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May 7, 2024

DELIVERED BY E-MAIL AND HAND DELIVERY

Melanie Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: PETITION NO. 1609 – TRITEC Americas, LLC notice of election to waive exclusion from Connecticut Siting Council jurisdiction, pursuant to Connecticut General Statutes §16-50k(e), and petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 0.999-megawatt AC solar photovoltaic electric generating facility located at 250 Carter Street, Manchester, Connecticut, and associated electrical interconnection. **Supplemental Filing - Geotechnical Engineering Report.**

Dear Attorney Bachman:

On behalf of TRITEC Americas, LLC (“Petitioner”), please see the enclosed Geotechnical Engineering Report as a Supplemental Filing in the above-referenced Petition. The Petitioner submits fifteen hard copies via hand delivery.

Please feel free to contact me if you have any questions.

Very sincerely yours,

Paul R. Michaud

cc: Service List dated April 30, 2024
John F. Sullivan, Attorney for the Town of Manchester
Raymond Welnicki
Rachel and Dana Schnabel
Rosemary Carroll (MARSD)



March 27, 2024

David Trepeck
TRITEC Americas, LLC
888 Prospect Street, Suite 200
LaJolla, CA 92037

**RE: Geotechnical Engineering Report
250 Carter Street Solar Development
Manchester, Connecticut
Solli Project No.: 23100101**

Dear Mr. Trepeck:

Solli Engineering, LLC (“SOLLI”) is pleased to submit this geotechnical engineering report for the above referenced project located at 250 Carter Street in Manchester, Connecticut. Refer to Figure 1, Locus Plan, in Appendix 1 for the general location of the project.

Our recommendations are based in part on guidance from the 2022 Connecticut State Building Code, which includes the 2021 International Building Code (IBC) and Connecticut Amendment. Design recommendations are based on Allowable Stress Design Methods.

SITE DESCRIPTION AND PROPOSED CONSTRUCTION

The approximately 41-acre site is located south of Carter Street, east of Amanda Drive, and west of Blue Ridge Drive. The site is undeveloped, lightly wooded, and contains areas of wetlands. Site grades generally slope down from the southeast to northwest at about seven to nine percent.

The proposed solar array will have a footprint of about 6.9 acres and will consist of approximately 2,590 TrinaSolar TSM-DEG19C20 540W modules on single axis tracking systems that will be supported by driven piles with no significant changes to the existing grades within the array. Foundation loads have not been provided; however, we anticipate that pile lengths will be less than 15 feet.

Access to the Project will be from Carter Street via a 12-ft wide, 740± ft long gravel road. The road will extend to the south to provide access to the proposed equipment, and will generate minimal traffic, for the primary use of operation and maintenance of the solar array.

SUBSURFACE EXPLORATIONS

SOLLI observed and documented 12 test pits (TP-1 through TP-12) that were excavated by David M. Koch, LLC of Middlebury, Connecticut on February 19 and 20, 2024. The approximate locations of the test pits are depicted on Figure 2, Exploration Location Plan, in Appendix 1. The test pits were located by GPS and the ground surface elevation at each was estimated from available survey data; this information should be considered approximate. Logs of the test pits are included in Appendix 2.

The test pits were performed to explore the subsurface conditions in the area of the proposed solar array. The test pits were excavated to between seven and ten feet below existing grades with a Caterpillar 304E2 mini excavator that has a bucket capacity of approximately 1/2 cubic yards and a reach of about 10 feet.

Monroe, CT | West Hartford, CT | Norwood, MA

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One infiltration test was performed at Test Pits TP-4 and TP-5 in general accordance with the 2024 Connecticut Stormwater Quality Manual, the results of which are included with the logs of the test pits in Appendix 2.

LABORATORY TESTING

Representative soil samples collected from the test pits were submitted to a certified laboratory for testing to confirm visual classifications and to evaluate corrosion potential. The laboratory testing was performed in accordance with the American Society for Testing and Materials (ASTM) standards as follows:

- Sieve and hydrometer - ASTM D6913 and ASTM D7928
- pH – ASTM D4972
- Sulfates – ASTM D516
- Chlorides – ASTM D512
- Electrical Resistivity – ASTM G57

The results of the laboratory testing are included in Appendix 3 and are discussed below.

SUBSURFACE CONDITIONS

Regional Geology

The United States Geologic Survey (USGS) map “Surficial Materials Map of Connecticut” by Stone, J.R., Schafer, J.P., London, E.H., and Thompson, W.B. (1992) indicates the surficial material at the site is thin till described as loose to moderately compact, generally sand, commonly stony.

Connecticut Geological and Natural History Survey, Quadrangle Report 6, titled “The Bedrock Geology of the Rockville Quadrangle” by Aitken, J.M. (1955) indicates the bedrock at the site is Glastonbury Gneiss that is described as light gray, medium to coarse grained, massive to well foliated, compositionally banded metamorphic rock.

General Subsurface Profile

The subsurface profile, as inferred from the test pit data, generally consists of topsoil over subsoil over natural granular soils (e.g., silty sand) to the depths explored, which is consistent with published geologic data. The following are more detailed descriptions of the subsurface materials encountered.

Topsoil

Topsoil was observed at the surface of each test pit that is about six inches thick and consists of dark brown, fine to coarse sand, some silt, trace fine gravel, and trace roots. The effort to advance through this material with the excavation equipment is generally easy.

Subsoil

Subsoil was observed below the topsoil in each test pit and is six to 24 inches thick. The subsoil is light brown, fine to coarse sand with some to and silt, trace fine gravel, and trace roots. The effort to advance through this material with the excavation equipment is generally easy.

Natural Granular Soil

Natural granular soil was observed below the topsoil and subsoil in each test pit and is at least five to nine feet thick. The natural granular soil is brown, fine to medium sand with some to and silt, little fine to coarse

gravel, and trace cobbles. The effort to advance through this material with the excavation equipment generally increases with depth from easy to moderate.

Groundwater

Groundwater was observed in each exploration except Test Pit TP-12. Where encountered, the groundwater is between three and nine feet below existing grades. Please note that groundwater levels may vary depending on factors such as temperature, season, precipitation, and other conditions, which may be different from those at the time of these observations.

GEOTECHNICAL DESIGN RECOMMENDATIONS:

Pile Foundations

Foundation loads have not been provided; however, we understand that HP8x36 piles are typically used for these applications. We recommend adopting the following soil properties for the geotechnical design of the pile foundations:

Strata	Total Unit Weight	Effective Unit Weight	Friction Angle
Topsoil/Subsoil	-	-	-
Natural Granular Soil	125 lb/ft ³	63 lb/ft ³	33 degrees

We recommend neglecting the topsoil and subsoil from contributing to the load carrying capacity of the piles. For axial loading, we recommend the piles be designed in accordance with Section 5.3.2, Bearing Capacity of a Single Pile, of the Naval Facilities Engineering Command Manual DM7.2 (NAVFAC). For lateral loading, we recommend the piles be designed in accordance with Section 5.7, Lateral Load Capacity, of NAVFAC.

Site soils are considered frost susceptible based on their higher fines content and as such the designer should consider uplift forces from adfreeze above the frost depth of the locale, which is 42 inches below final grade. We recommend adopting an average adfreeze bond stress of two kips per square foot (2 ksf) for frost susceptible soils frozen to steel as reported in the Canadian Foundation Engineering Manual, 4th Edition.

Soil Corrosivity

The corrosion potential of site soils was evaluated, and we anticipate they have a low potential as they are predominantly natural; however, if desired, a nominal allowance can be included in the structural design of the piles as a precaution.

Laboratory Test	Laboratory Result	Reference Standard	Corrosion Potential
Electrical Resistivity	38,206 ohm-cm	EPRI Report 1021854	Low
pH	5.5	CALTRANS 2015	Low
Chloride	22 ppm	CALTRANS 2015	Low
Sulfate	<10 ppm	CALTRANS 2015	Low

Seismic Site Class and Liquefaction Potential

We recommend adopting a Site Class “D” (Stiff Soil Profile) per the IBC. The Connecticut State Building Code defines S_S and S_I for Manchester, Connecticut as 0.192g and 0.055g respectively and we compute S_{MS} as 0.306g, S_{M1} as 0.132g, S_{DS} as 0.204g, S_{D1} as 0.088g. Based on the anticipated groundwater level and material types encountered, and expected peak ground acceleration at this locale, it is our opinion that site soils are not prone to liquefaction.

Equipment Pads

The equipment pads should bear on a six-inch-thick layer of compacted granular fill (CGF) or crushed stone over firm, undisturbed, natural granular soils. The CGF or crushed stone should be placed at least one foot beyond the edges of the equipment pads and down and away at a 1H:1V slope to the top of the natural granular soils. Based on Table 1806.2 of the Connecticut State Building Code, we recommend a maximum allowable bearing pressure of one and one-half tons per square foot (1.5 TSF) for equipment pads bearing on the subgrade described above.

Access Roads

We understand that access roads at the site will be gravel surface roads. We recommend the access roads consist of at least 12-inches of crushed stone over a stabilizing, separation, roadway fabric over firm and stable natural granular soil. Drainage ditches should be provided along the edges of the access roads to direct surface water and runoff away from the road.

Infiltration Rate

We anticipate the bottom of the proposed stormwater basin will be in the natural granular soils below the topsoil and subsoil. We evaluated the USDA soil texture based on our visual classifications and performed infiltration tests in general accordance with 2024 Connecticut Stormwater Quality Manual. The soil texture is Silt Loam, and the infiltration tests indicate an average rate ranging between 0.01 and 0.03 inches per minute.

MATERIALS AND COMPACTION REQUIREMENTS

Compacted Granular Fill (CGF) shall consist of inorganic soil free of clay, loam, ice and snow, tree stumps, roots, and other organic matter and should conform to the requirements of the State of Connecticut Department of Transportation, Standard Specifications for Roads, Bridges, Facilities, and Incidental Construction (CTDOT Form 818) Section M.02.05, Pervious Structure Backfill. We recommend this material be placed within two percent of its optimum moisture content and to a minimum in-place dry density of 95-percent as per ASTM D1557.

Crushed Stone should consist of sound, tough, durable, rock that conforms to the requirements of CTDOT Form 818 Section M.01.02, Coarse Aggregates, for No. 67 stone.

Geotextile road fabric should consist of US200 as manufactured by US Farics or equal.

CONSTRUCTION CONSIDERATIONS:

Pile Foundation Installations

Site soils were observed to be generally easy to moderate to excavate and contain only occasional cobbles with no boulders observed. As such, we anticipate lower effort will be required to install piles and misalignments due to obstructions should be minimal. However, to manage these occasional situations, the contractor should be prepared to pull and reinstall piles that are misaligned and/or cannot reach design tip elevations during conventional installation. Other remedial measure may be available depending on the Contractor's capabilities, which should be reviewed prior to implementation.

Subgrade Preparation

All topsoil and subsoil must be removed from beneath proposed equipment pads and access roads to the top of the natural granular soils prior to placement of new fill or construction. Final subgrades should be proof rolled until firm and stable with a ride-on roller. Areas disturbed during preparation should be undercut to undisturbed material below and backfilled with CGF or crushed stone. Final subgrades should be free of water, ice, frozen soil, and loose soil. Construction on final subgrades should occur as soon as possible after excavation so that disturbance of bearing materials does not occur.

Temporary Excavations

The on-site material is classified as OSHA Class "C" soil and can be cut at a maximum one vertical to one and half horizontal (1V:1.5H) and sloped up to a maximum excavation depth of 20 feet. This maximum slope and excavation depth assumes no surcharge load (i.e. stockpiles, construction equipment, etc.) at the top of the excavations or seepage (e.g. cuts below the groundwater table).

Dewatering

Groundwater is not expected to be encountered during construction. We expect that temporary groundwater or storm water control can be accomplished by means of shallow trenches, sumps, and grading the excavation to low points.

CONSTRUCTION DOCUMENTS AND QUALITY CONTROL:

Project drawings should be provided to SOLLI to review for conformance with the geotechnical recommendations contained herein. If changes are made to the locations or type of structure the recommendations in this report will need to be reviewed. We recommend that SOLLI make field observations of foundation installations to monitor compliance with our recommendations and project specifications.

LIMITATIONS

This report is subject to the limitations included in Appendix 4.

Thank you for the opportunity to be of service. Please feel free to call if you have questions.

Sincerely,



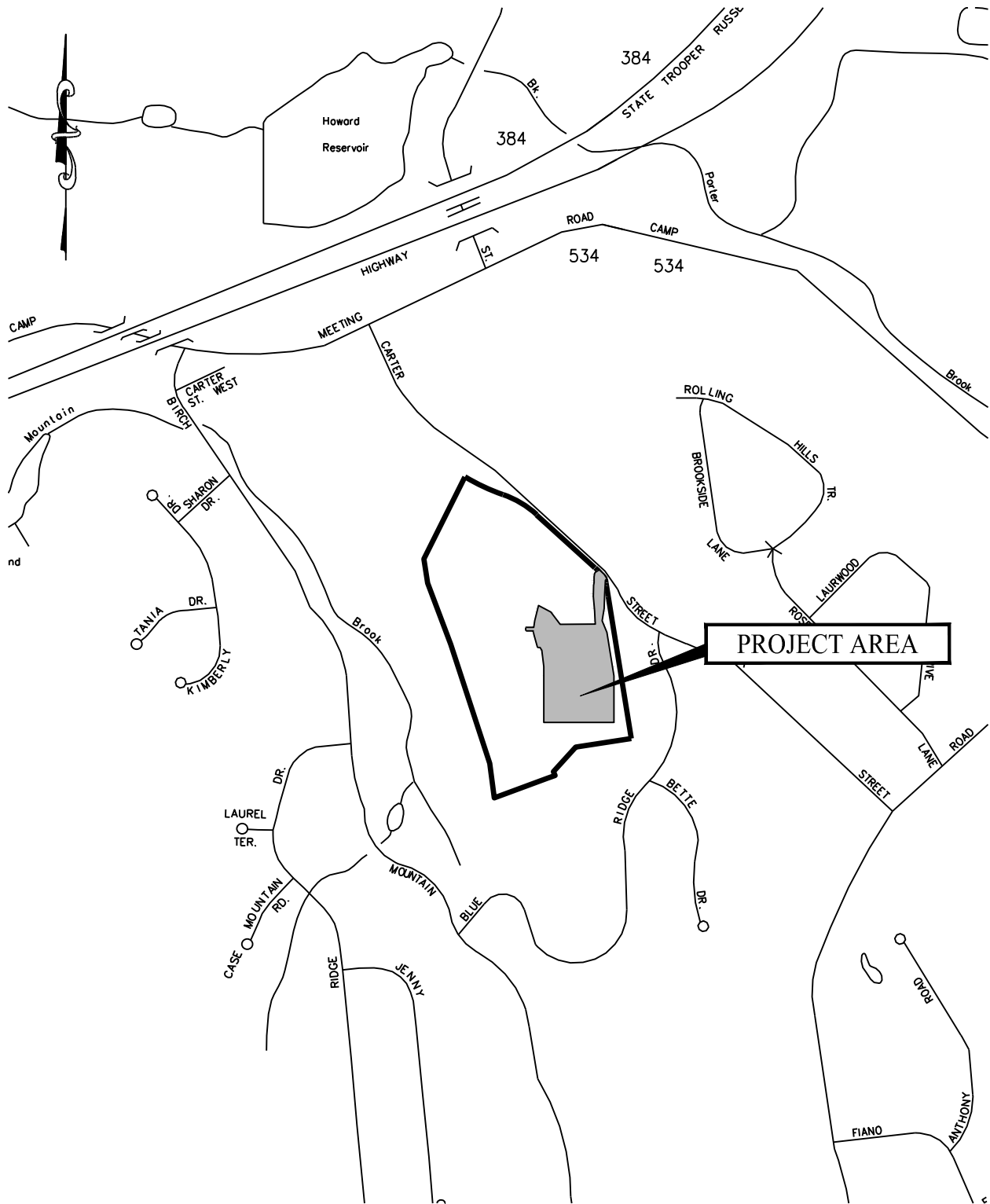
Joseph W. Kidd, P.E.
Senior Project Manager

Attachments:

- Appendix 1 – Figures
- Appendix 2 – Test Pit Logs
- Appendix 3 – Laboratory Test Results
- Appendix 4 – Limitations

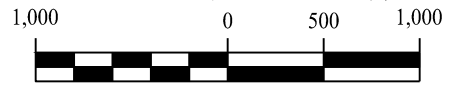
Appendix 1

Figures



PROJECT AREA

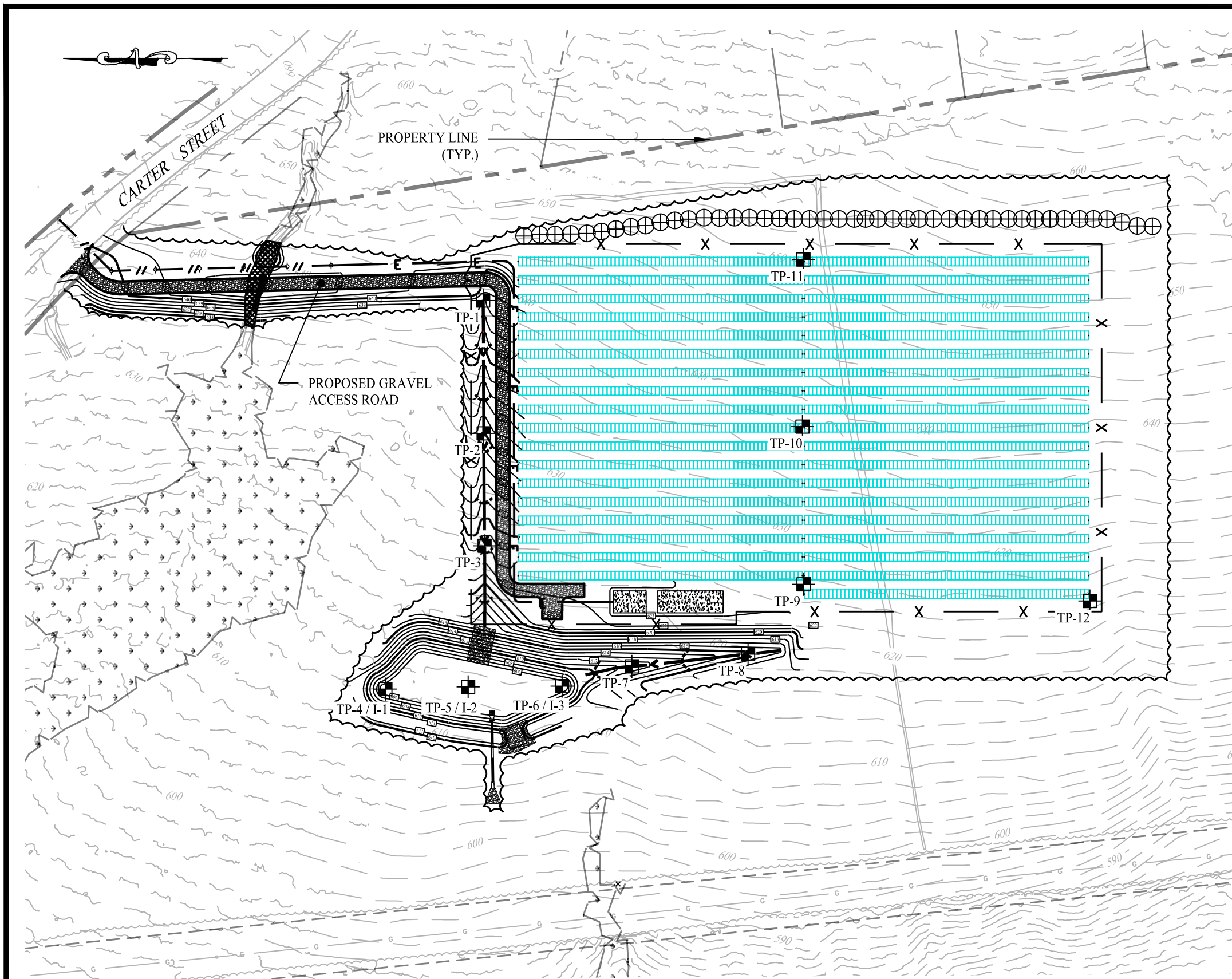
NOTE: BASE MAP INFORMATION TAKEN FROM CT DOT TRU MAPS 012 & 076



SOLLI
ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

SITE LOCATION MAP
250 CARTER STREET
MANCHESTER, CONNECTICUT

Project #:	23100101
Plan Date:	12/27/23
Scale:	1" = 1,000'
Figure:	1

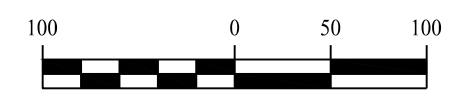


GENERAL NOTES

- EXISTING BOUNDARY, TOPOGRAPHY, AND SITE CONDITION INFORMATION TAKEN FROM A PLAN TITLED "PROPERTY & TOPOGRAPHIC SURVEY MAP PREPARED FOR SOLLI ENGINEERING, 250 CARTER STREET, MANCHESTER, CONNECTICUT," DATED OCTOBER 20, 2023, SCALE: 1"=100', BY HARRY E. COLE & SONS.
- EXPLORATIONS WERE PERFORMED ON FEBRUARY 19 & 20, 2024 BY DAVID M. KOCH LANDSCAPING, LLC.
- EXPLORATIONS WERE LOCATED USING A HAND-HELD GPS SYSTEM. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

LEGEND

- PROPERTY LINE
- TP-X / I-X
- TEST PIT / INFILTRATION TEST



SOLLI ENGINEERING
 501 Main Street, Monroe, CT 06468
 T: (203) 880-5455 | F: (203) 880-9695

Drawn By: SFU
 Checked By: JWK
 Project #: 23100101
 Plan Date: 02/27/24
 Scale: 1" = 100'

Project:
PROPOSED SOLAR ARRAY
 250 CARTER STREET
 MANCHESTER, CONNECTICUT

Sheet Title:
EXPLORATION LOCATION PLAN

FIG. 2

Appendix 2
Test Pit Logs

TEST PIT LOG



501 Main Street, Monroe, CT 06468
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PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-1

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±639.0'
Datum: N/A
Date: 2/19/2024
Time Start: 11:45 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND and SILT, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine to medium SAND and SILT, little fine to coarse Gravel, trace Cobbles.	E		1, 2
4			E		
5			E		
6			E		
7			E		
8		Bottom of Exploration ±7.0'			
9					
10					
11					
12					
13					
14					
15					
16					

Notes:

- Mottles and perched groundwater seeping at ±3.0'.
- Roots to ±3.0'.
- Groundwater observed at ±6.0'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Boulder</th> <th>Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>< 10%</td> <td>Trace</td> </tr> <tr> <td>10-20%</td> <td>Little</td> </tr> <tr> <td>20-35%</td> <td>Some</td> </tr> <tr> <td>35-50%</td> <td>And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
Boulder	Class																		
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35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-2

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±631.0'
Datum: N/A
Date: 2/19/2024
Time Start: 11:30 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND and SILT, trace fine Gravel, trace Roots.	E		
3		Brown, fine to medium SAND and SILT, little fine to coarse Gravel.	E		1, 2
4			E		
5			E		
6	SILTY SAND		E		
7			E		
8	▼		E		3
9			E		
10		Bottom of Exploration ±9.0'			
11					
12					
13					
14					
15					
16					

Notes:

- Mottles and perched groundwater seeping at ±3.0'.
- Roots to ±3.0'.
- Groundwater observed at ±7.5'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">< 10%</td> <td style="text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
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< 10%	Trace																		
10-20%	Little																		
20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-3

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±624.0'
Datum: N/A
Date: 2/19/2024
Time Start: 11:15 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND and SILT, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine to medium SAND, some Silt, little fine to coarse Gravel.	E		1
4			E		
5			E		2
6			E		
7			E		3
8			E		
9		Bottom of Exploration ±8.0'			
10					
11					
12					
13					
14					
15					
16					

Notes:

1. Perched groundwater seeping at ±3.0'.
2. Mottles and roots at ±4.5'.
3. Groundwater observed at ±6.5'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">< 10%</td> <td style="text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
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20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-4

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±612.0'
Datum: N/A
Date: 2/19/2024
Time Start: 8:30 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine to medium SAND, some Silt, little fine to coarse Gravel.	E		1
4			E		2
5			E		
6			E		
7			E		3
8			E		
9			E		
10		Bottom of Exploration ±9.5'			
11					
12					
13					
14					
15					
16					

Notes:

- Perched groundwater seeping at ±2.5'.
- Roots to ±3.0'.
- Test pit started caving. Groundwater level unable to be measured.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">Boulder</th> <th style="width: 50%;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">< 10%</td> <td style="width: 50%; text-align: center;">Trace</td> </tr> <tr> <td style="text-align: center;">10-20%</td> <td style="text-align: center;">Little</td> </tr> <tr> <td style="text-align: center;">20-35%</td> <td style="text-align: center;">Some</td> </tr> <tr> <td style="text-align: center;">35-50%</td> <td style="text-align: center;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
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TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-5

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±613.0'
Datum: N/A
Date: 2/19/2024
Time Start: 9:00 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3		Brown, fine to medium SAND and SILT, little fine to coarse Gravel, trace Cobbles.	E		1
4	E				
5	SILTY SAND		E		
6			E		2
7			E		
8			E		
9			E		
10			E		
11	Bottom of Exploration ±9.5'				
12					
13					
14					
15					
16					

Notes:

- Mottles and perched groundwater seeping at ±3.0'.
- Groundwater observed at 6.0' after 15 minutes, 5.5' after 45 minutes.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation	<u>BOULDER COUNT</u>	<u>PROPORTIONS USED</u>	<u>EXCAVATION EFFORT</u>																
<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">5.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 10px;"></div> <div style="margin-right: 10px;">N</div> <div style="text-align: center;">↓</div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;">< 10%</td> <td style="width: 50%; text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<p>E = Easy</p> <p>M = Moderate</p> <p>D = Difficult</p>
Boulder	Class																		
12"-24"	A																		
24"-36"	B																		
>36"	C																		
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10-20%	Little																		
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35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-6

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±614.0'
Datum: N/A
Date: 2/19/2024
Time Start: 9:30 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3		Brown, fine to medium SAND, some Silt, little fine to coarse Gravel, trace Cobbles.	E		1
4			E		2
5			E		
6	SILTY SAND		E		
7	▼		E		3
8			E		
9			E		
10		Bottom of Exploration ±9.0'			
11					
12					
13					
14					
15					
16					

Notes:

1. Roots and perched groundwater seeping at ±2.5'.
2. Mottles at ±3.5'.
3. Groundwater observed at ±7.0'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;"><u>Boulder</u></td> <td style="text-align: left;"><u>Class</u></td> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	<u>Boulder</u>	<u>Class</u>	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: left;">< 10%</td> <td style="text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
<u>Boulder</u>	<u>Class</u>																		
12"-24"	A																		
24"-36"	B																		
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35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-7

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±616.0'
Datum: N/A
Date: 2/19/2024
Time Start: 10:30 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine to medium SAND, some Silt, little fine to coarse Gravel, with Cobbles.	E		1
4			E		2
5			E		
6			E		
7			E		
8	E			3	
9		Bottom of Exploration ±8.0'			
10					
11					
12					
13					
14					
15					
16					

Notes:

1. Roots and perched groundwater seeping at ±2.5'.
2. Mottles at ±3.5'.
3. Groundwater observed at ±7.0'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">Boulder</th> <th style="width: 50%;">Class</th> </tr> <tr> <td>12"-24"</td> <td style="text-align: center;">A</td> </tr> <tr> <td>24"-36"</td> <td style="text-align: center;">B</td> </tr> <tr> <td>>36"</td> <td style="text-align: center;">C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">< 10%</td> <td style="width: 50%; text-align: center;">Trace</td> </tr> <tr> <td style="text-align: center;">10-20%</td> <td style="text-align: center;">Little</td> </tr> <tr> <td style="text-align: center;">20-35%</td> <td style="text-align: center;">Some</td> </tr> <tr> <td style="text-align: center;">35-50%</td> <td style="text-align: center;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
Boulder	Class																		
12"-24"	A																		
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< 10%	Trace																		
10-20%	Little																		
20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-8

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Montagno
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 30s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±619.0'
Datum: N/A
Date: 2/19/2024
Time Start: 11:00 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine SAND and SILT, little fine to coarse Gravel.	E		1
4			E		2
5			E		
6			E		
7			E		
8			E		
9			E		
9			E		
10		Bottom of Exploration ±9.5'			
11					
12					
13					
14					
15					
16					

Notes:

- Roots to ±2.5'.
- Mottles and perched groundwater seeping at ±3.5'.
- Groundwater observed at ±9.0'.

Water Symbols

▼ = Groundwater

Test Pit Dimensions & Orientation	<u>BOULDER COUNT</u>	<u>PROPORTIONS USED</u>	<u>EXCAVATION EFFORT</u>																
<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;">5.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 20px;"></div> <div style="margin-right: 20px;">N</div> <div style="text-align: center;">↓</div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;">< 10%</td> <td style="width: 50%; text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<p>E = Easy</p> <p>M = Moderate</p> <p>D = Difficult</p>
Boulder	Class																		
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20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-9

Sheet: 1 of 1

Project # 23100101

Checked By: J. Kidd

Solli Rep.: J. Kidd
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 20s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±626.0'
Datum: N/A
Date: 2/20/2024
Time Start: 10:40 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E	2A	
3		Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Cobbles.	E		1
4	▼		E		
5			M		2
6	SILTY SAND		M		
7			D	1C	
8			D		
9			D	1B	
10			D		
11		Bottom of Exploration ±10.0'			
12					
13					
14					
15					
16					

Notes:
1. Roots to ±1.5'.
2. Perched groundwater seeping at ±4.0'.

Water Symbols
▼ = Groundwater

Test Pit Dimensions & Orientation	<u>BOULDER COUNT</u>	<u>PROPORTIONS USED</u>	<u>EXCAVATION EFFORT</u>																
<div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 10px;">10.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 10px;"></div> <div style="margin-right: 10px;">N →</div> </div> <div style="margin-top: 10px;"> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">4.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 10px;"></div> </div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;">< 10%</td> <td style="width: 50%; text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<p>E = Easy M = Moderate D = Difficult</p>
Boulder	Class																		
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>36"	C																		
< 10%	Trace																		
10-20%	Little																		
20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-10
Sheet: 1 of 1
Project # 23100101
Checked By: J. Kidd

Solli Rep.: J. Kidd
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 20s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±638.0'
Datum: N/A
Date: 2/20/2024
Time Start: 8:55 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E	1C	1
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		
3	SILTY SAND	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Cobbles.	E		2
4			M		
5			M		
6			M		
7			M		
8			M		
9			M		
10			M		
11			M		
12			M		
13		Bottom of Exploration ±10.0'			
14					
15					
16					

Notes:
1. Roots to ±1.0'.
2. Perched groundwater seeping at ±3.0'.

Water Symbols
▼ = Groundwater

Test Pit Dimensions & Orientation 	<u>BOULDER COUNT</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%; text-align: left;"><u>Boulder</u></th> <th style="width: 50%; text-align: left;"><u>Class</u></th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	<u>Boulder</u>	<u>Class</u>	12"-24"	A	24"-36"	B	>36"	C	<u>PROPORTIONS USED</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;">< 10%</td> <td style="width: 50%; text-align: left;">Trace</td> </tr> <tr> <td style="text-align: left;">10-20%</td> <td style="text-align: left;">Little</td> </tr> <tr> <td style="text-align: left;">20-35%</td> <td style="text-align: left;">Some</td> </tr> <tr> <td style="text-align: left;">35-50%</td> <td style="text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<u>EXCAVATION EFFORT</u> E = Easy M = Moderate D = Difficult
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10-20%	Little																		
20-35%	Some																		
35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-11
Sheet: 1 of 1
Project # 23100101
Checked By: J. Kidd

Solli Rep.: J. Kidd
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 20s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±639.0'
Datum: N/A
Date: 2/20/2024
Time Start: 9:50 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes		
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E				
2	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		1		
3	SILTY SAND	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Cobbles.	E				
4			E		2		
5			E				
6			M				
7			M				
8			M		1A		
9			M				
10			D				
11			Bottom of Exploration ±10.0'				
12							
13							
14							
15							
16							

Notes:
1. Roots to ±1.0'.
2. Perched groundwater seeping at ±3.0'.

Water Symbols
▼ = Groundwater

Test Pit Dimensions & Orientation	<u>BOULDER COUNT</u>	<u>PROPORTIONS USED</u>	<u>EXCAVATION EFFORT</u>																
	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left;">Boulder</th> <th style="text-align: left;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: left;">< 10%</td> <td style="width: 50%; text-align: left;">Trace</td> </tr> <tr> <td style="width: 50%; text-align: left;">10-20%</td> <td style="width: 50%; text-align: left;">Little</td> </tr> <tr> <td style="width: 50%; text-align: left;">20-35%</td> <td style="width: 50%; text-align: left;">Some</td> </tr> <tr> <td style="width: 50%; text-align: left;">35-50%</td> <td style="width: 50%; text-align: left;">And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<p>E = Easy M = Moderate D = Difficult</p>
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35-50%	And																		

TEST PIT LOG



501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

PROJECT

Proposed Solar Array
250 Carter Street
Manchester, Connecticut

Test Pit No: TP-12
Sheet: 1 of 1
Project # 23100101
Checked By: J. Kidd

Solli Rep.: J. Kidd
Exc. Contractor: David M. Koch Landscaping, LLC
Exc. Operator: D. Koch
Weather: Clear, 20s

Make: Caterpillar
Model: 304E2
Capacity: 0.5 cy
Reach: ±10.0'

Ground Elev: ±625.0'
Datum: N/A
Date: 2/20/2024
Time Start: 9:20 AM

Depth Below Grade (ft)	Strata Change & Water Level	Subsurface Description	Excavation Effort	Boulder Qty/Class	Notes	
1	TOPSOIL	Dark brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E			
	SUBSOIL	Light brown, fine to coarse SAND, some Silt, trace fine Gravel, trace Roots.	E		1	
2	SILTY SAND	Brown, fine to coarse SAND, some Silt, little fine to coarse Gravel, trace Cobbles.	E			
3		E				
4		E				
5		M				
6		M	1A, 1B			
7		M				
8		M	1B			
9		M				
		M	3A			
10		Bottom of Exploration ±9.5'		D		
11						
12						
13						
14						
15						
16						

Notes:
1. Roots to ±1.0'.
2. Groundwater not observed.

Water Symbols
 = Groundwater

Test Pit Dimensions & Orientation	<u>BOULDER COUNT</u>	<u>PROPORTIONS USED</u>	<u>EXCAVATION EFFORT</u>																
<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 10px;">12.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 10px;"></div> <div style="text-align: center; margin-right: 10px;">N →</div> </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="text-align: center; margin-right: 10px;">4.0'</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 10px;"></div> </div>	<table style="width: 100%; border-collapse: collapse;"> <tr> <th style="text-align: left; border-bottom: 1px solid black;">Boulder</th> <th style="text-align: left; border-bottom: 1px solid black;">Class</th> </tr> <tr> <td>12"-24"</td> <td>A</td> </tr> <tr> <td>24"-36"</td> <td>B</td> </tr> <tr> <td>>36"</td> <td>C</td> </tr> </table>	Boulder	Class	12"-24"	A	24"-36"	B	>36"	C	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black;">< 10%</td> <td style="width: 50%; border-bottom: 1px solid black;">Trace</td> </tr> <tr> <td>10-20%</td> <td>Little</td> </tr> <tr> <td>20-35%</td> <td>Some</td> </tr> <tr> <td>35-50%</td> <td>And</td> </tr> </table>	< 10%	Trace	10-20%	Little	20-35%	Some	35-50%	And	<p>E = Easy M = Moderate D = Difficult</p>
Boulder	Class																		
12"-24"	A																		
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< 10%	Trace																		
10-20%	Little																		
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35-50%	And																		



501 Main Street, Monroe, CT 06468
 T: (203) 880-5455 F: (203) 880-9695

PROPOSED SOLAR ARRAY
 250 Carter Street, Manchester, Connecticut

Project # 23100101

Date: February 22, 2024
 Solli Rep.: J. Montagno

Test No.: I-1				Location: TP-4	
Temperature	30°F	Test Type: 4" PVC Casing (solid)		Ground Surface El. ±612.0'	
Weather	Clear	USDA Textural Class:		Subgrade El. ±609.0'	
				Test El. ±607.0'	
Time	Elapsed Tim (min.)	Water Depth (in.)	Infiltration Rate (in./min.)	Remarks	
10:15 AM	0	4.0	-	1	
10:20 AM	5	4.1	0.03	2	
Average Infiltration Rate (in./min.):			0.03		
REMARKS:					
1. First soak test					
2. No measurable change in water depth after 5 minutes.					

Test No.: I-2				Location: TP-5	
Temperature	30°F	Test Type: 4" PVC Casing (solid)		Ground Surface El. ±613.0'	
Weather	Clear	USDA Textural Class:		Subgrade El. ±609.0'	
				Test El. ±607.0'	
Time	Elapsed Tim (min.)	Water Depth (in.)	Infiltration Rate (in./min.)	Remarks	
10:16 AM	0	2.3	-	1	
10:21 AM	5	2.3	0.00		
10:26 AM	10	2.4	0.03		
10:36 AM	20	2.5	0.01	2	
Average Infiltration Rate (in./min.):			0.01		
REMARKS:					
1. First soak test					
2. No measurable change in water depth after 20 minutes.					

Appendix 3

Laboratory Test Results



Client:	Solli Engineering, LLC		
Project:	Manchester PV		
Location:	Manchester, CT	Project No:	GTX-318673
Boring ID:	---	Sample Type:	Bag
Sample ID:	23100101- TP10	Test Date:	03/01/24
Depth :	---	Test Id:	760613
Test Comment:	---		
Visual Description:	Moist, brown silty sand		
Sample Comment:	---		

pH of Soil by ASTM D4972

Boring ID	Sample ID	Depth	Visual Description	pH of Soil in Distilled Water	pH of Soil in Calcium Chloride
---	23100101-TP10	---	Moist, brown silty sand	5.5	4.3

Notes: Sample Preparation: screened through #10 sieve
Method A, pH meter used



Client:	Solli Engineering, LLC
Project:	Manchester PV
Location:	Manchester, CT
GTX#:	318673
Test Date:	03/01/24
Due Date:	03/06/24
Tested By:	NMK
Checked By:	ank

**Laboratory Measurement of Soil Resistivity Using
the Wenner Four-Electrode Method by ASTM G57
(Laboratory Measurement)**

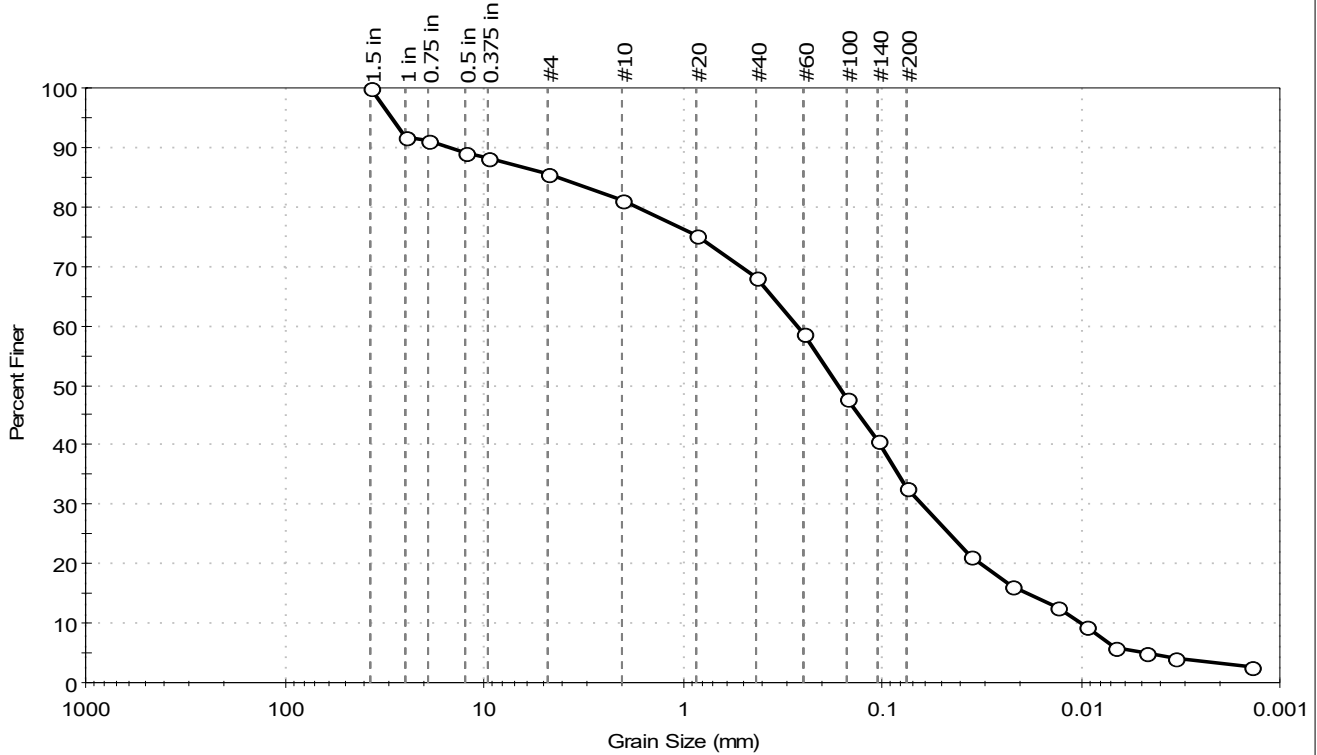
Boring ID	Sample ID	Depth, ft.	Sample Description	Electrical Resistivity, ohm-cm	Electrical Conductivity, (ohm-cm) ⁻¹
---	23100101-TP10	---	Moist, brown silty sand	38,206	2.6174E-05

Notes: Test Equipment: Nilsson Model 400 Soil Resistance Meter, MC Miller Soil Box
Water added to sample to create a thick slurry prior to testing (saturated condition).
Electrical Conductivity is calculated as inverse of Electrical Resistivity (per ASTM G57)
Test conducted in standard laboratory atmosphere: 68-73 F



Client: Solli Engineering, LLC
 Project: Manchester PV
 Location: Manchester, CT
 Project No: GTX-318673
 Boring ID: ---
 Sample Type: Bag
 Tested By: ckg
 Sample ID: 23100101- TP10
 Test Date: 03/02/24
 Checked By: ank
 Depth: ---
 Test Id: 760565
 Test Comment: ---
 Visual Description: Moist, brown silty sand
 Sample Comment: ---

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	14.5	52.6	32.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1.5 in	37.50	100		
1 in	25.00	92		
0.75 in	19.00	91		
0.5 in	12.50	89		
0.375 in	9.50	88		
#4	4.75	86		
#10	2.00	81		
#20	0.85	75		
#40	0.42	68		
#60	0.25	59		
#100	0.15	48		
#140	0.11	41		
#200	0.075	33		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0359	21		
---	0.0225	16		
---	0.0132	13		
---	0.0094	9		
---	0.0067	6		
---	0.0048	5		
---	0.0034	4		
---	0.0014	3		

<u>Coefficients</u>	
D ₈₅ = 4.2819 mm	D ₃₀ = 0.0625 mm
D ₆₀ = 0.2680 mm	D ₁₅ = 0.0186 mm
D ₅₀ = 0.1655 mm	D ₁₀ = 0.0100 mm
C _u = 26.800	C _c = 1.458

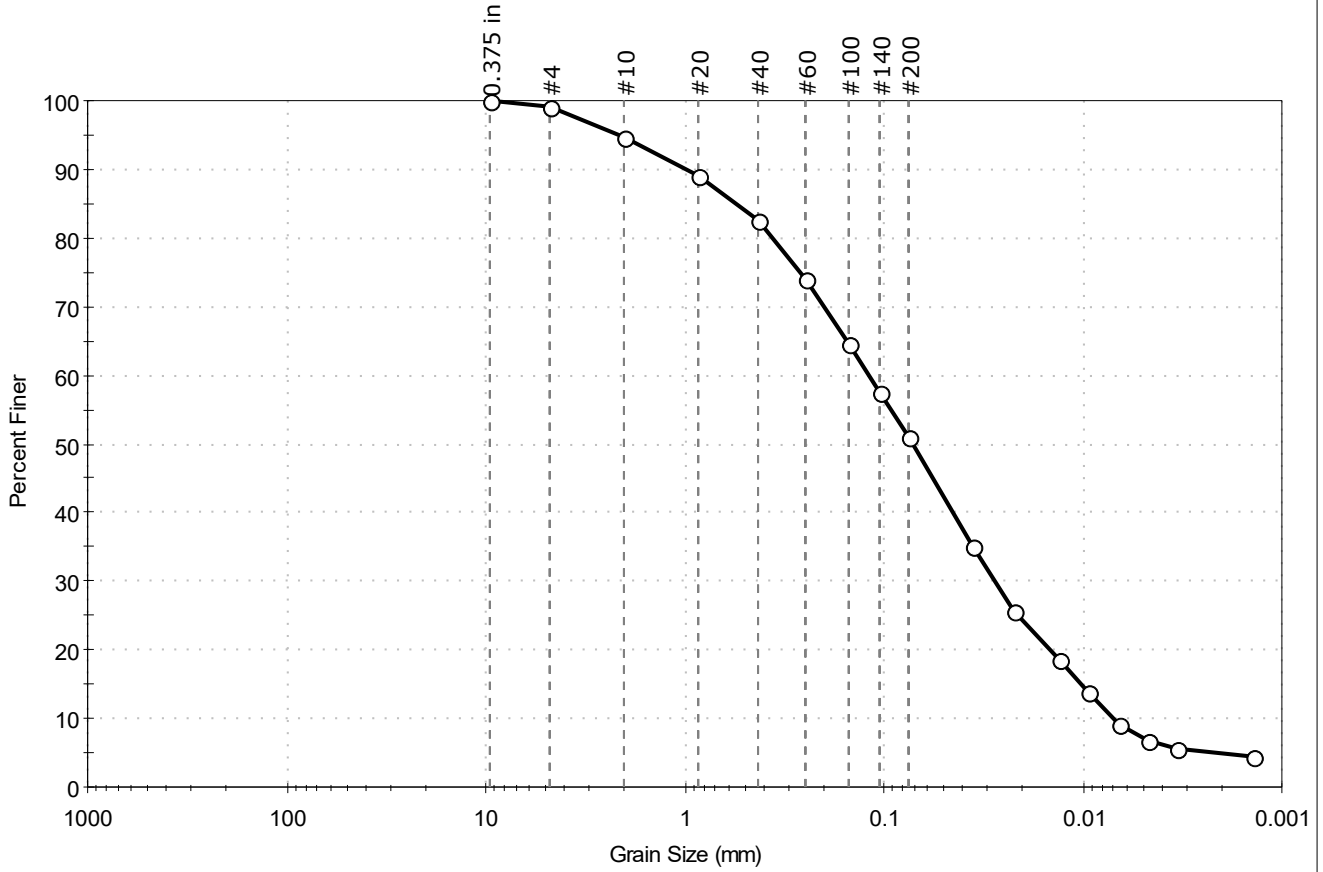
<u>Classification</u>	
<u>ASTM</u>	N/A
<u>AASHTO</u>	Silty Gravel and Sand (A-2-4 (0))

<u>Sample/Test Description</u>
Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



Client: Solli Engineering, LLC	Project No: GTX-318673
Project: Manchester PV	
Location: Manchester, CT	
Boring ID: ---	Sample Type: Bag
Sample ID: 23100101- TP3	Test Date: 03/01/24
Depth: ---	Test Id: 759858
Test Comment: ---	Tested By: ckg
Visual Description: Moist, yellowish brown sandy silt	Checked By: ank
Sample Comment: ---	

Particle Size Analysis - ASTM D6913/D7928



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.9	48.1	51.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
0.375 in	9.50	100		
#4	4.75	99		
#10	2.00	95		
#20	0.85	89		
#40	0.42	82		
#60	0.25	74		
#100	0.15	65		
#140	0.11	58		
#200	0.075	51		
Hydrometer	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0356	35		
---	0.0220	26		
---	0.0130	19		
---	0.0093	14		
---	0.0066	9		
---	0.0047	7		
---	0.0033	6		
---	0.0014	5		

Coefficients	
D ₈₅ = 0.5517 mm	D ₃₀ = 0.0274 mm
D ₆₀ = 0.1196 mm	D ₁₅ = 0.0100 mm
D ₅₀ = 0.0717 mm	D ₁₀ = 0.0070 mm
C _u = 17.086	C _c = 0.897

Classification	
ASTM	N/A
AASHTO	Silty Soils (A-4 (0))

Sample/Test Description
Sand/Gravel Particle Shape : ---
Sand/Gravel Hardness : ---
Dispersion Device : Apparatus A - Mech Mixer
Dispersion Period : 1 minute
Est. Specific Gravity : 2.65
Separation of Sample: #200 Sieve



|||||||
GEOTESTING EXPRESS INCORPORATED
125 NAGOG PARK
ACTON MA 01720-3451
USA

Analysis No. TS-A2411753
Report Date 05 March 2024
Date Sampled 29 February 2024
Date Received 04 March 2024
Where Sampled Acton, MA USA
Sampled By Client

This is to attest that we have examined: Soil: Project: Manchester PV, Andover; Site Location: Manchester, CT;
Job Number: GTX-318673

When examined to the applicable requirements of:

- ASTM D 512-12* "Standard Test Methods for Chloride Ion in Water" Method B
- ASTM D 516-16 "Standard Test Method for Sulfate Ion in Water"

Results:

ASTM D 512 - Chloride Method B

Sample	Results		Minimum Detection Limit
	ppm (mg/kg)	% ¹	
23100101-TP10	22.	0.0022	10.
---	---		

NOTE: ¹Percent by weight after drying and prepared as per the Standard. *Withdrawn 2021 without Replacement

ASTM D 516 – Sulfates (Soluble)

Sample	Results		Minimum Detection Limit
	ppm (mg/kg)	% ¹	
23100101-TP10	< 10.	< 0.0010	10.
---	---		

NOTE: ¹Percent by weight after drying and prepared as per the Standard.

END OF ANALYSIS

USEPA Laboratory ID UT00930

Merrill Gee P.E. – Engineer in Charge

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Appendix 4

Limitations

GEOTECHNICAL LIMITATIONS

Explorations

1. The analysis and recommendations submitted in this report are based in part upon the data obtained from widely spaced subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction. If variations then appear evident, it will be necessary to reevaluate the recommendations of this report.
2. The generalized soil profile described in the text is intended to convey trends in subsurface conditions. The boundaries between strata are approximate and idealized and have been developed by interpretations of widely spaced explorations and samples; actual soil transitions are probably more erratic. For specific information, refer to the test pit logs.
3. Water level readings have been made at the times and under the conditions stated on the test pit logs. This data has been reviewed and interpretations made in the text of this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or locations of the proposed structures are planned, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by Solli Engineering, LLC. It is recommended that this firm be provided with the opportunity for a general review of final design and specifications in order that earthwork and geotechnical recommendations may be properly interpreted and implemented in the design and specifications.

Use of Report

5. This report has been prepared for the exclusive use of TRITEC Americas, LLC and their design team for specific application to the Proposed Solar Array that will be located at 250 Carter Street in Manchester, Connecticut in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.