DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

GEOTECHNICAL ENGINEERING REPORT
PROPOSED TELECOMMUNICATIONS TOWER
CHESHIRE EAST
185 ACADEMY ROAD, CHESHIRE, CONNECTICUT

Prepared for:

All-Points Technologies Corporation, P.C.
567 Vauxhaul Street Extension – Suite 311
Waterford, Connecticut 06385

Prepared by:

Down To Earth Consulting, LLC
122 Church Street
Naugatuck, Connecticut 06770

File No. 0032-054.00
August 13, 2021

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING

August 13, 2021
File No. 0032-054.00

Mr. Robert C. Burns
All-Points Technology Corporation, P.C.
567 Vauxhaul Street Extension – Suite 311
Waterford, Connecticut 06385

Via email: rburns@allpointstech.com

Re: Geotechnical Engineering Report
Proposed Telecommunications Tower
185 Academy Road, Cheshire, Connecticut

Down To Earth Consulting, LLC (DTE) is pleased to submit this geotechnical engineering report for the proposed telecommunications tower on 185 Academy Road in Cheshire, Connecticut (Site) for All-Points Technologies Corporation, P.C. (Client). Our services were completed in general accordance with our current Master Services Agreement. We appreciate this opportunity to work with you. Please call if you have any questions.

Sincerely,

Down To Earth Consulting, LLC

Raymond P. Janeiro, P.E.
Principal

Thomas Orszulak, P.E.
Reviewer/Project Manager

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APPENDICES

1.0 INTRODUCTION

Down To Earth Consulting, LLC, completed a geotechnical engineering evaluation for the proposed telecommunications tower at the referenced Site. Our geotechnical engineering services included: reviewing project plans, performing geotechnical engineering analyses based on the results of a subsurface exploration program completed by the Client, and providing geotechnical design and construction recommendations for the project. Refer to Figure 1 and 2 (in Appendix 1) for an area plan and site plan, respectively.

Our services were performed in accordance with our August 20, 2020, email proposal. We were provided with soil boring logs and a boring location plan, prepared by Site, LLC, dated July 27, 2020. We were also provided with drawings prepared by the Client for the referenced project (*Wireless Telecommunications Facility – Cheshire East, 185 Academy Road, Cheshire, CT, 06410),* revision dated 08/20/2020.

Elevations (El.) stated in this report are in feet and based on the North American Vertical Datum of 1988 (NAVD 88). Our recommendations are based on allowable stress design methods and the 2018 Connecticut State Building Code which references the 2015 International Building Code.

2.0 BACKGROUND

The Site is located about 200 feet south from the Cheshire United Methodist Church building and is generally bordered by residential parcels to the east and west, and a cemetery to the south. Existing Site grades are relatively level at about El. 243+/-. Site conditions in the area of the proposed tower compound generally consists of an unpaved parking area.

The project consists of constructing a 95-foot monopine telecommunications tower and associated equipment cabinets within a 42-foot by 50-foot fenced compound with a gravel wearing surface. Tower and equipment platform loads were not provided to DTE at the time of writing this report. It's anticipated that nominal cuts and fills on the order of 1-foot or less will be needed to achieve design grades and that no significant slopes will be required. Refer to the Site and Exploration Location Plan (Figure 2) for additional proposed development details.

3.0 SUBSURFACE DATA

3.1 GENERAL SITE GEOLOGY

Published surficial and bedrock geological map data (*1:125,000 scale, Surficial Materials Map of Connecticut, Janet Radway Stone, 1992 and Bedrock Geological Map of Connecticut, John Rodgers, 1985*) was reviewed. The Site surficial material is mapped as glacial till consisting of a variable mixture of gravel, sand, silt, and clay that is intermixed with cobbles and boulders. The underlying bedrock is classified as red-brown, fine- to medium-grained Arkose (New Haven Formation).

3.2 EXPLORATIONS

The Client reportedly observed and logged five test borings (B-1 through B-5) drilled by Site, LLC on July 27, 2020. Exploration locations are depicted on Figure 2 – *Site Schematic* (Appendix 1) and the logs are included in Appendix 2.

The borings were drilled to explore the soil, bedrock, and groundwater conditions in the proposed tower area. Hollow-stem auger and rotary drilling methods were used to advance the borings to depths of approximately 3 to 18 feet (approximate El. 240 to 225) below existing grades. Upon encountering drilling refusal at a depth of approximately 8 feet bgs, rock core samples were obtained in Boring B-1 to evaluate the type and quality of bedrock. The core times were recorded every foot of core length and rock quality was determined using visual classification.

Representative soil samples were obtained from the boring for soil classification by split barrel sampling procedures in general accordance with ASTM D-1586. The split-spoon sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampler the middle 12-inches of a normal 24-inch penetration is recorded as the Standard Penetration Resistance Value (N). The blows (i.e., "N-Value") are indicated on the boring logs at their depth of occurrence and provide an indication of the relative consistency of the material.

Groundwater levels were measured during drilling and reported on the boring logs.

4.0 SUBSURFACE CONDITIONS

4.1 SUBSURFACE PROFILE

The generalized subsurface profile in the area of the proposed telecommunications compound, as inferred from the subsurface exploration data collected by others, is summarized as follows:

- Fill: Loose to very dense, red-brown, silty SAND, containing trace amounts of stone, asphalt, and brick fragments (SM). A 1- to 2-foot thick concrete slab was encountered within the fill stratum in several of the explorations.
  – 2 to 7 feet thick (to about El. 241 to 236); over

- Glacial Till: Dense, gray, well-graded SAND with silt and gravel (SW-SM). Glacial Till was not encountered in Boring B-3.
  – about 1 to 3 feet thick (to about El. 239 to 233); over

- Sandstone Bedrock – An approximate 1- to 5-foot layer of weathered rock was encountered in the explorations beneath the Glacial Till. A core barrel was advanced within the Bedrock stratum in B-1 (from about El. 235 to 225). Bedrock was classified as poorly-cemented, conglomerate, Sandstone. The core recovery and rock quality designation (RQD), averaged about 40% and 18%, respectively, indicating a poor rock mass quality.

Visual classifications of soil samples, and conditions encountered at each exploration location can be found in the provided exploration logs, included as Appendix 2.

4.2 GROUNDWATER

Groundwater levels were measured in the explorations at the times and under the conditions stated on the logs. Groundwater was reportedly not encountered during completion of the explorations. Groundwater levels measured in the explorations may not have had sufficient time to stabilize and should be considered approximate.

Groundwater levels will vary depending on factors such as temperature, season, precipitation, construction activity, and other conditions, which may be different from those at the time of these measurements. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

5.0 GEOTECHNICAL DESIGN AND CONSTRUCTION RECOMMENDATIONS

5.1 GEOTECHNICAL EVALUATION

Based on the results of the subsurface investigations completed by others, it is our opinion the proposed 95-foot steel monopine telecommunications tower may be supported on a monolithic mat or a pier-and-pad foundation bearing on undisturbed, natural Glacial Till Deposits, Weathered Rock, or Bedrock, or on Structural Fill (hereinafter specified as Compacted Granular Fill (CGF)) or Crushed Stone placed over a prepared natural soil/rock subgrade. Alternatively, the telecommunications tower may be supported on a drilled shaft foundation extending into competent Bedrock.

Design recommendations and construction considerations for the recommended foundation systems are presented in the following sections.

5.2 SEISMIC DESIGN

Based on the standard penetration test results, visual soil classification, and design peak ground acceleration at this locale, the site soils are not susceptible to liquefaction.

We recommend using the following design parameters as defined by the Building Code:

- Site Class: C (Section 1613.3.2 of the IBC)
- MCE spectral response accelerations: S_s = 0.186g and S_1 = 0.063g (Building Code Appendix N)

5.3 TOWER FOUNDATION DESIGN RECOMMENDATIONS

5.3.1 Shallow Foundation (Mat/Pad) Alternative

The proposed monopole telecommunications tower may be supported on a mat or pad-and-pier foundation bearing on prepared materials identified in Section 5.1. Crushed Stone, if used, should be separated from soil subgrades, excavation sidewalls and backfill using a geotextile separation fabric.

DTE recommends a maximum net allowable bearing pressure of 6 kips per square foot (ksf). Higher pressures can be accommodated by bearing directly on Bedrock should they be desired by the tower designer, in which case DTE should be consulted. Bedrock bearing surfaces should not exceed a slope of 12H:1V without consulting DTE. Foundations should be embedded a minimum of 42 inches below final grades for frost protection. The total settlement is anticipated to be less than 1 inch and differential settlement to be less than 0.5 inches. Foundation settlement will depend on the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the foundation, the thickness of compacted fill, and the quality of earthwork operations.

We recommend an ultimate passive pressure coefficient (Kp) of 3.0. Calculated passive pressures should be reduced by a minimum factor of safety of 3, to reflect the amount of movement required to mobilize the passive resistance. We also recommend an ultimate coefficient of sliding friction of 0.5. The sliding resistance value (tan δ) can be increased to 0.65 for foundations bearing directly on clean Bedrock. A factor of safety of at least 1.5 should be applied to calculated sliding resistance.

To summarize, we recommend the following static design parameters:

DESCRIPTION	VALUE
Maximum Net Allowable Bearing Pressure	6 kips per square foot (ksf)
Minimum Foundation Width	Isolated Spread Footing/ Mat Foundation: 3 feet
Minimum Embedment Below Finished Grade	42 inches
Estimated Total Settlement	<1 inch
Estimated Differential Settlement	<½ inch
Total Soil Unit Weight	135 pounds per cubic foot
Ultimate Passive Pressure Coefficient, Kp	3.0
Ultimate Coefficient of Sliding Friction	0.5 (soil) 0.65 (sound Bedrock)

Uplift resistance for the tower foundation may be computed as the sum of the weight of the foundation element and the weight of the soil overlying the foundation. We recommend using a soil unit weight of 110 pounds per cubic foot for CGF overlying the foundation.

5.3.2 Shallow Foundation (Mat/Pad) Construction Recommendations

The proposed mat/pad foundation and associated equipment areas should be cleared of existing vegetation and grubbed. Cobbles, boulders, and any deleterious materials should be removed. Existing Fill (including re-worked parent materials), and other unsuitable materials, must be removed from beneath footing zones of influence to the top of firm, natural Glacial Till, Weathered Rock, or Bedrock prior to construction. Over-excavation below foundations should include the zone of influence, defined as the area beneath 1 horizontal to 1 vertical (1H:1V) lines extending downward and outward from footing edges. Footings shall bear on a prepared subgrade of firm natural soils/weathered rock, competent bedrock, or CGF or Crushed Stone (over acceptable materials). Mixed bearing conditions (i.e., soil and bedrock) are not acceptable, and would require a minimum 12-inch-thick pad of CGF or crushed stone beneath the foundation to mitigate differential settlements. Refer to Section 6.0 - Materials and Compaction for material placement recommendations.

Earthwork should be performed in dry conditions so that disturbance to foundation subgrades is limited. During earthwork, the Contractor should be responsible for protecting subgrades from the elements and maintaining the soils in a suitable state until completion of the project. Backfill should not be placed over a subgrade with standing water or that is frozen. Standing water, if present, should be removed and any soft and yielding soil should be removed prior to backfill placement. Excavations to subgrade levels should be performed using a smooth-edged bucket to minimize possible disturbance to the in-place subgrade soils.

Soil and weathered rock subgrades should be proof-rolled under the observation of a qualified Geotechnical Engineer with at least four (4) passes of a smooth-drum vibratory roller (minimum 8,000 pounds, minimum centrifugal force of 12,500 pounds) or, where approved by the geotechnical engineer, a vibratory plate compactor with a minimum of 2,500 pounds of centrifugal force. Any soft or loose zones identified during proof-rolling should be excavated and replaced with CGF, as necessary, and as required by the Geotechnical Engineer.

5.3.3 Deep Foundation (Drilled Shaft) Alternative

DTE recommends the following static design parameters for a drilled shaft foundation alternative:

DESCRIPTION	VALUE
Maximum Net Allowable Bearing Capacity Bedrock	*See Note 1*
Allowable Bond Value[2] Bedrock	25 pounds per square inch (psi)
P-Y Modulus (k_{py})[3] Fill Glacial Till/Weathered Rock Bedrock (k_{rm})	90 pounds per cubic inch (pci) 225 pci 0.0005
Angle of Internal Friction Fill Glacial Till/Weathered Rock Bedrock	32 36 40
Total Soil Unit Weight Glacial Till/Weathered Rock Bedrock	135 pounds per cubic foot (pcf) 145 pcf
Minimum Drilled Shaft Diameter	Diameter of Monopine Base
Allowable Deflection at Top of Shaft	0.5 inch

1. The allowable end bearing capacity assumes that loose, disturbed soil/rock has been removed from the base of the shaft. End-bearing in a rock socket should be neglected for design due to the movement required to mobilize side resistance in a drilled shaft is less than the movement required to mobilize end-bearing resistance; therefore, bond values should be used to design the drilled shaft foundation.
2. Grout-to-ground values are provided (i.e., no permanent casing is assumed). Allowable values are based on a factor of safety of 2. Due to the relatively shallow bedrock, side resistance from overburden soils and decomposed rock should be ignored for strain compatibility reasons. The uplift capacity should be based on the dead weight of the shaft and side resistance provided by competent rock. It's assumed that applied loading will not have a significant Poissons-effect on the shaft.
3. z = depth below ground surface (feet); d = diameter of shaft (feet).

We anticipate that the design length of the shaft will be primarily dependent on the embedment/lateral capacity required to resist live loading. The drilled shaft will be subject to tension loads and therefore should have reinforcing steel that extend through the entire length of the shaft.

5.3.4 Deep Foundation (Drilled Shaft) Construction Recommendations

Technical specifications should be prepared by the design team that require detailed material and construction submittals and proof of experience in drilled shaft installation by the specialty Contractor. The drilling method or combination of methods selected by the contractor should be submitted for review by the geotechnical engineer, prior to mobilization of drilling equipment.

A section of temporary casing is recommended to reduce the likelihood of caving of the side walls of the shaft hole. Concrete should be placed by directing the concrete down the center of the shaft to reduce the likelihood of hitting the reinforcing steel and segregating. Groundwater, if

encountered in the shaft, should be removed prior to placing concrete; alternatively, concrete may be placed by tremie methods.

5.4 EQUIPMENT PLATFORM FOUNDATIONS

The proposed equipment cabinets and accessory structures may be designed as slabs-on-grade bearing on a base course of at least 12-inches of CGF or Crushed Stone overlying densified natural soils as described in Section 5.3.2. Alternatively, the equipment platforms can be founded on drilled shaft foundations.

5.4.1 Equipment Platform Slab-on-Grade Foundations

We recommend a maximum net allowable bearing pressure of 2 kips per square foot (ksf) for slab design. Frost walls should be embedded a minimum of 42 inches below final grades for frost protection. Alternatively, dense insulation boards could be used under lightly loaded slabs-on-grade to reduce frost penetration.

The total settlement is expected to be less than 1 inch and differential settlement to be less than 0.5 inches. We recommend an ultimate coefficient of sliding friction of 0.5 (except if insulation boards are used to minimize frost penetration). A factor of safety of at least 1.5 should be applied to calculated sliding resistance.

The design subgrade modulus for the recommended subgrade and base course is 250 pounds per cubic inch.

5.4.2 Equipment Platform Drilled Shaft Foundations

We recommend a maximum allowable soil bearing capacity of 4 kips per square foot (ksf) for piers end bearing on Glacial Till and/or Weathered Rock. Based on anticipated loads and the recommended soil bearing capacity, the anticipated total and differential settlement is less than one inch and one-half inch, respectively. Bottom of piers must be constructed at a minimum depth of 42-inches below final site grades. We recommend a minimum pier diameter of 12 inches. Construction operations should be planned to mitigate disturbance to the final subgrade. The base of pier excavations should be free of water and loose soils prior to placing concrete.

6.0 MATERIALS RECOMMENDATIONS

6.1 ON-SITE MATERIALS

Based on our visual soil classifications, existing Site soils will likely not satisfy the requirements for CGF. Excavated soils could be reused as Common Fill during Site development. If during construction excavated materials are planned for reuse, gradation analyses and Modified Proctor Test (ASTM D-1577, Method C) should be performed on representative soil samples and the results submitted to the Geotechnical Engineer for review and approval.

6.2 COMPACTED GRANULAR FILL

Compacted Granular Fill (CGF) for use as structural fill shall consist of inorganic soil free of clay, loam, ice and snow, tree stumps, roots, and other organic matter; graded within the following limits:

Sieve Size	Percent finer by weight
3-inches	100%
1/2-inch	50 - 85
No. 4	40 - 75
No. 50	8 - 28
No. 200	0 – 12

6.3 CRUSHED STONE

Crushed Stone for use below foundations and slabs shall consist of sound, tough, durable, rock that is graded within the following:

Sieve Size	Percent finer by weight
5/8-inches	100%
1/2-inch	85 - 100
3/8 inch	15 - 45
No. 4	0 - 15
No. 8	0 - 5

6.4 COMMON FILL

Common Fill may be used for general site grading, and other areas as appropriate, or as directed by the Geotechnical Engineer or his/her representative. The material should not be used beneath sensitive structures. Common Fill should conform to the following gradation requirements:

Sieve Size	Percent finer by weight
6-inches	100%
No. 200	0 - 25

6.5 MATERIAL COMPACTION

CGF should be placed in loose lifts not exceeding 8 inches in depth and compacted to at least 95 percent of its maximum dry density (and within 2% of optimum moisture content) as determined by ASTM D1557, Method C (Modified Proctor).

Common Fill should also be placed in loose lifts not exceeding 8 inches in depth, and compacted to at least 92 percent of its maximum dry density.

Crushed Stone is considered to be “self-compacting” and would negate the need to run laboratory proctor testing and have field density testing of in-place lifts. The crushed stone should be plate compacted to “chink up” the working surface in lifts. We recommend placing Crushed Stone in maximum 12-inch lifts and compacting the lifts with a minimum of four passes with a vibratory

plate compactor weighing a minimum of 1,000 pounds and with a minimum centrifugal force of 10,000 pounds.

6.6 GEOTEXTILE FABRIC

Geotextile fabric used as a separation fabric for crushed stone and soil material should meet the following criteria:

Property	Criteria	Test Method
Grab Strength	min. 120lbs	ASTM D4632
Static (CBR) Puncture	min. 310lbs	ASTM D6241
Trapezoid Tear	min. 50lbs	ASTM D4533
Apparent Opening Size	No. 70 (max.) U.S. Sieve Size	ASTM D4751

Fabric should be needle-punched non-woven material. Seams should be overlapped a minimum of six inches. During stone placement, the stone drop height should not exceed three feet and equipment traffic should be kept off the fabric until at least 6 to 12 inches of material is placed.

7.0 ADDITIONAL CONSTRUCTION RECOMMENDATIONS

Bedrock removal may be required to reach subgrade levels for the proposed tower foundation. Boulders and Weathered Rock may be able to be removed with a large excavator. For sound Bedrock removal, hydraulic splitters, air rams, or other more aggressive methods may be required. Controlled rock removal techniques must be implemented to protect adjacent structures and utilities from vibrations and limit risk of excessive fracturing.

Based on information obtained from the subsurface exploration program, the proposed foundations and slabs-on-grade will be constructed above the groundwater table. Stormwater runoff should not be permitted to accumulate on/within exposed subgrades and the runoff should be directed away from the exposed subgrade areas.

Where space permits and as needed, temporary slopes no steeper than 1.5H:1V appear to be appropriate. Excavation geometry should conform to OSHA excavation regulations contained in 29 CFR Part 1926. Temporary earth support is not anticipated for the excavations. If needed, temporary earth support systems should be designed by a Professional Engineer registered in the State of Connecticut.

8.0 REVIEW OF FINAL DESIGN, PLANS, AND SPECIFICATIONS

When project plans are finalized, and specifications are available, they should be provided to DTE for review of conformance with our geotechnical recommendations. If any changes are made to the proposed structure locations or elevations, the recommendations provided in this report will need to be verified by DTE for applicability.

9.0 CONSTRUCTION QUALITY CONTROL

We further recommend that DTE be retained during earthwork construction to observe excavation to footing subgrade, subgrade preparation, and fill placement and compaction in accordance with

Building Code requirements. The geotechnical engineer in the field should observe the work for compliance with the recommendations in this report, identify changes in subsurface conditions from those observed in the explorations should they become apparent, and assist in the development of design changes should subsurface conditions differ from those anticipated prior to the start of construction.

10.0 CLOSURE

We trust the information presented herein is sufficient for your use to progress design of the proposed telecommunications tower and compound equipment. We have enjoyed working with you on this project and look forward to our continued involvement. Please do not hesitate to call us if you have any questions.

This report is subject to the limitations included in Appendix 3.

APPENDIX 1 -

FIGURES

DOWN TO EARTH CONSULTING, LLC
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING
122 CHURCH STREET
NAUGATUCK, CONNECTICUT 06770

CONNECTICUT

QUADRANGLE LOCATION

AREA PLAN
PROPOSED TELECOMMUNICATIONS TOWER
185 ACADEMY ROAD
CHESHIRE, CONNECTICUT

REFERENCE:
USGS TOPOGRAPHIC QUADRANGLE: MOUNT CARMEL, CT

SCALE 1"= 2,000'

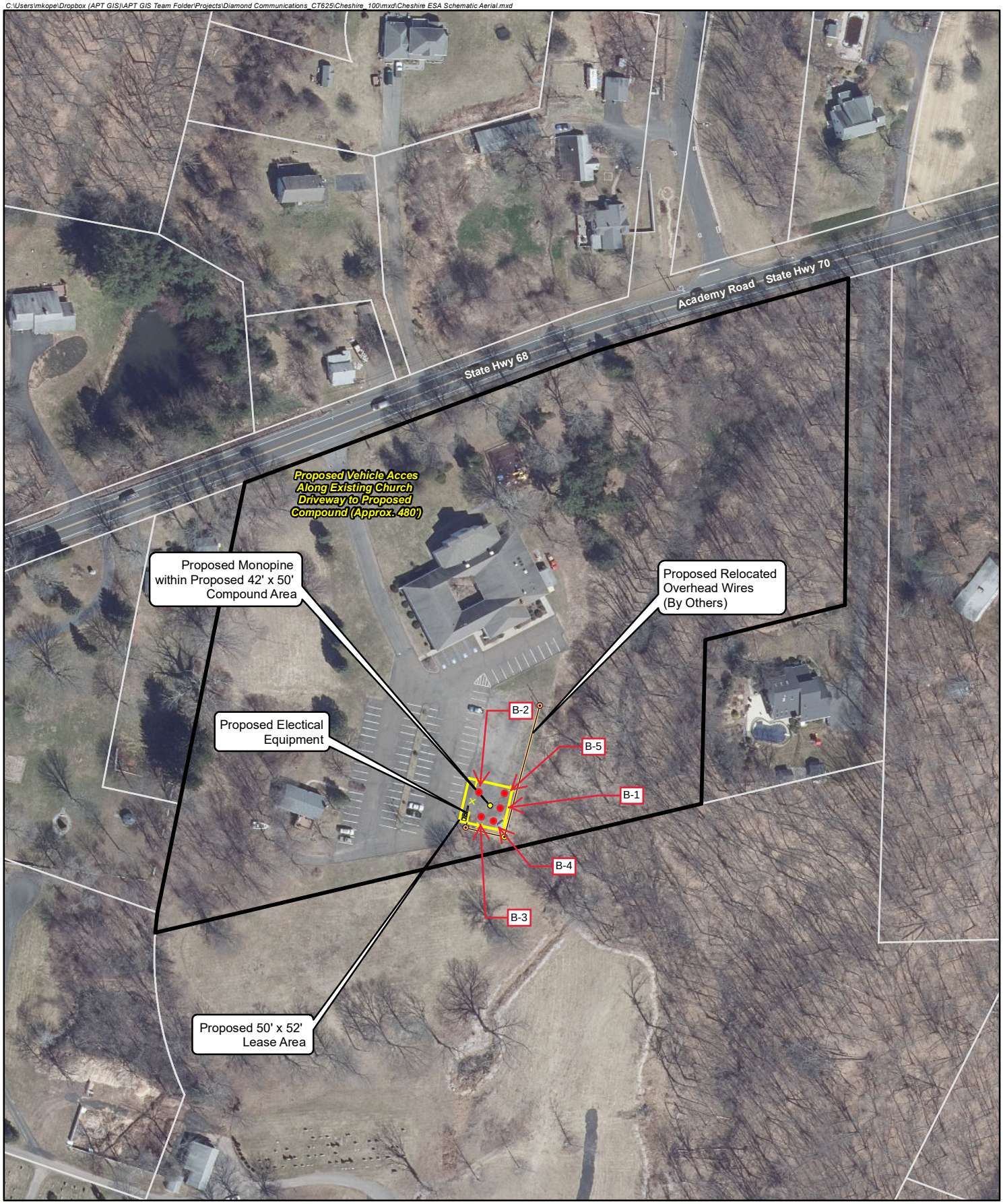
2,000' 1,000' 0 2,000'

PROJECT NO.	0032-054.00
DATE:	8/12/21
FIGURE NO.	1

DRAWN BY: RPJ

REVIEWED BY: RPJ

G:\My Drive\DTE Root Drive\Client Folders\0032 - All-Points Technology\054 - Proposed Tower, Cheshire, CT\0032-054.00 AREA AND SITE PLAN.dwg



Legend

- Proposed Lease Area
- Proposed Compound Area
- Proposed Equipment
- Proposed Relocated Overhead Wires (By Others)
- Proposed Utility Pole
- Existing Utility Pole
- Approximate Parcel Boundary (CTDEEP)
- Subject Property

N W E S

150 75 0 150 Feet

Map Notes:
Base Map Source: 2019 CT ECO Imagery
Map Scale:1 inch = 150 feet
Map Date: June 2020

Figure 2 - Site Schematic

Proposed Wireless Telecommunications Facility
Cheshire East
185 Academy Road
Cheshire, Connecticut

ALL-POINTS TECHNOLOGY CORPORATION

APPENDIX 2 -

TEST BORING LOGS
(BY OTHERS)

SITE LLC
Sub-surface Investigations, Technology & Experience

Client: **All Points Technology Corp.**
567 Vauxhall Street Extension
Waterford, CT 06385

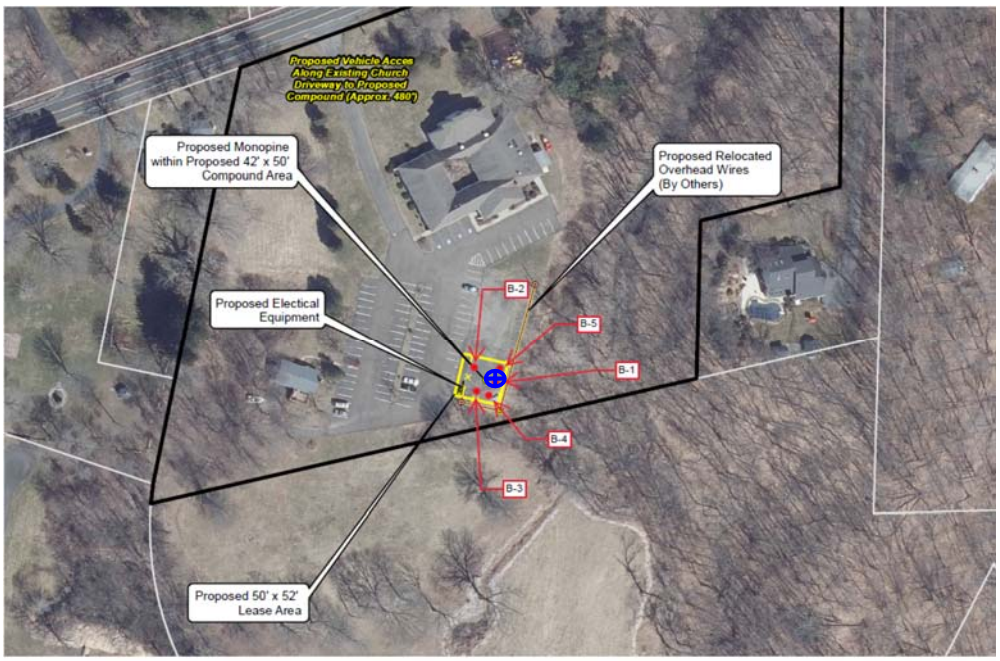
Project: **185 Academy Road, Cheshire, CT**
Date: Monday, 27 July 2020
Water: None
Ground Elev.:
Project Manager: Philip M. Rydel, CHMM

(203) 490-4777 63 Lancaster Drive, Beacon Falls, Connecticut 06403 www.site-llc.com

SITElog® Report **B-1**

Depth	Blows per 6"				Moisture	Changes	Color	DESCRIPTION OF FINDINGS	General	No.	Pen.	Rec.
0' to 10"	9	50/4"			Dry	0.33	og	SAND & STONE		1	10"	8"
							rb/br	SAND, some Silt, Stone, occasional Cobble				
2' to 2'-10"	5	50/4"			Dry	2.83			FILL	2	10"	6"
							gy	CONCRETE (Reinforced)				
5' to 7'	6	3	3	5	Damp	4.50				3	24"	16"
							d.rb	SAND & SILT, trace Stone	TILL			
7' to 8'-2"	19	30	50/2"		Dry	7.50				4	14"	9"
8' to 13'	C	O	R	E	Min/Se	8.00	rb	ROCK (Weathered) - Drove Casing to @ 8.00		5	60"	37"
					2:10		rb	Run #1 Nx Cored 8.00 to 13.00				
					1:28			Poorly Cemented Conglomerate SANDSTONE				
					1:32			RQD 0" = 0%				
					1:25							
13' to 18'	C	O	R	E	1:50			Run #2 Nx Cored 13.00 to 18.00	ROCK	6	60"	44"
					1:06			SANDSTONE firmer at 15'				
					1:37			RQD 22" = 37%				
					2:40							
					2:22							
					2:30	18.00						
								End of Exploration @ 18.00				

KEY bl - black w - white gy - grey tn - tan ro - rust/orange ob - olive/brown og - olive/grey d. - dark l. - light l/w -layered with m/w -mixed with



Fill
Organics
Subsoil
Silt
Silty Sand
Clay
Sand
Gravel
Cobble
Till
Rock
Water
SPT
Curb Box
Riser
Bentonite
Screen

GPS Coor: 41°29.898N 71°53.658W
Driller Name: J. DeAngelis, Jr
Helper Name: J. DeAngelis, III
Drill Equip: CME 55LCX
Hammer Wgt: 140# CME Auto
Sampler: 2" O.D. Lynac
Casing: 2.25" HSA/3"FWC

DISCLAIMER: Some GPS coord., descriptions and boundaries are not guaranteed.

SITE LLC
Sub-surface Investigations, Technology & Experience

Client: **All Points Technology Corp.**
567 Vauxhall Street Extension
Waterford, CT 06385

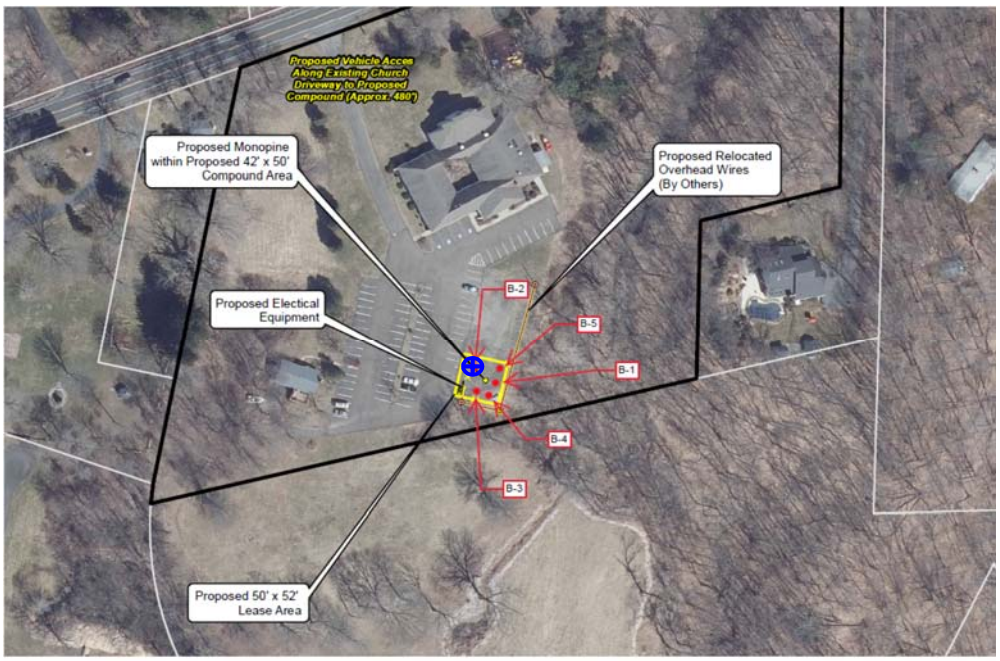
Project: **185 Academy Road, Cheshire, CT**
Date: Monday, 27 July 2020
Water: None
Ground Elev.:
Project Manager: Philip M. Rydel, CHMM

(203) 490-4777 63 Lancaster Drive, Beacon Falls, Connecticut 06403 www.site-llc.com

SITElog® Report **B-2**

Depth	Blows per 6"				Moisture	Changes	Color	DESCRIPTION OF FINDINGS	General	No.	Pen.	Rec.
0' to 2'	13	15	40	42	Dry	0.50	og	SAND & STONE		1	24"	17"
						1.00	br	SAND m/w Asphalt, Stone	FILL			
2' to 4'	7	5	6	6	Damp	2.00	rb	SAND some Stone, little Silt, Concrete, occas. Cobble		2	24"	13"
						4.00	rb	SAND, some Silt, trace Stone, Clay	TILL?			
5' 5'-11"	21	50/5"			Dry		l.rb	ROCK (Weathered Sandstone)		3	11"	11"
									ROCK			
								ROCK (Firmer Sandstone)				
						9.25						
10'								Auger Refusal @ 9.25				

KEY bl - black w - white gy - grey tn - tan ro - rust/orange ob - olive/brown og - olive/grey d. - dark l. - light l/w -layered with m/w -mixed with



GPS Coor:
41°29.900N
71°53.661W

Fill
Organics
Subsoil
Silt
Silty Sand
Clay
Sand
Gravel
Cobble
Till
Rock
Water
SPT
Curb Box
Riser
Bentonite
Screen

Driller Name: J. DeAngelis, Jr
Helper Name: J. DeAngelis, III
Drill Equip: CME 55LCX
Hammer Wgt: 140# CME Auto
Sampler: 2" O.D. Lynac
Casing: 2.25" H.S.A.

DISCLAIMER: Some GPS coord., descriptions and boundaries are not guaranteed.

SITE LLC
Sub-surface Investigations, Technology & Experience

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Client: All Points Technology Corp.
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Waterford, CT 06385

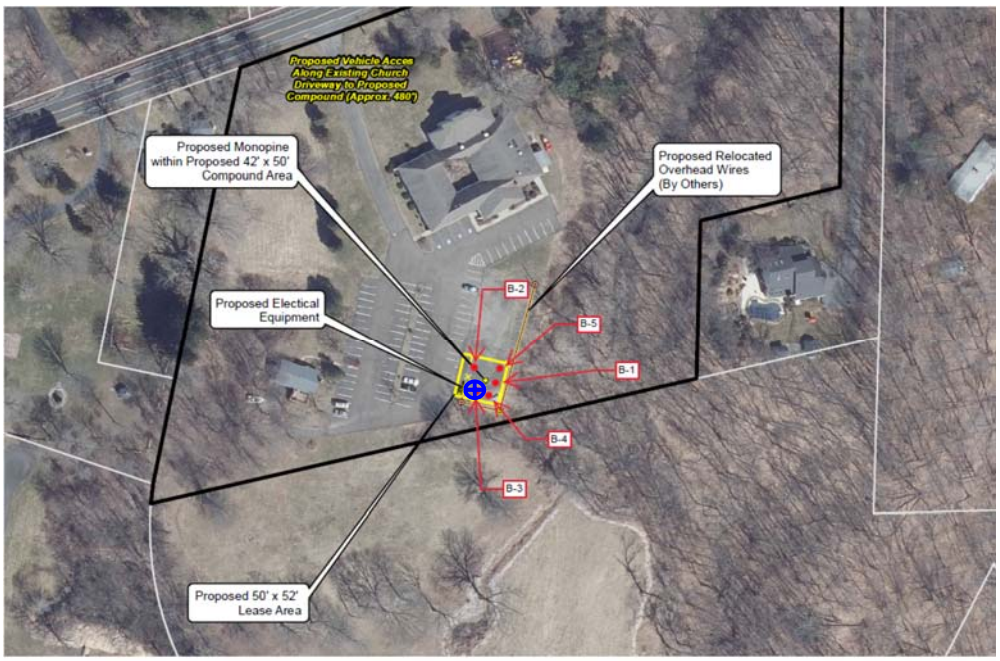
Project: 185 Academy Road, Cheshire, CT
Date: Monday, 27 July 2020
Water: None
Ground Elev.:
Project Manager: Philip M. Rydel, CHMM

SITElog® Report **B-3**

Depth	Blows per 6"				Moisture	Changes	Color	DESCRIPTION OF FINDINGS	General	No.	Pen.	Rec.
0' to 2'	4	9	11	14	Dry	0.33	og	SAND & STONE	FILL	1	24"	18"
						2.00	rb	SAND, little Silt, Stone, Brick				
2' to 2'-6"	50/6"				Dry	2.75	rb/br	SAND, little Asphalt, Concrete, Silt		2	6"	6"
						3.17	gy	CONCRETE (Reinforced)				
								Auger Refusal @ 3.17				

5' 10' 15' 20' 25' 30' 35'

KEY bl - black w - white gy - grey tn - tan ro - rust/orange ob - olive/brown og - olive/grey d. - dark l. - light l/w -layered with m/w -mixed with



Fill
Organics
Subsoil
Silt
Silty Sand
Clay
Sand
Gravel
Cobble
Till
Rock
Water
SPT
Curb Box
Riser
Bentonite
Screen

GPS Coor: 41°29.892N 71°53.656W
Driller Name: J. DeAngelis, Jr
Helper Name: J. DeAngelis, III
Drill Equip: CME 55LCX
Hammer Wgt: 140# CME Auto
Sampler: 2" O.D. Lynac
Casing: 2.25" H.S.A.

DISCLAIMER: Some GPS coord., descriptions and boundaries are not guaranteed.

SITE LLC
Sub-surface Investigations, Technology & Experience

Client: **All Points Technology Corp.**
567 Vauxhall Street Extension
Waterford, CT 06385

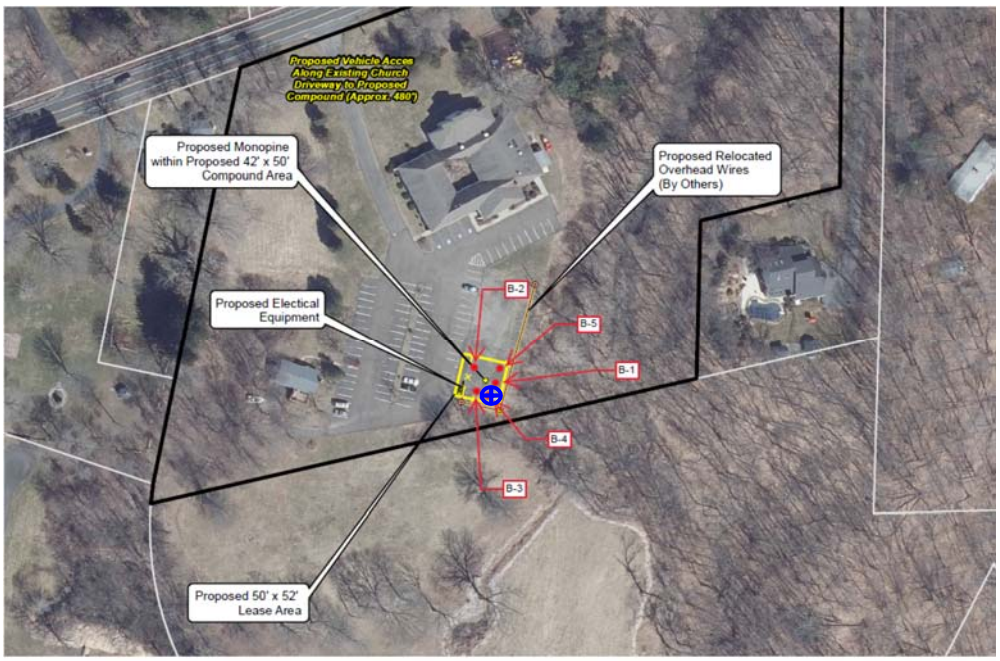
Project: **185 Academy Road, Cheshire, CT**
Date: Monday, 27 July 2020
Water: None
Ground Elev.:
Project Manager: Philip M. Rydel, CHMM

(203) 490-4777 63 Lancaster Drive, Beacon Falls, Connecticut 06403 www.site-llc.com

SITElog® Report **B-4**

Depth	Blows per 6"				Moisture	Changes	Color	DESCRIPTION OF FINDINGS	General	No.	Pen.	Rec.
0' to 1'-9"	6	11	18	50/3"	Dry	0.42	og	SAND & STONE		1	21"	19"
						1.50	rb/br	SAND, some Silt, little Stone				
3' to 5'	5	6	4	3	Dry	1.75	bl	ASPHALT		2	24"	9"
						2.58	gy	CONCRETE (Reinforced)	FILL			
5' to 7'	4	4	5	3	Dry		rb	SAND, some Asphalt, little Stone, Silt		3	24"	12"
						7.00						
						8.00	d.rb	SAND, some Silt, little Stone	TILL			
9' to 9'-10"	23	50/4"			Dry		rb	ROCK (Weathered Sandstone)	ROCK	4	10"	8"
						9.83						
								Spoon Refusal @ 9.83				

KEY bl - black w - white gy - grey tn - tan ro - rust/orange ob - olive/brown og - olive/grey d. - dark l. - light l/w -layered with m/w -mixed with



GPS Coor:
41°29.895N
71°53.659W

Fill
Organics
Subsoil
Silt
Silty Sand
Clay
Sand
Gravel
Cobble
Till
Rock
Water
SPT
Curb Box
Riser
Bentonite
Screen

Driller Name: J. DeAngelis, Jr
Helper Name: J. DeAngelis, III
Drill Equip: CME 55LCX
Hammer Wgt: 140# CME Auto
Sampler: 2" O.D. Lynac
Casing: 2.25" H.S.A.

DISCLAIMER: Some GPS coord., descriptions and boundaries are not guaranteed.

SITE LLC
Sub-surface Investigations, Technology & Experience

Client: **All Points Technology Corp.**
567 Vauxhall Street Extension
Waterford, CT 06385

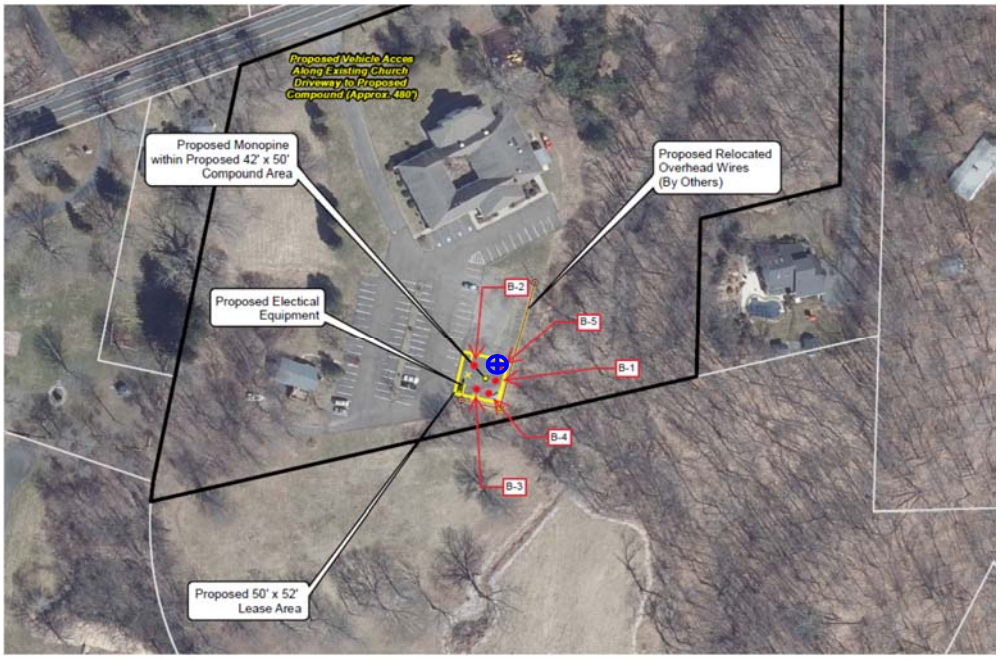
Project: **185 Academy Road, Cheshire, CT**
Date: Monday, 27 July 2020
Water: None
Ground Elev.:
Project Manager: Philip M. Rydel, CHMM

(203) 490-4777 63 Lancaster Drive, Beacon Falls, Connecticut 06403 www.site-llc.com

SITElog® Report **B-5**

Depth	Blows per 6"				Moisture	Changes	Color	DESCRIPTION OF FINDINGS	General	No.	Pen.	Rec.
0' to 2'	9	12	19	18	Dry	0.33	og	SAND & STONE		1	24"	21"
						2.00	rb	SAND, some Stone, little Silt, Asphalt				
2' to 4'	11	9	6	5	Dry		rb	SAND, m/w Asphalt, Stone, Silt	FILL	2	24"	6"
5' to 7'	4	4	3	3	Dry		br	SAND, some Silt, trace Asphalt, Stone		3	24"	13"
7' to 9'	2	3	4	6	Damp	7.00				4	24"	18"
							d.rb	SILT, some Sand, trace Stone	TILL			
9' to 10'	14	52/6"			Dry	9.25				5	12"	12"
						10.00	l.rb	ROCK (Weathered Sandstone)	ROCK			
								Spoon Refusal @ 10.00				

KEY bl - black w - white gy - grey tn - tan ro - rust/orange ob - olive/brown og - olive/grey d. - dark l. - light l/w -layered with m/w -mixed with



GPS Coor:
41°29.898N
71°53.656W

Fill
Organics
Subsoil
Silt
Silty Sand
Clay
Sand
Gravel
Cobble
Till
Rock
Water
SPT
Curb Box
Riser
Bentonite
Screen

Driller Name: J. DeAngelis, Jr
Helper Name: J. DeAngelis, III
Drill Equip: CME 55LCX
Hammer Wgt: 140# CME Auto
Sampler: 2" O.D. Lynac
Casing: 2.25" H.S.A.

DISCLAIMER: Some GPS coord., descriptions and boundaries are not guaranteed.

APPENDIX 3 -

LIMITATIONS

LIMITATIONS

Explorations

1. The analyses and recommendations submitted in this report are based in part upon the data obtained from subsurface explorations by others. 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 documented by others. 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 boring logs.

3. Water level readings have been made in the drill holes at times and under conditions stated on the boring logs. These data have been reviewed and interpretations have been 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, tidal, temperature, and other factors occurring since the time measurements were made.

Review

4. In the event that any changes in the nature, design or location of the proposed telecommunications tower 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 DTE. It is recommended that this firm be provided the opportunity for a general review of final design and specifications in order that earthwork and foundation recommendations may be properly interpreted and implemented in the design and specifications.

Construction

5. It is recommended that this firm be retained to provide soil engineering services during construction of the earthworks and foundation phases of the work. This is to observe compliance with the design concepts, specifications, and recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated prior to start of construction.

Use of Report

6. This report has been prepared for the exclusive use of All-Points Technology Corporation for specific application to the project noted in this geotechnical report in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made.

7. This soil and foundation engineering report has been prepared for this project by DTE. This report is for design purposes only and is not sufficient to prepare an accurate bid. Contractors wishing a copy of the report may secure it with the understanding that its scope is limited to design considerations only.

8. This report may contain comparative cost estimates for the purpose of evaluating alternative foundation schemes. These estimates may also involve approximate quantity evaluations. It should be noted that quantity estimates may not be accurate enough for construction bids. Since DTE has no control over labor and materials cost and design, the estimates of construction costs have been made on the basis of experience. DTE does not guarantee the accuracy of cost estimates as compared to contractor's bids for construction costs.