0	Brown cmf SAND; trace m GRAVEL; trace SILT (saturated, non-plastic)	10
23								Regained drilling water return at 23.6 feet.	
24		9	24.0	26.0	SS	1/12" 2 3		Light Brown cmf SAND; little SILT; trace f GRAVEL (saturated,	9

ATL-LOG1 LL CD4827 POWER ENGINEERS - SAG HARBOR.GPJ ATL4-08.GDT 12/22/20

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor; Bob Drake
Inspector: ______

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-3 Report No.: CD4827E-01-12-20

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
26								non-plastic)	
27							27.0		
28									
29		10	29.0	31.0	SS	3 4 4 6		Brown cmf SAND; little SILT (wet, non-plastic)	13
30									
31									
32									
33									
34		11	34.0	36.0	SS	3 4 7 6		Light Brown c-m+f SAND; trace SILT; trace f GRAVEL (wet, non-plastic) w = 16.5%	10
35									
36									
37									
38									
39		12	39.0	41.0	SS	4 6 7 9		Light Brown cmf SAND; little SILT (wet, non-plastic)	12
40									
41									
42							42.0		
43									
44		13	44.0	46.0	SS	6 8 10 11		Greyish-Brown mf SAND; some SILT; trace CLAY (wet, very plastic)	16
45									
46									
47									
48									
49		14	49.0	51.0	SS	8 6 9 12		Brown mf SAND; and SILT; trace CLAY (saturated, non-plastic)	15
50									
51									
52									
53									
54		15	54.0	56.0	SS	9 8 11 10		Brown c-mf+ SAND; and SILT (saturated, non-plastic) w = 21.6% LL = NP, PL = NP, PI = NP	12
55									
56									
57							57.0		
58									
59		16	59.0	61.0	SS	8 13 17 13		Light Brown mf SAND; little SILT (wet, non-plastic)	15
60									
61									
62									

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-3 Report No.: CD4827E-01-12-20

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	RECOVERY (inches)
64		17	64.0	66.0	SS	9 11 15 14		Brown cmf SAND; little SILT; trace CLAY (wet, very slightly plastic)	13
69		18	69.0	71.0	SS	10 10 18 20		Brown mf SAND; little SILT (wet, non-plastic)	15
73		19	73.0	75.0	SS	11 10 15 14		Light Brown mf SAND; little SILT (wet, non-plastic)	12
75		20	75.0	77.0	SS	21 27 35 36		Light Brown mf SAND; little SILT (wet, non-plastic)	24
78							78.0		
79		21	79.0	81.0	SS	12 17 24 24		Greyish-Brown cmf SAND; little SILT; little CLAY (wet, slightly plastic)	5
84		22	84.0	86.0	SS	10 15 22 23		Greyish-Brown c-mf+ SAND; little SILT; little CLAY; little mf GRAVEL (saturated, slightly plastic) w = 19.2%	13
89		23	89.0	91.0	SS	11 16 26 24		Light Brown mf SAND; little SILT; trace CLAY (wet, very slightly plastic)	16
94		24	94.0	96.0	SS	12 10 14 15		Greyish-Brown cmf SAND; and cmf GRAVEL; little SILT; trace CLAY (saturated, very slightly plastic)	3
99		25	99.0	101.0	SS	15 11 12 12		Greyish-Brown cmf SAND; little SILT; trace f GRAVEL (saturated,	4

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-3 Report No.: CD4827E-01-12-20

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine; m - medium; c - course; and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%)	RECOVERY (inches)
101							101.0	non-plastic)	
102								Boring terminated at 101.0 feet.	
103–137									

Notes:
1. Borehole backfilled with on-site soils.
2. A brass-lined 3" split spoon sampler was utilized to obtain samples S-8 and S-20. All other samples were collected with a 2" split spoon sampler.
3. Bulk sample BS-1 was collected from auger cuttings at a depth of 10.0 feet.

ATL-LOG1 LL CD4827 POWER ENGINEERS - SAG HARBOR.GPJ ATL4-08.GDT 12/22/20

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Boring Location: See Boring Location Plan

Project: Subsurface Investigation
PSEG - L1 Bridgehampton 9R to Buell 9E Substations
Sag Harbor, New York

Start Date: 5/19/2020 Finish Date: 5/19/2020

Boring No.: BH-4 Sheet 1 of 1

Groundwater Observations

Date	Time	Depth	Casing

Coordinates
Latitude
Longitude

Sampler Hammer
Weight: 140 lbs.
Fall: 30 in.
Hammer Type: Automatic

Ground Elev.:

Boring Advance By: 4 1/4" Auger

Based on the driller's observation, subsurface water was not encountered during borehole advancement.

CLASSIFICATION OF MATERIAL

f - fine; m - medium; c - coarse

and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
0–2	AUGER	1	0.0	2.0	SS	2 4 4 6		Brown cmf SAND; trace f GRAVEL; trace SILT; trace ORGANIC MATERIAL (roots, wood fragments) (moist, non-plastic) Encountered COBBLE fragments from surface to boring termination.	20
2–4		2	2.0	4.0	SS	3 3 5 8	4.0	Brownish-Orange cmf SAND; trace f GRAVEL; trace SILT; trace ORGANIC MATERIAL (wood fragments) (moist, non-plastic)	10
4–6		3	4.0	6.0	SS	2 3 2 4		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	12
6–8		4	6.0	8.0	SS	4 5 6 9		Light Brown cmf SAND; little c+f GRAVEL; trace SILT (moist, non-plastic)	6
8–10		5	8.0	10.0	SS	9 8 6 6		Light Brown cmf SAND; some c+mf GRAVEL; trace SILT (moist, non-plastic)	18
10–12		6	10.0	12.0	SS	6 5 6 8		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic) w = 5.3%	10
12–14		7	12.0	14.0	SS	9 8 6 6		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	20
14–16		8	14.0	16.0	SS	5 7 11 10	16.0	Light Brown cmf SAND; little c+f GRAVEL; trace SILT (moist, non-plastic)	18

Boring terminated at 16.0 feet.

Notes:
1. Borehole backfilled with on-site soils.
2. Bulk samples BS-1 and BS-2 were collected from auger cuttings at depths of 5.0 and 10.0 feet, respectively.

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor: Bob Drake

Inspector:

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Boring Location: See Boring Location Plan

Project: Subsurface Investigation

PSEG - L1 Bridgehampton 9R to Buell 9E Substations

Sag Harbor, New York

Offset from original boring location 2.0' East due to proximity to the road and 1.0' West due to trees.

Start Date: 5/14/2020 Finish Date: 5/14/2020

Boring No.: BH-5 Sheet 1 of 1

Groundwater Observations

Date	Time	Depth	Casing

Coordinates

Latitude

Longitude

Sampler Hammer

Weight: 140 lbs.

Fall: 30 in.

Hammer Type: Automatic

Ground Elev.:

Boring Advance By: 4 1/4" Auger

Based on the driller's observation, subsurface water was not encountered during borehole advancement.

CLASSIFICATION OF MATERIAL

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
0-2	AUGER	1	0.0	2.0	SS	1 1 1 2		Light Brownish-Yellow mf SAND; trace SILT (moist, non-plastic)	14
2-4		2	2.0	4.0	SS	2 2 2 4		Light Brownish-Yellow mf SAND; trace mf GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	11
4-6		3	4.0	6.0	SS	2 3 3 4		Light Brownish-Yellow mf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	20
6-8		4	6.0	8.0	SS	3 4 3 3	8.0	Light Brownish-Yellow mf SAND; trace f GRAVEL; trace SILT; trace ORGANIC MATERIAL (wood fragments) (moist, non-plastic)	16
8-10		5	8.0	10.0	SS	3 4 6 8		Light Brownish-Yellow mf SAND; trace SILT (moist, non-plastic)	18
10-12		6	10.0	12.0	SS	8 7 9 8		Light Brownish-Yellow mf SAND; trace SILT (moist, non-plastic)	16
12-14		7	12.0	14.0	SS	3 5 6 7		Light Brownish-Yellow f SAND; trace SILT (moist, non-plastic)	20
14-16		8	14.0	16.0	SS	5 7 10 11	16.0	Light Brown f SAND; trace mf GRAVEL; trace SILT (moist, non-plastic)	20
16-25								Boring terminated at 16.0 feet.	

Notes:

1. Borehole backfilled with on-site soils.
2. Bulk samples BS-1 and BS-2 were collected from auger cuttings at depths of 5.0 and 10.0 feet, respectively.

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor: Bob Drake

Inspector:

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: **CD4827E-01-12-20**

Client: **Power Engineers**

Project: **Subsurface Investigation**
PSEG - L1 Bridgehampton 9R to Buell 9E Substations
Sag Harbor, New York

Boring Location: **See Boring Location Plan**
Offset 3.0' North of original boring location due to proximity of trees.

Start Date: **5/15/2020** Finish Date: **5/15/2020**

Boring No.: **BH-6** Sheet **1** of **1**

Coordinates
Latitude ______
Longitude ______

Sampler Hammer
Weight: **140** lbs.
Fall: **30** in.
Hammer Type: **Automatic**

Ground Elev.: ______

Boring Advance By: **4 1/4" Auger**

Groundwater Observations

Date	Time	Depth	Casing

Based on the driller's observation, subsurface water was not encountered during borehole advancement.

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Recovery (Inches)
0–2	AUGER	1	0.0	2.0	SS	2 3 2 4		Light Brown mf SAND; trace f GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	18
2–4		2	2.0	4.0	SS	3 4 7 8		Light Brown f SAND; little SILT (moist, non-plastic)	19
4–6		3	4.0	6.0	SS	2 1 1 2	6.5	Light Brown f SAND; some SILT (moist, non-plastic) w = 11.3%	14
6–8		4	6.0	8.0	SS	2 11 28 21		Light Brown cmf SAND; little f GRAVEL; trace SILT (moist, non-plastic)	18
8–10		5	8.0	10.0	SS	5 7 13 18		Encountered COBBLE fragments from 6.0 feet to boring termination.	15
10–12		6	10.0	12.0	SS	19 17 21 24	12.0	Light Brown cmf SAND; trace mf GRAVEL; trace SILT (moist, non-plastic) Rust Orange cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	24
12–14		7	12.0	14.0	SS	3 6 8 9		Light Brownish-Orange cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	12
14–16		8	14.0	16.0	SS	4 7 6 5	16.0	Light Brownish-Orange cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	13
16–25								Boring terminated at 16.0 feet. Notes: 1. Borehole backfilled with on-site soils. 2. Bulk samples BS-1and BS-2 were collected from auger cuttings at depths of 5.0 and 10.0 feet, respectively.	

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: **Scott McGregor: Bob Drake**

Inspector: ______

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Boring Location: See Boring Location Plan

Project: Subsurface Investigation
PSEG - L1 Bridgehampton 9R to Buell 9E Substations
Sag Harbor, New York

Start Date: 5/19/2020 Finish Date: 5/19/2020

Boring No.: BH-7 Sheet 1 of 1

Groundwater Observations

Date	Time	Depth	Casing

Coordinates
Latitude ______
Longitude ______

Sampler Hammer
Weight: 140 lbs.
Fall: 30 in.
Hammer Type: Automatic

Ground Elev.: ______

Boring Advance By: 4 1/4" Auger

Based on the driller's observation, subsurface water was not encountered during borehole advancement.

CLASSIFICATION OF MATERIAL

f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	Recovery (Inches)
0-2	AUGER	1	0.0	2.0	SS	1 1 2 3		Light Brownish-Orange cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	16
2-4		2	2.0	4.0	SS	2 3 6 8		Light Brown cmf SAND; trace mf GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	12
4-6		3	4.0	6.0	SS	1 2 4 6	6.0	Light Brown cmf SAND; trace mf GRAVEL; trace SILT (moist, non-plastic)	14
6-8		4	6.0	8.0	SS	7 6 10 13		Light Brown cmf SAND; little mf GRAVEL; trace SILT (moist, non-plastic)	12
8-10		5	8.0	10.0	SS	3 5 5 6		Light Brown cmf SAND; little cmf GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	16
10-12		6	10.0	12.0	SS	5 11 24 22		Light Brown cmf SAND; little mf GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	6
12-14		7	12.0	14.0	SS	9 9 7 9		Light Brownish-Orange cmf SAND; little mf GRAVEL; trace SILT (moist, non-plastic) COBBLE Fragments	14
14-16		8	14.0	16.0	SS	13 20 17 18	16.0	Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	16
16-25								Boring terminated at 16.0 feet.	

Notes:
1. Borehole backfilled with on-site soils.
2. Bulk samples BS-1 and BS-2 were collected from auger cuttings at depths of 5.0 and 10.0 feet, respectively.

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor: Bob Drake

Inspector: ______

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Client:	Power Engineers	Report No.:	CD4827E-01-12-20
Project:	Subsurface Investigation	Boring Location:	See Boring Location Plan
	PSEG - L1 Bridgehampton 9R to Buell 9E Substations		
	Sag Harbor, New York	Start Date: 5/19/2020	Finish Date: 5/19/2020

Boring No.: BH-8   Sheet 1 of 2

Coordinates
Latitude ____
Longitude ____

Sampler Hammer
Weight: 140 lbs.
Fall: 30 in.
Hammer Type: Automatic

Ground Elev.: ____

Boring Advance By: 3.75" Casing

Groundwater Observations

Date	Time	Depth	Casing
5/19/2020	PM	DRY	39.0'
5/19/2020	PM	DRY	CAVED

Borehole caved at 34.3 feet.

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Recovery (Inches)
0-2	CASING	1	0.0	2.0	SS	WH 1 1/12"	0.3	4" TOPSOIL & ORGANIC MATERIAL Light Brown mf SAND; trace SILT; trace ORGANIC MATERIAL (wood fragments) (moist, non-plastic)	8
2-4		2	2.0	4.0	SS	1 1 2 3		Light Brown f SAND; little SILT (moist, non-plastic)	18
4-6		3	4.0	6.0	SS	2 3 5 6	6.0	Light Brown f SAND; little SILT; trace ORGANIC MATERIAL (wood fragments) (moist, non-plastic)	10
6-8		4	6.0	8.0	SS	5 6 8 11	8.0	Greyish-Brown mf SAND; little SILT; trace mf GRAVEL (moist, non-plastic)	19
8-10		5	8.0	10.0	SS	3 8 11 11		Light Brown cmf SAND; some mf GRAVEL; trace SILT (moist, non-plastic) w = 4.4% Encountered COBBLE fragments from 6.0 feet to boring termination.	10
10-12		6	10.0	12.0	SS	8 9 12 13		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	16
12-14		7	12.0	14.0	SS	4 4 7 6		Light Brown cmf SAND; trace f GRAVEL; trace SILT; trace ORGANIC MATERIAL (wood fragments) (moist, non-plastic)	15
14-16		8	14.0	16.0	SS	4 6 6 9		Light Brown cmf SAND; little mf GRAVEL; trace SILT (moist, non-plastic)	12
19-21		9	19.0	21.0	SS	14 33 16 15		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	22
24-25		10	24.0	26.0	SS	7 4 13 9		Light Brown cmf SAND; little mf GRAVEL; trace SILT (moist,	14

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor: Bob Drake

Inspector: ____

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: BH-8 | Report No.: CD4827E-01-12-20 | Sheet 2 of 2

f - fine, m - medium, c - course; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (inches)
								non-plastic)	
29		11	29.0	31.0	SS	6 6 7 8		Light Brownish-Orange cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	14
34		12	34.0	36.0	SS	7 8 8 11		Light Brown cmf SAND; trace f GRAVEL; trace SILT (moist, non-plastic)	17
39		13	39.0	41.0	SS	6 4 19 11		Light Brown cmf SAND; some c+f GRAVEL; trace SILT (moist, non-plastic)	8
41							41.0	Boring terminated at 41.0 feet.	

Notes:
1. Borehole backfilled with on-site soils.
2. A brass-lined 3" split spoon sampler was utilized to obtain sample S-9. All other samples were collected with a 2" split spoon sampler.
2. Bulk sample BS-1 was collected from auger cuttings at a depth of 10.0 feet.

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Report No.: CD4827E-01-12-20

Client: Power Engineers

Boring Location: See Boring Location Plan

Project: Subsurface Investigation

PSEG - L1 Bridgehampton 9R to Buell 9E Substations

Sag Harbor, New York

Start Date: 11/12/2020 Finish Date: 11/12/2020

Boring No.: BH-9 Sheet 1 of 2

Coordinates

Latitude

Longitude

Sampler Hammer

Weight: 140 lbs.

Fall: 30 in.

Hammer Type: Automatic

Ground Elev.:

Boring Advance By: HW (4") Casing/3 7/8" Wet Rotary

Groundwater Observations

Date	Time	Depth	Casing
11/12/2020	AM	17.0'	18.0'
11/12/2020	PM	*22.5'	18.0'
11/12/2020	PM	*24.7'	18.0'
11/12/2020	PM	DRY	CAVED

Borehole caved at 20.0 feet. *May be affected by water utilized to advance the borehole.

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL (f - fine, m - medium, c - coarse; and - 35-50%, some - 20-35%, little - 10-20%, trace - 0-10%)	Recovery (Inches)
0–5								Hand Cleared to 5.0 feet and began sampling.	
5	CASING	1	5.0	7.0	SS	3 8 5 4	7.0	Black and Brown cmf GRAVEL; some cmf SAND; little SILT (moist, non-plastic)	14
7		2	7.0	9.0	SS	13 6 24 26		Light Brown c-m+f SAND; trace SILT; trace f GRAVEL (moist, non-plastic) w = 15.8%	14
9		3	9.0	11.0	SS	10 14 20 19		Light Brown cmf SAND; some SILT; trace f GRAVEL (wet, non-plastic)	10
11		4	11.0	13.0	SS	8 11 15 20	13.0	Light Brown cmf SAND; little SILT; trace f GRAVEL (wet, non-plastic)	6
13		5	13.0	15.0	SS	10 9 21 18		Orange cmf SAND; some c+f GRAVEL; little SILT (wet, non-plastic) w = 12.0%	8
16								Advanced casing to 18.0 feet and began advancing 3 7/8" tri-cone roller bit wet rotary open hole within the borehole.	
18	WET ROTARY	6	18.0	20.0	SS	11 12 25 26		Light Brown c-m+f SAND; little mf+ GRAVEL; trace SILT (wet, non-plastic)	14
20		7	20.0	22.0	SS	12 12 15 15	23.0	Light Brown c-m+f SAND; little mf+ GRAVEL; trace SILT (wet, non-plastic) w = 14.2%, PL = NP, LL = NP, PI = NP	6
24		8	24.0	26.0	SS	11 10 11 12		Light Brown cmf SAND; some SILT (wet, non-plastic)	6

SS Split Spoon Sample
NX Rock Core
SH Undisturbed Sample (Shelby Tube)
Estimated Groundwater

Drillers: Scott McGregor; Kevin Jones

Inspector:

ATLANTIC TESTING LABORATORIES, Limited

Subsurface Investigation

Boring No.: **BH-9** Report No.: **CD4827E-01-12-20**

f - fine; m - medium; c - course

and - 35-50%; some - 20-35%; little - 10-20%; trace - 0-10%

DEPTH	METHOD OF ADVANCE	SAMPLE NO.	DEPTH OF SAMPLE From	DEPTH OF SAMPLE To	SAMPLE TYPE	BLOWS ON SAMPLER PER 6" 2" O.D. SAMPLER	DEPTH OF CHANGE	CLASSIFICATION OF MATERIAL	RECOVERY (inches)
26									
27									
28									
29		9	29.0	31.0	SS	10 11 14 15		Light Brown cmf SAND; some SILT; little f GRAVEL (wet, non-plastic)	8
30									
31									
32									
33									
34		10	34.0	36.0	SS	14 12 24 29		Light Brown cmf SAND; some SILT; trace f GRAVEL; trace CLAY (wet, very slightly plastic) w = 12.4%	10
35									
36									
37									
38		11	38.0	40.0	SS	19 19 23 27		Light Brown cmf SAND; some SILT; trace f GRAVEL; trace CLAY (wet, very slightly plastic)	16
39							40.0		
40		12	40.0	42.0	SS	20 23 19 24		Orangish-Brown cmf SAND; and cmf GRAVEL; little SILT (wet, non-plastic)	10
41							42.0		
42									
43								Boring terminated at 42.0 feet.	
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									
61									
62									

Notes:

1. Borehole backfilled with on-site soils.
2. A brass-lined 3" split spoon sampler was utilized to obtain samples S-6 and S-11. All other samples were collected with a 2" split spoon sampler.
3. Bulk sample BS-1 was collected from auger cuttings at a depth of 10.0 feet.

APPENDIX D

GEOTECHNICAL DESIGN PARAMETERS SUMMARY TABLES

Appendix D
Geotechnical Design Parameters Summary Tables
Proposed 69kV UG Transmission Circuits
Bridgehampton 9R to Buell 9E Substations
Sag Harbor to East Hampton, Suffolk County, New York
ATL No. CD4827E-01-05-20 Rev. 1

Soil Boring BH-1

Soil Layer	Description of Material	General USCS Symbol	General Soil Type	Depth to Bottom of Layer (ft)	Moist Unit Weight (pcf)	Effective Friction Angle, Ø (deg)	Cohesion (ksf)	Estimated Average Elastic Modulus, E_s (ksi)
1	Loose to M. Compact SAND	SP/SM	Cohesionless	27	115	28	0	3.5
2	M. Compact SILT and fine SAND	SM/ML	Cohesionless	52	110	26	0	1
3	M. Compact CLAYEY SAND	SC	Cohesive	57	115	24	1.5	1
4	V. Compact SAND and GRAVEL	SM/SP GM/GP	Cohesionless	82	130	36	0	10
5	V. Compact CLAYEY SAND	SC	Cohesive	87	120	30	3.5	4
6	V. Compact SAND	SM	Cohesionless	101 (1)	120	32	0	7.5

(1) Boring termination depth

Subsurface Water Observations

Date	Time	Freestanding Water Depth (ft)	Notes
5/12/20	AM	6.4 (1)	Freestanding water first recorded
5/12/20-5/14/20	AM/PM	22.3 – 42.4 (1)	Freestanding water depths during borehole advancement
5/14/20	PM	17.2 (1)	Freestanding water depth at the completion of drilling (2)

(1) May be affected by water utilized to advance the borehole
(2) Borehole caved at 25.7 feet

Appendix D
Geotechnical Design Parameters Summary Tables
Proposed 69kV UG Transmission Circuits
Bridgehampton 9R to Buell 9E Substations
Sag Harbor to East Hampton, Suffolk County, New York
ATL No. CD4827E-01-05-20 Rev. 1

Soil Boring BH-2

Soil Layer	Description of Material	General USCS Symbol	General Soil Type	Depth to Bottom of Layer (ft)	Moist Unit Weight (pcf)	Effective Friction Angle, Ø (deg)	Cohesion (ksf)	Estimated Average Elastic Modulus, E_s (ksi)
1	Loose to M. Compact GRAVELLY SAND	SW/SM	Cohesionless	22	115	30	0	2.75
2	M. Compact SILTY SAND	SM	Cohesionless	82	115	28	0	2.5
3	Compact SILTY SAND with GRAVEL	SM	Cohesionless	102 (1)	125	32	0	3.5

(1) Boring termination depth

Subsurface Water Observations

Date	Time	Freestanding Water Depth (ft)	Notes
9/23/20	PM	9.7 (1)	Freestanding water first recorded
9/23/20-9/24/20	AM/PM	11.1 – 22.9 (1)	Freestanding water depths during borehole advancement
9/24/20	PM	22.8 (1)	Freestanding water depth at the completion of drilling (2)

(1) May be affected by water utilized to advance the borehole
(2) Borehole caved at 101.6 feet

Appendix D
Geotechnical Design Parameters Summary Tables
Proposed 69kV UG Transmission Circuits
Bridgehampton 9R to Buell 9E Substations
Sag Harbor to East Hampton, Suffolk County, New York
ATL No. CD4827E-01-05-20 Rev. 1

Soil Boring BH-3

Soil Layer	Description of Material	General USCS Symbol	General Soil Type	Depth to Bottom of Layer (ft)	Moist Unit Weight (pcf)	Effective Friction Angle, Ø (deg)	Cohesion (ksf)	Estimated Average Elastic Modulus, E_s (ksi)
1	Loose to M. Compact SILTY SAND	SM	Cohesionless	42	115	28	0	2
2	M. Compact to Compact SILTY fine SAND	SM	Cohesionless	78	115	28	0	2
3	M. Compact to Compact SILTY SAND with CLAY	SM-SC	Cohesionless	101 (1)	120	30	0	2.5

(1) Boring termination depth

Subsurface Water Observations

Date	Time	Freestanding Water Depth (ft)	Notes
9/22/20	AM	10.8 (1)	Freestanding water first recorded
9/22/20-9/23/20	AM/PM	18.1 – 18.6 (1)	Freestanding water depth during borehole advancement
9/23/20	AM	19.4 (1)	Freestanding water depth at the completion of drilling

(1) May be affected by water utilized to advance the borehole

APPENDIX E

LABORATORY TEST REPORTS

SPLIT SPOON SAMPLES

ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS
ASTM D 2216

PROJECT INFORMATION

Client: Power Engineers, Inc.
Project: Proposed 69 KV (UG) Transmission Cable Route
Bridgehamton SS to Buell SS
Sag Harbor, Sufflok County, New York

ATL Report No.: CD4827SL-01-07-20
Report Date: July 10, 2020
Date Received: July 6, 2020

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
BH-1	S-11	34.0-36.0	35.2
	S-15 [1]	54.0-56.0	20.5
	S-19 [1]	74.0-76.0	13.2
	S-24 [1]	99.0-101.0	22.9
BH-4	S-6 [1]	10.0-12.0	5.3
BH-6	S-3	4.0-6.0	11.3
BH-8	S-5 [1]	8.0-10.0	4.4

REMARKS

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By: Judy Amas

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS
ASTM D 2216

PROJECT INFORMATION

Client: Power Engineers, Inc.
Project: Proposed 69 KV (UG) Transmission Cable Route
Bridgehamton SS to Buell SS
Sufflok County, New York

ATL Report No.: CD4827SL-02-10-20
Report Date: October 22, 2020
Date Received: October 19, 2020

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
BH-2	S-5 [1]	11.0-13.0	7.4
	S-9 [1]	29.0-31.0	12.1
	S-19	74.0-76.0	25.5
	S-22 [1]	89.0-91.0	13.8
BH-3	S-5 [1]	11.0-13.0	9.8
	S-11 [1]	34.0-36.0	16.5
	S-15	54.0-56.0	21.6
	S-22 [1]	84.0-86.0	19.2

REMARKS

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By: Judy Amas

Date: 10/22/20

ATLANTIC TESTING LABORATORIES

WBE certified company

LABORATORY DETERMINATION OF MOISTURE CONTENT OF SOILS
ASTM D 2216

PROJECT INFORMATION

Client: Power Engineers, Inc.
Project: Proposed 69 KV (UG) Transmission Cable Route
Bridgehamton SS to Buell SS
Sag Harbor, Sufflok County, New York

ATL Report No.: CD4827SL-03-12-20
Report Date: December 3, 2020
Date Received: December 1, 2020

TEST DATA

Boring No.	Sample No.	Depth (ft)	Moisture Content (%)
BH-9	S-2	7.0-9.0	15.8
	S-5 [1]	13.0-15.0	12.0
	S-7 [1]	20.0-22.0	14.2
	S-10 [1]	34.0-36.0	12.4

REMARKS

1. Sample mass was less than the minimum mass outlined in the referenced test method.

Reviewed By: ______________________ Date: 12/03/20

ATLANTIC TESTING LABORATORIES

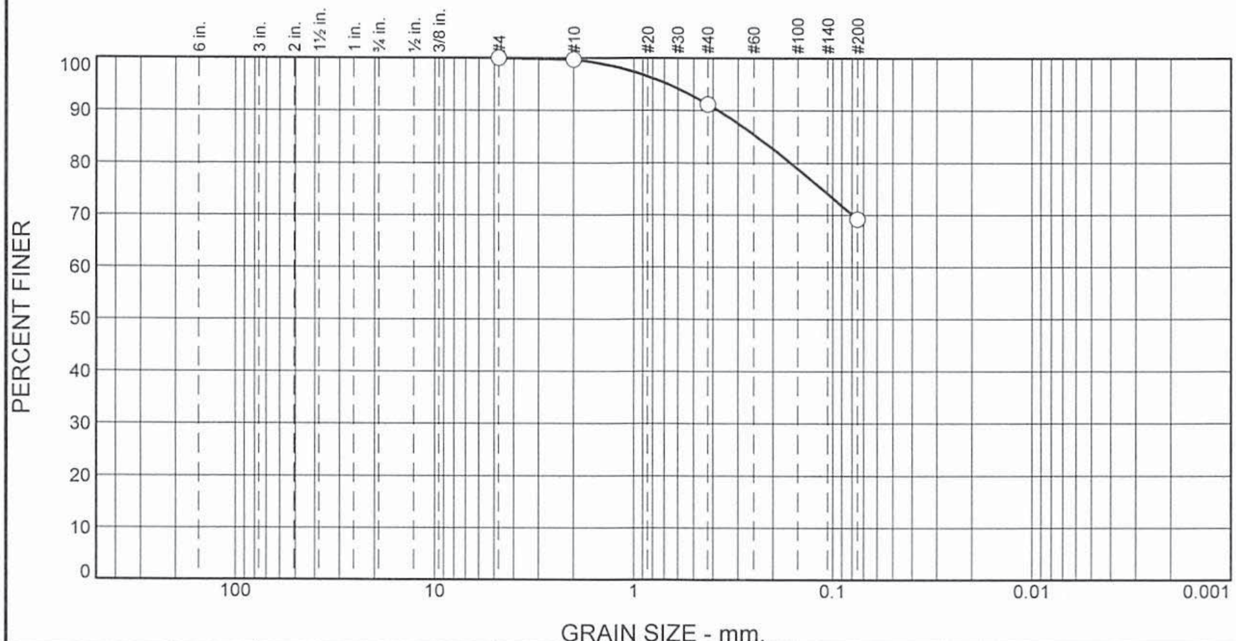
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-1, S-11 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 34.0-36.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	9	22	69	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100		
#10	100		
#40	91		
#200	69		

Soil Description

Black SILT; some mf+ SAND

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.2405 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 35.2%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

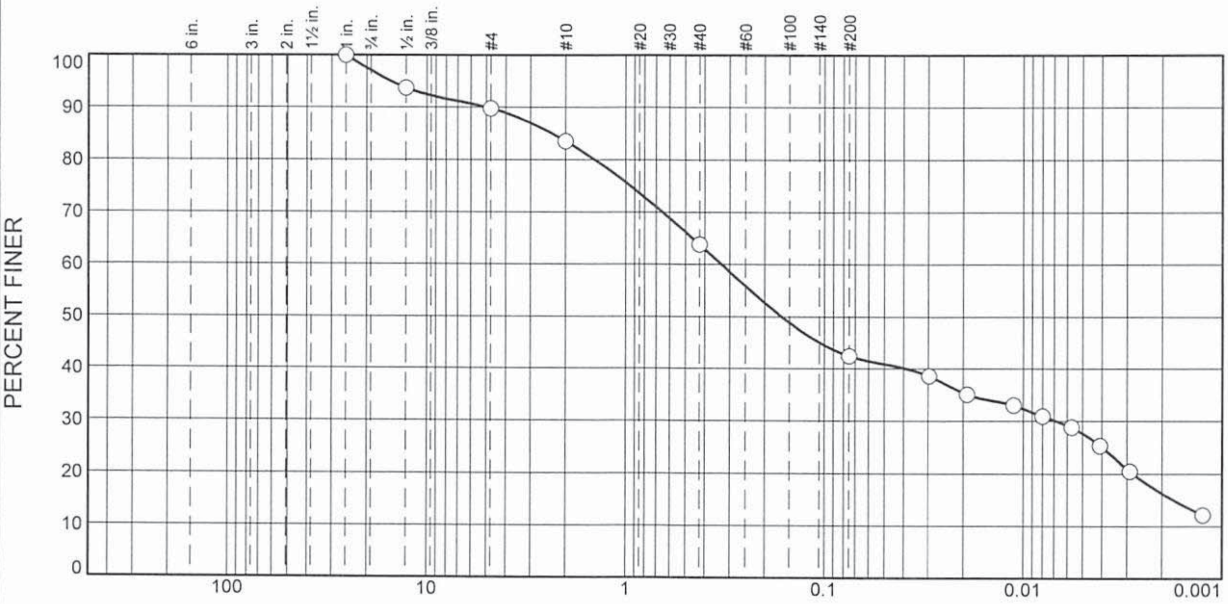
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-1, S-15 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 54.0-56.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	7	7	19	22	14	28

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	94		
#4	90		
#10	83		
#40	64		
#200	42		

Soil Description

Reddish-Brown c-mf SAND; some CLAY; little SILT; trace mf GRAVEL

Atterberg Limits

PL= 20 LL= 42 PI= 22

Coefficients

D_{85}= 2.3512 D_{60}= 0.3296 D_{50}= 0.1642
D_{30}= 0.0068 D_{15}= 0.0018 D_{10}=
C_u= C_c=

Classification

USCS= SC AASHTO= A-7-6(5)

Remarks

Moisture Content = 20.5%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

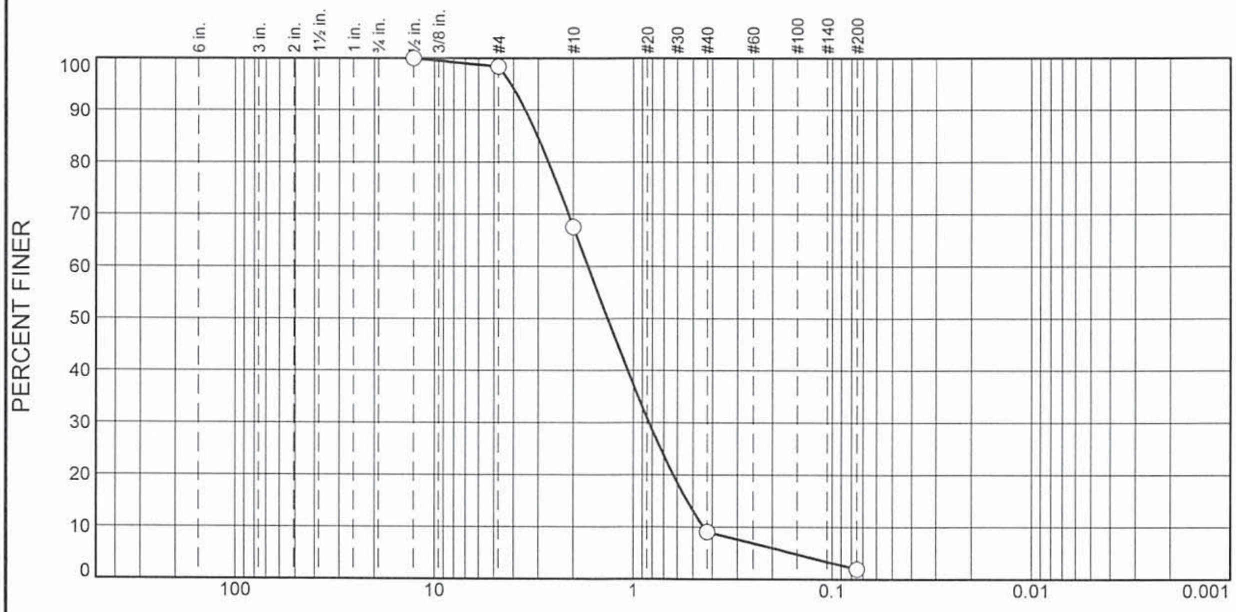
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-1, S-19 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 74.0-76.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	30	59	7	2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	98		
#10	68		
#40	9		
#200	2.0		

Soil Description

Greyish-White cm+f- SAND; trace f GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 3.0307 D_{60}= 1.6884 D_{50}= 1.3468
D_{30}= 0.8316 D_{15}= 0.5349 D_{10}= 0.4422
C_u= 3.82 C_c= 0.93

Classification

USCS= SP AASHTO=

Remarks

Moisture Content = 13.2%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

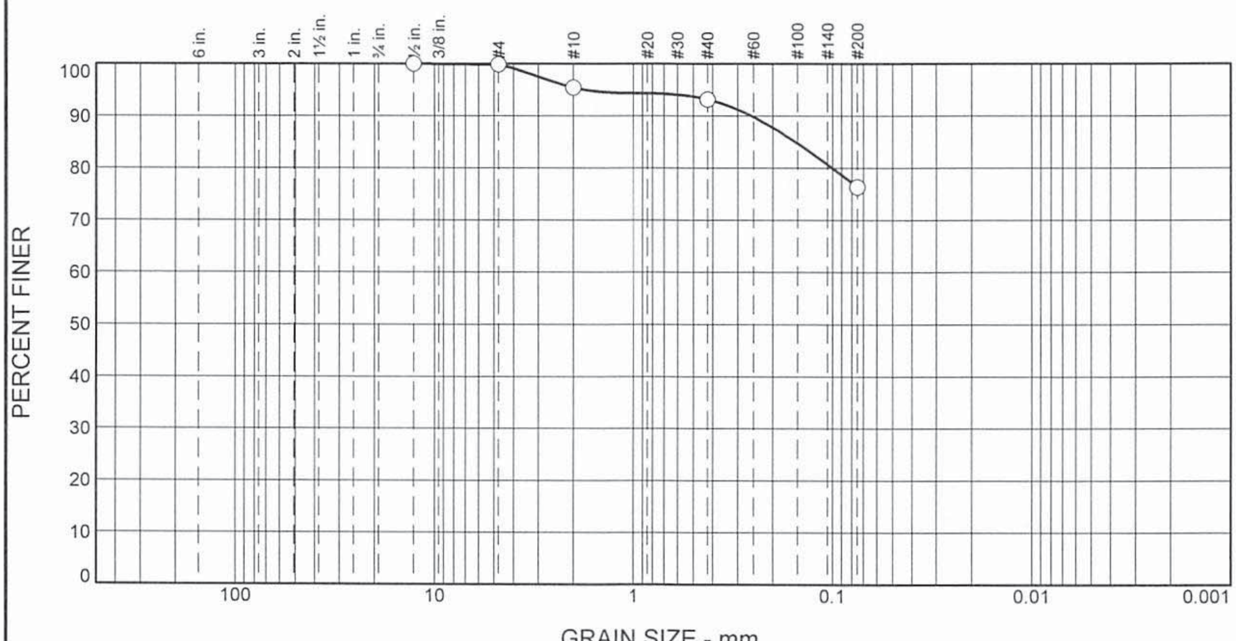
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-1, S-24 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 99.0-101.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	5	2	17	76	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	100		
#10	95		
#40	93		
#200	76		

Soil Description

Light Brown SILT; some cm-f+ SAND

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.1537 D_{60}= D_{50}=
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 22.9%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 07/10/20

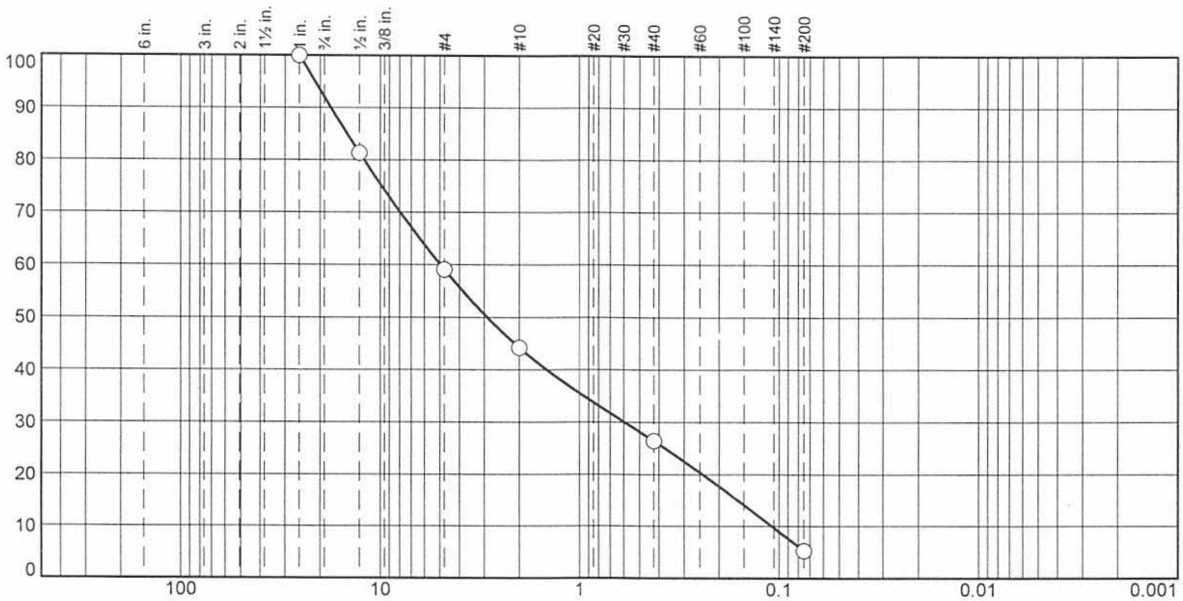
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-2, S-5 **Source of Sample:** Boring Sample
Location: In-place **Elev./Depth:** 11.0-13.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	8	33	15	18	21	5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	81		
#4	59		
#10	44		
#40	26		
#200	5.3		

Soil Description

Brown cmf SAND; and mf GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 14.6255 D_{60}= 4.9698 D_{50}= 2.8936
D_{30}= 0.5937 D_{15}= 0.1610 D_{10}= 0.1085
C_u= 45.81 C_c= 0.65

Classification

USCS= AASHTO=

Remarks

Moisture Content = 7.4%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

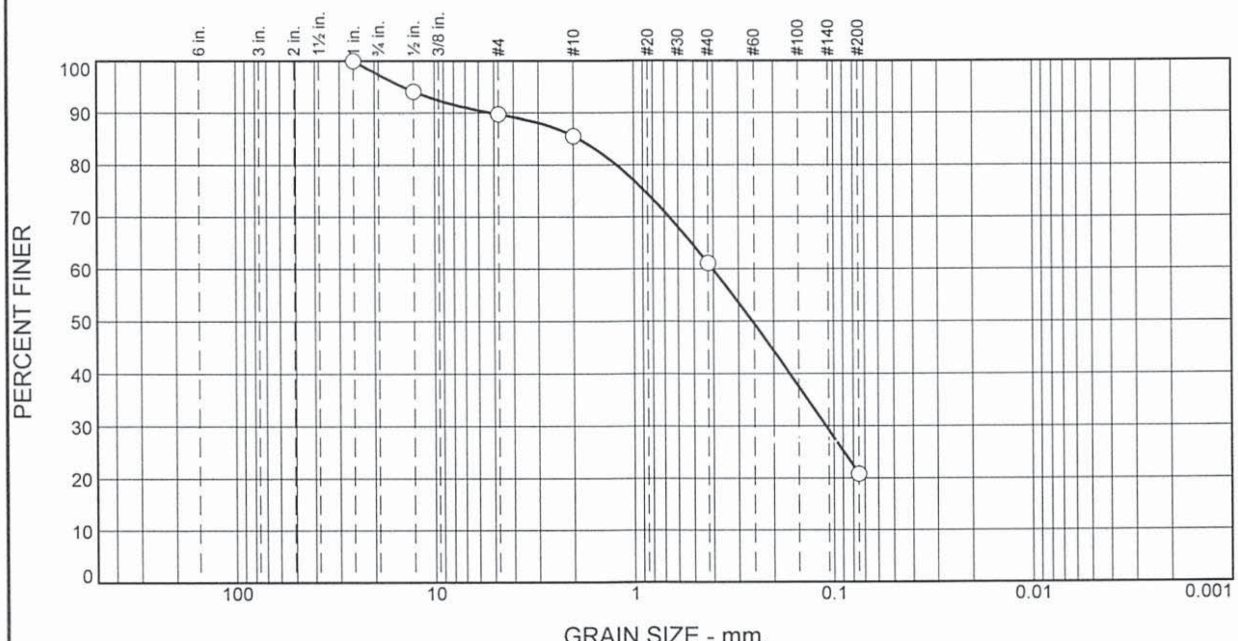
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-2, S-9 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 29.0-31.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	7	4	25	40	21	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	94		
#4	90		
#10	86		
#40	61		
#200	21		

Soil Description

Brown c-mf+ SAND; little SILT; trace mf GRAVEL

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85}= 1.8815 D_{60}= 0.4034 D_{50}= 0.2558

D_{30}= 0.1095 D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= SM AASHTO= A-2-4(0)

Remarks

Moisture Content = 12.1%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas

Date: 10/23/20

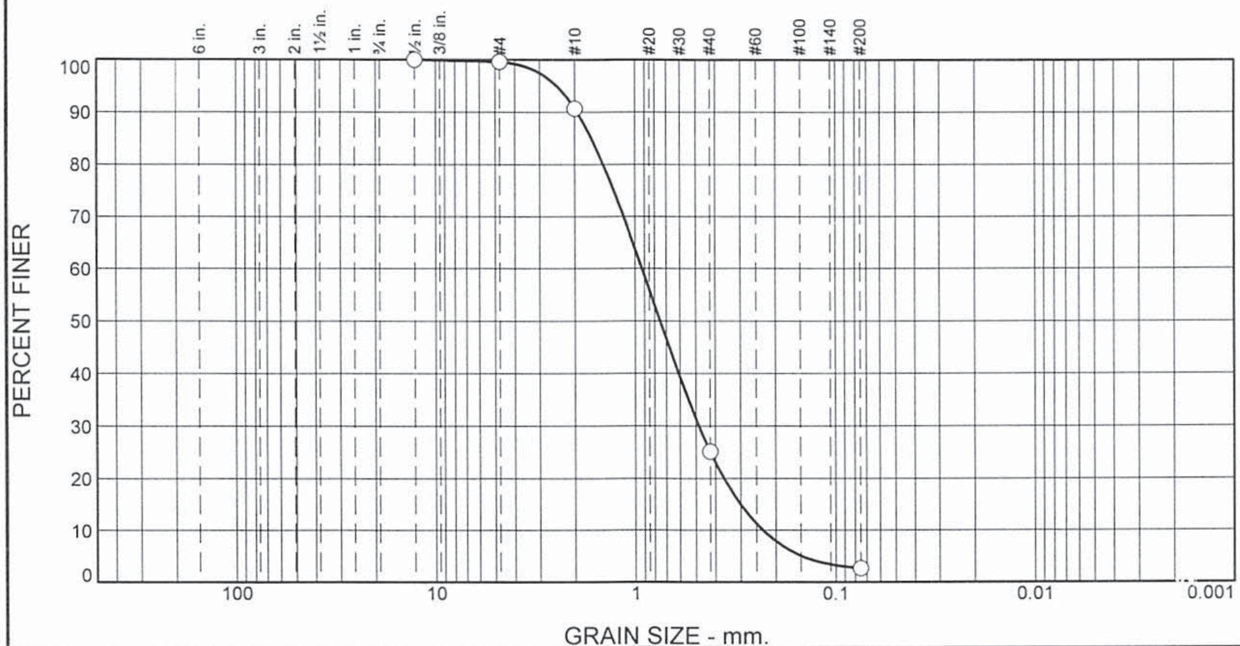
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-2, S-19 **Source of Sample:** Boring Sample
Location: In-place **Elev./Depth:** 74.0-76.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	9	66	22	3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	100		
#10	91		
#40	25		
#200	2.6		

Soil Description

Light Brown c-m+f SAND; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.6565 D_{60}= 0.9253 D_{50}= 0.7525
D_{30}= 0.4829 D_{15}= 0.2999 D_{10}= 0.2323
C_u= 3.98 C_c= 1.08

Classification

USCS= SP AASHTO=

Remarks

Moisture Content = 25.5%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas Date: 10/23/20

ATLANTIC TESTING LABORATORIES

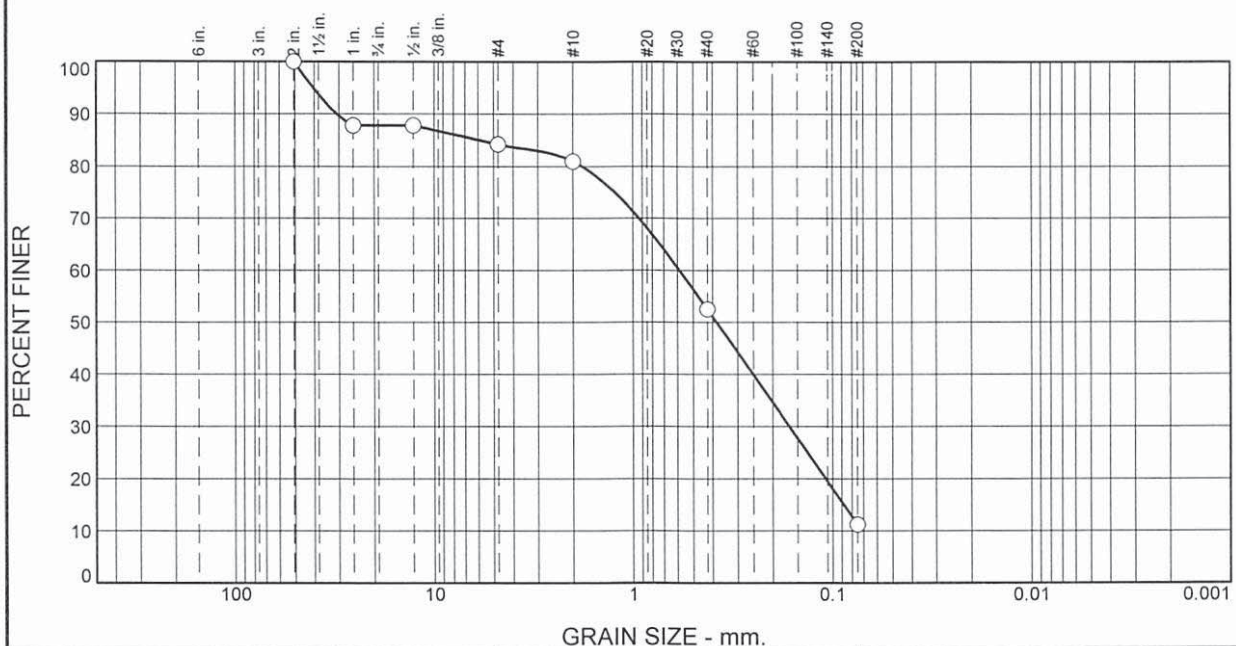
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-2, S-22 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 89.0-91.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	12	4	3	29	41	11	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	88		
1/2"	88		
#4	84		
#10	81		
#40	52		
#200	11		

Soil Description

Brown c-mf+ SAND; little c+f GRAVEL; trace CLAY; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 5.8846 D_{60}= 0.5863 D_{50}= 0.3826
D_{30}= 0.1648 D_{15}= 0.0879 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 13.8%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

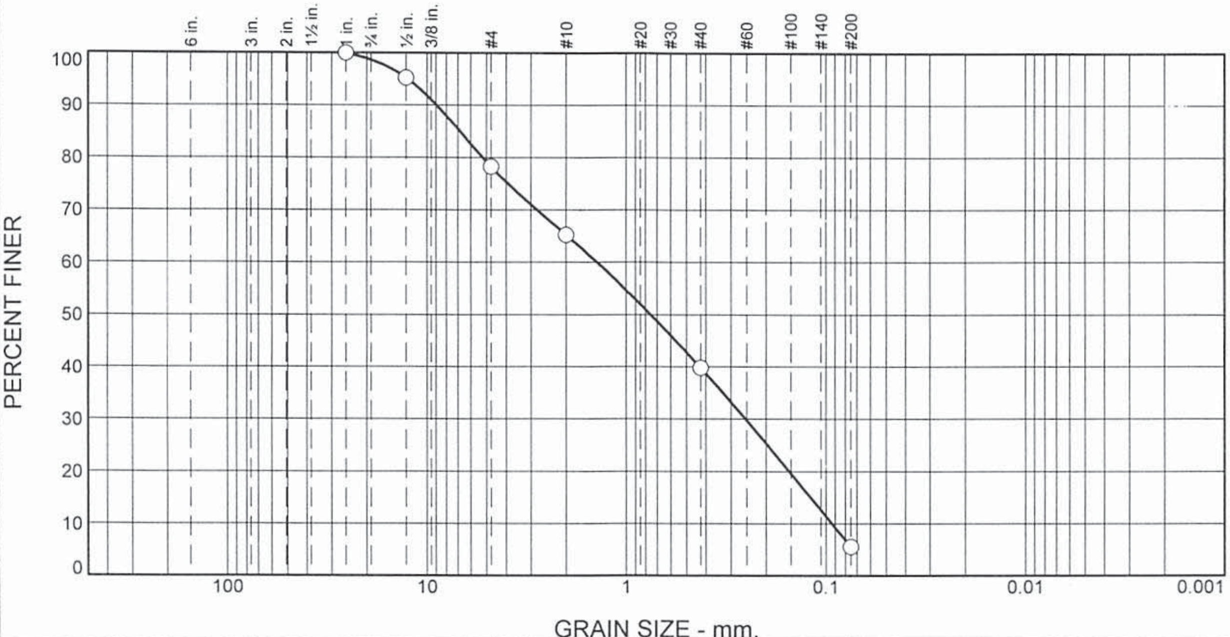
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-3, S-5 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 11.0-13.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	21	13	25	34	6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	95		
#4	78		
#10	65		
#40	40		
#200	5.5		

Soil Description

Light Brown c-mf SAND; some mf+ GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 6.8255 D_{60}= 1.4023 D_{50}= 0.7559

D_{30}= 0.2533 D_{15}= 0.1193 D_{10}= 0.0933

C_u= 15.03 C_c= 0.49

Classification

USCS= AASHTO=

Remarks

Moisture Content = 9.8%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

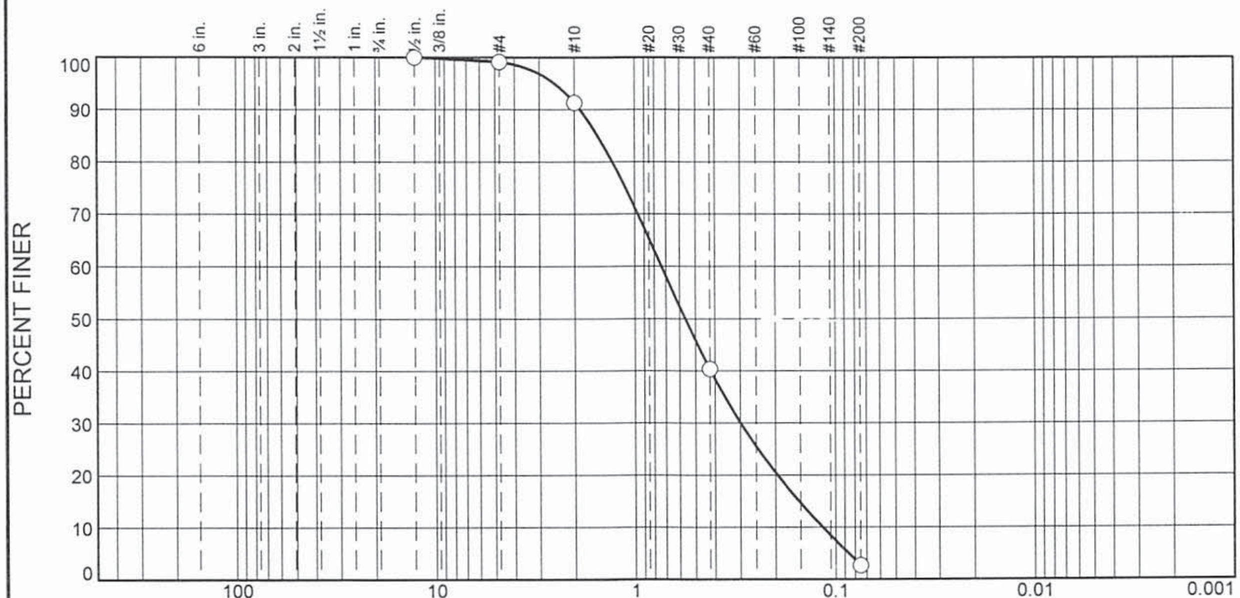
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/22/20

Sample No: BH-3, S-11 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 34.0-36.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	8	51	37	3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	99		
#10	91		
#40	40		
#200	2.7		

Soil Description

Light Brown c-m+f SAND; trace SILT; trace f GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.5369 D_{60}= 0.7372 D_{50}= 0.5622
D_{30}= 0.2985 D_{15}= 0.1528 D_{10}= 0.1161
C_u= 6.35 C_c= 1.04

Classification

USCS= SW AASHTO=

Remarks

Moisture Content = 16.5%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

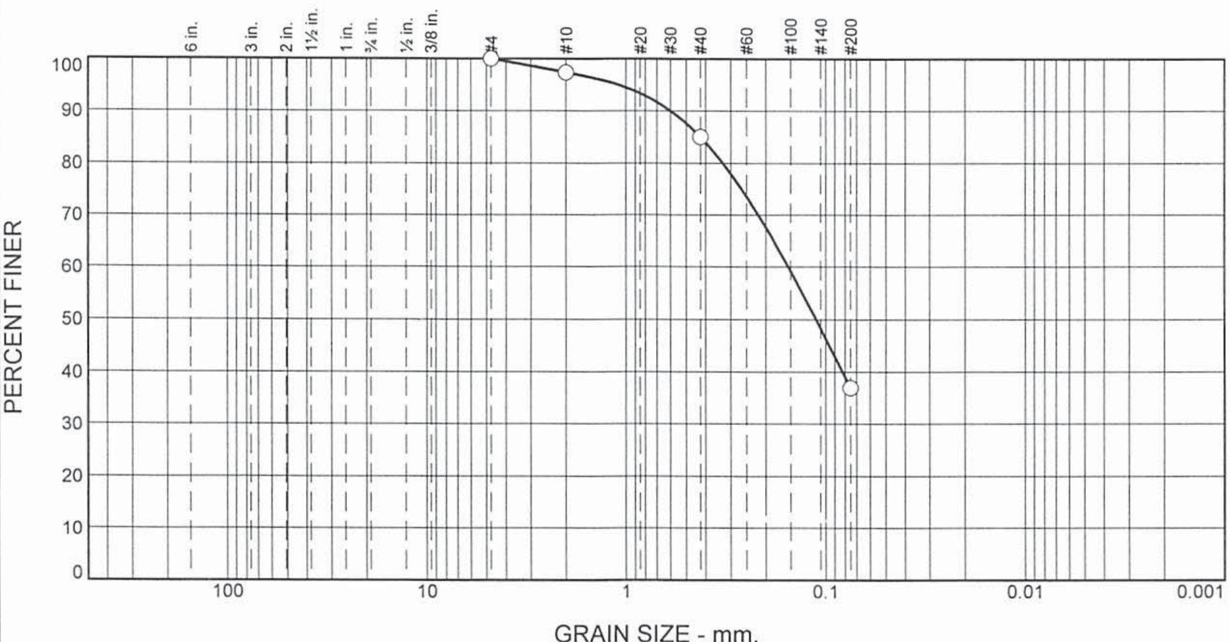
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/23/20

Sample No: BH-3, S-15 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 54.0-56.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	3	12	48	37	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100		
#10	97		
#40	85		
#200	37		

Soil Description

Brown c-mf+ SAND; and SILT

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85}= 0.4242 D_{60}= 0.1541 D_{50}= 0.1119
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Moisture Content = 21.6%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas Date: 10/23/20

ATLANTIC TESTING LABORATORIES

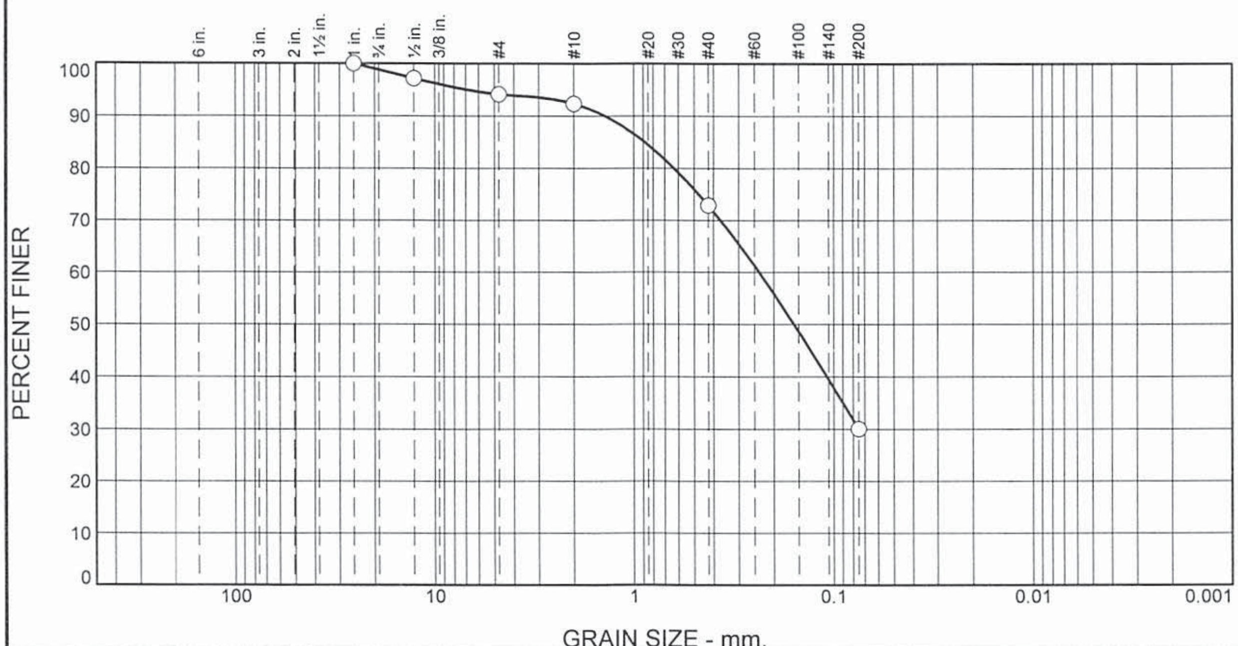
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/23/20

Sample No: BH-3, S-22 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 84.0-86.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	5	2	19	43	30	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	97		
#4	94		
#10	92		
#40	73		
#200	30		

Soil Description

Greyish-Brown c-mf+ SAND; little SILT; little CLAY; little mf GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.8833 D_{60}= 0.2365 D_{50}= 0.1583
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO= A-2-4(0)

Remarks

Moisture Content = 19.2%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

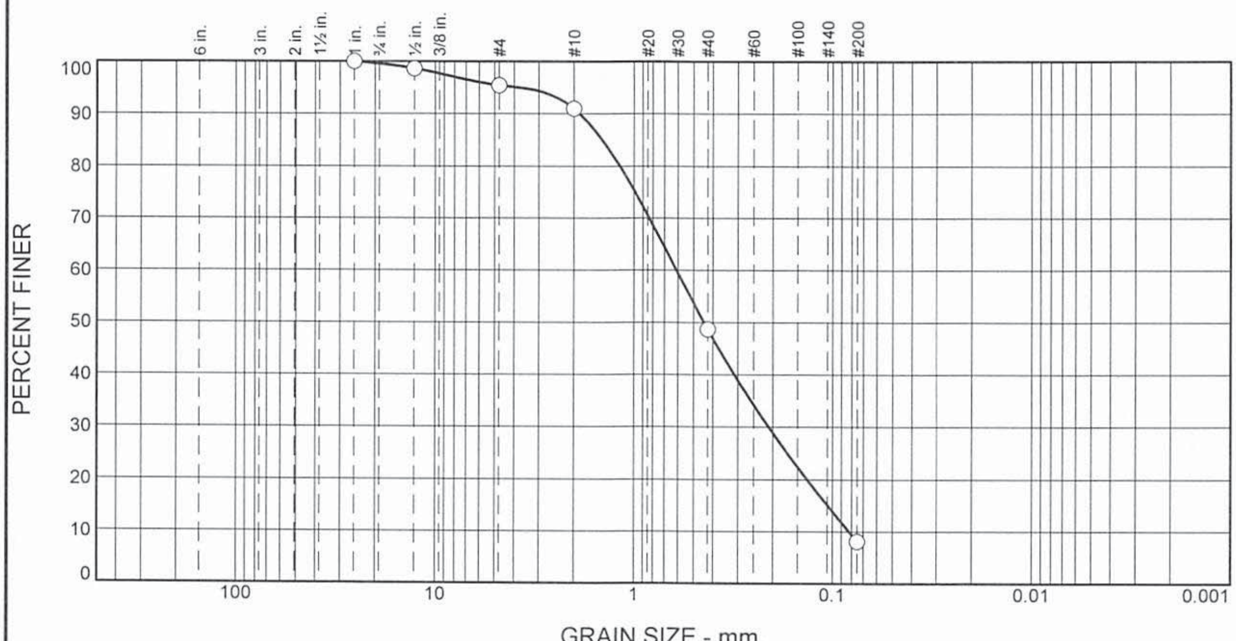
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-4, S-6 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 10.0-12.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	5	4	42	41	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	99		
#4	95		
#10	91		
#40	49		
#200	8.1		

Soil Description

Light Brown c-mf SAND; trace SILT; trace f GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.4428 D_{60}= 0.6099 D_{50}= 0.4436

D_{30}= 0.2095 D_{15}= 0.1054 D_{10}= 0.0825

C_u= 7.39 C_c= 0.87

Classification

USCS= AASHTO=

Remarks

Moisture Content = 5.3%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

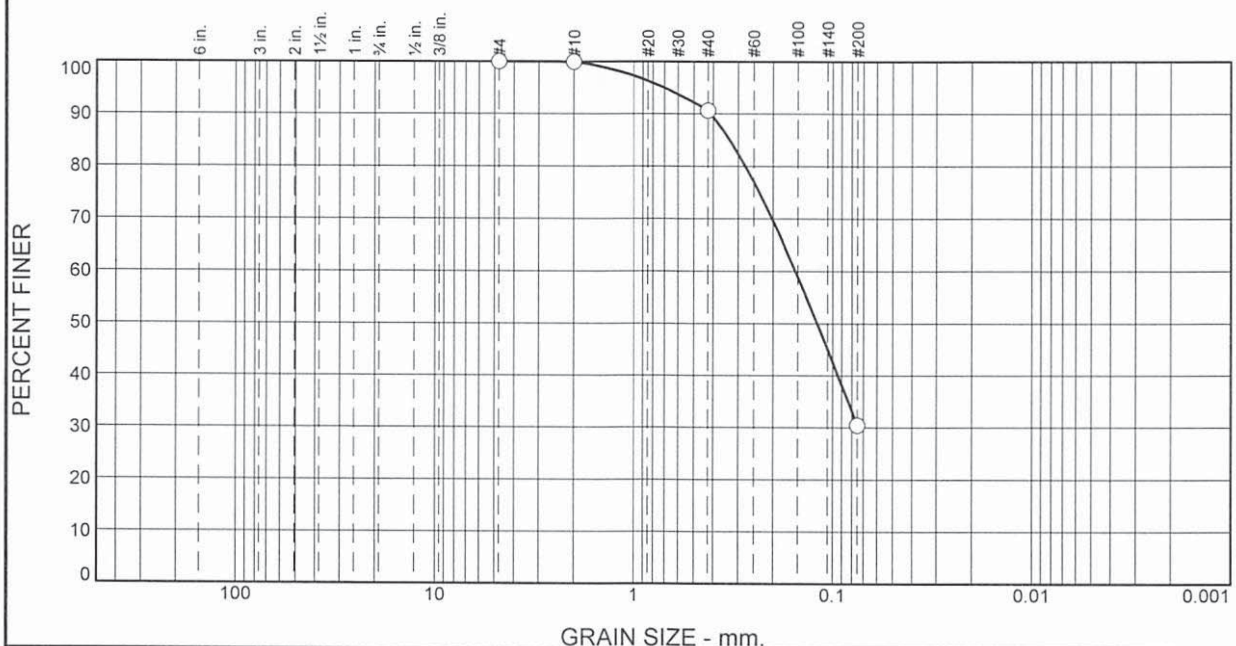
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-6, S-3 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 4.0-6.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	9	61	30	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
#4	100		
#10	100		
#40	91		
#200	30		

Soil Description

Light Brown m-f SAND; some SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.3307 D_{60}= 0.1541 D_{50}= 0.1197

D_{30}= D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Moisture Content = 11.3%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

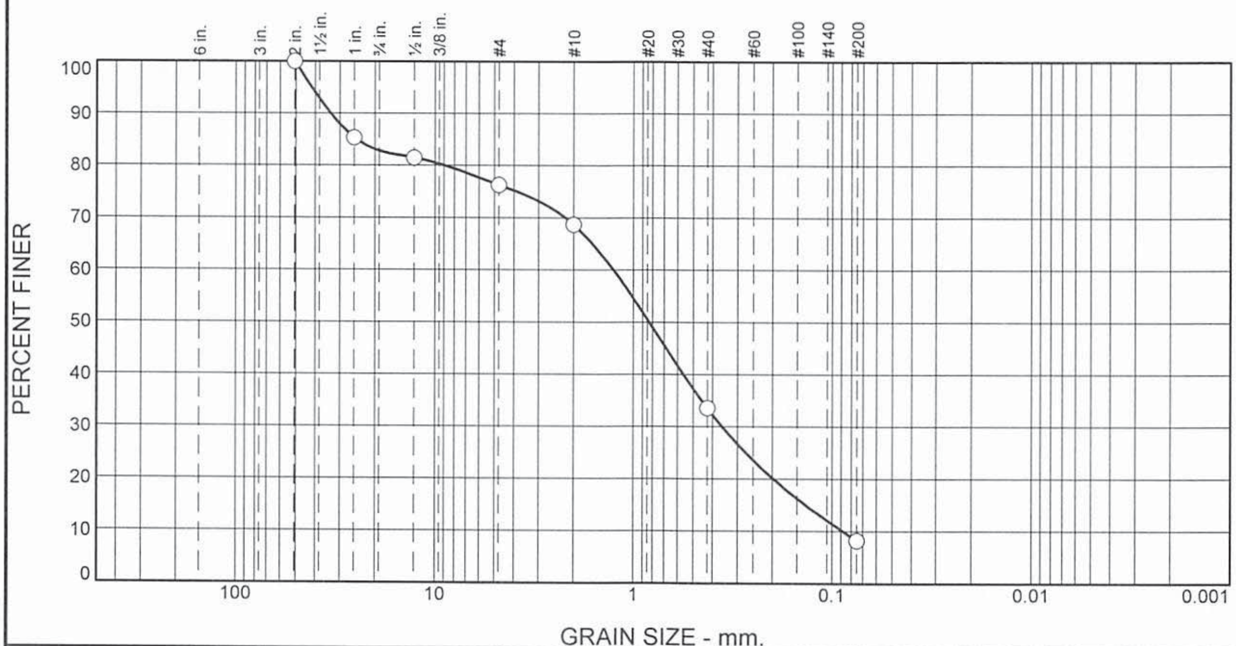
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route, Sag Harbor **Report No.:** CD4827SL-01-07-20

Client: Power Engineers, Inc. **Date:** 07/10/20

Sample No: BH-8, S-5 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 8.0-10.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	17	7	7	35	26	8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	85		
1/2"	81		
#4	76		
#10	69		
#40	34		
#200	8.2		

Soil Description

Light Brown c-mf SAND; some c+mf GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 24.8378 D_{60}= 1.2635 D_{50}= 0.8343
D_{30}= 0.3579 D_{15}= 0.1357 D_{10}= 0.0881
C_u= 14.34 C_c= 1.15

Classification

USCS= AASHTO=

Remarks

Moisture Content = 4.4%

* (no specification provided)

Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 07/10/20

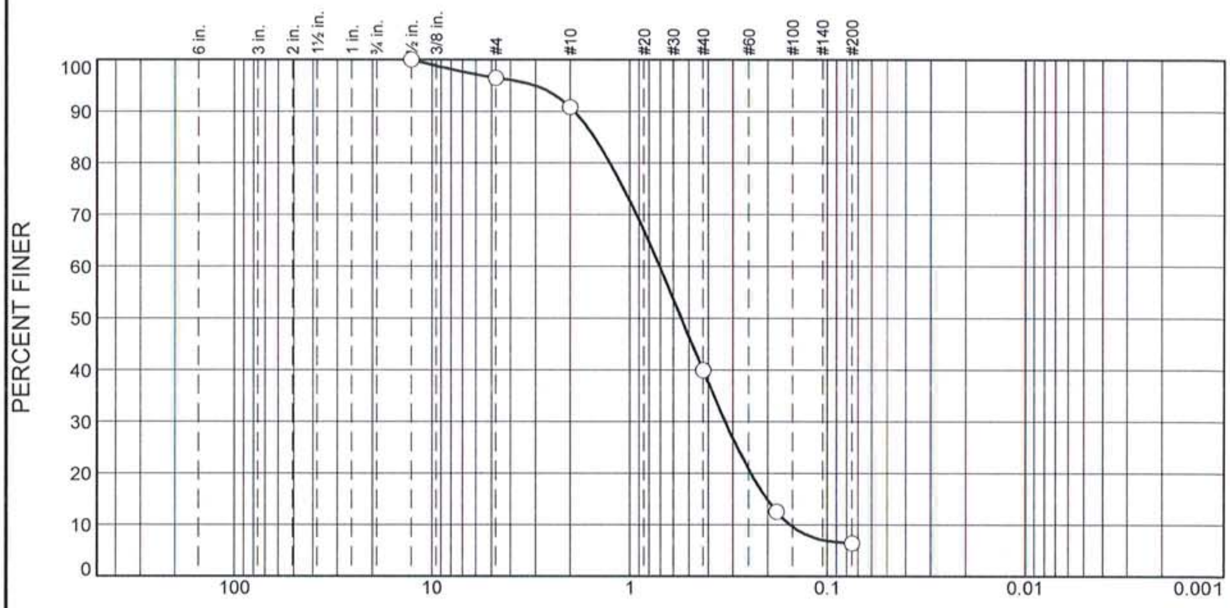
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-03-12-20

Client: Power Engineers, Inc. **Date:** 12/03/20

Sample No: BH-9, S-2 **Source of Sample:** Boring Sample
Location: In-place **Elev./Depth:** 7.0-9.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	3	6	51	34	6	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1/2"	100		
#4	97		
#10	91		
#40	40		
#80	12		
#200	6.4		

Soil Description

Light Brown c-m+f SAND; trace SILT; trace f GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.5086 D_{60}= 0.7066 D_{50}= 0.5477
D_{30}= 0.3278 D_{15}= 0.2022 D_{10}= 0.1542
C_u= 4.58 C_c= 0.99

Classification

USCS= AASHTO=

Remarks

Moisture Content= 15.8%

* (no specification provided)

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: ____________

Date: 12/3/20

ATLANTIC TESTING LABORATORIES

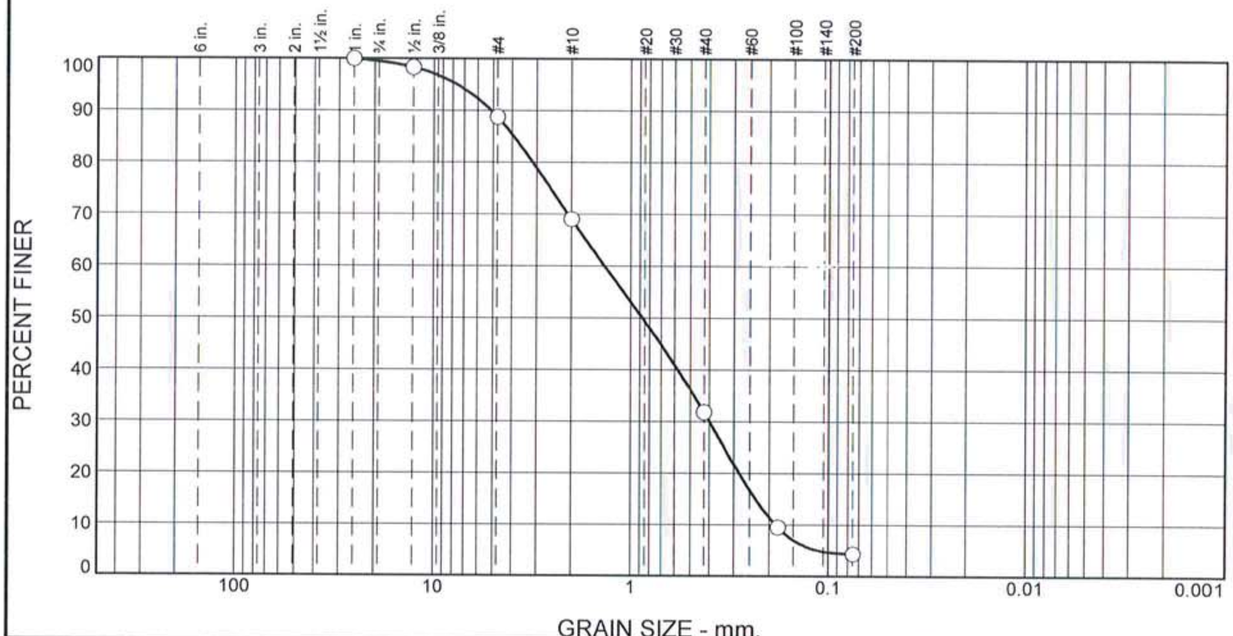
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-03-12-20

Client: Power Engineers, Inc. **Date:** 12/03/20

Sample No: BH-9, S-7 **Source of Sample:** Boring Sample

Location: In-place **Elev./Depth:** 20.0-22.0'



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	11	20	37	28	4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	98		
#4	89		
#10	69		
#40	32		
#80	9		
#200	4.3		

* (no specification provided)

Soil Description

Light Brown c-m+f SAND; little mf+ GRAVEL; trace SILT

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{85}= 3.9201 D_{60}= 1.3575 D_{50}= 0.8747
D_{30}= 0.3989 D_{15}= 0.2339 D_{10}= 0.1855
C_u= 7.32 C_c= 0.63

Classification

USCS= SP AASHTO= A-1-b

Remarks

Moisture Content= 14.2%

ATLANTIC TESTING LABORATORIES, LIMITED

Figure

Reviewed by: Date: 12/3/20

ATLANTIC TESTING LABORATORIES

WBE certified company

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL
ASTM D 4318

PROJECT INFORMATION

Client:	Power Engineers, Inc.	**ATL Report No.:**	CD4827SL-01-07-20
Project:	Proposed 69 KV (UG) Transmission Cable Route Bridgehamton SS to Buell SS Sag Harbor, Suffolk County, New York	**Report Date:**	July 10, 2020
		Date Received:	July 6, 2020

TEST DATA

Boring No.	Sample No.	LL	PL	PI
BH-1	S-15	42	20	22

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	As Received Moisture Content (%)
BH-1	S-15	25.4	36	20.5

PREPARATION INFORMATION

Boring No.	Sample No.	Preparation	Method of Removing Oversized Material
BH-1	S-15	Air Dry	Pulverizing and Screening

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A		Single Point - Method B	X
Liquid Limit Apparatus:	Manual	X	Motor Driven	
Liquid Limit Grooving Tool Material:	Plastic	X	Metal	
Liquid Limit Grooving Tool Shape:	Flat	X	Curved (AASHTO Only)	
Plastic Limit:	Hand Rolled	X	Mechanical Rolling Device	

Reviewed By: Judy Ames

Date: 07/10/20

ATLANTIC TESTING LABORATORIES

WBE certified company

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL
ASTM D 4318

PROJECT INFORMATION

Client: Power Engineers, Inc.
Project: Proposed 69 KV (UG) Transmission Cable Route
Bridgehamton SS to Buell SS
Suffolk County, New York

ATL Report No.: CD4827SL-02-10-20
Report Date: October 23, 2020
Date Received: October 19, 2020

TEST DATA

Boring No.	Sample No.	LL	PL	PI
BH-2	S-9	NP	NP	NP
BH-3	S-15	NP	NP	NP

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	As Received Moisture Content (%)
BH-2	S-9	25.4	39	12.1
BH-3	S-15	4.76	15	21.6

PREPARATION INFORMATION

Boring No.	Sample No.	Preparation	Method of Removing Oversized Material
BH-2	S-9	Air Dry	Pulverizing and Screening
BH-3	S-15	Air Dry	Pulverizing and Screening

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A		Single Point - Method B	X
Liquid Limit Apparatus:	Manual	X	Motor Driven	
Liquid Limit Grooving Tool Material:	Plastic	X	Metal	
Liquid Limit Grooving Tool Shape:	Flat	X	Curved (AASHTO Only)	
Plastic Limit:	Hand Rolled	X	Mechanical Rolling Device	

Reviewed By: Judy Amas

Date: 10/23/20

ATLANTIC TESTING LABORATORIES

WBE certified company

LIQUID LIMIT, PLASTIC LIMIT, AND PLASTICITY INDEX OF SOIL
ASTM D 4318

PROJECT INFORMATION

Client: Power Engineers, Inc.
Project: Proposed 69 KV (UG) Transmission Cable Route
Bridgehamton SS to Buell SS
Sag Harbor, Suffolk County, New York

ATL Report No.: CD4827SL-03-12-20
Report Date: December 3, 2020
Date Received: December 1, 2020

TEST DATA

Boring No.	Sample No.	LL	PL	PI
BH-9	S-7	NP	NP	NP

SAMPLE INFORMATION

Boring No.	Sample No.	Maximum Grain Size (mm)	Estimated Amount of Sample Retained on No. 40 Sieve (%)	As Received Moisture Content (%)
BH-9	S-7	12.7	68	14.2

PREPARATION INFORMATION

Boring No.	Sample No.	Preparation	Method of Removing Oversized Material
BH-9	S-7	Air Dry	Pulverizing and Screening

EQUIPMENT INFORMATION

Liquid Limit Procedure:	Multipoint - Method A	X	Single Point - Method B	
Liquid Limit Apparatus:	Manual	X	Motor Driven	
Liquid Limit Grooving Tool Material:	Plastic	X	Metal	
Liquid Limit Grooving Tool Shape:	Flat	X	Curved (AASHTO Only)	
Plastic Limit:	Hand Rolled	X	Mechanical Rolling Device	

Reviewed By: ______________________

Date: 12/03/20

BULK SAMPLES

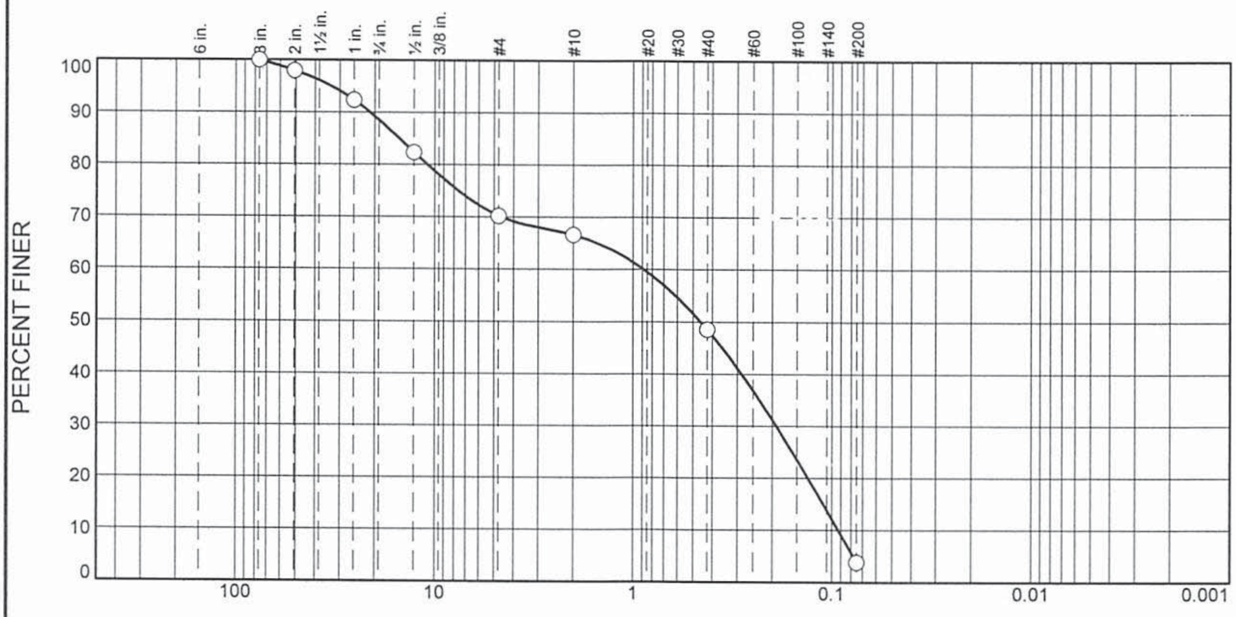
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/06/20

Sample No: BH-2, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Elev./Depth:** 5 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	11	19	3	18	45	4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
3"	100		
2"	98		
1"	92		
1/2"	82		
#4	70		
#10	67		
#40	49		
#200	3.8		

Soil Description

Light Brown c-mf+ SAND: some cmf GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 15.0731 D_{60}= 0.8851 D_{50}= 0.4580
D_{30}= 0.1906 D_{15}= 0.1105 D_{10}= 0.0928
C_u= 9.54 C_c= 0.44

Classification

USCS= SP AASHTO=

Remarks

Moisture Content = 2.3%

* (no specification provided)

Figure

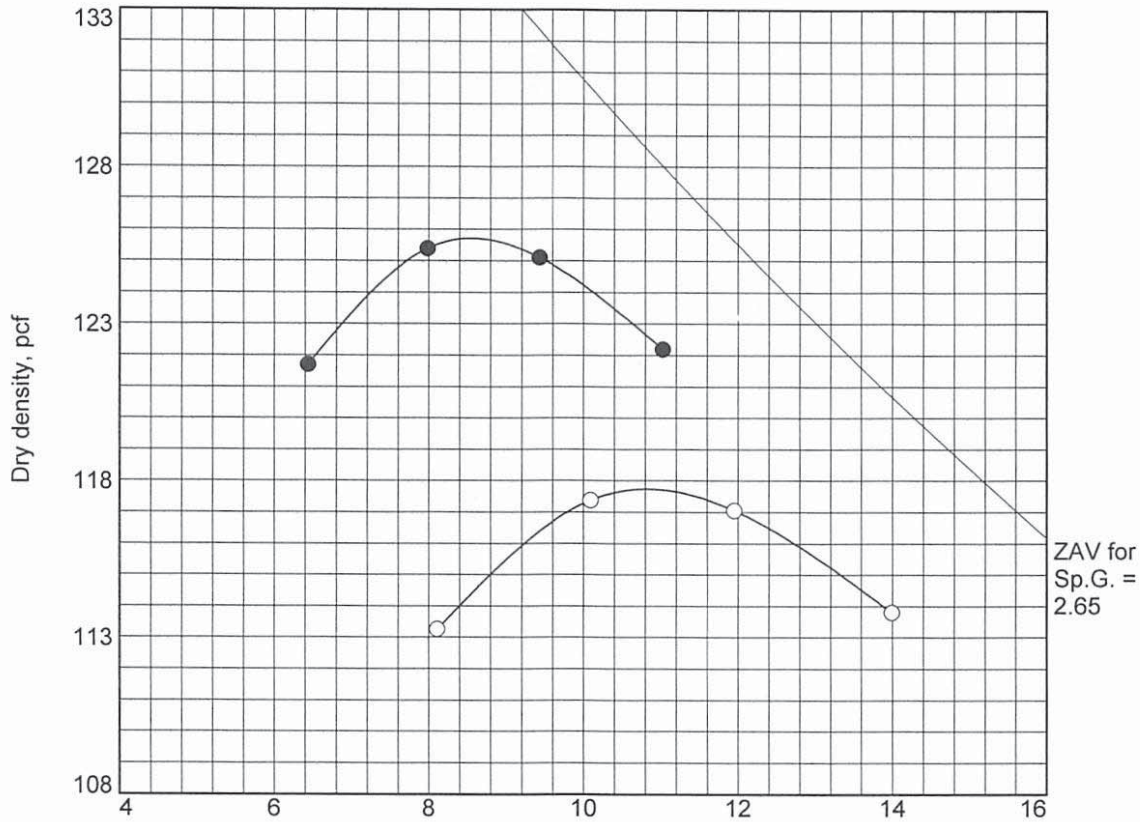
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 10/06/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method B Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > 3/8 in.
	USCS	AASHTO						
5 ft	SP		2.3	2.65	--	--	--	22

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 125.7 pcf Optimum moisture = 8.6 %	Light Brown c-mf+ SAND: some cmf GRAVEL; trace SILT

Report No.: CD4827SL-02-10-20 **Client:** Power Engineers, Inc.
Project: 69KV (UG) Transmission Cable Route, Bridgehampton SS to Buell SS
Sample No.: BH-2, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 10/06/20

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Remarks:
Moist Preparation

Rammer: Manual
Specific Gravity: Assumed

Reviewed by: Judy Amas

Date: 10/06/20

ATLANTIC TESTING LABORATORIES

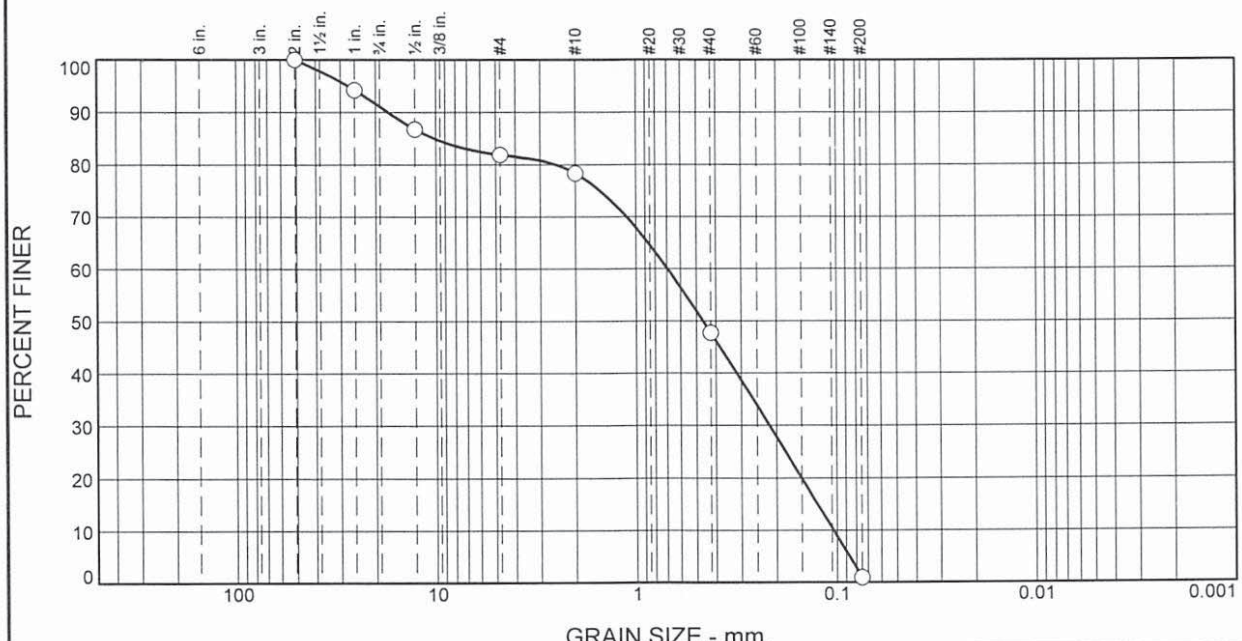
Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-02-10-20

Client: Power Engineers, Inc. **Date:** 10/06/20

Sample No: BH-3, BS-1 **Source of Sample:** Bulk Sample

Location: In-place **Elev./Depth:** 10 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	9	9	4	30	47	1	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	94		
1/2"	87		
#4	82		
#10	78		
#40	48		
#200	1.0		

Soil Description

Light Brown c-mf SAND; little cmf GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 10.1647 D_{60}= 0.6968 D_{50}= 0.4643
D_{30}= 0.2170 D_{15}= 0.1250 D_{10}= 0.1042
C_u= 6.69 C_c= 0.65

Classification

USCS= SP AASHTO=

Remarks

Moisture Content = 2.8%

* (no specification provided)

Figure

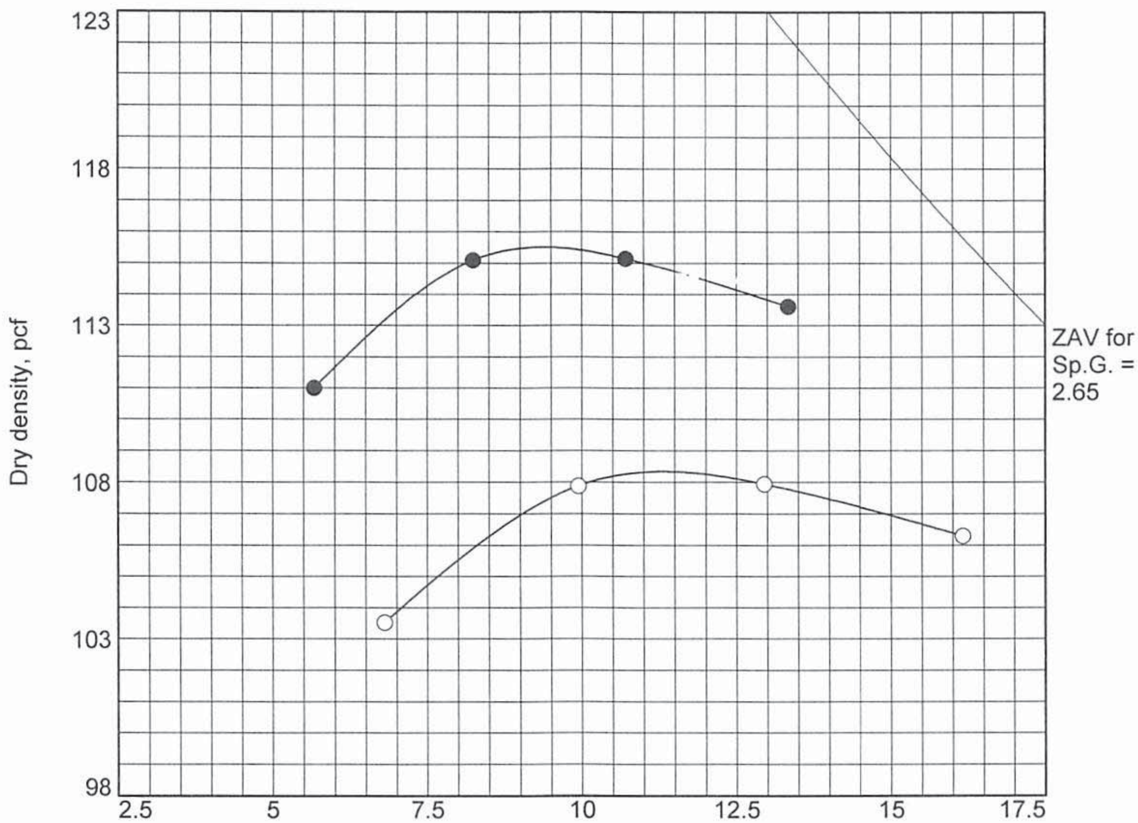
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 10/06/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
10 ft	SP		2.8	2.65	--	--	--	18

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 115.5 pcf Optimum moisture = 9.4 %	Light Brown c-mf SAND; little cmf GRAVEL; trace SILT

Report No.: CD4827SL-02-10-20 **Client:** Power Engineers, Inc.
Project: 69KV (UG) Transmission Cable Route, Bridgehampton SS to Buell SS
Sample No.: BH-3, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 10/06/20

Remarks:
Moist Preparation

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judez Amas

Date: 10/06/20

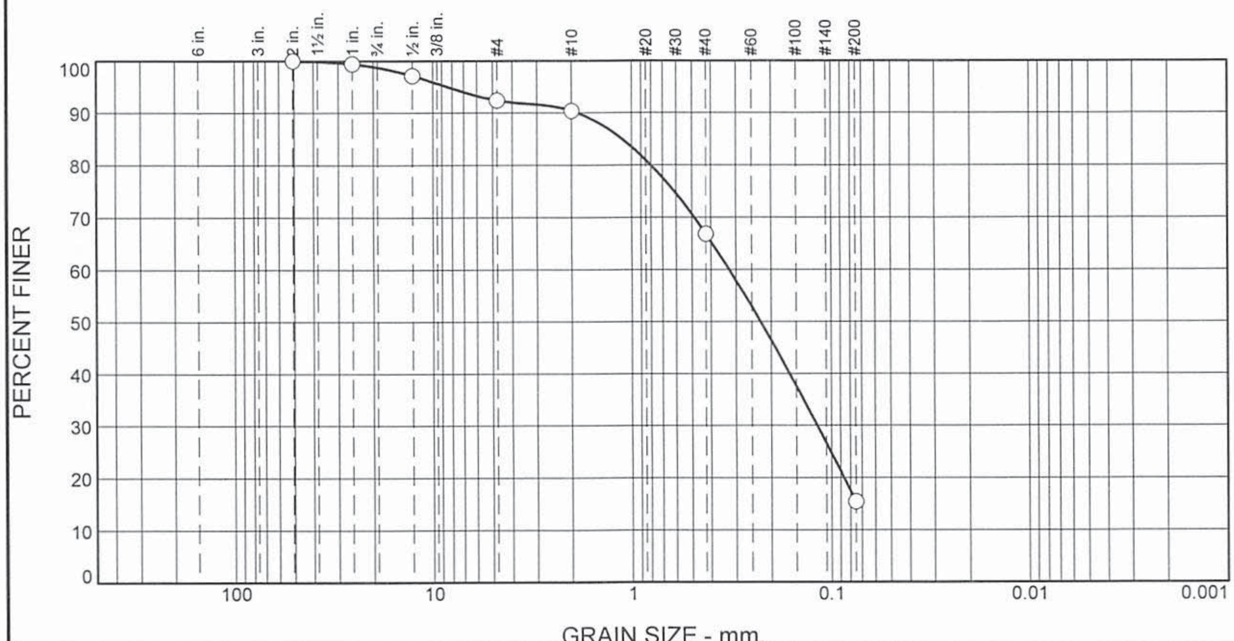
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route **Report No.:** CD4827SL-01-06-20

Client: Power Engineers **Date:** 06/02/20

Sample No: BH-4, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Elev./Depth:** 5 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	7	2	23	52	15	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	99		
1/2"	97		
#4	92		
#10	90		
#40	67		
#200	15		

Soil Description

Brown c-mf+ SAND; little SILT; trace cmf+ GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.1184 D_{60}= 0.3240 D_{50}= 0.2261
D_{30}= 0.1178 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

* (no specification provided)

Figure

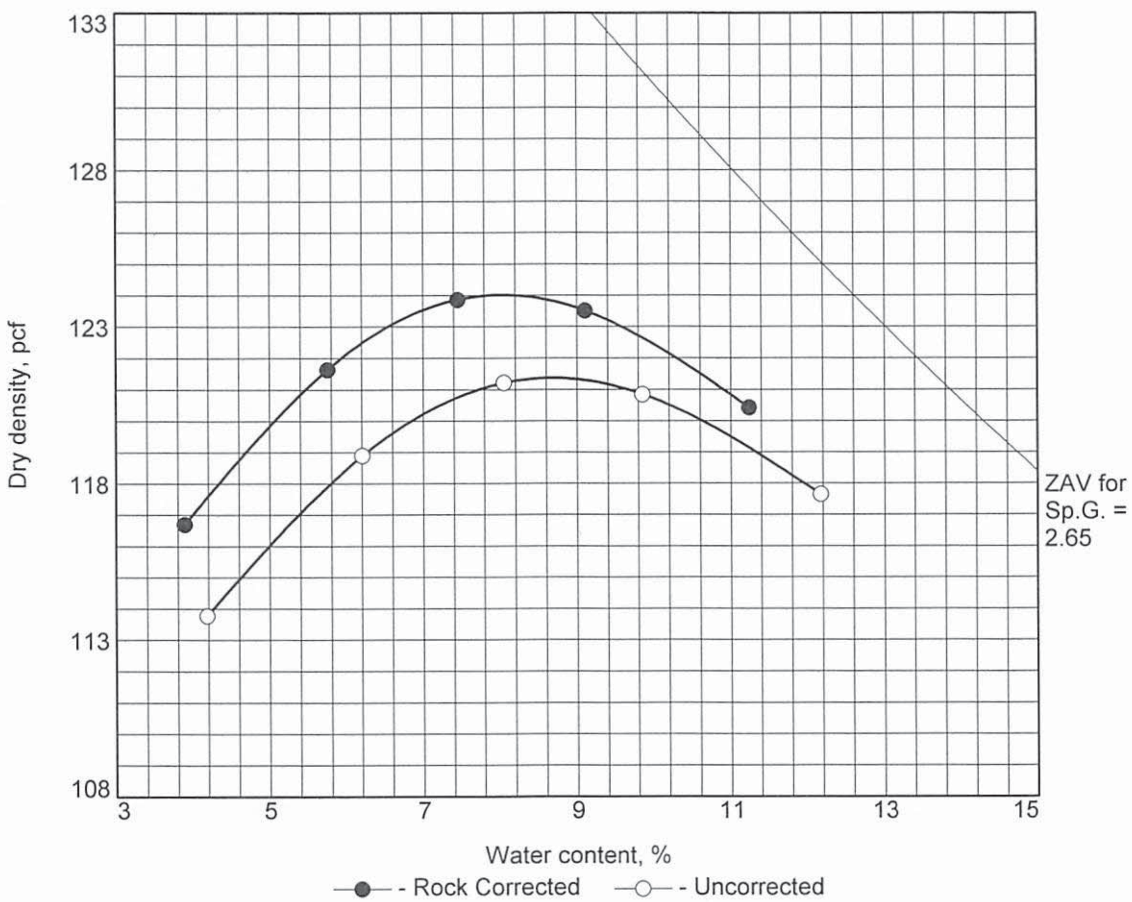
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
5 ft			6.0	2.65	--	--	--	8

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 124.0 pcf Optimum moisture = 8.0 %	Brown c-mf+ SAND; little SILT; trace cmf+ GRAVEL

Report No.: CD4827SL-01-06-20 **Client:** Power Engineers
Project: 69KV (UG) Transmission Cable Route - Bridgehamton SS to Buell SS
Sample No.: BH-4, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 06/02/20

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Remarks:
Moist Preparation

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judy Ames

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

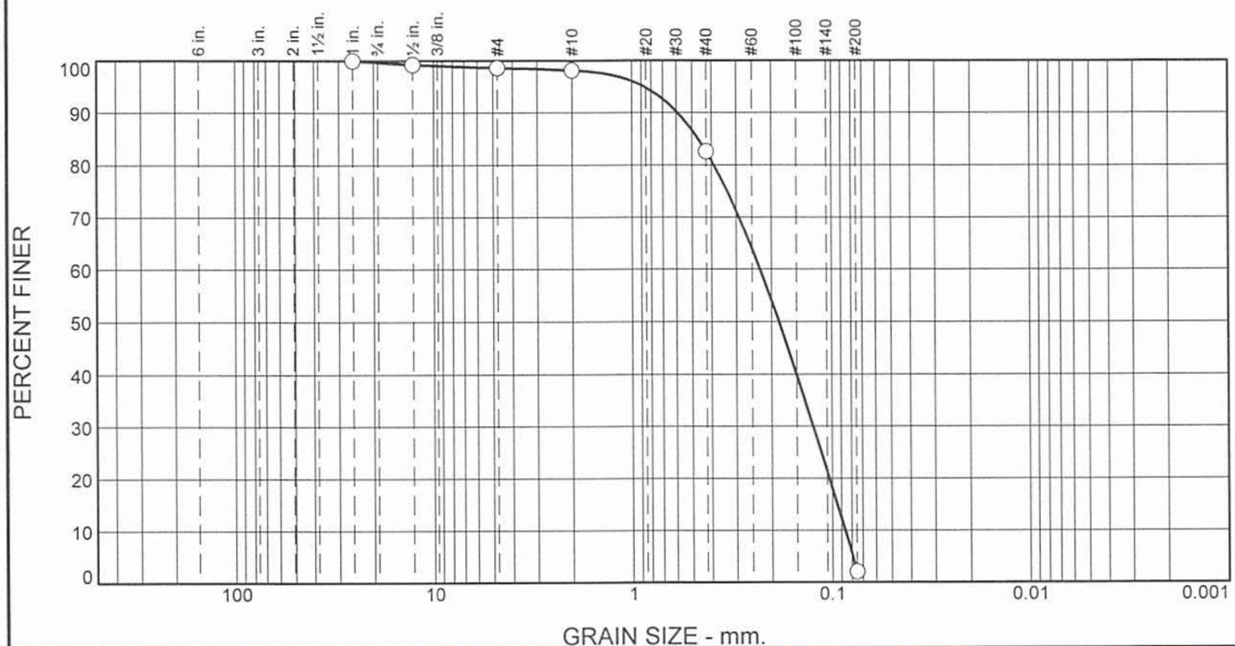
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route **Report No.:** CD4827SL-01-06-20

Client: Power Engineers **Date:** 06/02/20

Sample No: BH-5, BS-2 **Source of Sample:** Bulk Sample

Location: In-place **Elev./Depth:** 10 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	1	1	15	81	2	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	99		
#4	99		
#10	98		
#40	83		
#200	2.1		

Soil Description

Brown c-mf+ SAND; trace f GRAVEL; trace SILT

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 0.4654 D_{60}= 0.2281 D_{50}= 0.1838
D_{30}= 0.1244 D_{15}= 0.0945 D_{10}= 0.0864
C_u= 2.64 C_c= 0.79

Classification

USCS= SP AASHTO=

Remarks

* (no specification provided)

Figure

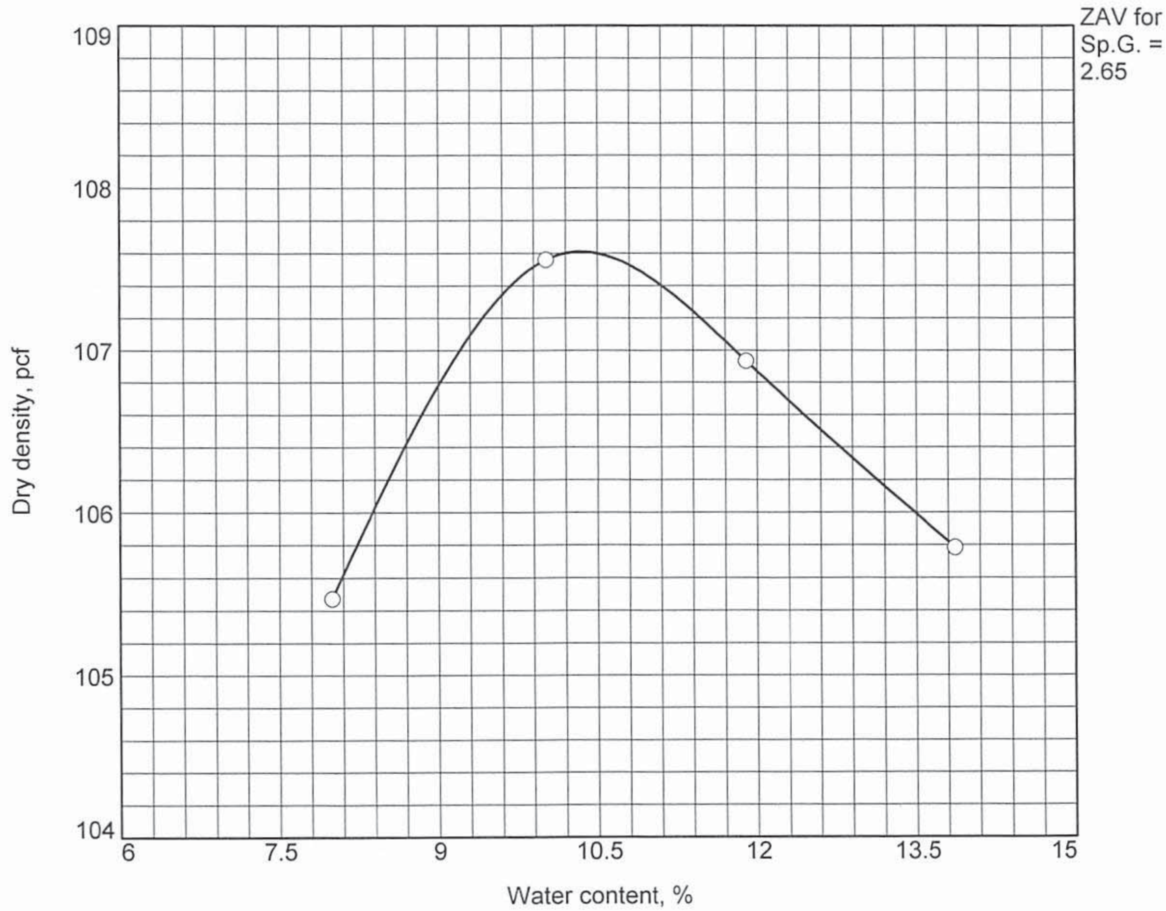
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
10 ft	SP		5.1	2.65	--	--	--	1

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 107.6 pcf Optimum moisture = 10.3 %	Brown c-mf+ SAND; trace f GRAVEL; trace SILT

Report No.: CD4827SL-01-06-20 **Client:** Power Engineers
Project: 69KV (UG) Transmission Cable Route - Bridgehamton SS to Buell SS
Sample No.: BH-5, BS-2 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 06/02/20

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Remarks:
Moist Preparation

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judy Ames

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

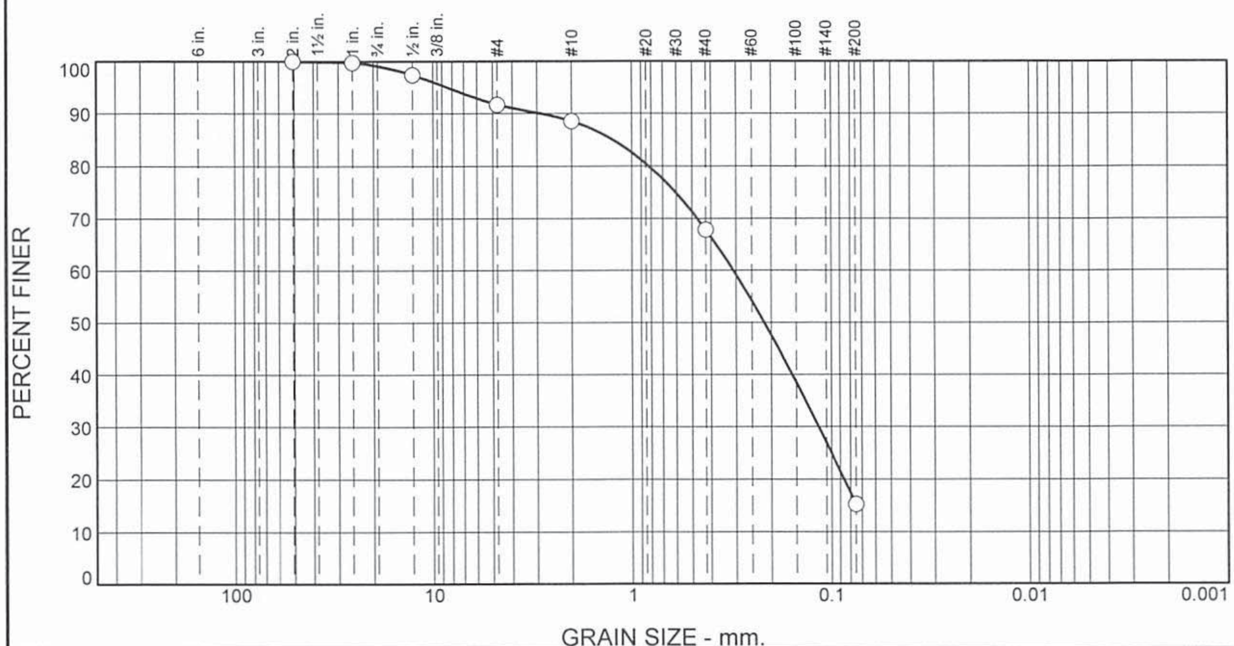
Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route **Report No.:** CD4827SL-01-06-20

Client: Power Engineers **Date:** 06/02/20

Sample No: BH-6, BS-1 **Source of Sample:** Bulk Sample

Location: In-place **Elev./Depth:** 5 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	7	3	21	53	15	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	100		
1/2"	97		
#4	92		
#10	89		
#40	68		
#200	15		

Soil Description

Brown c-mf+ SAND; little SILT; trace mf GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.2473 D_{60}= 0.3092 D_{50}= 0.2170
D_{30}= 0.1159 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

Remarks

* (no specification provided)

Figure

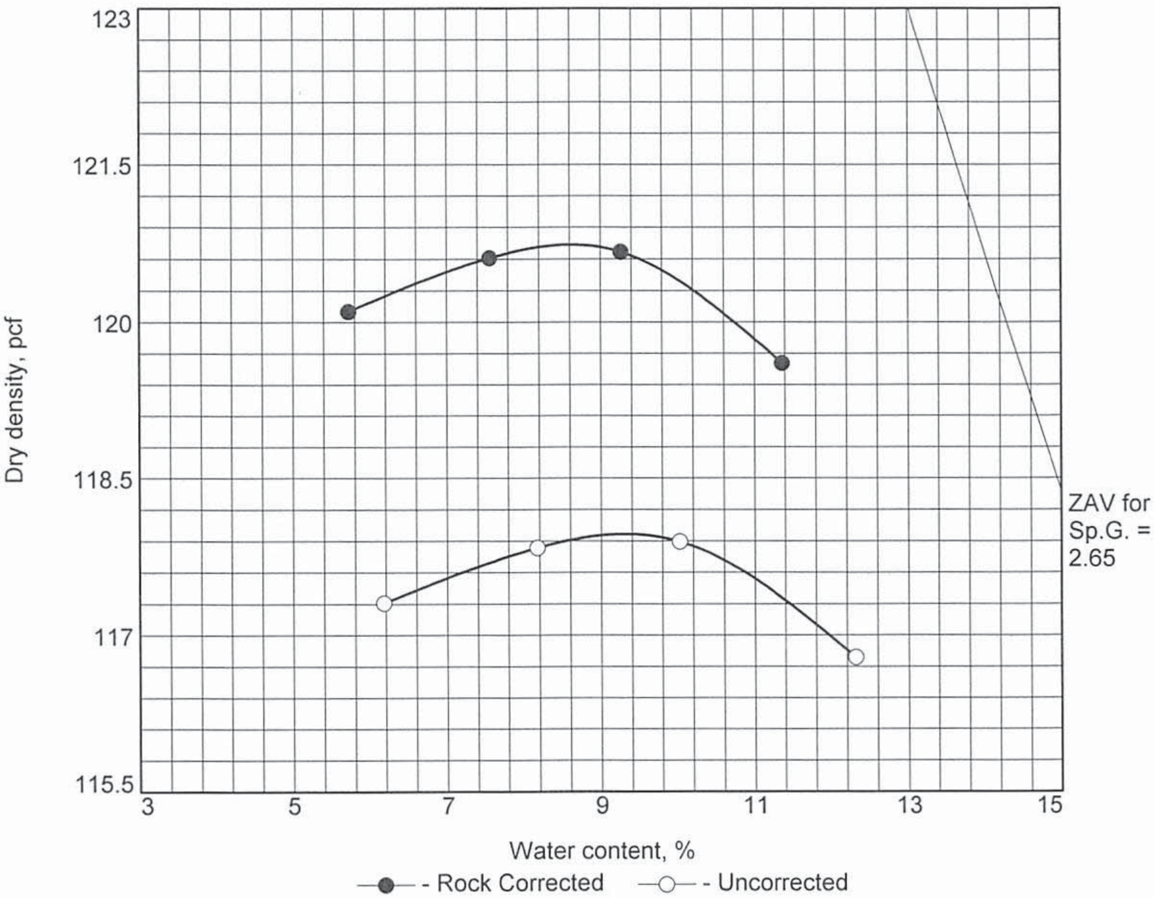
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Ames

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
5 ft			7.4	2.65	--	--	--	8

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 120.7 pcf Optimum moisture = 8.6 %	Brown c-mf+ SAND; little SILT; trace mf GRAVEL

Report No.: CD4827SL-01-06-20 **Client:** Power Engineers
Project: 69KV (UG) Transmission Cable Route - Bridgehamton SS to Buell SS
Sample No.: BH-6, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 06/02/20

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Remarks:
Moist Preparation

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judy Amas

Date: 06/02/20

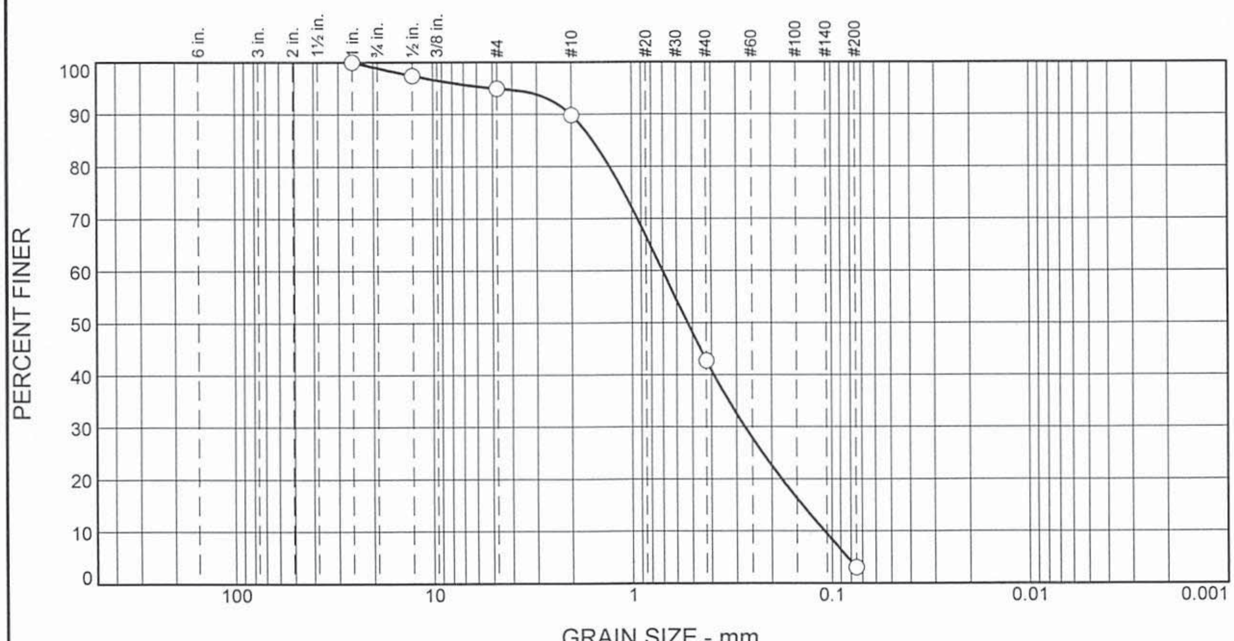
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Transmission Cable Route **Report No.:** CD4827SL-01-06-20

Client: Power Engineers **Date:** 06/02/20

Sample No: BH-7, BS-2 **Source of Sample:** Bulk Sample
Location: In-place **Elev./Depth:** 10 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	1	4	5	47	40	3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
1"	100		
1/2"	97		
#4	95		
#10	90		
#40	43		
#200	3.0		

Soil Description

Brown c-mf SAND; trace SILT; trace mf GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 1.5683 D_{60}= 0.7038 D_{50}= 0.5290
D_{30}= 0.2723 D_{15}= 0.1406 D_{10}= 0.1089
C_u= 6.46 C_c= 0.97

Classification

USCS= SP AASHTO=

Remarks

* (no specification provided)

Figure

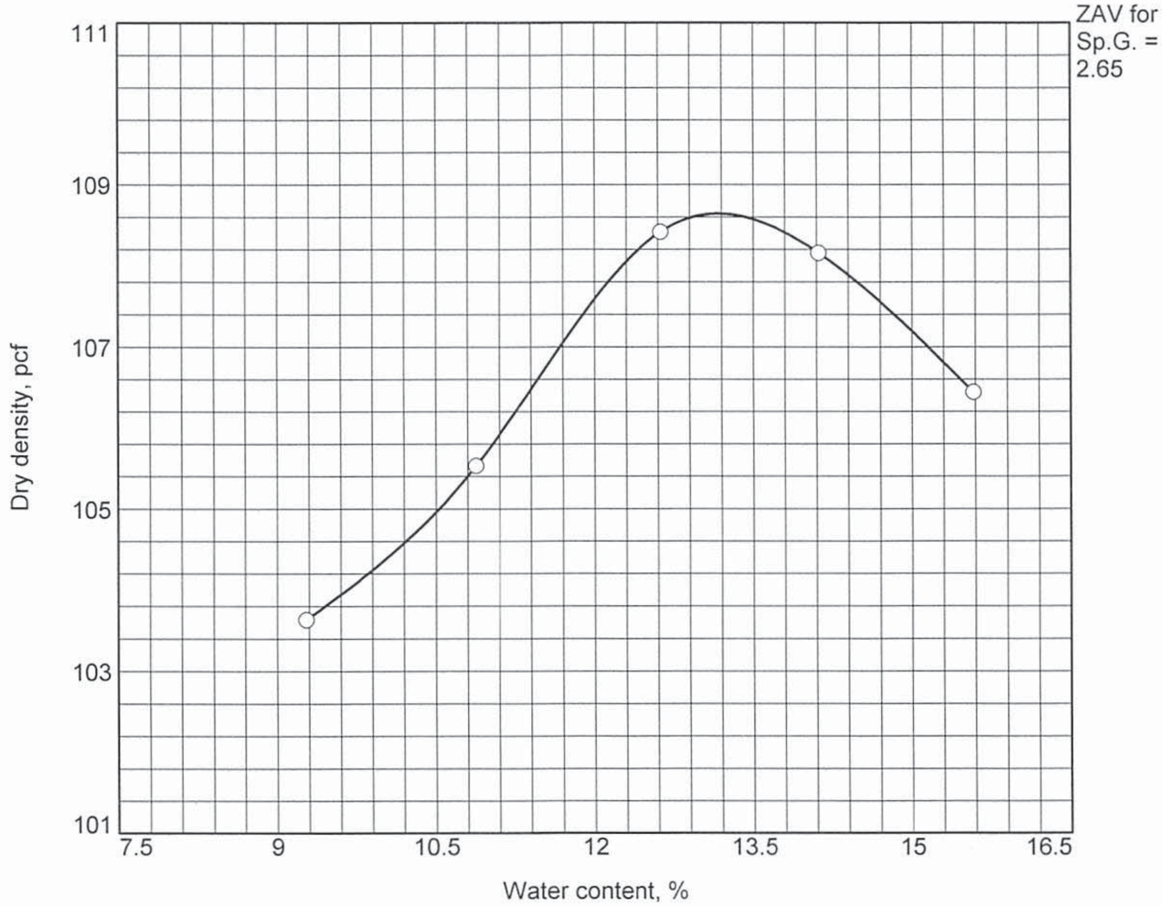
ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amos

Date: 06/02/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
10 ft	SP		4.0	2.65	--	--	--	5

TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 108.6 pcf Optimum moisture = 13.2 %	Brown c-mf SAND; trace SILT; trace mf GRAVEL

Report No.: CD4827SL-01-06-20 **Client:** Power Engineers
Project: 69KV (UG) Transmission Cable Route - Bridgehamton SS to Buell SS
Sample No.: BH-7, BS-2 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 06/02/20

Remarks:
Moist Preparation

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judy Amos

Date: 06/02/20

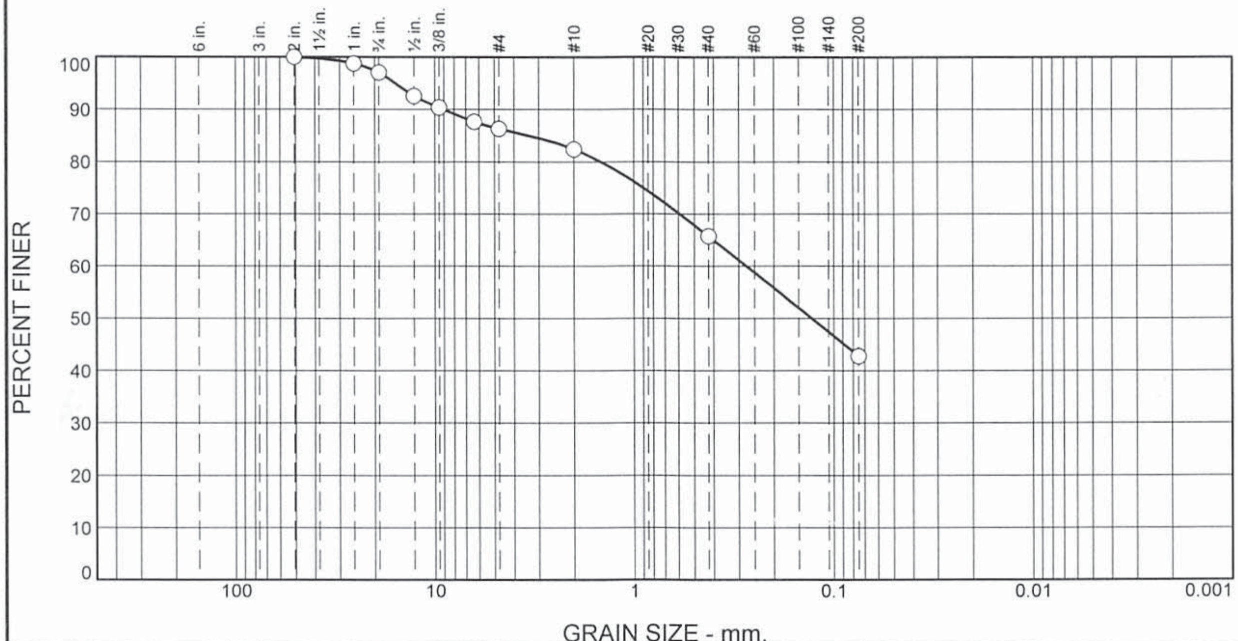
ATLANTIC TESTING LABORATORIES

Particle Size Distribution Report

Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS **Report No.:** CD4827SL-03-11-20

Client: Power Engineers, Inc. **Date:** 11/20/20

Sample No: BH-9, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Elev./Depth:** 10 ft



% Cobbles	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	3	11	4	16	23	43	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	OUT OF SPEC. (X)
2"	100		
1"	99		
3/4"	97		
1/2"	93		
3/8"	90		
1/4"	88		
#4	86		
#10	82		
#40	66		
#200	43		

Soil Description

Brown cmf SAND ; and SILT; little c-mf GRAVEL

Atterberg Limits

PL= -- LL= -- PI= --

Coefficients

D_{85}= 3.3798 D_{60}= 0.2744 D_{50}= 0.1289
D_{30}= D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

Remarks

Moisture Content= 10.5%

* (no specification provided)

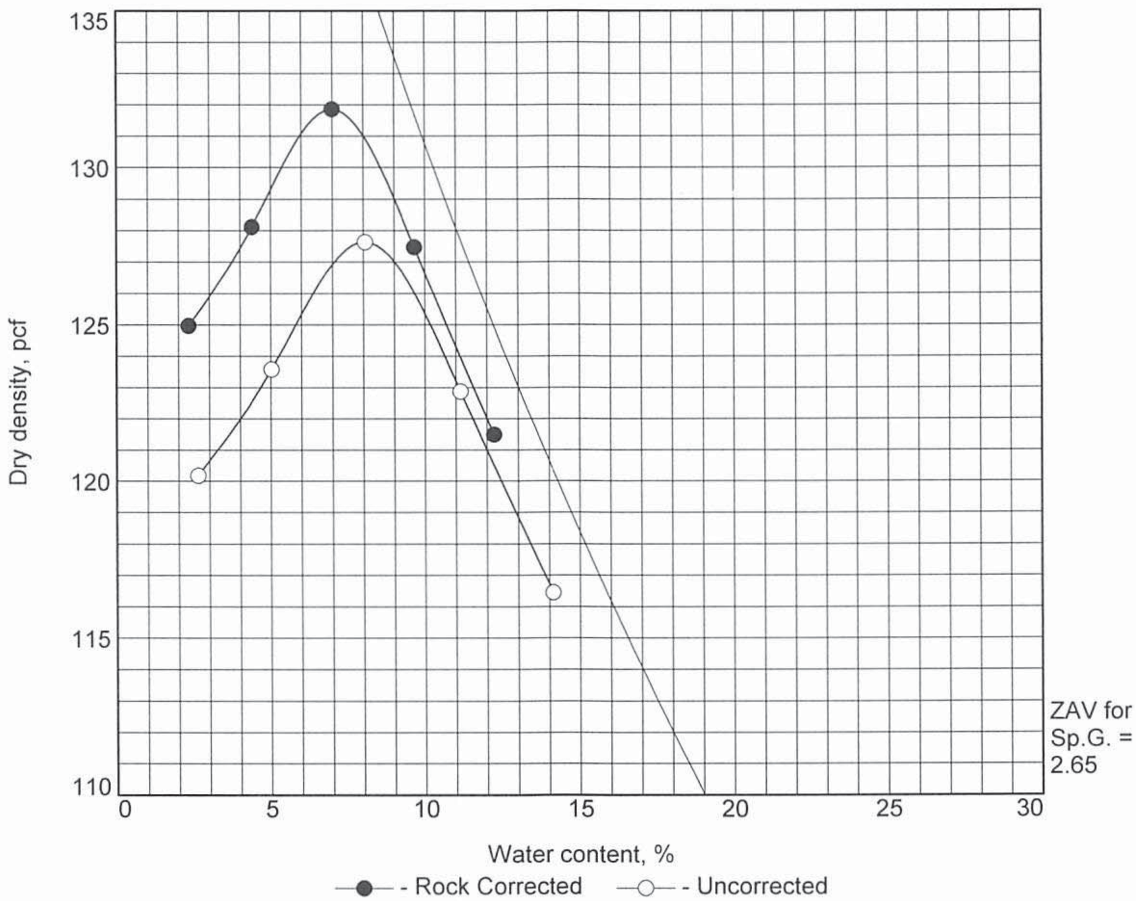
Figure

ATLANTIC TESTING LABORATORIES, LIMITED

Reviewed by: Judy Amas Date: 11/20/20

ATLANTIC TESTING LABORATORIES

COMPACTION TEST REPORT



Test specification: ASTM D 1557-12 Method A Modified
ASTM D4718-15 Oversize Corr. Applied to Each Test Point

Elev/ Depth	Classification		Received Moist.	Sp.G.	LL	PL	PI	% > #4
	USCS	AASHTO						
10 ft	SM		10.5	2.65	--	--	--	14

ROCK CORRECTED TEST RESULTS	MATERIAL DESCRIPTION
Maximum dry density = 131.9 pcf Optimum moisture = 7.0 %	Brown cmf SAND ; and SILT; little c-mf GRAVEL

Report No.: CD4827SL-03-11-20 **Client:** Power Engineers, Inc.
Project: 69KV (UG) Trans. Cable Rt, Bridgehampton to Buell SS
Sample No.: BH-9, BS-1 **Source of Sample:** Bulk Sample
Location: In-place **Date:** 11/20/20

Remarks:
Moist Preparation

ATLANTIC TESTING LABORATORIES, LIMITED

Canton, New York

Rammer: Mechanical
Specific Gravity: Assumed

Reviewed by: Judy Ames

Date: 11/20/20