

GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES



Addendum No. 5
To
Invitation for Bids (“IFB”) No. DCAM-21-CS-IFB-0002

Construction Services for the New W Street, NE Bus Terminal for the Office of State Superintendent of Education’s Division of Transportation (“OSSE DOT”)

Issued: January 21, 2021

This Addendum No. 5 is issued on January 21, 2021. Except as modified hereby, the IFB remains unmodified.

Item #1: The Department of General Services (the “DGS” or “Department”) hereby provides responses to additional questions received. See the Questions & Answers’ Spreadsheet attached as **Exhibit 1**. The Geotechnical Report is also attached as **Exhibit 1.1**.

By: *Franklin Austin*
Franklin Austin, CPPB, CPM
DGS’ Contracting Officer

Date: 1/21/2021

- End of Addendum No. 5

Exhibit 1

Questions & Answers Spreadsheet

(Additional Questions)

(See following page)

INVITATION FOR BIDS (“IFB”)

Questions & Answers Spreadsheet

Construction of the Office of State Superintendent of Education Division of Student Transportation (OSSE DOT) Solicitation Number: DCAM-20-CS-IFB-0002

New Comments Dated 1/21/2021

No.	Questions	Department Responses
1	Section 263213.13, 1.6, B. and also 2.2 A. specifies generator, housing, and sub-base is to be provided with seismic certification. Please confirm if this is required for this generator as it is to be located in Washington, DC which is not an area of high seismic activity. This is an expensive added expense to provide on the equipment	Seismic certification is not required, unless otherwise directed by the Government.
2	Section 263213.13, 2.3, C. specifies EPSS Class for generator is to be Class 2. This means a 2-hour runtime is only required before the fuel tank must be re-filled. Please clarify as later under 2.5, E. 2. specifies tank is to be 1,000 gallons? 1,000 gallon tank seems to be for a 600 kW generator while drawing is for a 80 KW generator. Drawing E-401 detail #7 says to provide a 189 gallon sub-base tank. Please clarify gallons for this 80 KW generator?	Class 2 is correct. Sub-base fuel oil tank size is 79 gallons for the 80kW generator.
3	Drawing E-401 detail #7 indicates to provide a SD080 Generac diesel generator which is an 80 KW generator. Please confirm 80 KW generator on that drawing and drawing E-601 is correct? In lieu of 600 kW under Section 263213.13, 2.09 E.?	Correct size generator is 80kW
4	Section 263213.13, 2.5, E. 1. b. and 3. Please clarify the basis of design manufacturer and model for this fuel tank annunciator panel for high level, low level, fuel indication in gallons, overflow alarm, and leak detection monitoring?	Manufacturer and model of fuel tank annunciator panel needs to be provided by the generator manufacturer. Yes, the remote fuel tank monitoring panel is required for the 80kW generator.

	Is this remote fuel tank panel required for this generator? If so where is to be installed as it is not shown on drawings and no circuit shown on drawings either.	Remote fuel tank panel should be installed in Main Electric Room 005.
5	Section 263213.13, 2.7, D. 2. Specifies generator is to trip upon a ground fault. This typically not recommended so please confirm if ground fault relay indication/alarm only with no trip is acceptable for this small 80 kW generator?	Ground Fault relay indication and alarm only with no trip is acceptable for 80kW generator.
6	Section 263213.13, 2.9 A. specifies to provide generator access platforms and refer to detail 1 on drawing E-105. This detail appears on drawing E-401 detail #7 it appears. Please confirm and correct?	Generator access platform is not required for the 80kW generator with 79 gallon sub-base fuel tank.
7	Section 263213.13, 2.9, C. mentions two mounting methods. #1 mentions secured to the concrete for stand-alone platform between the two generators. This project appears to only have a single (1) 80-kW diesel generator. Please confirm this is correct and this mounting method is incorrect?	Refer to response to #6 above.
8	Section 263213, 2.9, D. and drawing E-401 appears to show the stair width for the platforms as 22-inches which seems very small in width to get up the stairs to access the platform. Please confirm if 22-inch stair width is accurate and correct or if OSHA standard is fine?	Refer to response to #6 above.
9	Section 263213, 2.10, B. specifies to provide a “walk-in” type enclosure where the basis of design Generac SD080 Level 2 enclosure is not a walk-in style enclosure. Please confirm a “skintight” Level 2 sound enclosure is acceptable and no walk-in style enclosure is needed for this 80 kW generator?	A non-walk in Level 2 type enclosure is acceptable.
10	Section 263213.13, 2.10, D. specifies a smoke detector is required inside the generator enclosure according to NFPA 72. Please confirm if this accessory is actually required on this 80-KW generator?	Heat detector is not required with 80kW generator installed outside.

11	Section 263213.13, 2.10, F. specifies generator enclosure is to be provided with an enclosure space heater. The unit will be provided with an engine block heater and alternator windings strip heater to aid in preventing condensation build-up. Please confirm enclosure space heater is not required for this unit as it is not available at this 80 KW size?	Enclosure space heater is not required for the 80kW enclosure.
12	Section 263213.13, 2.10, J. 1. and 2. have conflicting requirements for the generator enclosure intake and discharge. Automatic dampers are typically not available on this size generator enclosure for a 80-kW as standard and they are an expensive added cost. Please confirm if fixed enclosure intake air louvers and fixed vertical air discharge are acceptable in lieu of automatic dampers?	Fixed enclosure intake air louvers and fixed vertical air discharge are acceptable instead of automatic dampers to the 80kW generator and enclosure.
13	Section 263213.13, 2.10, J. 3. Specifies to provide an exhaust fan in enclosure that is interlocked to prevent operation when engine is running. This requirement does not seem to make much sense to have an exhaust fan that stops running when unit starts. Please confirm the exhaust fan can be excluded all together for this project and is not required?	Specification Section 263213.13, 2.10. J.3 is not required for the 80kW enclosure. Exhaust fan to remove heat from enclosure is required.
14	Section 263600, 2.1, G. 2. Specifies the transfer switches are to be provided with withstand rating for three cycles. Please confirm if this is required or if each ATS can be rated based on specific upstream breaker ratings only?	ATS -1 is to be provided with withstand rating for three cycles and service rated. Fire pump controller is to be provided with withstand rating for three cycles.
15	Please confirm required number of poles for ATS? 3-pole with solid neutral?	Four poles with overlapping neutral.
16	Section 263600, 2.2, D. and E. and F. have conflicting requirements for the transition type for the transfer switches. Please clarify are the ATS to be open transition, delayed transition type. OR closed transition transfer switches? ATS cannot be all three at the same	ATS is to be open transition.

	time a single transition type must be selected. Open transition is industry standard.	
17	Section 263600, 2.3 A. specifies the transfer switches are to be bypass/isolation type switches. The electrical drawings do not appear to show them as that. Please clarify if bypass/isolation type transfer switches are required?	ATS-1 is to be a Bypass/Isolation switch.
18	Is DGS aware of any subsurface soil contaminants on the site?	Refer to HAZMAT report provided in RFI responses.
19	Have there been any surveys or geotechnical reports conducted at the site? If so, are there any previous reports available?	Refer to Geotech Report attached as <u>Exhibit 1.1</u> .
20	Is DGS aware of, or have reason to believe, there may be mislocated, mis-identified, or un-identified site utilities located on the site (i.e. abandoned fuel lines, gas lines, buried tanks, or electric lines that service the tracks for signals or other requirements)?	Refer to Drawings, Specifications, and Reports.

Exhibit 1.1
Geotechnical Report
(See following page)

**GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF GENERAL SERVICES
WASHINGTON, D.C.**



BUS TERMINAL

1601 W STREET N.E. WASHINGTON, D.C. 20018

OFFICE OF THE STATE SUPERINTENDENT OF EDUCATION
DEPARTMENT OF TRANSPORTATION

**GEOTECHNICAL REPORT
(Permit Supplement)**

CONTRACT NUMBER: DCAM-18-AE-0063



An ISO 9001 Certified Firm (#US4529)

September 18, 2020

DESIGN TEAM

DESIGNER OF RECORD

Alphatec, P.C.
1525 18th Street NW
Washington, DC 20036
Tel: (202) 797-5000
Fax: (202) 797-5003
Email: consult@alphatecpc.com

ARCHITECT/MEP/FP ENGINEERS

Alphatec, P.C.
1525 18th Street NW
Washington, DC 20036
Tel: (202) 797-5000
Fax: (202) 797-5003
Email: consult@alphatecpc.com

CIVIL ENGINEER

A. Morton Thomas and Associates, Inc
58 King Farm Boulevard, 4th Floor
Rockville, MD 20850
Tel: (301) 881-2545
Tel: (800) 881-2545

STRUCTURAL ENGINEER

Silman, PLLC
1053 31st Street NW
Washington, DC 20007
Tel: (202) 333-6230

GEOTECHNICAL ENGINEER

Geotechnical Engineers, Inc.
1620 I Street NW, Suite 800
Washington, DC 20006
Tel: (202) 828-9511
Fax: (202) 828-9513

SUSTAINABLE DESIGN/LEED COMPLIANCE

Alphatec, P.C.
1525 18th Street NW
Washington, DC 20036
Tel: (202) 797-5000
Fax: (202) 797-5003
Email: consult@alphatecpc.com

COMMUNITY OUTREACH

Alphatec, P.C.
1525 18th Street NW
Washington, DC 20036
Tel: (202) 797-5000
Fax: (202) 797-5003
Email: consult@alphatecpc.com

I. GEOTECHNICAL DESIGN

III. GEOTECHNICAL DESIGN

A. INTRODUCTION:

1. PREVIOUS INVESTIGATION

GeoCapitol Engineering, LLC (GeoCapitol) performed a preliminary subsurface investigation and summarized their results in a geotechnical engineering report dated February 22, 2018 at the 1601 W Street NE property.

The subsurface investigation consisted of ten (10) Standard Penetration Test (SPT) borings, test pits and laboratory testing. The depths of the borings varied, with two (2) borings 50 feet in depth, two (2) borings 30 feet in depth, three (3) borings 10 to 15 feet in depth and the remaining borings hitting refusal within 6.5 feet in depth. All borings were performed within the property limits on the paved surface at the top of the slope. Laboratory testing consisted of soil classification testing, Modified Proctor tests, California Bearing Ratio (CBR) tests and a direct shear test. GeoCapitol also performed three (3) test pits at the site to assess the dimensions of the existing westernmost building footings.

2. SUPPLEMENTAL INVESTIGATION

GEI Consultants, Inc. (GEI) supplemented GeoCapitol's preliminary subsurface investigation with an additional SPT boring advanced on February 14, 2019 and Cone Penetrometer Tests (CPTs) and Dilatometer Tests (DMTs) performed between February 13 and February 14, 2019. A seismic CPT sounding was also performed in general accordance with ASTM D5778 at one CPT location to generate a general shear wave velocity profile. Additional soil laboratory testing was also performed on select samples. The supplemental investigation performed by GEI focused on validating the subsurface information gathered by GeoCapitol,

determining the subsurface stratigraphy as the site transitions to the east, and obtaining in-situ properties of the soils within and at the bottom of the existing slope.

GEI performed one SPT boring, two (2) DMTs, seven (7) CPTs and three (3) hand augers as part of the supplemental investigation. One (1) DMT and one (1) CPT were performed near the perimeter of the site limits. The DMT was performed at the bottom of the slope within the sidewalk of Montana Ave NE to a depth of 12 feet, and the CPT was performed within the parking lot of an adjacent property to the east of the site. The CPT refused at a depth of 6 feet. The hand augers were advanced within the existing vegetative slope, but consistently hit refusal on construction debris. The boring location plan included as Figure 1, shows the approximate locations of the supplemental subsurface investigation.

Laboratory testing consisted of soil classification testing, a Modified Proctor test and a California Bearing Ratio (CBR) test. GEI also obtained a composite sample from the SPT spoils for waste characterization testing.

B. APPLICABLE CODES:

1. 2013 District of Columbia Building Code Chapter 18 Section 1803
2. CSX Public Project Information – For Construction and Improvement Projects That May Involve the Railroad (Revised April 8, 2015)
3. ASTM D1586 – Standard test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils
4. ASTM D5778 – Standard Test Method for Electronic Friction Cone and Piezocone Penetration Testing of Soils
5. ASTM D6635 – Standard Test Method for Performing the Flat Plate Dilatometer

6. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System)
7. ASTM D4318 – Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
8. ASTM D2216 – Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
9. ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils (Withdrawn 2016)
10. ASTM D1883 – Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils
11. ASTM D1557 – Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort

C. EXISTING CONDITIONS:

The site, located at 1601 W Street NE, is bounded to the north by W Street NE, to the east by Montana Avenue NE and several storefronts, to the south by CSX tracks and to the west by a paving company. The site was previously a crane mechanic yard, with five buildings ranging from sheds to warehouses surrounded by paved surfaces. A vegetated slope is present along the southern and eastern boundary of the site. An approximately four to seven-foot high retaining wall separates the vegetated slope from the sidewalk along Montana Avenue NE starting from the storefronts parking lot to the CSX track abutment. Approximately two thirds of the retaining wall starting from the parking lot consists of steel cantilever beams with concrete lagging and a concrete cap. The southern third of the retaining wall, adjacent to the CSX track abutment, appears to consist of a gravity concrete retaining wall. The concrete retaining wall showed signs of out of plane movement and rotation, along with some concrete spalling and effervescence consistent with water infiltration at the time of the site

exploration. Observations taken in a July 2019 site visit indicates that additional movement of the retaining wall appears to have occurred.

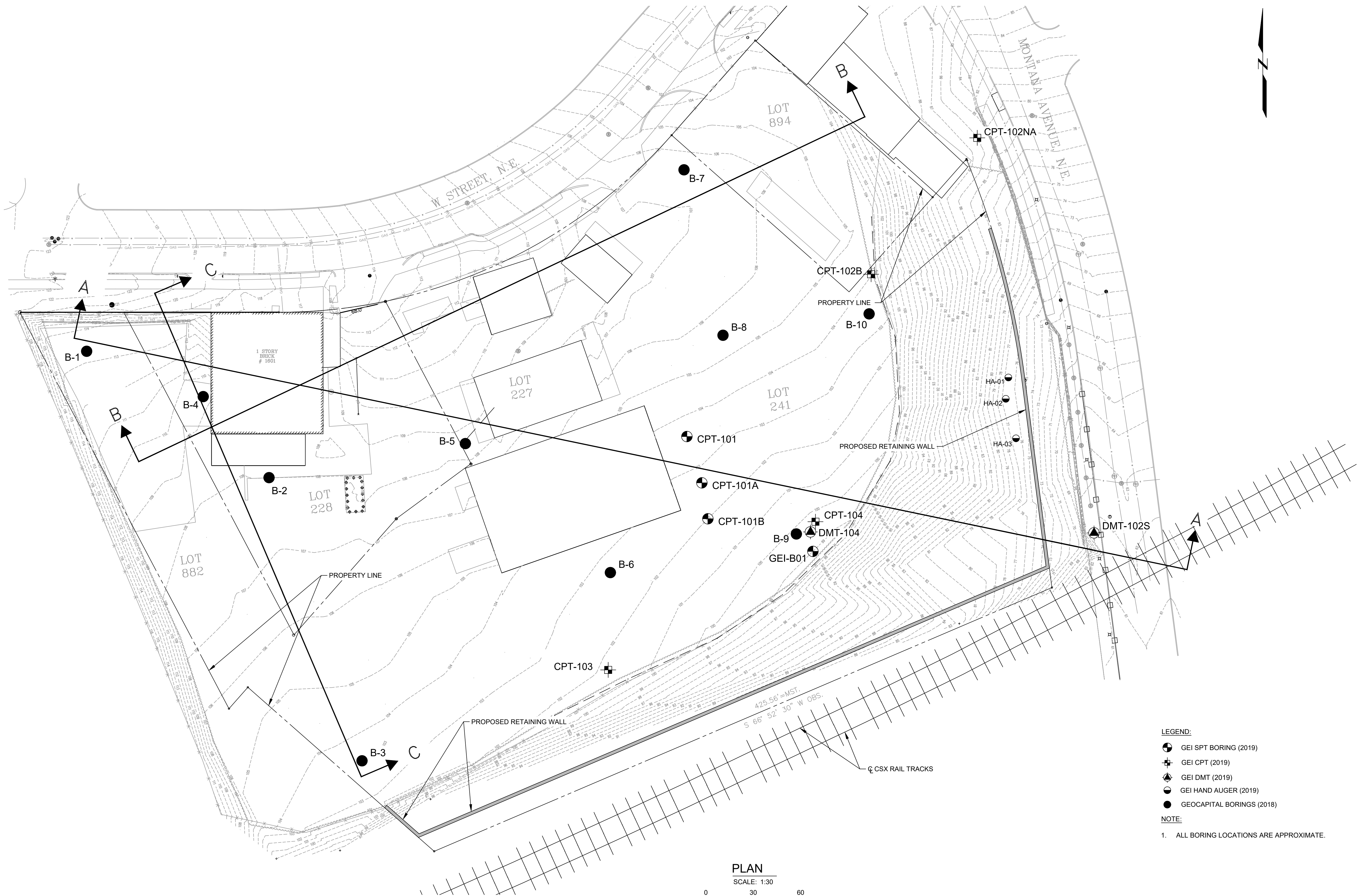
D. BORING LOCATIONS:

1. GEOCAPITOL BORING LOCATIONS

GeoCapitol performed ten (10) SPT borings within the paved surface and three (3) test pits along the existing westernmost building. The approximate boring and test pit locations advanced by GeoCapitol are included in Figure 1 appended to this report.

2. GEI BORING LOCATIONS


GEI performed an additional SPT boring, along with seven (7) CPTs and two (2) DMTs, as shown in Figure 1 appended to this report. The intent of GEI's investigation was to corroborate and supplement the data previously obtained by GeoCapitol. The locations were changed based on-site conditions, utility locations and offsets due to encountered subsurface obstructions.



- LEGEND:**
- GEI SPT BORING (2019)
 - ⊕ GEI CPT (2019)
 - ⚙ GEI DMT (2019)
 - GEI HAND AUGER (2019)
 - GEOCAPITAL BORINGS (2018)

NOTE:
 1. ALL BORING LOCATIONS ARE APPROXIMATE.

PLAN
 SCALE: 1:30
 0 30 60
 SCALE: 1" = 30'

Bus Terminal Retaining Wall 1601 W Street NE Washington DC		BORING LOCATION PLAN
Alphatec PC Washington DC	Project 1804446	February 2019 Fig. 1

E. GEOTECHNICAL REPORT:

1. PROPOSED DEVELOPMENT

The Department of General Services (DGS) on behalf of the Office of the State Superintendent of Education (OSSE) purchased the site located at 1601 W Street NE to renovate into a bus terminal for OSSE school bus vehicles. OSSE vehicles currently using the Adams Place NE and New York Avenue NE bus terminals will transfer to the renovated bus terminal at 1601 W Street NE. Site developments include a combined office building and bus maintenance facility, a bus washing station, and a fueling station. The proposed grading is not expected to change significantly relative to the current grade. The proposed structures are expected to be relatively lightly loaded. Column loads were not provided at the time of writing. Maximum column and wall loads of 150 kips and 5kip/foot, respectively were assumed for our analysis.

A retaining wall is proposed along the southern and eastern site boundaries to increase the paved parking surface. Site improvements related to stormwater management are also proposed. This retaining wall is anticipated to be a Mechanically Stabilized Earth (MSE) wall or another type of backfilled wall. Based on existing and proposed site elevations, the retained height of this wall ranges from approximately 15 feet along the edges to approximately 25 feet at the center.

2. GEOLOGY

Based on USGS geologic maps, the site is situated within the Coastal Plain Physiographic Province. The Coastal Plain Province consists of a wedge of unconsolidated to over-consolidated sediments including gravel, sand, silt and clay, which overlaps the rocks of the eastern Piedmont along an irregular line of contact known as the Fall Zone. Eastward, this wedge of sediments thickens to more than 8,000 feet at the Atlantic coast line. The

Coastal Plain deposits underlying the site consist of the lower Cretaceous period clay-dominated lithofacies of the Potomac Formation.

3. SUBSURFACE CONDITIONS

The subsurface conditions encountered in the GeoCapitol borings and test pits, and in GEI's supplemental subsurface investigation, are described below. The subsurface profile has been divided into three (3) primary soil layers. For detailed descriptions of soil samples, refer to GEI's subsurface investigation data in Appendix X.A.1, and GeoCapitol's borehole logs in Appendix X.A.1.

a. Layer I – Fill

This layer consists of lean CLAY (CL) with sand/gravel and clayey SAND (SC) and silty SAND (SM) with gravel. Fill material was encountered at each test location to a depth ranging between 9 feet in the NW corner of the site to 20 feet in the south portion of site, corresponding to approximately El. +100 to El. +81. The depth of the Fill layer increases considerably towards the southern portion of the site. SPT N-values ranged between 2 and 14 blows per foot (bpf) with an average of 8 bpf, indicating a very loose to medium relative density for cohesionless soils and a soft to stiff consistency for cohesive soils.

b. Layer II – Alluvium

The Alluvium layer consists of lean CLAY (CL), lean CLAY with sand and elastic SILT (MH). Alluvium was present in three (3) GeoCapitol borings, the GEI boring and the GEI CPTs and DMTs that went to depth. Alluvium was primarily encountered in the southern portions of the site at a depth of 12 to 20 feet, corresponding to approximately El. +92' to +82'. The Alluvium layer is approximately 22 to 12 feet thick in this area, corresponding to a bottom of layer between El. +69' to El. +70'. The Alluvium appeared to thin out towards the NW corner of the site. SPT N-

values ranged between 3 to 13 bpf with an average of 10 bpf, indicating a soft to stiff consistency.

c. Layer III – Potomac Formation Clay

The Fill/Alluvium layers are underlain by the clay dominated soils of the lower Cretaceous Potomac Formation. This layer consists of fat CLAY (CH), fat CLAY (CH) with sand, lean CLAY (CL) with sand and elastic SILT (MH). The Potomac Formation Clay was encountered in five (5) GeoCapitol borings, the GEI boring and five (5) GEI CPTs/DMTs at depths ranging between 9 feet in the NW corner of the site to 34 feet in the southern portions of site, corresponding to a top of Potomac Formation between approximately El. +100 to El. +68. SPT N-values range between 13 and 24 bpf with an average of 18 bpf, indicating a very stiff consistency. All borings/test locations that encountered the Potomac Formation terminated within the Potomac Formation. The remaining borings/test locations terminated in the Fill layer.

Based on the subsurface information gathered, it appears that the top of the Potomac Formation slopes from the NW to the SE of the site. GEI's DMT-102S, located at the bottom of the vegetated slope indicates that the top of Potomac Formation maintains this general slope as it transitions off the site. GEI's supplemental investigation also reveals that the top of Potomac formation slopes from the NW to the SW within the site.

4. GROUNDWATER CONDITIONS

Groundwater readings were taken in the field during and after drilling. Of the ten (10) borings advanced by GeoCapitol, groundwater was only encountered in boring B-8 at a depth of 8 feet below grade, or approximately El. +97.5 during drilling. No measurements after drilling were obtained as the boreholes caved at shallow depths.

Groundwater was encountered during drilling in boring GEI-101 at a depth of 13.5 feet. The CPTs measured hydrostatic pressure at approximately 8 feet below ground in most locations or approximately between El. +96 to +91, with a gradient towards the SE portion of the site. Based on the information available, we recommend a consideration of the water table at El. +97 for design. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in season, rainfall, temperature, and other factors not evident at the time observations were made and reported herein.

5. LABORATORY TESTING RESULTS

GEI performed soil laboratory tests on a select number of soil samples. One (1) sample was subjected to grain size distribution and three (3) samples were subjected to Atterberg Limits and moisture content tests for soil classification purposes. GEI also performed one (1) CBR test/standard Proctor compaction test on a bulk sample taken from within the top 10 feet of the soil profile. The results of these tests are appended to this report in Appendix X.A.1.

GeoCapitol previously performed soil laboratory tests on a select number of soil samples. Eleven (11) samples were subjected to grain size distribution, Atterberg Limits and moisture content tests for soil classification purposes. An additional fifteen (15) samples were tested for moisture content only. GeoCapitol also performed a direct shear test on an undisturbed Potomac Formation sample, along with three (3) CBR tests on bulk samples taken from within the top 10 feet of the soil profile. The results of these tests are also appended to this report in Appendix X.A.1.

6. ENVIRONMENTAL TESTING

a. General Site Characterization

Environmental sampling and testing to perform a Phase II Environmental Site Assessment were not part of GEI's scope for the project.

GeoCapitol performed a Phase I Environmental Site Assessment (ESA) for the subject property, with findings and recommendations summarized in a report dated October 25, 2017. Two Leaking Underground Storage Tank (LUST) cases were reported on the site, with at least one case closed. The status of the other LUST case is unclear. Based on the desktop study performed by GeoCapitol and observations of surface stains in the gravel parking areas, GeoCapitol recommended additional investigations to determine the extent of potential contamination.

GeoCapitol noted petroleum odors during drilling in three borings, but a Photoionization Detector (PID) did not measure Volatile Organic Compounds (VOCs) in the soil samples. GeoCapitol's geotechnical report mentioned additional chemical laboratory testing for a variety of environmental parameters but results of these tests were not provided by DGS. It is unclear whether this additional chemical laboratory testing was part of a waste characterization program, or whether these tests were part of a Phase II ESA.

GEI took PID readings while sampling the SPT boring. While no petroleum odors were noted, PID readings ranged from 0.1 to 3 parts per million (ppm). GEI also took one composite sample from the drilling spoils to perform environmental testing for the waste characterization of the drill spoils only.

b. Composite Sample for Drill Spoil Disposal

The composite sample was submitted to TestAmerica Laboratories for general analysis of waste characterization parameters, including the following analyses:

- VOCs by USEPA Method 8260B
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C
- Total petroleum hydrocarbons (TPH) for diesel-range organics (DRO) and gasoline range organics (GRO) by USEPA Method 8015C
- Polychlorinated biphenyls (PCBs) by USEPA Method 8081B
- Pesticides by USEPA Method 8082A
- Herbicides by USEPA Method 8151A
- Resource Conservation and Recovery Act (RCRA) 8 Metals by USEPA Methods 6010/7471
- Toxicity characteristic leachate procedure (TCLP) by USEPA Methods 1311/6010D/7470A
- Total cyanide by USEPA Method 9012B
- Total sulfide by USEPA Method 9034
- Ignitability for solids by USEPA Method 1030
- Corrosivity by USEPA Method 9045D

The laboratory testing described above and completed during this investigation is a generally accepted suite of waste characterization analyses. Additional sampling and testing may be necessary if the testing results indicate that a higher sampling frequency is required by the contractor's specific soil receiving facilities, or delineation sampling

is required by the individual soil receiving facilities. The specific nature and extent of potential additional sampling is unknown at this time.

Soil samples collected for laboratory analyses were placed into laboratory supplied containers, properly labeled, packed on ice, and submitted to TA in Savannah, Georgia, a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory. All samples were accompanied by a properly completed and signed chain-of-custody and submitted via laboratory courier. A summary table of the laboratory data is included in Appendix X.A.1.

Low level concentrations of VOCs (toluene only), SVOCs (bis(2-ethylhexyl) phthalate only) TPH-DRO, pesticides, and metals were detected. The metals included arsenic, barium, chromium, lead, and silver. PCBs, TPH-GRO, herbicides, and all of the TCLP analyses were non-detect in this sample. Based on the laboratory analytical results, the soil sampled at this site can be classified as non-hazardous. Non-hazardous soils are defined as soils that have low levels of detections for the analytical tests performed. Non-hazardous soils have the potential to be disposed of at a construction and demolition (C&D) landfill, but all facilities have their own permit requirements for the material they can accept. Due to the presence of TPH-DRO, the excavated soils may need to be handled and disposed as contaminated soil and be disposed at a facility like Soil Safe. Because TPH-DRO impacted soil will be removed as part of the planned redevelopment activities at the Site, we do not recommend additional actions be taken to remediate subsurface soil at the Site.

While one composite sample provides sufficient data to dispose of the drilling spoils, additional sampling and testing will be necessary during

construction to dispose of site soils or water depending on the quantity of excavated soils, dewatering activities and the presence of contaminants.

The waste characterization testing should not be considered as a Phase II ESA, as it cannot establish the depth and/or extent of contamination in the soil. A Phase II ESA as defined by DOEE requirements also requires groundwater sampling and testing, which was not included in the waste characterization scope.

7. SEISMIC SITE CLASS AND LIQUEFACTION POTENTIAL

The International Building Code (IBC) 2012 and American Society of Civil Engineers' Minimum Design Loads for Buildings and Other Structures manual (ASCE Standard 7-10) requires site classification for seismic design based on the upper 100 feet of soil profile.

Borehole GEI-101, B-9 and B-10 extended to a maximum depth of 50 feet below ground surface, less than the 100-foot depth typically required for site classification. However, the typical soil profile in the area and the subsurface information collected from nearby sites may be used to assess the geologic conditions prevailing in the immediate vicinity for soils from 50 feet to 100 feet below ground surface. The deeper soils appear to be a continuation of Potomac Formation soils, similar to the soils encountered in boreholes GEI-101, B-9 and B-10.

A seismic CPT sounding was also performed at CPT-104 to a depth of 55 feet below ground surface to generate a shear wave velocity profile. The average shear wave velocity within sounding CPT-104 was 800 feet per second. The results of the seismic CPT sounding are included in Appendix X.A.1.

Based on the subsurface information and the shear wave velocity data, the site is classified as Site Class D in accordance with the criteria noted in Table 20.3-1 Site Classification of ASCE Standard 7-10. This standard is referenced by the 2013 District of Columbia Building Code, Section 1613.

Liquefaction of the soils during an earthquake event are unlikely due to the predominantly cohesive nature of the soil profile at the site, and due to the relative density of the few cohesionless soils.

8. FOUNDATION RECOMMENDATIONS

Based on the preliminary drawings, all existing buildings will be demolished, with the exception of the northern façade of the westernmost building, which will be preserved and incorporated into the proposed office and bus maintenance building. The proposed building is a three-story steel frame structure with a lower level finished floor elevation (FFE) at approximately El. +108. Exact foundation loads were not available at this stage of the design, so 150 kip column loads and 5 kip/foot wall loads were assumed in the analysis.

Shallow foundations on natural soils, a mat foundation, or shallow foundations on ground improvement are all feasible options for supporting the proposed structure. Recommendations for each of these options are outlined as follows.

a. Shallow Foundations on Native Soils

A shallow foundation system consisting of isolated spread footings bearing on natural Layer II or III soils is a feasible option to support the proposed structure. In general, the Fill (Layer I) is not suitable to support shallow foundations (spread footings) due to the potential for excessive differential settlements within the building structure. Subsequently,

shallow foundations should bear on competent Layer II/III soils. Given the proposed FFE is at El. +108, undercuts of up to 10 feet to remove the fill material and reach competent native soils are likely required.

We recommend that the following criteria be used for the design of the shallow foundations bearing on natural soils.

- i. Design footings for an allowable bearing pressure of 4,000 psf. Total and differential post-construction settlements should be limited to 1.0 inch and 0.5 inches, respectively.
- ii. A minimum footing width of 36 inches wide is recommended.
- iii. Design exterior footings to bear at least 2.5 feet below the finished exterior grade for frost protection.
- iv. The tops of all footings should be at least 6 inches below the bottom of the overlying floor slabs.
- v. The results of subsurface investigations indicate the native soils consist of CL or CH soils. Wet, plastic, or soft soils or material with organics shall be undercut and replaced with suitable controlled backfill.
- vi. We recommend that a mud mat be placed at the footing subgrade to prevent damage to the subgrade soils after excavation for the footings.
- vii. Spacing between footings shall be at least 1.5 times the width of the larger foundation to minimize any reduction in bearing capacity due to overlapping zones of influence.
- viii. An allowable coefficient of friction of 0.30 is recommended for sliding.
- ix. Maintain positive drainage away from the structure to prevent water from infiltrating under footings. Tie all roof gutters and leaders into a stormwater drainage system for drainage away

from the structure. Do not allow stormwater from the roof area to drain directly onto pavement areas or into permeable areas adjacent to the structure.

- x. Protect all footing subgrades from water and/or disturbance prior to placing the mud mat.

b. Shallow Foundations Bearing on Ground Improvement

Ground improvement with shallow foundations can be used as an alternative to undercutting the Layer I fill soils. We recommend the use of stone columns or rigid inclusions ground improvement for this purpose. Either method may require the use of a loaded transfer platform to distribute foundation loads to the stone columns or rigid inclusions. We recommend that the ground improvement be placed under column and wall footings.

We recommend that the ground improvement be designed to provide a minimum allowable bearing pressure of 6,000 pounds per square feet (psf) at column locations and maintain maximum building settlements of 1.0 inch total and 0.5 inch differential over 100 feet. The design for ground improvement is typically provided by the specialty contractor retained to perform the work. A description of stone columns and rigid inclusions is presented below.

- i. Stone aggregate columns are a ground improvement option for the proposed structure. Stone columns require auger drilling to the desired bearing elevation and the placement of aggregate in the hole in compacted lifts to the ground surface. The final design for the stone columns, including column diameter, spacing and gradation of the aggregate fill, is the responsibility of the specialty contractor. We recommend that the aggregate consist of sands

and gravel with less than 15% fines. The addition of grout to the aggregate is recommended. A typical aggregate column diameter is 30 inches.

- ii. Rigid inclusion is the generic term for a ground improvement technology used to improve the soil characteristics of a compressible soil layer and to reduce settlement by using rigid concrete elements. The objective of this system is to increase the stiffness of the soil mass through the use of concrete inclusions. A load transfer platform (LTP) may be required. The rigid inclusion is typically constructed by drilling a 12 to 18 inch diameter auger into the ground and pumping cement grout into the hole under pressure as the auger is withdrawn. The cement grout columns are installed in an evenly distributed grid. Part of the load of the overlying structure will be transferred down to a competent layer through the grout column while the remaining load is transferred to the surrounding soil through skin friction.

We recommend that the rigid inclusion system be designed so that the loads are transferred into the Layer II and III soils, at a minimum. We recommend maintaining a maximum tributary area of 100 square feet per column and a minimum column diameter of 12 inches.

c. Mat Foundation

Another feasible option is to support the building on a structural mat foundation that bears directly on the existing fill material. We recommend that the following criteria be used for the design of the mat:

- i. Design mat for a maximum contact pressure of 2,000 psf.
- ii. Design mat using a modulus of subgrade reaction of 20 pci.

- iii. Total and differential post-construction settlements up to 1.0 inch and 0.5 inches, respectively should be expected.
- iv. Mat slab should be at least 3 feet thick.
- v. Mat should be underlain with a minimum of 12 inches of compacted gravel fill.
- vi. Compacted gravel fill should be placed on fill free of debris or deleterious material. Any wet, plastic, or soft soils or material with organics shall be undercut and replaced with suitable controlled backfill.
- vii. Existing fill material that pumps during proofrolling shall be undercut and replaced with structural fill.

9. SLAB RECOMMENDATIONS

The shallow foundation systems presented above allow for the use of a slab on grade for the lowest level of the proposed structure. We recommend undercutting the surface soils under the slab a minimum of 12 inches and replacing the material with a controlled backfill. Additional undercuts may be needed if fill soils, wet, plastic, or soft soils or material with organics are encountered at the subgrade. We recommend that contraction joints be incorporated between the slab on grade and the columns and perimeter walls of the proposed building. Given the potential contamination present at the site, a vapor barrier below the lowest level floor slab is also recommended.

10. SUB-DRAINAGE SYSTEM RECOMMENDATIONS

Groundwater was encountered in one GeoCapitol boring during drilling and in GEI's boring. The CPTs performed at the site also measured hydrostatic pressures at a depth of approximately 8 feet below ground surface. GEI recommends using a design groundwater elevation of El. +97.

Given the finished floor elevation of El. +108, dewatering and an active subdrainage system below the proposed structure will not be required. Positive drainage away from the structure should be maintained at all times during and after construction.

11. NEW UTILITIES

Due to the presence of Fill between the curb and the building footprint, GEI recommends that trenches for new utilities outside of the building footprint be undercut by 1 foot and backfilled with compacted structural fill to reduce potential settlement.

12. BELOW GRADE WALLS

The proposed plan includes a new basement wall approximately 25 feet south of the existing façade. Support of excavation (SOE) might be required to retain the unexcavated soil to construct the basement level.

The permanent basement walls should be designed to withstand lateral earth pressures. We recommend a linearly increasing lateral at-rest earth pressure of approximately 48 psf per vertical foot of wall (48H) to the bottom of the basement wall. Based on the groundwater conditions noted above, we do not expect hydrostatic pressures to act on the basement wall.

Dead loads, live and vibration loads, and earthquake loads should be added to the lateral earth pressure load where appropriate for a design total load. The wall design shall also include any surcharge loads that may develop within a 45° slope from the toe of the wall using 50% of the adjacent surcharge load over the height of the wall.

We recommend that the basement walls be waterproofed. Rain water and water falling on impermeable surfaces should be tied to subgrade stormwater sewers and directed away for basement walls. □□

Temporary SOE is required for vertical excavations deeper than 4 feet to support the cut face. Temporary walls should be designed to withstand lateral earth pressures and surcharge loads from construction staging, equipment, stockpiles, and adjacent traffic loads. Based on the existing grades and the proposed lowest level of the structure, cut heights up to 11 feet can be expected. A SOE system consisting of cantilevered soldier piles and lagging is therefore feasible.

13. RETAINING WALL RECOMMENDATIONS

A vegetated slope is present along the southern and eastern boundaries of the site, with elevation differences between 15 feet in the SW corner to 25 feet in the SE portion of the site. To maximize the site's footprint, a retaining wall along the southern and eastern limits of the site is proposed. The proposed retained wall heights range between 15 feet and 25 feet based on existing site elevations. A mechanically stabilized earth (MSE) retaining wall with pile stabilization is a feasible option for this site.

a. Previous Slope Stability Analysis

GeoCapitol previously performed a global stability analysis of the existing slope at the SE corner of the site, where the elevation difference is greatest. Peak strength parameters for the Potomac Formation were used but residual cohesion was neglected, resulting in a factor of safety against global stability less than 1.0.

b. GEI Slope Stability Analysis

GEI revisited the global stability analysis at the SE corner to include the information gathered during the supplemental investigation. A revised stratigraphy, along with fully softened strength parameters correlated from laboratory testing data for the Potomac Formation was modeled in SLOPE/W, developed by GeoStudio. Soil strength parameters used in the global stability analysis are presented in Table 1.

Table 1 – Soil Strength Parameters

Strata	Unit Weight (pcf)	Friction Angle (deg)	Cohesion (psf)
Fill	120	30	0
Alluvium	115	28	0
Potomac Clay – Undrained	125	0	1500
Potomac Clay - Drained	125	16.7	0

The results of the slope stability analysis give a factor of safety against global stability of 1.1 for the existing conditions. This represents a marginal factor of safety, which is manifested by evidence of movement and rotation of the concrete retaining wall separating the sidewalk along Montana Ave NE and the vegetated slope. Evidence of wall movement is typically indicative of localized slope instability. Between the geotechnical exploration phase and the time of writing of this report, additional out-of-plane movement of the concrete retaining wall has been observed.

GEI also performed global stability analyses at the SE corner for the temporary excavation phase (MSE wall installation) and the final conditions (MSE wall completed). Given the fully softened strength parameters for the Potomac Formation, a minimum factor of safety against global stability of

1.5 cannot be achieved in the final conditions without the use of additional slope stabilization at the toe of the MSE wall. The global stability analysis results show that the slope stabilization system should extend a minimum of 53 feet below the base of the MSE wall, or to a minimum tip elevation of EL. +9 feet to achieve a minimum factor of safety for global stability of 1.5. The subgrade slope stabilization system may need to resist lateral loads up to 50 kips per lineal foot of shear in order to achieve the minimum factor of safety of 1.5. This stabilization system should be designed to satisfy structural and performance requirements and be performed by a Professional Engineer registered in the District of Columbia. Steel reinforced concrete drilled shafts connected by a grade beam is a feasible solution for stabilizing the slope.

The global stability results are presented in Appendix X.A.1.

c. MSE Wall Recommendations

We recommend that the following criteria be used for the design of the MSE retaining wall.

- i. The retaining wall should bear on either the Layer II or III soils defined in this report. Depending on the depth of fill material present on the slope, undercuts should be anticipated to reach a suitable bearing surface.
- ii. Design retaining wall for a maximum allowable bearing pressure of 4,000 psf. Total post-construction settlements should be limited to 1.0 inch.
- iii. Include surcharge loads consistent with the proposed traffic and parking layout.
- iv. The soil properties defined in Table 1 should be considered maximum values for use in design of the MSE wall.

- v. The minimum embedment depth from bottom of wall to finished grade should be $H/7$, where H represents the retained soil height.
- vi. Design a pile stabilization system located at the toe of the MSE wall capable of resisting 50 kip/ft shear load. Extend the piles deep enough to achieve a minimum factor of safety against global stability of 1.5, or El. +9, whichever is deeper, consistent with recommendations provided in the sections above.
- vii. Design the retaining wall for a minimum factor of safety against sliding of 1.5.
- viii. Design the retaining wall such that the resultant load is within the middle third of the footing.
- ix. Design the soil reinforcement for a minimum factor of safety against pullout of 1.5.
- x. Soil reinforcement should be either inextensible or extensible reinforcement.
- xi. Vertical spacing of soil reinforcement shall not exceed 32 inches.
- xii. Minimum soil reinforcement length should be $0.7H$, where H represents the retained soil height.
- xiii. Damage reduction factors shall be considered in the design of the soil reinforcement to take installation damage, creep and durability factors into account.
- xiv. Provide instrumentation on the wall and within the wall to demonstrate that wall movement is less than 1.0 inch horizontally and 0.5 inches vertically along the entire wall profile. Wall movements should be recorded and presented monthly during construction and quarterly for a period of two years after construction.

14. RECOMMENDATIONS FOR EXCAVATION

Excavations will be required to remove the fill material for the construction of the retaining wall and for building foundations. Based on the subsurface investigation program, we believe it is feasible to remove the overburden soils using conventional heavy earthmoving equipment in proper working condition. Soil slopes and exposed soil surfaces will be subject to degradation through weathering and will require treatment to maintain stability.

Temporary construction excavations above the water table that are less than 5 feet in depth may be constructed with 1.5 Horizontal to 1 Vertical (1.5H:1V) side slopes in soil, unless otherwise noted. Localized instabilities in such excavations may occur due to the possibility of loose Fill material.

In such areas, the excavation sides should be sloped at an inclination of 2H:1V, or flatter. Side slopes should be protected from excessive disturbance and surface water runoff.

The excavation required to install the slope stabilization system and the MSE wall should be constructed with a 2.5H:1V side slope back up to the site to maintain an adequate factor of safety against global stability in temporary conditions. Side slopes should be protected from excessive disturbance and surface water runoff.

All excavations should be performed in accordance with local, state, and federal regulations, including current OSHA excavation safety standards.

15. PRELIMINARY RECOMMENDATIONS FOR ENVIRONMENTAL CHARACTERIZATION AND DISPOSAL CONSIDERATIONS

As noted previously, GeoCapitol noted petroleum odors during the subsurface investigation. The results of the environmental testing performed by GeoCapitol were not provided as part of the contract documents. GEI performed waste characterization testing of one composite sample generated from the drilling spoils, which is sufficient for spoil disposal only. As mentioned previously, additional sampling and testing will be necessary during construction to dispose of site soils or water depending on the quantity of excavated soils, dewatering activities and the presence of contaminants.

Prior to commencing construction excavation, a soils management and disposal plan should be developed that will identify necessary testing, suitable reuse and disposal alternatives.

16. RECOMMENDATIONS FOR SUBGRADE PREPARATION AND BACKFILL PLACEMENT

The subgrade should be stripped of all vegetation, rootmat, existing Fill, and soft or otherwise unsuitable soils such as high plasticity soils with a LL greater than 40 and a PI greater than 20. Disposal of any on-site debris should be performed in accordance with local, state, and Federal regulations.

Existing utilities that are not planned to be reused should be removed, along with any unsuitable backfill materials. Care should be taken during site grading operations to avoid damaging any utilities that are to remain in service.

Imported soil backfill within the building footprint should consist of granular material complying with ASTM D-2487 soil classification groups GP, GM, GC, SM, SC, SW and SP and should be well-graded. Clayey silt and silty sand with high fines content or material with a Liquid Limit greater than 40 and Plasticity Index greater than 20 are not acceptable for reuse as backfill within the building footprint.

Imported soil backfill used for the reinforced soil behind the retaining wall should consist of free draining granular material complying with less than 15% fines and a Plasticity Index equal to or less than 6. The reinforced soil backfill material shall be free of organics, recycled materials and other deleterious substances.

GEI recommends that all backfill beneath structures be placed in uniform, horizontal lifts and compacted to at least 95% of the maximum laboratory dry density as determined by ASTM D1577 (Modified Proctor). Fill should be compacted at moisture content within $\pm 2\%$ of optimum. Fill placed within the building footprint and behind the retaining wall should be placed in horizontal, eight-inch maximum loose lifts. In areas to support the slab the uppermost one-foot (after compaction) shall be compacted to 100% of the material's maximum dry density.

Placement and compaction of all backfill materials should be monitored and tested by a GEI representative. GEI recommends that all fill placement be tested in accordance with ASTM D6938 (Nuclear Methods) to verify the density, degree of compaction, and moisture content of the fill. The specifications should call for frequent testing on placed and compacted fill. If any portion of the fill fails to meet the compaction requirements, the area should be reworked, recompacted, and retested until the specified compaction is achieved.

If construction is performed during freezing weather, special precautions might be required to prevent the subgrade soils from freezing. Foundations constructed on frozen soil may result in subsequent settlement of the structure. All subgrades should be free of frost before placement of concrete. Soils that are frozen should be removed and replaced with compacted structural fill. The footing and the soil adjacent to the footing should be insulated until they are backfilled. Soil placed as fill should be free of frost, as should the ground on which it is placed. If the foundation is constructed and left exposed during the winter, precautions should be taken to prevent freezing of the underlying soil.

Any loose or disturbed soil should be removed from the bottom of the excavation, and the subgrade should be compacted with a vibrator compactor weighing at least 200 pounds. If compaction begins to cause the subgrade to “pump” or become unstable, the material should be removed and replaced with approved structural backfill.

17. RECOMMENDATIONS FOR PAVEMENT DESIGN

The site will serve as a terminal for up to 236 school buses and 56 cars. The entire site with the exception of the bio-retention areas and the proposed office/bus maintenance building will be subjected to traffic loading. The design recommendations noted herein are for the traditional pavement only.

The design of the traditional pavement sections is based on an anticipated daily traffic over the 25-year life of the project. The assumed anticipated traffic volumes consist of approximately 1100 average daily traffic (ADT) with 90% bus traffic. The area is anticipated to see access of a fire truck/ambulance 10 times a year. If different traffic loading conditions are

required, the asphalt pavement sections should be redesigned using the applicable traffic loading.

GEI took a bulk sample from the top 10 feet of soil at borehole GEI-B01 to perform a CBR test and corroborate test results obtained by GeoCapitol. The results of GEI's CBR test suggests a CBR value of 3.0. GeoCapitol's CBR test results varied between 0.9 and 68.8, depending on the location of the sample used to perform the test, but GeoCapitol recommended a preliminary design CBR value of 10.0. GEI also recommends a CBR value of 10.0 for the design of pavements. However, given the variability of the test results and the presence of Layer I fill material, we recommend that CBR tests be performed on the in-situ soils at a minimum of five locations after rough grading to verify that the design CBR value is achieved. In addition, given the presence of Layer I fill soils, undercuts or soil modification (lime treatment, geogrid, etc.) should be anticipated within the pavement are. It is recommended that a project allowance be established to account for these potential undercuts.

The pavement was designed in accordance with United Facilities Criteria (UFC) 3-201-01 Civil Engineering using the modelling software PCASE. As a portion of the site will be on controlled backfill, laboratory testing should be performed on the controlled backfill and native subgrade soils to define the strength and CBR value of both materials. If strength and CBR values vary considerably between the two materials, additional pavement designs would be required.

The CBR value of 10.0 assumes a properly compacted subgrade soil and controlled backfill. We recommend that the graded aggregate layer consist of gravels, crushed stone, crushed rock (GW, GP) with 0 to 1.5 percent of

finer or with 0 to 3 percent sands (SW, SP) with a minimum CBR value of 80.

The recommended design section for the paved parking lot is shown in Table 2 below. The thickness below assumes that frost does not penetrate into the subgrade and that the subgrade is not frost-susceptible.

Table 2: Flexible Pavement Recommendations for Parking Lot

Layer Type	Thickness (inches)
Asphalt	4.0
Graded Aggregate	9.0

We recommend that topsoil, any soft, high plasticity or unsuitable materials, or any rubble or debris encountered near the ground surface of all paved areas be removed and disposed off-site. The stripped surface should be proofrolled and carefully observed at the time of construction in order to aid in identifying localized soft or unsuitable materials which should be removed. Good drainage should be provided to minimize the possibility of the subgrade materials becoming saturated over a long period of time.

We suggest that, at the time of construction, California Bearing Ratio (CBR) and Atterberg Limits tests be performed in the proposed pavement areas on representative subgrade materials to confirm the design assumptions noted herein. If the CBR value for the subgrade is less than the assumed value, the asphalt pavement section should be redesigned using the new CBR value or remedial measures taken, including undercuts, use of geogrid or lime treatment.

We recommend that the base course be proofrolled using a fully-loaded, rubber tire, six-wheel dump truck having a minimum gross load of 60,000 pounds. Two passes in each of two perpendicular directions should be performed. Areas that experience pumping or rutting under the proofroll should be improved by over-excavating unstable base and backfilling the over-excavation as described below. We recommend the proofroll be observed by a GEI representative.

18. PRELIMINARY RECOMMENDATIONS FOR STORMWATER MANAGEMENT

It is our understanding that all stormwater collected at the site will be directed to a stormwater filter prior to discharging into an existing 15 inch diameter storm sewer below W Street NE. The bio-retention areas will not rely on soil infiltration to manage stormwater.

II. APPENDICES

BORING INFORMATION

NORTHING: 456,029.2
 GROUND SURFACE EL. (ft): 99
 VERT./HORIZ. DATUMS: NAVD 88/NAD 83
 TOTAL DEPTH (ft): 50.0
 LOGGED BY: Michael Johnescu

EASTING: 1,318,299.2
 DATE START/END: 2/14/2019 - 2/14/2019
 DRILLING COMPANY: Connelly & Associates
 DRILLER NAME: Kevin
 RIG TYPE: CME 55

BORING

GEI-101

PAGE 1 of 2

DRILLING INFORMATION

HAMMER TYPE: Automatic
 AUGER I.D./O.D.: 3.25 inch / NA
 DRILLING METHOD: Hollow Stem Auger
 WATER LEVEL ELEVATIONS (ft): ∇ - At Time of Drilling: El. 85.5 ft. @ Drill Depth: 13.5 ft. @ 2/14/2019

CASING I.D./O.D.: NA / NA
 DRILL ROD O.D.: NM
 CORE BARREL TYPE:
 CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS: Pen. = Penetration Length, Rec. = Recovery Length, RQD = Rock Quality Designation = Length of Sound Cores > 4 in / Pen., %
 WOR = Weight of Rods, WOH = Weight of Hammer
 S = Split Spoon Sample, C = Core Sample, U = Undisturbed Sample, SC = Sonic Core, DP = Direct Push Sample, HSA = Hollow-Stem Auger
 Qp = Pocket Penetrometer Strength, Sv = Pocket Torvane Shear Strength, LL = Liquid Limit, PI = Plasticity Index, PID = Photoionization Detector, I.D./O.D. = Inside Diameter/Outside Diameter
 NA, NM = Not Applicable, Not Measured
 Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information			Field Test Data			Drilling Remarks/ Field Test Data	Layer Name	Graphic Log	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	PID (ppm)	Qp (tsf)				
		S-01	0 to 2	24/6	10-9-5-10 (14)	1.1		Fill		SILTY SAND AND GRAVEL (SM): black, mostly coarse, subangular gravel, mostly fine to medium sand, nonplastic fines, medium dense, moist, max. gravel size=1"	
		S-02	2.5 to 4	18/6	4-3-4 (7/)	1.5		Fill		CLAYEY SAND AND GRAVEL (SC): red, black, light brown, mostly coarse, subangular gravel, mostly fine to medium sand, medium plasticity fines, dense, moist, max. gravel size=1"	
	5	S-03	5 to 6.5	18/8	3-4-2 (6/)	0.1				SANDY SILT (ML): reddish brown, red, light brown, black, mostly fine gravel, mostly fine sand, medium plasticity fines, very stiff, moist, max. gravel size=0.25", brick,	
	10	S-04	8.5 to 10	18/10	5-2-3 (5/)	0.1		Fill		Same as previous	
	15	S-05	13.5 to 15	18/1	2-1-1 (2/)	2.1		Fill		SILTY GRAVEL AND SAND (GM): brown, mostly fine gravel, mostly fine to coarse sand, dense, wet, max. gravel size=0.25", brick, wood fragments	
	20	S-06	18.5 to 20	18/16	4-6-7 (13/)	3		Alluvium		ELASTIC SILT (MH): light brown, gray, medium plasticity fines, very stiff, moist	
	25	S-07	23.5 to 25	18/18	3-5-7 (12/)	1.3		Alluvium		LEAN CLAY (CL): reddish brown, red, light brown, mostly 0 sand, medium plasticity fines, very stiff, moist	
	30	S-08	28.5 to 30	18/18	4-5-7 (12/)	0.2				FAT CLAY (CH): red, medium plasticity fines, very stiff, dry	

NOTES:

PROJECT NAME: 1601 W St NE Bus Terminal
 CITY/STATE: Washington, DC
 GEI PROJECT NUMBER: 1804446






GEI STD 6-PID-PP GINT PROJECT GINT MODULES-DOWNSIZE.GDT 4/22/19

NORTHING: 456,029.2
GROUND SURFACE EL. (ft): 99
VERT./HORIZ. DATUMS: NAVD 88/NAD 83

EASTING: 1,318,299.2
DATE START/END: 2/14/2019 - 2/14/2019
DRILLING COMPANY: Connelly & Associates

**BORING
 GEI-101
 PAGE 2 of 2**

Elev. (ft)	Depth (ft)	Sample Information			Field Test Data			Drilling Remarks/ Field Test Data	Layer Name	Graphic Log	Soil and Rock Description
		Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	PID (ppm)	Qp (tsf)				
		S-09	30 to 32	24/24	5-7-7-9 (14)	0.3		Potomac		Same as previous except purple	
		S-10	32 to 34	24/12	4-6-6-7 (12)	0.5				Same as previous	
35											
60	40	S-11	38.5 to 40	18/18	7-9-10 (19/)	0.1		Potomac		ELASTIC SILT (MH): red, gray, medium plasticity fines, very stiff	
	45	S-12	43 to 45	24/24	8-11-12-15 (23)	0.1		Potomac		FAT CLAY (CH): brown, red, light brown, gray, medium plasticity fines, very stiff, dry	
50	50	S-13	48.5 to 50	18/18	6-9-11 (20/)	0.2				FAT CLAY mostly fine to medium sand, high plasticity fines, very stiff, dry, other, trace mica	
										Bottom of boring at depth 50 ft.	
	55										
	60										
	65										
	30										

GEI STD 6-PID-PP GINT PROJECT GINT MODULES-DOWNSIZE.GDT 4/22/19

NOTES:

PROJECT NAME: 1601 W St NE Bus Terminal
CITY/STATE: Washington, DC
GEI PROJECT NUMBER: 1804446





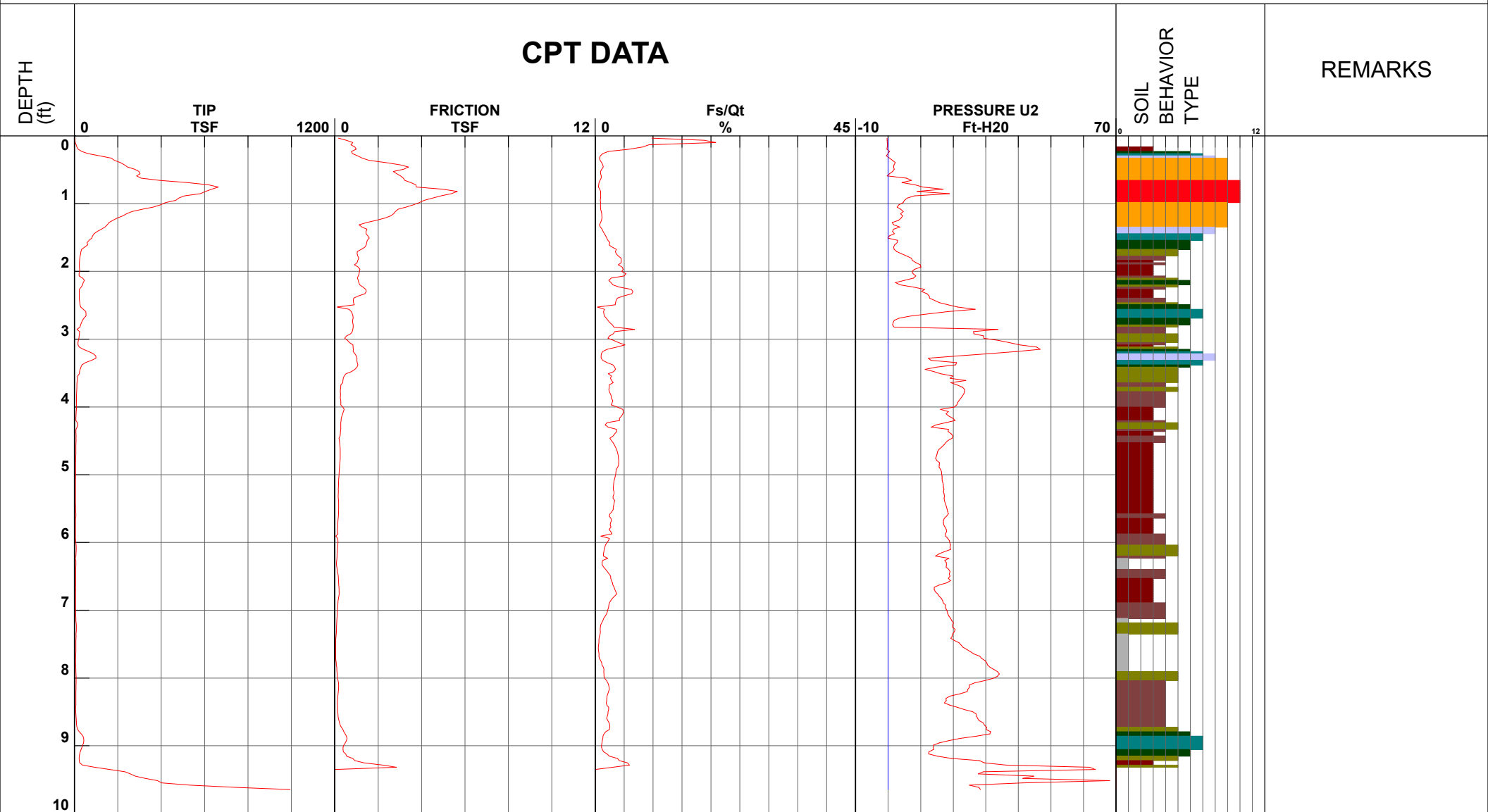
In-Situ Soil Testing, L.C. CPTU Sounding Data

Project
Location
Operator
File Name

1800 Montana Ave
Cone Number DDG1357
Ground Elev.
Total Depth 9.65 ft

Sounding
Date/Time
Water Depth

CPT-101
2/13/2019 9:30:15 AM
65.62 ft



REMARKS

- 1 - sensitive fine grained
- 4 - silty clay to clay
- 7 - silty sand to sandy silt
- 10 - gravelly sand to sand
- 2 - organic material
- 5 - clayey silt to silty clay
- 8 - sand to silty sand
- 11 - very stiff fine grained (*)
- 3 - clay
- 6 - sandy silt to clayey silt
- 9 - sand
- 12 - sand to clayey sand (*)



In-Situ Soil Testing, L.C. CPTU Sounding Data

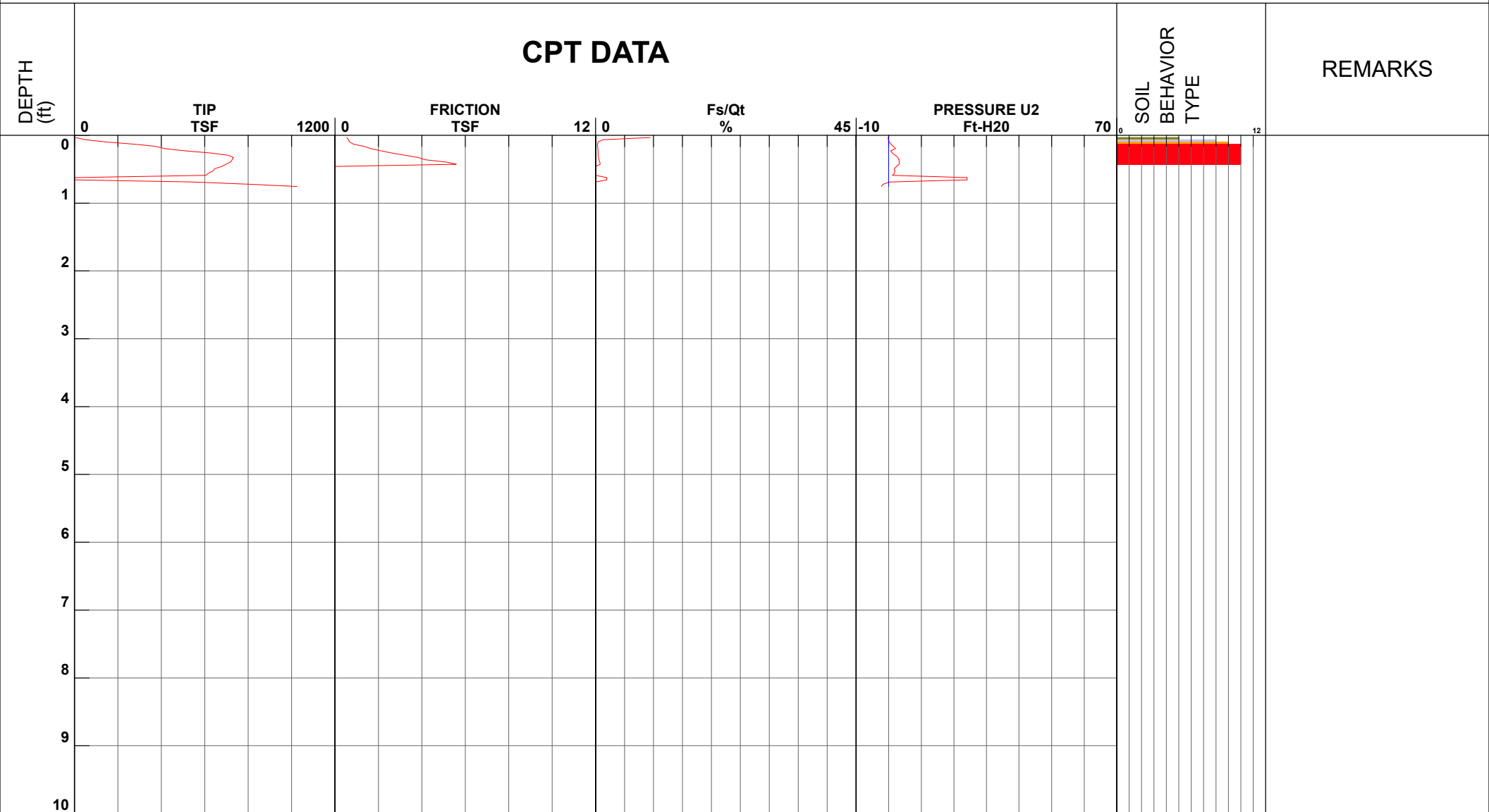
Project
Location
Operator
File Name

1800 Montana Ave
Cone Number
Roger A Failmezger
CPT-101A.cpt

1800 Montana Ave
Cone Number
DDG1357
Ground Elev.
Total Depth
0.75 ft

Sounding
Date/Time
Water Depth

CPT-101A
2/13/2019 10:39:02 AM
32.81 ft



- 1 - sensitive fine grained
- 4 - silty clay to clay
- 7 - silty sand to sandy silt
- 10 - gravelly sand to sand
- 2 - organic material
- 5 - clayey silt to silty clay
- 8 - sand to silty sand
- 11 - very stiff fine grained (*)
- 3 - clay
- 6 - sandy silt to clayey silt
- 9 - sand
- 12 - sand to clayey sand (*)



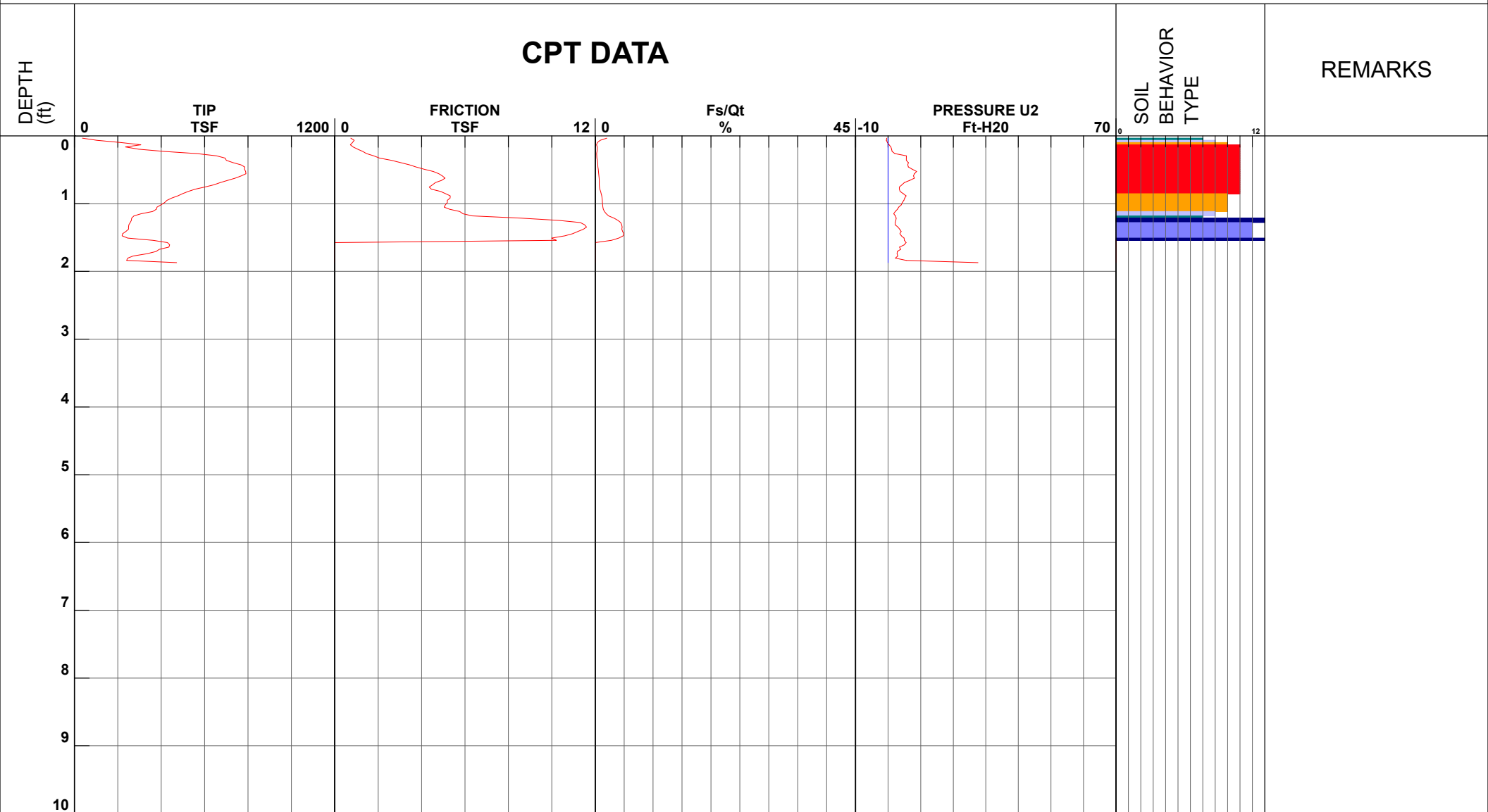
In-Situ Soil Testing, L.C. CPTU Sounding Data

Project
Location
Operator
File Name

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Cone Number DDG1357
Ground Elev.
Total Depth 1.87 ft

Sounding
Date/Time
Water Depth

CPT-101B
2/13/2019 10:47:03 AM
32.81 ft



- 1 - sensitive fine grained
- 4 - silty clay to clay
- 7 - silty sand to sandy silt
- 10 - gravelly sand to sand
- 2 - organic material
- 5 - clayey silt to silty clay
- 8 - sand to silty sand
- 11 - very stiff fine grained (*)
- 3 - clay
- 6 - sandy silt to clayey silt
- 9 - sand
- 12 - sand to clayey sand (*)



In-Situ Soil Testing, L.C. CPTU Sounding Data

Project
Location
Operator
File Name

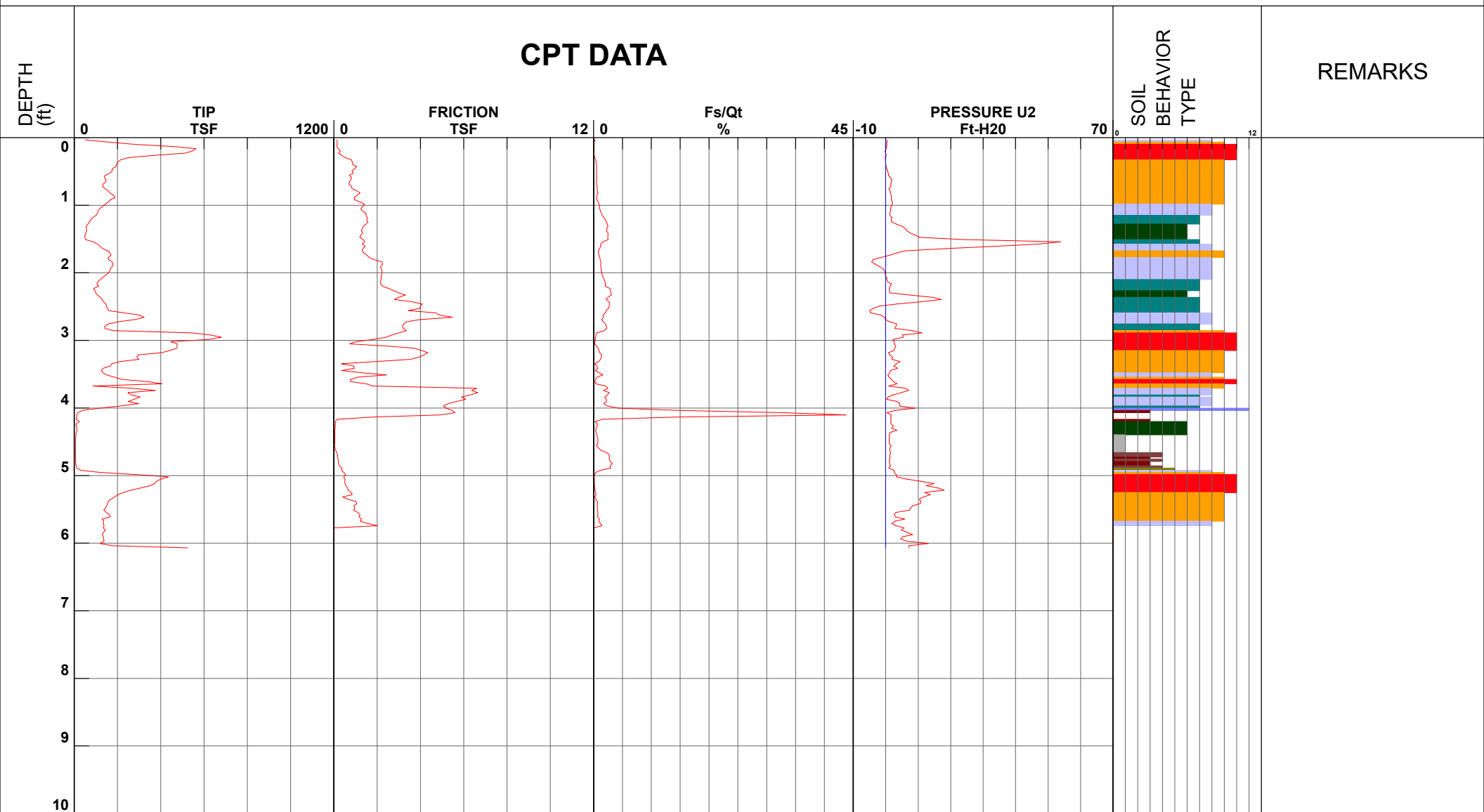
1800 Montana Ave
Cone Number
Roger A Failmezger
CPT-102NA.cpt

1800 Montana Ave
Cone Number
Ground Elev.
Total Depth

DDG1357
6.07 ft

Sounding
Date/Time
Water Depth

CPT-102NA
2/13/2019 8:08:11 AM
65.62 ft



REMARKS

- 1 - sensitive fine grained
- 4 - silty clay to clay
- 7 - silty sand to sandy silt
- 10 - gravelly sand to sand
- 2 - organic material
- 5 - clayey silt to silty clay
- 8 - sand to silty sand
- 11 - very stiff fine grained (*)
- 3 - clay
- 6 - sandy silt to clayey silt
- 9 - sand
- 12 - sand to clayey sand (*)

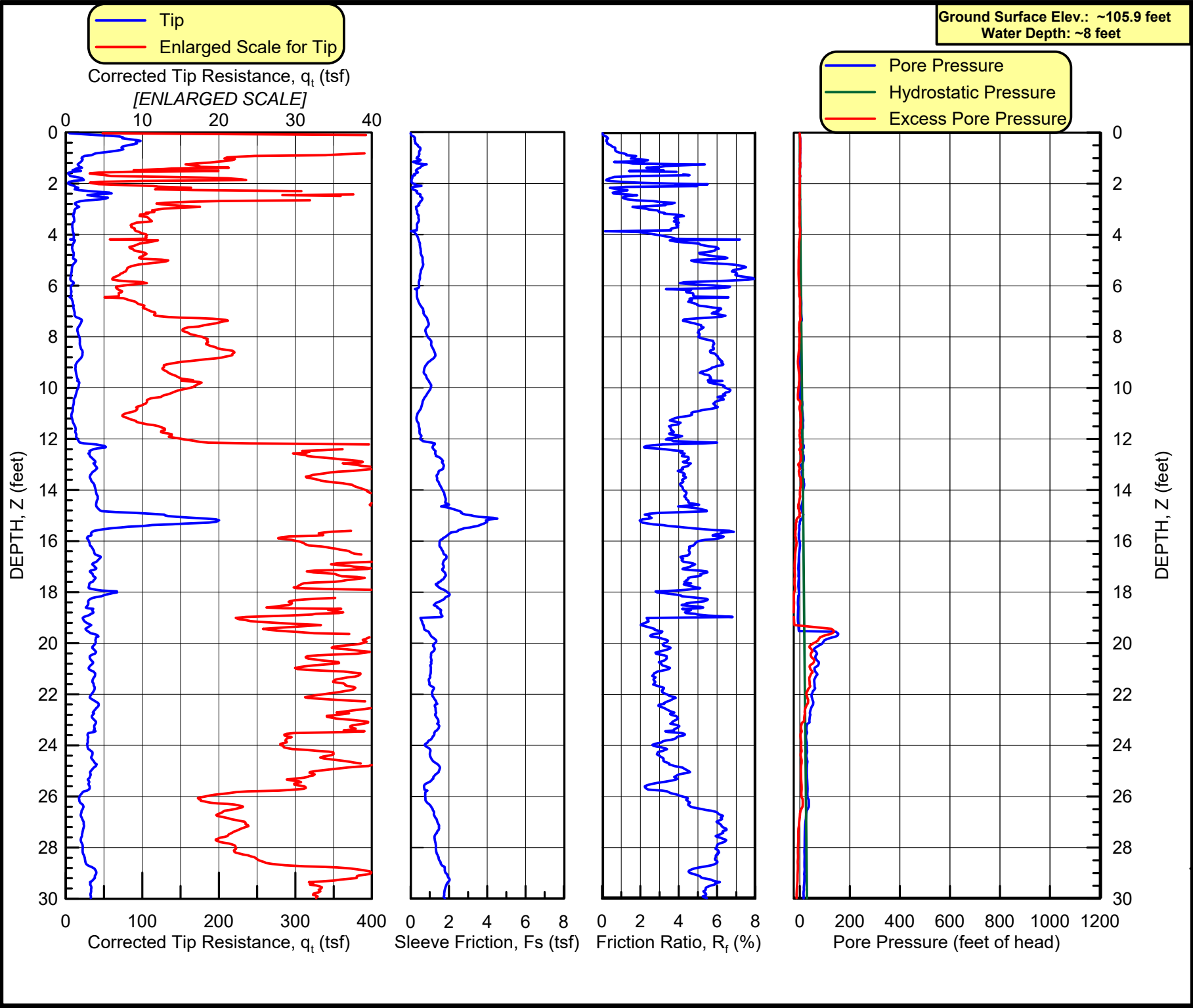
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456, 147.3 E1, 318, 304.0

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

CONE PENETROMETER TEST RESULTS

SOUNDING
CPT102B

Ground Surface Elev.: ~105.9 feet
 Water Depth: ~8 feet



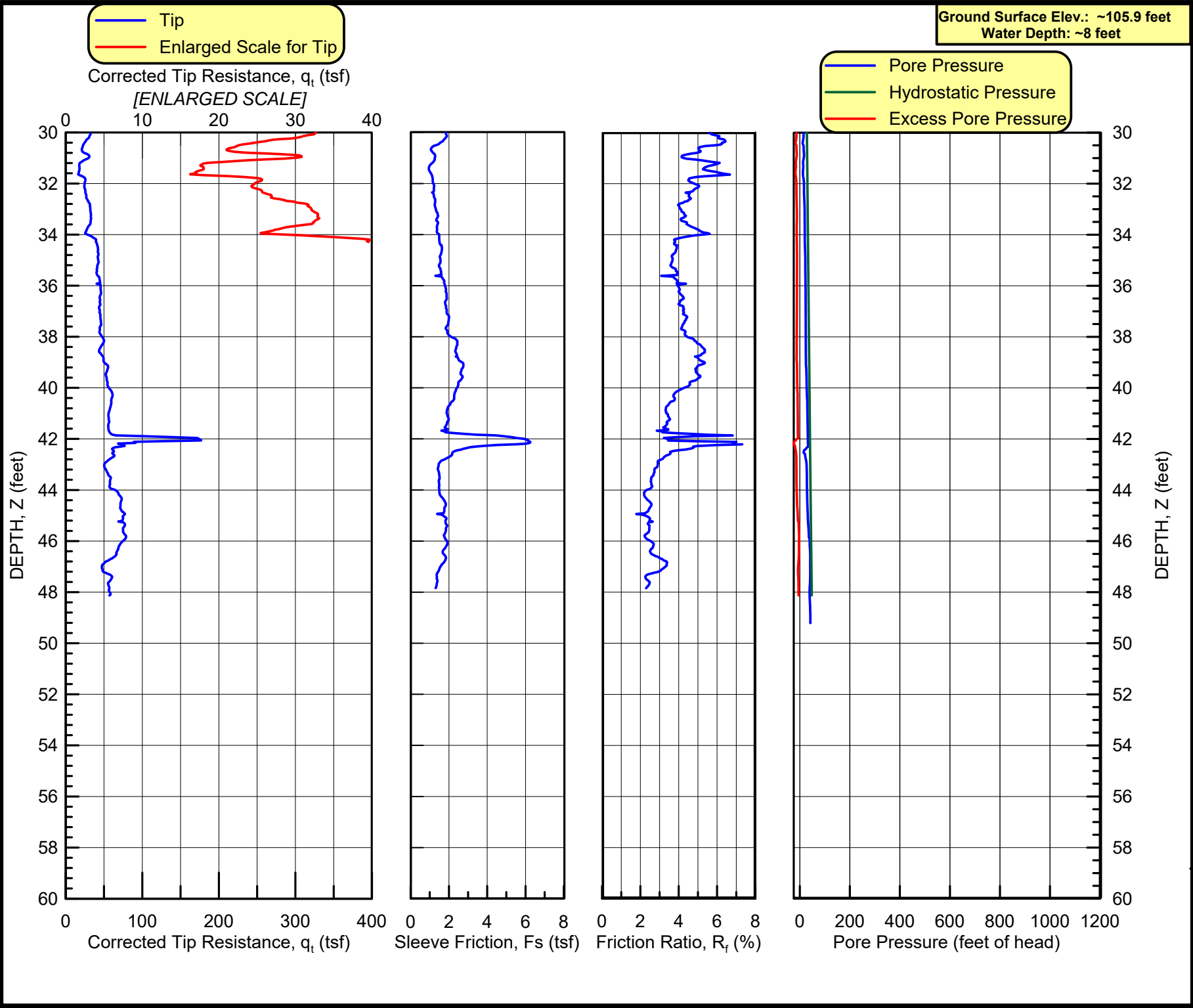
Ground Surface Elev.: ~105.9 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456, 147.3 E1, 318, 304.0

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

CONE PENETROMETER TEST RESULTS

SOUNDING
CPT102B



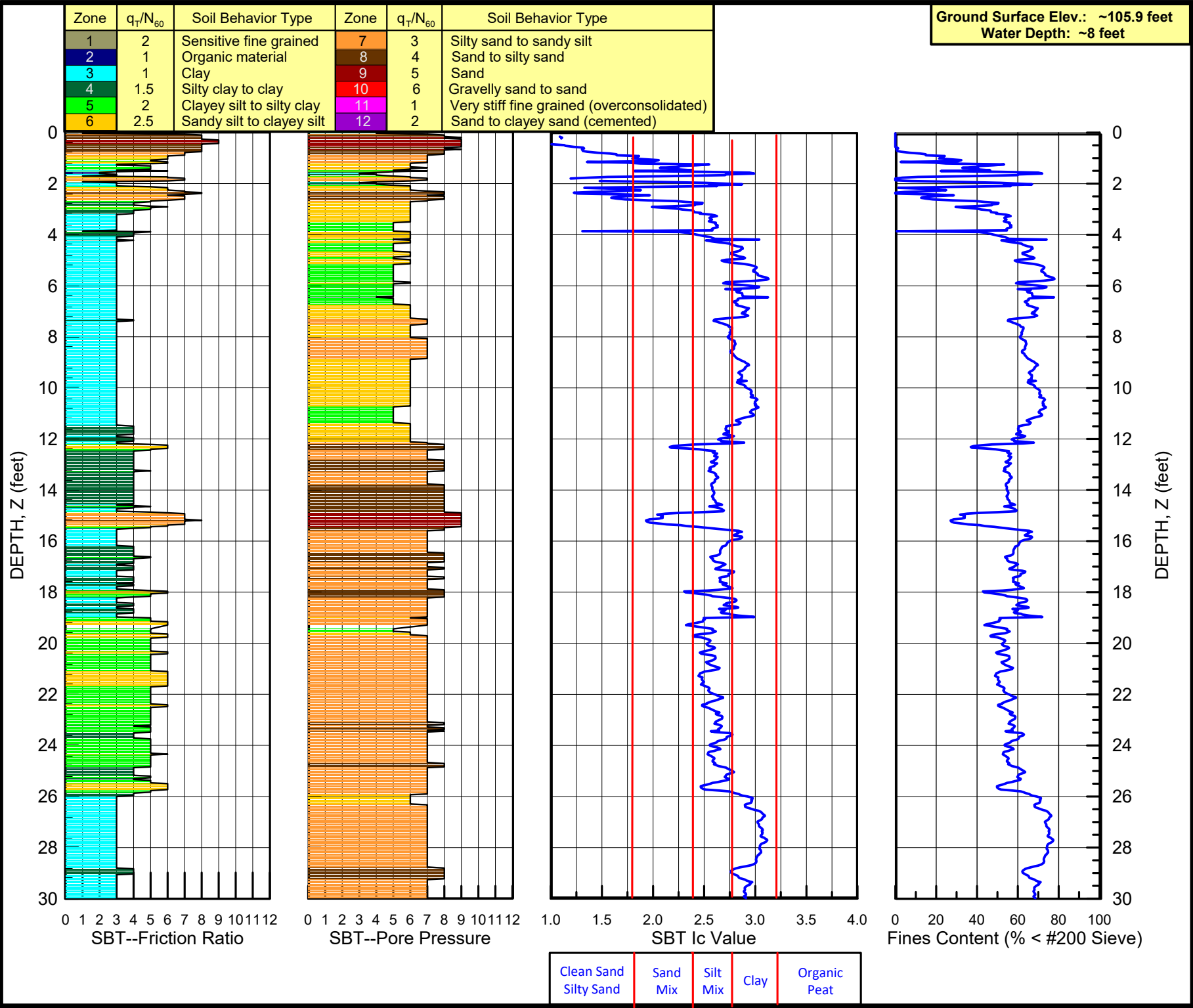
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456, 147.3 E1, 318, 304.0

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D. GE
SOUNDING DATE: 2/13/19

SOUNDING
CPT102B

Ground Surface Elev.: ~105.9 feet
Water Depth: ~8 feet

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION



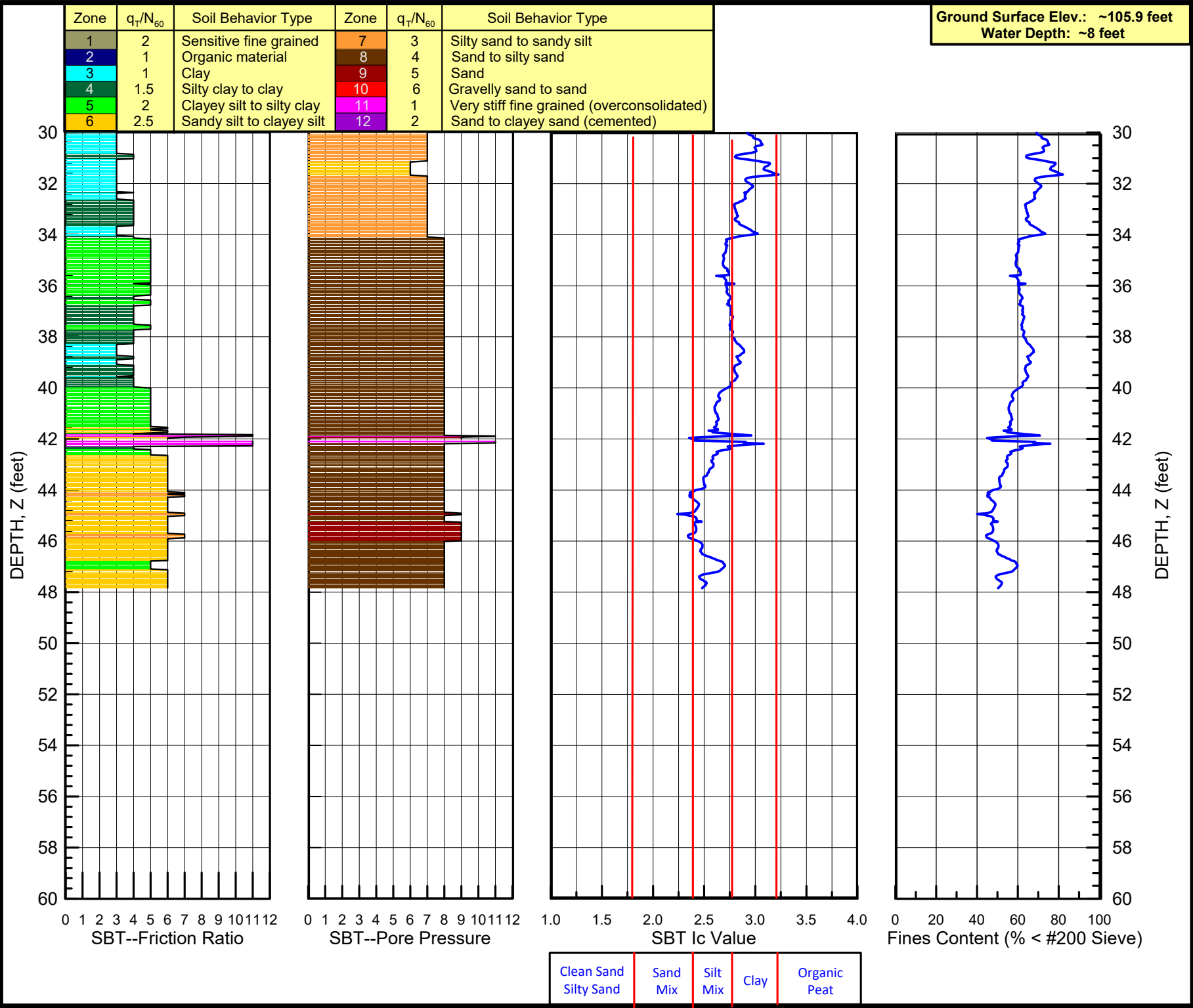
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456, 147.3 E1,318,304.0

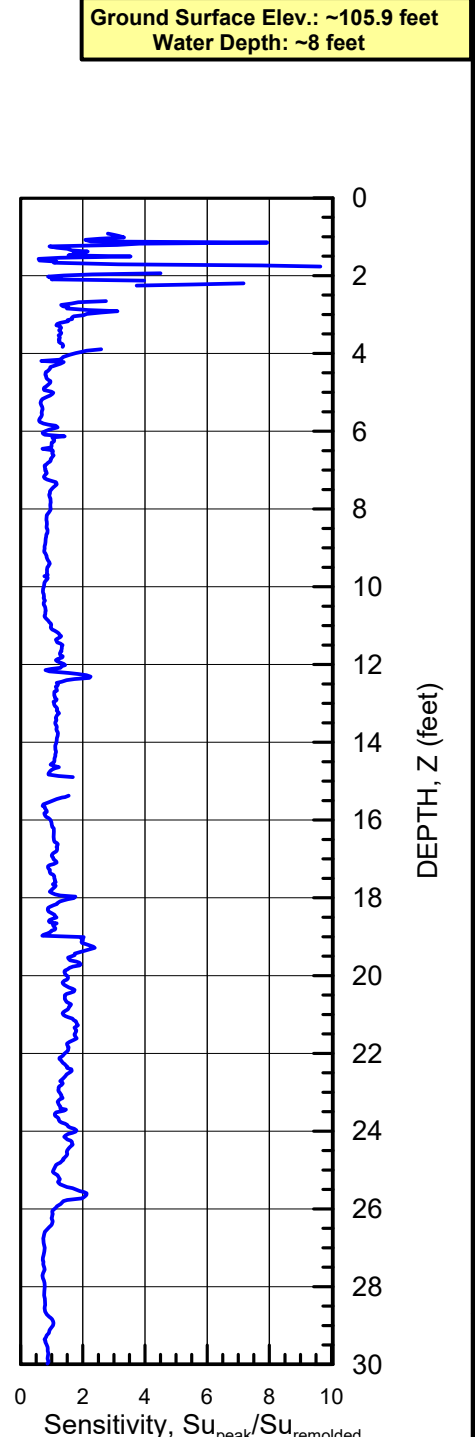
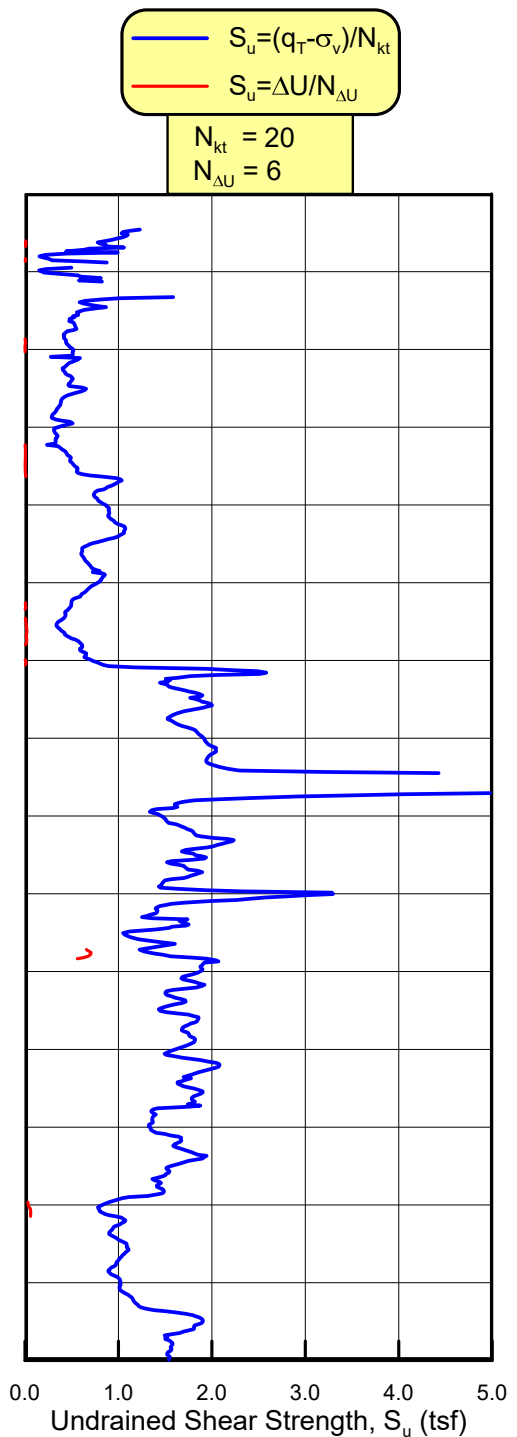
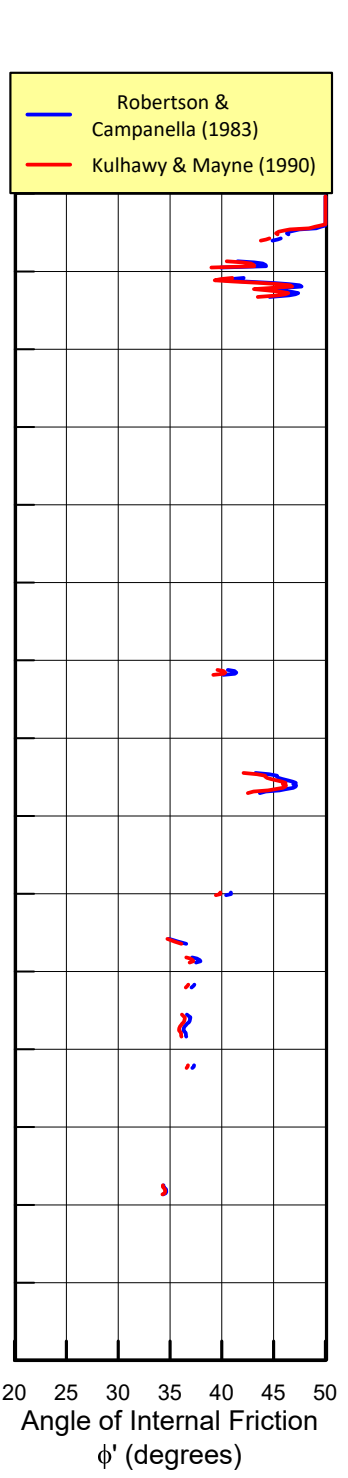
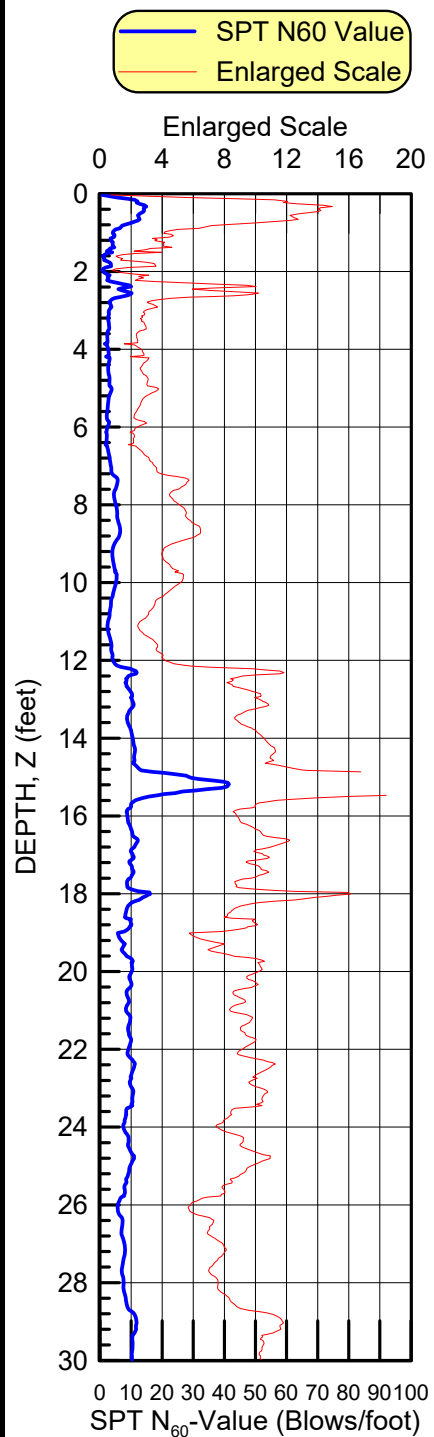
IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

SOUNDING
CPT102B

Ground Surface Elev.: ~105.9 feet
Water Depth: ~8 feet

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION





CPT--SOIL SHEAR STRENGTH INTERPRETATION

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456, 147.3 E1,318,304.0

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D. GE
SOUNDING DATE: 2/13/19

SOUNDING
CPT102B

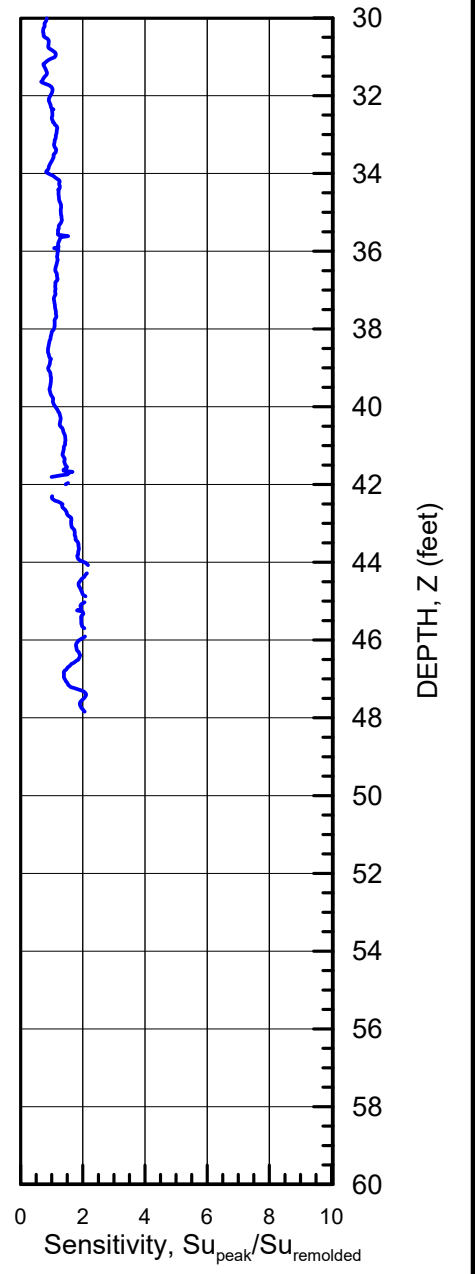
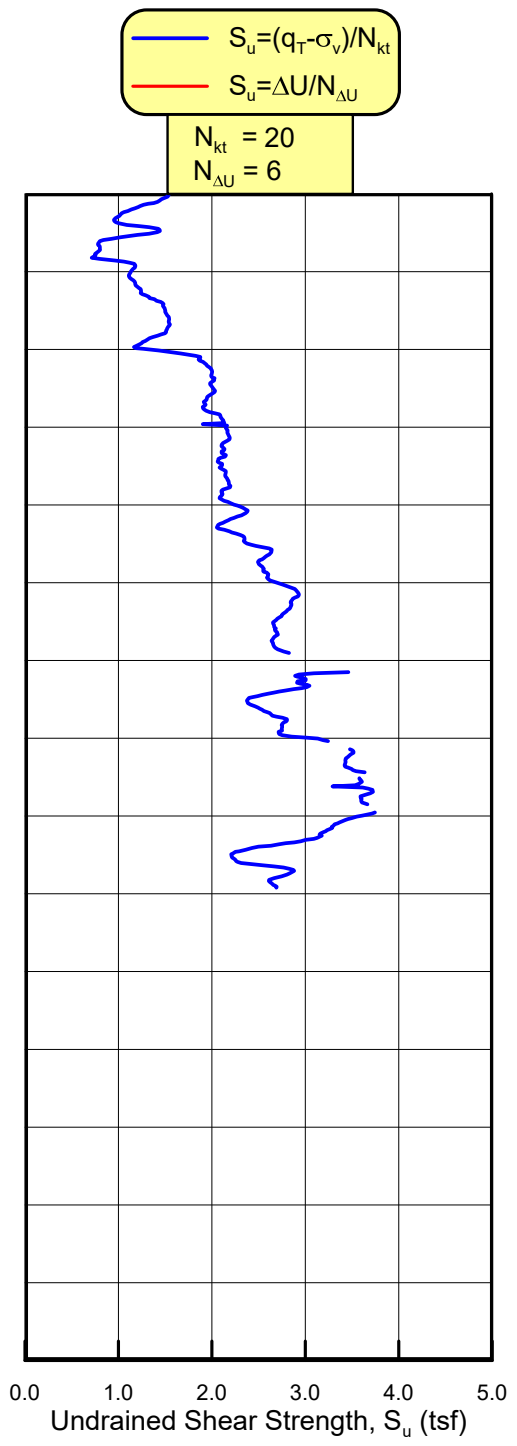
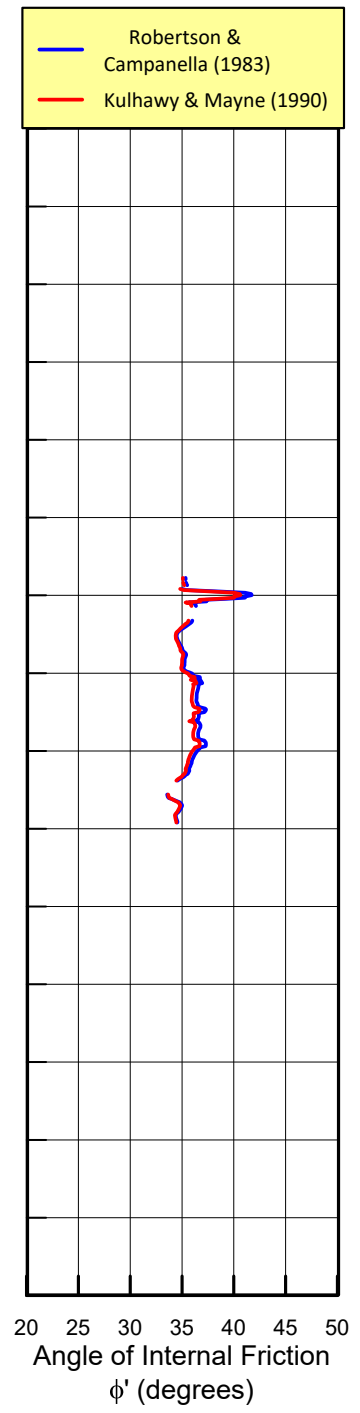
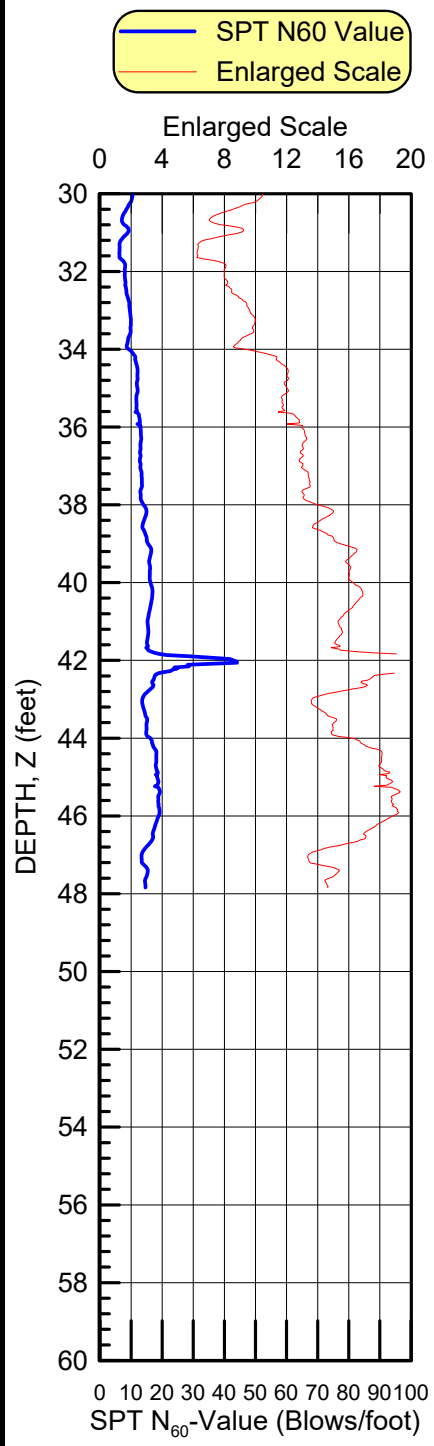
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N456, 147.3 E1,318,304.0

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Faltmeizger, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

SOUNDING
 CPT102B

CPT--SOIL SHEAR STRENGTH INTERPRETATION

Ground Surface Elev.: ~105.9 feet
 Water Depth: ~8 feet



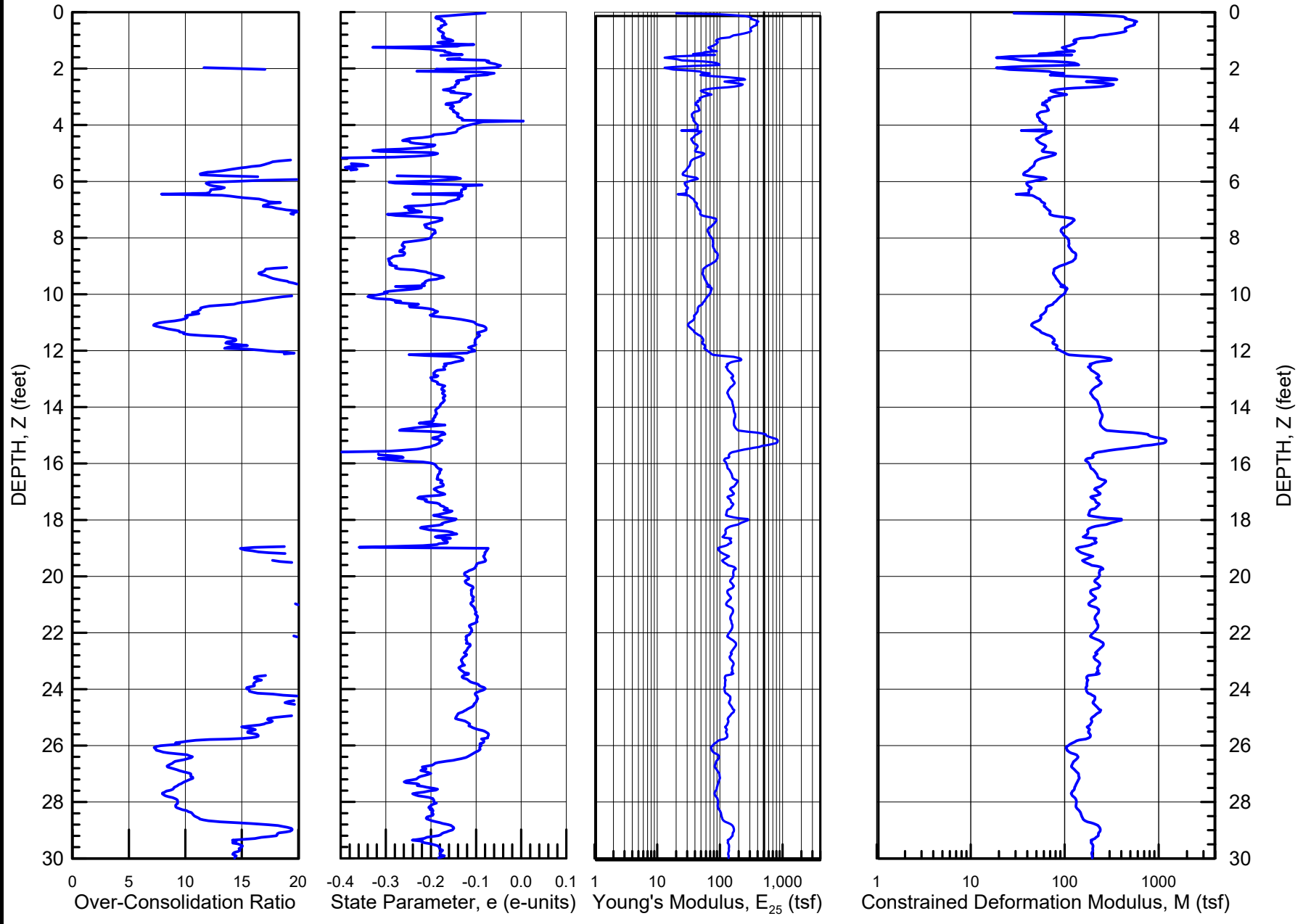
Ground Surface Elev.: ~105.9 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,147.3 E1,318,304.0

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

SOUNDING
CPT102B

CPT--SOIL MODULUS INTERPRETATION



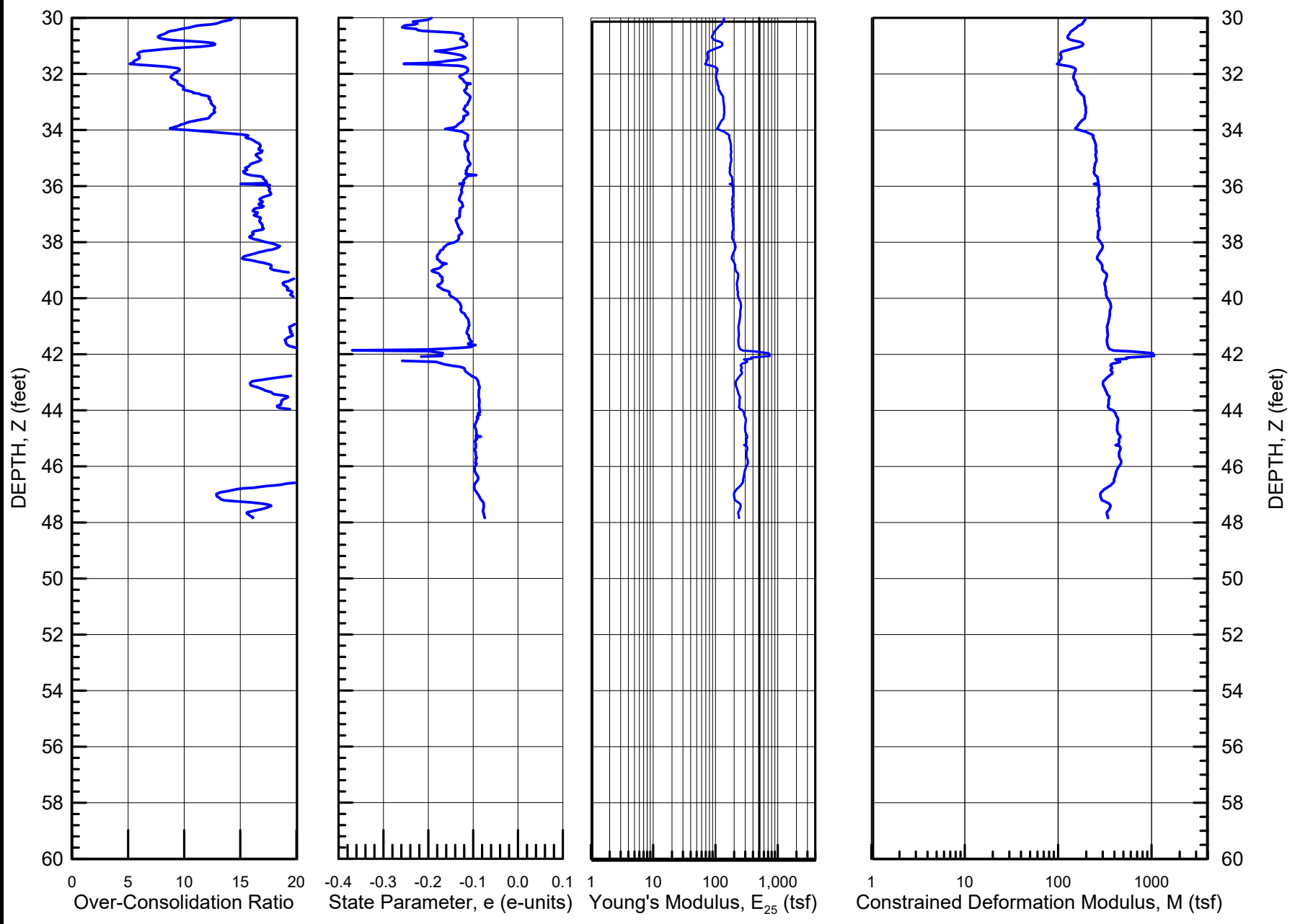
Ground Surface Elev.: ~105.9 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,147.3 E1,318,304.0

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

SOUNDING
CPT102B

CPT--SOIL MODULUS INTERPRETATION



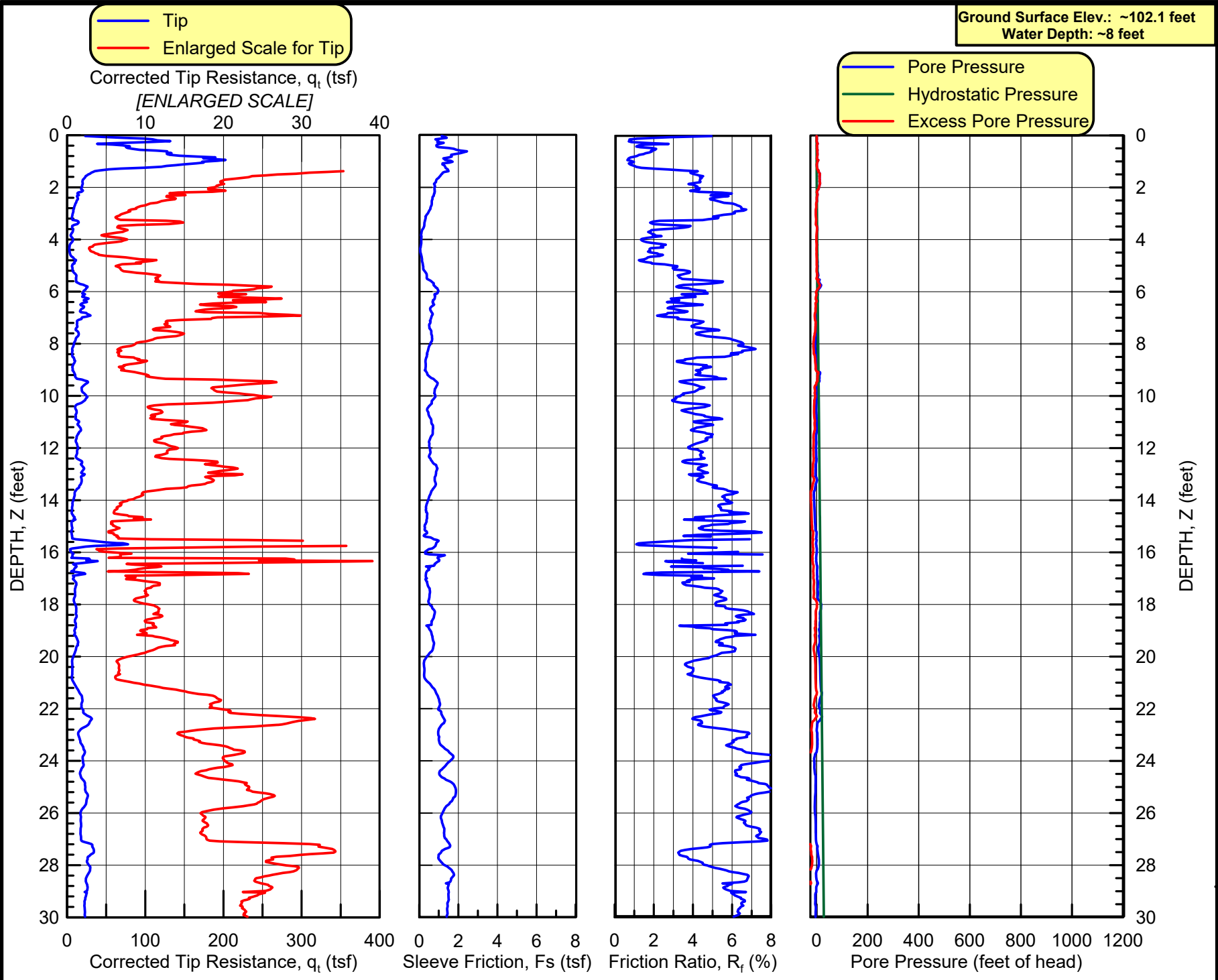
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N45,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT103

CONE PENETROMETER TEST RESULTS

Ground Surface Elev.: ~102.1 feet
 Water Depth: ~8 feet



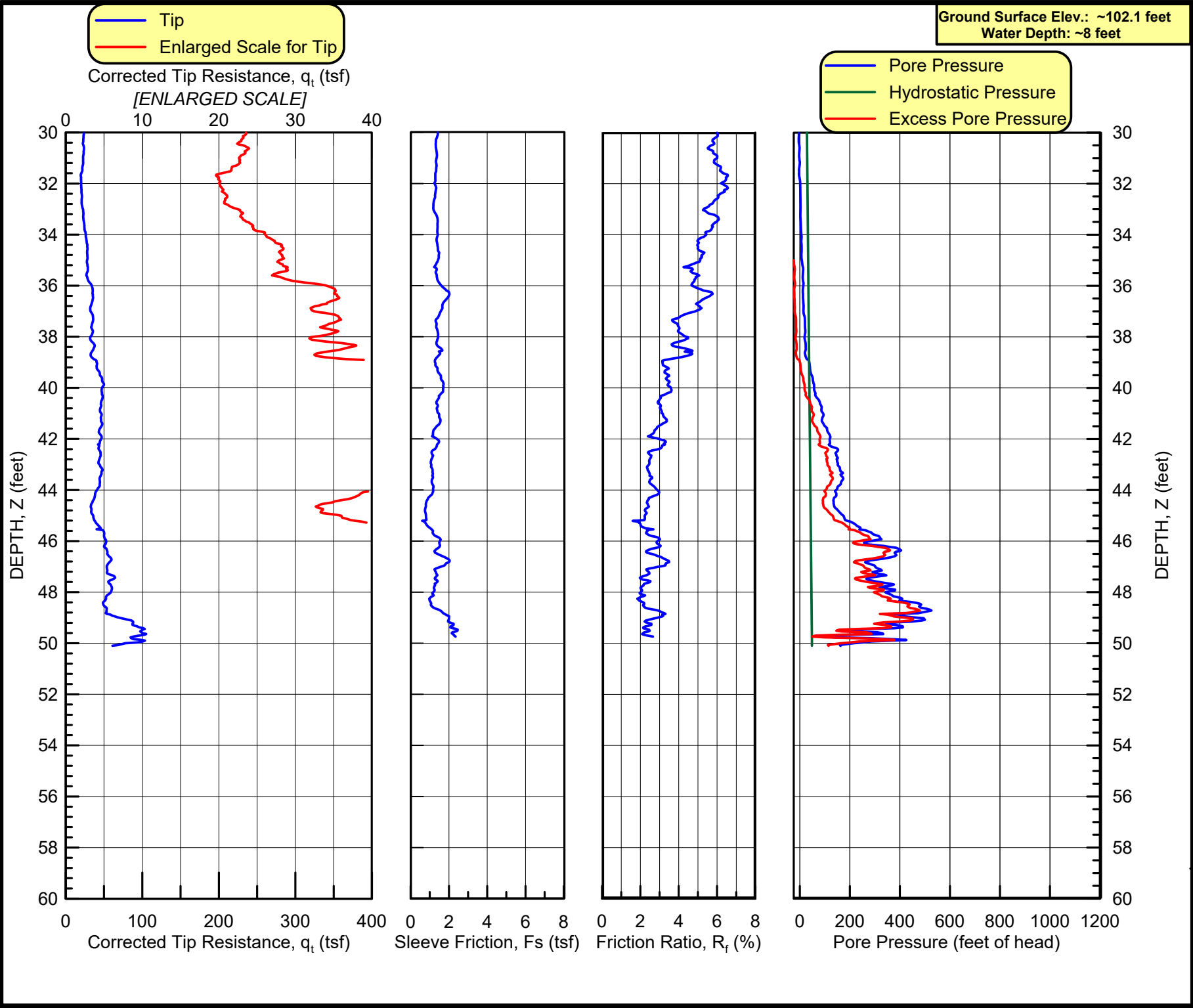
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

CONE PENETROMETER TEST RESULTS

SOUNDING
CPT103

Ground Surface Elev.: ~102.1 feet
 Water Depth: ~8 feet



PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

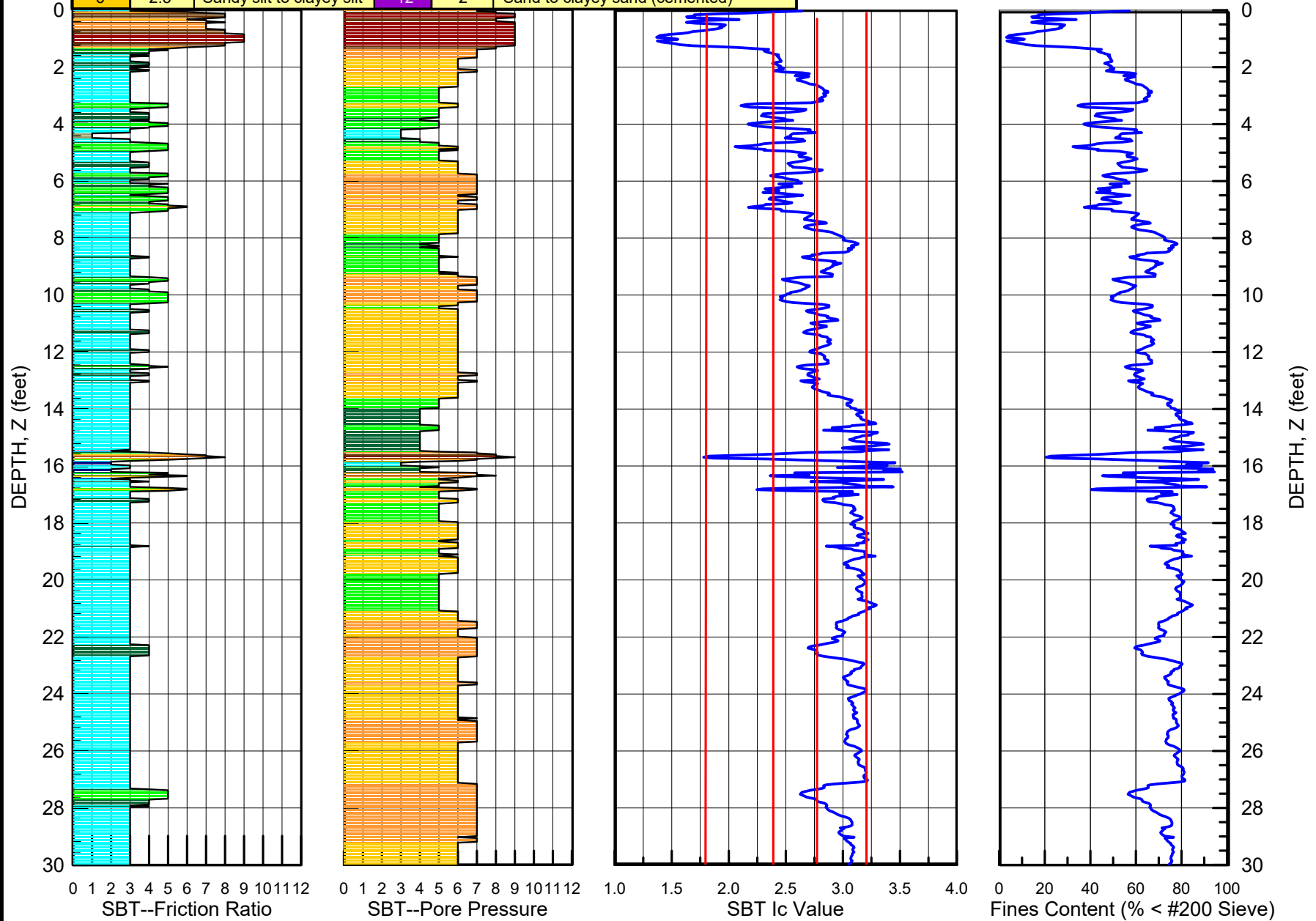
IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezeur, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT103

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

Ground Surface Elev.: ~102.1 feet
Water Depth: ~8 feet

Zone	q_T/N_{60}	Soil Behavior Type	Zone	q_T/N_{60}	Soil Behavior Type
1	2	Sensitive fine grained	7	3	Silty sand to sandy silt
2	1	Organic material	8	4	Sand to silty sand
3	1	Clay	9	5	Sand
4	1.5	Silty clay to clay	10	6	Gravelly sand to sand
5	2	Clayey silt to silty clay	11	1	Very stiff fine grained (overconsolidated)
6	2.5	Sandy silt to clayey silt	12	2	Sand to clayey sand (cemented)



Clean Sand	Sand Mix	Silt Mix	Clay	Organic Peat
Silty Sand				

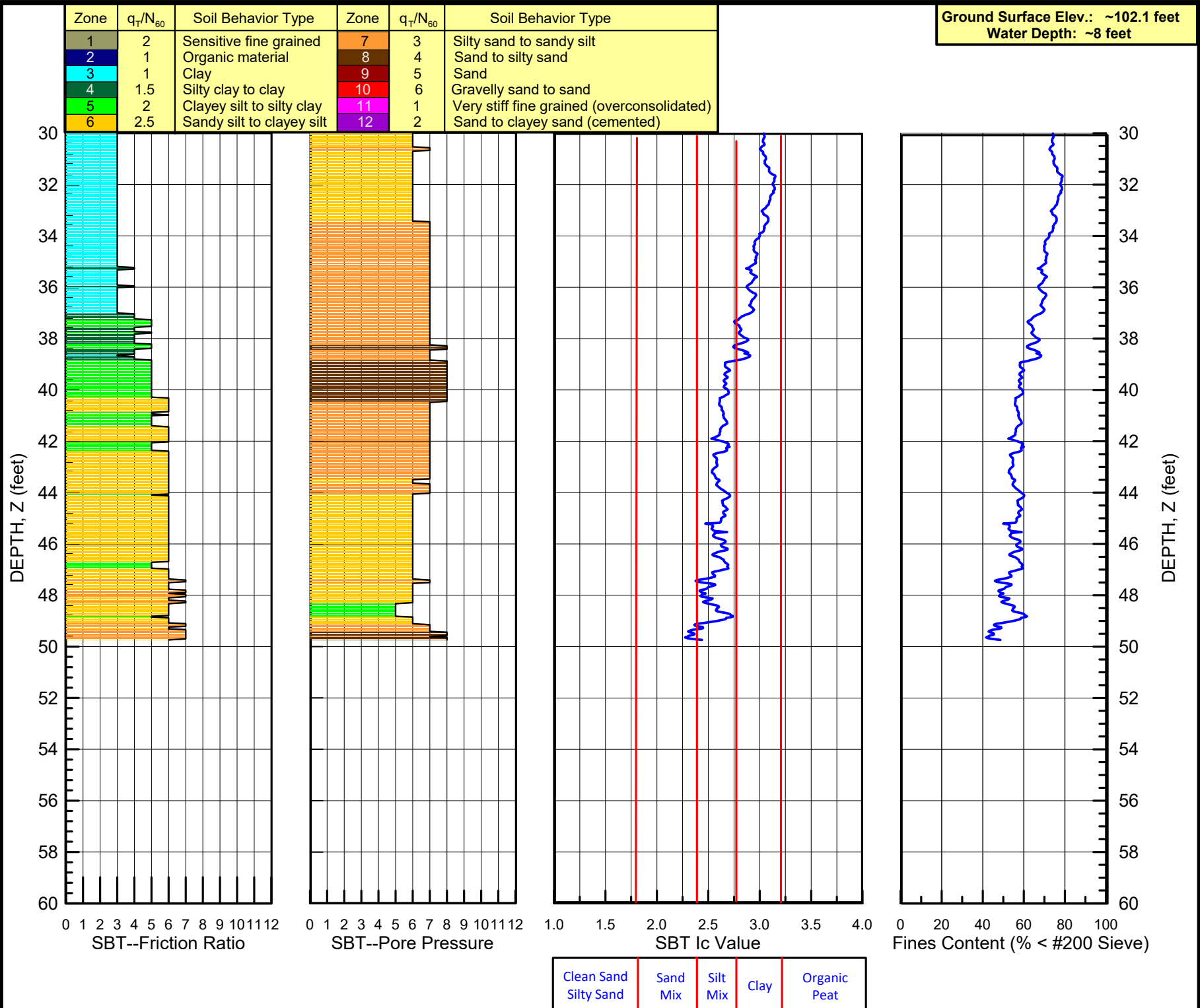
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT103

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

Ground Surface Elev.: ~102.1 feet
 Water Depth: ~8 feet



Clean Sand
 Silty Sand
 Sand Mix
 Silt Mix
 Clay
 Organic Peat

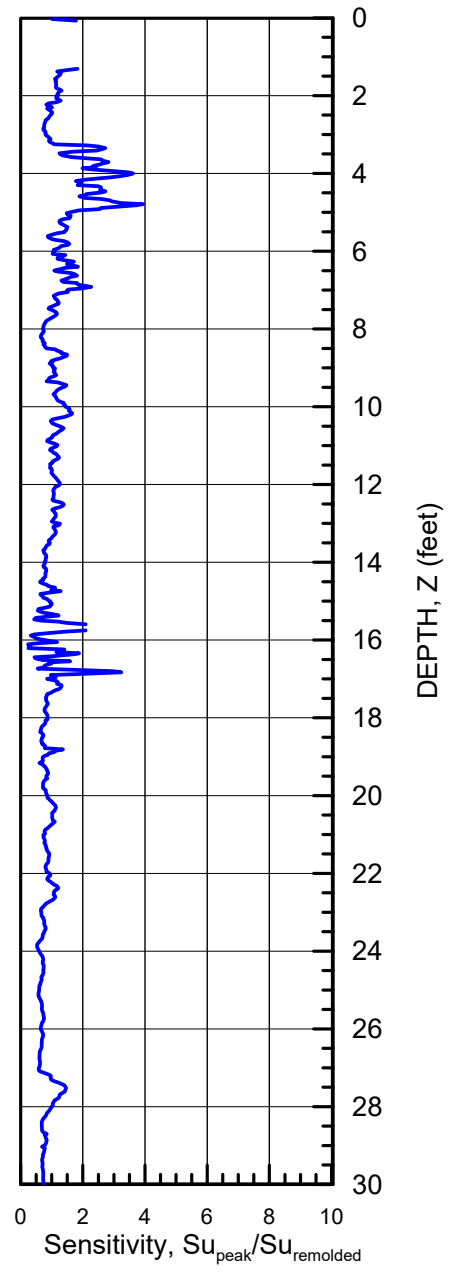
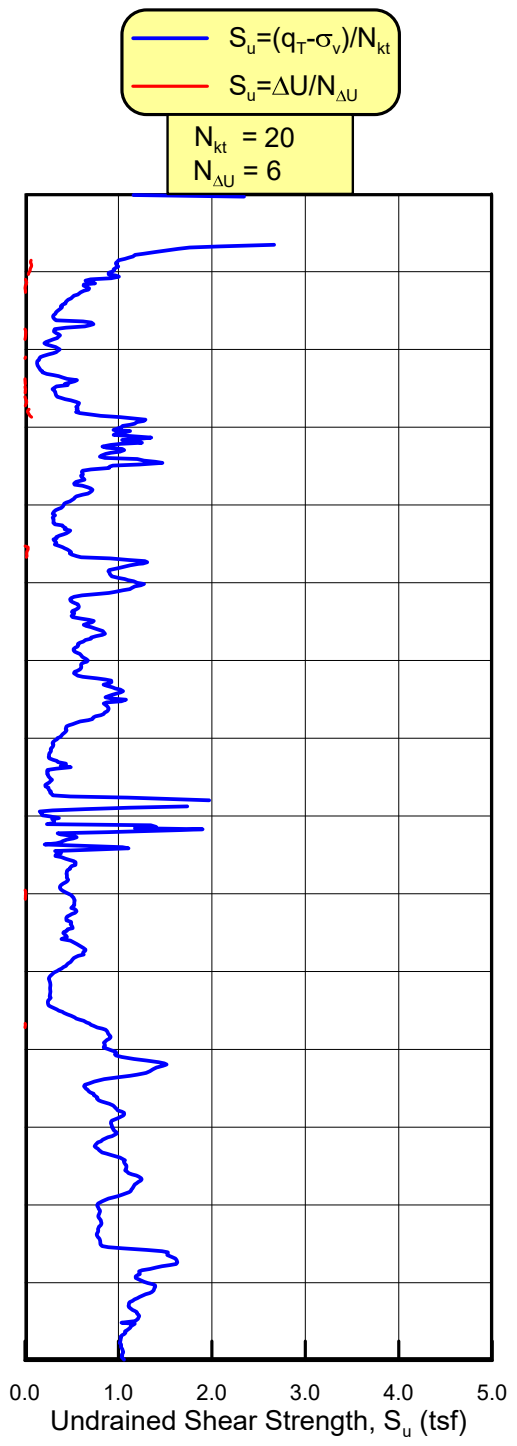
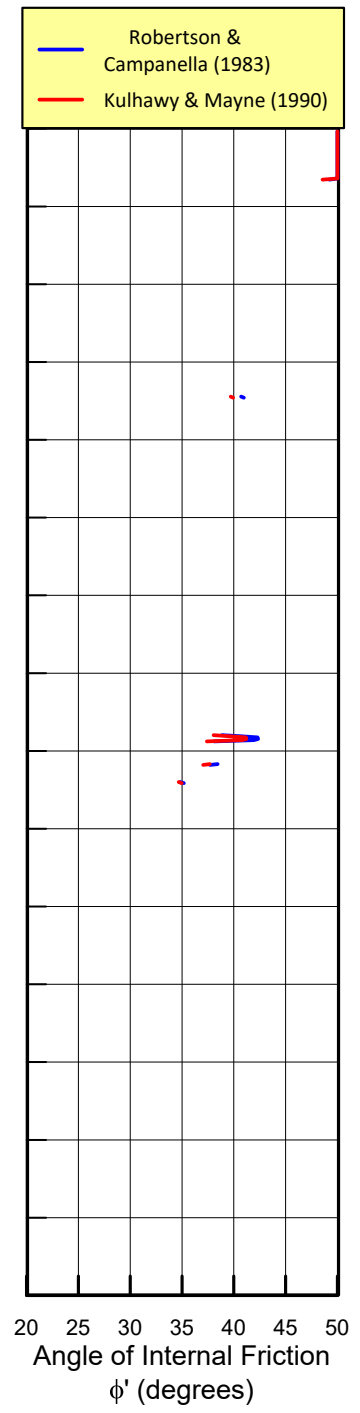
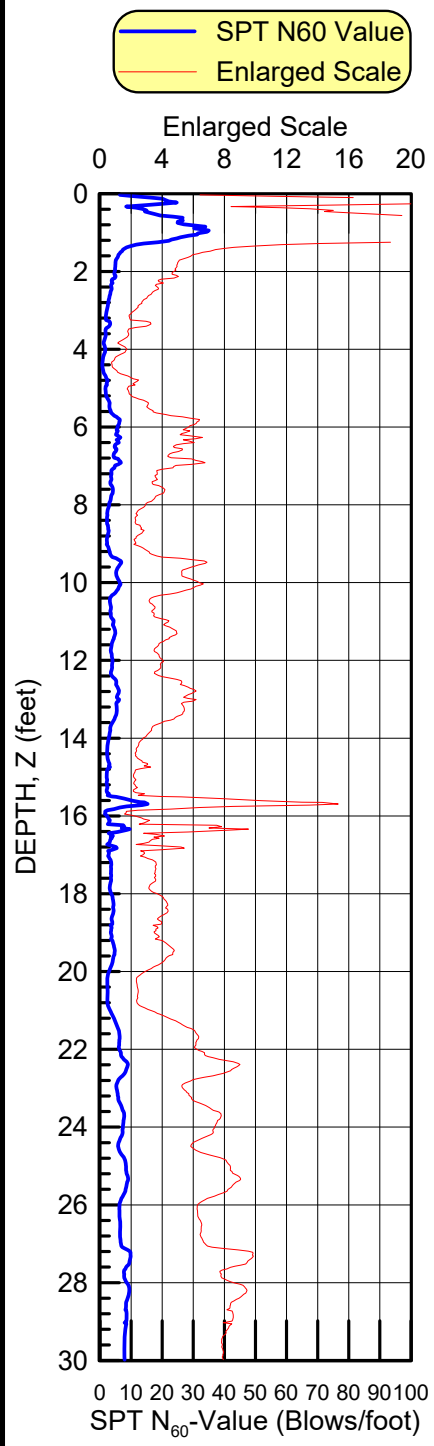
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Faltmeizger, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

SOUNDING
 CPT103

CPT--SOIL SHEAR STRENGTH INTERPRETATION

Ground Surface Elev.: ~102.1 feet
 Water Depth: ~8 feet



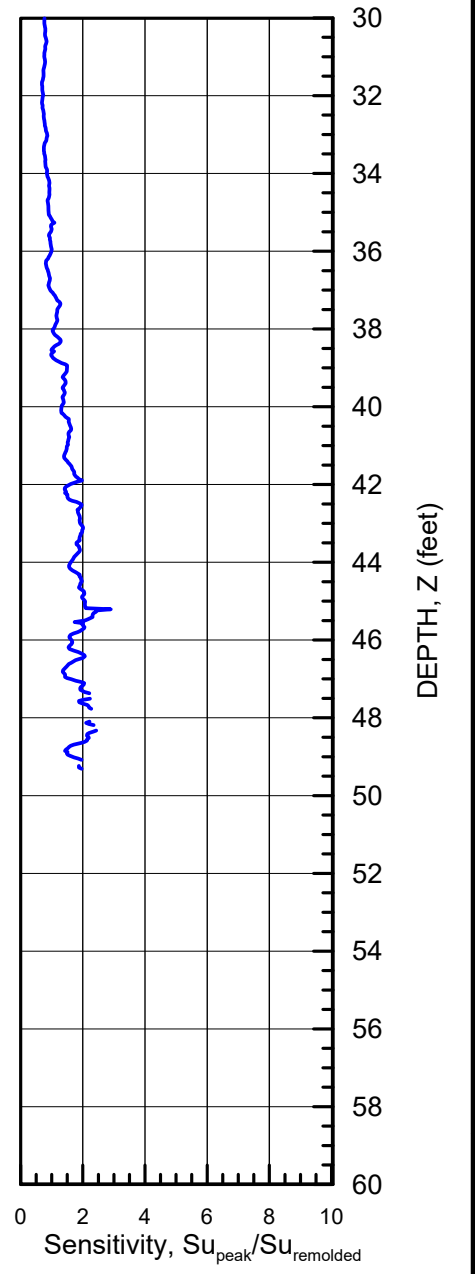
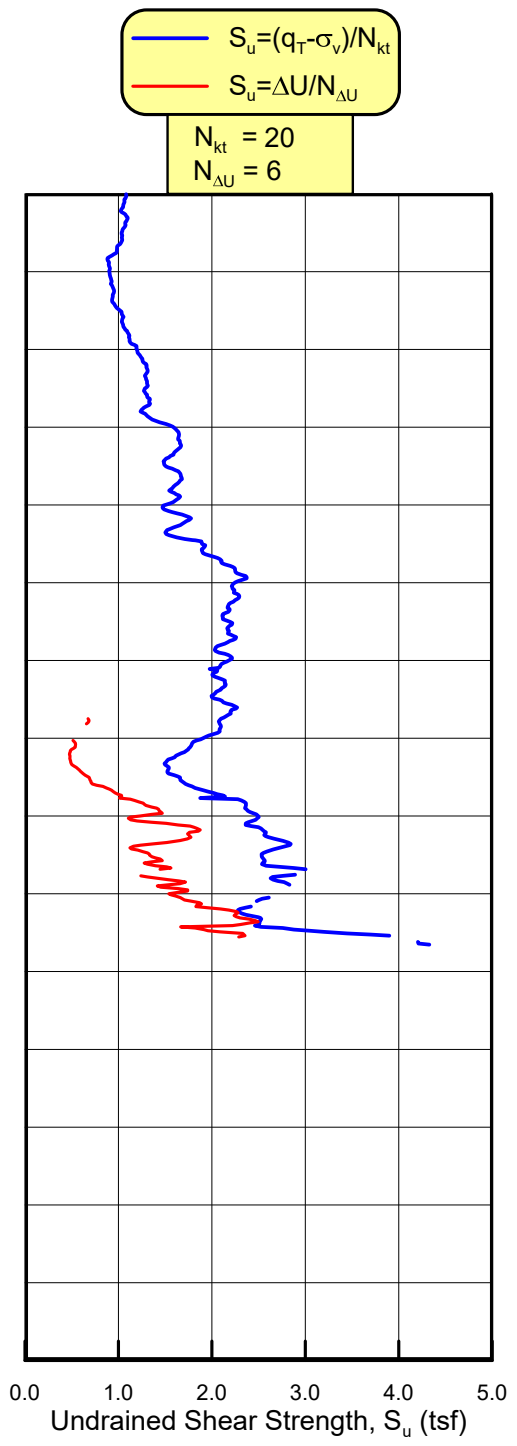
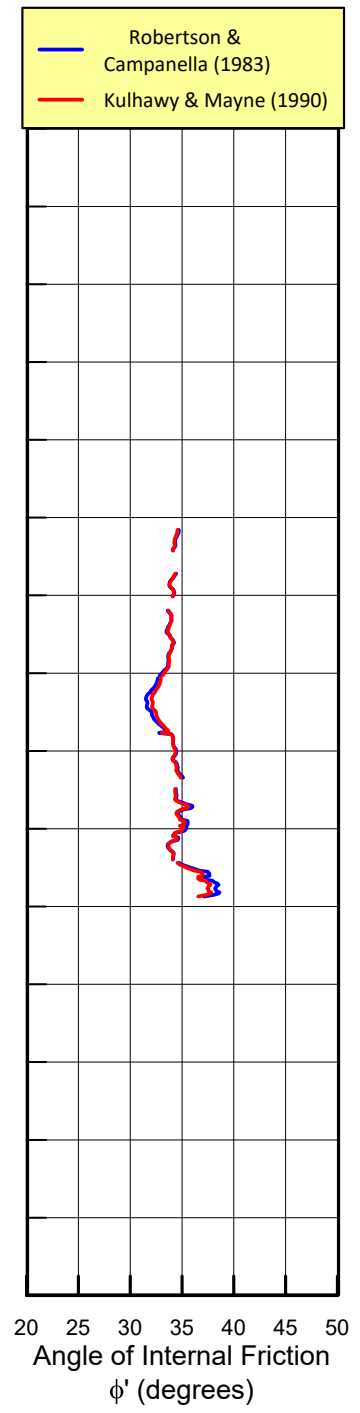
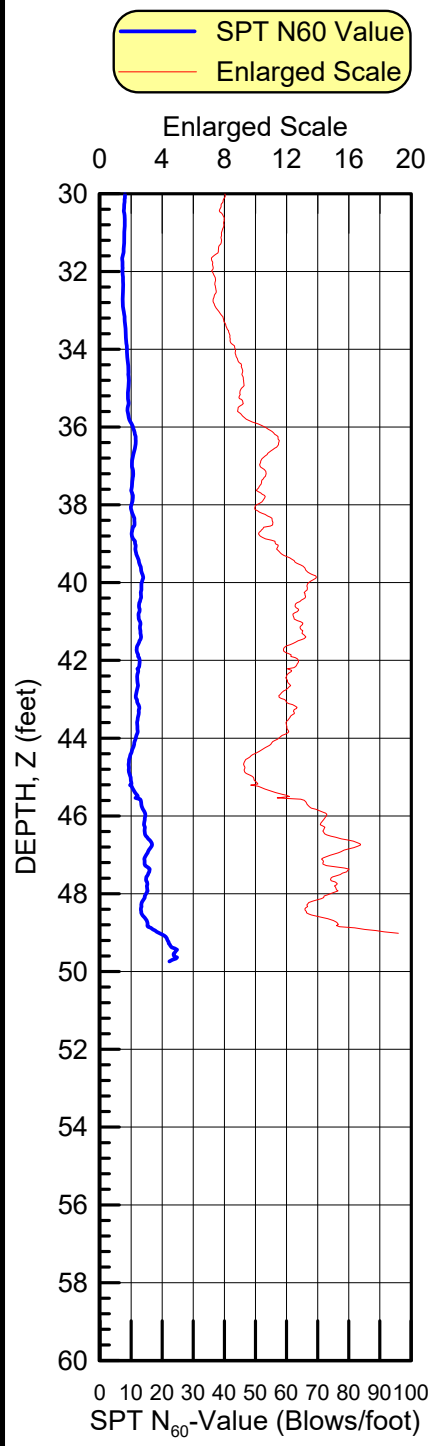
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmeijer, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT103

CPT--SOIL SHEAR STRENGTH INTERPRETATION

Ground Surface Elev.: ~102.1 feet
 Water Depth: ~8 feet



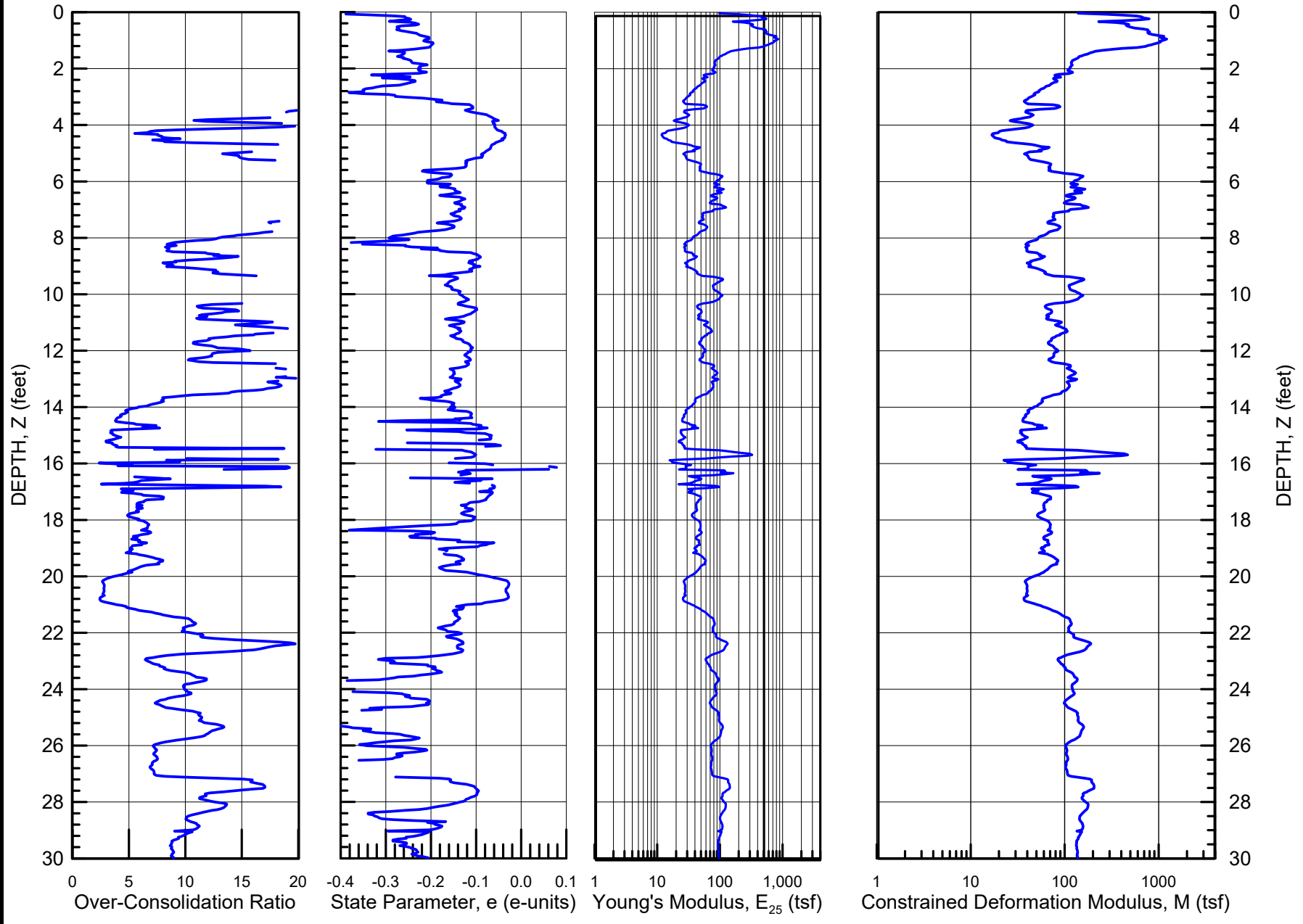
Ground Surface Elev.: ~102.1 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

CPT--SOIL MODULUS INTERPRETATION

SOUNDING
CPT103



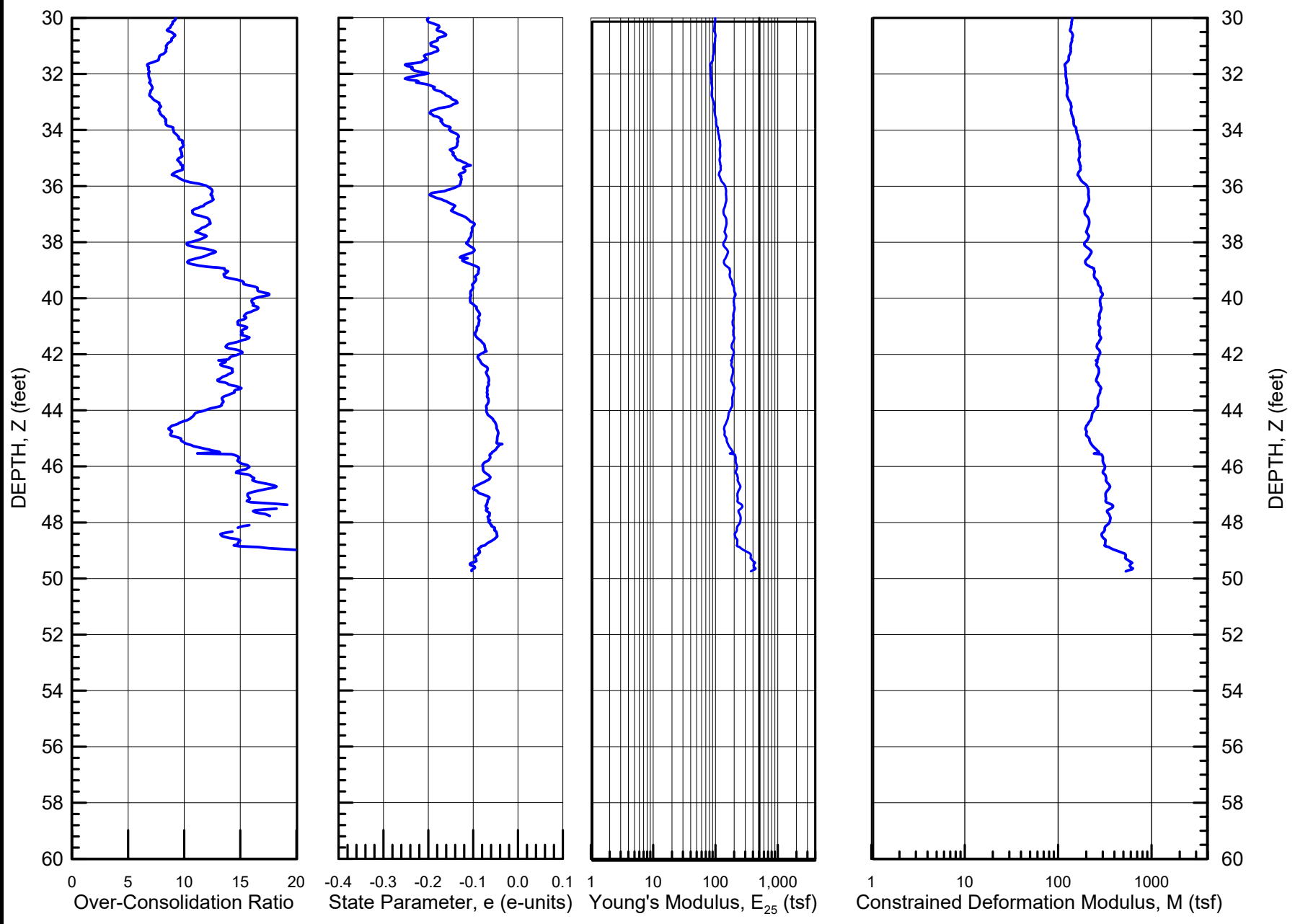
Ground Surface Elev.: ~102.1 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N455,894.7 E1,318,177.8

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

CPT--SOIL MODULUS INTERPRETATION

SOUNDING
CPT103



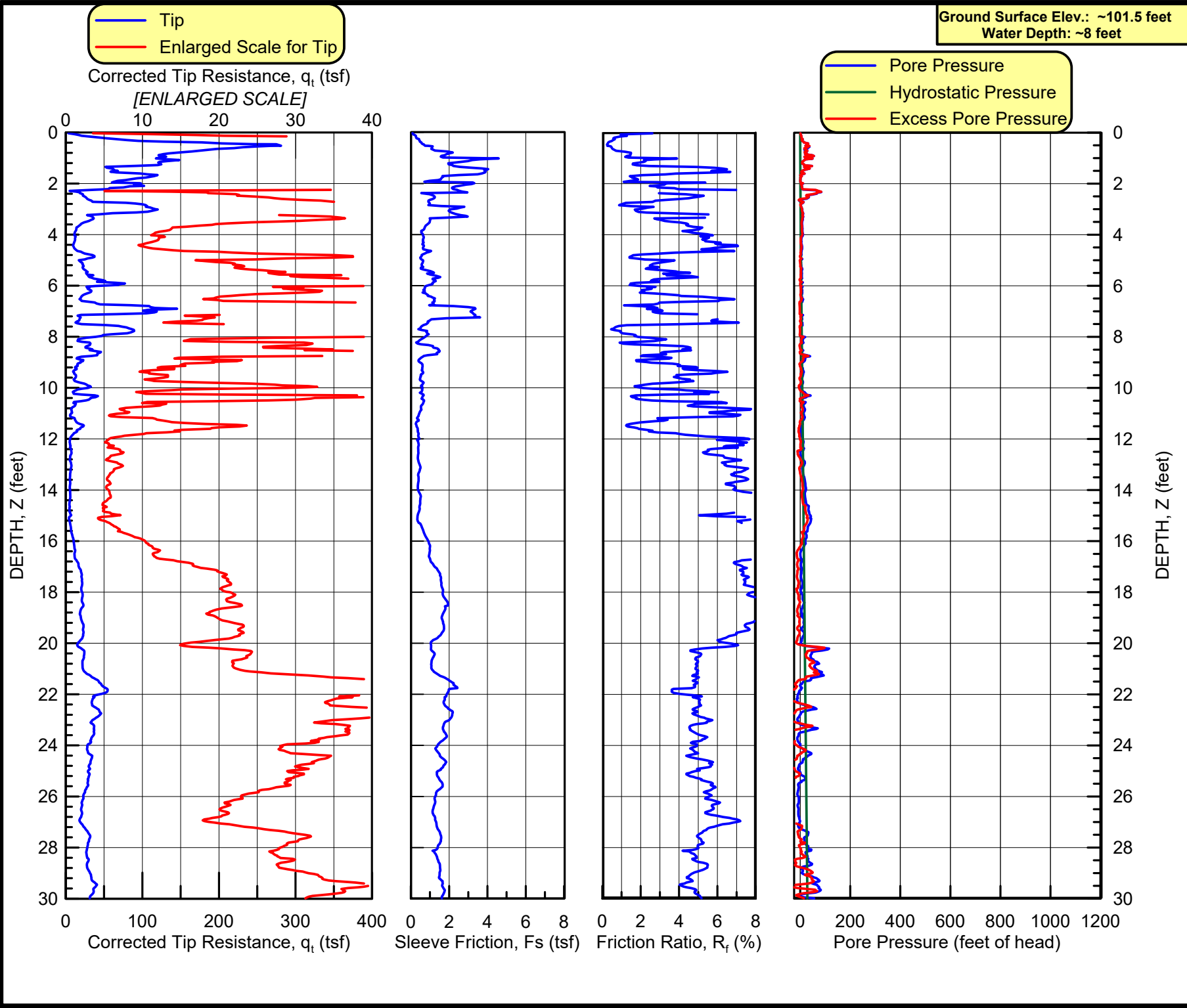
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT104

Ground Surface Elev.: ~101.5 feet
 Water Depth: ~8 feet

CONE PENETROMETER TEST RESULTS



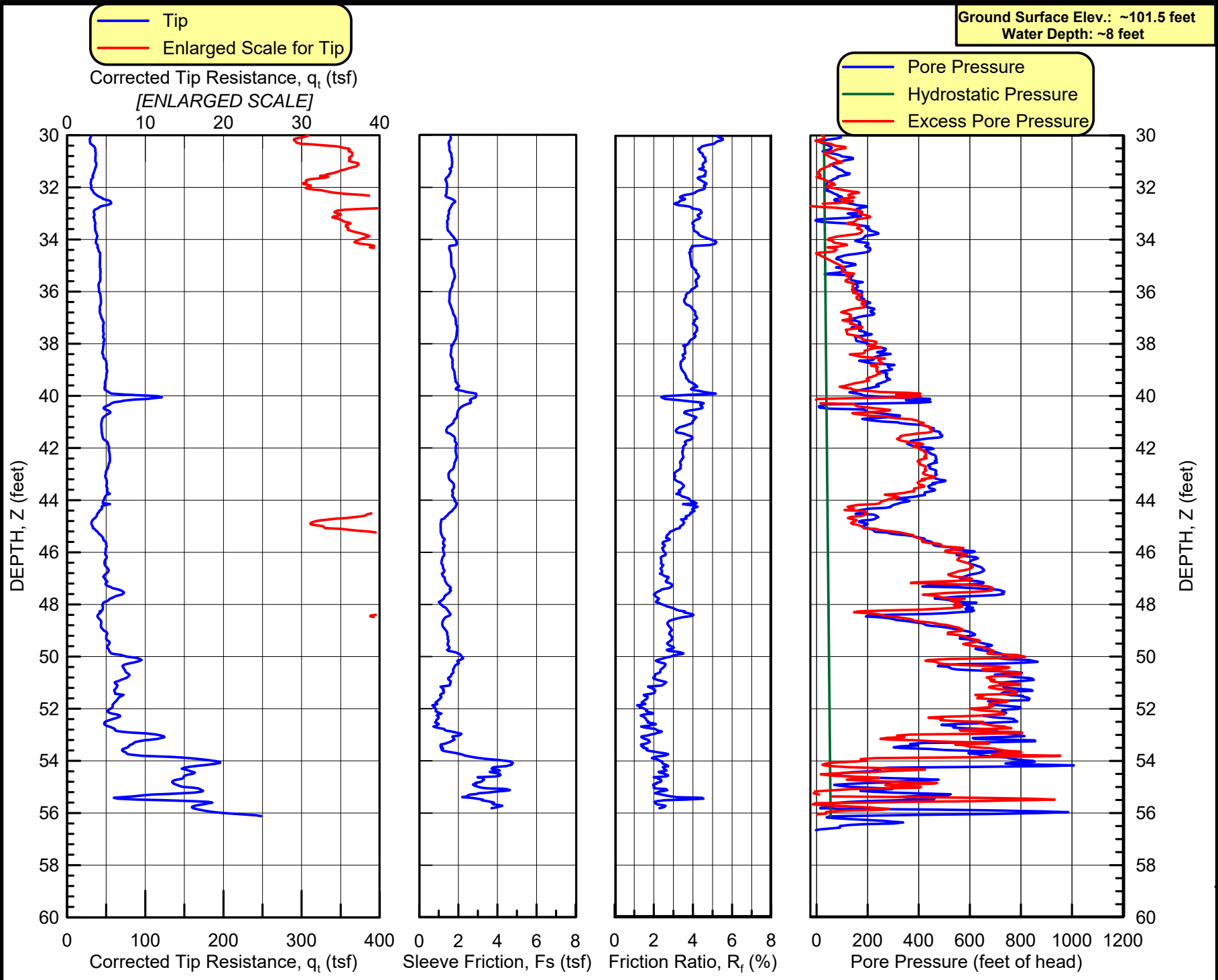
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Falmezeiger, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

CONE PENETROMETER TEST RESULTS

SOUNDING
CPT104

Ground Surface Elev.: ~101.5 feet
 Water Depth: ~8 feet



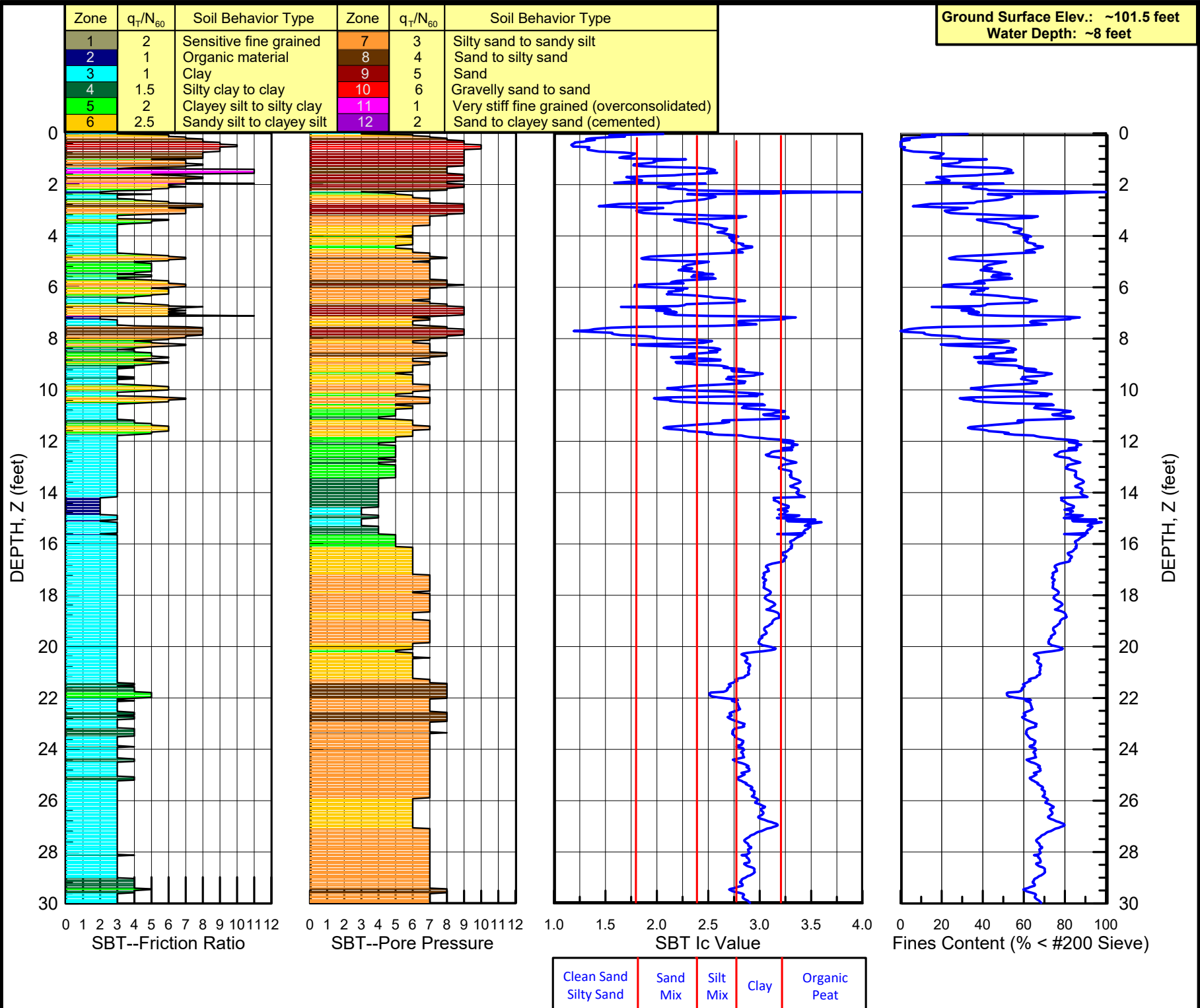
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmezer, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT104

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

Ground Surface Elev.: ~101.5 feet
Water Depth: ~8 feet



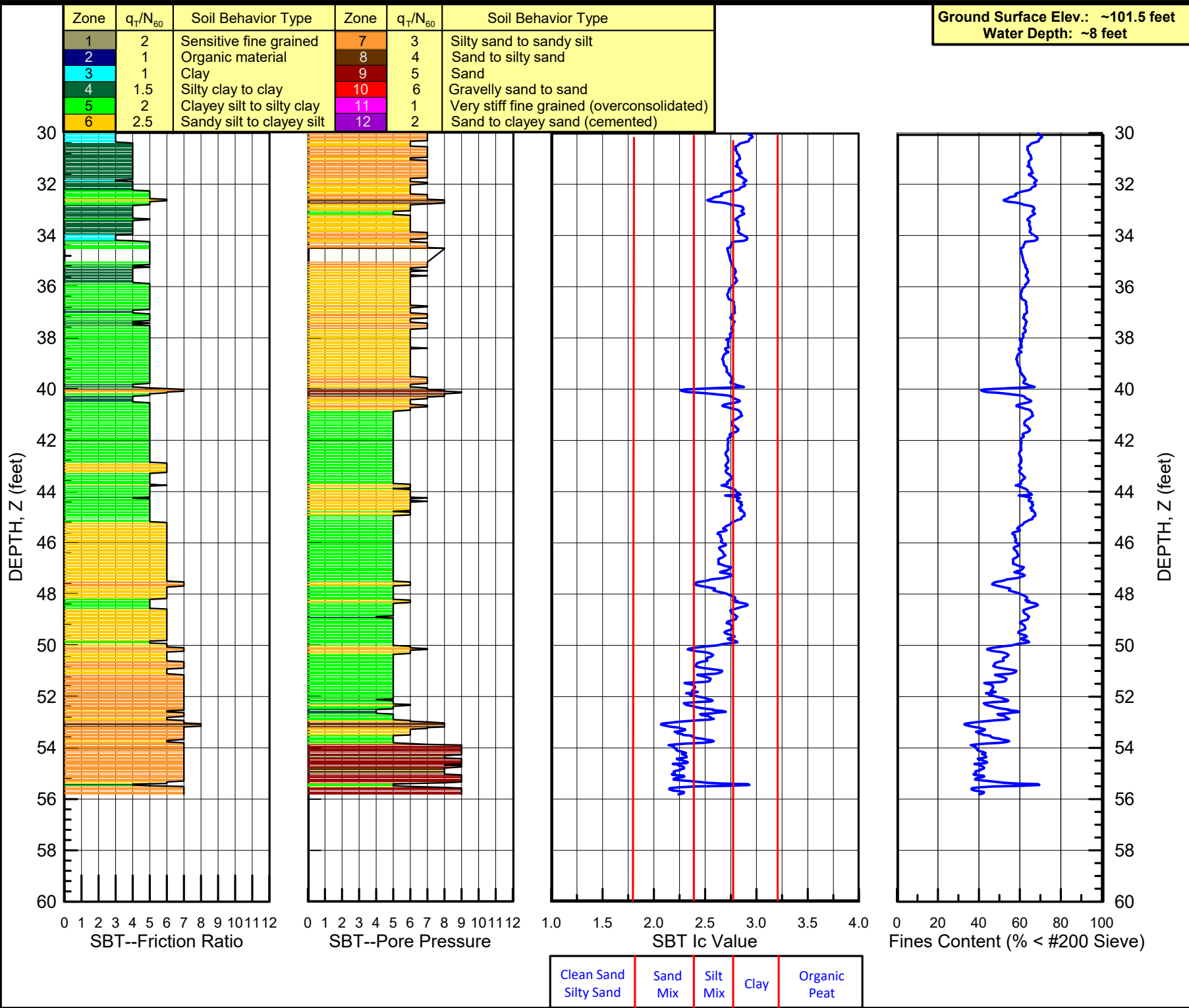
PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

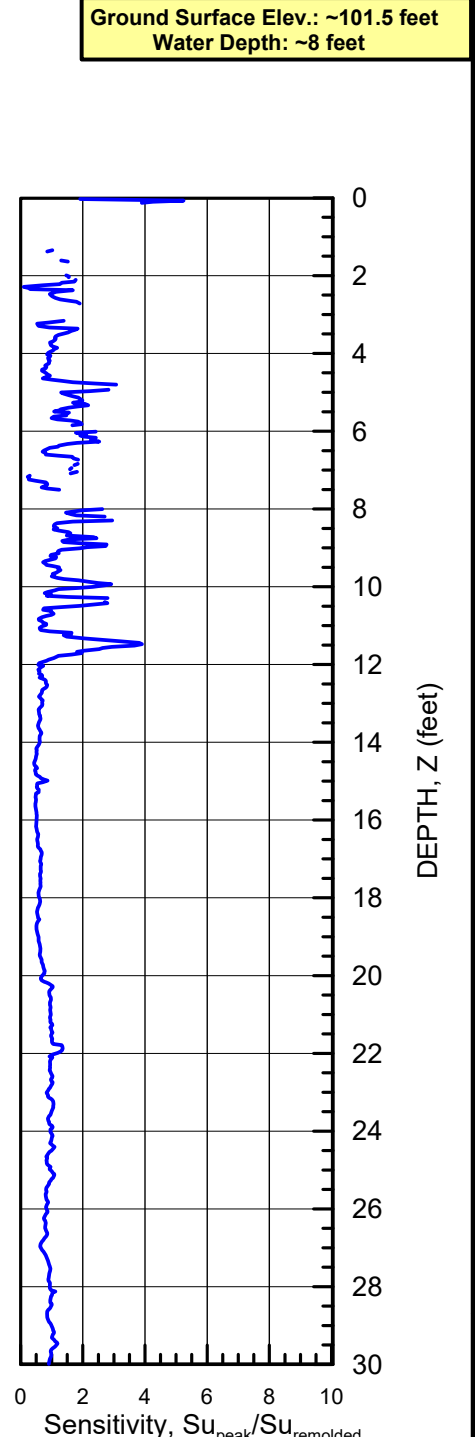
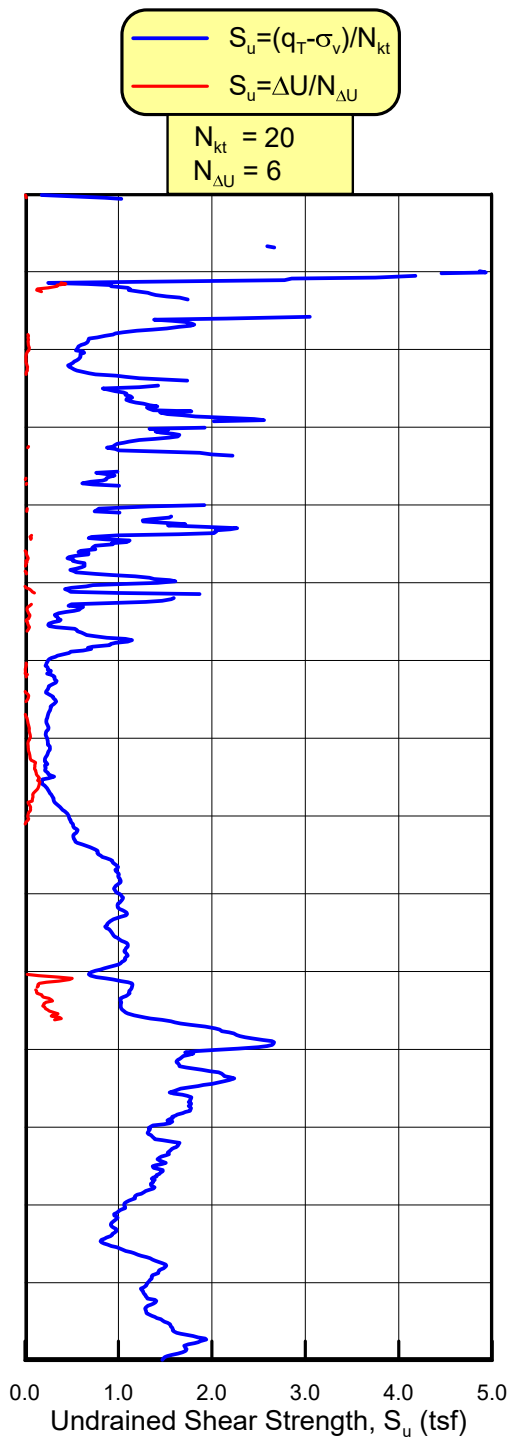
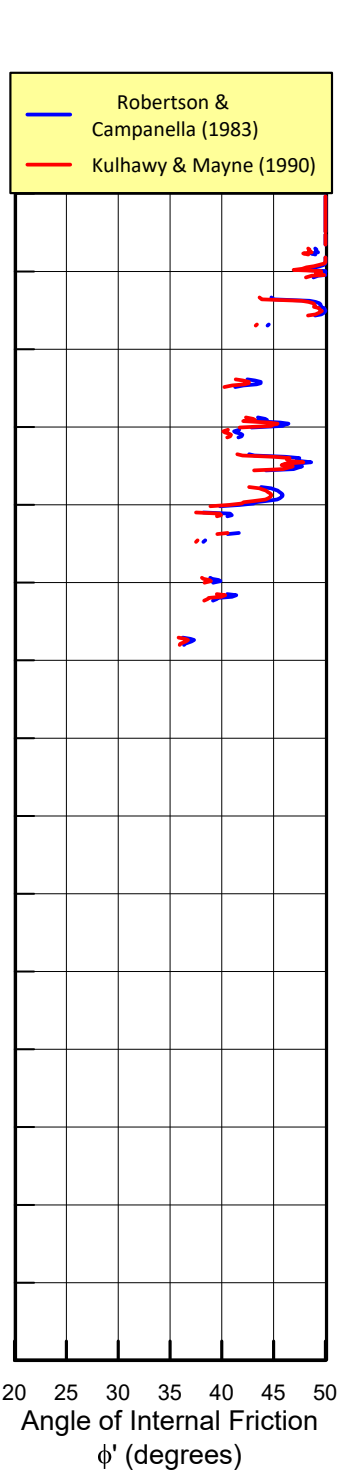
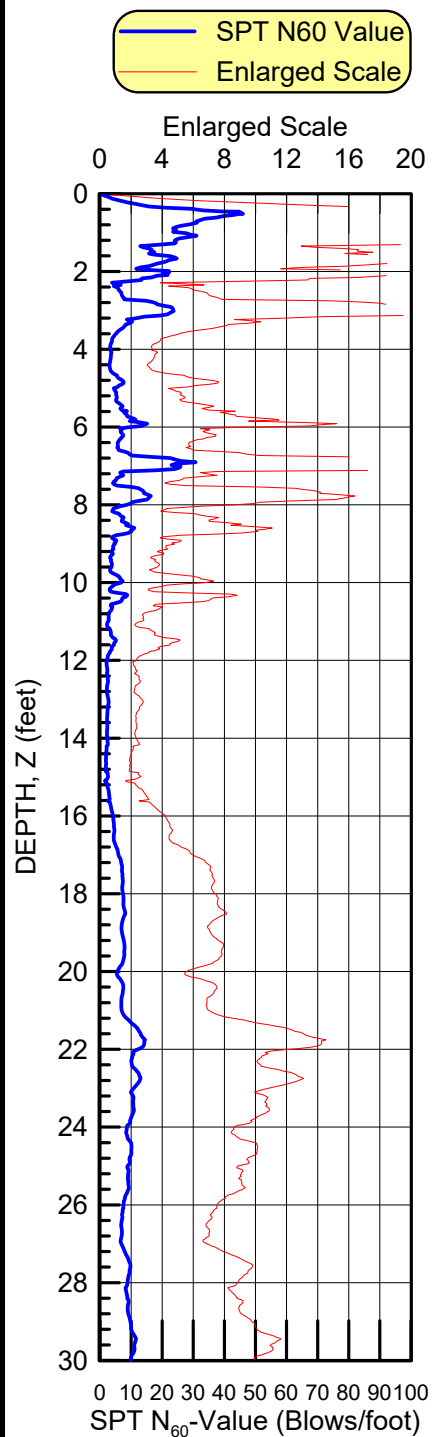
IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmeizer, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
CPT104

CPT--SOIL BEHAVIOR TYPE CLASSIFICATION

Ground Surface Elev.: ~101.5 feet
Water Depth: ~8 feet





PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
Engineer: R. Failmezger, P.E., F. ASCE, D. GE
SOUNDING DATE: 2/13/19

SOUNDING

CPT104

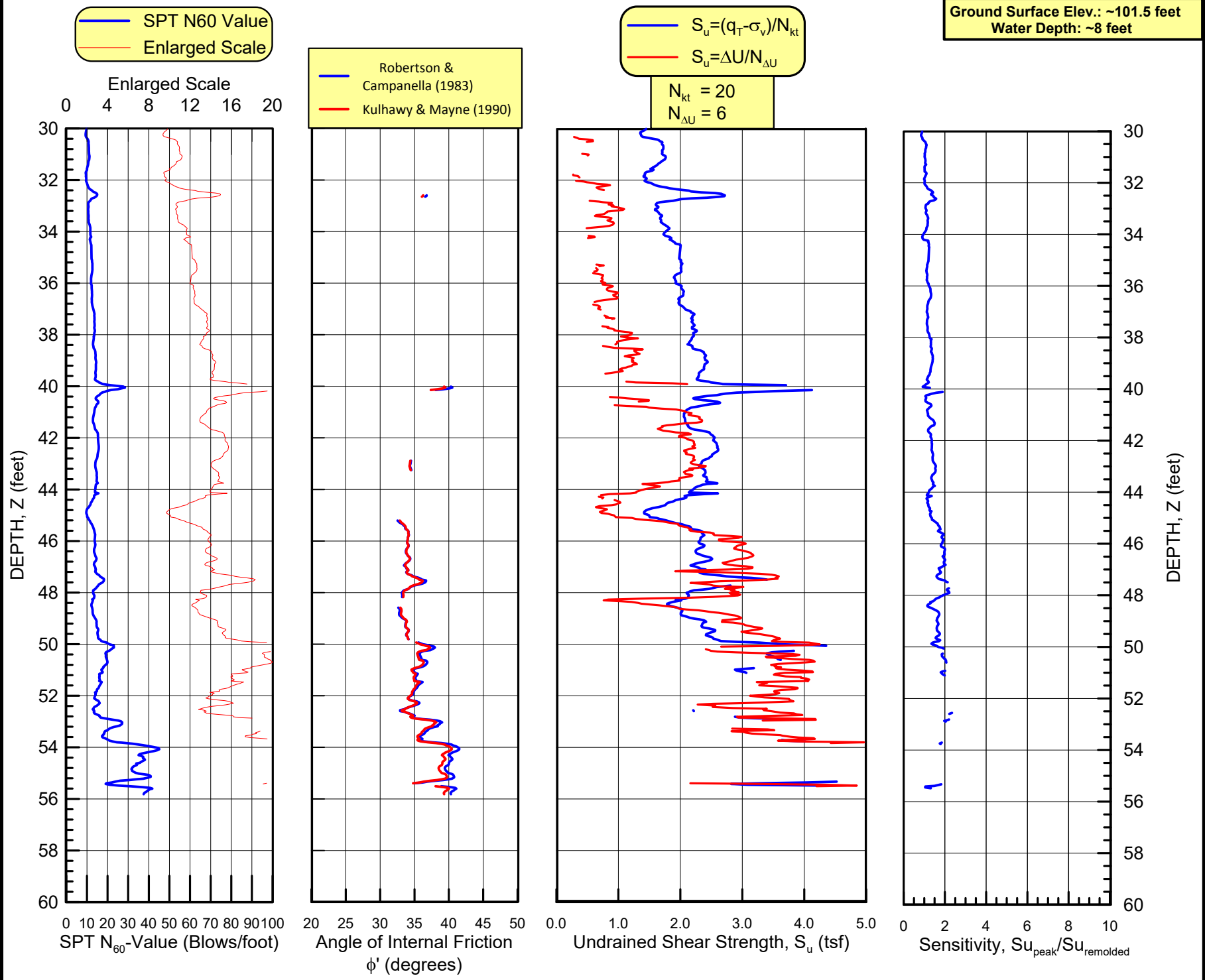
PROJECT: 1601 W Street Northeast Bus Terminal
 LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
 Engineer: R. Fallmeizger, P.E., F. ASCE, D. GE
 SOUNDING DATE: 2/13/19

SOUNDING
 CPT104

CPT--SOIL SHEAR STRENGTH INTERPRETATION

Ground Surface Elev.: ~101.5 feet
 Water Depth: ~8 feet



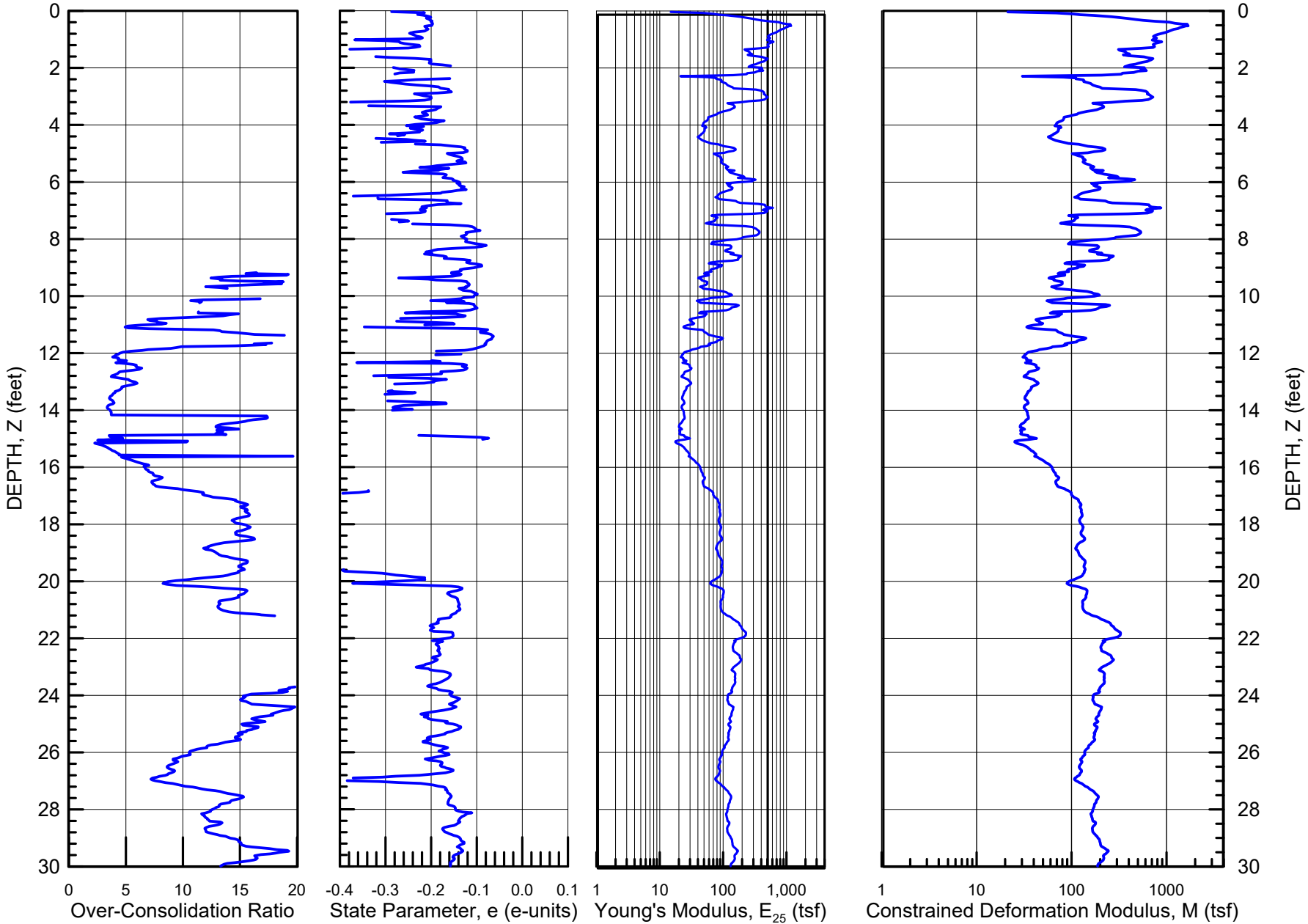
Ground Surface Elev.: ~101.5 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

CPT--SOIL MODULUS INTERPRETATION

SOUNDING
CPT104



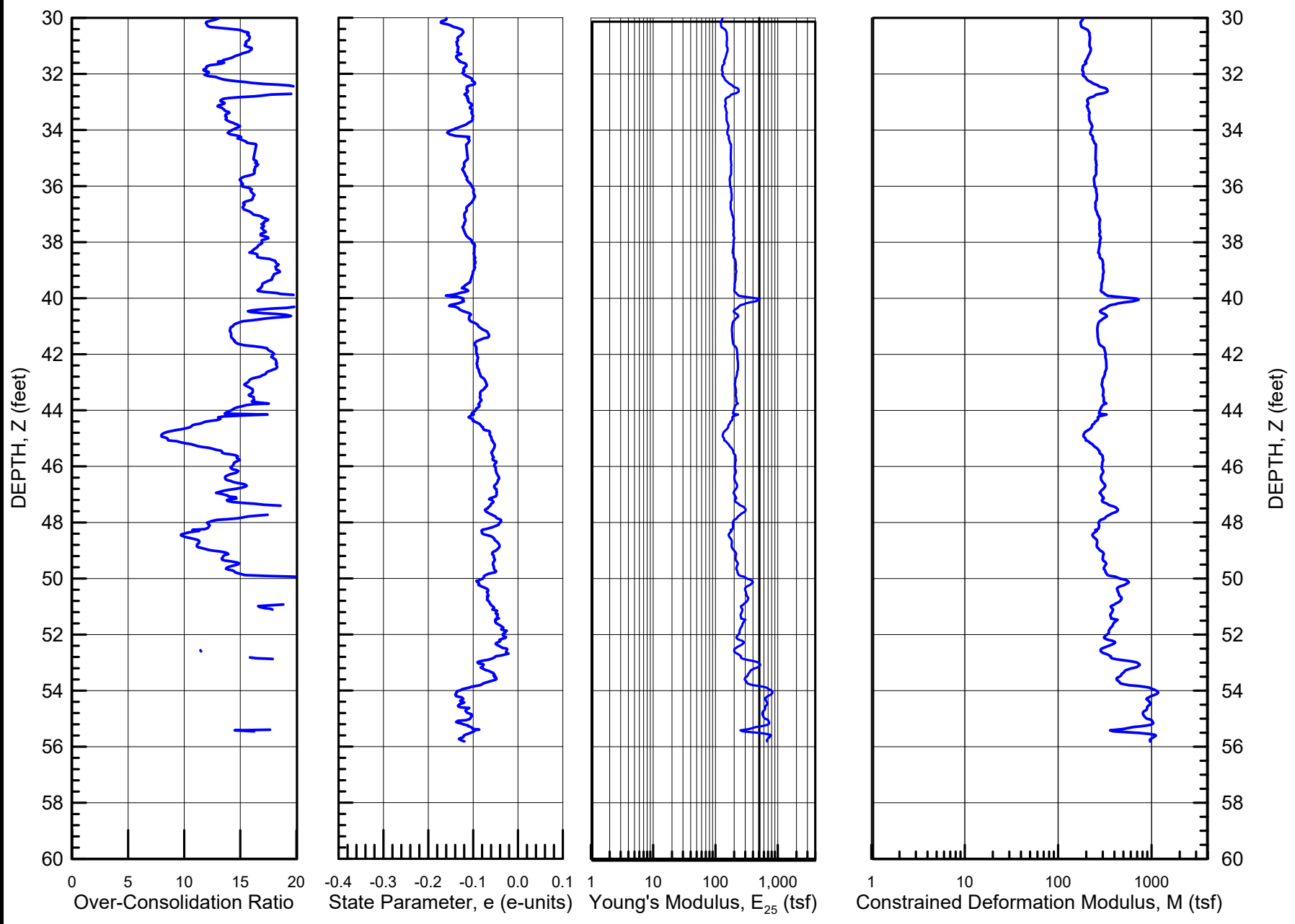
Ground Surface Elev.: ~101.5 feet
Water Depth: ~8 feet

PROJECT: 1601 W Street Northeast Bus Terminal
LOCATION: Washington, D.C. N456,009.8 E1,318,310.3

IN-SITU SOIL TESTING, L.C.
Engineer: R. Fallmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

CPT--SOIL MODULUS INTERPRETATION

SOUNDING
CPT104



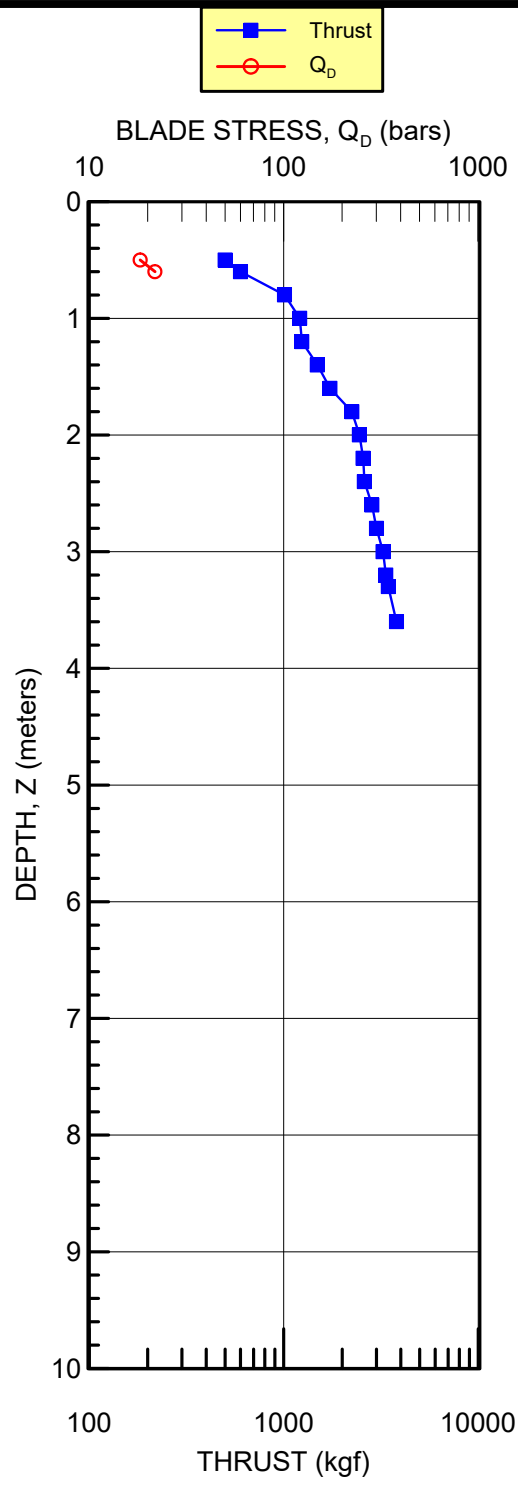
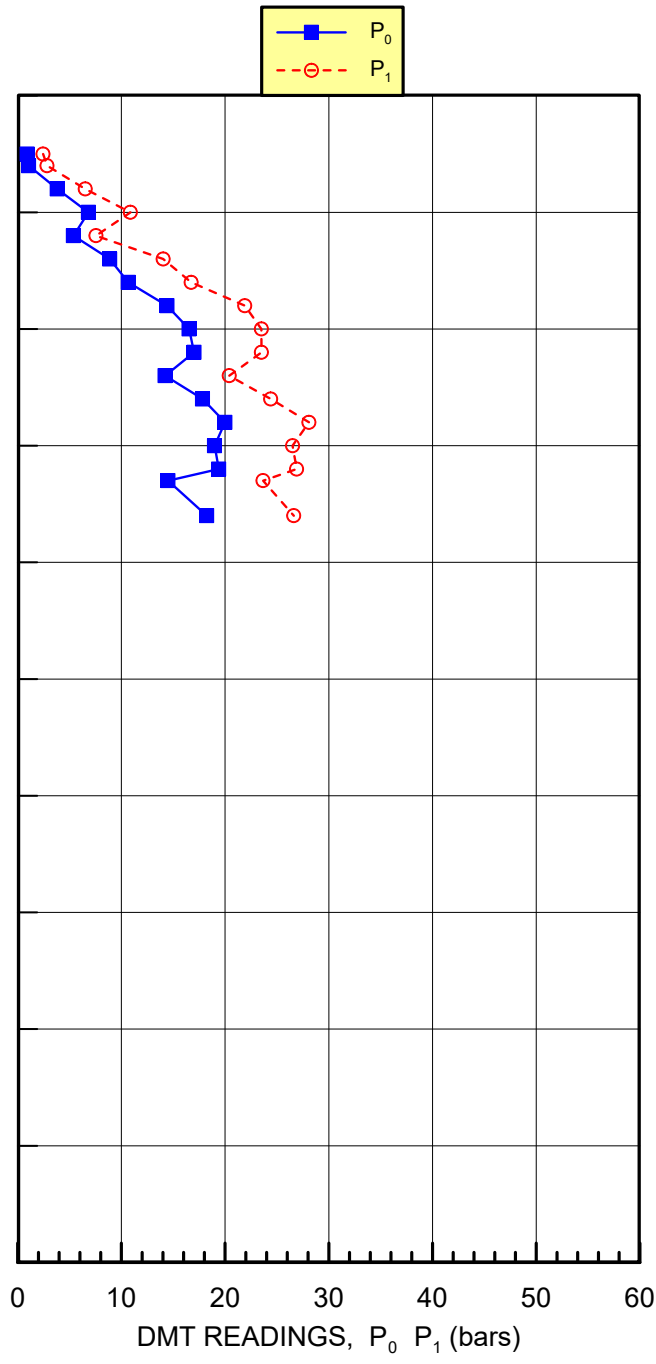
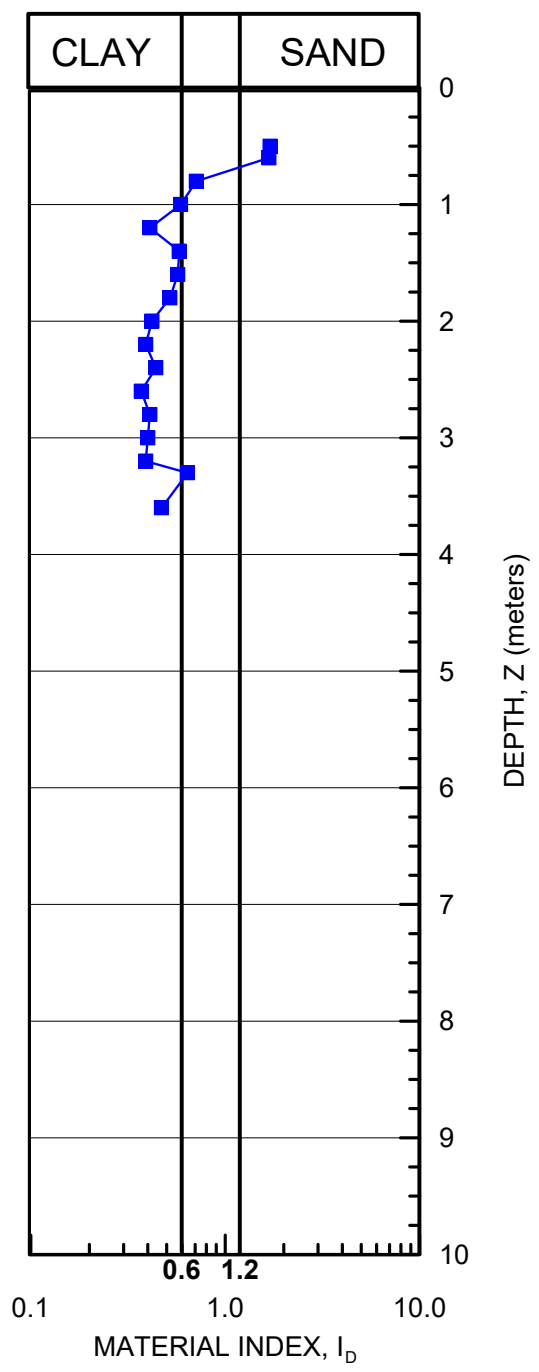
Ground Surface Elev.: ~ 23.8 meters
 Water Depth: ~ 1 meter

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N455,979.6 E1,318,460.6

IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Fallmezzger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/14/19

SOUNDING
 DMT-102S

DILATOMETER RESULTS



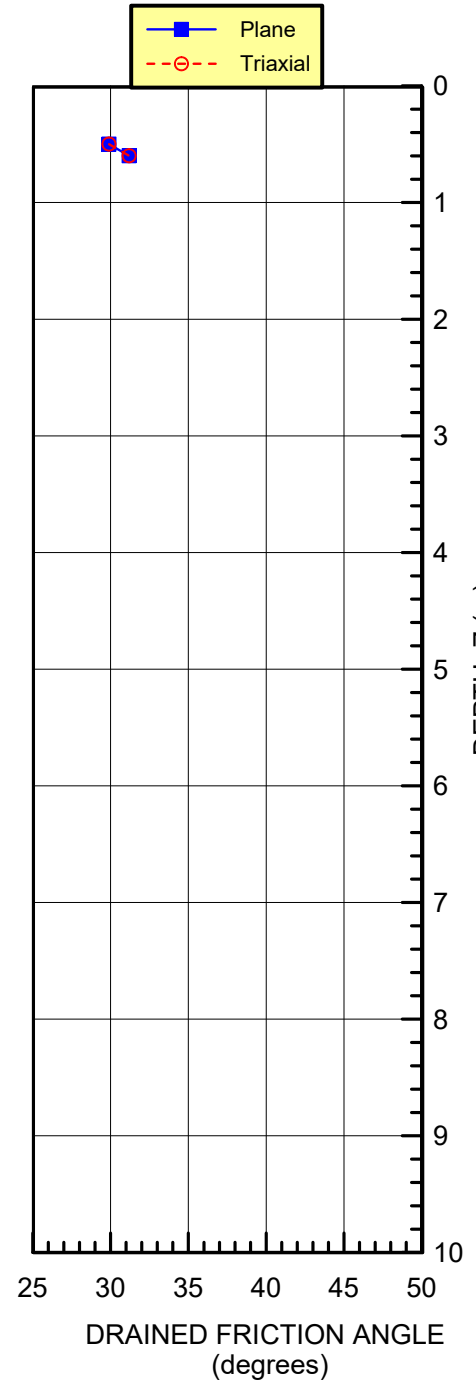
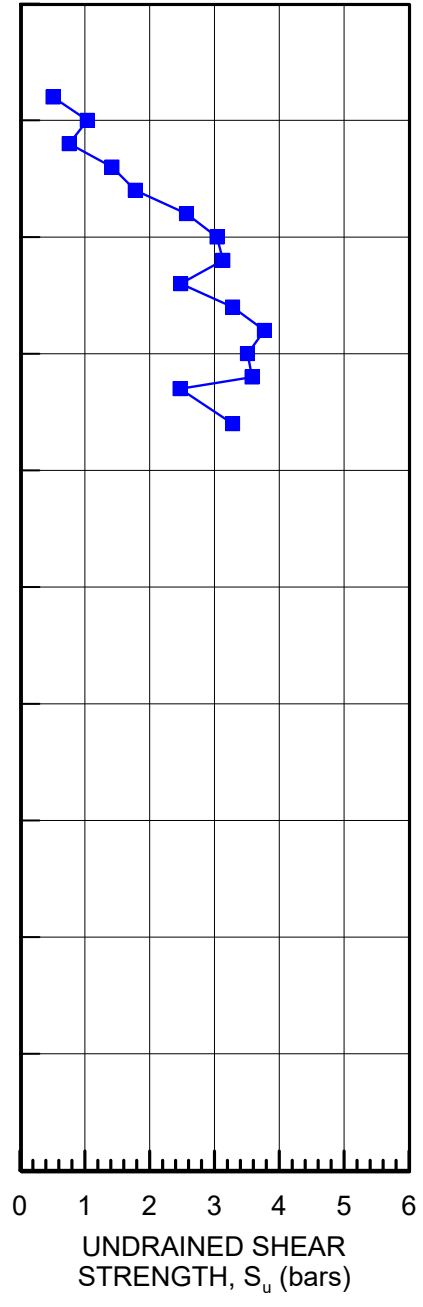
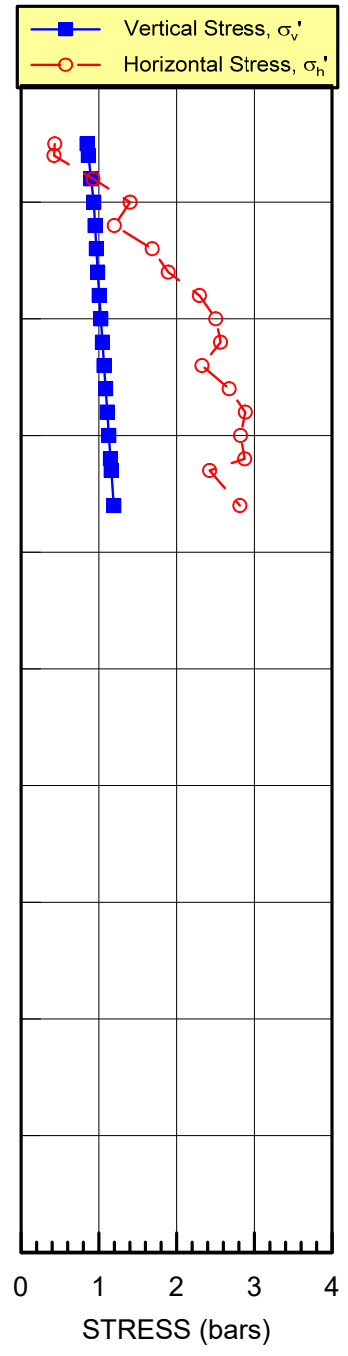
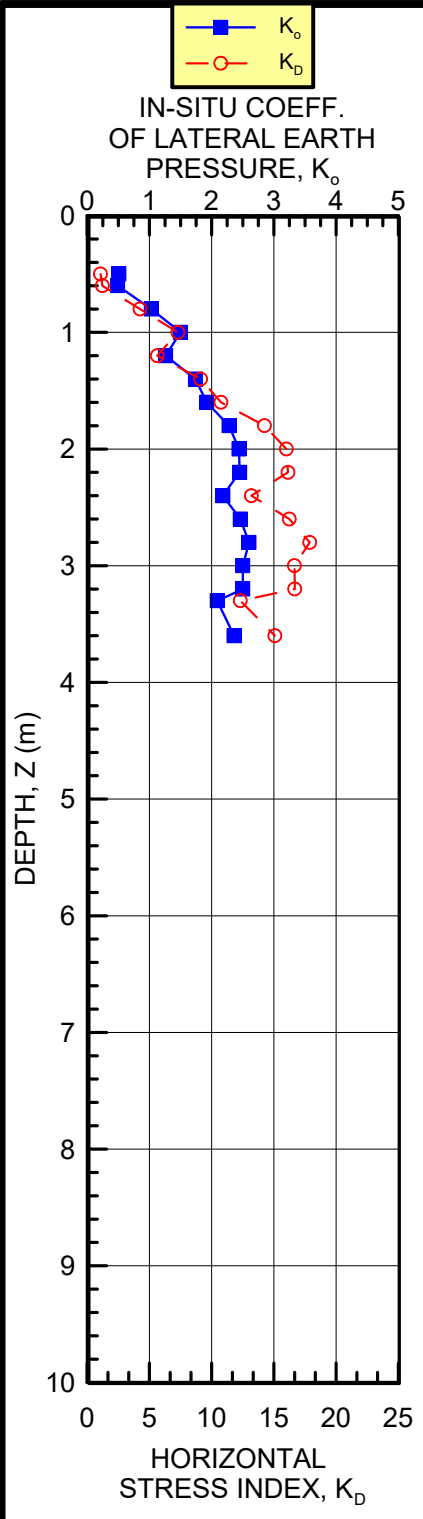
Ground Surface Elev: ~ 23.8 meters
Water Depth: ~ 1 meter

PROJECT: 1601 W Street Bus Terminal
LOCATION: Northeast, Washington, D.C.--N455,979.6 E1,318,460.6
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezer, P.E., F. ASCE, D GE
SOUNDING DATE: 2/14/19

INTERPRETED DMT STRENGTH PARAMETERS

SOUNDING
DMT-102S

Note: For angles <32°, Triaxial ~ Plane.



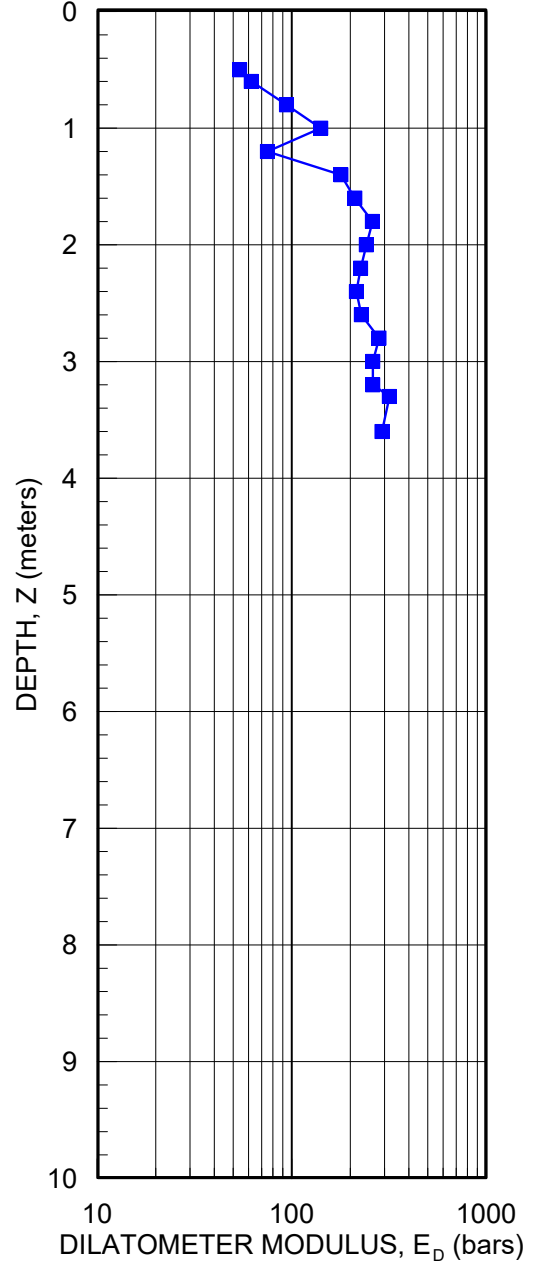
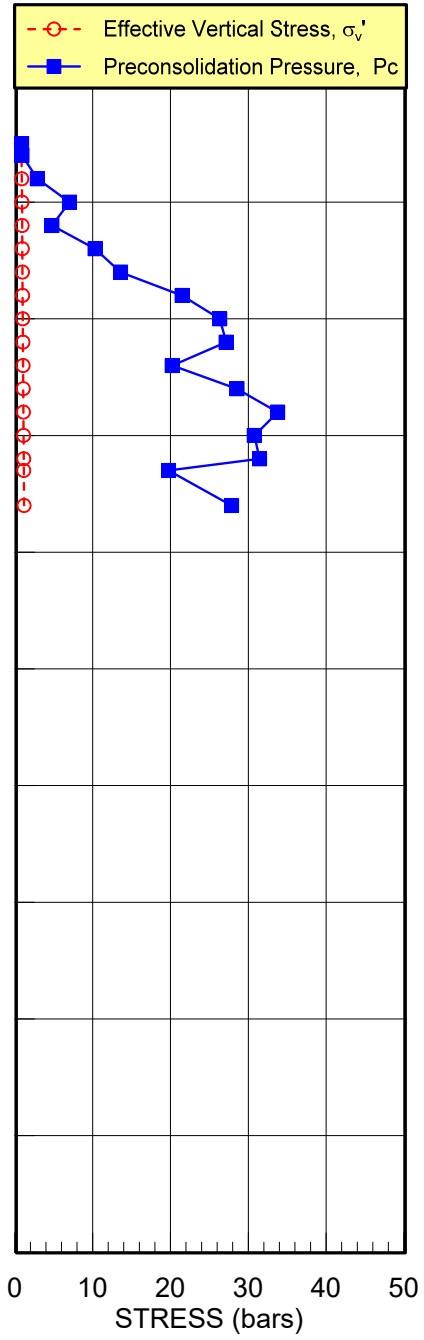
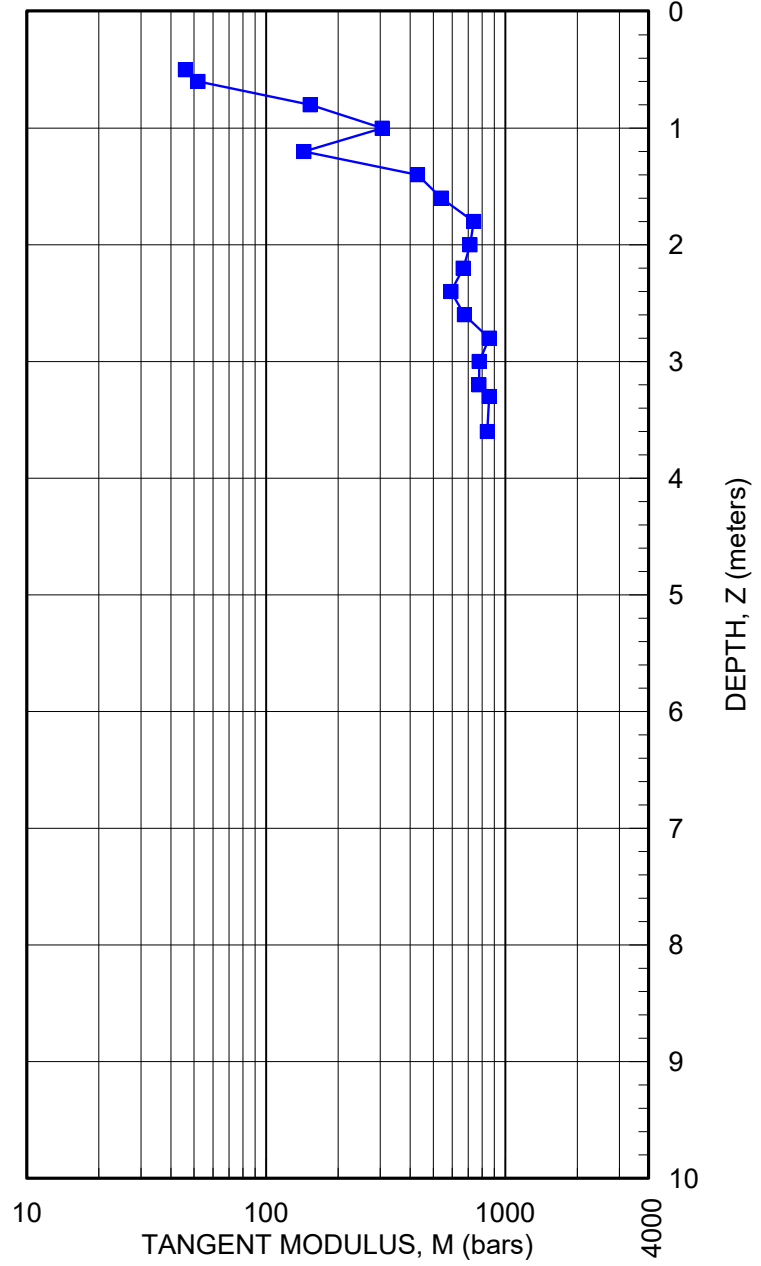
Ground Surface Elev.: ~ 23.8 meters
 Water Depth: ~ 1 meter

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N455,979.6 E1,318,460.6

IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Fallmeizger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/14/19

SOUNDING
 DMT-102S

INTERPRETED DMT DEFORMATION PARAMETERS



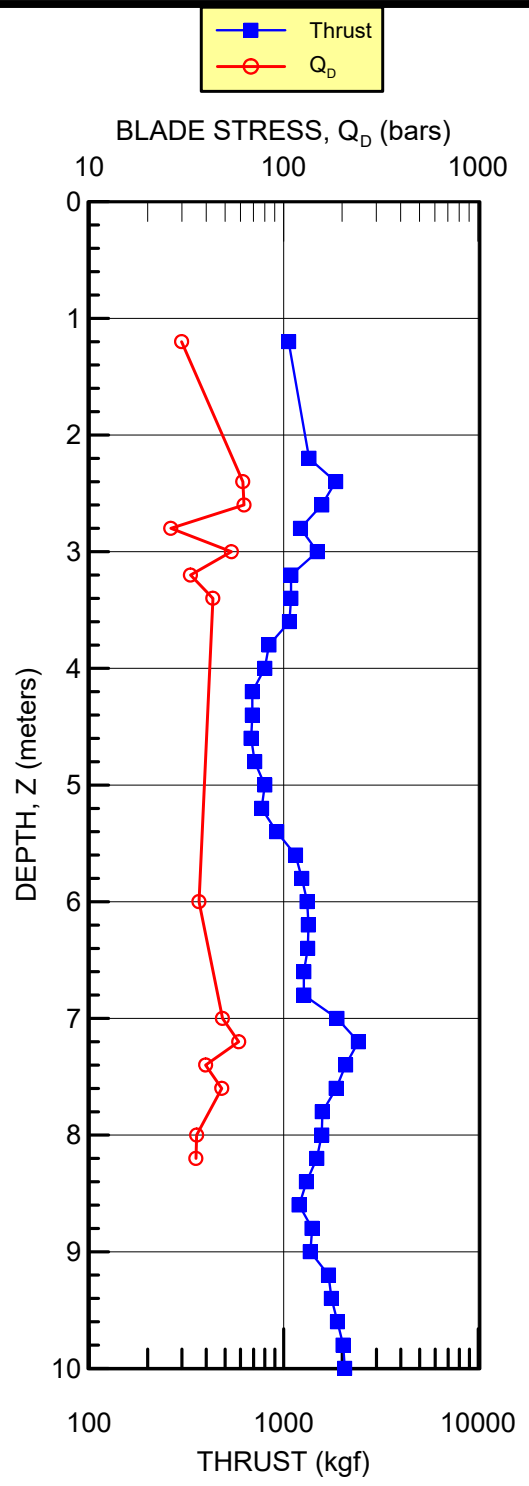
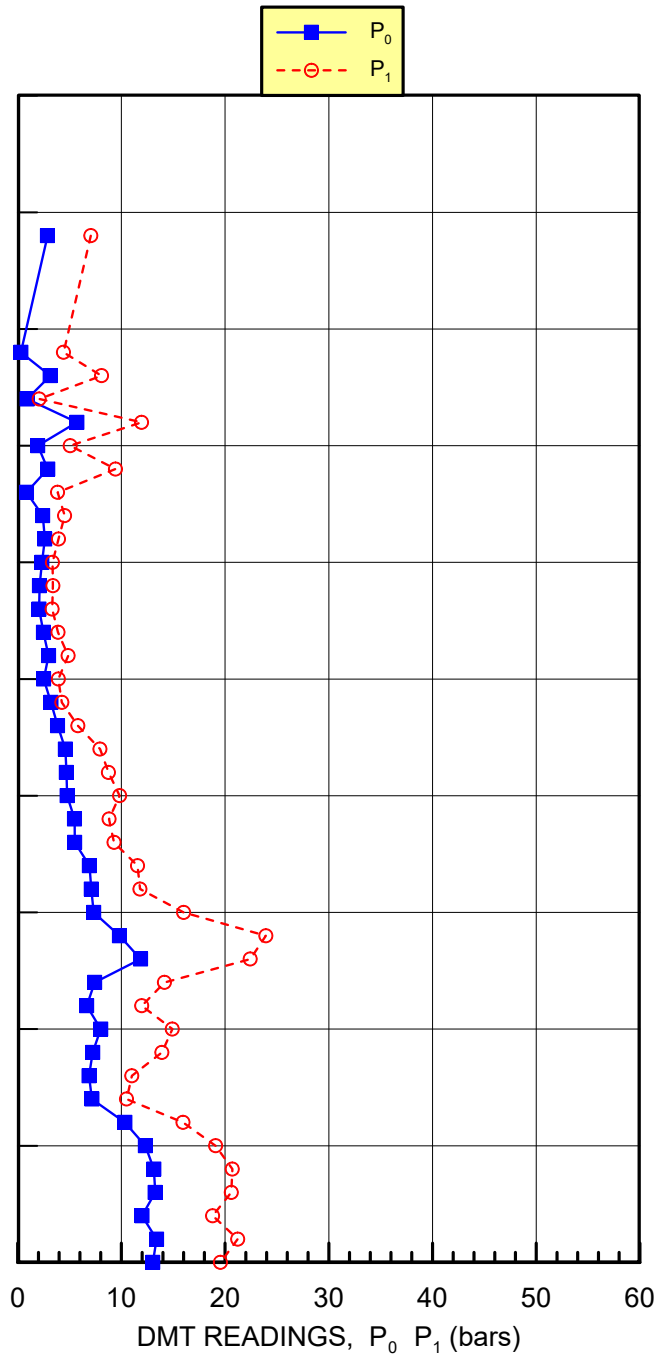
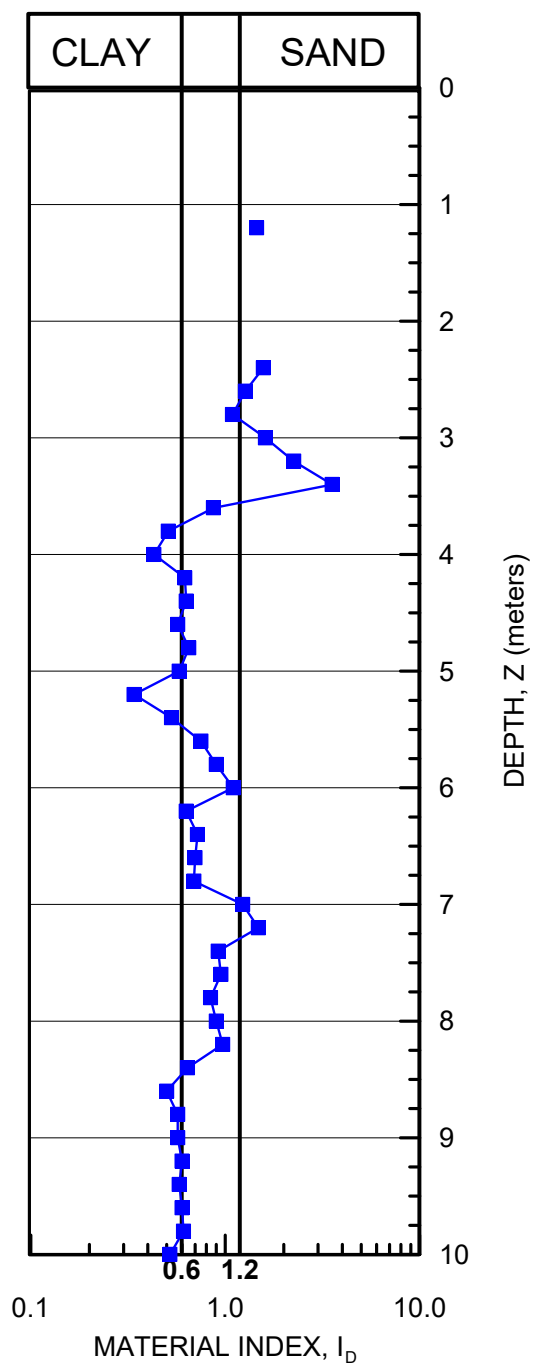
Ground Surface Elev.: ~ 31.0 meters
 Water Depth: ~ 2.4 meter

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4

IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Fallmezzger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
 DMT-104

DILATOMETER RESULTS



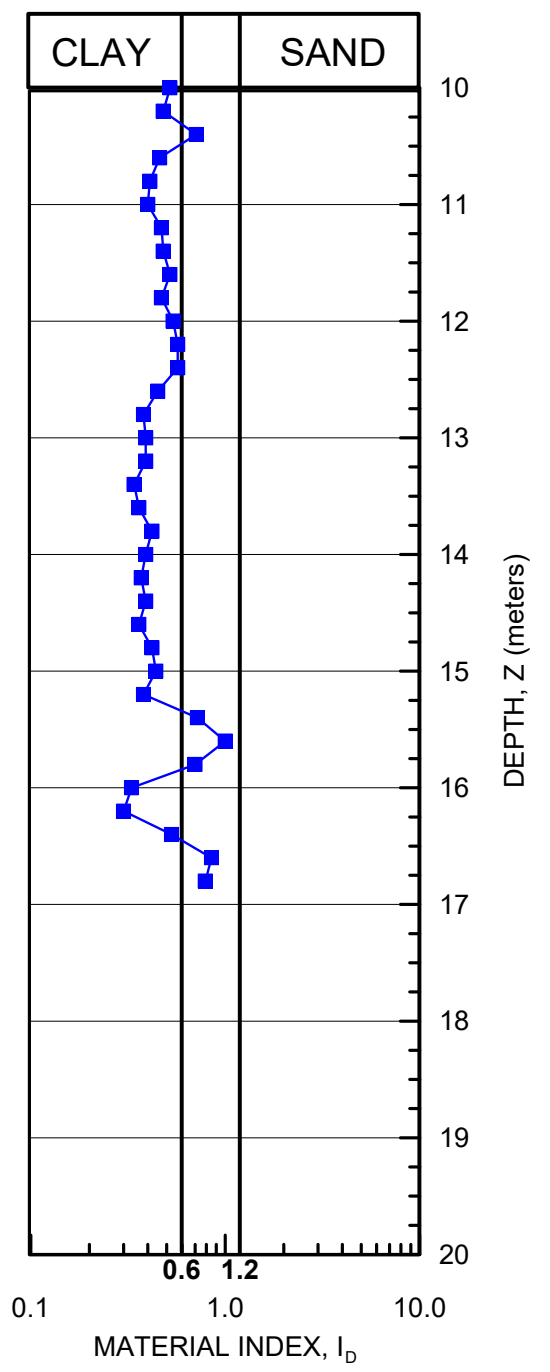
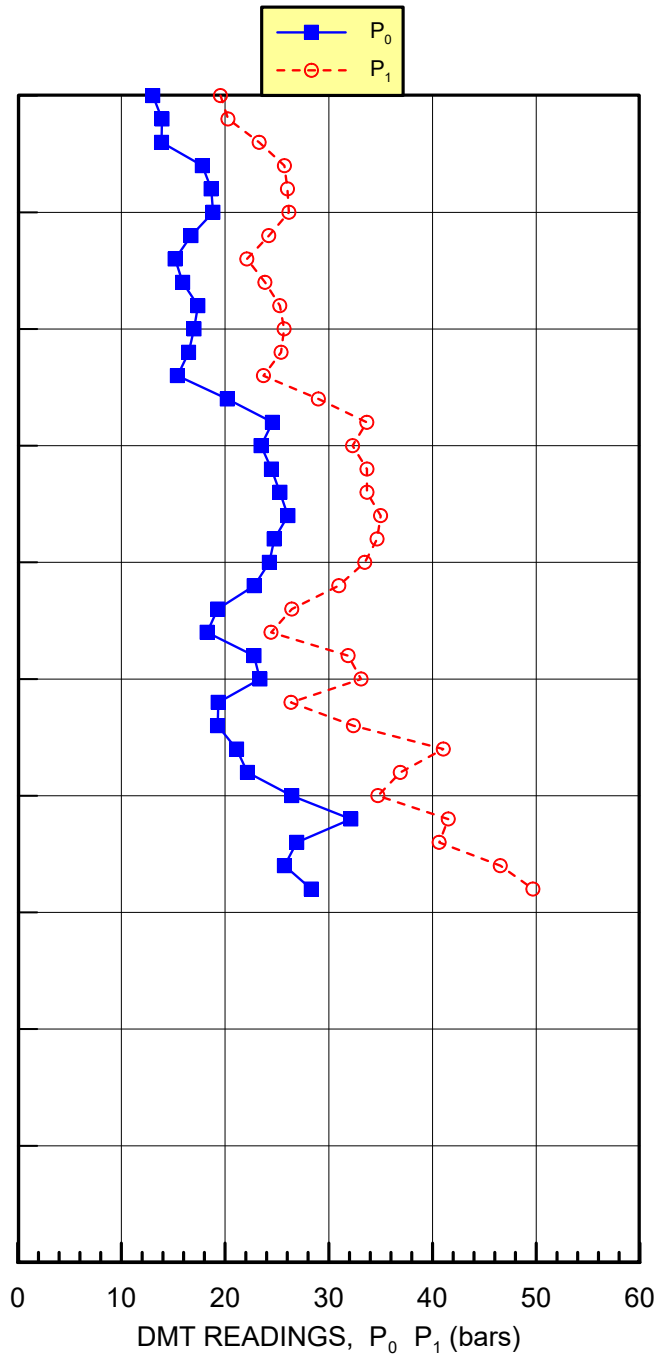
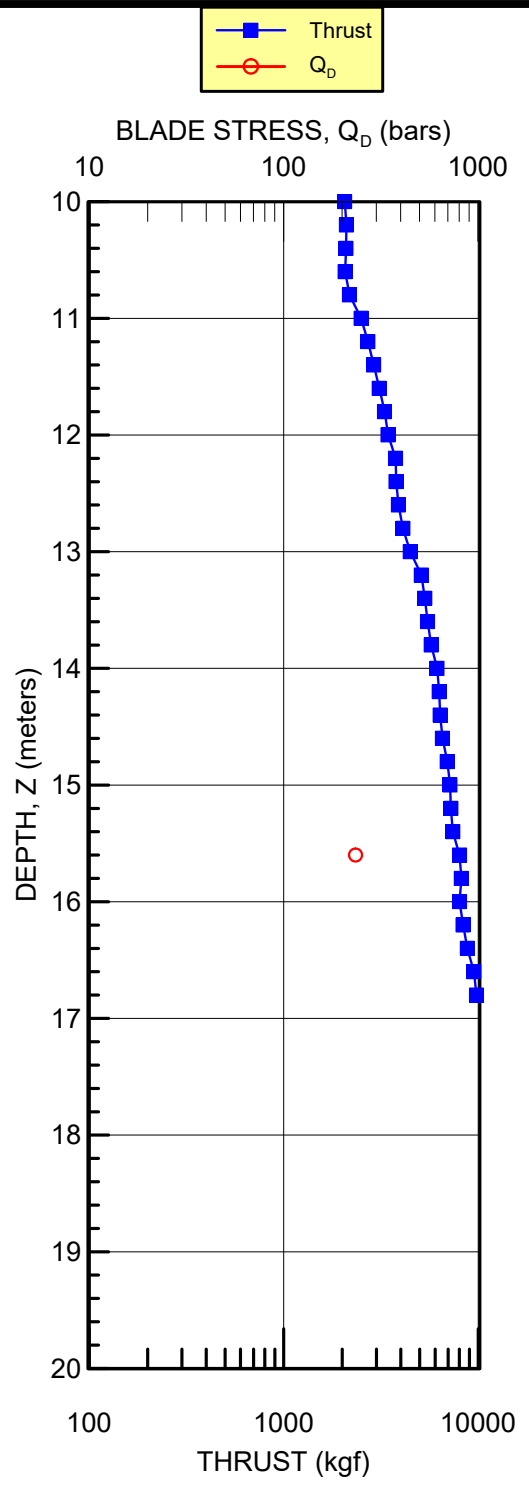
Ground Surface Elev.: ~ 31.0 meters
Water Depth: ~ 2.4 meter

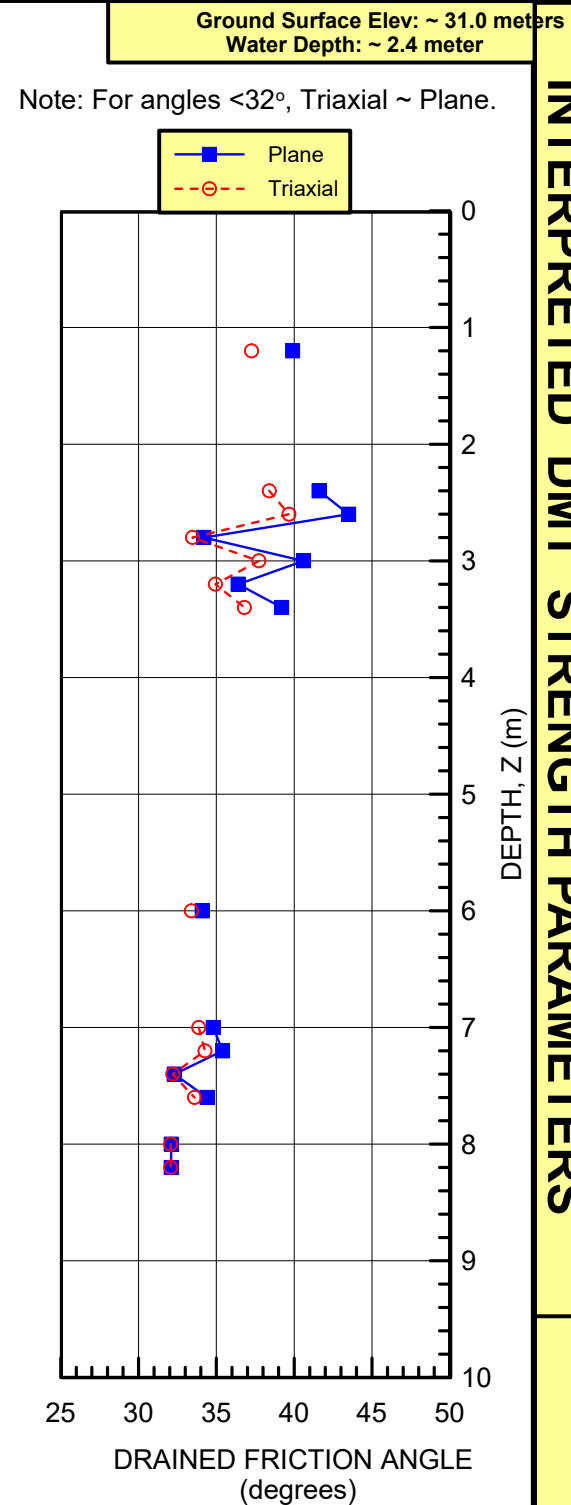
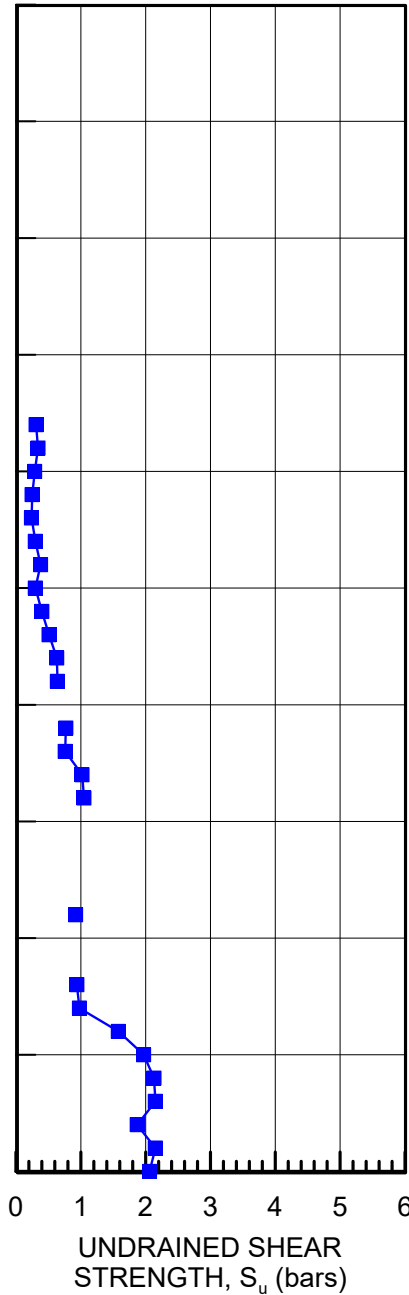
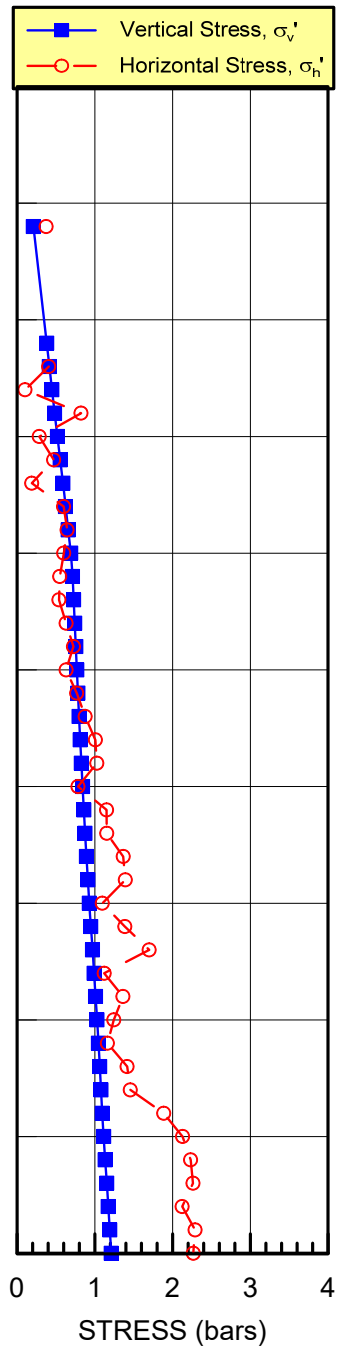
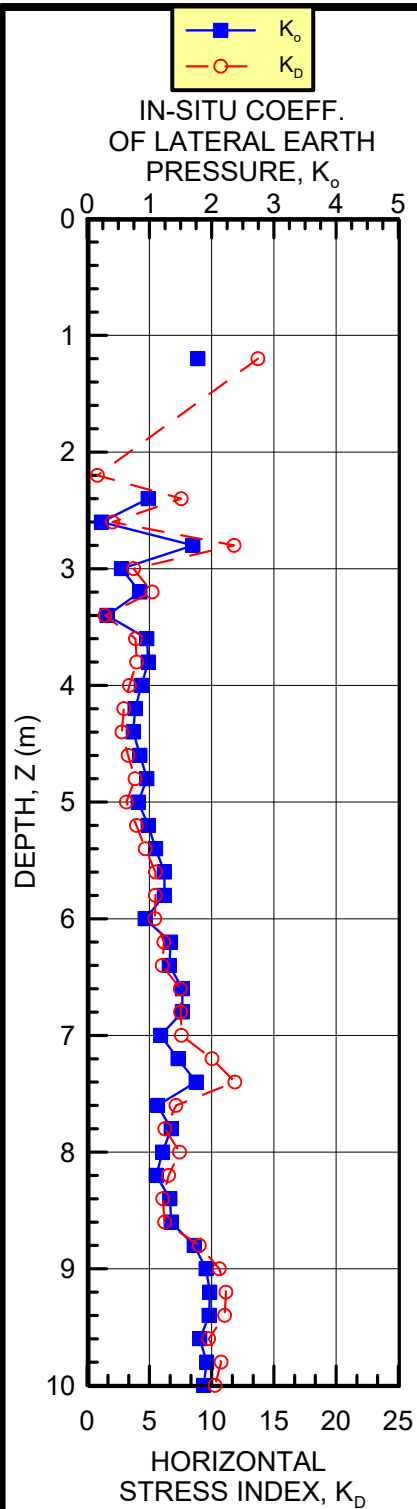
PROJECT: 1601 W Street Bus Terminal
LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4

IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Fallmezzger, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

SOUNDING
DMT-104

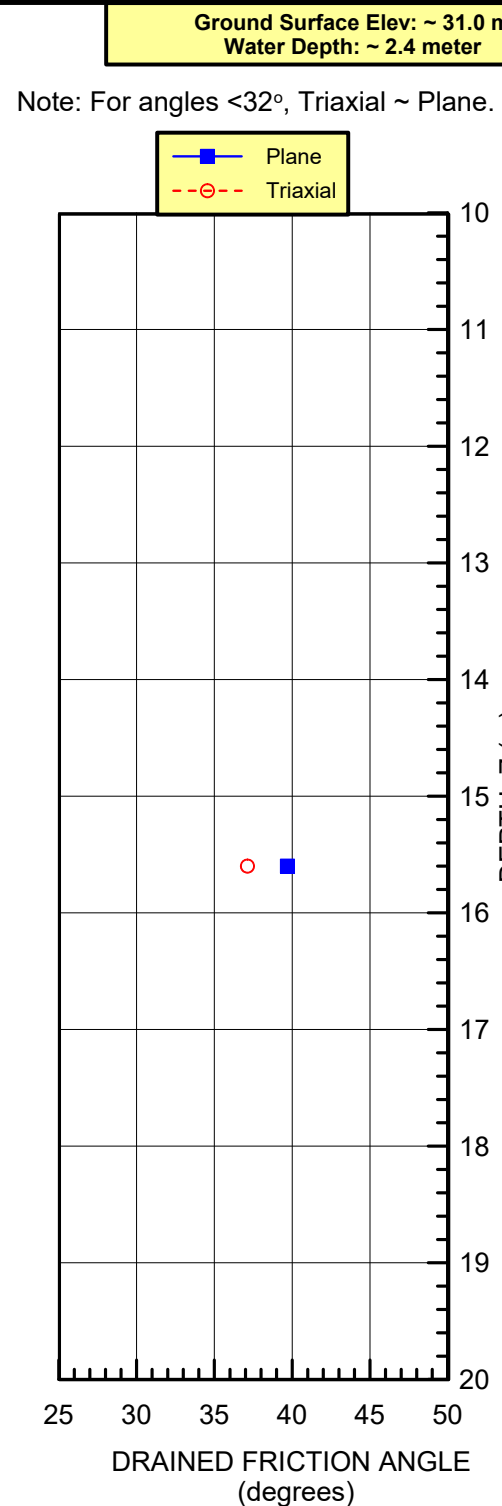
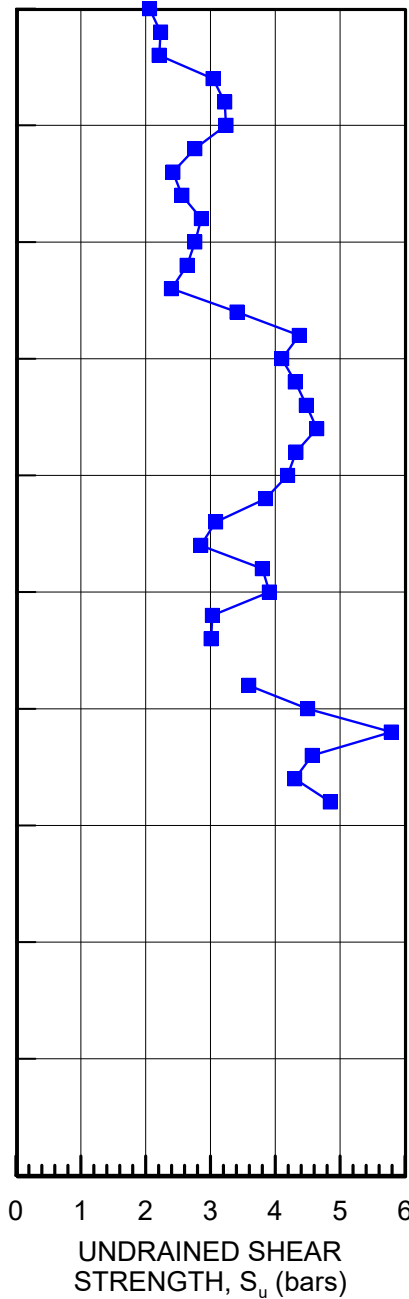
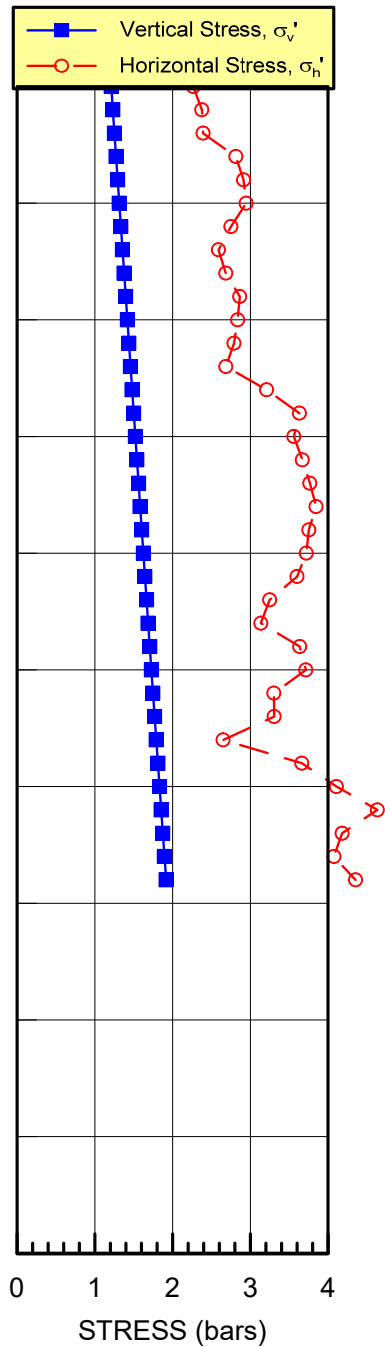
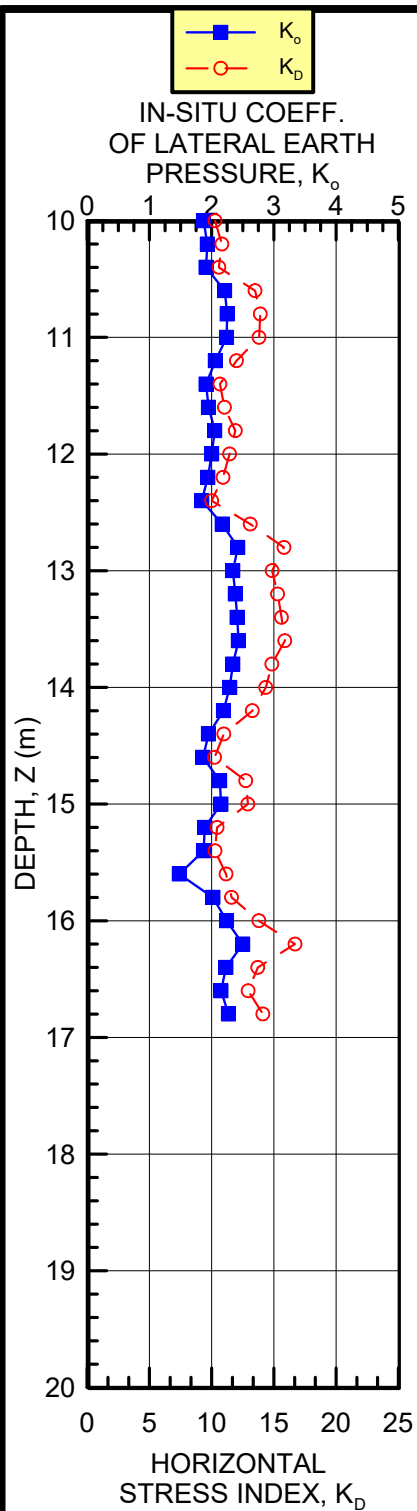
DILATOMETER RESULTS





INTERPRETED DMT STRENGTH PARAMETERS

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4
 IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Failmezger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19
 SOUNDING
 DMT-104



INTERPRETED DMT STRENGTH PARAMETERS

PROJECT: 1601 W Street Bus Terminal
LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger, P.E., F. ASCE, D GE
SOUNDING DATE: 2/13/19

SOUNDING
DMT-104

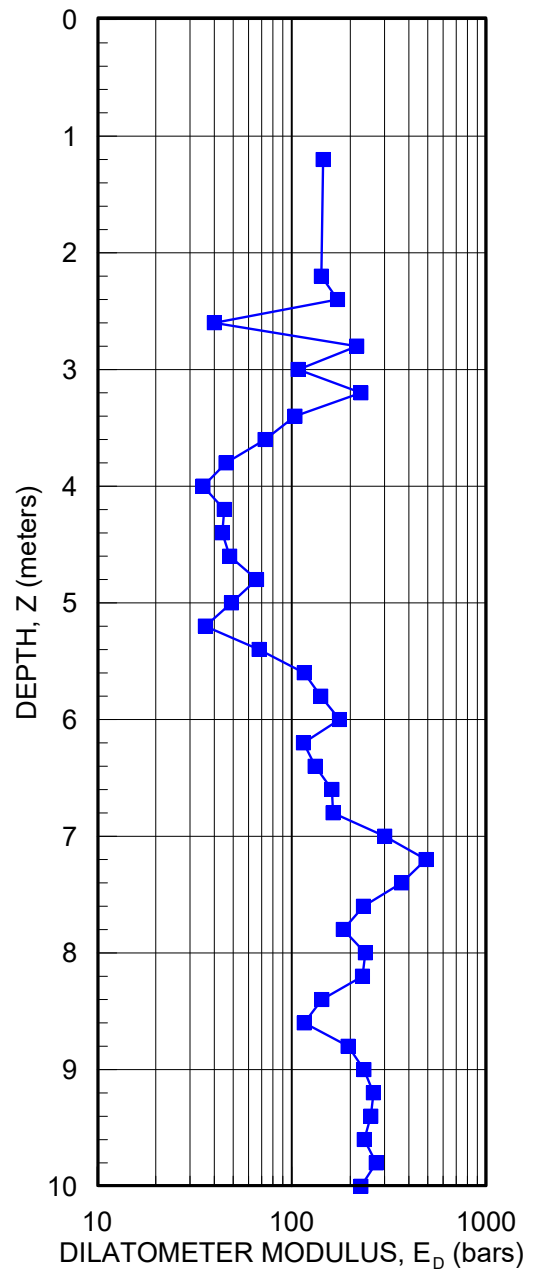
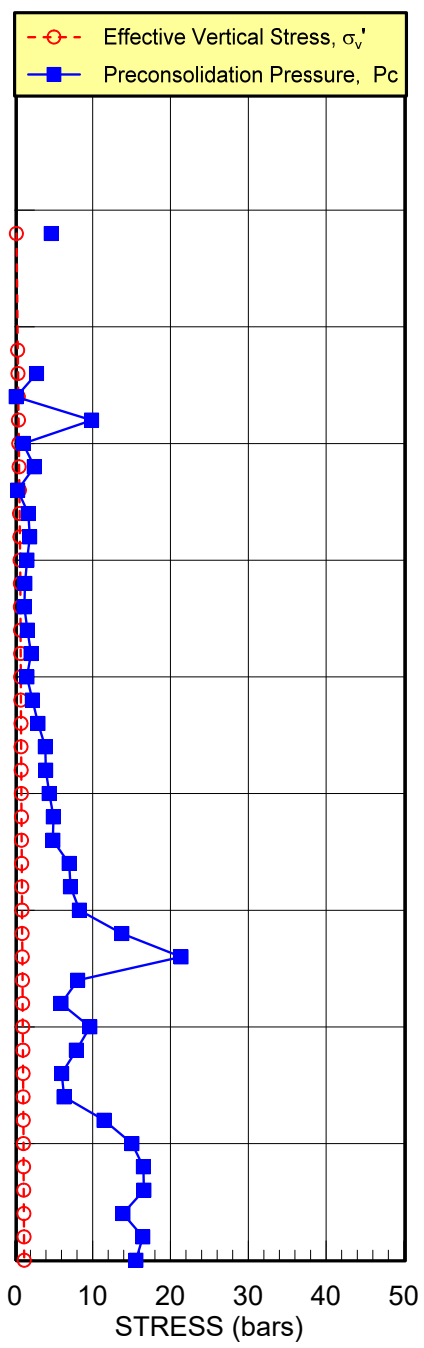
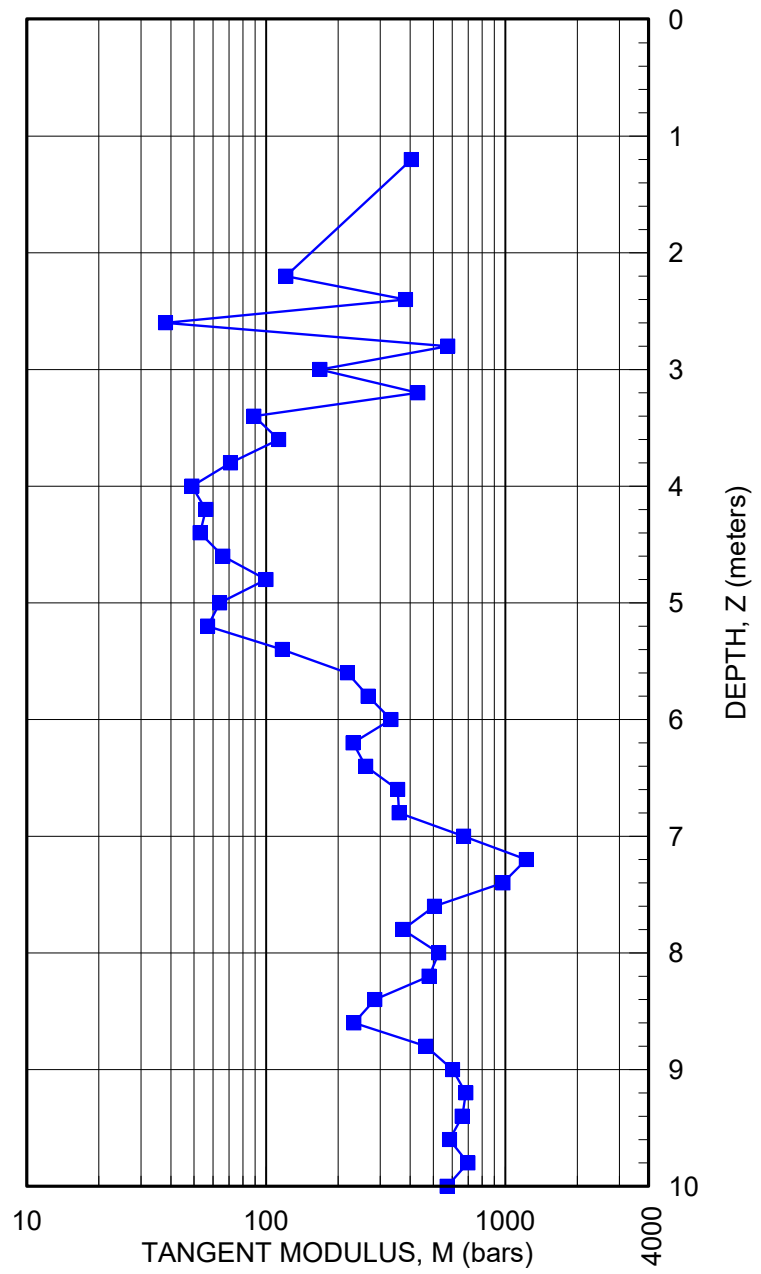
Ground Surface Elev.: ~ 31.0 meters
 Water Depth: ~ 2.4 meter

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4

IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Fallmeizger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

SOUNDING
 DMT-104

INTERPRETED DMT DEFORMATION PARAMETERS



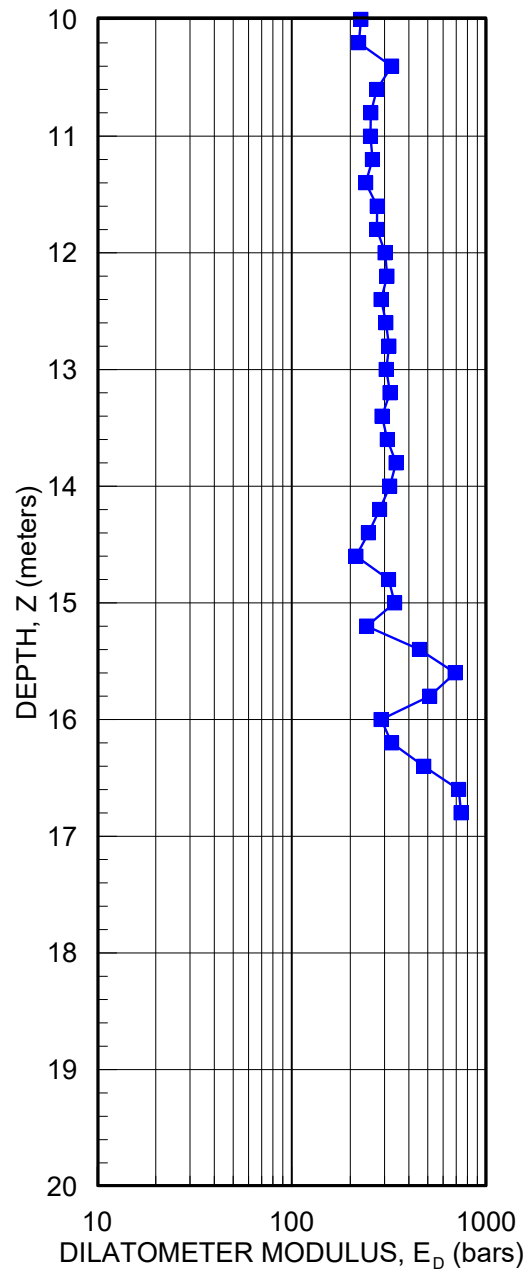
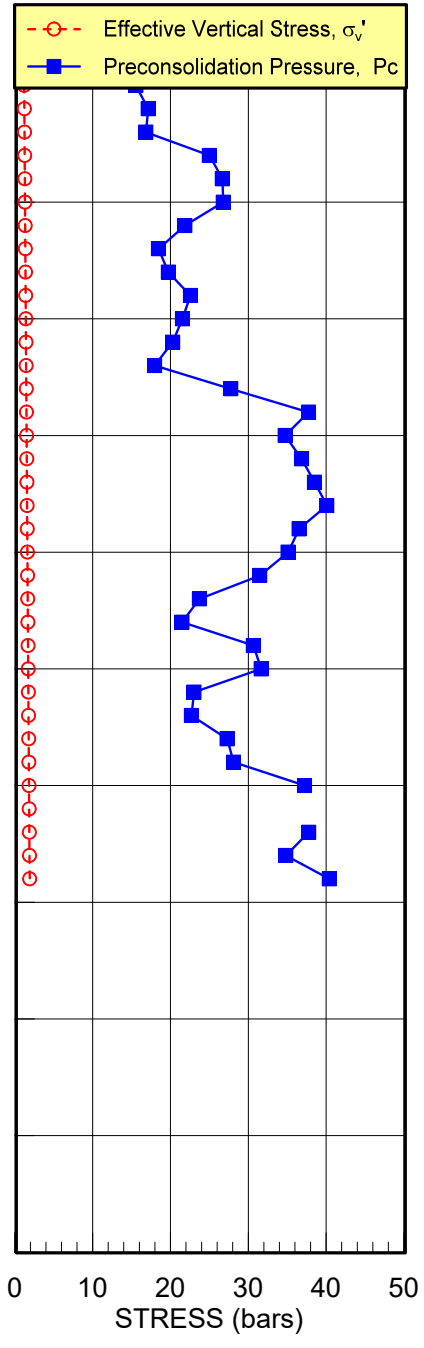
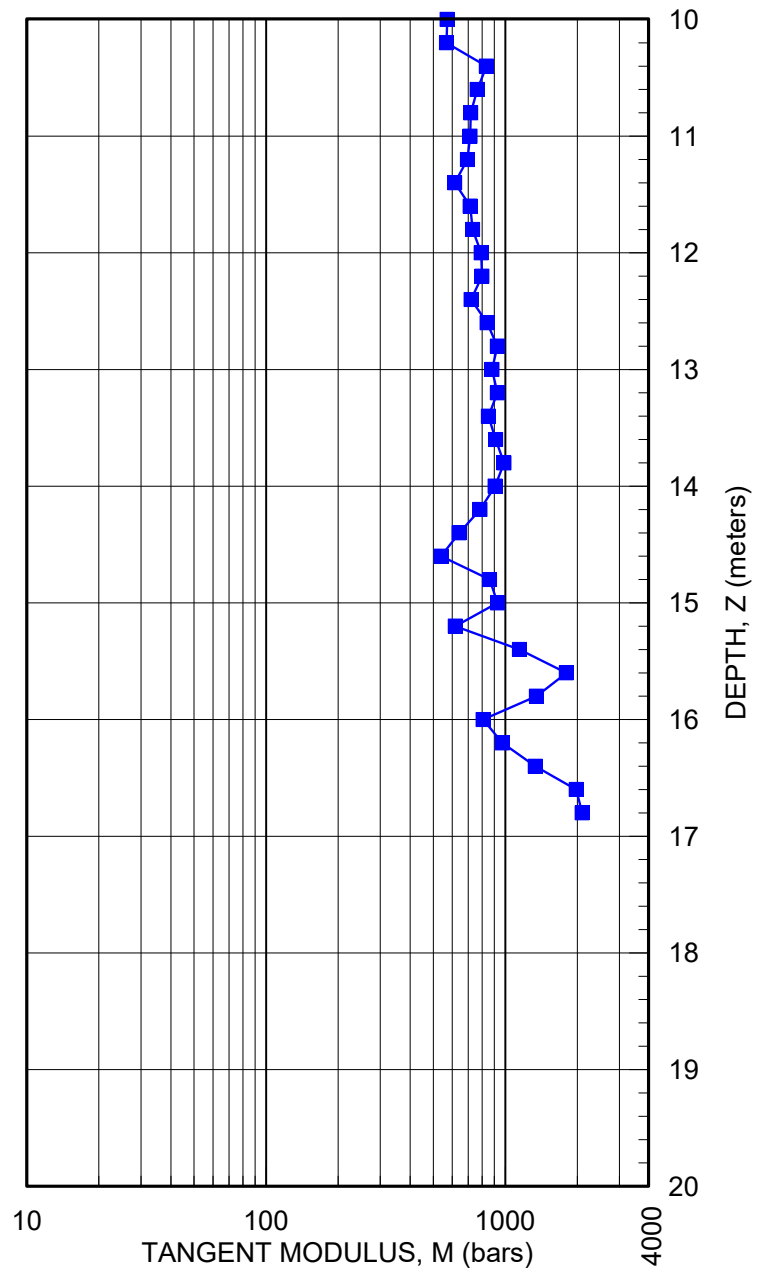
Ground Surface Elev.: ~ 31.0 meters
 Water Depth: ~ 2.4 meter

PROJECT: 1601 W Street Bus Terminal
 LOCATION: Northeast, Washington, D.C.--N456,019.9 E1,318,317.4

IN-SITU SOIL TESTING, L.C.
 ENGINEER: R. Fallmeizger, P.E., F. ASCE, D GE
 SOUNDING DATE: 2/13/19

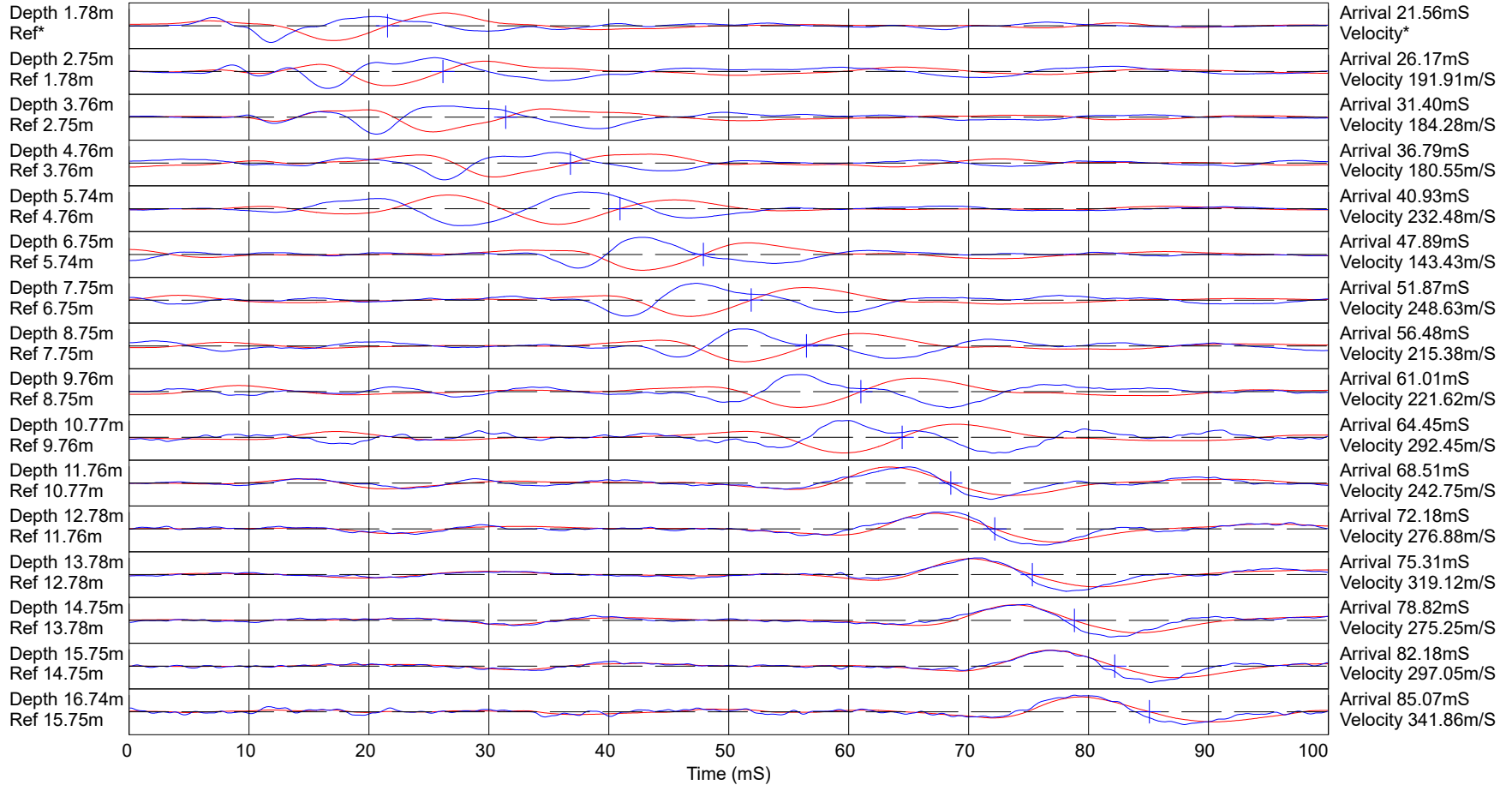
SOUNDING
 DMT-104

INTERPRETED DMT DEFORMATION PARAMETERS



1601 W Street NE Bus Terminal
CPT-104 Seismic Sounding

SEISMIC TEST



Hammer to Rod String Distance (m): 1.00

* = Not Determined

COMMENT:


Boring Location N:456,061.214 E:1318405.772 Date Start/Finish 2/13/19
 Ground El., Datum ≈ 75' Driller N/A HA-01
 Rig Type N/A Casing Type/Size N/A
 Groundwater El. 4" Date 2/13/19 GEI Rep. J. HUDSON Total Depth (ft) .5 Pg. 1 of 1

Depth ft	Sample				PID Jar HS / Remarks	Layer Name	Soil and Rock Descriptions
	Type and No.	Blows per 6 in.	Pen in.	Rec in.			
6"						TS	4" TOP SOIL, HEAVILY VEGETATIVE FILL - CONSTRUCTION DEBRIS - CONCRETE, BRICK FRAGMENTS. END OF HAND AUGER

Blows per 6 in. - 140 lb. Hammer Falling 30 in. to drive a
 2.0 in. OD Split Spoon Sampler
 Pen - Penetration Length of Sampler or Core Barrel
 Rec - Recovery Length of Sample
 RQD - Length of Sound Cores > 4 in./Length Cored, %
 PID - Photo Ionization Detector (Jar Headspace), ppm
 S - Sample C - Core Sample
 U - Undisturbed Sample Groundwater

Notes: WATERLEVEL WAS JUST BELOW TOP SOIL
 HAND AUGER WAS STOPPED @ 6" BGS

Project Name: 1601 W ST. NE BUS TERMINAL
 GEI Project No.: 1804446




Boring Location N:456052.837 E:1318404.351 Date Start/Finish 2/13/19
 Ground El., Datum ≈ 75' Driller N/A HA-02
 Rig Type N/A Casing Type/Size N/A
 Groundwater El. 6" Date 2/13/19 GEI Rep. T. HANSON Total Depth (ft) .5' Pg. 1 of 1

Depth ft	Sample				PID Jar HS / Remarks	Layer Name	Soil and Rock Descriptions
	Type and No.	Blows per 6 in.	Pen in.	Rec in.			
6"							TOPSOIL WITH VEGETATION FILL - WET, FAT CLAY WITH LARGE CONCRETE FRAGMENTS + BRICK FRAGMENTS.

Blows per 6 in. - 140 lb. Hammer Falling 30 in. to drive a 2.0 in. OD Split Spoon Sampler
 Pen - Penetration Length of Sampler or Core Barrel
 Rec - Recovery Length of Sample
 RQD - Length of Sound Cores > 4 in./Length Cored, %
 PID - Photo Ionization Detector (Jar Headspace), ppm
 S - Sample C - Core Sample
 U - Undisturbed Sample Groundwater

Notes: GROUND WATER LEVEL WAS JUST BELOW THE TOPSOIL
 HAND AUGER WAS STOPPED @ 6" BGS DUE TO FILL.

Project Name: 1601 W ST NE BUS TERMINAL
 GEI Project No.: 1804446



Boring Location N:456027.890 E:1318411.469 Date Start/Finish 2/13/19
 Ground El., Datum ≈ 74' Driller N/A
 Rig Type N/A Casing Type/Size N/A
 Groundwater El. 2' Date 2/13/19 GEI Rep. T. HUDSON Total Depth (ft) 2' Pg. 1 of 1

Depth ft	Sample				PID Jar HS / Remarks	Layer Name	Soil and Rock Descriptions
	Type and No.	Blows per 6 in.	Pen in.	Rec in.			
4"							TOPSOIL WITH VEGETATION
2'							LEAN CLAY (CL) - MEDIUM PLASTIC, SOFT, WET FINES, <5% SAND, ORANGE MOTTLED SMALL BRICK FRAGMENTS, LARGE FERROUS NODULES.


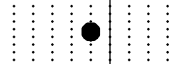

Blows per 6 in. - 140 lb. Hammer Falling 30 in. to drive a 2.0 in. OD Split Spoon Sampler
 Pen - Penetration Length of Sampler or Core Barrel
 Rec - Recovery Length of Sample
 RQD - Length of Sound Cores > 4 in./Length Cored, %
 PID - Photo Ionization Detector (Jar Headspace), ppm
 S - Sample C - Core Sample
 U - Undisturbed Sample Groundwater

Notes: WATER LEVEL APPROX 2' BGS.
 HAND AMBER WAS STOPPED @ 2' BGS DUE TO FILL

Project Name: 1601 W ST NE BUS TERMINAL
 GEI Project No.: 1604446



PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-1	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.		DATES DRILLED: 1/4/18 - 1/4/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG:	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL		
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF) 20 40 60 80
				Light gray, Sandy Gravel	0	50	1	
		A		Concrete				
				Auger Refusal at 1.0 ft.				

GROUND WATER LEVELS: 1/5/2018: NOT ENCOUNTERED	SAMPLE TYPES:
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REMARKS: Borehole grouted upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-2	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Jon L.		DATES DRILLED: 1/8/18 - 1/8/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL			
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF) 20 40 60 80	MC (%)
				Asphalt = 1.2 in. Concrete = 4.8 in.	0	16+6+7	10		
				Fill, tan black, SILTY SAND WITH GRAVEL, moist, SM					
				Fill, dark brown, Lean clay with sand, moist, CL	0	1+2+2	2		
5		A			0	1+1+2	18		27.2
				Potomac group, light brown and gray, LEAN CLAY, moist, CL	0	3+4+6	18		
10					0	4+6+12	18		
				Potomac group, dark brown black, FAT CLAY, contains organics, moist, CH	0	3+6+9	18		
15					0	3+5+9	18		24.2
		B1		Potomac group, red brown, FAT CLAY, moist, CH	0	4+6+10	18		
20					0				
25					0				
30				Bottom of Borehole at 30.0 ft.	0				

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION 1/9/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
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REMARKS: Borehole grouted upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-3	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.		DATES DRILLED: 1/4/18 - 1/4/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL						
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)		
								20	40		60	80
0				Asphalt = 1.2 in. <i>Fill</i> , dark gray and brown, Clayey sand with gravel, very stiff, moist, SC	0	47+21+29	18					
0				<i>Fill</i> , brown, LEAN CLAY WITH GRAVEL, very stiff, moist, CL	0	3+7+15	4					8.0
5		A		<i>Fill</i> , brown, LEAN CLAY WITH GRAVEL, very stiff, moist, CL	0	10+6+8	18					22.4
10				<i>Fill</i> , light brown black, LEAN CLAY, contains trace organics, stiff, moist, CL	0	7+5+4	12					65.7
10				Bottom of Borehole at 10.0 ft.								

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION CAVED: <u>4.5</u> ft. 1/5/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
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REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold	BORING NUMBER: B-4
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Jon L.	DATES DRILLED: 1/9/18 - 1/9/18
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer	DRILL RIG: CME 55

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL				
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)
						20 40 60 80				
				Concrete = 6 in.						
				Fill, brown black, LEAN CLAY with gravel, firm, moist, CL	0	3+2+2	12			
				Fill, light brown-red, LEAN CLAY with gravel, with sand, soft, moist, CL	0	1+1+1	5			
5		A		Fill, red and black, FAT CLAY, very stiff, moist, CH	0	3+2+2	12			28.4
10				Potomac group, red gray, Fat clay, very stiff, moist, CH	0	3+6+10	18			21.7
15					0	3+8+12	12			
20		B1		Potomac group, brown and red, LEAN CLAY, with sand, hard, moist, CL	0	4+9+15	18			15.2
25				Potomac group, dark red, FAT CLAY, very stiff, moist, CL	0	3+8+13	15			
30				Potomac group, dark red and gray, FAT CLAY, very stiff, moist, CL	0	4+8+14	13			21.8
				Bottom of Borehole at 30.0 ft.						

GROUND WATER LEVELS:

NOT ENCOUNTERED DURING DRILLING
 NOT ENCOUNTERED UPON COMPLETION
 1/10/2018: NOT ENCOUNTERED

SAMPLE TYPES:



REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-5	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.		DATES DRILLED: 1/4/18 - 1/4/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL						
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)		
								20	40	60	80	
				Asphalt = 1.2 in. Fill, dark brown, FAT CLAY, very stiff, moist, CL	0	24+5+7	16					
		A		Fill, light brown and black, sandy FAT CLAY, with organics, stiff, moist, with sand, CH	0	3+4+3	16					23.0
5					0	3+11+7	5					25.9
				Auger Refusal at 6.5 ft.								

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION CAVED: <u>4.5</u> ft. 1/5/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
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REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold	BORING NUMBER: B-6 SHEET 1 OF 1
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.	DATES DRILLED: 1/4/18 - 1/4/18
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer	DRILL RIG: CME 55

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL						
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)		
								20	40	60	80	
	X			Asphalt = 2.4 in.	0	12+50/3	8					●
		A		Fill, tan and black, SILTY SAND WITH GRAVEL, very dense, moist, SM								
				Fill, light brown and black, LEAN CLAY WITH GRAVEL, very hard, moist, CL	0	50/0	0					● 25.8
				Auger Refusal at 3.5 ft.								
5												
10												

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION CAVED: <u>3.0</u> ft. 1/5/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
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REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-7	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.		DATES DRILLED: 1/4/18 - 1/4/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL						
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)		
							20	40	60		80	
				Asphalt = 2.4 in. <i>Fill</i> , dark red tan, SILTY SAND WITH GRAVEL, contains brick fragments, dense, moist, SM	0	28+18+14	16					
				<i>Fill</i> , brown gray, LEAN CLAY, contains organics, very stiff, moist, CL	0	5+6+8	18					16.2
5		A			0	4+6+7	18					
				<i>Fill</i> , brown red, LEAN CLAY, stiff, moist, CL	0	3+3+7	16					20.1
10												
		B1		<i>Potomac group</i> , light brown, FAT CLAY WITH GRAVEL, contains and organics, very stiff, moist, CH	0	3+6+7	18					
15				Bottom of Borehole at 15.0 ft.								

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION CAVED: <u>7.5</u> ft. 1/5/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
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REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-8	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Cody N.		DATES DRILLED: 1/4/18 - 1/4/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL				MC (%)		
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)				
								20	40	60	80	
				Fill, tan and gray, Clayey sand with gravel, contains and brick fragments, dense, moist, SC	0	47+18+7	12					
		A		Fill, brown and gray, Clayey sand with gravel, firm, moist, SC	0	3+3+3	16					13.0
				Fill, gray-brown, Clayey sand with gravel, stiff, moist, SC	0	7+6+4	10					17.8
		B1			0	3+3+3	16					21.6
10				Bottom of Borehole at 10.0 ft.								

GROUND WATER LEVELS:

 ▽ ENCOUNTERED: 8.0 ft.

 NOT ENCOUNTERED UPON COMPLETION CAVED: 5.5 ft.

1/5/2018: NOT ENCOUNTERED

SAMPLE TYPES:

 SPT

REMARKS: Borehole backfilled upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-9	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Jon L.		DATES DRILLED: 1/9/18 - 1/9/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	

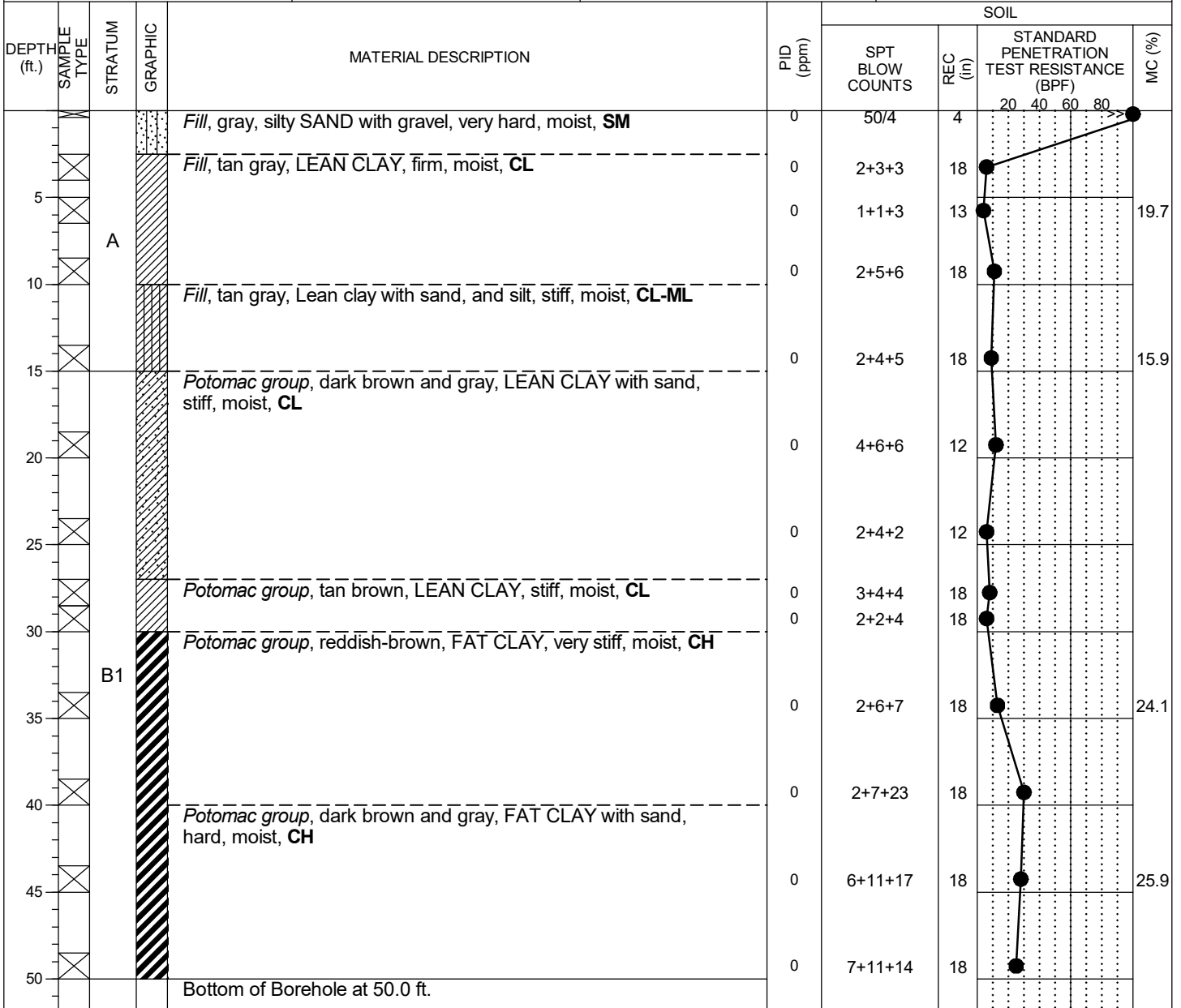
DEPTH (ft.)	SAMPLE TYPE	STRATUM	GRAPHIC	MATERIAL DESCRIPTION	PID (ppm)	SOIL						
						SPT BLOW COUNTS	REC (in)	STANDARD PENETRATION TEST RESISTANCE (BPF)		MC (%)		
								20	40	60	80	
0				Fill, dark brown and black, silty SAND with gravel, with brick fragments, firm, moist, SM	0	8+10+10	8					
0				Fill, dark orange-brown, sandy LEAN CLAY with gravel, soft, moist, CL	0	4+30+0	10					
0		A		Fill, dark orange-brown, sandy LEAN CLAY with gravel, soft, moist, CL	0	2+3+3	6					
0				Potomac group, brown-red and gray, LEAN CLAY, stiff, moist, CL	0	1+2+1	15					19.8
0				Potomac group, brown-red and gray, LEAN CLAY, stiff, moist, CL	0	2+2+1	5					
0		B1		Potomac group, brown-red and gray, LEAN CLAY, stiff, moist, CL	0	1+1+2	18					20.8
0				Potomac group, brown-red tan, LEAN CLAY, stiff, moist, CL	0	2+3+3	18					
0				Potomac group, light gray tan, FAT CLAY, stiff, moist, CH	0	3+3+5	18					
0				Potomac group, tan red, FAT CLAY, very stiff, moist, CH	0	3+6+8	18					
0				Potomac group, tan red, FAT CLAY, very stiff, moist, CH	0	3+6+9	18					
0				Potomac group, blue-gray tan, FAT CLAY, very stiff, moist, CH	0	4+9+11	18					23.2
0				Potomac group, blue-gray tan, FAT CLAY, very stiff, moist, CH	0	5+8+12	18					
				Bottom of Borehole at 50.0 ft.								

GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION 1/10/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
--------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------

REMARKS: Borehole grouted upon completion

THE STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARIES. THE TRANSITION MAY BE GRADUAL.

PROJECT: 1601 W Street, NE		LOGGED BY: A. Arnold		BORING NUMBER: B-10	
LOCATION: Washington DC		DRILLING CONTRACTOR: Connelly & Associates Inc.		SHEET 1 OF 1	
OWNER/CLIENT: AMAR Group LLC		DRILLER: Jon L.		DATES DRILLED: 1/8/18 - 1/8/18	
PROJECT NUMBER: DC17053.01	GROUND SURFACE ELEVATION (ft.): NOT SURVEYED	DRILLING METHOD: 2.25 ID HSA; Automatic Hammer		DRILL RIG: CME 55	



GROUND WATER LEVELS: NOT ENCOUNTERED DURING DRILLING NOT ENCOUNTERED UPON COMPLETION 1/9/2018: NOT ENCOUNTERED	SAMPLE TYPES: <input checked="" type="checkbox"/> SPT
-------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------

REMARKS: Borehole grouted upon completion

BOREHOLE/TEST PIT 1601 W STREET, NE LOGS.GPJ GEOCONCEPTS 20170216.GDT 2/6/18



GIT Corporation
 14674-F Southlawn Lane,
 Rockville, MD 20850
 Telephone: (240) 505-8154

SUMMARY OF LABORATORY RESULTS

CLIENT GEI Consultants, Inc.

PROJECT NAME 1601 W ST NE Bus ermina

PROJECT NUMBER 1804446

PROJECT LOCATION 1601 W ST NE, Washington DC

Borehole	Depth(ft)	Liquid Limit	Plastic Limit	Plasticity Index	Maximum Size (mm)	Saturation (%)	%<#200 Sieve	Classification	Water Content (%)	Dry Density (pcf)	Void Ratio
B-01	5-6.5	32	26	6					18.8		
B-01	8.5-10				19		33				
B-01	18.5	64	42	22					21.2		
B-01	38.5-40	59	46	13					22.6		
G-1	Bulk	34	23	11	37.5		50	CL	16.7		



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 Telephone: (240) 505-8154

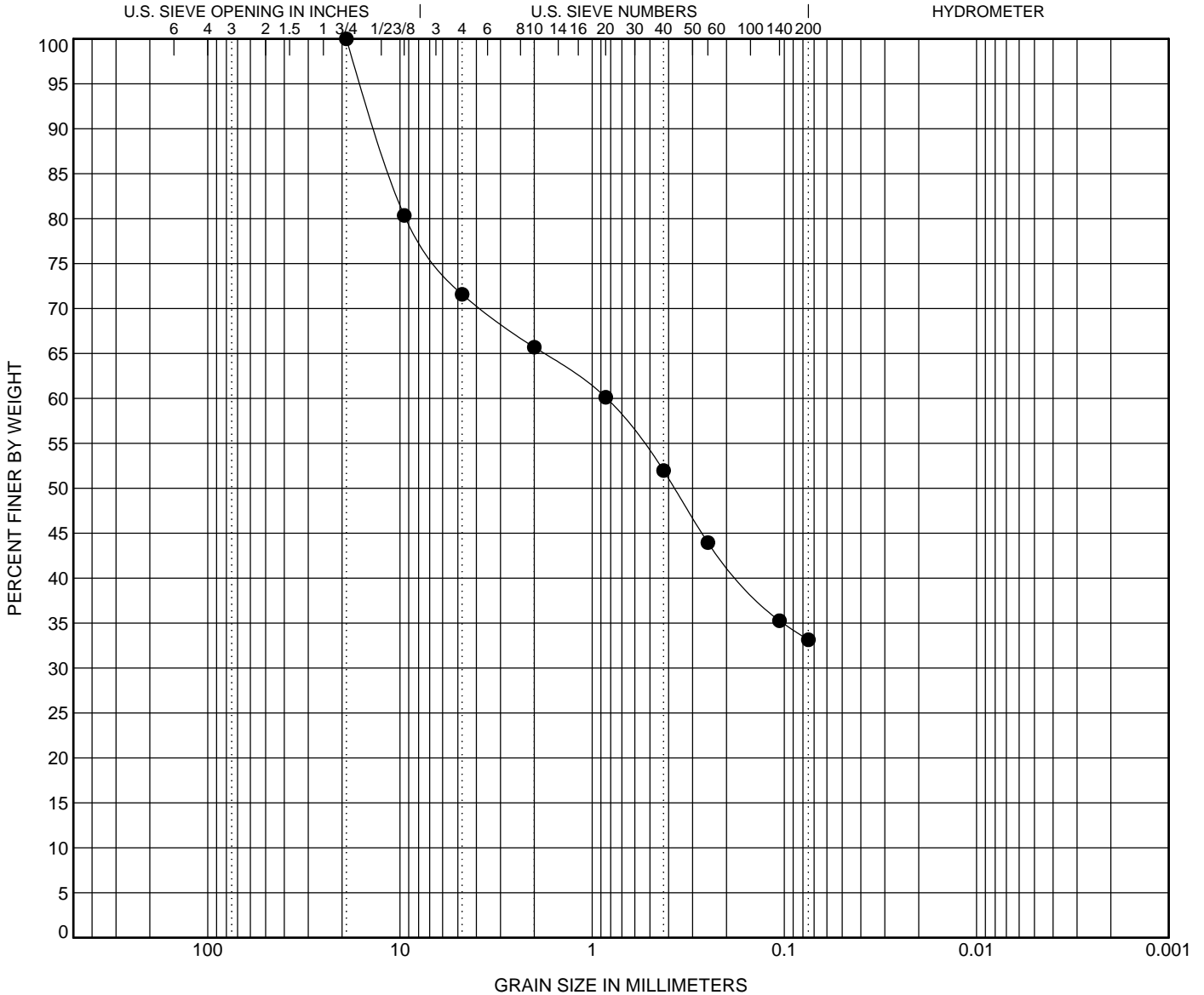
GRAIN SIZE DISTRIBUTION ASTM D422

CLIENT GEI Consultants, Inc.

PROJECT NAME 1601 W ST NE Bus ermina

PROJECT NUMBER 1804446

PROJECT LOCATION 1601 W ST NE, Washington DC

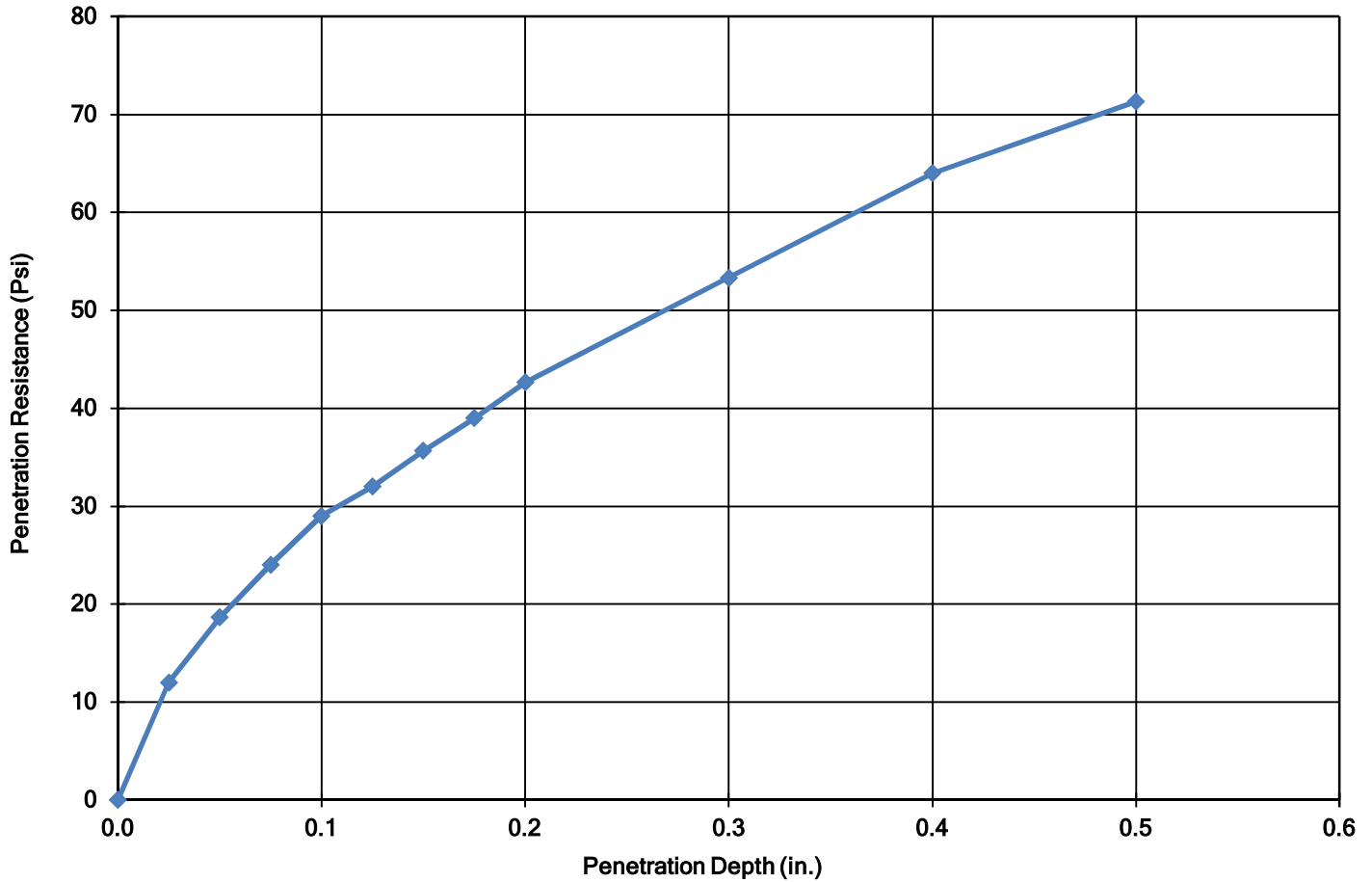


COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SAMPLE No.	DEPTH(ft)	Classification					LL	PL	PI	Cc	Cu
● B-01	8.5-10										
SAMPLE No.	DEPTH(ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
● B-01	8.5-10	19	0.841			28.4	38.4	33.1			

GRAIN SIZE - GINT STD US LAB.GDT - 3/21/19 11:20 - C:\USERS\BENTLEY\GINT\PROJECTS\1601 W ST. NE BUS TERMINAL.GPJ

California Bearing Ratio (CBR) ASTM D 1883-16



Sample No.: G-1		Source:	G-1
Description: brown Sandy Lean Clay			
Classification: (CL), A-6(3)		Remark:	
Maximum Dry Density (pcf)	114.0		
Opt. Moisture Content (%)	16.5	CBR @ 0.1"	2.9
Natural Moisture Content	16.7	CBR @ 0.2"	2.8
Liquid Limit (LL)	34		
Plastic Limit (PL)	23	Dry Density as Molded	113.8
Plasticity Index (PI)	11	Molded Moisture Content	16.7
Liquidity Index (LI)	-	Percent of Maximum Density	99.0
Percent Retained 3/4" Sieve	3.1	Moisture Content +/- Opt	0.2
Percent Retained No. 4 Sieve	12.1	Percent (%)Swell	0.3
Percent Passing No.200 Sieve	50.3		

Client: GEI Consultants, Inc.

Project: 1601 W ST NE Bus ermina

Project No.: 1804446

Date: 3/15/2019

California Bearing Ratio Curves



GIT Corporation
 14674-F Southlawn Lane,
 Rockville, MD 20850
 Telephone: (240) 505-8154

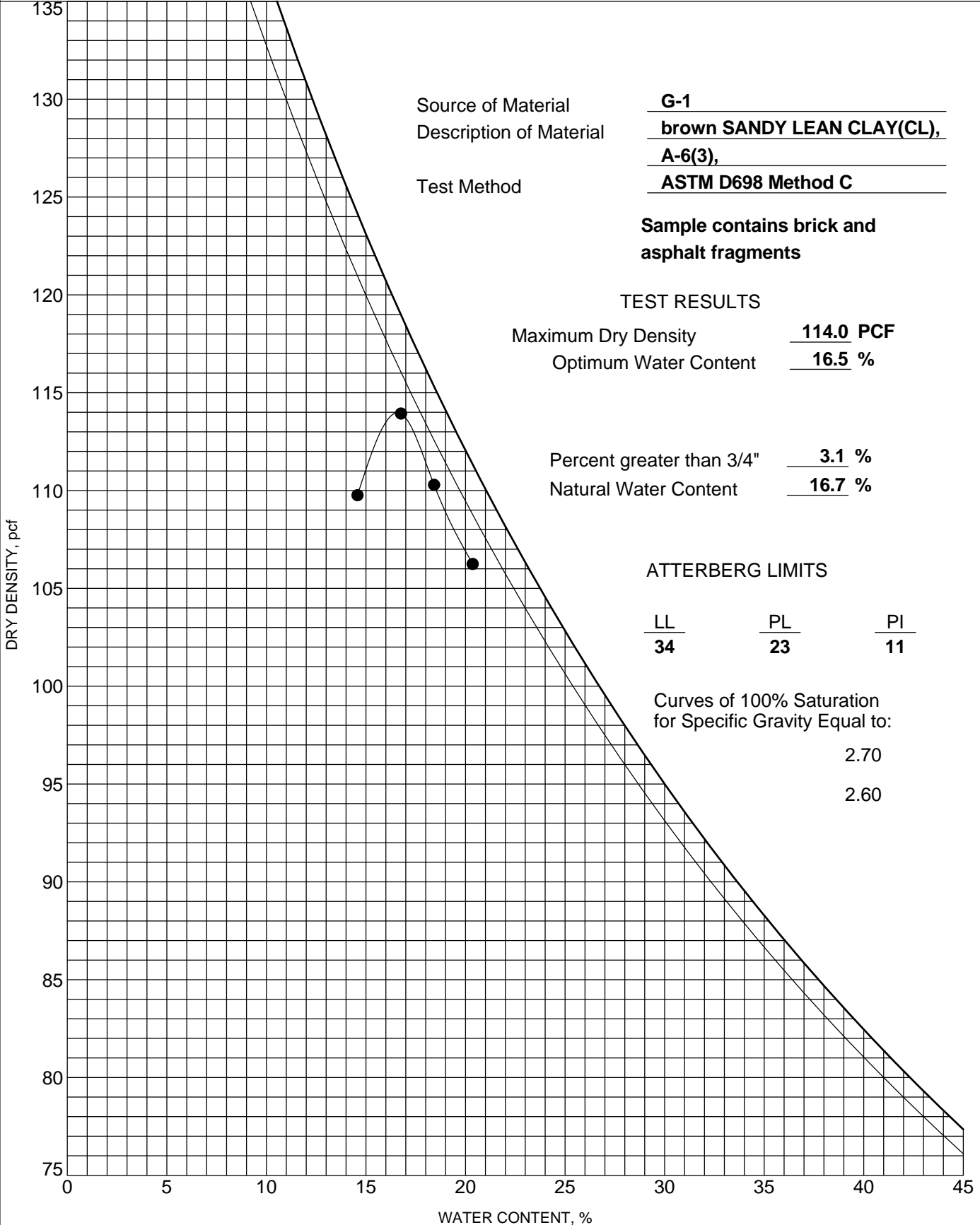
MOISTURE-DENSITY RELATIONSHIP ASTM D698 - 12e2

CLIENT GEI Consultants, Inc.

PROJECT NAME 1601 W ST NE Bus ermina

PROJECT NUMBER 1804446

PROJECT LOCATION 1601 W ST NE, Washington DC



Source of Material G-1
 Description of Material brown SANDY LEAN CLAY(CL),
 A-6(3),
 Test Method ASTM D698 Method C

**Sample contains brick and
 asphalt fragments**

TEST RESULTS

Maximum Dry Density 114.0 PCF
 Optimum Water Content 16.5 %

Percent greater than 3/4" 3.1 %
 Natural Water Content 16.7 %

ATTERBERG LIMITS

LL	PL	PI
<u>34</u>	<u>23</u>	<u>11</u>

Curves of 100% Saturation
 for Specific Gravity Equal to:
 2.70
 2.60

COMPACTION - GINT STD US LAB.GDT - 3/21/19 11:37 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\1601 W ST. NE BUS TERMINAL.GPJ



GIT Corporation
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 Telephone: (240) 505-8154

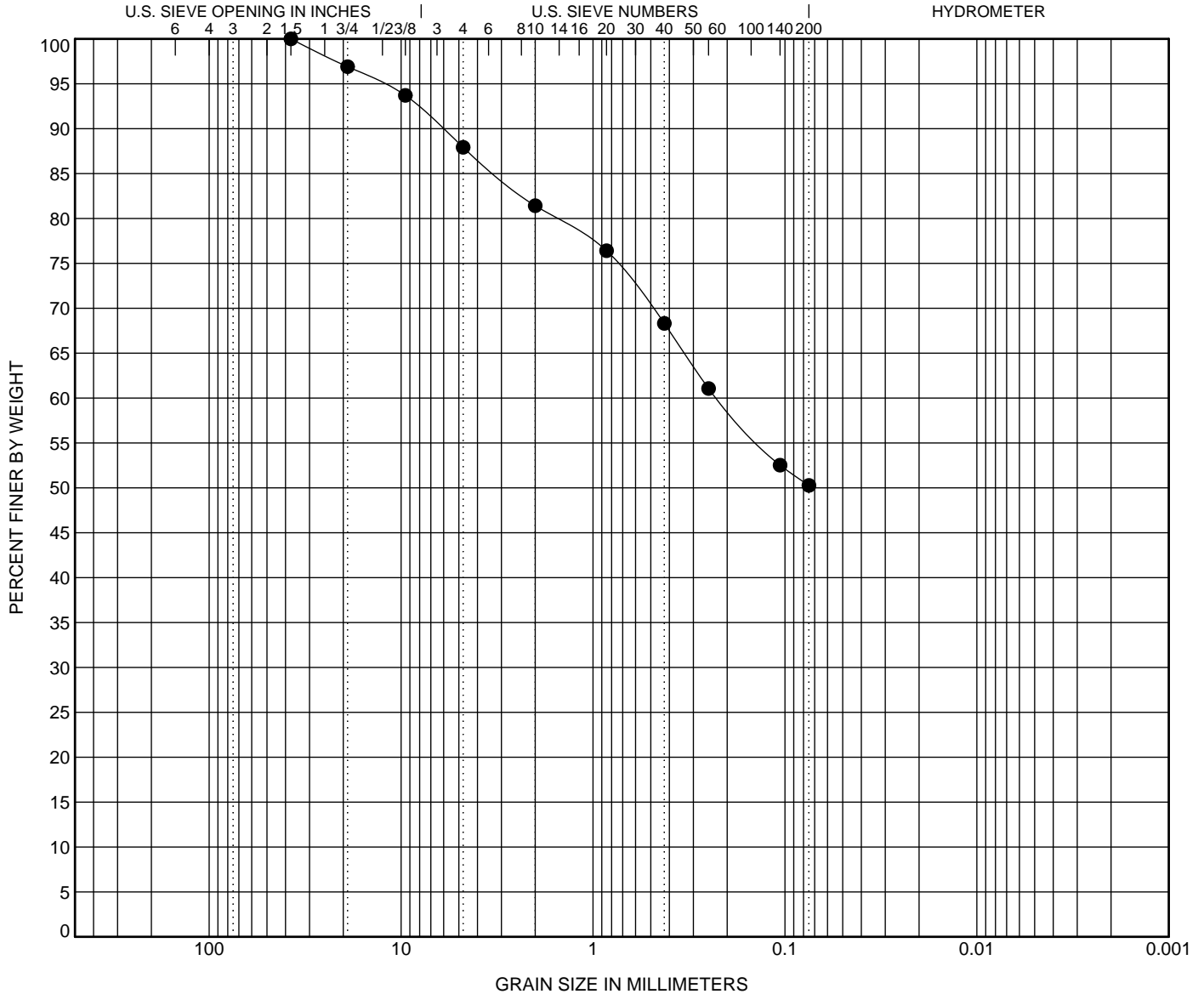
GRAIN SIZE DISTRIBUTION ASTM D422

CLIENT GEI Consultants, Inc.

PROJECT NAME 1601 W ST NE Bus ermina

PROJECT NUMBER 1804446

PROJECT LOCATION 1601 W ST NE, Washington DC



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

SAMPLE No.	DEPTH(ft)	Classification	LL	PL	PI	Cc	Cu
● G-1	Bulk	brown SANDY LEAN CLAY(CL), A-6(3)	34	23	11		

SAMPLE No.	DEPTH(ft)	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● G-1	Bulk	37.5	0.225			12.1	37.6	50.3	

GRAIN SIZE - GINT STD. US LAB.GDT - 3/21/19 11:33 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\1601 W ST. NE BUS TERMINAL.GPJ



CTL Engineering Inc.
 7655 Coppermine Drive
 Manassas, Virginia 20109

Moisture Content Worksheet

ASTM D2216

Project Name: W Street NE Parking Lot

Project Number: 18020003VIR-A

Date: 01/23/18

Reviewed by: MS

Sample ID	B-9	B-1						
Depth (ft)	30.0-31.9	25-27						
Sample Type	UD	UD						
Moisture Content (%)	26.9	17.2						

SUMMARY OF LABORATORY TESTING

W ST. NE PARKING LOT

PROJECT NO.	DC17053.01	SAMPLE DATE	-	JAY KAY TESTING, INC.
SAMPLES:	24	LOCATION:	-	5233 Lehman Road, Suite 110
REPORT:	01/23/18	REMARKS:	-	Spring Grove, PA 17362
				Phone: (410) 259-5101

BORING	SAMPLE	DEPTH	MC %	OM %	LL	PL	PI	% FINES	USCS
B-2	S-3	5.0-6.5	27.2	-	35	20	15	75.3	CL
B-2	S-7	23.5-25.0	24.2	-	83	23	60	99.6	CH
B-3	Bulk	1.0-5.0	8.0	-	35	20	15	30.1	SC
B-3	-	5.0-6.5	22.4	-	-	-	-	-	-
B-3	-	8.5-10.0	65.7	-	-	-	-	-	-
B-4	Bulk	5.0-10.0	28.4	-	80	22	58	97.8	CH
B-4	S-4	8.5-10.0	21.7	-	-	-	-	-	-
B-4	S-6	18.5-20.0	15.2	-	37	19	18	87.3	CL
B-4	S-8	28.5-30.0	21.8	-	-	-	-	-	-
B-5	-	2.5-4.0	23.0	-	-	-	-	-	-
B-5	-	5.0-6.5	25.9	-	-	-	-	-	-
B-6	-	2.5-4.0	25.8	-	-	-	-	-	-
B-7	-	2.5-4.0	16.2	-	-	-	-	-	-
B-7	-	8.5-10.0	20.1	-	42	18	24	62.3	CL
B-8	Bulk	1.0-5.0	13.0	-	38	20	18	39.4	SC
B-8	-	5.0-5.8	17.8	-	-	-	-	-	-
B-8	-	8.5-10.0	21.6	-	-	-	-	-	-
B-9	S-4	8.5-10.0	19.8	-	-	-	-	-	-
B-9	S-6	18.5-20.0	20.8	-	43	21	22	99.8	CL
B-9	S-9	43.5-45.0	23.2	-	72	22	50	98.0	CH
B-10	S-3	5.0-6.5	19.7	-	-	-	-	-	-
B-10	S-5	13.5-15.0	15.9	-	24	17	7	75.6	CL-ML
B-10	S-9	33.5-35.0	24.1	-	85	22	63	96.0	CH
B-10	S-11	43.5-45.0	25.9	-	-	-	-	-	-

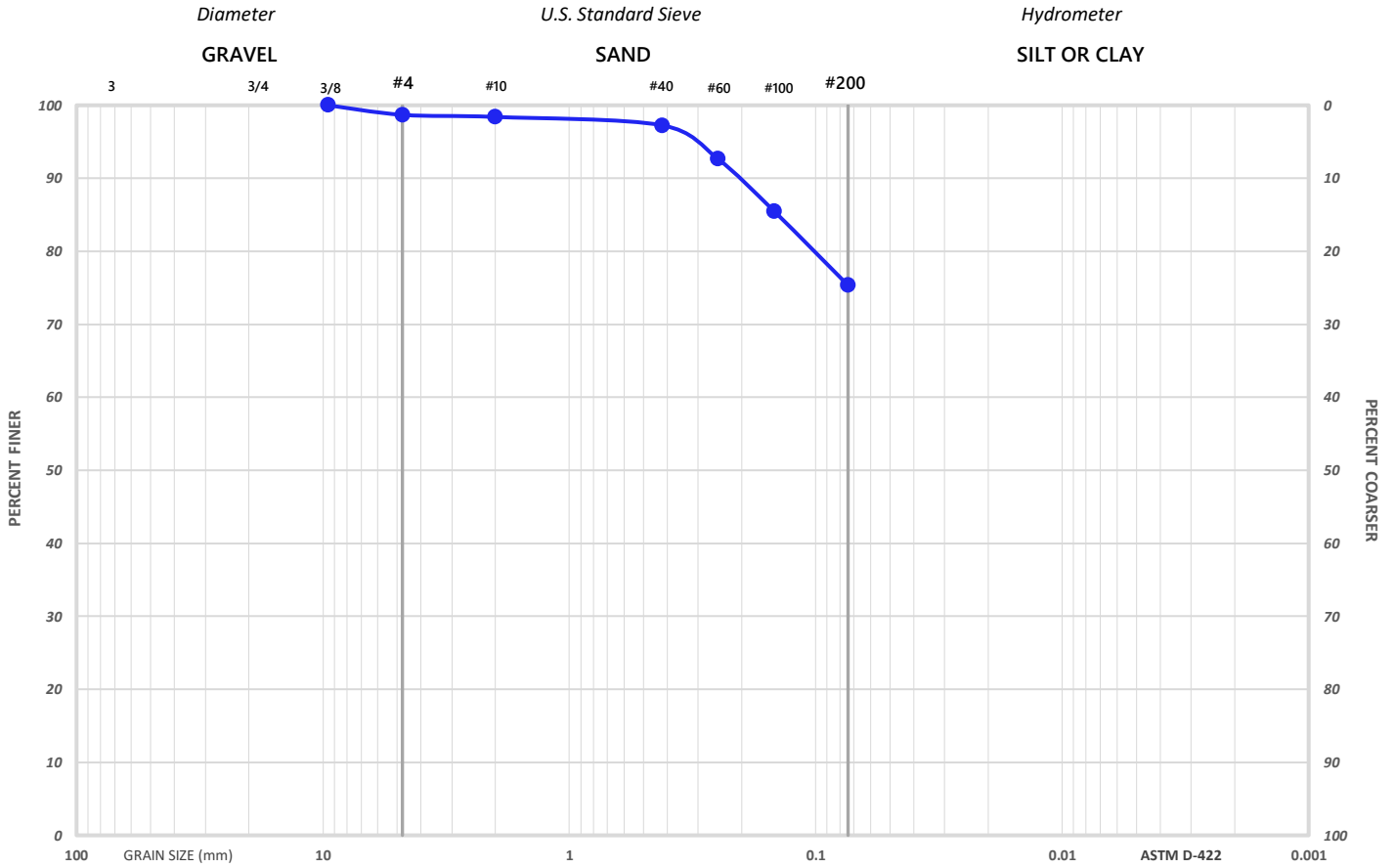
Jay Kay Testing, Inc. (AASHTO-Accredited)

W ST. NE PARKING LOT

Boring: **B-2**
 Sample: **S-3**
 Depth: **5.0-6.5'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	-	100.0	98.7	98.4	97.3	92.7	85.4	75.3

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
1.3	23.4	-	1.3	0.3	1.1	22.0	-	-

Moisture Content: 27.2
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

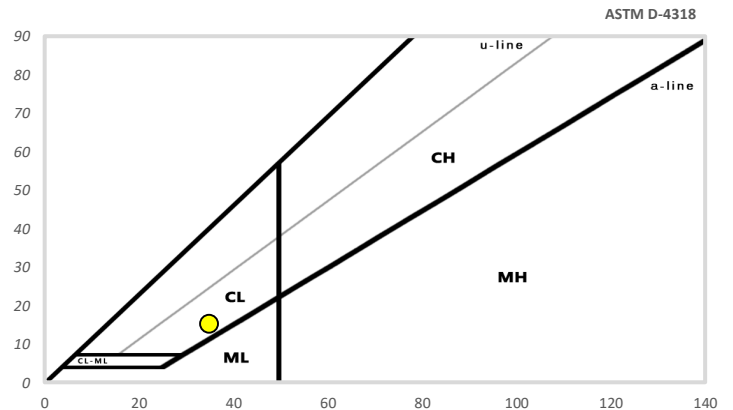
Liquid Limit: 35
 Plastic Limit: 20
 Plasticity Index: 15

CLASSIFICATION

AASHTO: A-6
 USCS: CL

SOIL DESCRIPTION

Dark brown lean CLAY with sand

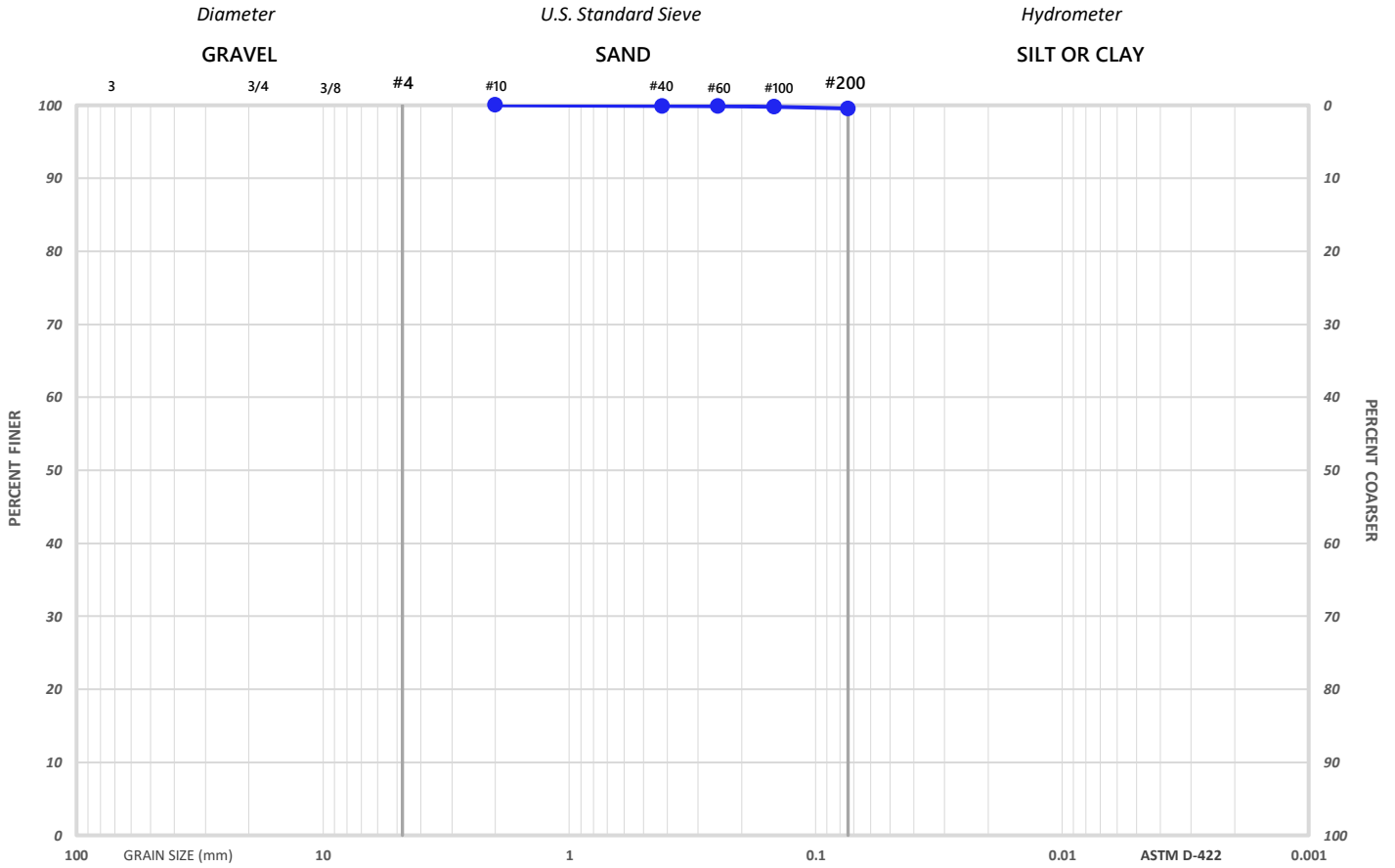


W ST. NE PARKING LOT

Boring: **B-2**
 Sample: **S-7**
 Depth: **23.5-25.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	-	-	-	100.0	99.9	99.9	99.8	99.6

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
-	0.4	-	-	-	0.1	0.3	-	-

Moisture Content: 24.2
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

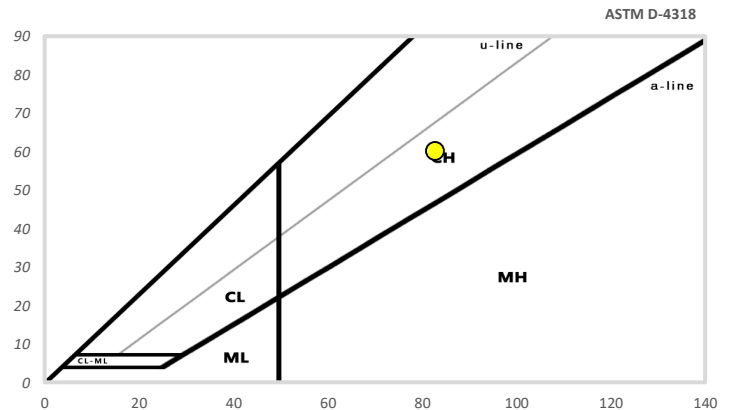
Liquid Limit: 83
 Plastic Limit: 23
 Plasticity Index: 60

CLASSIFICATION

AASHTO: A-7-6
 USCS: CH

SOIL DESCRIPTION

Reddish brown fat CLAY

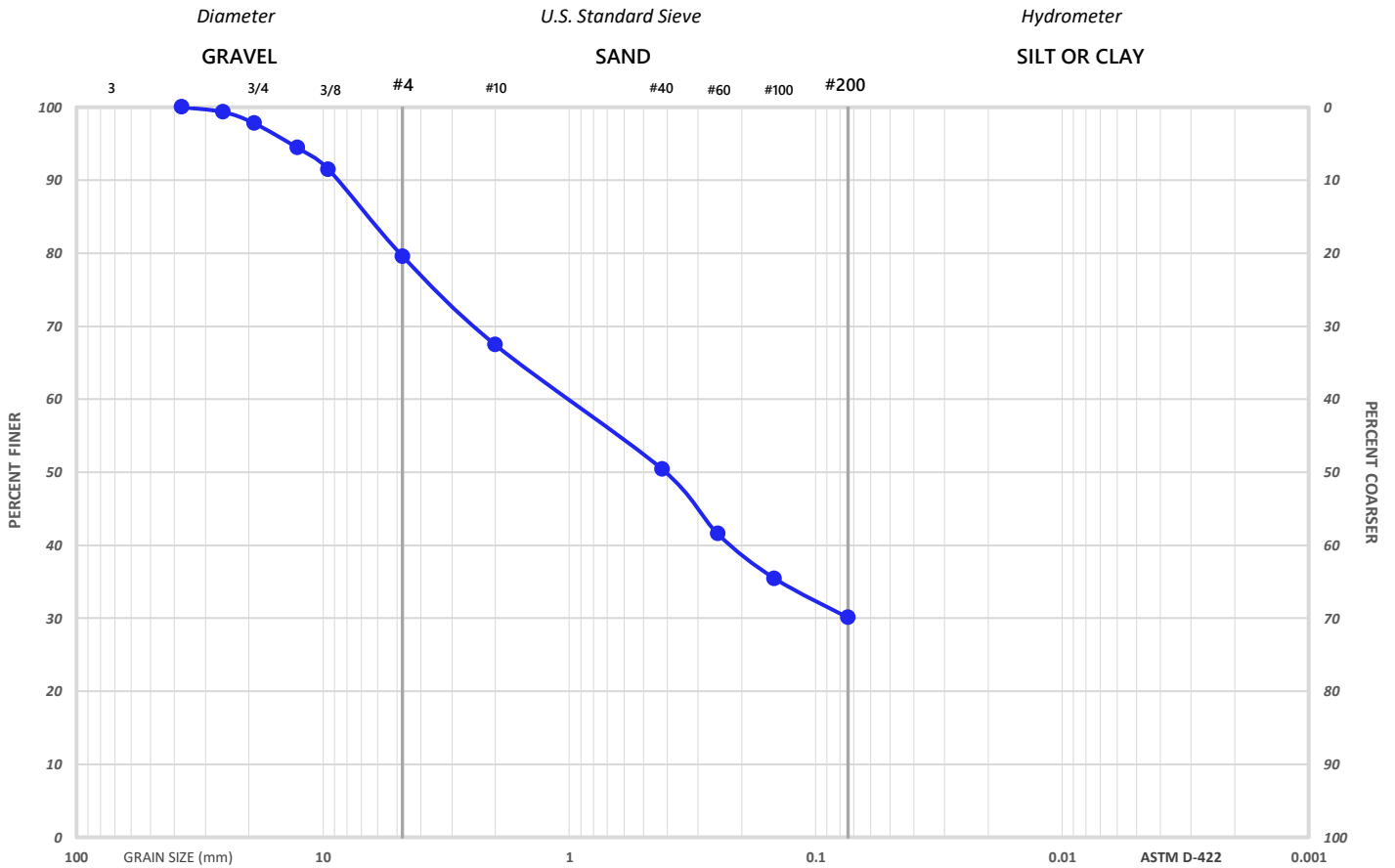


W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	100.0	99.3	97.8	94.4	91.5	79.6	67.5	50.4	41.6	35.4	30.1

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
20.4	49.5	2.2	18.2	12.1	17.1	20.3	-	-

Moisture Content: 8.0
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

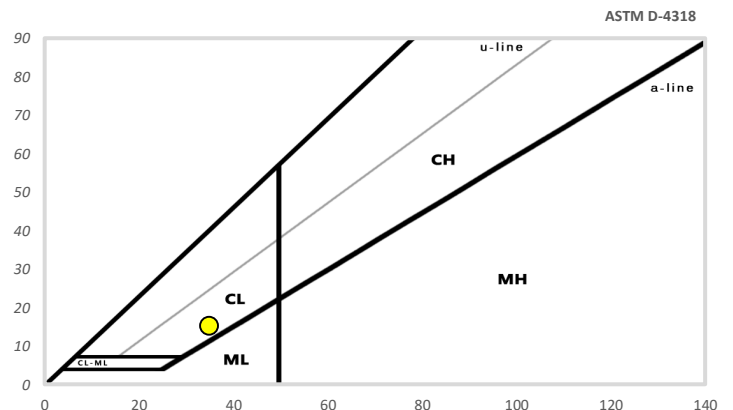
Liquid Limit: 35
 Plastic Limit: 20
 Plasticity Index: 15

CLASSIFICATION

AASHTO: A-2-6
 USCS: SC

SOIL DESCRIPTION

Dark grayish brown clayey SAND with gravel

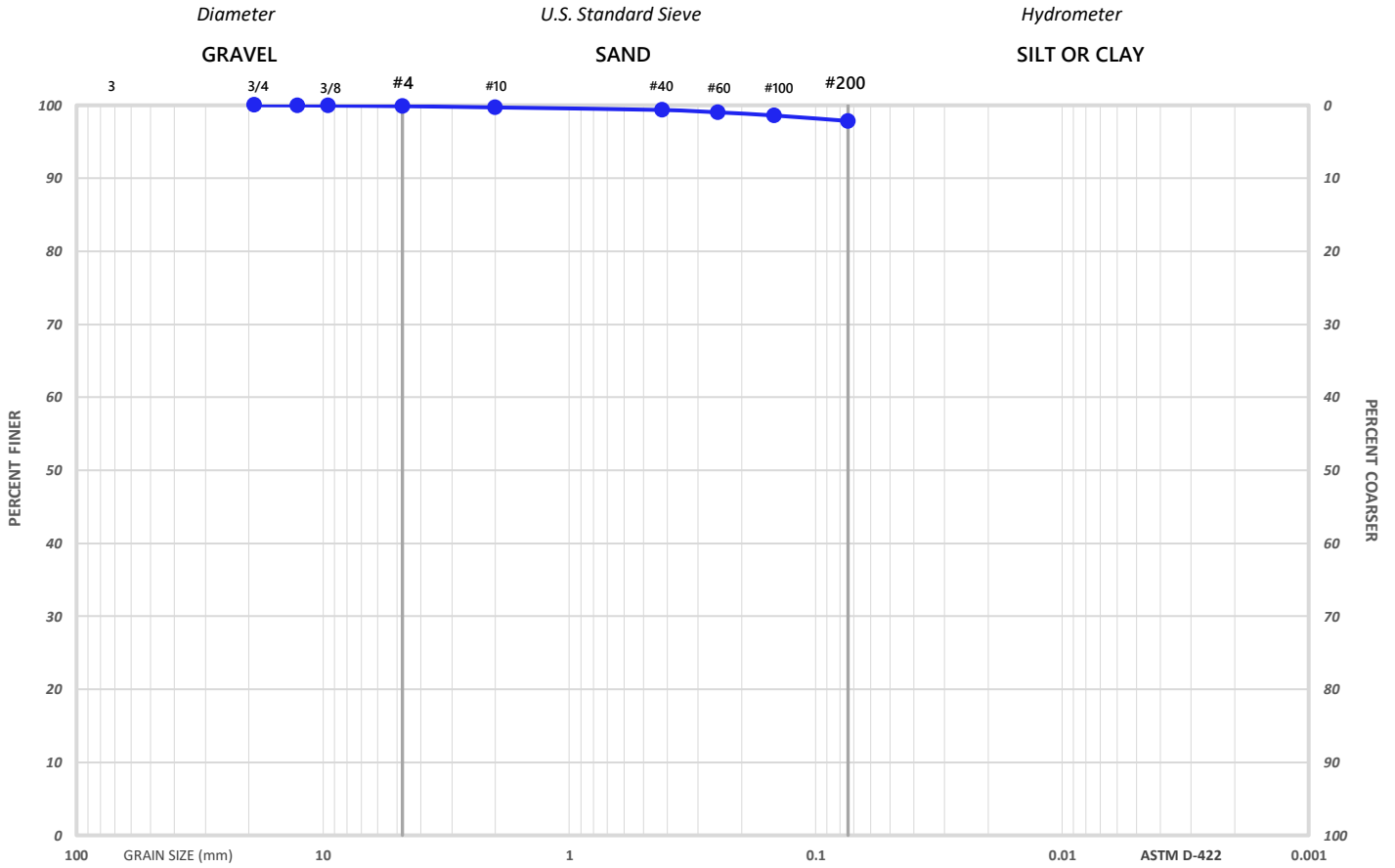


W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	100.0	99.9	99.9	99.9	99.7	99.4	99.0	98.6	97.8

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
0.1	2.1	-	0.1	0.2	0.3	1.6	-	-

Moisture Content: 28.4
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

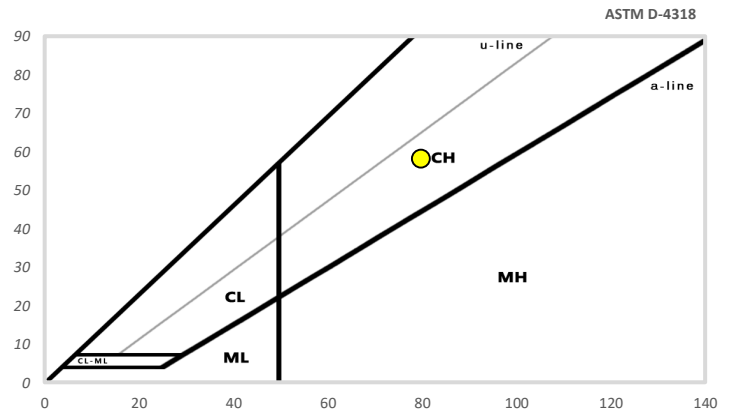
Liquid Limit: 80
 Plastic Limit: 22
 Plasticity Index: 58

CLASSIFICATION

AASHTO: A-7-6
 USCS: CH

SOIL DESCRIPTION

Red fat CLAY

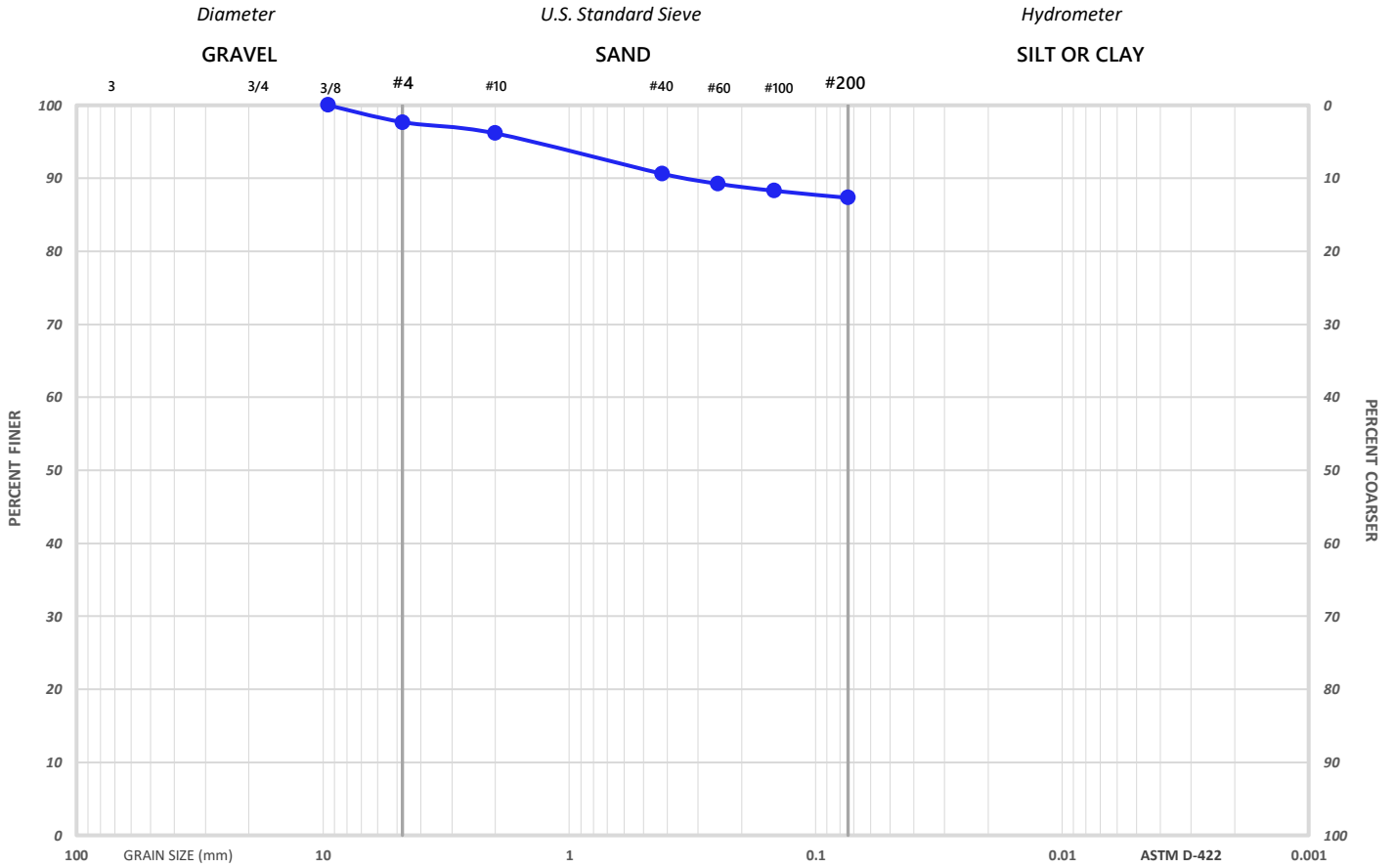


W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **S-6**
 Depth: **18.5-20.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

<i>Diameter</i>	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
<i>Sieve Size</i>	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
<i>% Passing</i>	-	-	-	-	-	-	100.0	97.7	96.2	90.6	89.3	88.3	87.3

% GRAVEL	% SAND	<i>Coarse Gravel</i>	<i>Fine Gravel</i>	<i>Coarse Sand</i>	<i>Medium Sand</i>	<i>Fine Sand</i>	CC	CU
2.3	10.4	-	2.3	1.5	5.6	3.3	-	-

Moisture Content: 15.2
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

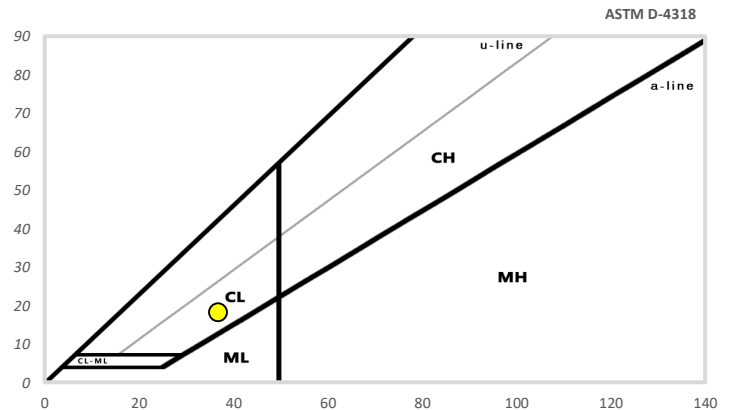
Liquid Limit: 37
 Plastic Limit: 19
 Plasticity Index: 18

CLASSIFICATION

AASHTO: A-6
 USCS: CL

SOIL DESCRIPTION

Brown lean CLAY

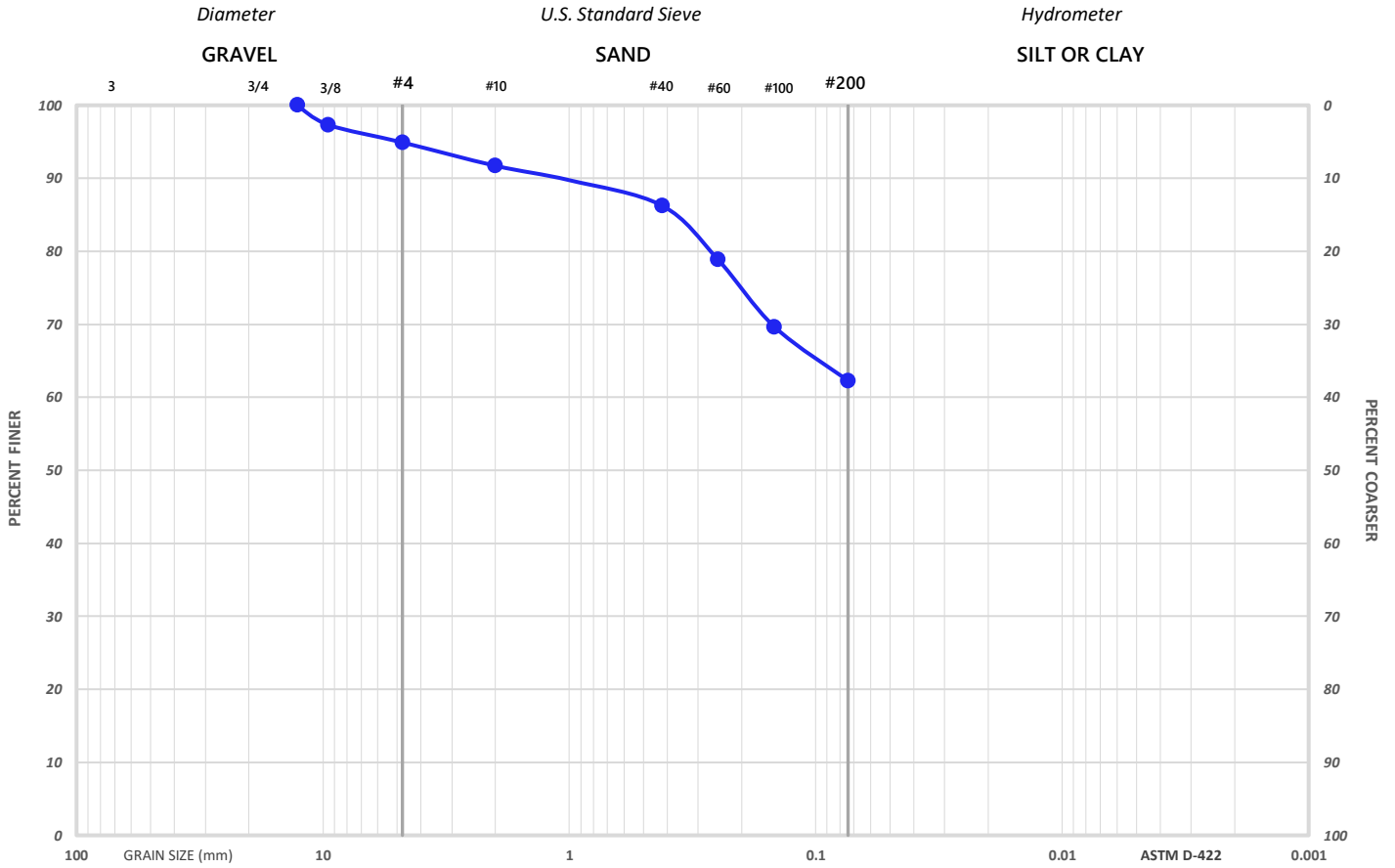


W ST. NE PARKING LOT

Boring: **B-7**
 Sample:
 Depth: **8.5-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	100.0	97.3	94.9	91.7	86.2	78.9	69.6	62.3

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
5.1	32.6	-	5.1	3.2	5.5	23.9	-	-

Moisture Content: 20.1
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

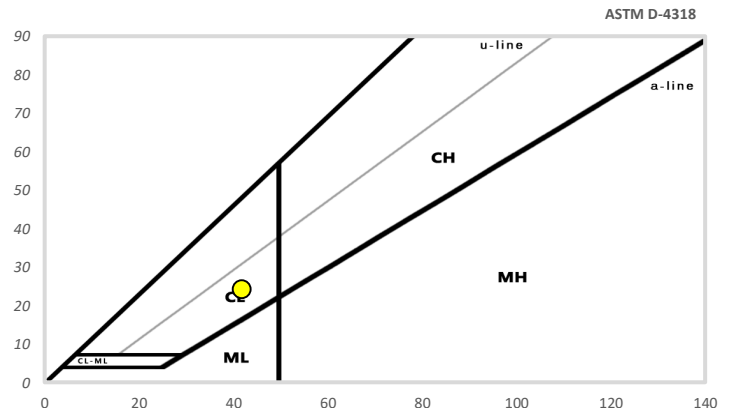
Liquid Limit: 42
 Plastic Limit: 18
 Plasticity Index: 24

CLASSIFICATION

AASHTO: A-7-6
 USCS: CL

SOIL DESCRIPTION

Brown sandy lean CLAY

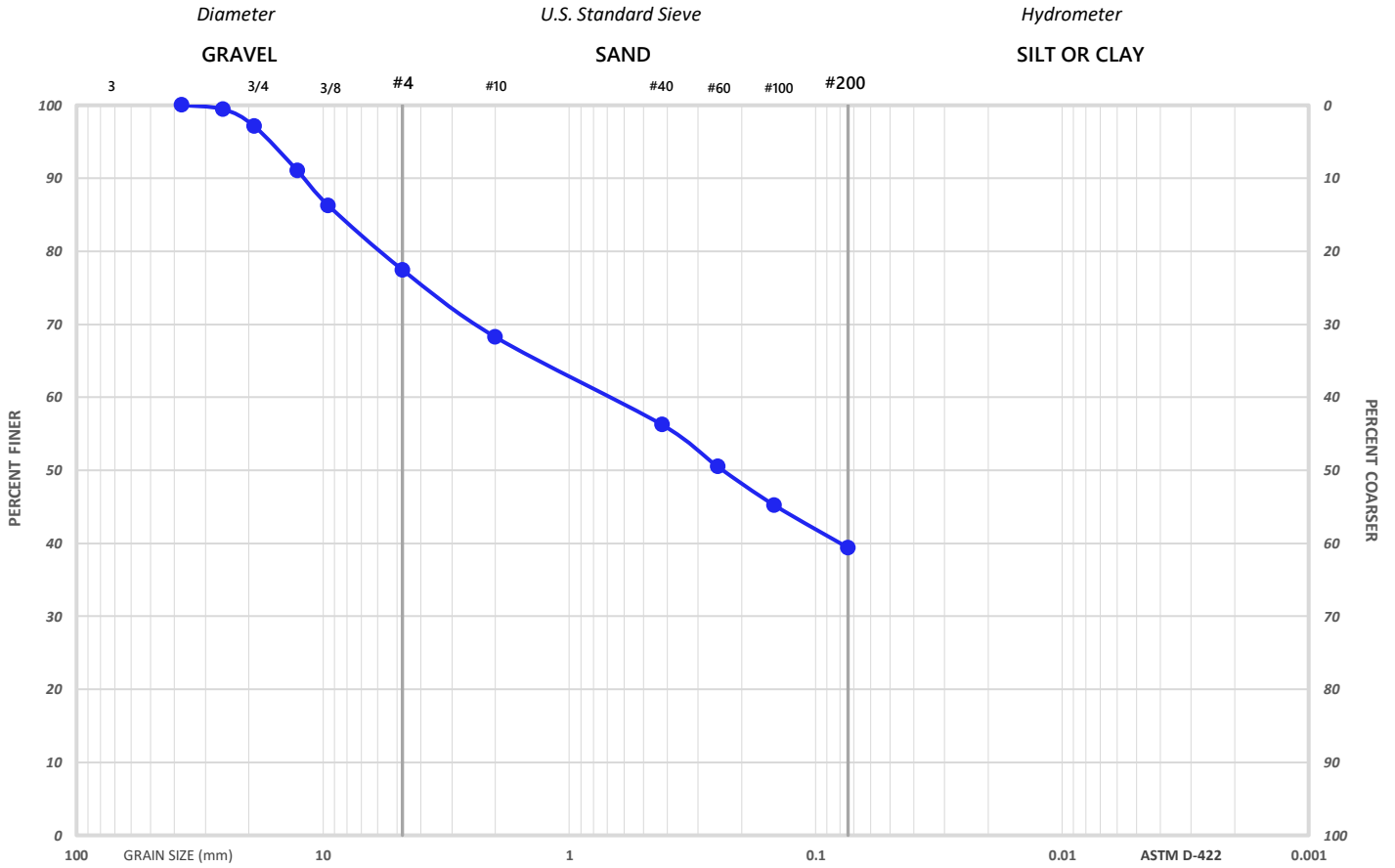


W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	100.0	99.5	97.1	91.0	86.3	77.4	68.3	56.2	50.5	45.2	39.4

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
22.6	38.0	2.9	19.7	9.1	12.1	16.8	-	-

Moisture Content: 13.0
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

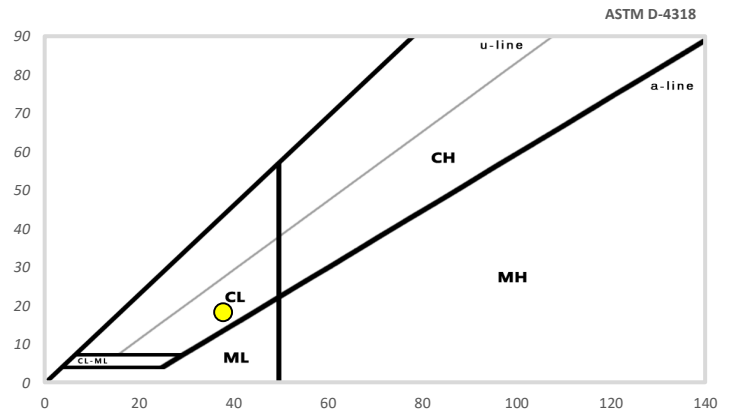
Liquid Limit: 38
 Plastic Limit: 20
 Plasticity Index: 18

CLASSIFICATION

AASHTO: A-6
 USCS: SC

SOIL DESCRIPTION

Brown clayey SAND with gravel

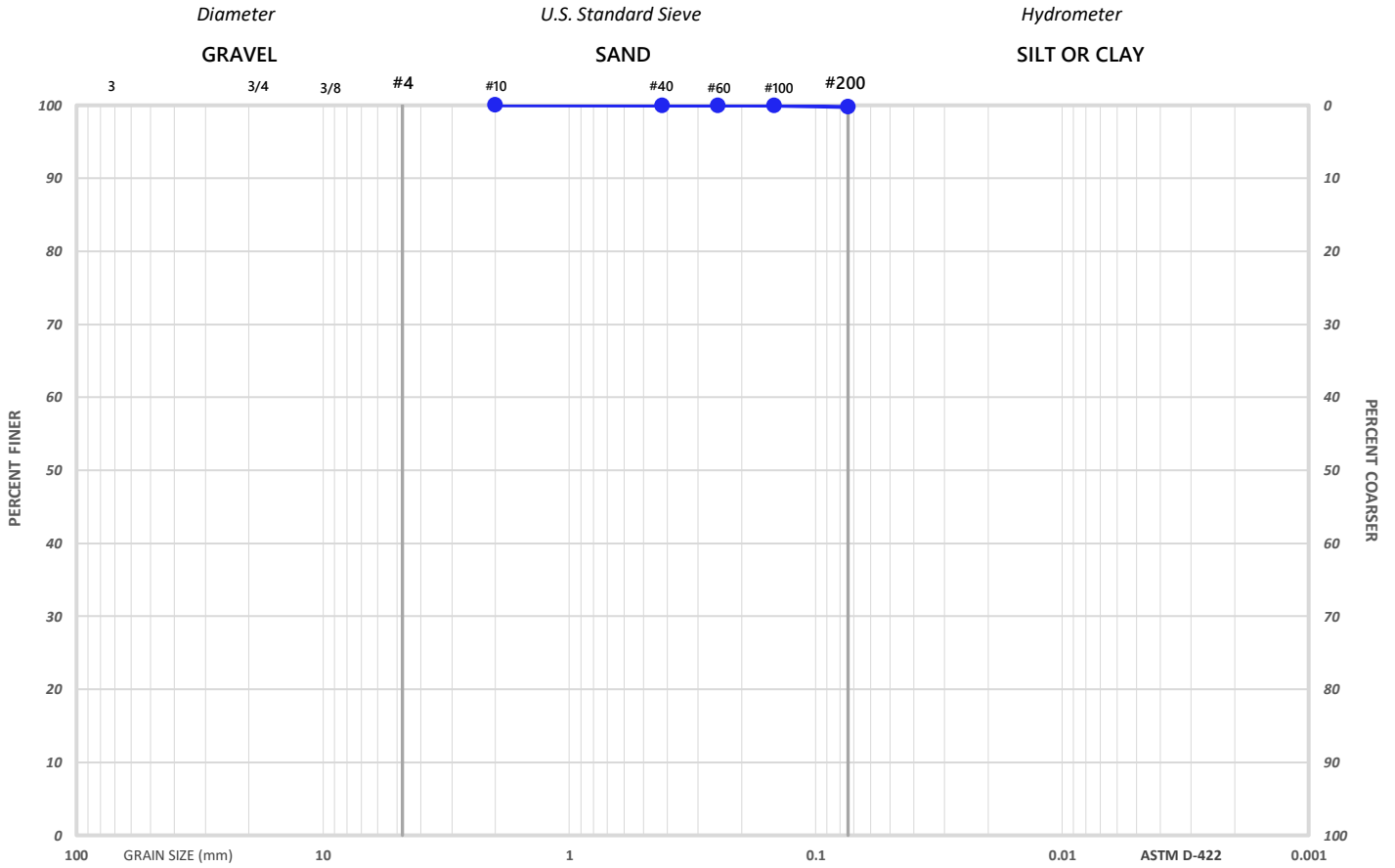


W ST. NE PARKING LOT

Boring: **B-9**
 Sample: **S-6**
 Depth: **18.5-20.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101



GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	-	-	-	100.0	99.9	99.9	99.9	99.8

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
-	0.2	-	-	-	0.1	0.1	-	-

Moisture Content: 20.8
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

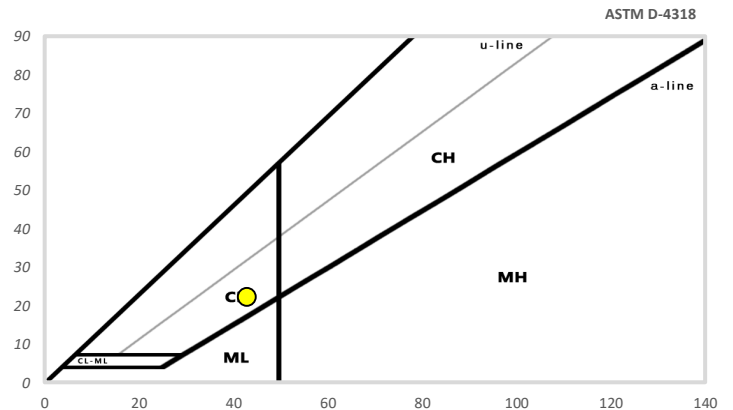
Liquid Limit: 43
 Plastic Limit: 21
 Plasticity Index: 22

CLASSIFICATION

AASHTO: A-7-6
 USCS: CL

SOIL DESCRIPTION

Light brown lean CLAY

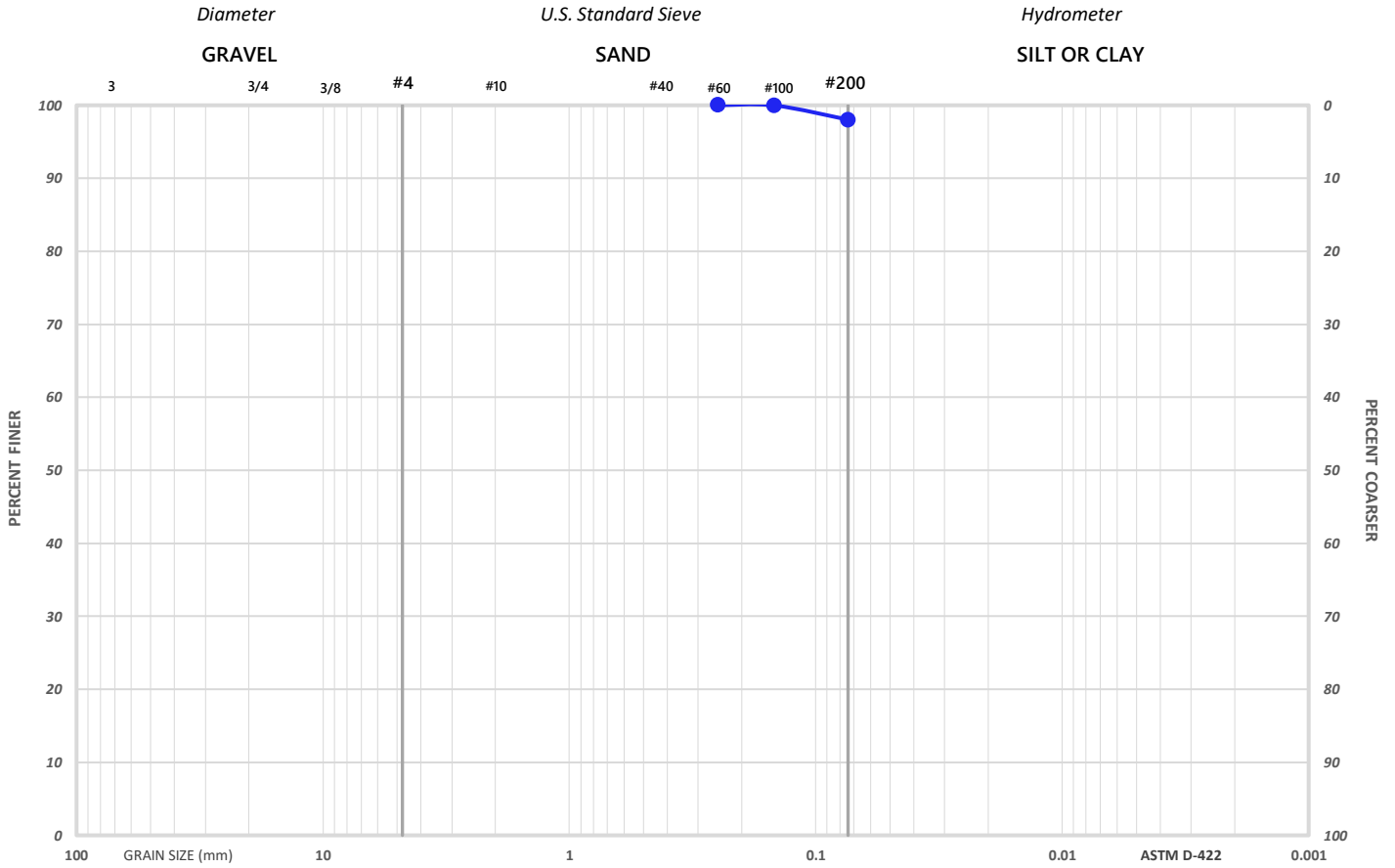


W ST. NE PARKING LOT

Boring: **B-9**
 Sample: **S-9**
 Depth: **43.5-45.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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 Spring Grove, PA 17362
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GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	-	-	-	-	-	100.0	99.9	98.0

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
-	2.0	-	-	-	-	2.0	-	-

Moisture Content: 23.2
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

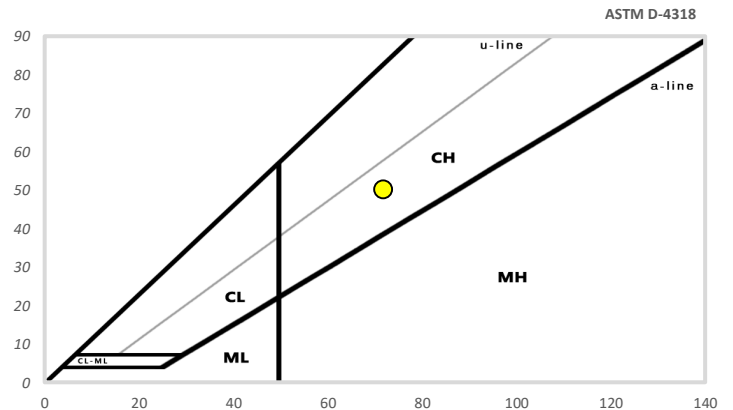
Liquid Limit: 72
 Plastic Limit: 22
 Plasticity Index: 50

CLASSIFICATION

AASHTO: A-7-6
 USCS: CH

SOIL DESCRIPTION

Bluish green fat CLAY

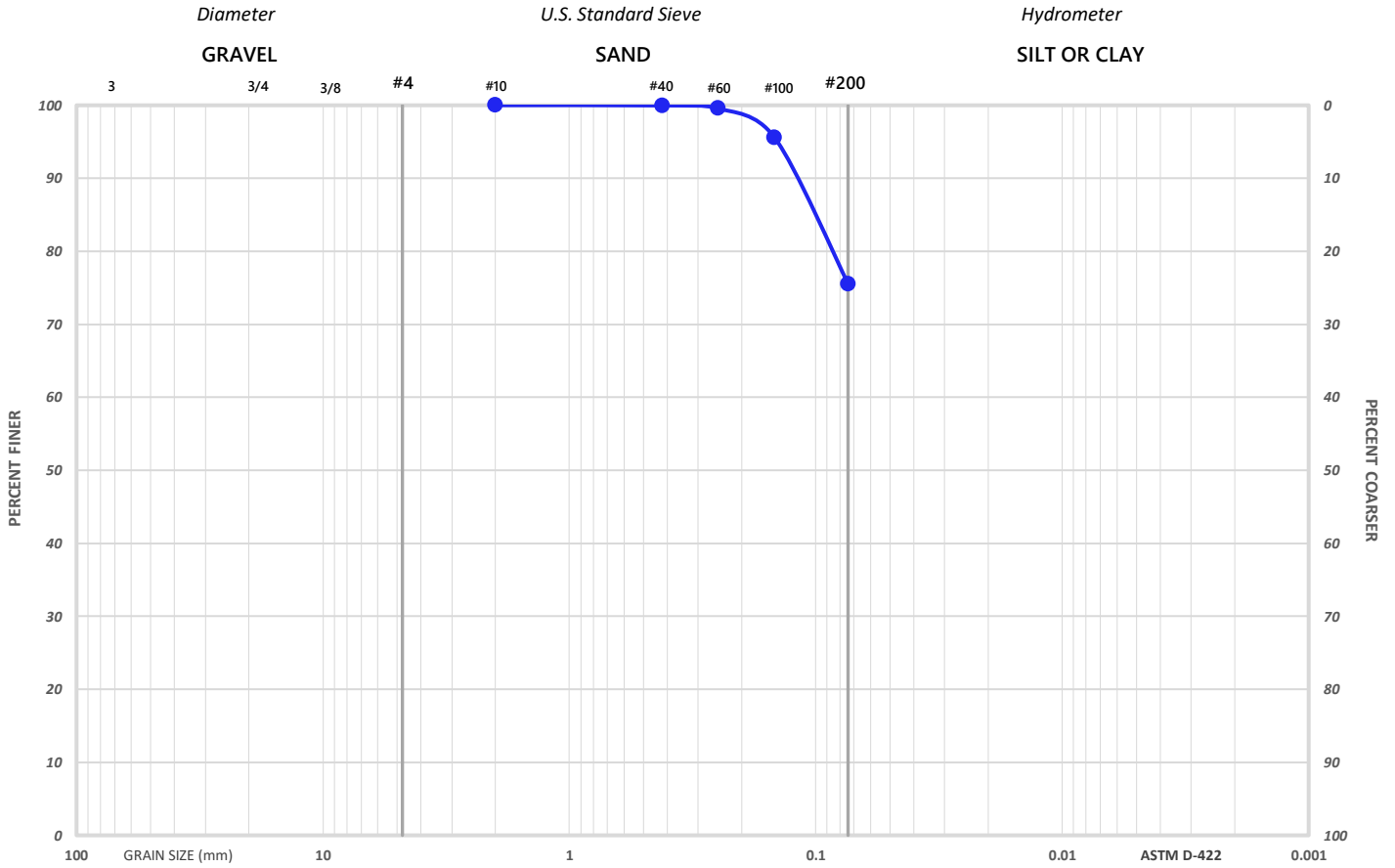


W ST. NE PARKING LOT

Boring: **B-10**
 Sample: **S-5**
 Depth: **13.5-15.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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GRAIN SIZE ANALYSIS

Diameter	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
Sieve Size	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
% Passing	-	-	-	-	-	-	-	-	100.0	99.9	99.6	95.6	75.6

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
-	24.4	-	-	-	0.1	24.3	-	-

Moisture Content: 15.9
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

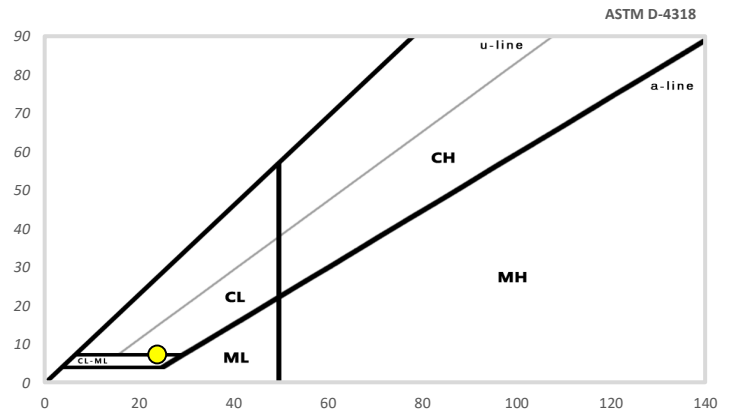
Liquid Limit: 24
 Plastic Limit: 17
 Plasticity Index: 7

CLASSIFICATION

AASHTO: A-4
 USCS: CL-ML

SOIL DESCRIPTION

Light gray SILTY CLAY with sand

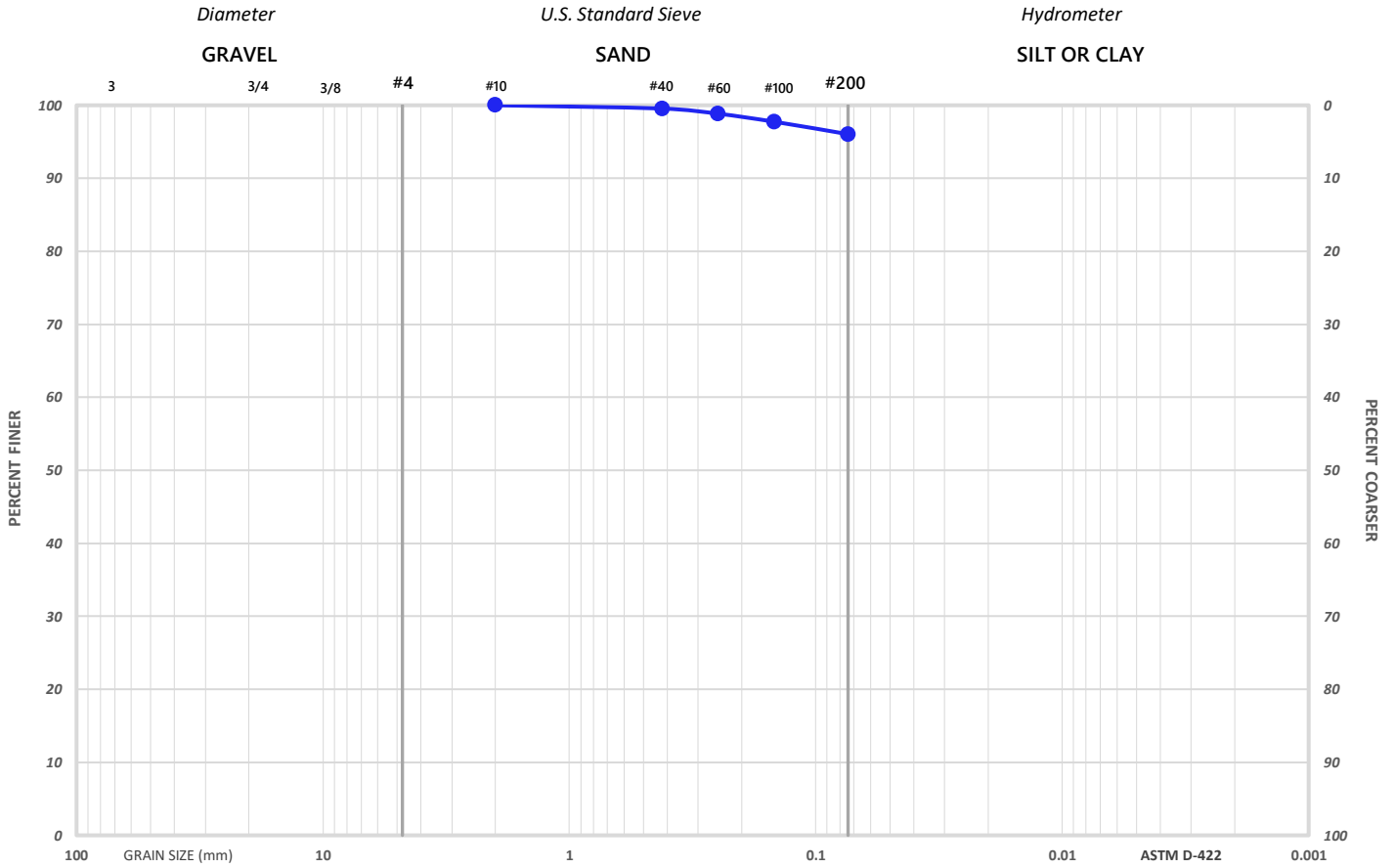


W ST. NE PARKING LOT

Boring: **B-10**
 Sample: **S-9**
 Depth: **33.5-35.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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GRAIN SIZE ANALYSIS

<i>Diameter</i>	75.0	50.8	37.5	25.4	19.0	12.7	9.51	4.75	2.0	0.42	0.25	0.147	0.074
<i>Sieve Size</i>	3"	2"	1.5"	1"	3/4"	1/2"	3/8"	#4	#10	#40	#60	#100	#200
<i>% Passing</i>	-	-	-	-	-	-	-	-	100.0	99.6	98.9	97.7	96.0

% GRAVEL	% SAND	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	CC	CU
-	4.0	-	-	-	0.4	3.6	-	-

Moisture Content: 24.1
 pH: -

Organic Content: -
 Other: -

ATTERBERG LIMITS

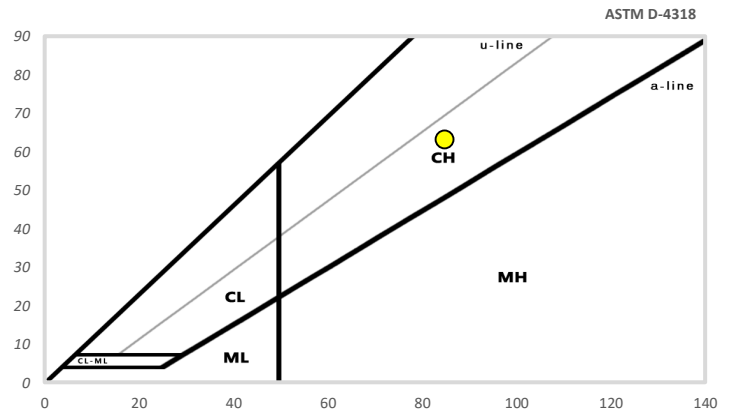
Liquid Limit: 85
 Plastic Limit: 22
 Plasticity Index: 63

CLASSIFICATION

AASHTO: A-7-6
 USCS: CH

SOIL DESCRIPTION

Reddish brown fat CLAY



W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

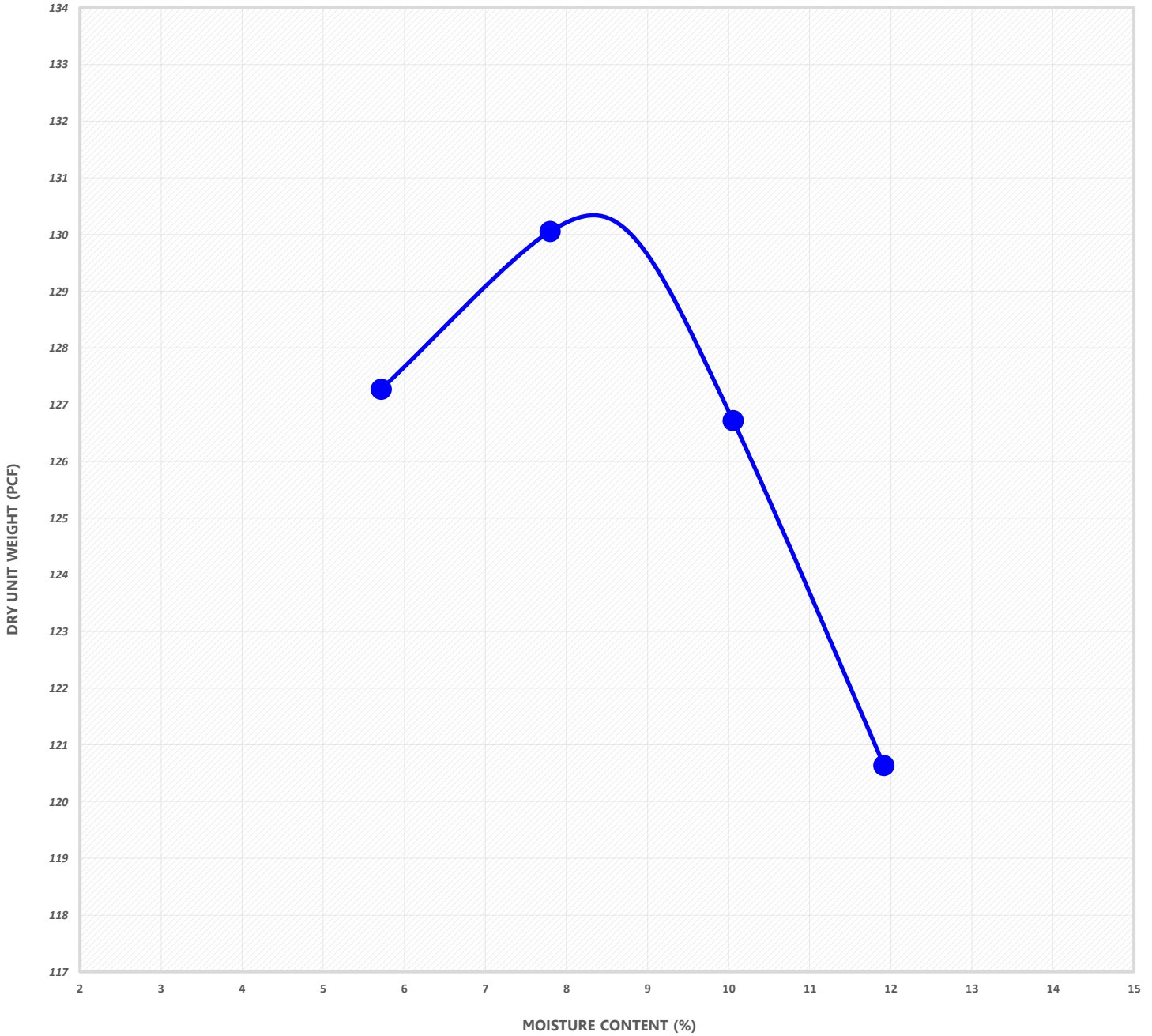
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MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (B)

*Corrected for 8.5% retained on 3/8" sieve

	UNCORRECTED		CORRECTED *
Maximum Dry Unit Weight	130.3	PCF	132.5
Optimum Moisture Content	8.3	MC	7.8



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
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MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (A)

MAXIMUM DRY UNIT WEIGHT

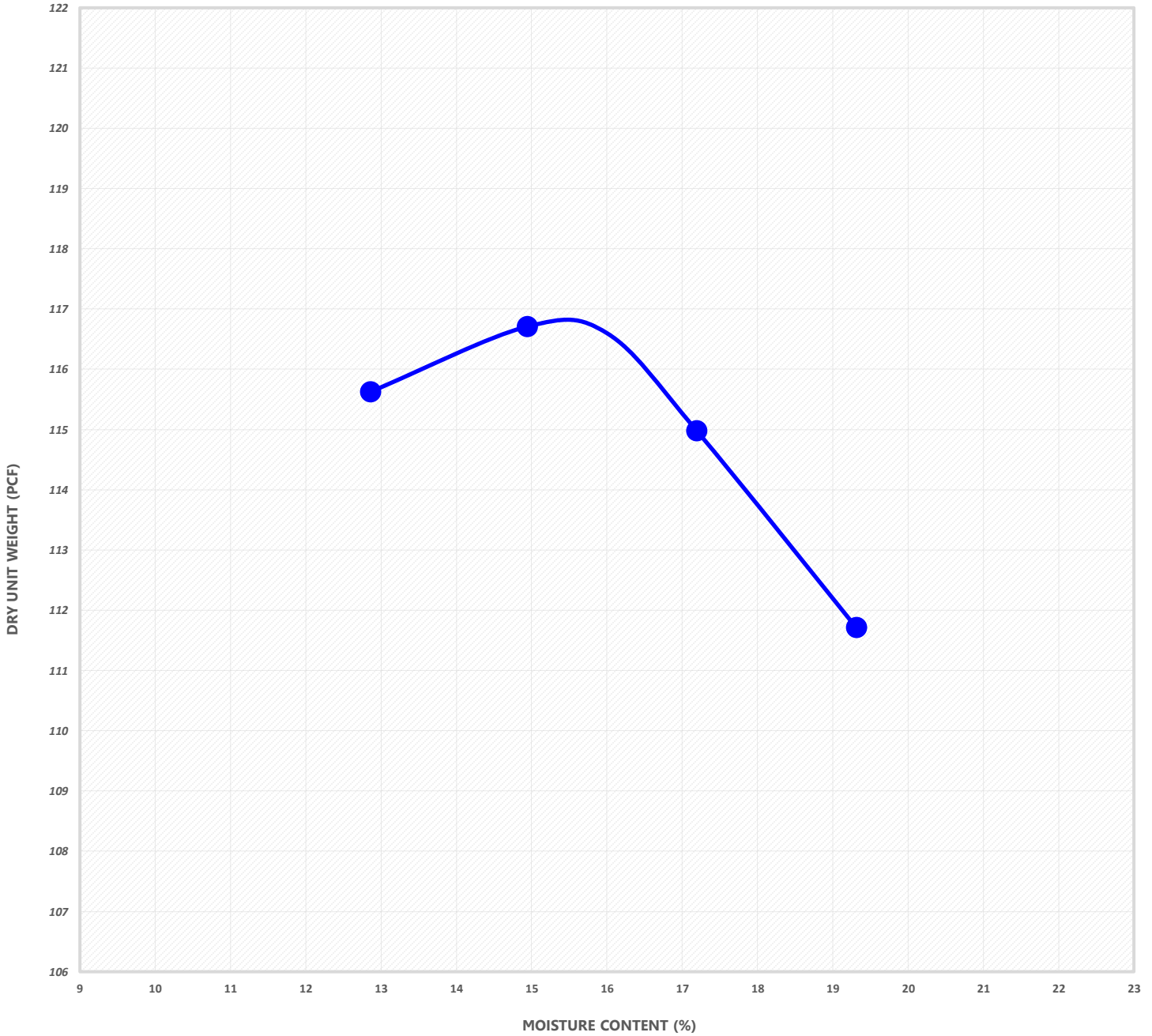
116.8

PCF

OPTIMUM MOISTURE CONTENT

15.6

%



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

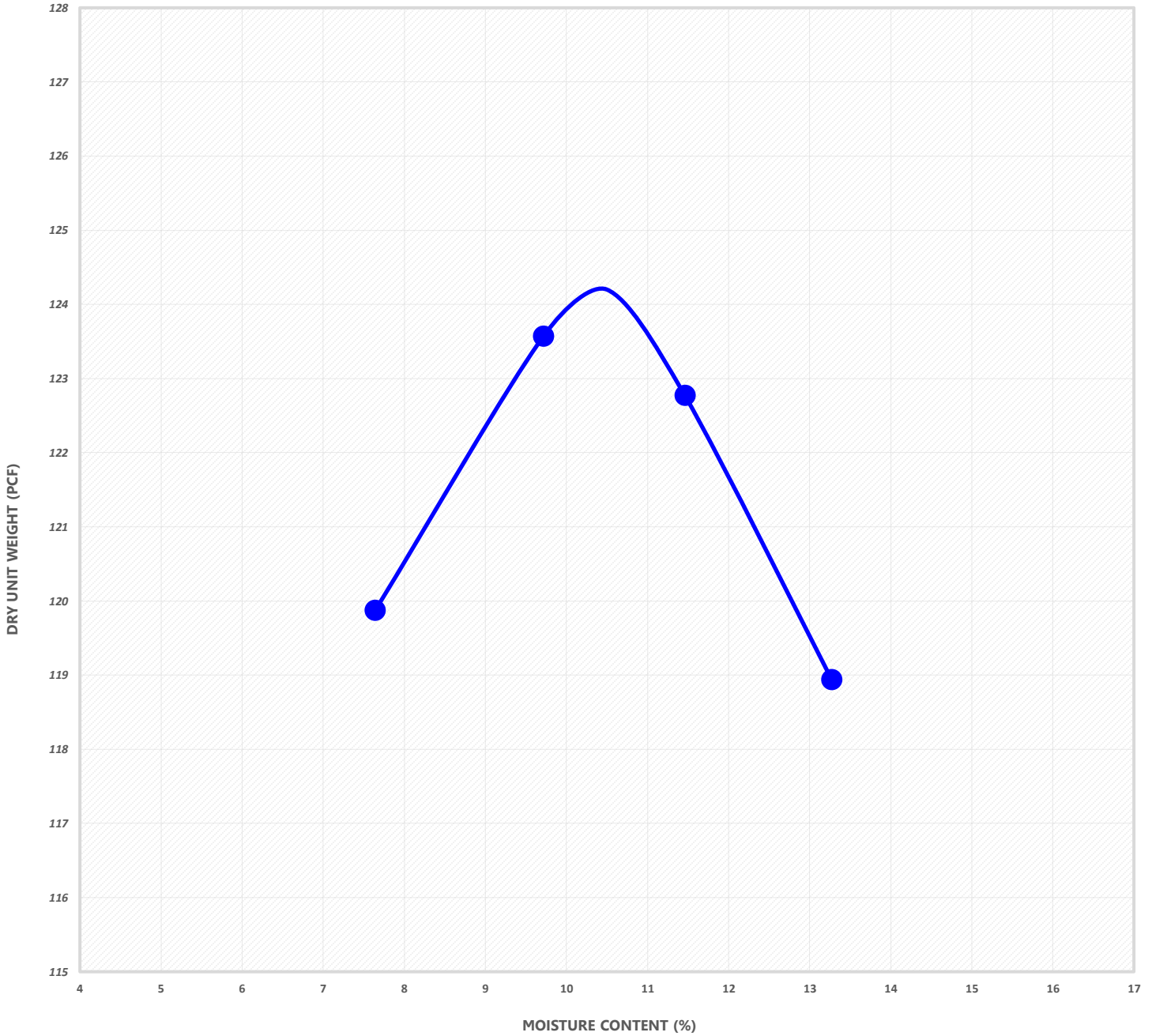
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MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (B)

*Corrected for 13.7% retained on 3/8" sieve

	UNCORRECTED		CORRECTED *
Maximum Dry Unit Weight	124.2	PCF	128.3
Optimum Moisture Content	10.4	MC	9.2



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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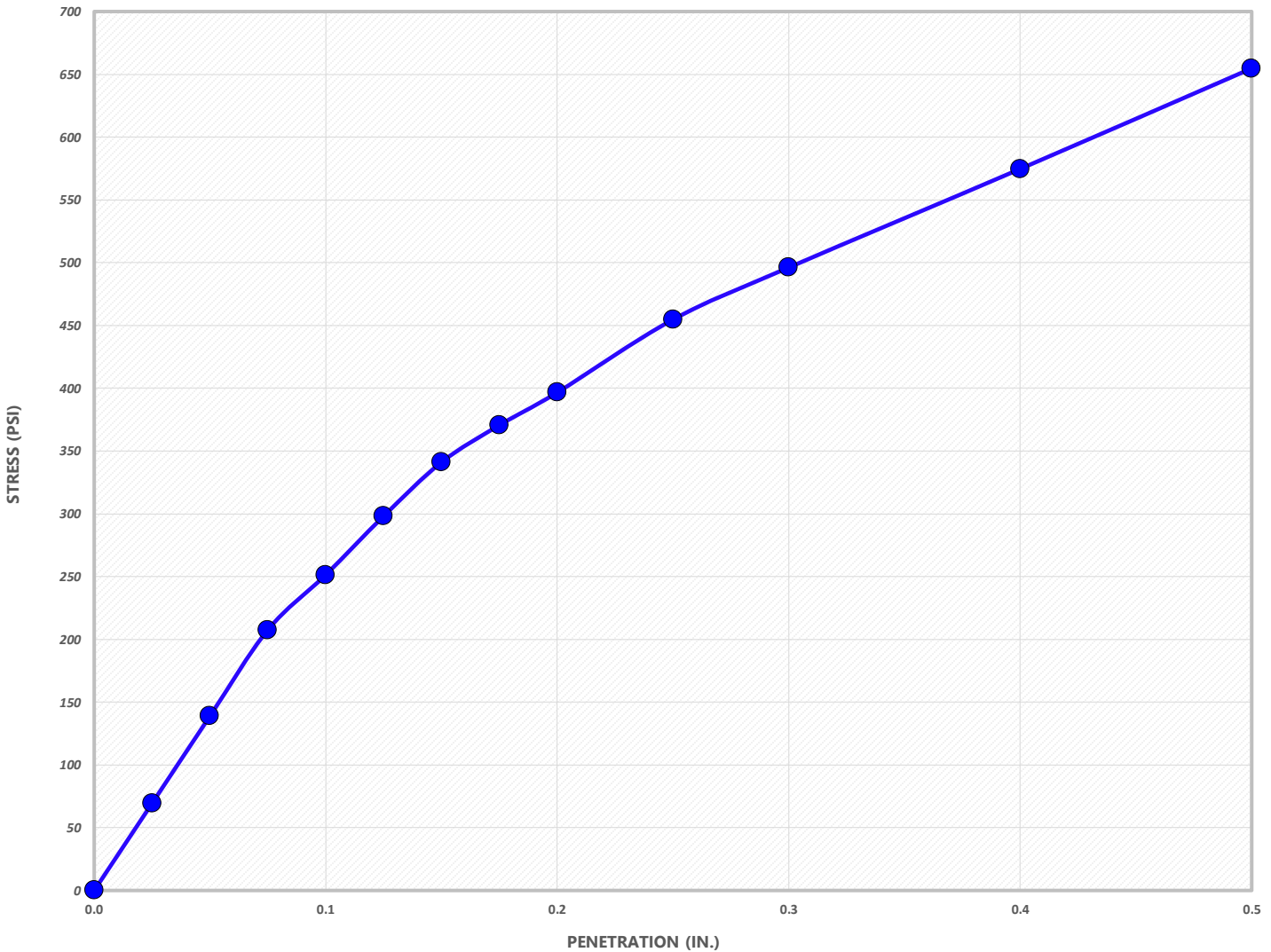
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
25.1

CBR AT 0.2"
26.4

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	120.9	8.4	91.2	-	75
After Soak	122.3	12.1	92.3	0.70	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

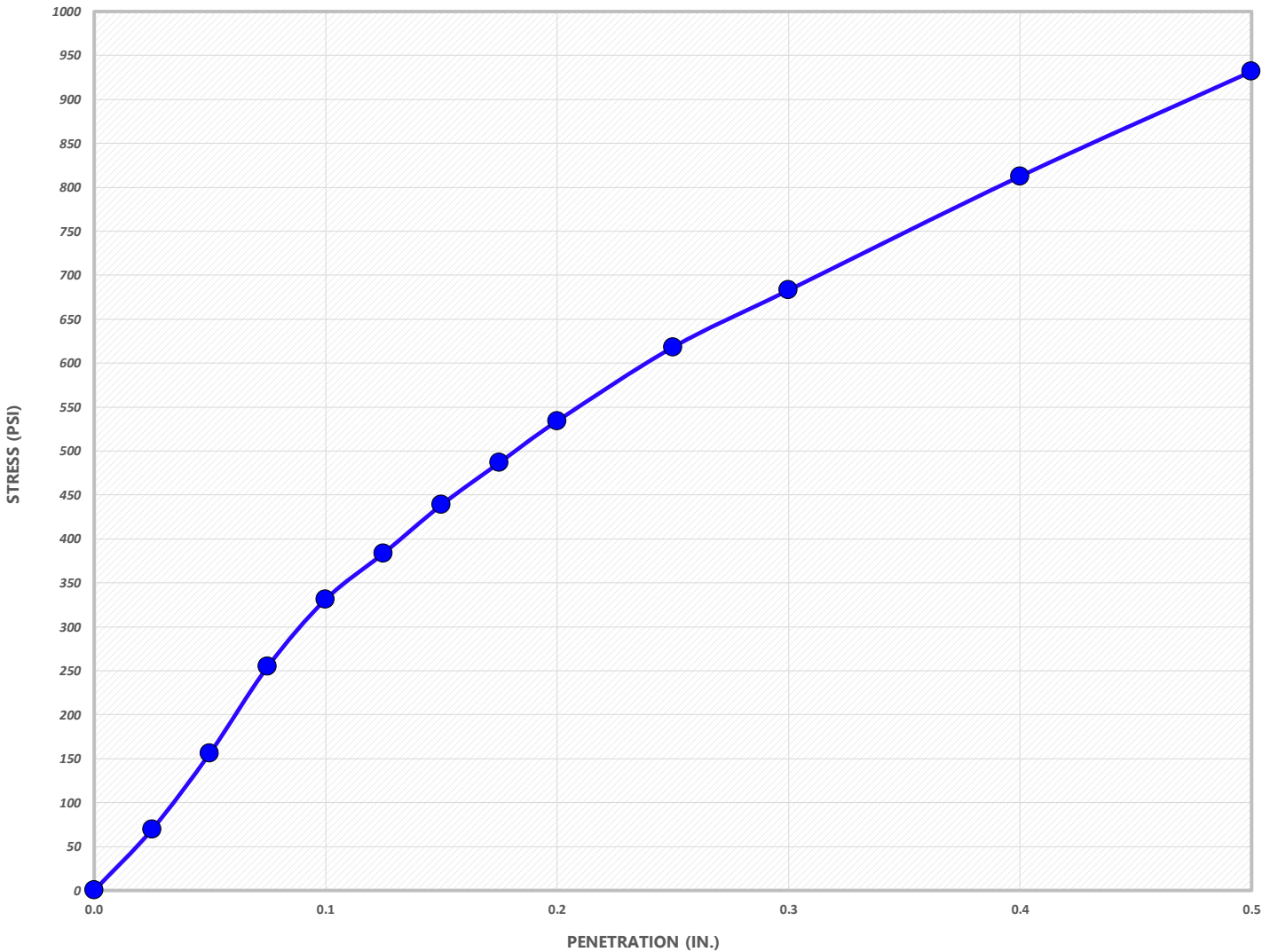
33.1

CBR AT 0.2"

35.6

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	125.6	8.7	94.8	-	75
After Soak	125.4	11.3	94.6	0.57	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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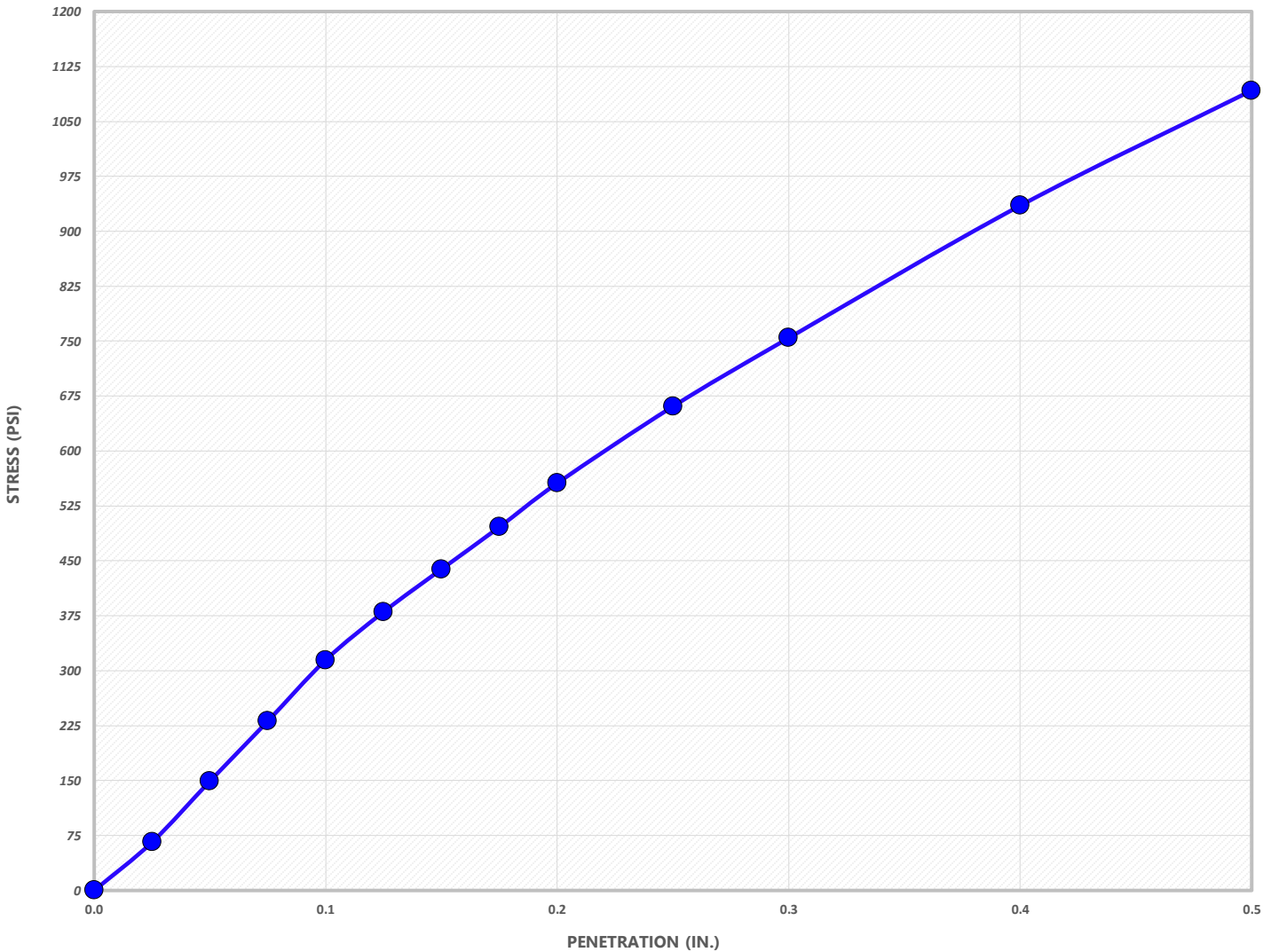
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
31.5

CBR AT 0.2"
37.1

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	130.9	8.1	98.8	-	75
After Soak	129.2	10.2	97.5	0.24	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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 Spring Grove, PA 17362
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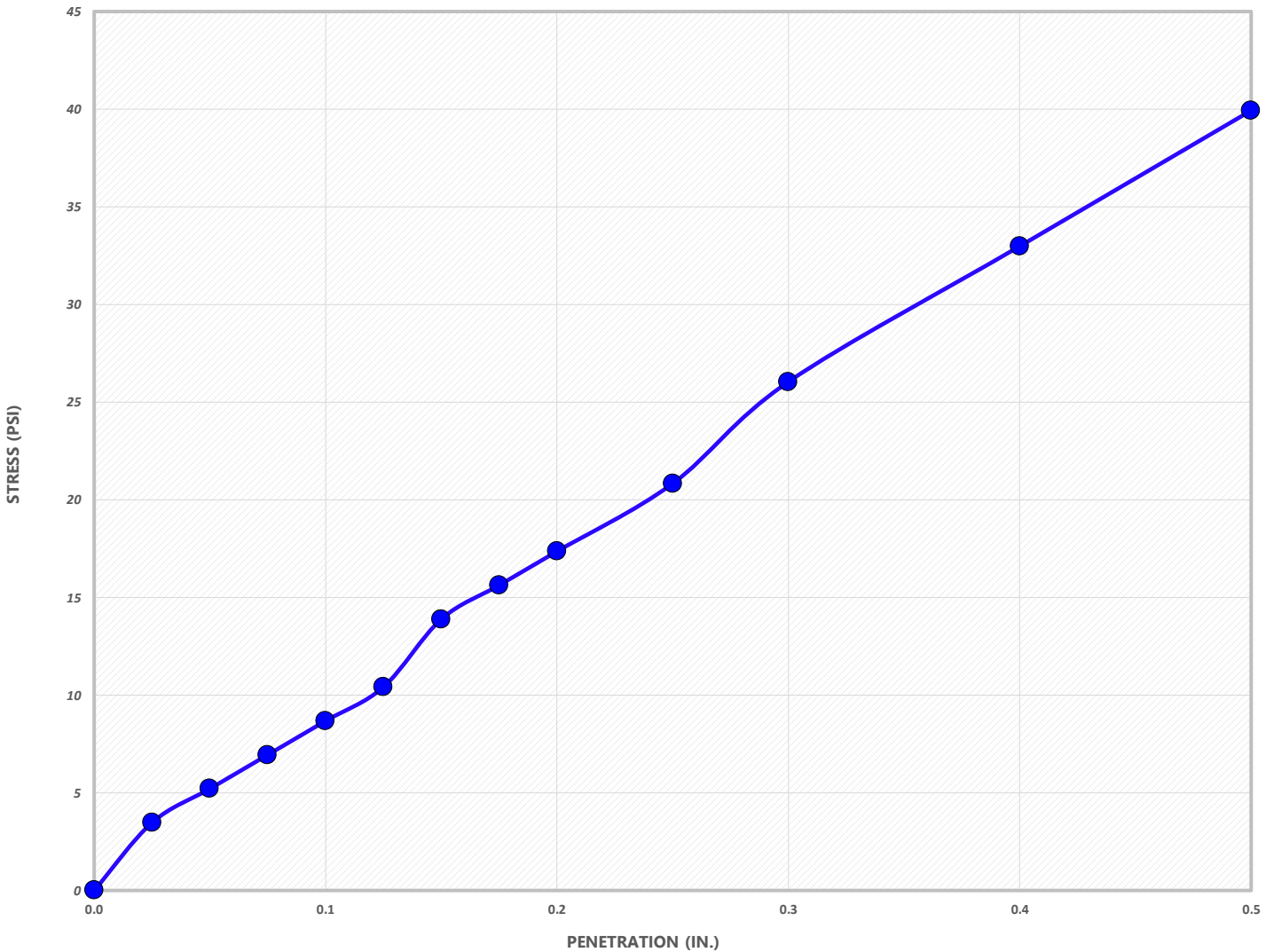
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
0.9

CBR AT 0.2"
1.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	105.3	15.6	90.1	-	75
After Soak	97.0	25.8	83.0	5.22	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

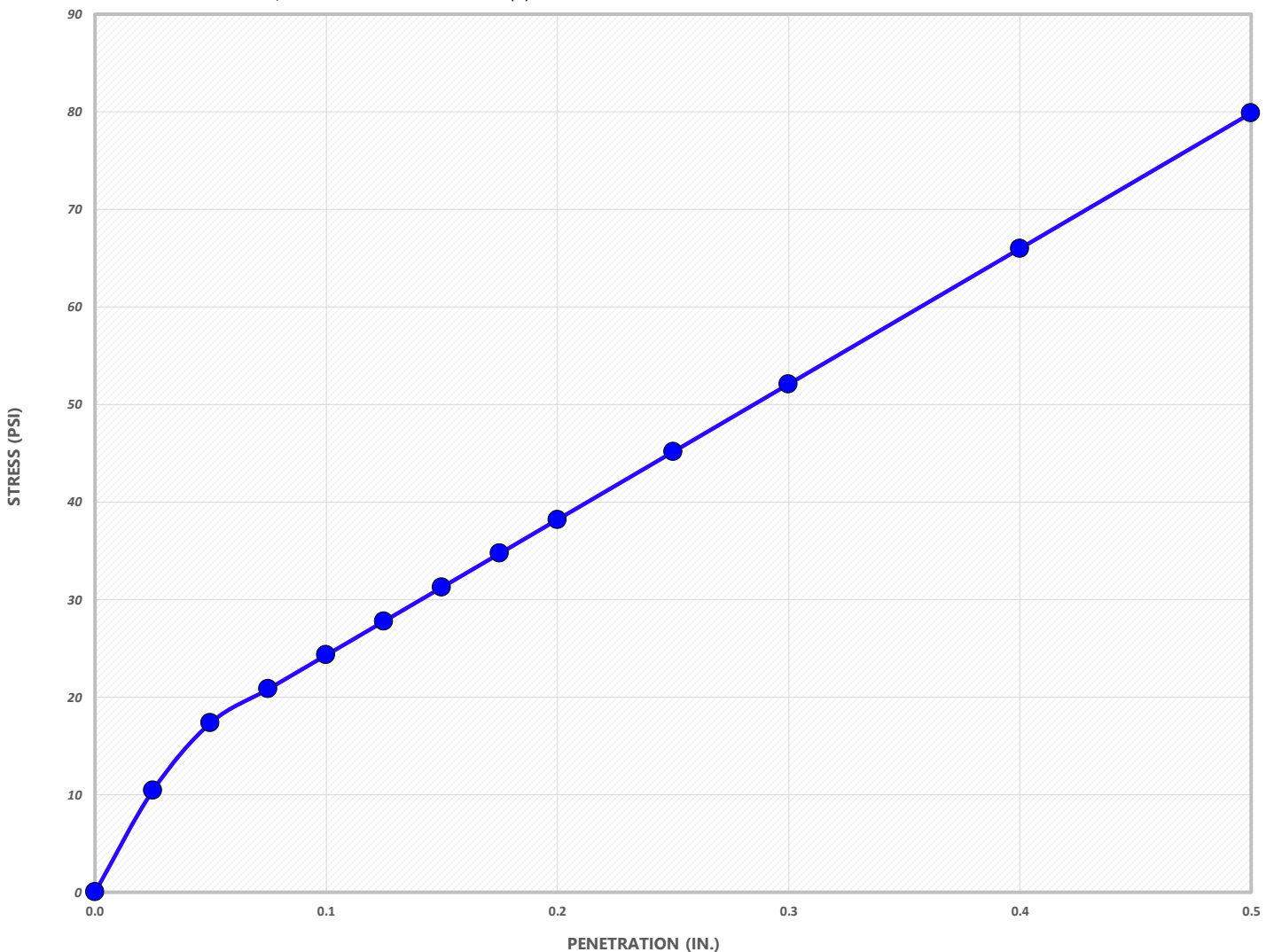
2.4

CBR AT 0.2"

2.5

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	112.9	15.7	96.7	-	75
After Soak	104.6	24.3	89.6	4.83	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
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CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

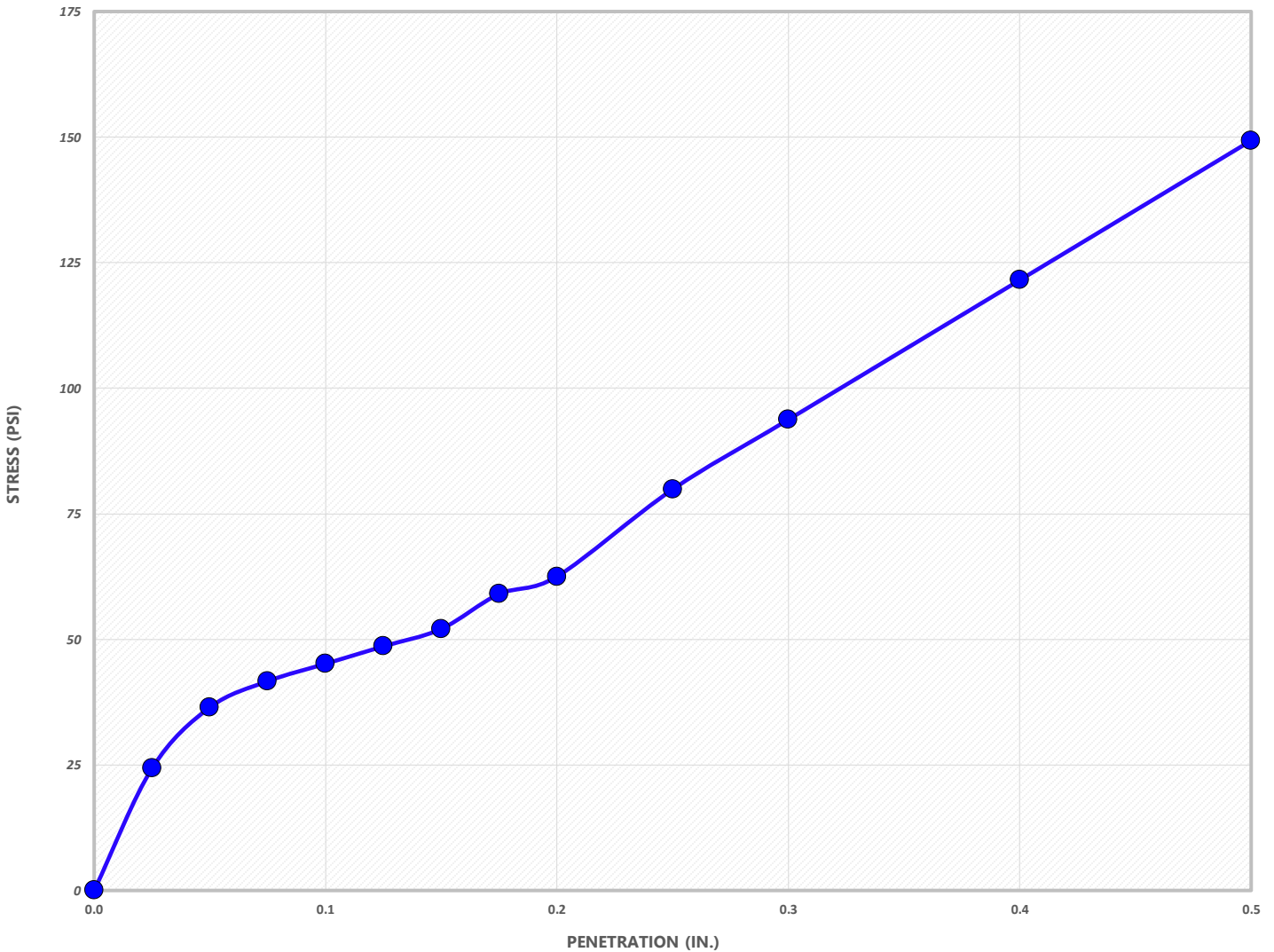
4.5

CBR AT 0.2"

4.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	117.5	15.4	100.6	-	75
After Soak	109.3	22.2	93.6	4.48	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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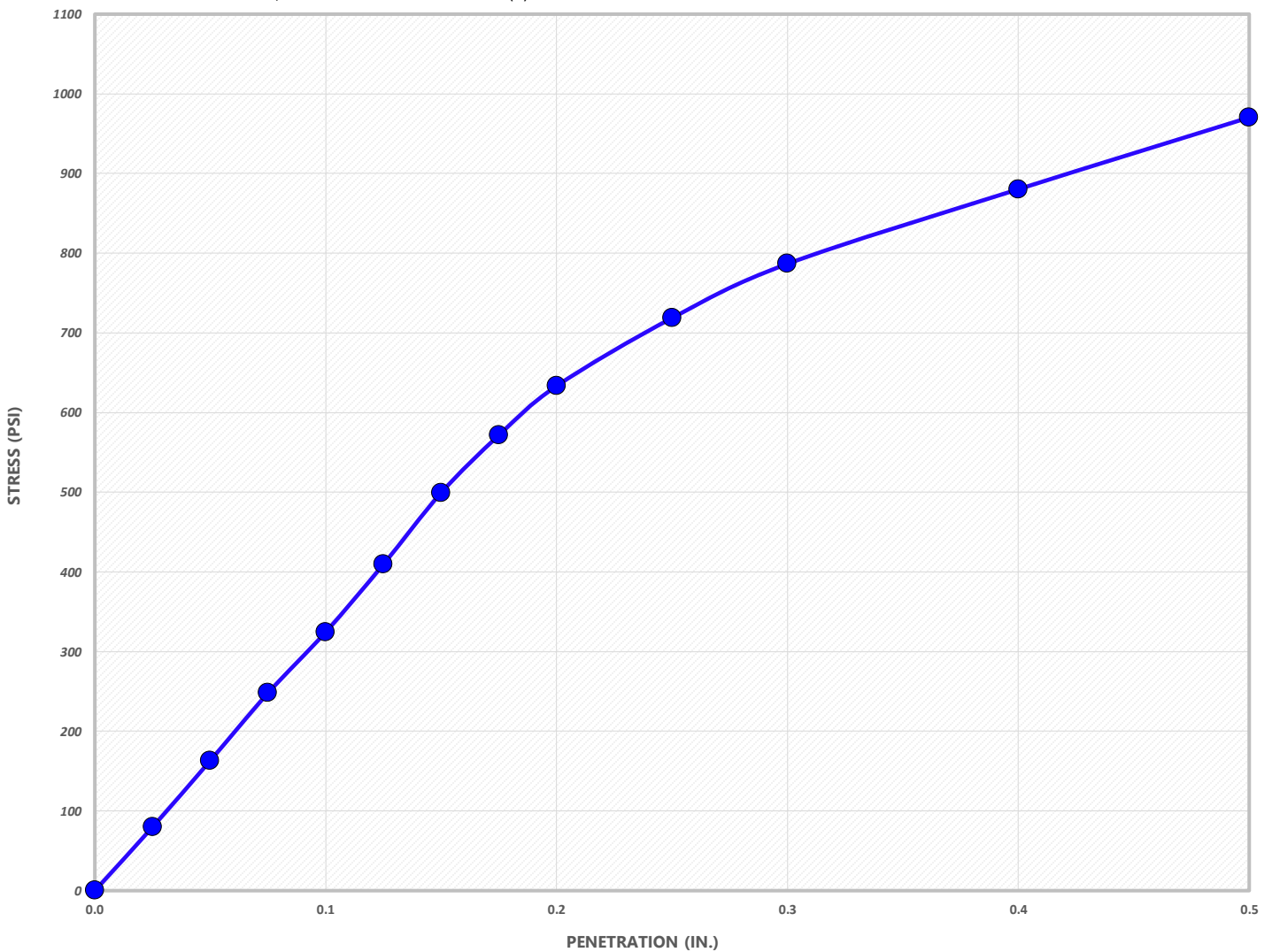
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
32.5

CBR AT 0.2"
42.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	117.9	9.5	91.9	-	75
After Soak	115.9	15.2	90.3	1.66	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

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CALIFORNIA BEARING RATIO TEST RESULTS

CORRECTED CBR AT 0.1"

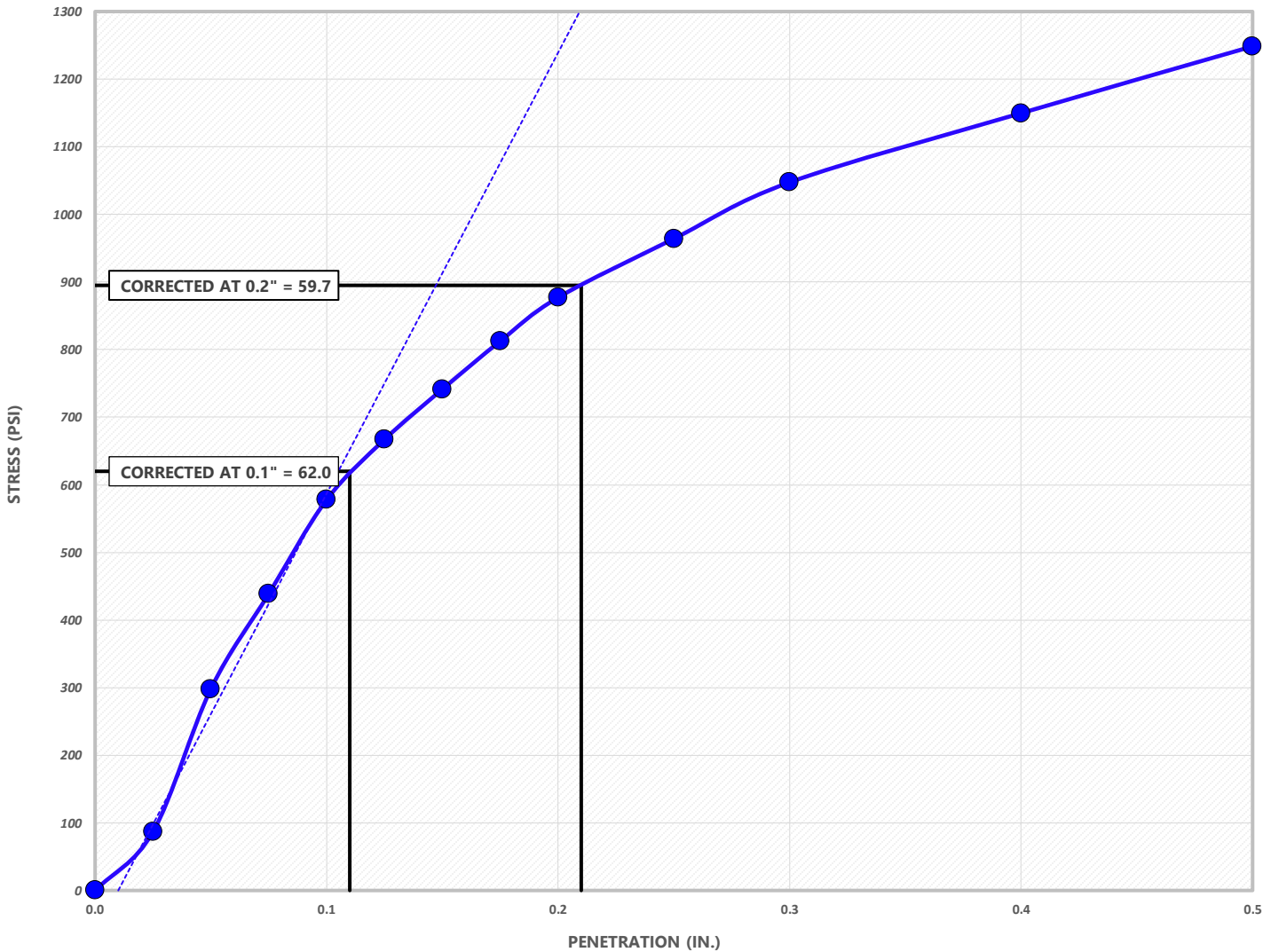
CORRECTED CBR AT 0.2"

62.0

59.7

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	122.1	9.2	95.1	-	75
After Soak	119.7	14.1	93.3	1.38	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
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CALIFORNIA BEARING RATIO TEST RESULTS

CORRECTED CBR AT 0.1"

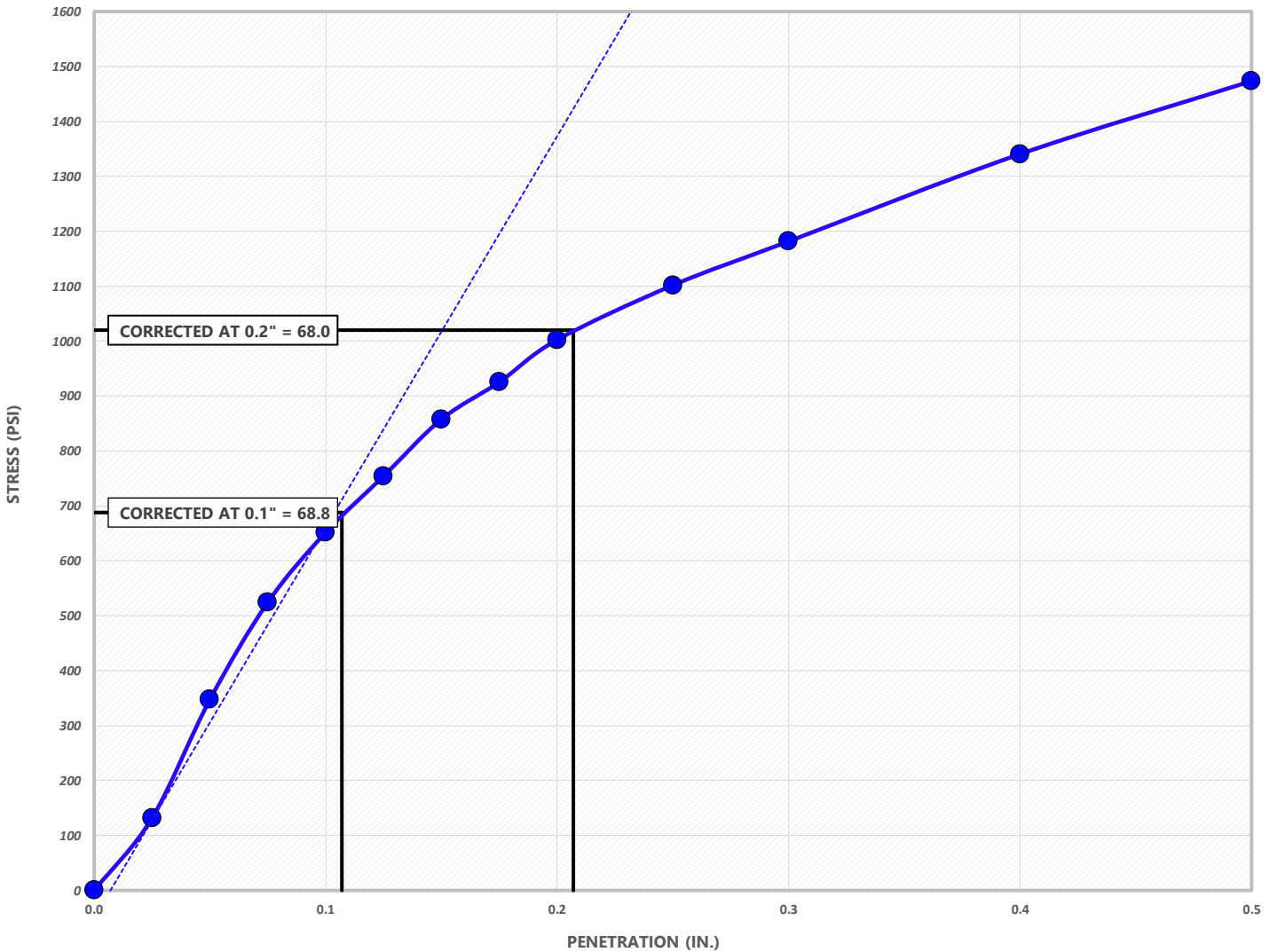
CORRECTED CBR AT 0.2"

68.8

68.0

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	127.2	9.3	99.1	-	75
After Soak	124.9	12.9	97.3	0.37	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
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CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	91.2	120.9	8.4	92.3	122.3	12.1	25.1	26.4	15	0.70
▲	94.8	125.6	8.7	94.6	125.4	11.3	33.1	35.6	25	0.57
■	98.8	130.9	8.1	97.5	129.2	10.2	31.5	37.1	56	0.24
	%	PCF	%	%	PCF	%			#	%

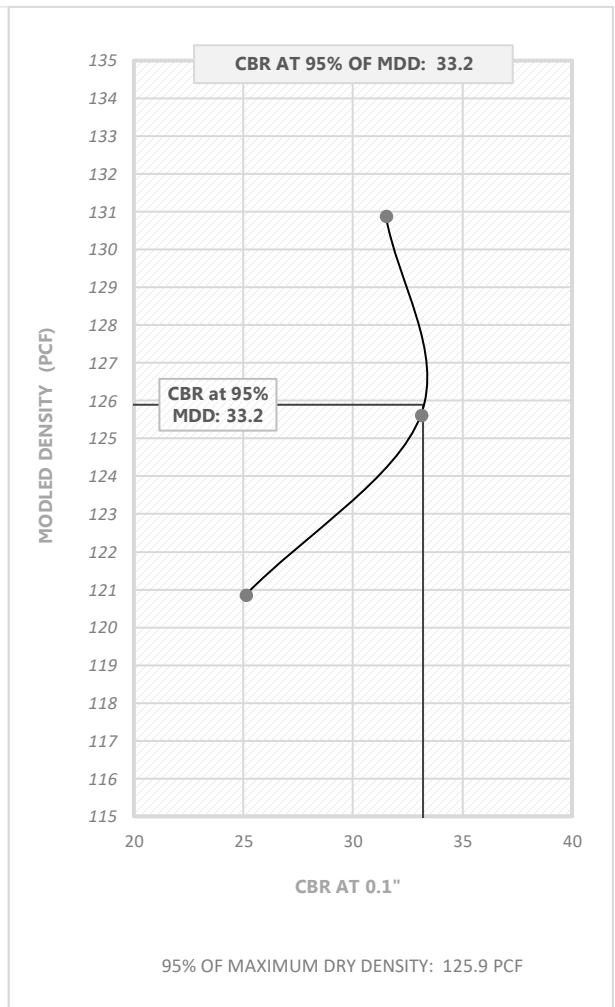
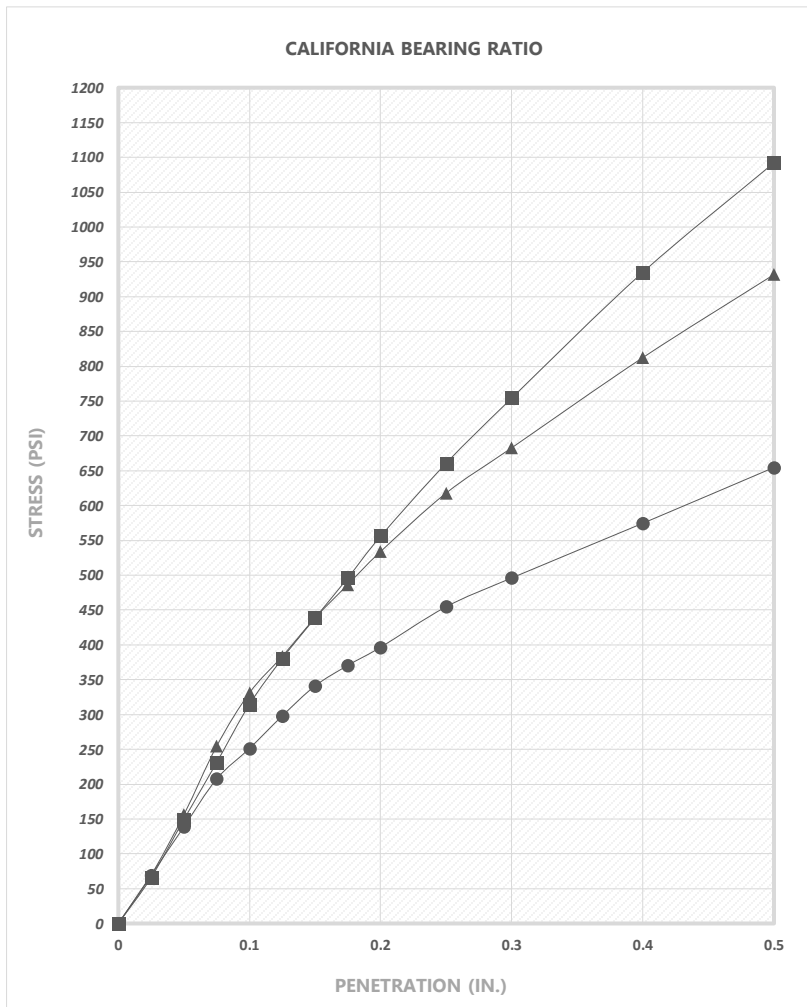
MAXIMUM DRY DENSITY
132.5 PCF

OPTIMUM MOISTURE CONTENT
7.8 %

COMPACTION METHOD
ASTM D-1557 (B)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
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CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	90.1	105.3	15.6	83.0	97.0	25.8	0.9	1.2	15	5.22
▲	96.7	112.9	15.7	89.6	104.6	24.3	2.4	2.5	25	4.83
■	100.6	117.5	15.4	93.6	109.3	22.2	4.5	4.2	56	4.48
	%	PCF	%	%	PCF	%			#	%

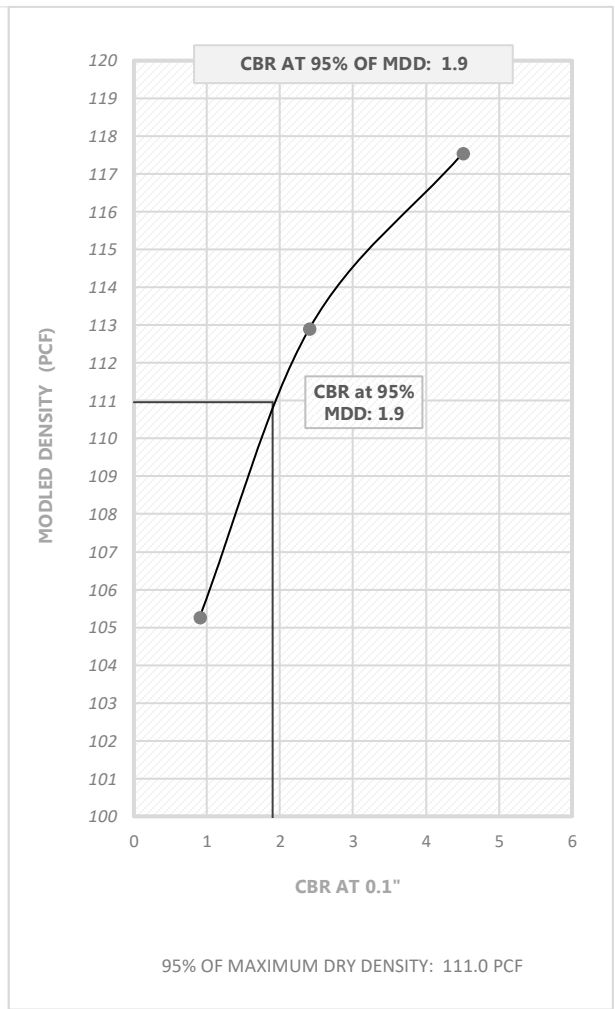
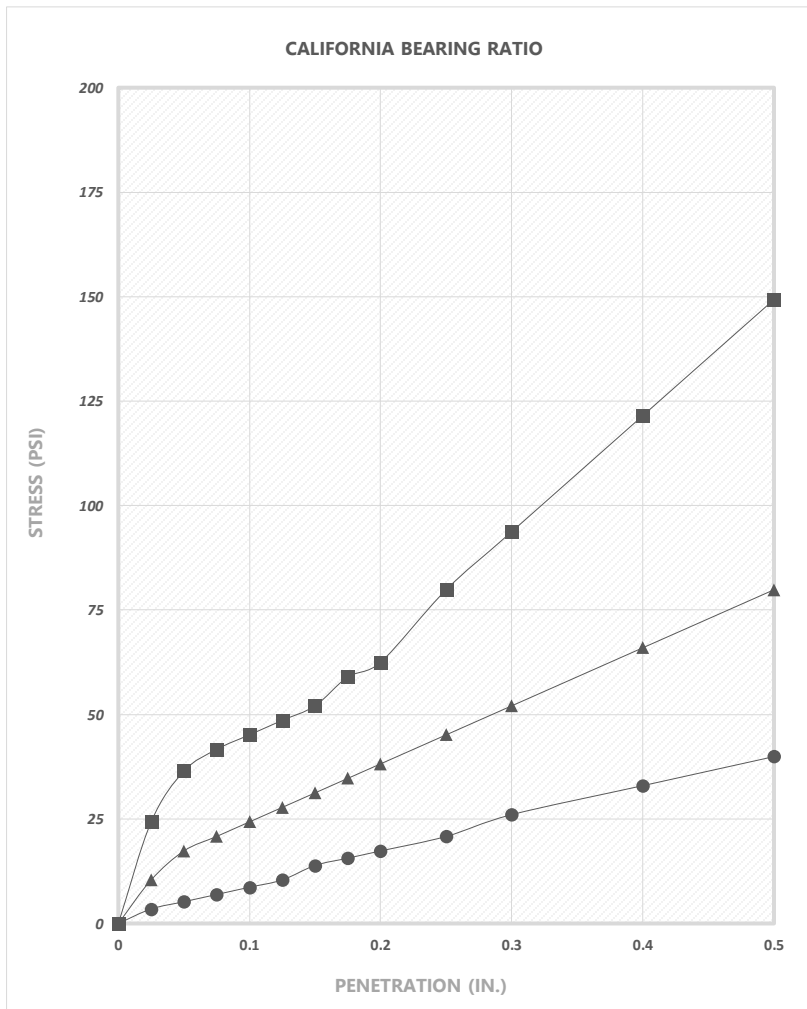
MAXIMUM DRY DENSITY
116.8 PCF

OPTIMUM MOISTURE CONTENT
15.6 %

COMPACTION METHOD
ASTM D-1557 (A)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

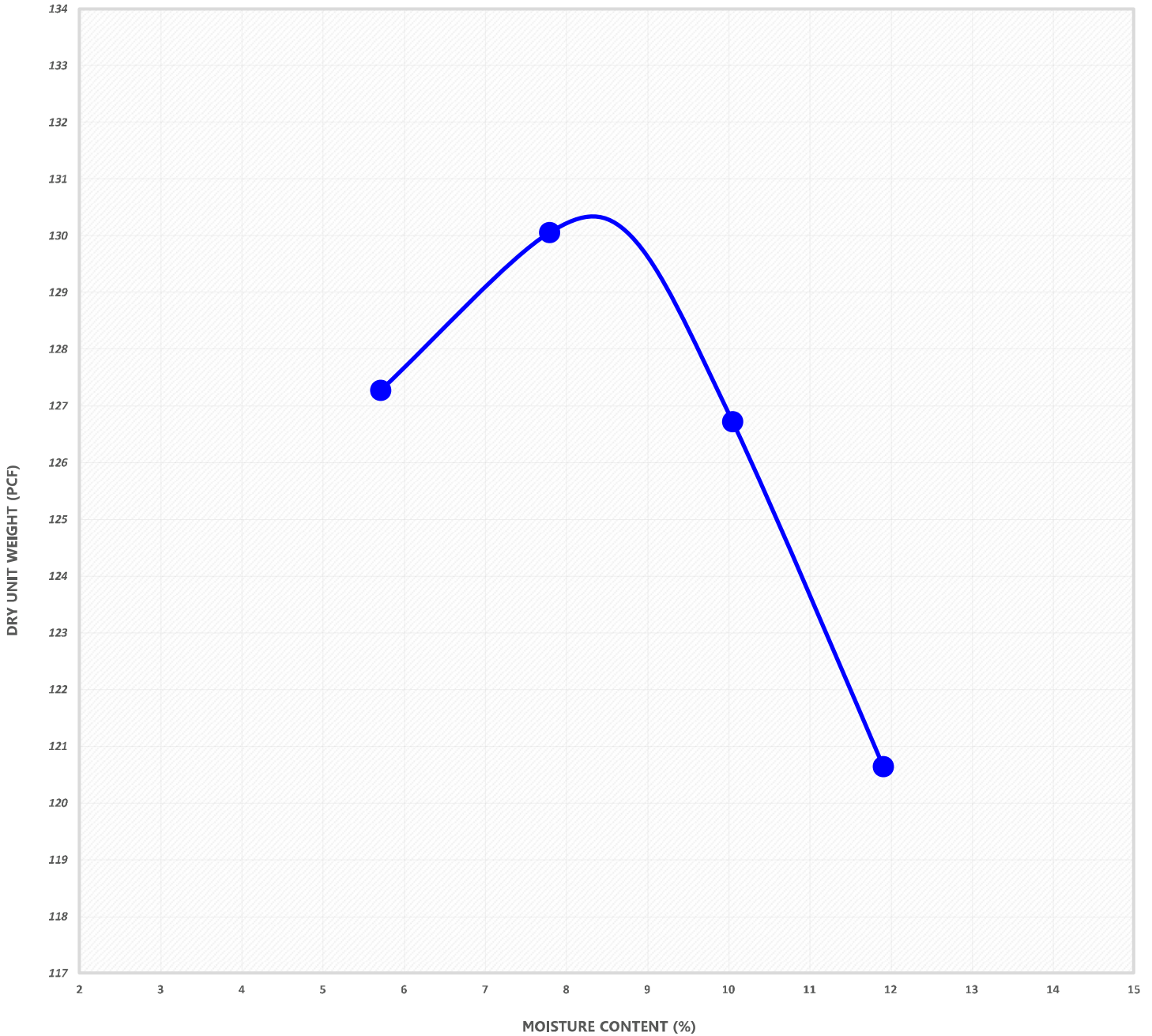
JAY KAY TESTING, INC.
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 Spring Grove, PA 17362
 Phone: (410) 259-5101

MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (B)

*Corrected for 8.5% retained on 3/8" sieve

	UNCORRECTED		CORRECTED *
Maximum Dry Unit Weight	130.3	PCF	132.5
Optimum Moisture Content	8.3	MC	7.8



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (A)

MAXIMUM DRY UNIT WEIGHT

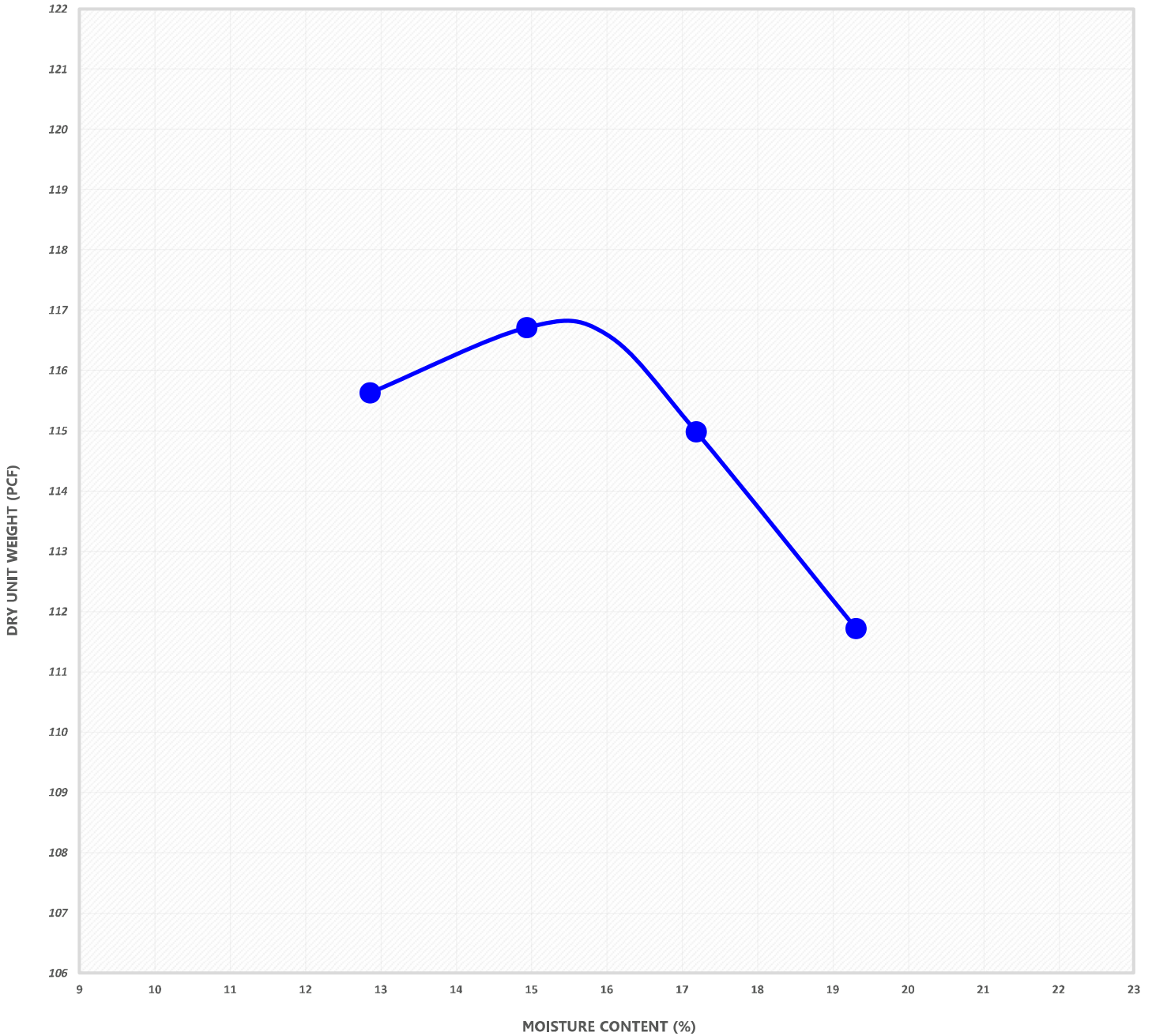
116.8

PCF

OPTIMUM MOISTURE CONTENT

15.6

%



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

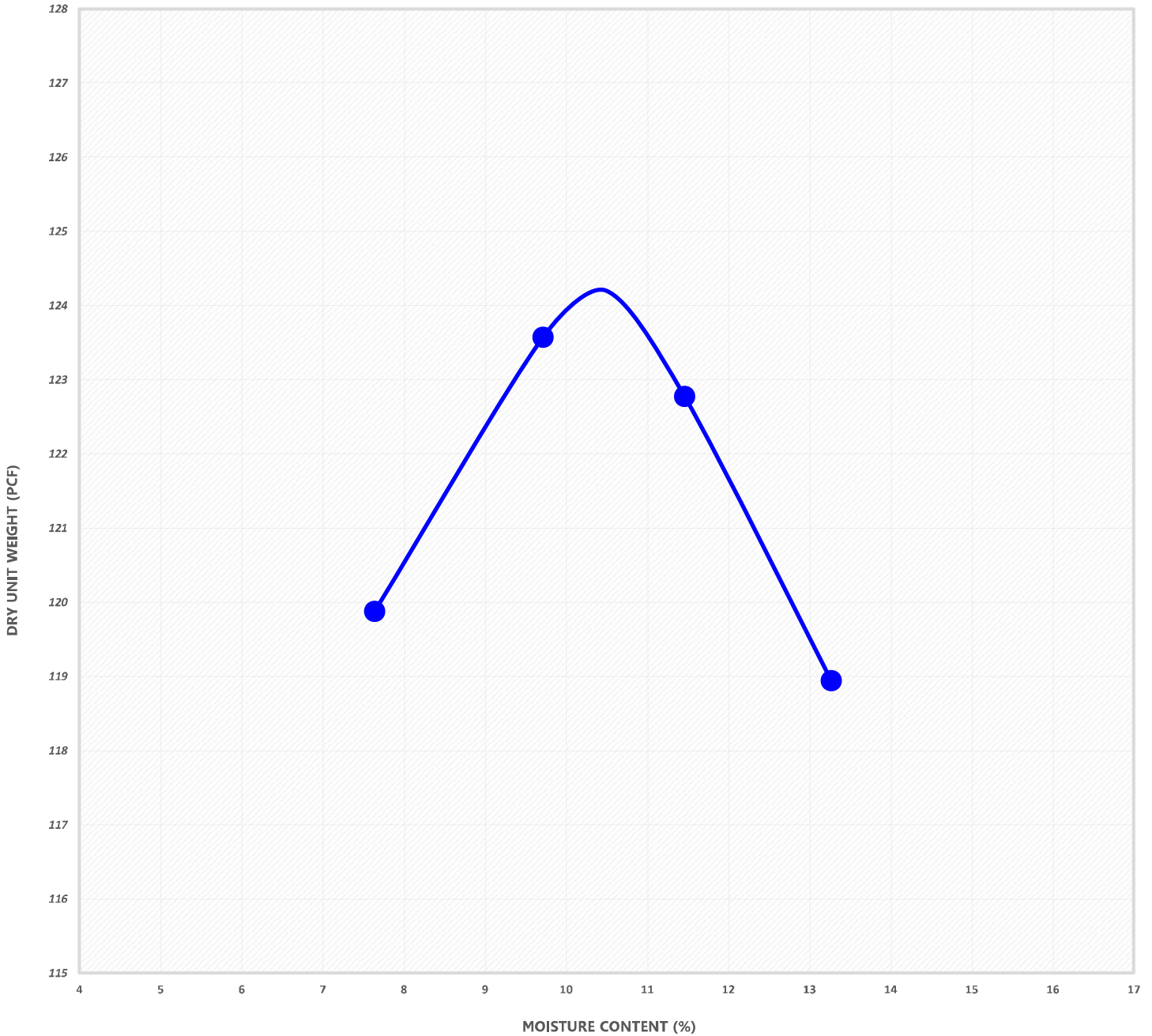
JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

MODIFIED PROCTOR TEST RESULTS

TEST METHOD: ASTM D-1557 (B)

*Corrected for 13.7% retained on 3/8" sieve

	UNCORRECTED		CORRECTED *
Maximum Dry Unit Weight	124.2	PCF	128.3
Optimum Moisture Content	10.4	MC	9.2



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

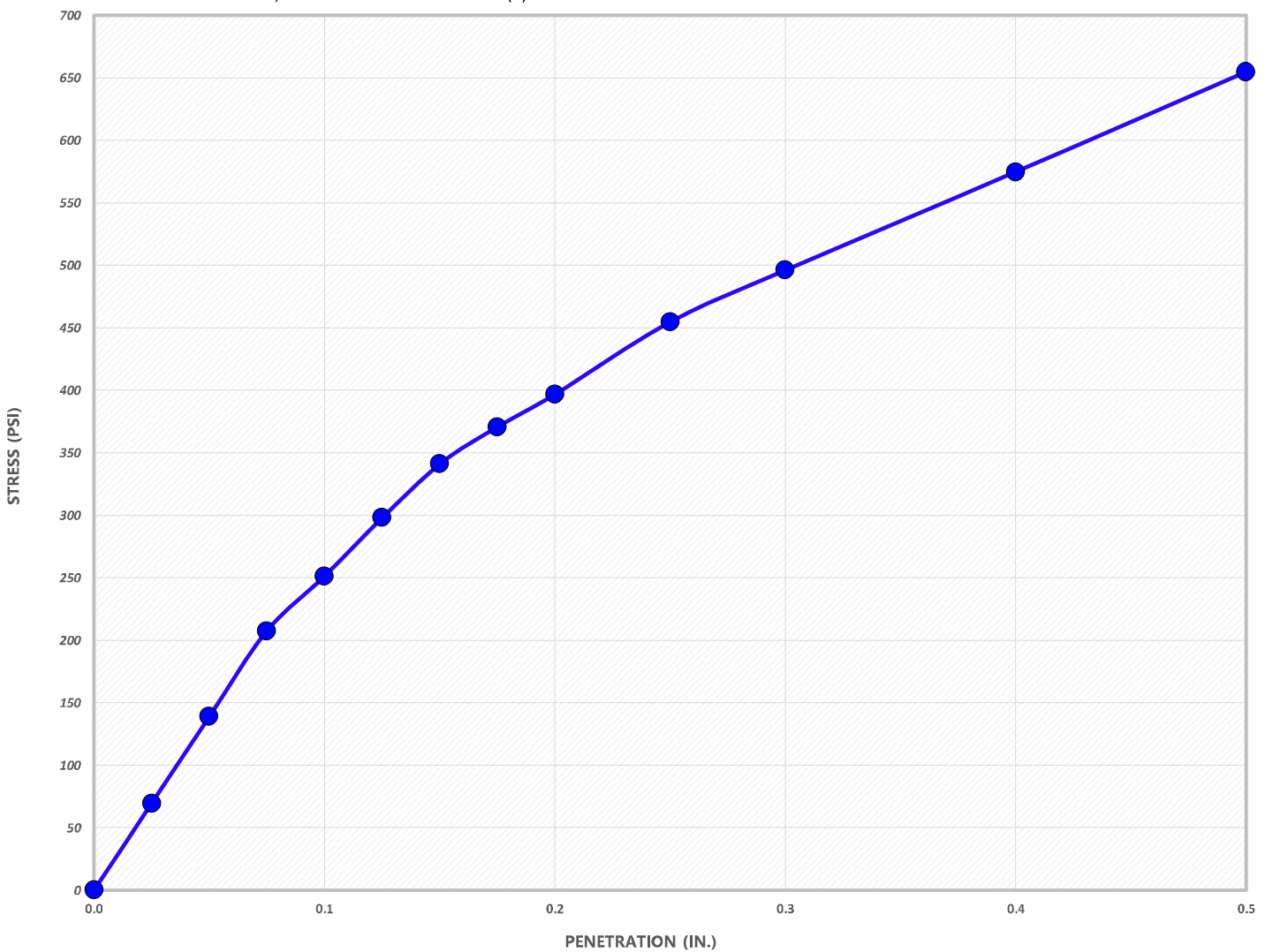
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
25.1

CBR AT 0.2"
26.4

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	120.9	8.4	91.2	-	75
After Soak	122.3	12.1	92.3	0.70	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

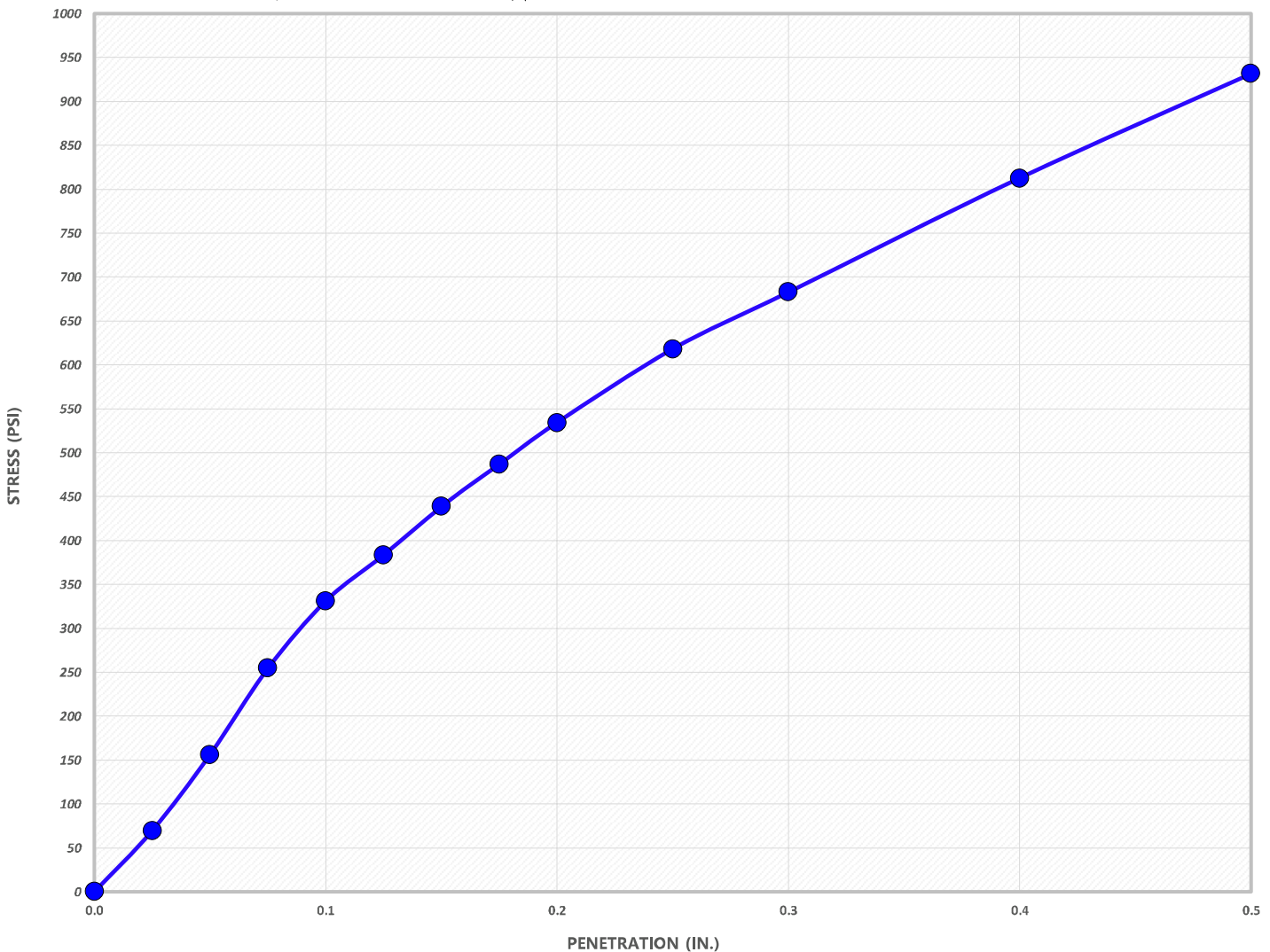
CBR AT 0.2"

33.1

35.6

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	125.6	8.7	94.8	-	75
After Soak	125.4	11.3	94.6	0.57	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
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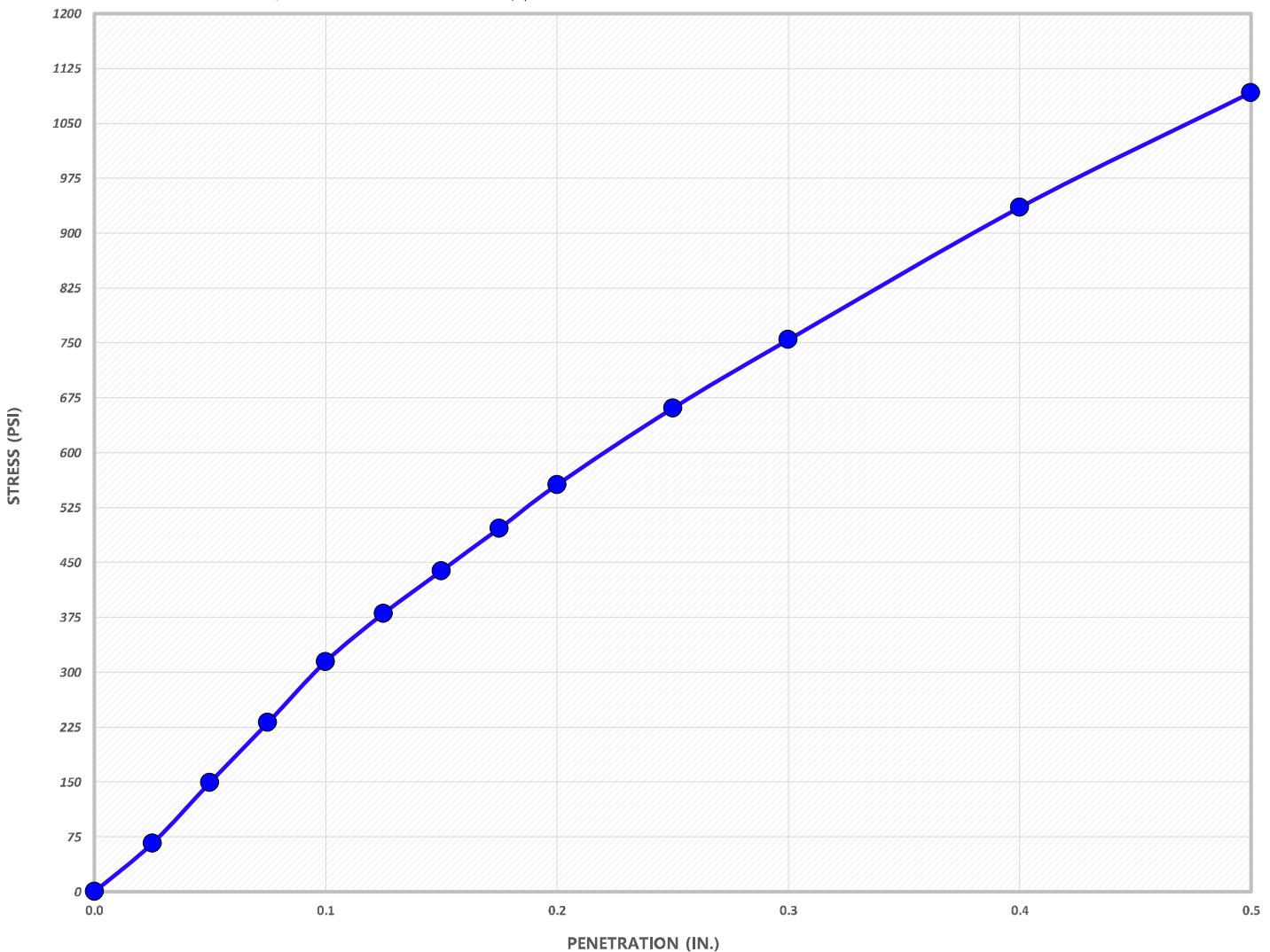
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
31.5

CBR AT 0.2"
37.1

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	130.9	8.1	98.8	-	75
After Soak	129.2	10.2	97.5	0.24	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

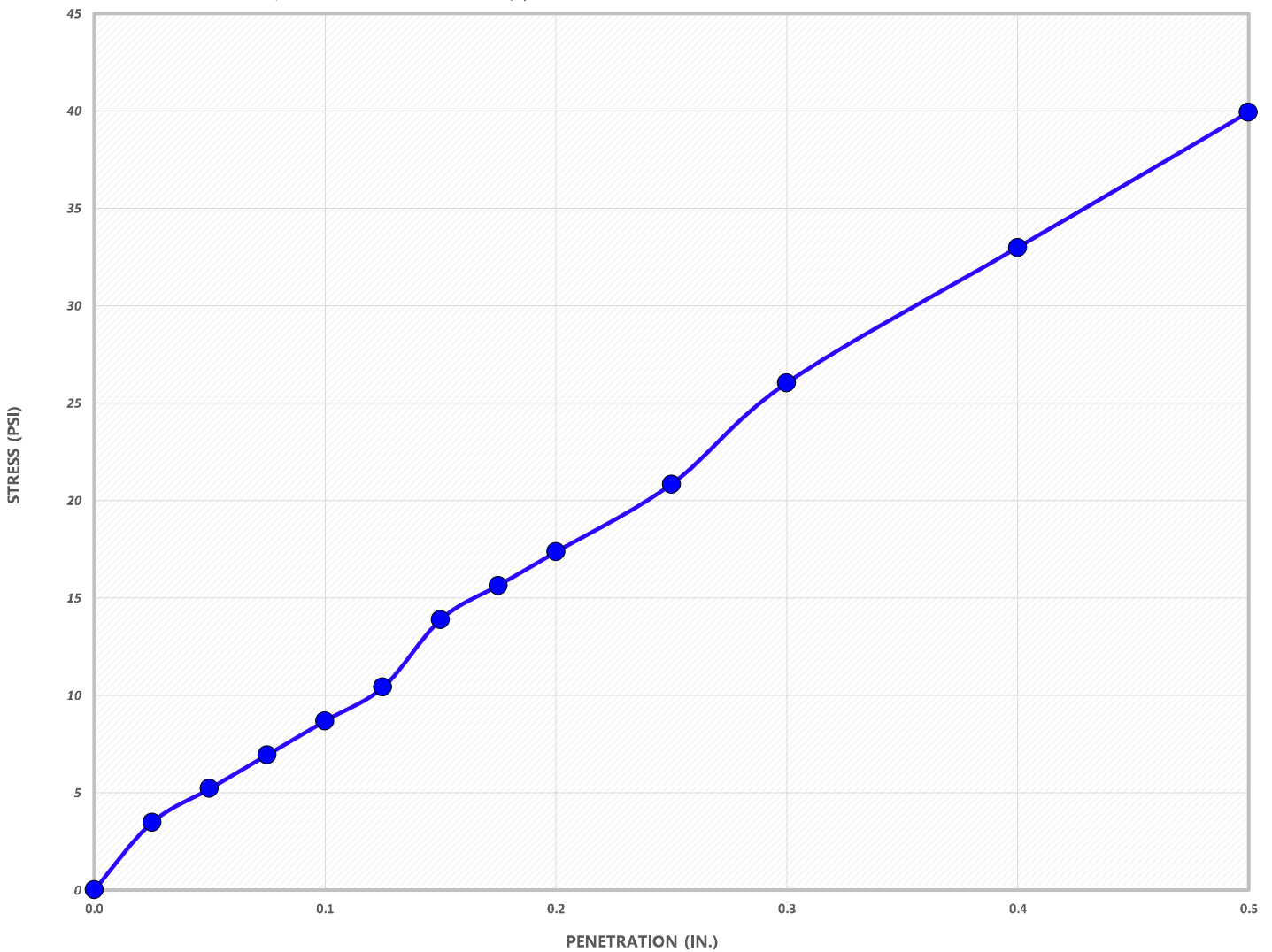
0.9

CBR AT 0.2"

1.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	105.3	15.6	90.1	-	75
After Soak	97.0	25.8	83.0	5.22	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

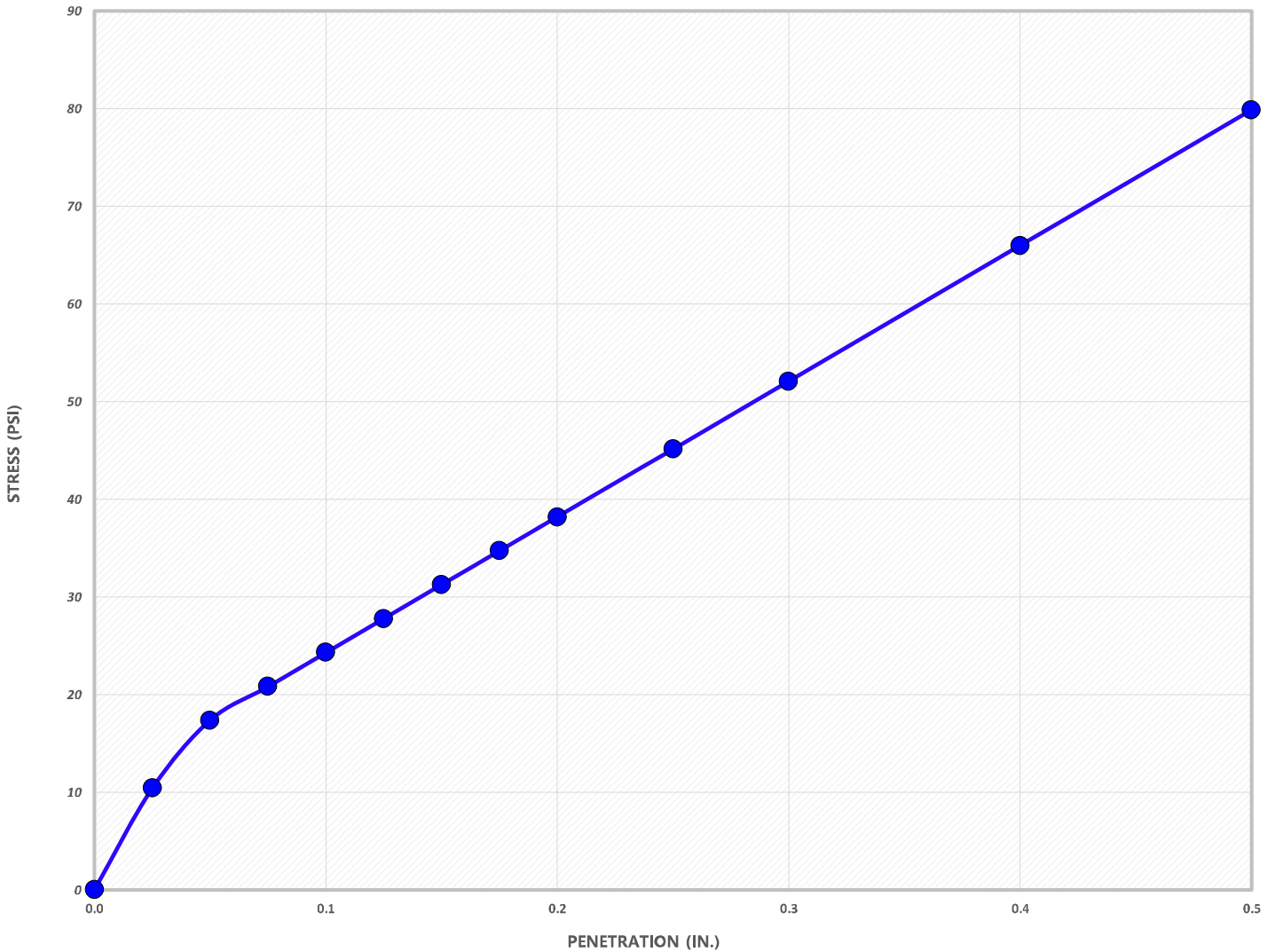
CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"
2.4

CBR AT 0.2"
2.5

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	112.9	15.7	96.7	-	75
After Soak	104.6	24.3	89.6	4.83	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

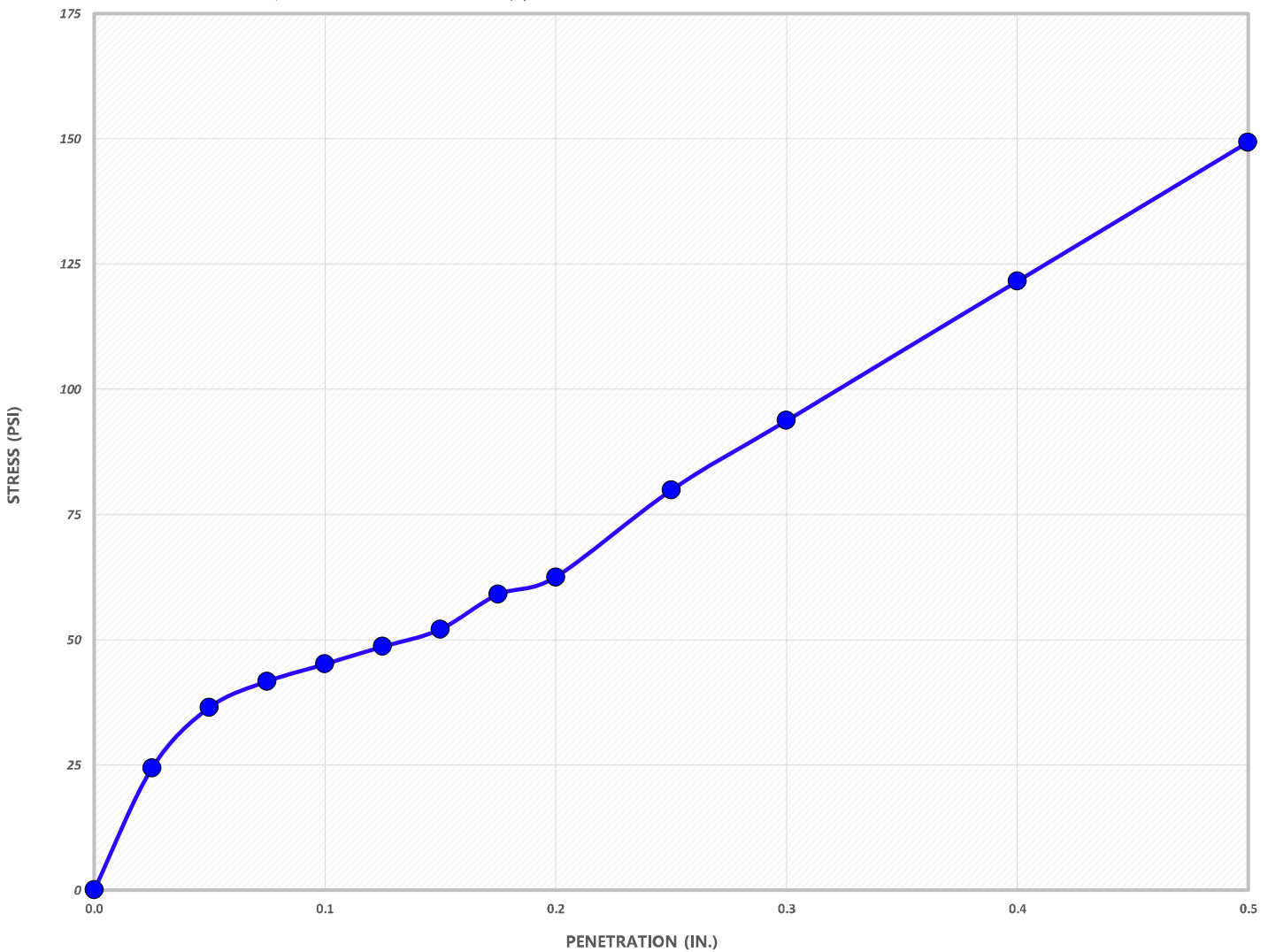
4.5

CBR AT 0.2"

4.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	117.5	15.4	100.6	-	75
After Soak	109.3	22.2	93.6	4.48	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (A)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CBR AT 0.1"

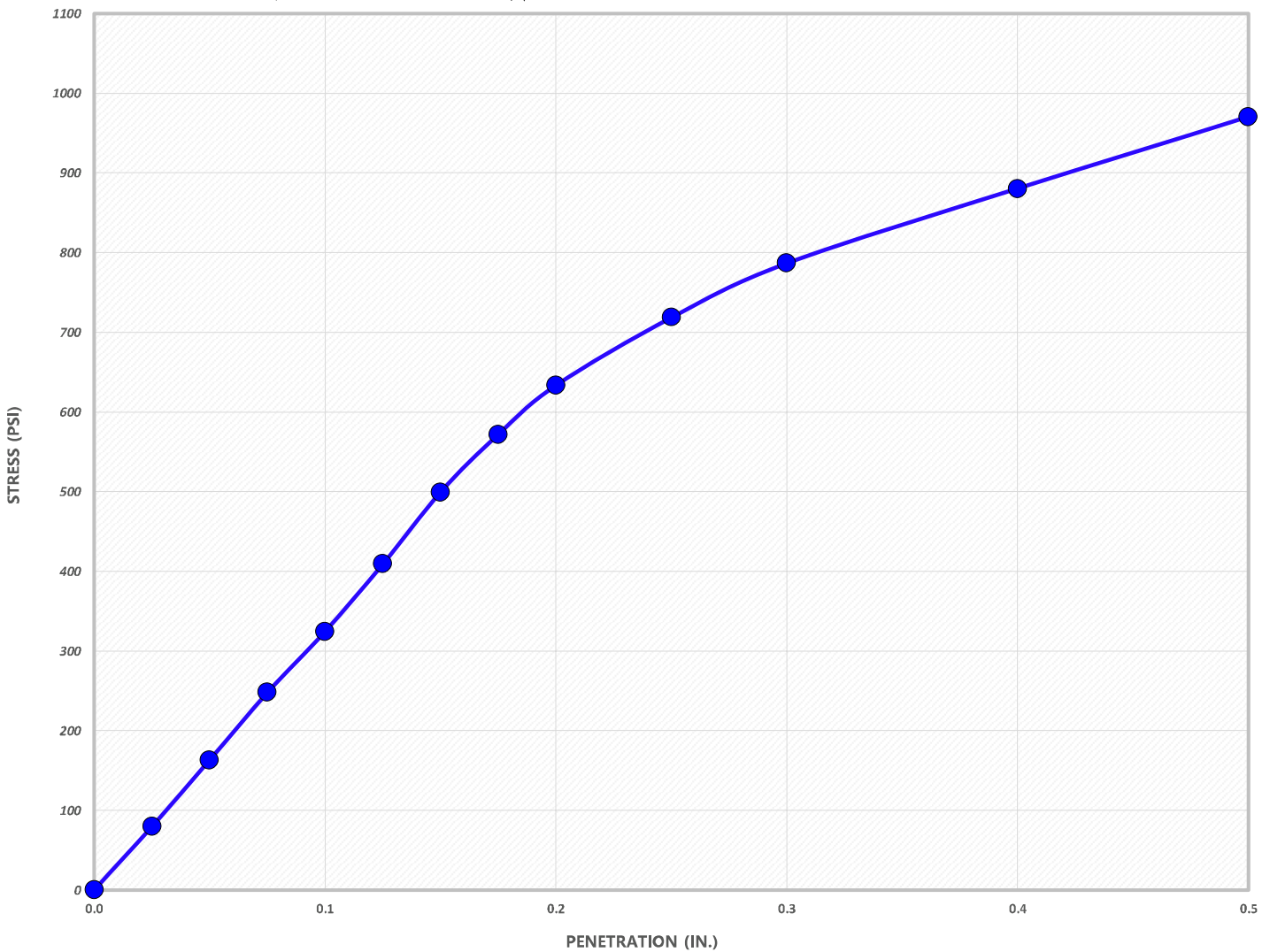
CBR AT 0.2"

32.5

42.2

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	117.9	9.5	91.9	-	75
After Soak	115.9	15.2	90.3	1.66	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CORRECTED CBR AT 0.1"

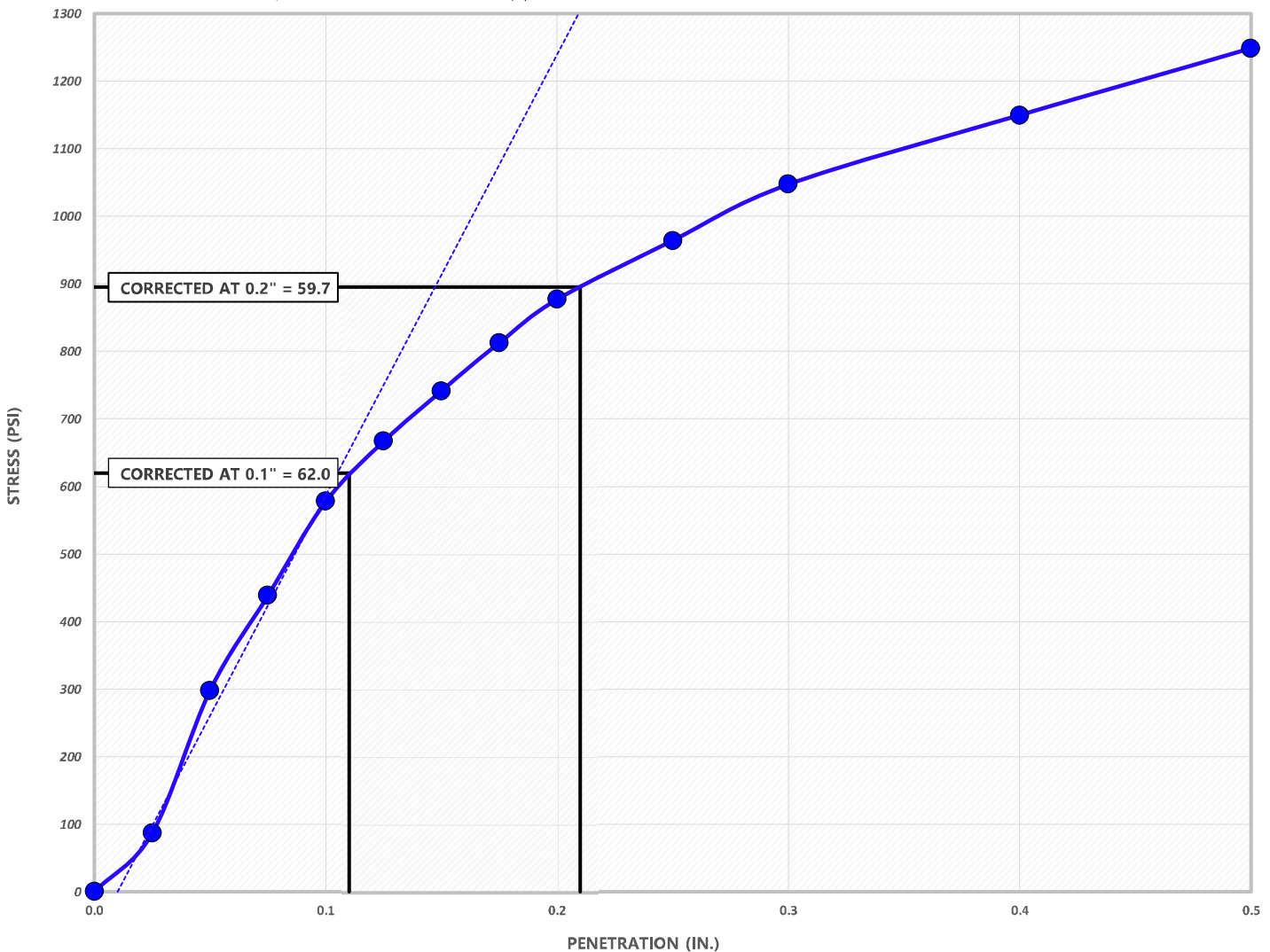
CORRECTED CBR AT 0.2"

62.0

59.7

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	122.1	9.2	95.1	-	75
After Soak	119.7	14.1	93.3	1.38	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

CORRECTED CBR AT 0.1"

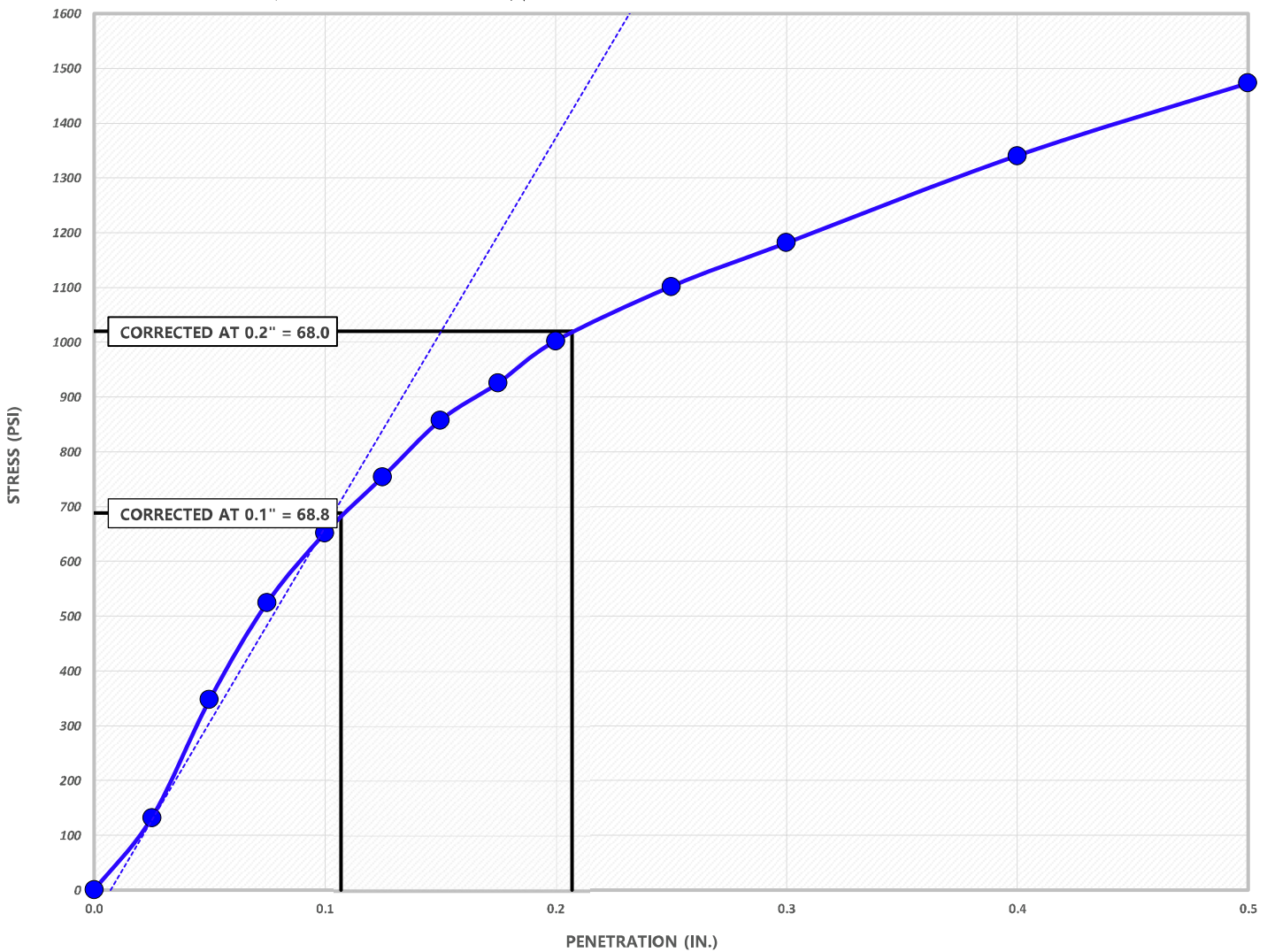
CORRECTED CBR AT 0.2"

68.8

68.0

	Dry Unit Weight	Moisture Content	Compaction	Swell	Surcharge
As Molded	127.2	9.3	99.1	-	75
After Soak	124.9	12.9	97.3	0.37	75
	PCF	%	%	%	PSF

METHOD: ASTM D-1883, COMPACTION: ASTM D-1557 (B)



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-3**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	91.2	120.9	8.4	92.3	122.3	12.1	25.1	26.4	15	0.70
▲	94.8	125.6	8.7	94.6	125.4	11.3	33.1	35.6	25	0.57
■	98.8	130.9	8.1	97.5	129.2	10.2	31.5	37.1	56	0.24
	%	PCF	%	%	PCF	%			#	%

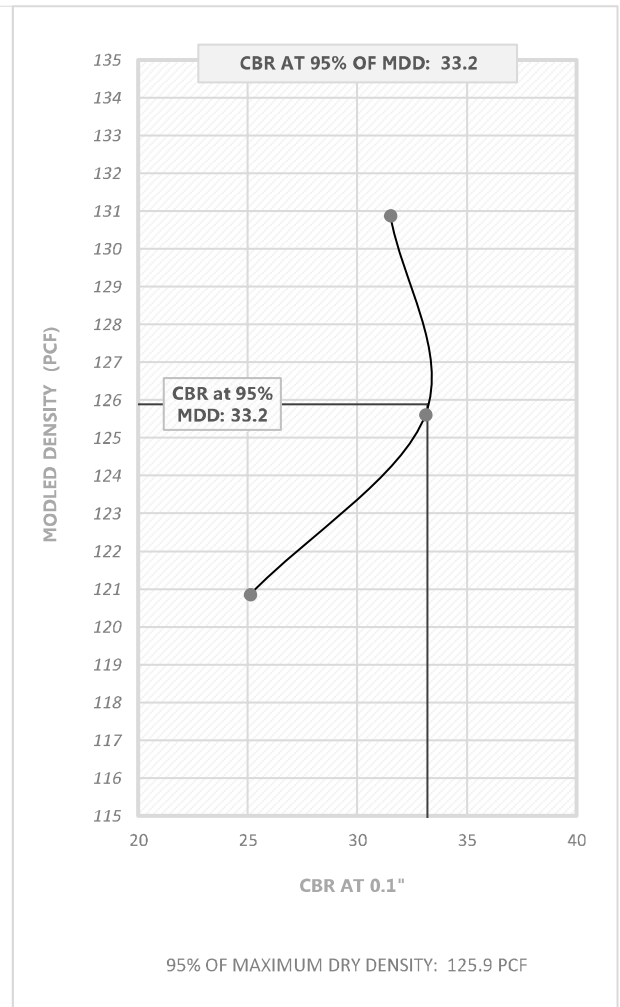
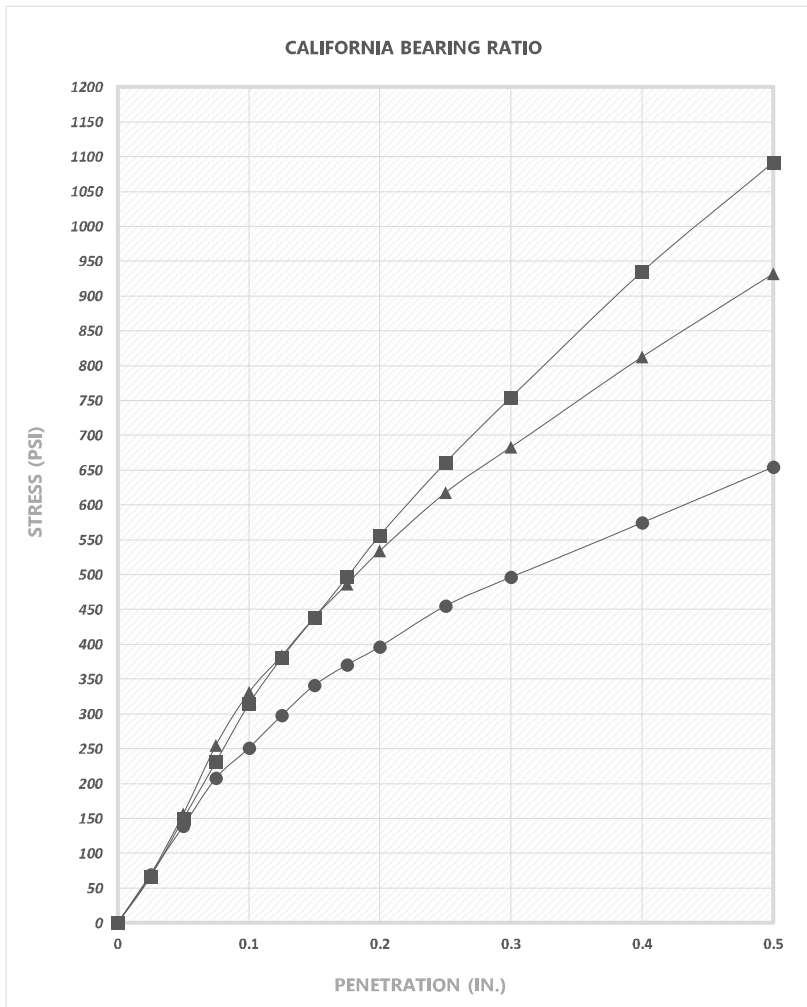
MAXIMUM DRY DENSITY
132.5 PCF

OPTIMUM MOISTURE CONTENT
7.8 %

COMPACTION METHOD
ASTM D-1557 (B)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
8.0	35	20	15	SC	A-2-6	30.1	Dark grayish brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-4**
 Sample: **Bulk**
 Depth: **5.0-10.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	90.1	105.3	15.6	83.0	97.0	25.8	0.9	1.2	15	5.22
▲	96.7	112.9	15.7	89.6	104.6	24.3	2.4	2.5	25	4.83
■	100.6	117.5	15.4	93.6	109.3	22.2	4.5	4.2	56	4.48
	%	PCF	%	%	PCF	%			#	%

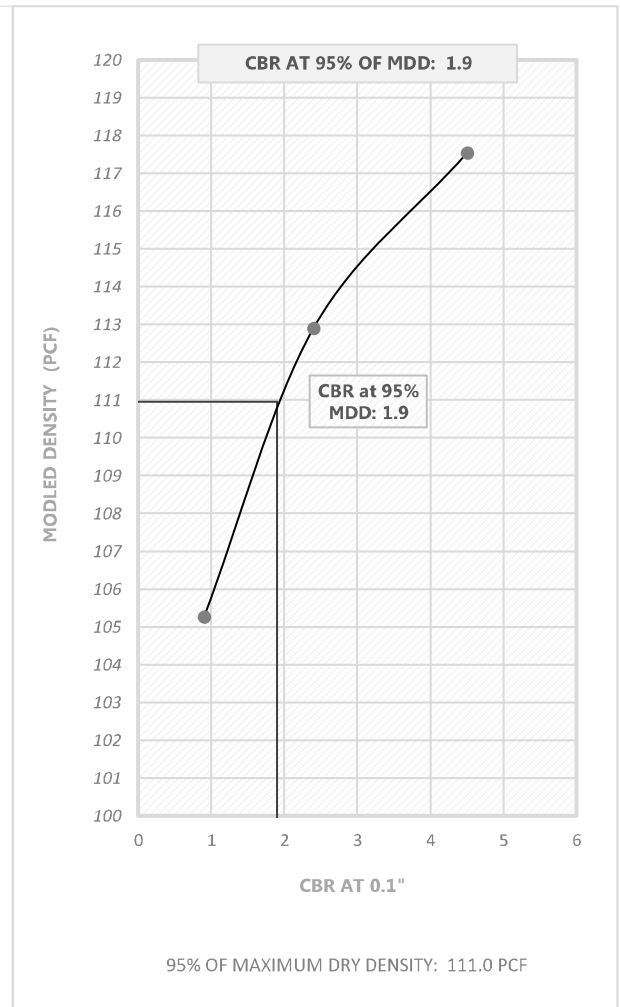
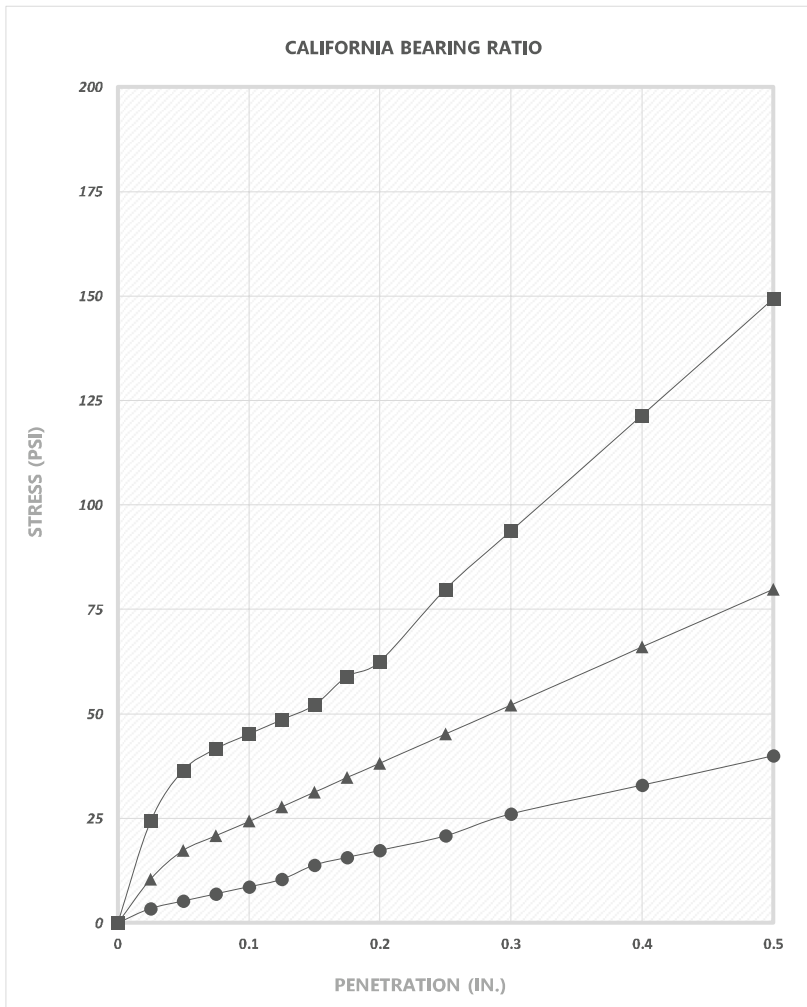
MAXIMUM DRY DENSITY
116.8 PCF

OPTIMUM MOISTURE CONTENT
15.6 %

COMPACTION METHOD
ASTM D-1557 (A)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
28.4	80	22	58	CH	A-7-6	97.8	Red fat CLAY

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	91.9	117.9	9.5	90.3	115.9	15.2	32.5	42.2	12	1.66
▲	95.1	122.1	9.2	93.3	119.7	14.1	62.0*	59.7*	25	1.38
■	99.1	127.2	9.3	97.3	124.9	12.9	68.8*	68.0*	56	0.37
	%	PCF	%	%	PCF	%	* DENOTES CORRECTED VALUE		#	%

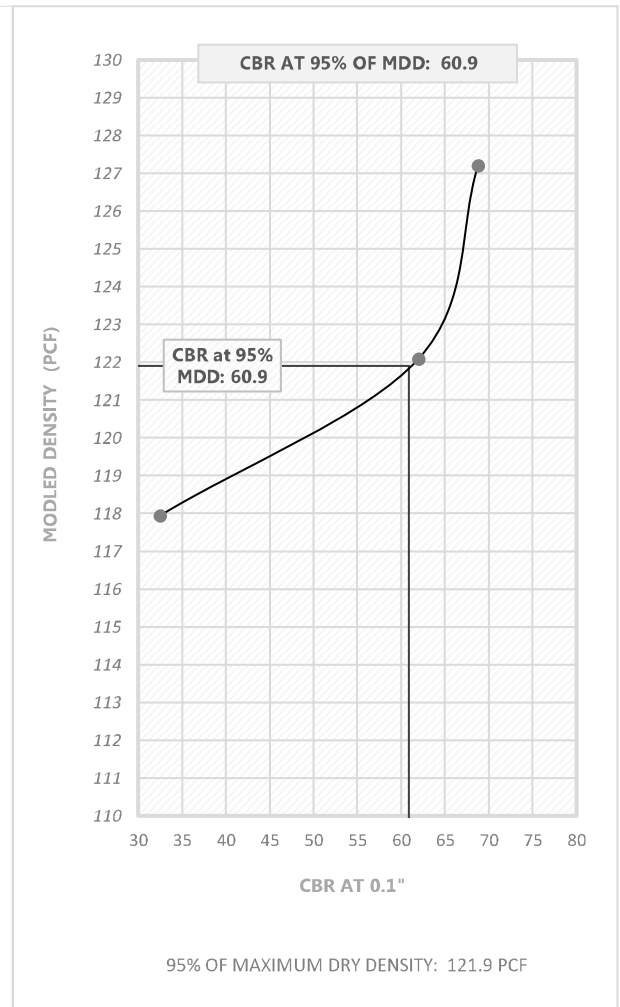
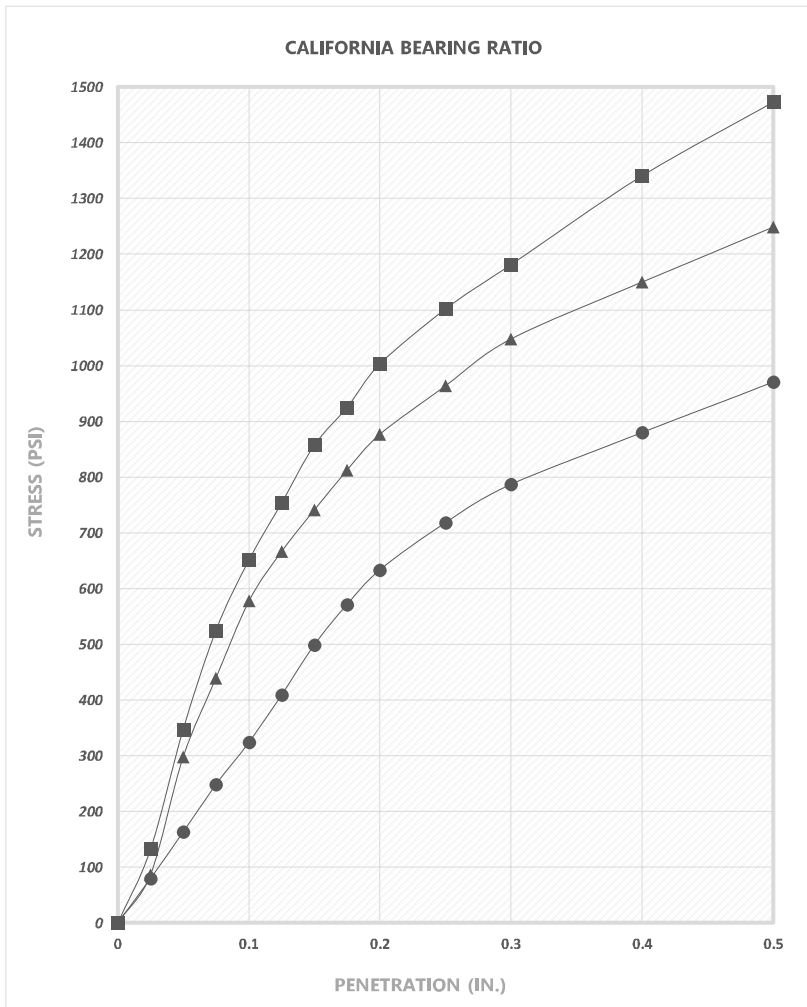
MAXIMUM DRY DENSITY
128.3 PCF

OPTIMUM MOISTURE CONTENT
9.2 %

COMPACTION METHOD
ASTM D-1557 (B)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

W ST. NE PARKING LOT

Boring: **B-8**
 Sample: **Bulk**
 Depth: **1.0-5.0'**

Project No.: DC17053.01
 Sample Date: -
 Location: -

JAY KAY TESTING, INC.
 5233 Lehman Road, Suite 110
 Spring Grove, PA 17362
 Phone: (410) 259-5101

CALIFORNIA BEARING RATIO TEST RESULTS

	AS MOLDED			AFTER SOAK			CBR at 0.1"	CBR at 0.2"	Blows	Swell
	Compaction	Density	Moisture	Compaction	Density	Moisture				
●	91.9	117.9	9.5	90.3	115.9	15.2	32.5	42.2	12	1.66
▲	95.1	122.1	9.2	93.3	119.7	14.1	62.0*	59.7*	25	1.38
■	99.1	127.2	9.3	97.3	124.9	12.9	68.8*	68.0*	56	0.37
	%	PCF	%	%	PCF	%	* DENOTES CORRECTED VALUE		#	%

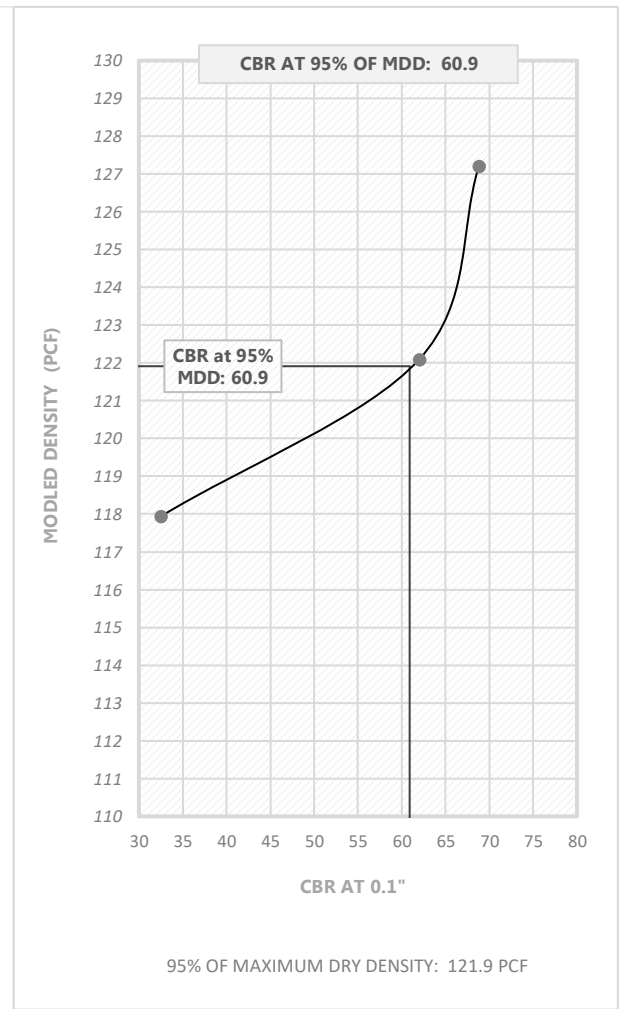
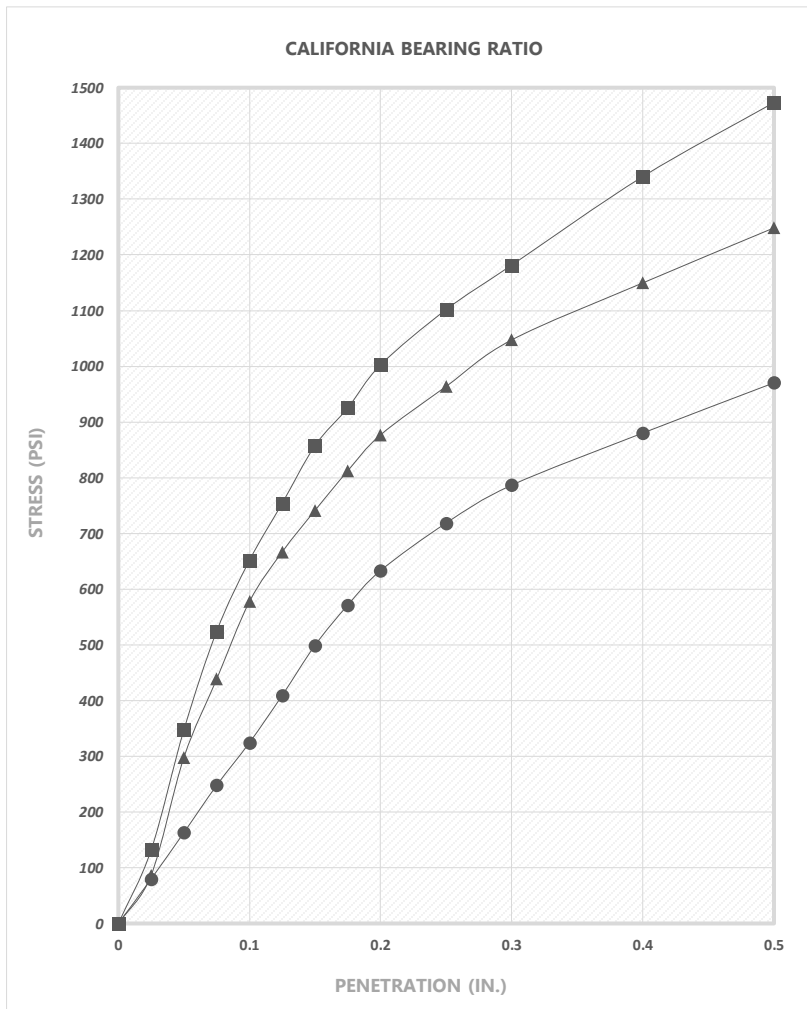
MAXIMUM DRY DENSITY
128.3 PCF

OPTIMUM MOISTURE CONTENT
9.2 %

COMPACTION METHOD
ASTM D-1557 (B)

CBR METHOD
ASTM D-1883

SURCHARGE
75 PSF



MC	LL	PL	PI	USCS	AASHTO	FINES	SOIL DESCRIPTION
13.0	38	20	18	SC	A-6	39.4	Brown clayey SAND with gravel

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-164616-1
Client Project/Site: Washington, DC

For:
GEI Consultants, Inc.
1620 I Street NW
Suite 800
Washington, Washington, DC 20006

Attn: Mr. Michael Johnescu

Kathryn Smith

Authorized for release by:
3/13/2019 4:42:15 PM

Kathryn Smith, Manager of Project Management
(912)250-0275
kathy.smith@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Definitions/Glossary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)

TestAmerica Savannah

Definitions/Glossary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

1

2

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12

Sample Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-164616-1	B-01	Solid	02/14/19 13:40	02/15/19 09:25
680-164616-2	Trip Blank	Water	02/14/19 00:00	02/15/19 09:25

1

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9

10

11

12

Case Narrative

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Job ID: 680-164616-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE Client: GEI Consultants, Inc. Project: Washington, DC

Report Number: 680-164616-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In the event of interference or analytes present at high concentrations, samples may be diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

RECEIPT

The samples were received on 02/15/2019; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 2.9° C.

TCLP VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample B-01 (680-164616-1) was analyzed for TCLP volatile organic compounds (GC-MS) in accordance with EPA SW-846 Methods 1311/8260B. The samples were leached on 02/19/2019 and analyzed on 02/25/2019.

Sample B-01 (680-164616-1)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample B-01 (680-164616-1) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were prepared on 02/18/2019 and analyzed on 02/20/2019.

Methylene Chloride was detected in method blank MB 680-559004/8 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample Trip Blank (680-164616-2) was analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/25/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TCLP SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample B-01 (680-164616-1) was analyzed for TCLP semivolatile organic compounds (GC-MS) in accordance with EPA SW846 Methods 1311 / 8270D. The samples were leached on 02/19/2019, prepared on 02/20/2019 and analyzed on 02/26/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

Sample B-01 (680-164616-1) was analyzed for Semivolatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8270D. The samples were prepared on 02/21/2019 and analyzed on 02/22/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GASOLINE RANGE ORGANICS (GRO)

Case Narrative

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Job ID: 680-164616-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Sample B-01 (680-164616-1) was analyzed for gasoline range organics (GRO) in accordance with EPA SW-846 Method 8015B. The samples were prepared on 02/18/2019 and analyzed on 02/27/2019.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL RANGE ORGANICS (DRO)

Sample B-01 (680-164616-1) was analyzed for Diesel Range Organics (DRO) in accordance with EPA SW-846 Method 8015C. The samples were prepared on 02/21/2019 and analyzed on 02/22/2019.

Due to the nature of this analysis which involves a total area sum over the entire retention time range, manual integrations are routinely performed for target analytes and surrogates to ensure consistent integration.

Diesel Range Organics [C10-C28] was detected in method blank MB 680-559159/8-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES (TCLP)

Sample B-01 (680-164616-1) was analyzed for Pesticides (TCLP) in accordance with EPA SW-846 Method 1311/8081B_8082A. The samples were leached on 02/19/2019, prepared on 02/20/2019 and analyzed on 02/26/2019.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 680-558988 and analytical batch 680-559753 recovered outside control limits for the following analyte: Methoxychlor. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PESTICIDES AND PCBs

Sample B-01 (680-164616-1) was analyzed for Pesticides and PCBs in accordance with EPA SW-846 Method 8081B_8082A. The samples were prepared on 02/19/2019 and analyzed on 03/12/2019.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

Two surrogates are used for this analysis. The laboratory's SOP allows one of these surrogates to be outside acceptance criteria without performing re-extraction/re-analysis. The following sample contained an allowable number of surrogate compounds outside limits: B-01 (680-164616-1). These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

HERBICIDES (TCLP)

Sample B-01 (680-164616-1) was analyzed for Herbicides (TCLP) in accordance with EPA SW-846 Methods 1311/ 8151A. The samples were leached on 02/19/2019, prepared on 02/22/2019 and analyzed on 02/27/2019.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Case Narrative

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Job ID: 680-164616-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

CHLORINATED HERBICIDES

Sample B-01 (680-164616-1) was analyzed for chlorinated herbicides in accordance with EPA SW-846 Method 8151A. The samples were prepared on 02/27/2019 and analyzed on 03/05/2019.

This method incorporates 2nd column confirmation. Corrective action is not taken for surrogate/spike compounds unless results from both columns are unacceptable. Results outside criteria are qualified.

The laboratory control sample (LCS) for preparation batch 680-559896 and analytical batch 680-560455 recovered outside control limits for the following analyte: Dalapon. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP) - TCLP

Sample B-01 (680-164616-1) was analyzed for Metals (ICP) - TCLP in accordance with EPA SW-846 Methods 1311/6010C. The samples were leached on 02/19/2019, prepared on 02/21/2019 and analyzed on 02/22/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICP)

Sample B-01 (680-164616-1) was analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 02/20/2019 and analyzed on 02/26/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

MERCURY - TCLP

Sample B-01 (680-164616-1) was analyzed for mercury - TCLP in accordance with EPA SW-846 Methods 1311/7470A. The samples were leached on 02/19/2019, and prepared and analyzed on 02/21/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Sample B-01 (680-164616-1) was analyzed for total mercury in accordance with EPA SW-846 Method 7471B. The samples were prepared on 02/15/2019 and analyzed on 02/18/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

IGNITABILITY FOR SOLIDS

Sample B-01 (680-164616-1) was analyzed for ignitability for solids in accordance with EPA SW-846 Method 1030. The samples were analyzed on 02/19/2019.

The following sample did not ignite: B-01 (680-164616-1); therefore, an ignitability value could not be obtained. The result has been reported as "No Burn" (NB).

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL CYANIDE

Sample B-01 (680-164616-1) was analyzed for total cyanide in accordance with EPA SW-846 Method 9012B. The samples were prepared and analyzed on 02/19/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SULFIDE

Sample B-01 (680-164616-1) was analyzed for total sulfide in accordance with EPA SW-846 Method 9034. The samples were prepared and analyzed on 02/20/2019.

Case Narrative

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Job ID: 680-164616-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

CORROSIVITY (PH)

Sample B-01 (680-164616-1) was analyzed for corrosivity (pH) in accordance with EPA SW-846 Method 9045D. The samples were analyzed on 02/18/2019.

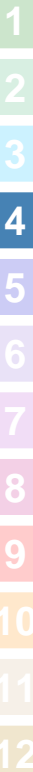
This analysis is considered a field test and is to be performed within 15 minutes of collection. This analysis was performed in the laboratory outside the 15 minute timeframe.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PERCENT SOLIDS/MOISTURE

Sample B-01 (680-164616-1) was analyzed for Percent Solids/Moisture in accordance with TestAmerica SOP. The samples were analyzed on 02/15/2019.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Lab Sample ID: 680-164616-1

Date Collected: 02/14/19 13:40

Matrix: Solid

Date Received: 02/15/19 09:25

Percent Solids: 74.6

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	47	U	47	10	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Benzene	4.7	U	4.7	0.69	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Bromodichloromethane	4.7	U	4.7	0.91	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Bromoform	4.7	U	4.7	1.4	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Bromomethane	4.7	U	4.7	1.4	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
2-Butanone (MEK)	23	U	23	2.3	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Carbon disulfide	4.7	U	4.7	1.0	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Carbon tetrachloride	4.7	U	4.7	0.78	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Chlorobenzene	4.7	U	4.7	0.90	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Chloroethane	4.7	U	4.7	2.5	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Chloroform	4.7	U	4.7	1.0	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Chloromethane	4.7	U	4.7	0.94	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
cis-1,2-Dichloroethene	4.7	U	4.7	1.3	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
cis-1,3-Dichloropropene	4.7	U	4.7	0.78	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Dibromochloromethane	4.7	U	4.7	1.6	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2-Dibromo-3-Chloropropane	9.4	U	9.4	4.1	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2-Dibromoethane	4.7	U	4.7	1.4	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2-Dichlorobenzene	4.7	U	4.7	1.2	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,3-Dichlorobenzene	4.7	U	4.7	1.5	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,4-Dichlorobenzene	4.7	U	4.7	0.69	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Dichlorodifluoromethane	4.7	U	4.7	0.88	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,1-Dichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2-Dichloroethane	4.7	U	4.7	1.0	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,1-Dichloroethene	4.7	U	4.7	1.4	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2-Dichloropropane	4.7	U	4.7	0.81	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Ethylbenzene	4.7	U	4.7	1.2	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
2-Hexanone	23	U	23	3.1	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Isopropylbenzene	4.7	U	4.7	1.8	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Methylene Chloride	4.7	U	4.7	0.92	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
4-Methyl-2-pentanone	23	U	23	3.9	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Methyl tert-butyl ether	4.7	U	4.7	0.94	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Styrene	4.7	U	4.7	0.87	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,1,2,2-Tetrachloroethane	4.7	U	4.7	1.5	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Tetrachloroethene	4.7	U	4.7	1.8	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Toluene	2.1	J	4.7	0.79	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
trans-1,2-Dichloroethene	4.7	U	4.7	0.59	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
trans-1,3-Dichloropropene	4.7	U	4.7	0.82	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,2,4-Trichlorobenzene	4.7	U	4.7	0.84	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,1,1-Trichloroethane	4.7	U	4.7	0.55	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
1,1,2-Trichloroethane	4.7	U	4.7	1.2	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Trichloroethene	4.7	U	4.7	1.2	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Trichlorofluoromethane	4.7	U	4.7	1.1	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Vinyl chloride	4.7	U	4.7	1.4	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1
Xylenes, Total	9.4	U	9.4	1.0	ug/Kg	☼	02/18/19 10:41	02/20/19 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		70 - 130	02/18/19 10:41	02/20/19 15:42	1
Dibromofluoromethane (Surr)	105		70 - 130	02/18/19 10:41	02/20/19 15:42	1
1,2-Dichloroethane-d4 (Surr)	116		70 - 130	02/18/19 10:41	02/20/19 15:42	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Date Collected: 02/14/19 13:40

Date Received: 02/15/19 09:25

Lab Sample ID: 680-164616-1

Matrix: Solid

Percent Solids: 74.6

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		70 - 130	02/18/19 10:41	02/20/19 15:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.020	U	0.020	0.010	mg/L			02/25/19 14:37	20
Chlorobenzene	0.020	U	0.020	0.0052	mg/L			02/25/19 14:37	20
Tetrachloroethene	0.020	U	0.020	0.015	mg/L			02/25/19 14:37	20
Carbon tetrachloride	0.020	U	0.020	0.0066	mg/L			02/25/19 14:37	20
Chloroform	0.020	U	0.020	0.010	mg/L			02/25/19 14:37	20
Benzene	0.020	U	0.020	0.0086	mg/L			02/25/19 14:37	20
Vinyl chloride	0.020	U	0.020	0.010	mg/L			02/25/19 14:37	20
1,1-Dichloroethene	0.020	U	0.020	0.0072	mg/L			02/25/19 14:37	20
2-Butanone (MEK)	0.20	U	0.20	0.068	mg/L			02/25/19 14:37	20
Trichloroethene	0.020	U	0.020	0.0096	mg/L			02/25/19 14:37	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 120		02/25/19 14:37	20
1,2-Dichloroethane-d4 (Surr)	120		73 - 131		02/25/19 14:37	20
Dibromofluoromethane (Surr)	101		80 - 122		02/25/19 14:37	20
4-Bromofluorobenzene (Surr)	104		80 - 120		02/25/19 14:37	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	420	U	420	52	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Acenaphthylene	420	U	420	46	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Acetophenone	420	U	420	36	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Anthracene	420	U	420	32	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Benzo[a]anthracene	420	U	420	34	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Benzo[a]pyrene	420	U	420	66	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Benzo[b]fluoranthene	420	U	420	48	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Benzo[g,h,i]perylene	420	U	420	28	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Benzo[k]fluoranthene	420	U	420	83	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Bis(2-chloroethoxy)methane	420	U	420	50	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Bis(2-chloroethyl)ether	420	U	420	57	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
bis (2-chloroisopropyl) ether	420	U	420	38	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Bis(2-ethylhexyl) phthalate	520		420	37	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Bromophenyl phenyl ether	420	U	420	46	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Butyl benzyl phthalate	420	U	420	33	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Carbazole	420	U	420	38	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Chloroaniline	840	U	840	66	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Chloro-3-methylphenol	420	U	420	45	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Chloronaphthalene	420	U	420	45	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Chlorophenol	420	U	420	51	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Chlorophenyl phenyl ether	420	U	420	56	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Chrysene	420	U	420	27	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Dibenz(a,h)anthracene	420	U	420	50	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Dibenzofuran	420	U	420	42	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
3,3'-Dichlorobenzidine	840	U	840	36	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,4-Dichlorophenol	420	U	420	45	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Diethyl phthalate	420	U	420	47	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Lab Sample ID: 680-164616-1

Date Collected: 02/14/19 13:40

Matrix: Solid

Date Received: 02/15/19 09:25

Percent Solids: 74.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	420	U	420	56	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Dimethyl phthalate	420	U	420	43	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Di-n-butyl phthalate	420	U	420	38	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4,6-Dinitro-2-methylphenol	2200	U	2200	220	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,4-Dinitrophenol	2200	U	2200	1100	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,4-Dinitrotoluene	420	U	420	62	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,6-Dinitrotoluene	420	U	420	53	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Di-n-octyl phthalate	420	U	420	37	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Fluoranthene	420	U	420	41	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Fluorene	420	U	420	46	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Hexachlorobenzene	420	U	420	50	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Hexachlorobutadiene	420	U	420	46	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Hexachlorocyclopentadiene	420	U	420	52	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Hexachloroethane	420	U	420	36	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Indeno[1,2,3-cd]pyrene	420	U	420	36	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Isophorone	420	U	420	42	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Methylnaphthalene	420	U	420	48	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Methylphenol	420	U	420	34	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
3 & 4 Methylphenol	420	U	420	55	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Naphthalene	420	U	420	38	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Nitroaniline	2200	U	2200	57	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
3-Nitroaniline	2200	U	2200	59	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Nitroaniline	2200	U	2200	62	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Nitrobenzene	420	U	420	33	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2-Nitrophenol	420	U	420	52	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
4-Nitrophenol	2200	U	2200	420	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
N-Nitrosodi-n-propylamine	420	U	420	41	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
N-Nitrosodiphenylamine	420	U	420	42	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Phenanthrene	420	U	420	34	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Phenol	420	U	420	43	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
Pyrene	420	U	420	34	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,4,5-Trichlorophenol	420	U	420	45	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1
2,4,6-Trichlorophenol	420	U	420	37	ug/Kg	☼	02/21/19 11:00	02/22/19 16:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	48		41 - 116	02/21/19 11:00	02/22/19 16:08	1
2-Fluorophenol (Surr)	54		39 - 114	02/21/19 11:00	02/22/19 16:08	1
Nitrobenzene-d5 (Surr)	47		37 - 115	02/21/19 11:00	02/22/19 16:08	1
Phenol-d5 (Surr)	52		38 - 122	02/21/19 11:00	02/22/19 16:08	1
Terphenyl-d14 (Surr)	51		46 - 126	02/21/19 11:00	02/22/19 16:08	1
2,4,6-Tribromophenol (Surr)	67		45 - 129	02/21/19 11:00	02/22/19 16:08	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.050	U	0.050	0.0027	mg/L		02/20/19 15:55	02/26/19 22:27	1
Pyridine	0.25	U	0.25	0.012	mg/L		02/20/19 15:55	02/26/19 22:27	1
Hexachlorobenzene	0.050	U	0.050	0.0040	mg/L		02/20/19 15:55	02/26/19 22:27	1
2,4-Dinitrotoluene	0.050	U	0.050	0.0060	mg/L		02/20/19 15:55	02/26/19 22:27	1
Hexachloroethane	0.050	U	0.050	0.0038	mg/L		02/20/19 15:55	02/26/19 22:27	1
Hexachlorobutadiene	0.050	U	0.050	0.0031	mg/L		02/20/19 15:55	02/26/19 22:27	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Lab Sample ID: 680-164616-1

Date Collected: 02/14/19 13:40

Matrix: Solid

Date Received: 02/15/19 09:25

Percent Solids: 74.6

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - TCLP (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	0.050	U	0.050	0.0043	mg/L		02/20/19 15:55	02/26/19 22:27	1
2,4,5-Trichlorophenol	0.050	U	0.050	0.0060	mg/L		02/20/19 15:55	02/26/19 22:27	1
Nitrobenzene	0.050	U	0.050	0.0037	mg/L		02/20/19 15:55	02/26/19 22:27	1
2-Methylphenol	0.050	U	0.050	0.0045	mg/L		02/20/19 15:55	02/26/19 22:27	1
3 & 4 Methylphenol	0.050	U	0.050	0.0065	mg/L		02/20/19 15:55	02/26/19 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4,6-Tribromophenol (Surr)	105		31 - 141	02/20/19 15:55	02/26/19 22:27	1
2-Fluorobiphenyl (Surr)	85		38 - 130	02/20/19 15:55	02/26/19 22:27	1
2-Fluorophenol (Surr)	64		25 - 130	02/20/19 15:55	02/26/19 22:27	1
Terphenyl-d14 (Surr)	81		10 - 143	02/20/19 15:55	02/26/19 22:27	1
Phenol-d5 (Surr)	68		25 - 130	02/20/19 15:55	02/26/19 22:27	1
Nitrobenzene-d5 (Surr)	78		39 - 130	02/20/19 15:55	02/26/19 22:27	1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	9.8	U	9.8	2.5	mg/Kg	☼	02/18/19 10:41	02/27/19 14:46	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		70 - 131	02/18/19 10:41	02/27/19 14:46	100

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	24	B	4.3	2.8	mg/Kg	☼	02/21/19 11:00	02/22/19 17:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	75		45 - 130	02/21/19 11:00	02/22/19 17:26	1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	1.1	U	1.1	0.096	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
alpha-BHC	1.1	U	1.1	0.089	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
beta-BHC	1.1	U	1.1	0.21	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Chlordane (technical)	11	U	11	1.9	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
4,4'-DDD	0.12	J p	1.1	0.12	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
4,4'-DDE	0.94	J	1.1	0.12	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
4,4'-DDT	1.8		1.1	0.14	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
delta-BHC	1.1	U	1.1	0.12	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Dieldrin	1.1	U	1.1	0.11	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endosulfan I	1.1	U	1.1	0.11	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endosulfan II	1.1	U	1.1	0.096	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endosulfan sulfate	1.1	U	1.1	0.13	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endrin	1.1	U	1.1	0.14	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endrin aldehyde	1.1	U	1.1	0.14	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Endrin ketone	1.1	U	1.1	0.13	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
gamma-BHC (Lindane)	1.1	U	1.1	0.089	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Heptachlor	1.1	U	1.1	0.12	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Heptachlor epoxide	1.1	U	1.1	0.10	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Methoxychlor	1.1	U	1.1	0.18	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1016	21	U	21	7.0	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Lab Sample ID: 680-164616-1

Date Collected: 02/14/19 13:40

Matrix: Solid

Date Received: 02/15/19 09:25

Percent Solids: 74.6

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1221	21	U	21	9.6	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1232	21	U	21	3.3	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1242	21	U	21	3.2	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1248	21	U	21	5.2	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1254	21	U	21	6.4	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
PCB-1260	21	U	21	6.1	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1
Toxaphene	110	U	110	3.5	ug/Kg	☼	02/19/19 20:06	03/12/19 21:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	26	X	54 - 133	02/19/19 20:06	03/12/19 21:14	1
Tetrachloro-m-xylene	71		46 - 130	02/19/19 20:06	03/12/19 21:14	1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 19:20	1
Chlordane (technical)	0.012	U	0.012	0.012	mg/L		02/20/19 15:55	02/26/19 19:20	1
gamma-BHC (Lindane)	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 19:20	1
Endrin	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 19:20	1
Methoxychlor	0.0012	U *	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 19:20	1
Heptachlor	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 19:20	1
Toxaphene	0.12	U	0.12	0.12	mg/L		02/20/19 15:55	02/26/19 19:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	63		40 - 130	02/20/19 15:55	02/26/19 19:20	1
DCB Decachlorobiphenyl	100		14 - 130	02/20/19 15:55	02/26/19 19:20	1

Method: 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	11	U	11	6.7	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
2,4-DB	11	U	11	4.0	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
2,4,5-T	11	U	11	3.1	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Silvex (2,4,5-TP)	11	U	11	2.1	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Dalapon	130	U *	130	3.9	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Dicamba	11	U	11	2.5	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Dichlorprop	11	U	11	1.5	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Dinoseb	67	U	67	6.1	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
MCPA	2700	U	2700	250	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Mecoprop	2700	U	2700	230	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1
Pentachlorophenol	11	U	11	0.56	ug/Kg	☼	02/27/19 13:57	03/05/19 09:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	81		35 - 137	02/27/19 13:57	03/05/19 09:11	1

Method: 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	0.050	U	0.050	0.0037	mg/L		02/22/19 07:46	02/27/19 11:31	1
Silvex (2,4,5-TP)	0.025	U	0.025	0.0062	mg/L		02/22/19 07:46	02/27/19 11:31	1
Pentachlorophenol	0.025	U	0.025	0.0037	mg/L		02/22/19 07:46	02/27/19 11:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	87		52 - 151	02/22/19 07:46	02/27/19 11:31	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Date Collected: 02/14/19 13:40

Date Received: 02/15/19 09:25

Lab Sample ID: 680-164616-1

Matrix: Solid

Percent Solids: 74.6

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	2.0	J	2.4	0.94	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Barium	49		1.2	0.19	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Cadmium	0.59	U	0.59	0.12	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Chromium	41		1.2	0.25	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Lead	12		1.2	0.40	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Selenium	2.9	U	2.9	1.1	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1
Silver	1.4		1.2	0.071	mg/Kg	☼	02/20/19 07:13	02/26/19 14:54	1

Method: 6010C - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:17	1
Barium	1.0	U	1.0	1.0	mg/L		02/21/19 12:59	02/22/19 12:17	1
Cadmium	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 12:17	1
Chromium	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:17	1
Lead	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:17	1
Selenium	0.50	U	0.50	0.50	mg/L		02/21/19 12:59	02/22/19 12:17	1
Silver	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 12:17	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	U	0.020	0.020	mg/L		02/21/19 10:34	02/21/19 17:02	1

Method: 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.025	U	0.025	0.0099	mg/Kg	☼	02/15/19 14:28	02/18/19 18:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability	nb		NONE	NONE	mm/sec			02/19/19 15:31	1
pH	7.6	HF			SU			02/18/19 10:29	1
Temperature	18.8	HF			Degrees C			02/18/19 10:29	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.65	U	0.65	0.17	mg/Kg	☼	02/19/19 04:26	02/19/19 10:48	1
Sulfide	79	U	79	79	mg/Kg	☼	02/20/19 03:00	02/20/19 03:34	1

Client Sample ID: Trip Blank

Date Collected: 02/14/19 00:00

Date Received: 02/15/19 09:25

Lab Sample ID: 680-164616-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			02/25/19 12:47	1
Benzene	1.0	U	1.0	0.43	ug/L			02/25/19 12:47	1
Bromodichloromethane	1.0	U	1.0	0.44	ug/L			02/25/19 12:47	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/25/19 12:47	1
Bromomethane	5.0	U	5.0	2.5	ug/L			02/25/19 12:47	1
2-Butanone (MEK)	10	U	10	3.4	ug/L			02/25/19 12:47	1
Carbon disulfide	2.0	U	2.0	1.0	ug/L			02/25/19 12:47	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			02/25/19 12:47	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/25/19 12:47	1

TestAmerica Savannah

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: Trip Blank

Lab Sample ID: 680-164616-2

Date Collected: 02/14/19 00:00

Matrix: Water

Date Received: 02/15/19 09:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	5.0	U	5.0	2.5	ug/L			02/25/19 12:47	1
Chloroform	1.0	U	1.0	0.50	ug/L			02/25/19 12:47	1
Chloromethane	1.0	U	1.0	0.40	ug/L			02/25/19 12:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			02/25/19 12:47	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			02/25/19 12:47	1
Dibromochloromethane	1.0	U	1.0	0.32	ug/L			02/25/19 12:47	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.1	ug/L			02/25/19 12:47	1
1,2-Dibromoethane	1.0	U	1.0	0.44	ug/L			02/25/19 12:47	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/25/19 12:47	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/25/19 12:47	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/25/19 12:47	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			02/25/19 12:47	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			02/25/19 12:47	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			02/25/19 12:47	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			02/25/19 12:47	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			02/25/19 12:47	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			02/25/19 12:47	1
2-Hexanone	10	U	10	2.0	ug/L			02/25/19 12:47	1
Isopropylbenzene	1.0	U	1.0	0.35	ug/L			02/25/19 12:47	1
Methyl acetate	5.0	U	5.0	1.8	ug/L			02/25/19 12:47	1
Methylcyclohexane	1.0	U	1.0	0.43	ug/L			02/25/19 12:47	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			02/25/19 12:47	1
4-Methyl-2-pentanone	10	U	10	2.1	ug/L			02/25/19 12:47	1
Methyl tert-butyl ether	10	U	10	0.30	ug/L			02/25/19 12:47	1
Styrene	1.0	U	1.0	0.27	ug/L			02/25/19 12:47	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			02/25/19 12:47	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			02/25/19 12:47	1
Toluene	1.0	U	1.0	0.48	ug/L			02/25/19 12:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			02/25/19 12:47	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			02/25/19 12:47	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			02/25/19 12:47	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			02/25/19 12:47	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			02/25/19 12:47	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			02/25/19 12:47	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			02/25/19 12:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.36	ug/L			02/25/19 12:47	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			02/25/19 12:47	1
Xylenes, Total	1.0	U	1.0	0.23	ug/L			02/25/19 12:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		02/25/19 12:47	1
Dibromofluoromethane (Surr)	97		80 - 122		02/25/19 12:47	1
1,2-Dichloroethane-d4 (Surr)	98		73 - 131		02/25/19 12:47	1
Toluene-d8 (Surr)	100		80 - 120		02/25/19 12:47	1

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-559004/8

Matrix: Solid

Analysis Batch: 559004

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	50	U	50	11	ug/Kg			02/20/19 14:32	1
Benzene	5.0	U	5.0	0.73	ug/Kg			02/20/19 14:32	1
Bromodichloromethane	5.0	U	5.0	0.97	ug/Kg			02/20/19 14:32	1
Bromoform	5.0	U	5.0	1.5	ug/Kg			02/20/19 14:32	1
Bromomethane	5.0	U	5.0	1.5	ug/Kg			02/20/19 14:32	1
2-Butanone (MEK)	25	U	25	2.4	ug/Kg			02/20/19 14:32	1
Carbon disulfide	5.0	U	5.0	1.1	ug/Kg			02/20/19 14:32	1
Carbon tetrachloride	5.0	U	5.0	0.83	ug/Kg			02/20/19 14:32	1
Chlorobenzene	5.0	U	5.0	0.96	ug/Kg			02/20/19 14:32	1
Chloroethane	5.0	U	5.0	2.7	ug/Kg			02/20/19 14:32	1
Chloroform	5.0	U	5.0	1.1	ug/Kg			02/20/19 14:32	1
Chloromethane	5.0	U	5.0	1.0	ug/Kg			02/20/19 14:32	1
cis-1,2-Dichloroethene	5.0	U	5.0	1.4	ug/Kg			02/20/19 14:32	1
cis-1,3-Dichloropropene	5.0	U	5.0	0.83	ug/Kg			02/20/19 14:32	1
Dibromochloromethane	5.0	U	5.0	1.7	ug/Kg			02/20/19 14:32	1
1,2-Dibromo-3-Chloropropane	10	U	10	4.4	ug/Kg			02/20/19 14:32	1
1,2-Dibromoethane	5.0	U	5.0	1.5	ug/Kg			02/20/19 14:32	1
1,2-Dichlorobenzene	5.0	U	5.0	1.3	ug/Kg			02/20/19 14:32	1
1,3-Dichlorobenzene	5.0	U	5.0	1.6	ug/Kg			02/20/19 14:32	1
1,4-Dichlorobenzene	5.0	U	5.0	0.74	ug/Kg			02/20/19 14:32	1
Dichlorodifluoromethane	5.0	U	5.0	0.94	ug/Kg			02/20/19 14:32	1
1,1-Dichloroethane	5.0	U	5.0	1.1	ug/Kg			02/20/19 14:32	1
1,2-Dichloroethane	5.0	U	5.0	1.1	ug/Kg			02/20/19 14:32	1
1,1-Dichloroethene	5.0	U	5.0	1.5	ug/Kg			02/20/19 14:32	1
1,2-Dichloropropane	5.0	U	5.0	0.86	ug/Kg			02/20/19 14:32	1
Ethylbenzene	5.0	U	5.0	1.3	ug/Kg			02/20/19 14:32	1
2-Hexanone	25	U	25	3.3	ug/Kg			02/20/19 14:32	1
Isopropylbenzene	5.0	U	5.0	1.9	ug/Kg			02/20/19 14:32	1
Methylene Chloride	1.74	J	5.0	0.98	ug/Kg			02/20/19 14:32	1
4-Methyl-2-pentanone	25	U	25	4.2	ug/Kg			02/20/19 14:32	1
Methyl tert-butyl ether	5.0	U	5.0	1.0	ug/Kg			02/20/19 14:32	1
Styrene	5.0	U	5.0	0.93	ug/Kg			02/20/19 14:32	1
1,1,2,2-Tetrachloroethane	5.0	U	5.0	1.6	ug/Kg			02/20/19 14:32	1
Tetrachloroethene	5.0	U	5.0	1.9	ug/Kg			02/20/19 14:32	1
Toluene	5.0	U	5.0	0.84	ug/Kg			02/20/19 14:32	1
trans-1,2-Dichloroethene	5.0	U	5.0	0.63	ug/Kg			02/20/19 14:32	1
trans-1,3-Dichloropropene	5.0	U	5.0	0.87	ug/Kg			02/20/19 14:32	1
1,2,4-Trichlorobenzene	5.0	U	5.0	0.89	ug/Kg			02/20/19 14:32	1
1,1,1-Trichloroethane	5.0	U	5.0	0.59	ug/Kg			02/20/19 14:32	1
1,1,2-Trichloroethane	5.0	U	5.0	1.3	ug/Kg			02/20/19 14:32	1
Trichloroethene	5.0	U	5.0	1.3	ug/Kg			02/20/19 14:32	1
Trichlorofluoromethane	5.0	U	5.0	1.2	ug/Kg			02/20/19 14:32	1
Vinyl chloride	5.0	U	5.0	1.5	ug/Kg			02/20/19 14:32	1
Xylenes, Total	10	U	10	1.1	ug/Kg			02/20/19 14:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		70 - 130		02/20/19 14:32	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-559004/8
Matrix: Solid
Analysis Batch: 559004

Client Sample ID: Method Blank
Prep Type: Total/NA

<i>Surrogate</i>	<i>MB</i> <i>%Recovery</i>	<i>MB</i> <i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Dibromofluoromethane (Surr)</i>	103		70 - 130		02/20/19 14:32	1
<i>1,2-Dichloroethane-d4 (Surr)</i>	96		70 - 130		02/20/19 14:32	1
<i>Toluene-d8 (Surr)</i>	97		70 - 130		02/20/19 14:32	1

Lab Sample ID: LCS 680-559004/4
Matrix: Solid
Analysis Batch: 559004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

<i>Analyte</i>	<i>Spike</i> <i>Added</i>	<i>LCS</i> <i>Result</i>	<i>LCS</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>
Acetone	250	277		ug/Kg		111	40 - 160
Benzene	50.0	48.8		ug/Kg		98	70 - 130
Bromodichloromethane	50.0	46.0		ug/Kg		92	70 - 130
Bromoform	50.0	51.7		ug/Kg		103	70 - 130
Bromomethane	50.0	57.1		ug/Kg		114	40 - 160
2-Butanone (MEK)	250	256		ug/Kg		103	40 - 160
Carbon disulfide	50.0	58.1		ug/Kg		116	40 - 160
Carbon tetrachloride	50.0	48.6		ug/Kg		97	70 - 130
Chlorobenzene	50.0	48.9		ug/Kg		98	70 - 130
Chloroethane	50.0	51.2		ug/Kg		102	40 - 160
Chloroform	50.0	46.2		ug/Kg		92	70 - 130
Chloromethane	50.0	45.4		ug/Kg		91	40 - 160
cis-1,2-Dichloroethene	50.0	46.5		ug/Kg		93	70 - 130
cis-1,3-Dichloropropene	50.0	45.8		ug/Kg		92	70 - 130
Dibromochloromethane	50.0	47.4		ug/Kg		95	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	55.2		ug/Kg		110	40 - 160
1,2-Dibromoethane	50.0	46.6		ug/Kg		93	70 - 130
1,2-Dichlorobenzene	50.0	48.3		ug/Kg		97	70 - 130
1,3-Dichlorobenzene	50.0	48.1		ug/Kg		96	70 - 130
1,4-Dichlorobenzene	50.0	47.1		ug/Kg		94	70 - 130
Dichlorodifluoromethane	50.0	45.6		ug/Kg		91	40 - 160
1,1-Dichloroethane	50.0	43.6		ug/Kg		87	70 - 130
1,2-Dichloroethane	50.0	46.1		ug/Kg		92	70 - 130
1,1-Dichloroethene	50.0	48.7		ug/Kg		97	70 - 130
1,2-Dichloropropane	50.0	46.2		ug/Kg		92	70 - 130
Ethylbenzene	50.0	48.9		ug/Kg		98	70 - 130
2-Hexanone	250	253		ug/Kg		101	40 - 160
Isopropylbenzene	50.0	50.1		ug/Kg		100	70 - 130
Methylene Chloride	50.0	49.2		ug/Kg		98	70 - 130
4-Methyl-2-pentanone	250	237		ug/Kg		95	40 - 160
Methyl tert-butyl ether	50.0	43.9		ug/Kg		88	70 - 130
Styrene	50.0	50.0		ug/Kg		100	70 - 130
1,1,2,2-Tetrachloroethane	50.0	50.9		ug/Kg		102	70 - 130
Tetrachloroethene	50.0	47.5		ug/Kg		95	70 - 130
Toluene	50.0	44.8		ug/Kg		90	70 - 130
trans-1,2-Dichloroethene	50.0	45.8		ug/Kg		92	70 - 130
trans-1,3-Dichloropropene	50.0	46.5		ug/Kg		93	70 - 130
1,2,4-Trichlorobenzene	50.0	55.4		ug/Kg		111	70 - 130
1,1,1-Trichloroethane	50.0	48.0		ug/Kg		96	70 - 130

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-559004/4
Matrix: Solid
Analysis Batch: 559004

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2-Trichloroethane	50.0	45.5		ug/Kg		91	70 - 130
Trichloroethene	50.0	48.7		ug/Kg		97	70 - 130
Trichlorofluoromethane	50.0	49.7		ug/Kg		99	40 - 160
Vinyl chloride	50.0	46.5		ug/Kg		93	70 - 130
Xylenes, Total	100	100		ug/Kg		100	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	95		70 - 130
1,2-Dichloroethane-d4 (Surr)	93		70 - 130
Toluene-d8 (Surr)	97		70 - 130

Lab Sample ID: LCSD 680-559004/5
Matrix: Solid
Analysis Batch: 559004

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	250	242		ug/Kg		97	40 - 160	14	20
Benzene	50.0	47.0		ug/Kg		94	70 - 130	4	20
Bromodichloromethane	50.0	47.7		ug/Kg		95	70 - 130	4	20
Bromoform	50.0	51.6		ug/Kg		103	70 - 130	0	20
Bromomethane	50.0	55.4		ug/Kg		111	40 - 160	3	20
2-Butanone (MEK)	250	244		ug/Kg		98	40 - 160	5	20
Carbon disulfide	50.0	54.0		ug/Kg		108	40 - 160	7	20
Carbon tetrachloride	50.0	48.5		ug/Kg		97	70 - 130	0	20
Chlorobenzene	50.0	47.9		ug/Kg		96	70 - 130	2	20
Chloroethane	50.0	48.9		ug/Kg		98	40 - 160	5	20
Chloroform	50.0	47.5		ug/Kg		95	70 - 130	3	20
Chloromethane	50.0	43.4		ug/Kg		87	40 - 160	5	20
cis-1,2-Dichloroethene	50.0	47.3		ug/Kg		95	70 - 130	2	20
cis-1,3-Dichloropropene	50.0	49.3		ug/Kg		99	70 - 130	7	20
Dibromochloromethane	50.0	47.1		ug/Kg		94	70 - 130	1	20
1,2-Dibromo-3-Chloropropane	50.0	52.5		ug/Kg		105	40 - 160	5	20
1,2-Dibromoethane	50.0	46.5		ug/Kg		93	70 - 130	0	20
1,2-Dichlorobenzene	50.0	47.7		ug/Kg		95	70 - 130	1	20
1,3-Dichlorobenzene	50.0	47.1		ug/Kg		94	70 - 130	2	20
1,4-Dichlorobenzene	50.0	46.5		ug/Kg		93	70 - 130	1	20
Dichlorodifluoromethane	50.0	43.8		ug/Kg		88	40 - 160	4	20
1,1-Dichloroethane	50.0	45.4		ug/Kg		91	70 - 130	4	20
1,2-Dichloroethane	50.0	48.4		ug/Kg		97	70 - 130	5	20
1,1-Dichloroethene	50.0	48.6		ug/Kg		97	70 - 130	0	20
1,2-Dichloropropane	50.0	45.7		ug/Kg		91	70 - 130	1	20
Ethylbenzene	50.0	47.3		ug/Kg		95	70 - 130	3	20
2-Hexanone	250	239		ug/Kg		96	40 - 160	6	20
Isopropylbenzene	50.0	48.4		ug/Kg		97	70 - 130	3	20
Methylene Chloride	50.0	50.5		ug/Kg		101	70 - 130	3	20
4-Methyl-2-pentanone	250	238		ug/Kg		95	40 - 160	0	20
Methyl tert-butyl ether	50.0	48.0		ug/Kg		96	70 - 130	9	20

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-559004/5

Matrix: Solid

Analysis Batch: 559004

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Styrene	50.0	48.9		ug/Kg		98	70 - 130	2	20
1,1,2,2-Tetrachloroethane	50.0	49.8		ug/Kg		100	70 - 130	2	20
Tetrachloroethene	50.0	46.0		ug/Kg		92	70 - 130	3	20
Toluene	50.0	46.8		ug/Kg		94	70 - 130	4	20
trans-1,2-Dichloroethene	50.0	46.7		ug/Kg		93	70 - 130	2	20
trans-1,3-Dichloropropene	50.0	45.2		ug/Kg		90	70 - 130	3	20
1,2,4-Trichlorobenzene	50.0	52.2		ug/Kg		104	70 - 130	6	20
1,1,1-Trichloroethane	50.0	48.1		ug/Kg		96	70 - 130	0	20
1,1,2-Trichloroethane	50.0	45.6		ug/Kg		91	70 - 130	0	20
Trichloroethene	50.0	47.9		ug/Kg		96	70 - 130	2	20
Trichlorofluoromethane	50.0	48.4		ug/Kg		97	40 - 160	2	20
Vinyl chloride	50.0	43.9		ug/Kg		88	70 - 130	6	20
Xylenes, Total	100	96.7		ug/Kg		97	70 - 130	4	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
4-Bromofluorobenzene (Surr)	97		70 - 130
Dibromofluoromethane (Surr)	97		70 - 130
1,2-Dichloroethane-d4 (Surr)	96		70 - 130
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: MB 680-559484/8

Matrix: Solid

Analysis Batch: 559484

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.0010	U	0.0010	0.00043	mg/L			02/25/19 11:59	1
2-Butanone (MEK)	0.010	U	0.010	0.0034	mg/L			02/25/19 11:59	1
Carbon tetrachloride	0.0010	U	0.0010	0.00033	mg/L			02/25/19 11:59	1
Chlorobenzene	0.0010	U	0.0010	0.00026	mg/L			02/25/19 11:59	1
Chloroform	0.0010	U	0.0010	0.00050	mg/L			02/25/19 11:59	1
1,2-Dichloroethane	0.0010	U	0.0010	0.00050	mg/L			02/25/19 11:59	1
1,1-Dichloroethene	0.0010	U	0.0010	0.00036	mg/L			02/25/19 11:59	1
Tetrachloroethene	0.0010	U	0.0010	0.00075	mg/L			02/25/19 11:59	1
Trichloroethene	0.0010	U	0.0010	0.00048	mg/L			02/25/19 11:59	1
Vinyl chloride	0.0010	U	0.0010	0.00050	mg/L			02/25/19 11:59	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		02/25/19 11:59	1
Dibromofluoromethane (Surr)	96		80 - 122		02/25/19 11:59	1
1,2-Dichloroethane-d4 (Surr)	109		73 - 131		02/25/19 11:59	1
Toluene-d8 (Surr)	104		80 - 120		02/25/19 11:59	1

Lab Sample ID: LCS 680-559484/3

Matrix: Solid

Analysis Batch: 559484

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.0500	0.0484		mg/L		97	80 - 120

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-559484/3
Matrix: Solid
Analysis Batch: 559484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	0.250	0.237		mg/L		95	79 - 125
Carbon tetrachloride	0.0500	0.0500		mg/L		100	67 - 125
Chlorobenzene	0.0500	0.0471		mg/L		94	80 - 120
Chloroform	0.0500	0.0510		mg/L		102	80 - 120
1,2-Dichloroethane	0.0500	0.0535		mg/L		107	72 - 128
1,1-Dichloroethene	0.0500	0.0471		mg/L		94	80 - 120
Tetrachloroethene	0.0500	0.0486		mg/L		97	71 - 123
Trichloroethene	0.0500	0.0483		mg/L		97	80 - 120
Vinyl chloride	0.0500	0.0422		mg/L		84	80 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	92		80 - 122
1,2-Dichloroethane-d4 (Surr)	109		73 - 131
Toluene-d8 (Surr)	99		80 - 120

Lab Sample ID: LCSD 680-559484/4
Matrix: Solid
Analysis Batch: 559484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.0500	0.0487		mg/L		97	80 - 120	1	20
2-Butanone (MEK)	0.250	0.245		mg/L		98	79 - 125	3	20
Carbon tetrachloride	0.0500	0.0503		mg/L		101	67 - 125	0	20
Chlorobenzene	0.0500	0.0473		mg/L		95	80 - 120	1	20
Chloroform	0.0500	0.0509		mg/L		102	80 - 120	0	20
1,2-Dichloroethane	0.0500	0.0537		mg/L		107	72 - 128	0	50
1,1-Dichloroethene	0.0500	0.0472		mg/L		94	80 - 120	0	20
Tetrachloroethene	0.0500	0.0489		mg/L		98	71 - 123	1	20
Trichloroethene	0.0500	0.0488		mg/L		98	80 - 120	1	20
Vinyl chloride	0.0500	0.0425		mg/L		85	80 - 129	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	92		80 - 122
1,2-Dichloroethane-d4 (Surr)	108		73 - 131
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: MB 680-559488/9
Matrix: Water
Analysis Batch: 559488

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	7.0	ug/L			02/25/19 12:24	1
Benzene	1.0	U	1.0	0.43	ug/L			02/25/19 12:24	1
Bromodichloromethane	1.0	U	1.0	0.44	ug/L			02/25/19 12:24	1
Bromoform	1.0	U	1.0	0.43	ug/L			02/25/19 12:24	1
Bromomethane	5.0	U	5.0	2.5	ug/L			02/25/19 12:24	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-559488/9

Matrix: Water

Analysis Batch: 559488

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2-Butanone (MEK)	10	U	10	3.4	ug/L			02/25/19 12:24	1
Carbon disulfide	2.0	U	2.0	1.0	ug/L			02/25/19 12:24	1
Carbon tetrachloride	1.0	U	1.0	0.33	ug/L			02/25/19 12:24	1
Chlorobenzene	1.0	U	1.0	0.26	ug/L			02/25/19 12:24	1
Chloroethane	5.0	U	5.0	2.5	ug/L			02/25/19 12:24	1
Chloroform	1.0	U	1.0	0.50	ug/L			02/25/19 12:24	1
Chloromethane	1.0	U	1.0	0.40	ug/L			02/25/19 12:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.41	ug/L			02/25/19 12:24	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.40	ug/L			02/25/19 12:24	1
Dibromochloromethane	1.0	U	1.0	0.32	ug/L			02/25/19 12:24	1
1,2-Dibromo-3-Chloropropane	5.0	U	5.0	1.1	ug/L			02/25/19 12:24	1
1,2-Dibromoethane	1.0	U	1.0	0.44	ug/L			02/25/19 12:24	1
1,2-Dichlorobenzene	1.0	U	1.0	0.37	ug/L			02/25/19 12:24	1
1,3-Dichlorobenzene	1.0	U	1.0	0.43	ug/L			02/25/19 12:24	1
1,4-Dichlorobenzene	1.0	U	1.0	0.46	ug/L			02/25/19 12:24	1
Dichlorodifluoromethane	1.0	U	1.0	0.60	ug/L			02/25/19 12:24	1
1,1-Dichloroethane	1.0	U	1.0	0.38	ug/L			02/25/19 12:24	1
1,2-Dichloroethane	1.0	U	1.0	0.50	ug/L			02/25/19 12:24	1
1,1-Dichloroethene	1.0	U	1.0	0.36	ug/L			02/25/19 12:24	1
1,2-Dichloropropane	1.0	U	1.0	0.67	ug/L			02/25/19 12:24	1
Ethylbenzene	1.0	U	1.0	0.33	ug/L			02/25/19 12:24	1
2-Hexanone	10	U	10	2.0	ug/L			02/25/19 12:24	1
Isopropylbenzene	1.0	U	1.0	0.35	ug/L			02/25/19 12:24	1
Methyl acetate	5.0	U	5.0	1.8	ug/L			02/25/19 12:24	1
Methylcyclohexane	1.0	U	1.0	0.43	ug/L			02/25/19 12:24	1
Methylene Chloride	5.0	U	5.0	2.5	ug/L			02/25/19 12:24	1
4-Methyl-2-pentanone	10	U	10	2.1	ug/L			02/25/19 12:24	1
Methyl tert-butyl ether	10	U	10	0.30	ug/L			02/25/19 12:24	1
Styrene	1.0	U	1.0	0.27	ug/L			02/25/19 12:24	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.62	ug/L			02/25/19 12:24	1
Tetrachloroethene	1.0	U	1.0	0.74	ug/L			02/25/19 12:24	1
Toluene	1.0	U	1.0	0.48	ug/L			02/25/19 12:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.37	ug/L			02/25/19 12:24	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.42	ug/L			02/25/19 12:24	1
1,2,4-Trichlorobenzene	5.0	U	5.0	2.5	ug/L			02/25/19 12:24	1
1,1,1-Trichloroethane	1.0	U	1.0	0.37	ug/L			02/25/19 12:24	1
1,1,2-Trichloroethane	1.0	U	1.0	0.33	ug/L			02/25/19 12:24	1
Trichloroethene	1.0	U	1.0	0.48	ug/L			02/25/19 12:24	1
Trichlorofluoromethane	1.0	U	1.0	0.42	ug/L			02/25/19 12:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.36	ug/L			02/25/19 12:24	1
Vinyl chloride	1.0	U	1.0	0.50	ug/L			02/25/19 12:24	1
Xylenes, Total	1.0	U	1.0	0.23	ug/L			02/25/19 12:24	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	106		80 - 120		02/25/19 12:24	1
Dibromofluoromethane (Surr)	98		80 - 122		02/25/19 12:24	1
1,2-Dichloroethane-d4 (Surr)	99		73 - 131		02/25/19 12:24	1
Toluene-d8 (Surr)	100		80 - 120		02/25/19 12:24	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Lab Sample ID: LCS 680-559488/5

Matrix: Water

Analysis Batch: 559488

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	250	225		ug/L		90	70 - 135
Benzene	50.0	48.9		ug/L		98	80 - 120
Bromodichloromethane	50.0	51.8		ug/L		104	80 - 120
Bromoform	50.0	50.2		ug/L		100	74 - 126
Bromomethane	50.0	39.3		ug/L		79	62 - 130
2-Butanone (MEK)	250	239		ug/L		96	80 - 131
Carbon disulfide	50.0	51.1		ug/L		102	80 - 120
Carbon tetrachloride	50.0	55.6		ug/L		111	76 - 123
Chlorobenzene	50.0	48.2		ug/L		96	80 - 120
Chloroethane	50.0	51.1		ug/L		102	66 - 135
Chloroform	50.0	51.2		ug/L		102	80 - 120
Chloromethane	50.0	46.5		ug/L		93	69 - 131
cis-1,2-Dichloroethene	50.0	54.0		ug/L		108	80 - 120
cis-1,3-Dichloropropene	50.0	53.7		ug/L		107	80 - 120
Dibromochloromethane	50.0	53.5		ug/L		107	80 - 121
1,2-Dibromo-3-Chloropropane	50.0	44.6		ug/L		89	71 - 134
1,2-Dibromoethane	50.0	52.1		ug/L		104	80 - 120
1,2-Dichlorobenzene	50.0	49.2		ug/L		98	80 - 120
1,3-Dichlorobenzene	50.0	51.1		ug/L		102	80 - 120
1,4-Dichlorobenzene	50.0	49.5		ug/L		99	80 - 120
Dichlorodifluoromethane	50.0	50.5		ug/L		101	47 - 155
1,1-Dichloroethane	50.0	51.8		ug/L		104	80 - 120
1,2-Dichloroethane	50.0	54.1		ug/L		108	80 - 120
1,1-Dichloroethene	50.0	50.9		ug/L		102	76 - 120
1,2-Dichloropropane	50.0	51.0		ug/L		102	80 - 120
Ethylbenzene	50.0	49.6		ug/L		99	80 - 120
2-Hexanone	250	263		ug/L		105	74 - 127
Isopropylbenzene	50.0	51.7		ug/L		103	80 - 120
Methyl acetate	100	83.4		ug/L		83	45 - 158
Methylcyclohexane	50.0	60.3		ug/L		121	85 - 122
Methylene Chloride	50.0	44.5		ug/L		89	80 - 120
4-Methyl-2-pentanone	250	251		ug/L		101	76 - 124
Methyl tert-butyl ether	50.0	50.7		ug/L		101	80 - 120
Styrene	50.0	51.7		ug/L		103	80 - 120
1,1,2,2-Tetrachloroethane	50.0	47.2		ug/L		94	80 - 120
Tetrachloroethene	50.0	53.2		ug/L		106	80 - 121
Toluene	50.0	52.7		ug/L		105	80 - 113
trans-1,2-Dichloroethene	50.0	50.0		ug/L		100	80 - 120
trans-1,3-Dichloropropene	50.0	51.2		ug/L		102	80 - 120
1,2,4-Trichlorobenzene	50.0	54.2		ug/L		108	68 - 128
1,1,1-Trichloroethane	50.0	52.8		ug/L		106	80 - 120
1,1,2-Trichloroethane	50.0	47.2		ug/L		94	80 - 120
Trichloroethene	50.0	51.9		ug/L		104	80 - 120
Trichlorofluoromethane	50.0	56.5		ug/L		113	60 - 141
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	57.4		ug/L		115	79 - 124
Vinyl chloride	50.0	51.5		ug/L		103	71 - 128
Xylenes, Total	100	100		ug/L		100	80 - 120

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-559488/5
Matrix: Water
Analysis Batch: 559488

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	104		80 - 122
1,2-Dichloroethane-d4 (Surr)	103		73 - 131
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: LCSD 680-559488/6
Matrix: Water
Analysis Batch: 559488

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	250	198		ug/L		79	70 - 135	13	30
Benzene	50.0	47.8		ug/L		96	80 - 120	2	20
Bromodichloromethane	50.0	49.8		ug/L		100	80 - 120	4	20
Bromoform	50.0	48.9		ug/L		98	74 - 126	3	20
Bromomethane	50.0	43.5		ug/L		87	62 - 130	10	20
2-Butanone (MEK)	250	221		ug/L		89	80 - 131	8	20
Carbon disulfide	50.0	49.8		ug/L		100	80 - 120	3	20
Carbon tetrachloride	50.0	54.3		ug/L		109	76 - 123	2	20
Chlorobenzene	50.0	47.5		ug/L		95	80 - 120	1	20
Chloroethane	50.0	52.1		ug/L		104	66 - 135	2	20
Chloroform	50.0	50.0		ug/L		100	80 - 120	2	20
Chloromethane	50.0	45.2		ug/L		90	69 - 131	3	30
cis-1,2-Dichloroethene	50.0	52.2		ug/L		104	80 - 120	3	20
cis-1,3-Dichloropropene	50.0	51.5		ug/L		103	80 - 120	4	20
Dibromochloromethane	50.0	51.7		ug/L		103	80 - 121	3	20
1,2-Dibromo-3-Chloropropane	50.0	43.6		ug/L		87	71 - 134	2	20
1,2-Dibromoethane	50.0	48.9		ug/L		98	80 - 120	6	20
1,2-Dichlorobenzene	50.0	48.2		ug/L		96	80 - 120	2	20
1,3-Dichlorobenzene	50.0	50.8		ug/L		102	80 - 120	1	20
1,4-Dichlorobenzene	50.0	49.0		ug/L		98	80 - 120	1	20
Dichlorodifluoromethane	50.0	48.1		ug/L		96	47 - 155	5	40
1,1-Dichloroethane	50.0	49.8		ug/L		100	80 - 120	4	20
1,2-Dichloroethane	50.0	50.8		ug/L		102	80 - 120	6	50
1,1-Dichloroethene	50.0	50.4		ug/L		101	76 - 120	1	20
1,2-Dichloropropane	50.0	49.5		ug/L		99	80 - 120	3	20
Ethylbenzene	50.0	49.0		ug/L		98	80 - 120	1	20
2-Hexanone	250	249		ug/L		100	74 - 127	5	20
Isopropylbenzene	50.0	50.7		ug/L		101	80 - 120	2	20
Methyl acetate	100	80.2		ug/L		80	45 - 158	4	20
Methylcyclohexane	50.0	55.0		ug/L		110	85 - 122	9	20
Methylene Chloride	50.0	41.8		ug/L		84	80 - 120	6	20
4-Methyl-2-pentanone	250	240		ug/L		96	76 - 124	5	20
Methyl tert-butyl ether	50.0	48.2		ug/L		96	80 - 120	5	20
Styrene	50.0	50.8		ug/L		102	80 - 120	2	20
1,1,2,2-Tetrachloroethane	50.0	45.1		ug/L		90	80 - 120	5	20
Tetrachloroethene	50.0	51.7		ug/L		103	80 - 121	3	20
Toluene	50.0	51.5		ug/L		103	80 - 113	2	20
trans-1,2-Dichloroethene	50.0	51.7		ug/L		103	80 - 120	3	20

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-559488/6

Matrix: Water

Analysis Batch: 559488

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	50.0	49.7		ug/L		99	80 - 120	3	30
1,2,4-Trichlorobenzene	50.0	53.5		ug/L		107	68 - 128	1	20
1,1,1-Trichloroethane	50.0	52.1		ug/L		104	80 - 120	1	20
1,1,2-Trichloroethane	50.0	43.8		ug/L		88	80 - 120	7	20
Trichloroethene	50.0	50.8		ug/L		102	80 - 120	2	20
Trichlorofluoromethane	50.0	53.4		ug/L		107	60 - 141	6	20
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.9		ug/L		106	79 - 124	8	20
Vinyl chloride	50.0	50.0		ug/L		100	71 - 128	3	20
Xylenes, Total	100	99.2		ug/L		99	80 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	100		80 - 122
1,2-Dichloroethane-d4 (Surr)	98		73 - 131
Toluene-d8 (Surr)	95		80 - 120

Lab Sample ID: LB 680-558889/1-A

Matrix: Solid

Analysis Batch: 559484

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.020	U	0.020	0.0086	mg/L			02/25/19 12:44	20
2-Butanone (MEK)	0.20	U	0.20	0.068	mg/L			02/25/19 12:44	20
Carbon tetrachloride	0.020	U	0.020	0.0066	mg/L			02/25/19 12:44	20
Chlorobenzene	0.020	U	0.020	0.0052	mg/L			02/25/19 12:44	20
Chloroform	0.020	U	0.020	0.010	mg/L			02/25/19 12:44	20
1,2-Dichloroethane	0.020	U	0.020	0.010	mg/L			02/25/19 12:44	20
1,1-Dichloroethene	0.020	U	0.020	0.0072	mg/L			02/25/19 12:44	20
Tetrachloroethene	0.020	U	0.020	0.015	mg/L			02/25/19 12:44	20
Trichloroethene	0.020	U	0.020	0.0096	mg/L			02/25/19 12:44	20
Vinyl chloride	0.020	U	0.020	0.010	mg/L			02/25/19 12:44	20

Surrogate	LB %Recovery	LB Qualifier	LB Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		02/25/19 12:44	20
Dibromofluoromethane (Surr)	103		80 - 122		02/25/19 12:44	20
1,2-Dichloroethane-d4 (Surr)	124		73 - 131		02/25/19 12:44	20
Toluene-d8 (Surr)	107		80 - 120		02/25/19 12:44	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-558942/10-A

Matrix: Solid

Analysis Batch: 559644

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 558942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.010	U	0.010	0.00054	mg/L		02/20/19 15:55	02/26/19 17:48	1
Pyridine	0.050	U	0.050	0.0024	mg/L		02/20/19 15:55	02/26/19 17:48	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-558942/10-A
Matrix: Solid
Analysis Batch: 559644

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558942

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dinitrotoluene	0.010	U	0.010	0.0012	mg/L		02/20/19 15:55	02/26/19 17:48	1
Hexachlorobenzene	0.010	U	0.010	0.00080	mg/L		02/20/19 15:55	02/26/19 17:48	1
Hexachlorobutadiene	0.010	U	0.010	0.00062	mg/L		02/20/19 15:55	02/26/19 17:48	1
Hexachloroethane	0.010	U	0.010	0.00076	mg/L		02/20/19 15:55	02/26/19 17:48	1
2-Methylphenol	0.010	U	0.010	0.00090	mg/L		02/20/19 15:55	02/26/19 17:48	1
3 & 4 Methylphenol	0.010	U	0.010	0.0013	mg/L		02/20/19 15:55	02/26/19 17:48	1
Nitrobenzene	0.010	U	0.010	0.00074	mg/L		02/20/19 15:55	02/26/19 17:48	1
2,4,5-Trichlorophenol	0.010	U	0.010	0.0012	mg/L		02/20/19 15:55	02/26/19 17:48	1
2,4,6-Trichlorophenol	0.010	U	0.010	0.00086	mg/L		02/20/19 15:55	02/26/19 17:48	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	62		38 - 130	02/20/19 15:55	02/26/19 17:48	1
2-Fluorophenol (Surr)	57		25 - 130	02/20/19 15:55	02/26/19 17:48	1
Nitrobenzene-d5 (Surr)	67		39 - 130	02/20/19 15:55	02/26/19 17:48	1
Phenol-d5 (Surr)	59		25 - 130	02/20/19 15:55	02/26/19 17:48	1
Terphenyl-d14 (Surr)	86		10 - 143	02/20/19 15:55	02/26/19 17:48	1
2,4,6-Tribromophenol (Surr)	86		31 - 141	02/20/19 15:55	02/26/19 17:48	1

Lab Sample ID: LCS 680-558942/11-A
Matrix: Solid
Analysis Batch: 559644

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558942

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,4-Dichlorobenzene	0.100	0.0694		mg/L		69	31 - 130
Pyridine	0.200	0.106		mg/L		53	10 - 130
2,4-Dinitrotoluene	0.100	0.0971		mg/L		97	52 - 130
Hexachlorobenzene	0.100	0.0939		mg/L		94	43 - 130
Hexachlorobutadiene	0.100	0.0697		mg/L		70	27 - 130
Hexachloroethane	0.100	0.0656		mg/L		66	29 - 130
2-Methylphenol	0.100	0.0789		mg/L		79	40 - 130
3 & 4 Methylphenol	0.100	0.0772		mg/L		77	42 - 130
Nitrobenzene	0.100	0.0837		mg/L		84	43 - 130
2,4,5-Trichlorophenol	0.100	0.0936		mg/L		94	48 - 130
2,4,6-Trichlorophenol	0.100	0.0953		mg/L		95	47 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	85		38 - 130
2-Fluorophenol (Surr)	69		25 - 130
Nitrobenzene-d5 (Surr)	83		39 - 130
Phenol-d5 (Surr)	72		25 - 130
Terphenyl-d14 (Surr)	81		10 - 143
2,4,6-Tribromophenol (Surr)	103		31 - 141

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 680-558942/12-A

Matrix: Solid

Analysis Batch: 559644

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 558942

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
1,4-Dichlorobenzene	0.100	0.0664		mg/L		66	31 - 130	4	50
Pyridine	0.200	0.103		mg/L		51	10 - 130	4	50
2,4-Dinitrotoluene	0.100	0.106		mg/L		106	52 - 130	9	50
Hexachlorobenzene	0.100	0.0979		mg/L		98	43 - 130	4	50
Hexachlorobutadiene	0.100	0.0645		mg/L		65	27 - 130	8	50
Hexachloroethane	0.100	0.0678		mg/L		68	29 - 130	3	50
2-Methylphenol	0.100	0.0803		mg/L		80	40 - 130	2	50
3 & 4 Methylphenol	0.100	0.0805		mg/L		81	42 - 130	4	50
Nitrobenzene	0.100	0.0818		mg/L		82	43 - 130	2	50
2,4,5-Trichlorophenol	0.100	0.0982		mg/L		98	48 - 130	5	50
2,4,6-Trichlorophenol	0.100	0.0996		mg/L		100	47 - 130	4	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl (Surr)	85		38 - 130
2-Fluorophenol (Surr)	67		25 - 130
Nitrobenzene-d5 (Surr)	83		39 - 130
Phenol-d5 (Surr)	73		25 - 130
Terphenyl-d14 (Surr)	86		10 - 143
2,4,6-Tribromophenol (Surr)	104		31 - 141

Lab Sample ID: MB 680-559191/4-A

Matrix: Solid

Analysis Batch: 559337

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 559191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	310	U	310	39	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Acenaphthylene	310	U	310	34	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Acetophenone	310	U	310	27	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Anthracene	310	U	310	24	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Benzo[a]anthracene	310	U	310	26	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Benzo[a]pyrene	310	U	310	49	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Benzo[b]fluoranthene	310	U	310	36	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Benzo[g,h,i]perylene	310	U	310	21	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Benzo[k]fluoranthene	310	U	310	62	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Bis(2-chloroethoxy)methane	310	U	310	37	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Bis(2-chloroethyl)ether	310	U	310	43	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
bis (2-chloroisopropyl) ether	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Bis(2-ethylhexyl) phthalate	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Bromophenyl phenyl ether	310	U	310	34	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Butyl benzyl phthalate	310	U	310	25	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Carbazole	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Chloroaniline	630	U	630	49	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Chloro-3-methylphenol	310	U	310	33	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Chloronaphthalene	310	U	310	33	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Chlorophenol	310	U	310	38	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Chlorophenyl phenyl ether	310	U	310	42	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Chrysene	310	U	310	20	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Dibenz(a,h)anthracene	310	U	310	37	ug/Kg		02/21/19 11:00	02/22/19 11:52	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-559191/4-A

Matrix: Solid

Analysis Batch: 559337

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 559191

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Dibenzofuran	310	U	310	31	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
3,3'-Dichlorobenzidine	630	U	630	27	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4-Dichlorophenol	310	U	310	33	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Diethyl phthalate	310	U	310	35	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4-Dimethylphenol	310	U	310	42	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Dimethyl phthalate	310	U	310	32	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Di-n-butyl phthalate	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4,6-Dinitro-2-methylphenol	1600	U	1600	160	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4-Dinitrophenol	1600	U	1600	790	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4-Dinitrotoluene	310	U	310	47	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,6-Dinitrotoluene	310	U	310	40	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Di-n-octyl phthalate	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Fluoranthene	310	U	310	30	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Fluorene	310	U	310	34	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Hexachlorobenzene	310	U	310	37	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Hexachlorobutadiene	310	U	310	34	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Hexachlorocyclopentadiene	310	U	310	39	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Hexachloroethane	310	U	310	27	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Indeno[1,2,3-cd]pyrene	310	U	310	27	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Isophorone	310	U	310	31	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Methylnaphthalene	310	U	310	36	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Methylphenol	310	U	310	26	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
3 & 4 Methylphenol	310	U	310	41	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Naphthalene	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Nitroaniline	1600	U	1600	43	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
3-Nitroaniline	1600	U	1600	44	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Nitroaniline	1600	U	1600	47	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Nitrobenzene	310	U	310	25	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2-Nitrophenol	310	U	310	39	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
4-Nitrophenol	1600	U	1600	310	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
N-Nitrosodi-n-propylamine	310	U	310	30	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
N-Nitrosodiphenylamine	310	U	310	31	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Phenanthrene	310	U	310	26	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Phenol	310	U	310	32	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
Pyrene	310	U	310	26	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4,5-Trichlorophenol	310	U	310	33	ug/Kg		02/21/19 11:00	02/22/19 11:52	1
2,4,6-Trichlorophenol	310	U	310	28	ug/Kg		02/21/19 11:00	02/22/19 11:52	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl (Surr)	68		41 - 116	02/21/19 11:00	02/22/19 11:52	1
2-Fluorophenol (Surr)	62		39 - 114	02/21/19 11:00	02/22/19 11:52	1
Nitrobenzene-d5 (Surr)	63		37 - 115	02/21/19 11:00	02/22/19 11:52	1
Phenol-d5 (Surr)	62		38 - 122	02/21/19 11:00	02/22/19 11:52	1
Terphenyl-d14 (Surr)	64		46 - 126	02/21/19 11:00	02/22/19 11:52	1
2,4,6-Tribromophenol (Surr)	89		45 - 129	02/21/19 11:00	02/22/19 11:52	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-559191/5-A

Matrix: Solid

Analysis Batch: 559337

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 559191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Acenaphthene	6440	4050		ug/Kg		63	47 - 130
Acenaphthylene	6440	4200		ug/Kg		65	45 - 130
Acetophenone	6440	3670		ug/Kg		57	44 - 130
Anthracene	6440	4060		ug/Kg		63	50 - 130
Benzo[a]anthracene	6440	4000		ug/Kg		62	50 - 130
Benzo[a]pyrene	6440	4180		ug/Kg		65	47 - 131
Benzo[b]fluoranthene	6440	4260		ug/Kg		66	48 - 130
Benzo[g,h,i]perylene	6440	4060		ug/Kg		63	42 - 130
Benzo[k]fluoranthene	6440	3790		ug/Kg		59	48 - 108
Bis(2-chloroethoxy)methane	6440	3370		ug/Kg		52	47 - 130
Bis(2-chloroethyl)ether	6440	4770		ug/Kg		74	37 - 130
bis (2-chloroisopropyl) ether	6440	3160		ug/Kg		49	38 - 130
Bis(2-ethylhexyl) phthalate	6440	4320		ug/Kg		67	48 - 130
4-Bromophenyl phenyl ether	6440	3910		ug/Kg		61	53 - 130
Butyl benzyl phthalate	6440	4010		ug/Kg		62	53 - 134
Carbazole	6440	4000		ug/Kg		62	51 - 130
4-Chloroaniline	6440	1560		ug/Kg		24	10 - 130
4-Chloro-3-methylphenol	6440	3930		ug/Kg		61	51 - 130
2-Chloronaphthalene	6440	3930		ug/Kg		61	48 - 130
2-Chlorophenol	6440	3810		ug/Kg		59	47 - 130
4-Chlorophenyl phenyl ether	6440	4190		ug/Kg		65	49 - 130
Chrysene	6440	4260		ug/Kg		66	47 - 130
Dibenz(a,h)anthracene	6440	3920		ug/Kg		61	44 - 130
Dibenzofuran	6440	4140		ug/Kg		64	49 - 130
3,3'-Dichlorobenzidine	6440	1890		ug/Kg		29	16 - 130
2,4-Dichlorophenol	6440	3870		ug/Kg		60	48 - 130
Diethyl phthalate	6440	4120		ug/Kg		64	49 - 130
2,4-Dimethylphenol	6440	3940		ug/Kg		61	43 - 130
Dimethyl phthalate	6440	4120		ug/Kg		64	50 - 130
Di-n-butyl phthalate	6440	4380		ug/Kg		68	52 - 130
4,6-Dinitro-2-methylphenol	12900	6650		ug/Kg		52	23 - 130
2,4-Dinitrophenol	12900	3950		ug/Kg		31	10 - 130
2,4-Dinitrotoluene	6440	4490		ug/Kg		70	49 - 111
2,6-Dinitrotoluene	6440	4000		ug/Kg		62	49 - 130
Di-n-octyl phthalate	6440	4140		ug/Kg		64	46 - 130
Fluoranthene	6440	4410		ug/Kg		68	51 - 130
Fluorene	6440	4160		ug/Kg		65	52 - 130
Hexachlorobenzene	6440	3980		ug/Kg		62	53 - 130
Hexachlorobutadiene	6440	3750		ug/Kg		58	48 - 130
Hexachlorocyclopentadiene	6440	4070		ug/Kg		63	28 - 130
Hexachloroethane	6440	3290		ug/Kg		51	42 - 130
Indeno[1,2,3-cd]pyrene	6440	4010		ug/Kg		62	41 - 130
Isophorone	6440	3700		ug/Kg		58	48 - 130
2-Methylnaphthalene	6440	3870		ug/Kg		60	48 - 130
2-Methylphenol	6440	3830		ug/Kg		59	46 - 130
3 & 4 Methylphenol	6440	3880		ug/Kg		60	46 - 130
Naphthalene	6440	3850		ug/Kg		60	47 - 130
2-Nitroaniline	6440	4080		ug/Kg		63	44 - 130

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 680-559191/5-A
Matrix: Solid
Analysis Batch: 559337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
3-Nitroaniline	6440	2520		ug/Kg		39	21 - 130
4-Nitroaniline	6440	3820		ug/Kg		59	41 - 130
Nitrobenzene	6440	3550		ug/Kg		55	45 - 130
2-Nitrophenol	6440	3810		ug/Kg		59	43 - 130
4-Nitrophenol	12900	11200		ug/Kg		87	40 - 130
N-Nitrosodi-n-propylamine	6440	3390		ug/Kg		53	38 - 130
N-Nitrosodiphenylamine	6440	3820		ug/Kg		59	50 - 130
Phenanthrene	6440	3960		ug/Kg		61	52 - 130
Phenol	6440	4080		ug/Kg		63	47 - 130
Pyrene	6440	4160		ug/Kg		65	50 - 130
2,4,5-Trichlorophenol	6440	4130		ug/Kg		64	51 - 130
2,4,6-Trichlorophenol	6440	4280		ug/Kg		66	50 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl (Surr)	64		41 - 116
2-Fluorophenol (Surr)	68		39 - 114
Nitrobenzene-d5 (Surr)	57		37 - 115
Phenol-d5 (Surr)	66		38 - 122
Terphenyl-d14 (Surr)	59		46 - 126
2,4,6-Tribromophenol (Surr)	76		45 - 129

Lab Sample ID: LB 680-558813/1-B
Matrix: Solid
Analysis Batch: 559644

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 558942

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.050	U	0.050	0.0027	mg/L		02/20/19 15:55	02/26/19 18:35	1
Pyridine	0.25	U	0.25	0.012	mg/L		02/20/19 15:55	02/26/19 18:35	1
2,4-Dinitrotoluene	0.050	U	0.050	0.0060	mg/L		02/20/19 15:55	02/26/19 18:35	1
Hexachlorobenzene	0.050	U	0.050	0.0040	mg/L		02/20/19 15:55	02/26/19 18:35	1
Hexachlorobutadiene	0.050	U	0.050	0.0031	mg/L		02/20/19 15:55	02/26/19 18:35	1
Hexachloroethane	0.050	U	0.050	0.0038	mg/L		02/20/19 15:55	02/26/19 18:35	1
2-Methylphenol	0.050	U	0.050	0.0045	mg/L		02/20/19 15:55	02/26/19 18:35	1
3 & 4 Methylphenol	0.050	U	0.050	0.0065	mg/L		02/20/19 15:55	02/26/19 18:35	1
Nitrobenzene	0.050	U	0.050	0.0037	mg/L		02/20/19 15:55	02/26/19 18:35	1
2,4,5-Trichlorophenol	0.050	U	0.050	0.0060	mg/L		02/20/19 15:55	02/26/19 18:35	1
2,4,6-Trichlorophenol	0.050	U	0.050	0.0043	mg/L		02/20/19 15:55	02/26/19 18:35	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	83		38 - 130	02/20/19 15:55	02/26/19 18:35	1
2-Fluorophenol (Surr)	71		25 - 130	02/20/19 15:55	02/26/19 18:35	1
Nitrobenzene-d5 (Surr)	84		39 - 130	02/20/19 15:55	02/26/19 18:35	1
Phenol-d5 (Surr)	73		25 - 130	02/20/19 15:55	02/26/19 18:35	1
Terphenyl-d14 (Surr)	86		10 - 143	02/20/19 15:55	02/26/19 18:35	1
2,4,6-Tribromophenol (Surr)	108		31 - 141	02/20/19 15:55	02/26/19 18:35	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)

Lab Sample ID: MB 680-559849/7
Matrix: Solid
Analysis Batch: 559849

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	10	U	10	2.5	mg/Kg	-		02/27/19 14:11	100
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	89		70 - 131					02/27/19 14:11	100

Lab Sample ID: LCS 680-559849/4
Matrix: Solid
Analysis Batch: 559849

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C10	50.0	49.6		mg/Kg	-	99	64 - 133
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
a,a,a-Trifluorotoluene	95		70 - 131				

Lab Sample ID: LCSD 680-559849/5
Matrix: Solid
Analysis Batch: 559849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C10	50.0	55.6		mg/Kg	-	111	64 - 133	11	50
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
a,a,a-Trifluorotoluene	91		70 - 131						

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)

Lab Sample ID: MB 680-559159/8-A
Matrix: Solid
Analysis Batch: 559352

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559159

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	3.89		3.1	2.0	mg/Kg	-	02/21/19 11:00	02/22/19 15:57	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl (Surr)	82		45 - 130				02/21/19 11:00	02/22/19 15:57	1

Lab Sample ID: LCS 680-559159/9-A
Matrix: Solid
Analysis Batch: 559352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559159

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	63.5	46.7		mg/Kg	-	74	35 - 130

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8015C - Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics) (Continued)

Lab Sample ID: LCS 680-559159/9-A
Matrix: Solid
Analysis Batch: 559352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559159

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl (Surr)	70		45 - 130

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Lab Sample ID: MB 680-558896/5-A
Matrix: Solid
Analysis Batch: 560117

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558896

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aldrin	0.84	U	0.84	0.074	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
alpha-BHC	0.84	U	0.84	0.069	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
beta-BHC	0.84	U	0.84	0.16	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Chlordane (technical)	8.4	U	8.4	1.4	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
4,4'-DDD	0.84	U	0.84	0.089	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
4,4'-DDE	0.84	U	0.84	0.089	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
4,4'-DDT	0.84	U	0.84	0.11	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
delta-BHC	0.84	U	0.84	0.094	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Dieldrin	0.84	U	0.84	0.084	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endosulfan I	0.84	U	0.84	0.084	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endosulfan II	0.84	U	0.84	0.074	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endosulfan sulfate	0.84	U	0.84	0.10	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endrin	0.84	U	0.84	0.11	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endrin aldehyde	0.84	U	0.84	0.11	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Endrin ketone	0.84	U	0.84	0.099	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
gamma-BHC (Lindane)	0.84	U	0.84	0.069	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Heptachlor	0.84	U	0.84	0.094	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Heptachlor epoxide	0.84	U	0.84	0.079	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Methoxychlor	0.84	U	0.84	0.14	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1016	16	U	16	5.4	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1221	16	U	16	7.4	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1232	16	U	16	2.6	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1242	16	U	16	2.5	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1248	16	U	16	4.0	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1254	16	U	16	4.9	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
PCB-1260	16	U	16	4.7	ug/Kg		02/19/19 20:06	03/01/19 12:50	1
Toxaphene	84	U	84	2.7	ug/Kg		02/19/19 20:06	03/01/19 12:50	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
<i>DCB</i> Decachlorobiphenyl	70		54 - 133	02/19/19 20:06	03/01/19 12:50	1
Tetrachloro- <i>m</i> -xylene	61		46 - 130	02/19/19 20:06	03/01/19 12:50	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Lab Sample ID: LCS 680-558896/6-A
Matrix: Solid
Analysis Batch: 560117

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558896
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Aldrin	3.23	3.17		ug/Kg		98	44 - 130
alpha-BHC	3.23	2.71		ug/Kg		84	42 - 130
beta-BHC	3.23	3.49		ug/Kg		108	48 - 131
4,4'-DDD	3.23	3.45		ug/Kg		107	46 - 135
4,4'-DDE	3.23	3.64		ug/Kg		113	45 - 130
4,4'-DDT	3.23	3.50		ug/Kg		108	45 - 144
delta-BHC	3.23	3.23		ug/Kg		100	49 - 130
Dieldrin	3.23	3.63		ug/Kg		112	47 - 130
Endosulfan I	3.23	3.15		ug/Kg		98	40 - 130
Endosulfan II	3.23	3.43		ug/Kg		106	45 - 130
Endosulfan sulfate	3.23	3.71		ug/Kg		115	50 - 142
Endrin	3.23	3.63		ug/Kg		112	46 - 155
Endrin aldehyde	3.23	3.16		ug/Kg		98	41 - 135
Endrin ketone	3.23	4.10		ug/Kg		127	43 - 153
gamma-BHC (Lindane)	3.23	3.18		ug/Kg		98	45 - 130
Heptachlor	3.23	3.22		ug/Kg		100	46 - 130
Heptachlor epoxide	3.23	3.31		ug/Kg		102	48 - 130
Methoxychlor	3.23	3.56		ug/Kg		110	43 - 166

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	86		54 - 133
Tetrachloro-m-xylene	73		46 - 130

Lab Sample ID: MB 680-558988/8-A
Matrix: Solid
Analysis Batch: 559753

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558988

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.00025	U	0.00025	0.00025	mg/L		02/20/19 15:55	02/26/19 17:53	1
Endrin	0.000025	U	0.000025	0.000025	mg/L		02/20/19 15:55	02/26/19 17:53	1
gamma-BHC (Lindane)	0.000025	U	0.000025	0.000025	mg/L		02/20/19 15:55	02/26/19 17:53	1
Heptachlor	0.000025	U	0.000025	0.000025	mg/L		02/20/19 15:55	02/26/19 17:53	1
Heptachlor epoxide	0.000025	U	0.000025	0.000025	mg/L		02/20/19 15:55	02/26/19 17:53	1
Methoxychlor	0.000025	U	0.000025	0.000025	mg/L		02/20/19 15:55	02/26/19 17:53	1
Toxaphene	0.0025	U	0.0025	0.0025	mg/L		02/20/19 15:55	02/26/19 17:53	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	103		14 - 130	02/20/19 15:55	02/26/19 17:53	1
Tetrachloro-m-xylene	73		40 - 130	02/20/19 15:55	02/26/19 17:53	1

Lab Sample ID: LCS 680-558988/9-A
Matrix: Solid
Analysis Batch: 559753

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558988
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin	0.0000500	0.0000530		mg/L		106	59 - 143

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Lab Sample ID: LCS 680-558988/9-A

Matrix: Solid

Analysis Batch: 559753

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 558988

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
gamma-BHC (Lindane)	0.0000500	0.0000585		mg/L		117	52 - 130
Heptachlor	0.0000500	0.0000533		mg/L		107	35 - 130
Heptachlor epoxide	0.0000500	0.0000558		mg/L		112	52 - 130
Methoxychlor	0.0000500	0.0000797	*	mg/L		159	52 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	86		14 - 130
Tetrachloro-m-xylene	72		40 - 130

Lab Sample ID: LCSD 680-558988/10-A

Matrix: Solid

Analysis Batch: 559753

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 558988

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Endrin	0.0000500	0.0000419		mg/L		84	59 - 143	23	50
gamma-BHC (Lindane)	0.0000500	0.0000459		mg/L		92	52 - 130	24	50
Heptachlor	0.0000500	0.0000410		mg/L		82	35 - 130	26	50
Heptachlor epoxide	0.0000500	0.0000482		mg/L		96	52 - 130	15	50
Methoxychlor	0.0000500	0.0000673		mg/L		135	52 - 136	17	50

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	79		14 - 130
Tetrachloro-m-xylene	56		40 - 130

Lab Sample ID: LB 680-558813/1-C

Matrix: Solid

Analysis Batch: 559753

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 558988

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	0.012	U	0.012	0.012	mg/L		02/20/19 15:55	02/26/19 17:24	1
Endrin	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:24	1
gamma-BHC (Lindane)	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:24	1
Heptachlor	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:24	1
Heptachlor epoxide	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:24	1
Methoxychlor	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:24	1
Toxaphene	0.12	U	0.12	0.12	mg/L		02/20/19 15:55	02/26/19 17:24	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		14 - 130	02/20/19 15:55	02/26/19 17:24	1
Tetrachloro-m-xylene	62		40 - 130	02/20/19 15:55	02/26/19 17:24	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Lab Sample ID: LB 680-558856/1-C
Matrix: Solid
Analysis Batch: 559753

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 558988

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlordane (technical)	0.012	U	0.012	0.012	mg/L		02/20/19 15:55	02/26/19 17:39	1
Endrin	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:39	1
gamma-BHC (Lindane)	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:39	1
Heptachlor	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:39	1
Heptachlor epoxide	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:39	1
Methoxychlor	0.0012	U	0.0012	0.0012	mg/L		02/20/19 15:55	02/26/19 17:39	1
Toxaphene	0.12	U	0.12	0.12	mg/L		02/20/19 15:55	02/26/19 17:39	1

Surrogate	LB LB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	87		14 - 130	02/20/19 15:55	02/26/19 17:39	1
Tetrachloro-m-xylene	62		40 - 130	02/20/19 15:55	02/26/19 17:39	1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 680-559311/15-A
Matrix: Solid
Analysis Batch: 559764

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559311

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	0.00050	U	0.00050	0.000037	mg/L		02/22/19 07:46	02/27/19 03:42	1
Silvex (2,4,5-TP)	0.00025	U	0.00025	0.000062	mg/L		02/22/19 07:46	02/27/19 03:42	1
Pentachlorophenol	0.00025	U	0.00025	0.000037	mg/L		02/22/19 07:46	02/27/19 03:42	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	87		52 - 151	02/22/19 07:46	02/27/19 03:42	1

Lab Sample ID: LCS 680-559311/18-A
Matrix: Solid
Analysis Batch: 559764

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559311

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
2,4-D	0.00200	0.00115		mg/L		58	55 - 130
Silvex (2,4,5-TP)	0.000500	0.000398		mg/L		80	60 - 130
Pentachlorophenol	0.000500	0.000473		mg/L		95	57 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCAA	97		52 - 151

Lab Sample ID: MB 680-559896/7-A
Matrix: Solid
Analysis Batch: 560455

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559896

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	8.2	U	8.2	5.0	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
2,4-DB	8.2	U	8.2	3.0	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
2,4,5-T	8.2	U	8.2	2.3	ug/Kg		02/27/19 13:57	03/05/19 01:00	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 680-559896/7-A
Matrix: Solid
Analysis Batch: 560455

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559896

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	8.2	U	8.2	1.6	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Dalapon	99	U	99	2.9	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Dicamba	8.2	U	8.2	1.9	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Dichlorprop	8.2	U	8.2	1.1	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Dinoseb	50	U	50	4.6	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
MCPA	2000	U	2000	190	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Mecoprop	2000	U	2000	170	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
Pentachlorophenol	8.2	U	8.2	0.42	ug/Kg		02/27/19 13:57	03/05/19 01:00	1
MB MB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	100		35 - 137				02/27/19 13:57	03/05/19 01:00	1

Lab Sample ID: LCS 680-559896/8-A
Matrix: Solid
Analysis Batch: 560455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559896

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
2,4-D	66.2	49.0		ug/Kg		74	53 - 130	
2,4-DB	66.2	17.2		ug/Kg		26	10 - 130	
2,4,5-T	16.6	8.29		ug/Kg		50	17 - 130	
Silvex (2,4,5-TP)	16.6	9.17		ug/Kg		55	29 - 130	
Dalapon	66.2	99.8	p *	ug/Kg		151	19 - 130	
Dicamba	33.1	28.3		ug/Kg		86	58 - 130	
Dichlorprop	66.2	33.8		ug/Kg		51	23 - 130	
Dinoseb	66.2	17.9	J	ug/Kg		27	20 - 130	
MCPA	6620	4180		ug/Kg		63	47 - 130	
Mecoprop	6620	4240		ug/Kg		64	10 - 130	
Pentachlorophenol	16.6	13.4		ug/Kg		81	54 - 130	
LCS LCS								
Surrogate	%Recovery	Qualifier	Limits					
DCAA	120		35 - 137					

Lab Sample ID: LB 680-558813/1-F
Matrix: Solid
Analysis Batch: 559764

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 559311

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	0.050	U	0.050	0.0037	mg/L		02/22/19 07:46	02/27/19 03:22	1
Silvex (2,4,5-TP)	0.025	U	0.025	0.0062	mg/L		02/22/19 07:46	02/27/19 03:22	1
Pentachlorophenol	0.025	U	0.025	0.0037	mg/L		02/22/19 07:46	02/27/19 03:22	1
LB LB									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	90		52 - 151				02/22/19 07:46	02/27/19 03:22	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-558919/1-A
Matrix: Solid
Analysis Batch: 559863

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558919

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.9	U	1.9	0.75	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Barium	0.94	U	0.94	0.15	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Cadmium	0.47	U	0.47	0.094	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Chromium	0.94	U	0.94	0.20	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Lead	0.94	U	0.94	0.32	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Selenium	2.4	U	2.4	0.92	mg/Kg		02/20/19 07:13	02/26/19 13:58	1
Silver	0.94	U	0.94	0.057	mg/Kg		02/20/19 07:13	02/26/19 13:58	1

Lab Sample ID: LCS 680-558919/2-A
Matrix: Solid
Analysis Batch: 559863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558919

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	9.35	9.26		mg/Kg		99	80 - 120
Barium	9.35	9.41		mg/Kg		101	80 - 120
Cadmium	4.67	4.97		mg/Kg		106	80 - 120
Chromium	9.35	9.54		mg/Kg		102	80 - 120
Lead	46.7	48.4		mg/Kg		104	80 - 120
Selenium	9.35	9.66		mg/Kg		103	80 - 120
Silver	4.67	4.43		mg/Kg		95	80 - 120

Lab Sample ID: MB 680-559244/1-A
Matrix: Solid
Analysis Batch: 559396

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559244

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.020	U	0.020	0.020	mg/L		02/21/19 12:59	02/22/19 11:40	1
Barium	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 11:40	1
Cadmium	0.010	U	0.010	0.010	mg/L		02/21/19 12:59	02/22/19 11:40	1
Chromium	0.020	U	0.020	0.020	mg/L		02/21/19 12:59	02/22/19 11:40	1
Lead	0.020	U	0.020	0.020	mg/L		02/21/19 12:59	02/22/19 11:40	1
Selenium	0.050	U	0.050	0.050	mg/L		02/21/19 12:59	02/22/19 11:40	1
Silver	0.010	U	0.010	0.010	mg/L		02/21/19 12:59	02/22/19 11:40	1

Lab Sample ID: LCS 680-559244/2-A
Matrix: Solid
Analysis Batch: 559396

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559244

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	2.00	1.92		mg/L		96	80 - 120
Barium	2.00	1.98		mg/L		99	80 - 120
Cadmium	1.00	1.01		mg/L		101	80 - 120
Chromium	2.00	1.99		mg/L		100	80 - 120
Lead	10.0	10.0		mg/L		100	80 - 120
Selenium	2.00	1.96		mg/L		98	80 - 120
Silver	1.00	0.967		mg/L		97	80 - 120

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LB 680-558813/1-E
Matrix: Solid
Analysis Batch: 559396

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 559244

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 11:49	1
Barium	1.0	U	1.0	1.0	mg/L		02/21/19 12:59	02/22/19 11:49	1
Cadmium	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 11:49	1
Chromium	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 11:49	1
Lead	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 11:49	1
Selenium	0.50	U	0.50	0.50	mg/L		02/21/19 12:59	02/22/19 11:49	1
Silver	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 11:49	1

Lab Sample ID: LB2 680-558813/8-C
Matrix: Solid
Analysis Batch: 559396

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 559244

Analyte	LB2 LB2		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:45	1
Barium	1.0	U	1.0	1.0	mg/L		02/21/19 12:59	02/22/19 12:45	1
Cadmium	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 12:45	1
Chromium	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:45	1
Lead	0.20	U	0.20	0.20	mg/L		02/21/19 12:59	02/22/19 12:45	1
Selenium	0.50	U	0.50	0.50	mg/L		02/21/19 12:59	02/22/19 12:45	1
Silver	0.10	U	0.10	0.10	mg/L		02/21/19 12:59	02/22/19 12:45	1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-559190/1-A
Matrix: Solid
Analysis Batch: 559386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 559190

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.00020	U	0.00020	0.00020	mg/L		02/21/19 10:34	02/21/19 15:35	1

Lab Sample ID: LCS 680-559190/2-A
Matrix: Solid
Analysis Batch: 559386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 559190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Lab Sample ID: LB 680-558813/1-D
Matrix: Solid
Analysis Batch: 559386

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 559190

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.020	U	0.020	0.020	mg/L		02/21/19 10:34	02/21/19 16:17	1

TestAmerica Savannah

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LB2 680-558813/8-B
Matrix: Solid
Analysis Batch: 559386

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 559190

Analyte	LB2 Result	LB2 Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	U	0.020	0.020	mg/L		02/21/19 10:34	02/21/19 17:17	1

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 680-558598/13-A
Matrix: Solid
Analysis Batch: 558810

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558598

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.020	U	0.020	0.0080	mg/Kg		02/15/19 14:28	02/18/19 17:19	1

Lab Sample ID: LCS 680-558598/14-A
Matrix: Solid
Analysis Batch: 558810

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558598
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.245	0.229		mg/Kg		93	80 - 120

Method: 1030 - Ignitability, Solids

Lab Sample ID: MB 680-558893/1
Matrix: Solid
Analysis Batch: 558893

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Ignitability	nb				mm/sec			02/19/19 15:31	1

Lab Sample ID: LCS 680-558893/2
Matrix: Solid
Analysis Batch: 558893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
%Rec.

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Ignitability	3.10	3.095		mm/sec		100	75 - 125

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 680-558782/1-A
Matrix: Solid
Analysis Batch: 558852

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558782

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	0.50	U	0.50	0.13	mg/Kg		02/19/19 04:26	02/19/19 10:34	1

QC Sample Results

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method: 9034 - Sulfide, Acid Soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 680-558909/1-A
Matrix: Solid
Analysis Batch: 558910

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 558909

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	60	U	60	60	mg/Kg		02/20/19 03:00	02/20/19 03:34	1

Lab Sample ID: LCS 680-558909/2-A
Matrix: Solid
Analysis Batch: 558910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 558909

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	1250	1150		mg/Kg		92	50 - 150

Lab Sample ID: LCSD 680-558909/3-A
Matrix: Solid
Analysis Batch: 558910

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 558909

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sulfide	1250	1140		mg/Kg		91	50 - 150	1	50

Lab Sample ID: 680-164616-1 MS
Matrix: Solid
Analysis Batch: 558910

Client Sample ID: B-01
Prep Type: Total/NA
Prep Batch: 558909

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	79	U	1640	1510		mg/Kg	☼	92	50 - 150

Lab Sample ID: 680-164616-1 MSD
Matrix: Solid
Analysis Batch: 558910

Client Sample ID: B-01
Prep Type: Total/NA
Prep Batch: 558909

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sulfide	79	U	1640	1500		mg/Kg	☼	91	50 - 150	1	50

Method: 9045D - pH

Lab Sample ID: LCS 680-558692/1
Matrix: Solid
Analysis Batch: 558692

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.2		SU		103	79 - 126

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

GC/MS VOA

Prep Batch: 558677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	5035	

Leach Batch: 558889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	1311	
LB 680-558889/1-A	Method Blank	TCLP	Solid	1311	

Analysis Batch: 559004

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8260B	558677
MB 680-559004/8	Method Blank	Total/NA	Solid	8260B	
LCS 680-559004/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 680-559004/5	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 559484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	8260B	558889
LB 680-558889/1-A	Method Blank	TCLP	Solid	8260B	558889
MB 680-559484/8	Method Blank	Total/NA	Solid	8260B	
LCS 680-559484/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 680-559484/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 559488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-2	Trip Blank	Total/NA	Water	8260B	
MB 680-559488/9	Method Blank	Total/NA	Water	8260B	
LCS 680-559488/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-559488/6	Lab Control Sample Dup	Total/NA	Water	8260B	

GC/MS Semi VOA

Leach Batch: 558813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	1311	
LB 680-558813/1-B	Method Blank	TCLP	Solid	1311	

Prep Batch: 558942

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	3520C	558813
LB 680-558813/1-B	Method Blank	TCLP	Solid	3520C	558813
MB 680-558942/10-A	Method Blank	Total/NA	Solid	3520C	
LCS 680-558942/11-A	Lab Control Sample	Total/NA	Solid	3520C	
LCSD 680-558942/12-A	Lab Control Sample Dup	Total/NA	Solid	3520C	

Prep Batch: 559191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	3546	
MB 680-559191/4-A	Method Blank	Total/NA	Solid	3546	
LCS 680-559191/5-A	Lab Control Sample	Total/NA	Solid	3546	

TestAmerica Savannah

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

GC/MS Semi VOA (Continued)

Analysis Batch: 559337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8270D	559191
MB 680-559191/4-A	Method Blank	Total/NA	Solid	8270D	559191
LCS 680-559191/5-A	Lab Control Sample	Total/NA	Solid	8270D	559191

Analysis Batch: 559644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	8270D	558942
LB 680-558813/1-B	Method Blank	TCLP	Solid	8270D	558942
MB 680-558942/10-A	Method Blank	Total/NA	Solid	8270D	558942
LCS 680-558942/11-A	Lab Control Sample	Total/NA	Solid	8270D	558942
LCSD 680-558942/12-A	Lab Control Sample Dup	Total/NA	Solid	8270D	558942

GC VOA

Prep Batch: 558677

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	5035	

Analysis Batch: 559849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8015C	558677
MB 680-559849/7	Method Blank	Total/NA	Solid	8015C	
LCS 680-559849/4	Lab Control Sample	Total/NA	Solid	8015C	
LCSD 680-559849/5	Lab Control Sample Dup	Total/NA	Solid	8015C	

GC Semi VOA

Leach Batch: 558813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	1311	
LB 680-558813/1-C	Method Blank	TCLP	Solid	1311	
LB 680-558813/1-F	Method Blank	TCLP	Solid	1311	

Leach Batch: 558856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 680-558856/1-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 558896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	3546	
MB 680-558896/5-A	Method Blank	Total/NA	Solid	3546	
LCS 680-558896/6-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 558988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	3520C	558813
LB 680-558813/1-C	Method Blank	TCLP	Solid	3520C	558813
LB 680-558856/1-C	Method Blank	TCLP	Solid	3520C	558856
MB 680-558988/8-A	Method Blank	Total/NA	Solid	3520C	
LCS 680-558988/9-A	Lab Control Sample	Total/NA	Solid	3520C	

TestAmerica Savannah

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

GC Semi VOA (Continued)

Prep Batch: 558988 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-558988/10-A	Lab Control Sample Dup	Total/NA	Solid	3520C	

Prep Batch: 559159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	3546	
MB 680-559159/8-A	Method Blank	Total/NA	Solid	3546	
LCS 680-559159/9-A	Lab Control Sample	Total/NA	Solid	3546	

Prep Batch: 559311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	8151A	558813
LB 680-558813/1-F	Method Blank	TCLP	Solid	8151A	558813
MB 680-559311/15-A	Method Blank	Total/NA	Solid	8151A	
LCS 680-559311/18-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 559352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8015C	559159
MB 680-559159/8-A	Method Blank	Total/NA	Solid	8015C	559159
LCS 680-559159/9-A	Lab Control Sample	Total/NA	Solid	8015C	559159

Analysis Batch: 559753

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	8081B/8082A	558988
LB 680-558813/1-C	Method Blank	TCLP	Solid	8081B/8082A	558988
LB 680-558856/1-C	Method Blank	TCLP	Solid	8081B/8082A	558988
MB 680-558988/8-A	Method Blank	Total/NA	Solid	8081B/8082A	558988
LCS 680-558988/9-A	Lab Control Sample	Total/NA	Solid	8081B/8082A	558988
LCSD 680-558988/10-A	Lab Control Sample Dup	Total/NA	Solid	8081B/8082A	558988

Analysis Batch: 559764

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	8151A	559311
LB 680-558813/1-F	Method Blank	TCLP	Solid	8151A	559311
MB 680-559311/15-A	Method Blank	Total/NA	Solid	8151A	559311
LCS 680-559311/18-A	Lab Control Sample	Total/NA	Solid	8151A	559311

Prep Batch: 559896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8151A	
MB 680-559896/7-A	Method Blank	Total/NA	Solid	8151A	
LCS 680-559896/8-A	Lab Control Sample	Total/NA	Solid	8151A	

Analysis Batch: 560117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-558896/5-A	Method Blank	Total/NA	Solid	8081B/8082A	558896
LCS 680-558896/6-A	Lab Control Sample	Total/NA	Solid	8081B/8082A	558896

Analysis Batch: 560455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8151A	559896

TestAmerica Savannah

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

GC Semi VOA (Continued)

Analysis Batch: 560455 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-559896/7-A	Method Blank	Total/NA	Solid	8151A	559896
LCS 680-559896/8-A	Lab Control Sample	Total/NA	Solid	8151A	559896

Analysis Batch: 561503

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	8081B/8082A	558896

Metals

Prep Batch: 558598

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	7471B	
MB 680-558598/13-A	Method Blank	Total/NA	Solid	7471B	
LCS 680-558598/14-A	Lab Control Sample	Total/NA	Solid	7471B	

Analysis Batch: 558810

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	7471B	558598
MB 680-558598/13-A	Method Blank	Total/NA	Solid	7471B	558598
LCS 680-558598/14-A	Lab Control Sample	Total/NA	Solid	7471B	558598

Leach Batch: 558813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	1311	
LB 680-558813/1-D	Method Blank	TCLP	Solid	1311	
LB 680-558813/1-E	Method Blank	TCLP	Solid	1311	
LB2 680-558813/8-B	Method Blank	TCLP	Solid	1311	
LB2 680-558813/8-C	Method Blank	TCLP	Solid	1311	

Prep Batch: 558919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	3050B	
MB 680-558919/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 680-558919/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Prep Batch: 559190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	7470A	558813
LB 680-558813/1-D	Method Blank	TCLP	Solid	7470A	558813
LB2 680-558813/8-B	Method Blank	TCLP	Solid	7470A	558813
MB 680-559190/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 680-559190/2-A	Lab Control Sample	Total/NA	Solid	7470A	

Prep Batch: 559244

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	3010A	558813
LB 680-558813/1-E	Method Blank	TCLP	Solid	3010A	558813
LB2 680-558813/8-C	Method Blank	TCLP	Solid	3010A	558813
MB 680-559244/1-A	Method Blank	Total/NA	Solid	3010A	
LCS 680-559244/2-A	Lab Control Sample	Total/NA	Solid	3010A	

TestAmerica Savannah

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Metals (Continued)

Analysis Batch: 559386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	7470A	559190
LB 680-558813/1-D	Method Blank	TCLP	Solid	7470A	559190
LB2 680-558813/8-B	Method Blank	TCLP	Solid	7470A	559190
MB 680-559190/1-A	Method Blank	Total/NA	Solid	7470A	559190
LCS 680-559190/2-A	Lab Control Sample	Total/NA	Solid	7470A	559190

Analysis Batch: 559396

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	TCLP	Solid	6010C	559244
LB 680-558813/1-E	Method Blank	TCLP	Solid	6010C	559244
LB2 680-558813/8-C	Method Blank	TCLP	Solid	6010C	559244
MB 680-559244/1-A	Method Blank	Total/NA	Solid	6010C	559244
LCS 680-559244/2-A	Lab Control Sample	Total/NA	Solid	6010C	559244

Analysis Batch: 559863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	6010C	558919
MB 680-558919/1-A	Method Blank	Total/NA	Solid	6010C	558919
LCS 680-558919/2-A	Lab Control Sample	Total/NA	Solid	6010C	558919

General Chemistry

Analysis Batch: 558612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	Moisture	

Analysis Batch: 558692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	9045D	
LCS 680-558692/1	Lab Control Sample	Total/NA	Solid	9045D	

Prep Batch: 558782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	9012B	
MB 680-558782/1-A	Method Blank	Total/NA	Solid	9012B	

Analysis Batch: 558852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	9012B	558782
MB 680-558782/1-A	Method Blank	Total/NA	Solid	9012B	558782

Analysis Batch: 558893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	1030	
MB 680-558893/1	Method Blank	Total/NA	Solid	1030	
LCS 680-558893/2	Lab Control Sample	Total/NA	Solid	1030	

Prep Batch: 558909

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	9030B	

TestAmerica Savannah

QC Association Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

General Chemistry (Continued)

Prep Batch: 558909 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-558909/1-A	Method Blank	Total/NA	Solid	9030B	
LCS 680-558909/2-A	Lab Control Sample	Total/NA	Solid	9030B	
LCSD 680-558909/3-A	Lab Control Sample Dup	Total/NA	Solid	9030B	
680-164616-1 MS	B-01	Total/NA	Solid	9030B	
680-164616-1 MSD	B-01	Total/NA	Solid	9030B	

Analysis Batch: 558910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-164616-1	B-01	Total/NA	Solid	9034	558909
MB 680-558909/1-A	Method Blank	Total/NA	Solid	9034	558909
LCS 680-558909/2-A	Lab Control Sample	Total/NA	Solid	9034	558909
LCSD 680-558909/3-A	Lab Control Sample Dup	Total/NA	Solid	9034	558909
680-164616-1 MS	B-01	Total/NA	Solid	9034	558909
680-164616-1 MSD	B-01	Total/NA	Solid	9034	558909

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01
Date Collected: 02/14/19 13:40
Date Received: 02/15/19 09:25

Lab Sample ID: 680-164616-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			25.01 g	500 mL	558889	02/19/19 16:20	EHS	TAL SAV
TCLP	Analysis	8260B		20	5 g	5 g	559484	02/25/19 14:37	Y1S	TAL SAV
Instrument ID: CMSAA										
TCLP	Leach	1311			100.00 g	2000 mL	558813	02/19/19 15:24	EHS	TAL SAV
TCLP	Prep	3520C			201.1 mL	1 mL	558942	02/20/19 15:55	CEW	TAL SAV
TCLP	Analysis	8270D		1			559644	02/26/19 22:27	KNW	TAL SAV
Instrument ID: CMSG										
TCLP	Leach	1311			100.00 g	2000 mL	558813	02/19/19 15:24	EHS	TAL SAV
TCLP	Prep	3520C			20.7 mL	5 mL	558988	02/20/19 15:55	CEW	TAL SAV
TCLP	Analysis	8081B/8082A		1			559753	02/26/19 19:20	GEM	TAL SAV
Instrument ID: CSGJ										
TCLP	Leach	1311			100.00 g	2000 mL	558813	02/19/19 15:24	EHS	TAL SAV
TCLP	Prep	8151A			10 mL	10 mL	559311	02/22/19 07:46	WGG	TAL SAV
TCLP	Analysis	8151A		1			559764	02/27/19 11:31	GEM	TAL SAV
Instrument ID: CSGS										
TCLP	Leach	1311			100.00 g	2000 mL	558813	02/19/19 15:24	EHS	TAL SAV
TCLP	Prep	3010A			5 mL	50 mL	559244	02/21/19 12:59	AJR	TAL SAV
TCLP	Analysis	6010C		1			559396	02/22/19 12:17	BCB	TAL SAV
Instrument ID: ICPE										
TCLP	Leach	1311			100.00 g	2000 mL	558813	02/19/19 15:24	EHS	TAL SAV
TCLP	Prep	7470A			0.5 mL	50 mL	559190	02/21/19 10:34	PEP	TAL SAV
TCLP	Analysis	7470A		1			559386	02/21/19 17:02	PEP	TAL SAV
Instrument ID: LEEMAN2										
Total/NA	Analysis	1030		1			558893	02/19/19 15:31	NVF	TAL SAV
Instrument ID: NOEQUIP										
Total/NA	Analysis	9045D		1	20.65 g	20 mL	558692	02/18/19 10:29	NVF	TAL SAV
Instrument ID: GEpHM2										
Total/NA	Analysis	Moisture		1			558612	02/15/19 16:26	EHS	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: B-01
Date Collected: 02/14/19 13:40
Date Received: 02/15/19 09:25

Lab Sample ID: 680-164616-1
Matrix: Solid
Percent Solids: 74.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.14 g	5 mL	558677	02/18/19 10:41	FES	TAL SAV
Total/NA	Analysis	8260B		1	5 g	5 g	559004	02/20/19 15:42	JLK	TAL SAV
Instrument ID: CMSAA										
Total/NA	Prep	3546			15.79 g	1 mL	559191	02/21/19 11:00	JAM	TAL SAV
Total/NA	Analysis	8270D		1			559337	02/22/19 16:08	OK	TAL SAV
Instrument ID: CMSG										
Total/NA	Prep	5035			6.83 g	5 mL	558677	02/18/19 10:41	FES	TAL SAV
Total/NA	Analysis	8015C		100	5 mL	5 mL	559849	02/27/19 14:46	DAS	TAL SAV
Instrument ID: CVGWFD1										

TestAmerica Savannah

Lab Chronicle

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Client Sample ID: B-01

Lab Sample ID: 680-164616-1

Date Collected: 02/14/19 13:40

Matrix: Solid

Date Received: 02/15/19 09:25

Percent Solids: 74.6

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.35 g	1 mL	559159	02/21/19 11:00	JAM	TAL SAV
Total/NA	Analysis	8015C		1			559352	02/22/19 17:26	LBH	TAL SAV
Instrument ID: CSGAB1										
Total/NA	Prep	3546			15.73 g	5 mL	558896	02/19/19 20:06	TS	TAL SAV
Total/NA	Analysis	8081B/8082A		1			561503	03/12/19 21:14	JCK	TAL SAV
Instrument ID: CSGK										
Total/NA	Prep	8151A			30.2 g	10 mL	559896	02/27/19 13:57	CEW	TAL SAV
Total/NA	Analysis	8151A		1			560455	03/05/19 09:11	JCK	TAL SAV
Instrument ID: CSGS										
Total/NA	Prep	3050B			1.14 g	100 mL	558919	02/20/19 07:13	CDD	TAL SAV
Total/NA	Analysis	6010C		1			559863	02/26/19 14:54	BCB	TAL SAV
Instrument ID: ICPE										
Total/NA	Prep	7471B			0.54 g	50 mL	558598	02/15/19 14:28	PEP	TAL SAV
Total/NA	Analysis	7471B		1			558810	02/18/19 18:24	BCB	TAL SAV
Instrument ID: LEEMAN2										
Total/NA	Prep	9012B			1.03 g	50 mL	558782	02/19/19 04:26	DAM	TAL SAV
Total/NA	Analysis	9012B		1			558852	02/19/19 10:48	DAM	TAL SAV
Instrument ID: LCHAT1										
Total/NA	Prep	9030B			1.02 g	6 mL	558909	02/20/19 03:00	DAM	TAL SAV
Total/NA	Analysis	9034		1	6 mL	6 mL	558910	02/20/19 03:34	DAM	TAL SAV
Instrument ID: NOEQUIP										

Client Sample ID: Trip Blank

Lab Sample ID: 680-164616-2

Date Collected: 02/14/19 00:00

Matrix: Water

Date Received: 02/15/19 09:25

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5 mL	5 mL	559488	02/25/19 12:47	UI	TAL SAV
Instrument ID: CMSB										

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Laboratory: TestAmerica Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
	AFCEE		SAVLAB	
Alabama	State Program	4	41450	06-30-19
Alaska	State Program	10		06-30-19
Alaska (UST)	State Program	10	UST-104	09-22-19
ANAB	DoD / DOE		L2463	09-22-19
ANAB	ISO/IEC 17025		L2463.01	09-22-19
Arizona	State Program	9	AZ0808	12-14-19
Arkansas DEQ	State Program	6	88-0692	02-01-20
California	State Program	9	2939	06-30-19
Colorado	State Program	8	N/A	12-31-19
Connecticut	State Program	1	PH-0161	03-31-21
Florida	NELAP	4	E87052	06-30-19
GA Dept. of Agriculture	State Program	4	N/A	06-12-19
Georgia	State Program	4	N/A	06-30-19
Georgia	State Program	4	803	06-30-19
Guam	State Program	9	15-005r	04-17-19
Hawaii	State Program	9	N/A	06-30-19
Illinois	NELAP	5	200022	11-30-19
Indiana	State Program	5	N/A	06-30-19
Iowa	State Program	7	353	06-30-19
Kentucky (DW)	State Program	4	90084	12-31-19
Kentucky (UST)	State Program	4	18	06-30-19
Kentucky (WW)	State Program	4	90084	12-31-19
Louisiana	NELAP	6	30690	06-30-19
Louisiana (DW)	NELAP	6	LA160019	12-31-19
Maine	State Program	1	GA00006	09-25-20
Maryland	State Program	3	250	12-31-19
Massachusetts	State Program	1	M-GA006	06-30-19
Michigan	State Program	5	9925	03-05-19 *
Mississippi	State Program	4	N/A	06-30-19
Nebraska	State Program	7	TestAmerica-Savannah	06-30-19
New Jersey	NELAP	2	GA769	06-30-19
New Mexico	State Program	6	N/A	06-30-19
New York	NELAP	2	10842	04-01-19
North Carolina (DW)	State Program	4	13701	07-31-19
North Carolina (WW/SW)	State Program	4	269	12-31-19
Oklahoma	State Program	6	9984	08-31-19
Pennsylvania	NELAP	3	68-00474	06-30-19
Puerto Rico	State Program	2	GA00006	01-01-20
South Carolina	State Program	4	98001	06-30-18 *
Tennessee	State Program	4	TN02961	06-30-19
Texas	NELAP	6	T104704185-16-9	11-30-19
Texas (DW)	State Program	1	T104704185	06-30-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
Virginia	NELAP	3	460161	06-14-19
Washington	State Program	10	C805	06-10-19
West Virginia (DW)	State Program	3	9950C	12-31-19
West Virginia DEP	State Program	3	094	06-30-19
Wisconsin	State Program	5	999819810	08-31-19
Wyoming	State Program	8	8TMS-L	06-30-16 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Savannah

Method Summary

Client: GEI Consultants, Inc.
Project/Site: Washington, DC

TestAmerica Job ID: 680-164616-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Gasoline Range Organics)	SW846	TAL SAV
8015C	Nonhalogenated Organics using GC/FID -Modified (Diesel Range Organics)	SW846	TAL SAV
8081B/8082A	Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography	SW846	TAL SAV
8151A	Herbicides (GC)	SW846	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV
7471B	Mercury (CVAA)	SW846	TAL SAV
1030	Ignitability, Solids	SW846	TAL SAV
9012B	Cyanide, Total and/or Amenable	SW846	TAL SAV
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	TAL SAV
9045D	pH	SW846	TAL SAV
Moisture	Percent Moisture	EPA	TAL SAV
1311	TCLP Extraction	SW846	TAL SAV
3010A	Preparation, Total Metals	SW846	TAL SAV
3050B	Preparation, Metals	SW846	TAL SAV
3520C	Liquid-Liquid Extraction (Continuous)	SW846	TAL SAV
3546	Microwave Extraction	SW846	TAL SAV
5030B	Purge and Trap	SW846	TAL SAV
5035	Closed System Purge and Trap	SW846	TAL SAV
7470A	Preparation, Mercury	SW846	TAL SAV
7471B	Preparation, Mercury	SW846	TAL SAV
8151A	Extraction (Herbicides)	SW846	TAL SAV
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	TAL SAV
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

0111004

Chain of Custody Record

TestAmerica

THE LABORATORY SERVICES GROUP
TestAmerica Laboratories, Inc.
TAL-8210 (07/13)

Regulatory Program: DSH NCEES RLEA ODE

Project Manager: L. J. S. S. C. **Tel/Fax:** _____

Client Contact: _____

Company Name: GFT Consultants
Address: 1620 I St NW Suite 500
City/State/Zip: Washington, DC 20004
Phone: (202) 725-1816
Fax: _____

Analysis Turnaround Time: _____
 CALENDAR DAYS: _____
 WORKING DAYS: _____
 (AT if different from B-X)

Sample Identification: B-01

Sample Date: 2-14-13
Sample Time: 12:40
Sample Type (Comp. or Grab): C
Matrix: S
of Cont.: 5

Site Contact: Val de Joliet
Lab Contact: _____

Date: _____
Customer: _____

Site Contact: _____
Lab Contact: _____

Perform MS/MSD (Y/N) _____
Filtered Sample (Y/N) _____

Sample ID	Sample Description	Date	Time	Matrix	# of Cont.	Analysis	Notes
8151-1	Hydrocarbons	2/14/13	12:40	C	5	X	8151-1 (TCLP)
8081A-8081C	Hydrocarbons	2/14/13	12:40	C	5	X	8081A-8081C (TCLP)
8151-2	Hydrocarbons	2/14/13	12:40	C	5	X	8151-2 (TCLP)
8151-3	Hydrocarbons	2/14/13	12:40	C	5	X	8151-3 (TCLP)
8151-4	Hydrocarbons	2/14/13	12:40	C	5	X	8151-4 (TCLP)
8151-5	Hydrocarbons	2/14/13	12:40	C	5	X	8151-5 (TCLP)
8151-6	Hydrocarbons	2/14/13	12:40	C	5	X	8151-6 (TCLP)
8151-7	Hydrocarbons	2/14/13	12:40	C	5	X	8151-7 (TCLP)
8151-8	Hydrocarbons	2/14/13	12:40	C	5	X	8151-8 (TCLP)
8151-9	Hydrocarbons	2/14/13	12:40	C	5	X	8151-9 (TCLP)
8151-10	Hydrocarbons	2/14/13	12:40	C	5	X	8151-10 (TCLP)
8151-11	Hydrocarbons	2/14/13	12:40	C	5	X	8151-11 (TCLP)
8151-12	Hydrocarbons	2/14/13	12:40	C	5	X	8151-12 (TCLP)
8151-13	Hydrocarbons	2/14/13	12:40	C	5	X	8151-13 (TCLP)
8151-14	Hydrocarbons	2/14/13	12:40	C	5	X	8151-14 (TCLP)
8151-15	Hydrocarbons	2/14/13	12:40	C	5	X	8151-15 (TCLP)
8151-16	Hydrocarbons	2/14/13	12:40	C	5	X	8151-16 (TCLP)
8151-17	Hydrocarbons	2/14/13	12:40	C	5	X	8151-17 (TCLP)
8151-18	Hydrocarbons	2/14/13	12:40	C	5	X	8151-18 (TCLP)
8151-19	Hydrocarbons	2/14/13	12:40	C	5	X	8151-19 (TCLP)
8151-20	Hydrocarbons	2/14/13	12:40	C	5	X	8151-20 (TCLP)

Sample Specific Notes:
 * methods addic
 10.1.16 to
 match bottle
 order request
 on 2/18/13

Barcode: 680-164616 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= NaOH; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: _____
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments section if the lab is to dispose of the sample

Non-hazard Potentially Hazardous Other

Special Instructions/OC Requirements & Comments: _____

Custody Seal Intact: Yes No

Relinquished by: _____
Relinquished by: _____
Relinquished by: _____

Received by: _____
Received by: _____
Received by Laboratory by: _____

Company: GFT Consultants
Company: GFT Consultants
Company: GFT Consultants

Date/Time: 2/14/13 12:30
Date/Time: _____
Date/Time: _____

Chain of Custody:
 2-8/29
 2.15.13 09:25



Login Sample Receipt Checklist

Client: GEI Consultants, Inc.

Job Number: 680-164616-1

Login Number: 164616

List Number: 1

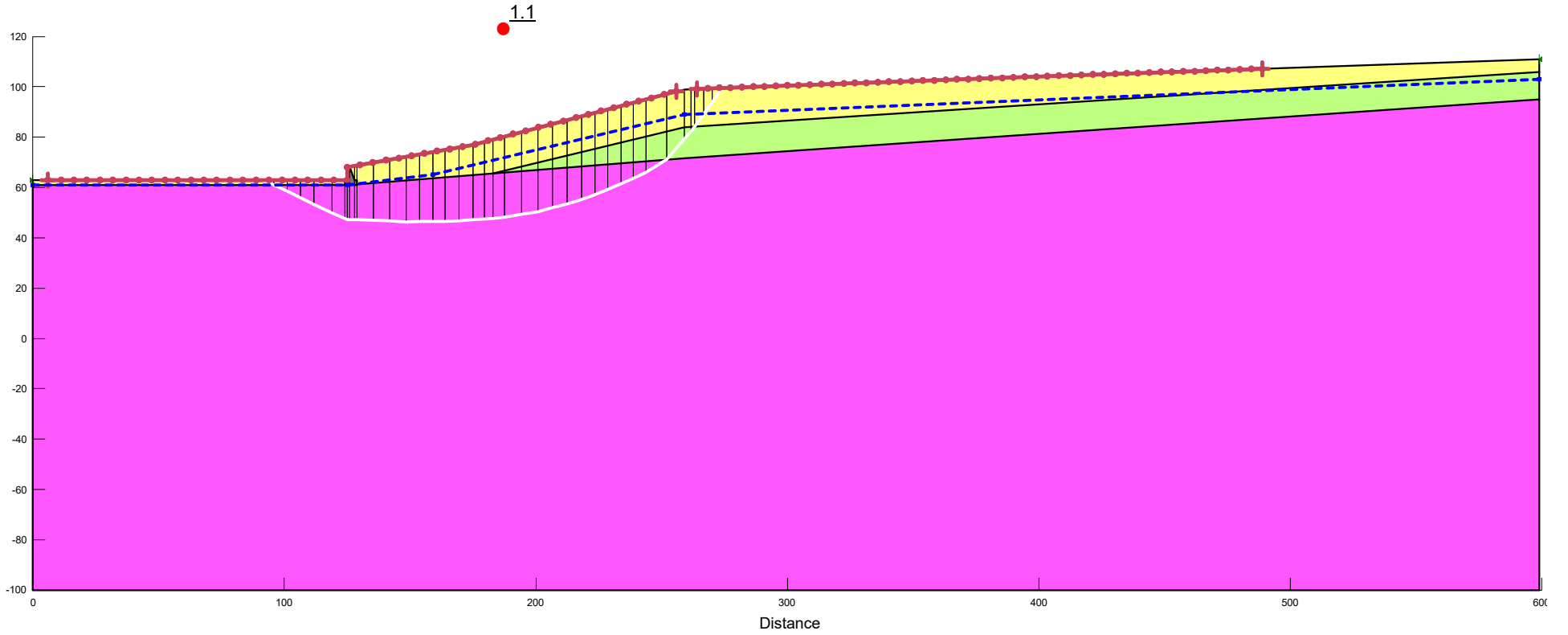
Creator: Laughlin, Paul D

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

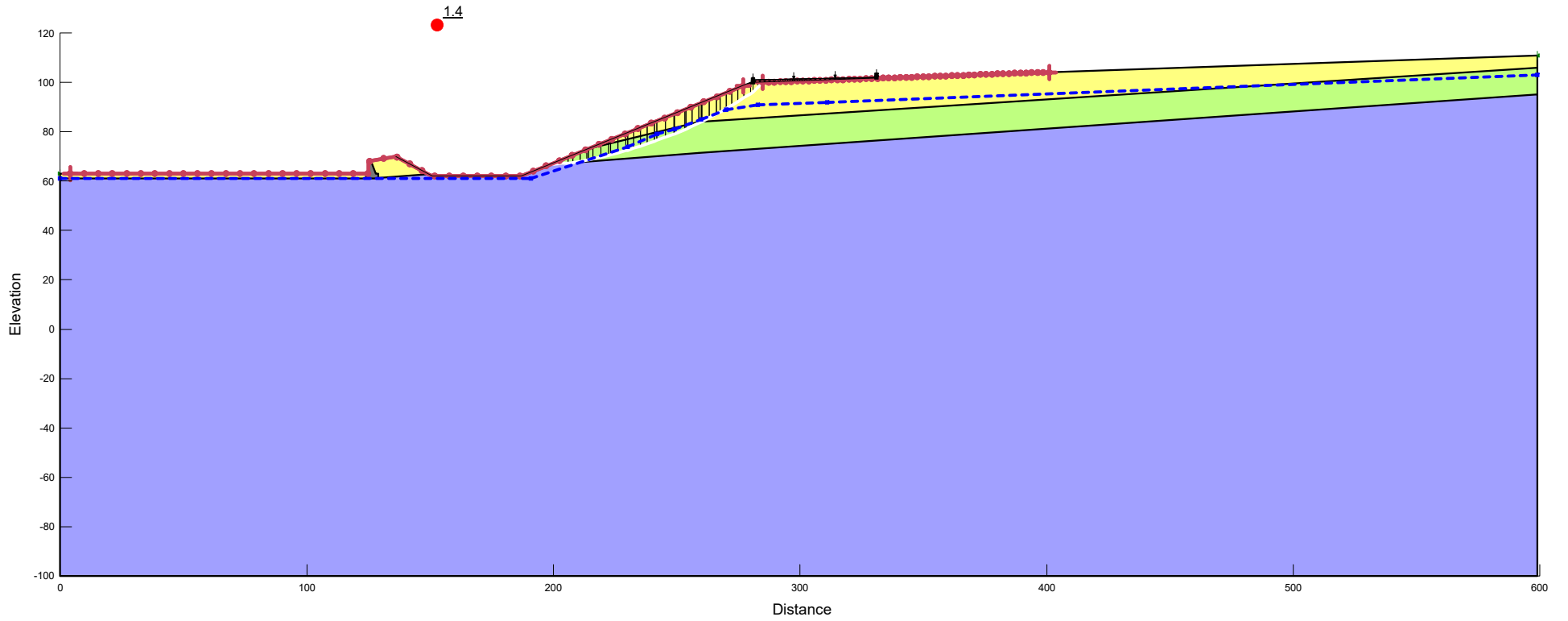
GEI Project 1804446
1601 W Street NE Bus Terminal
Existing Conditions

Title: 1601 W ST Bus Terminal MSE Wall
Method: Spencer
Region 1: Potomac - Drained Fully Softened (Correlation)



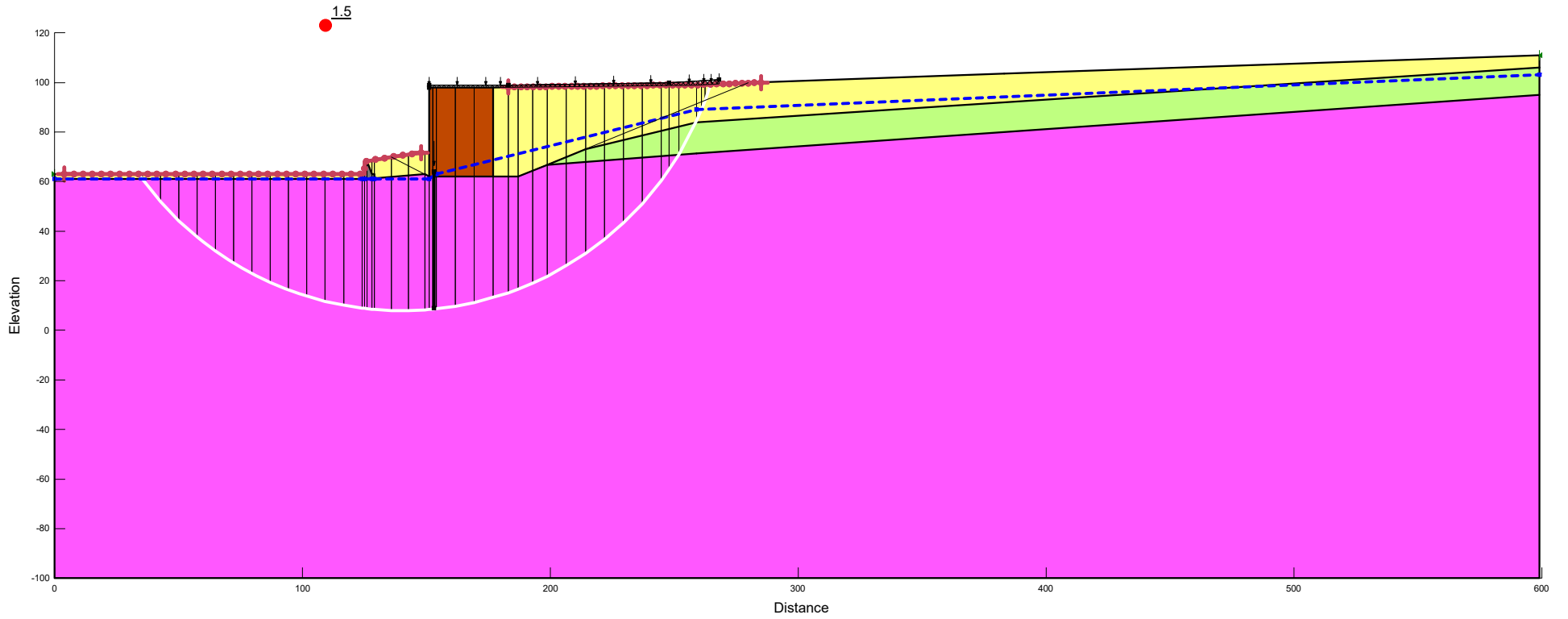
GEI Project 1804446
1601 W Street NE Bus Terminal
Temporary Condition - Slip Surface

Title: 1601 W ST Bus Terminal MSE Wall
Method: Spencer
Region 1: Potomac Undrained



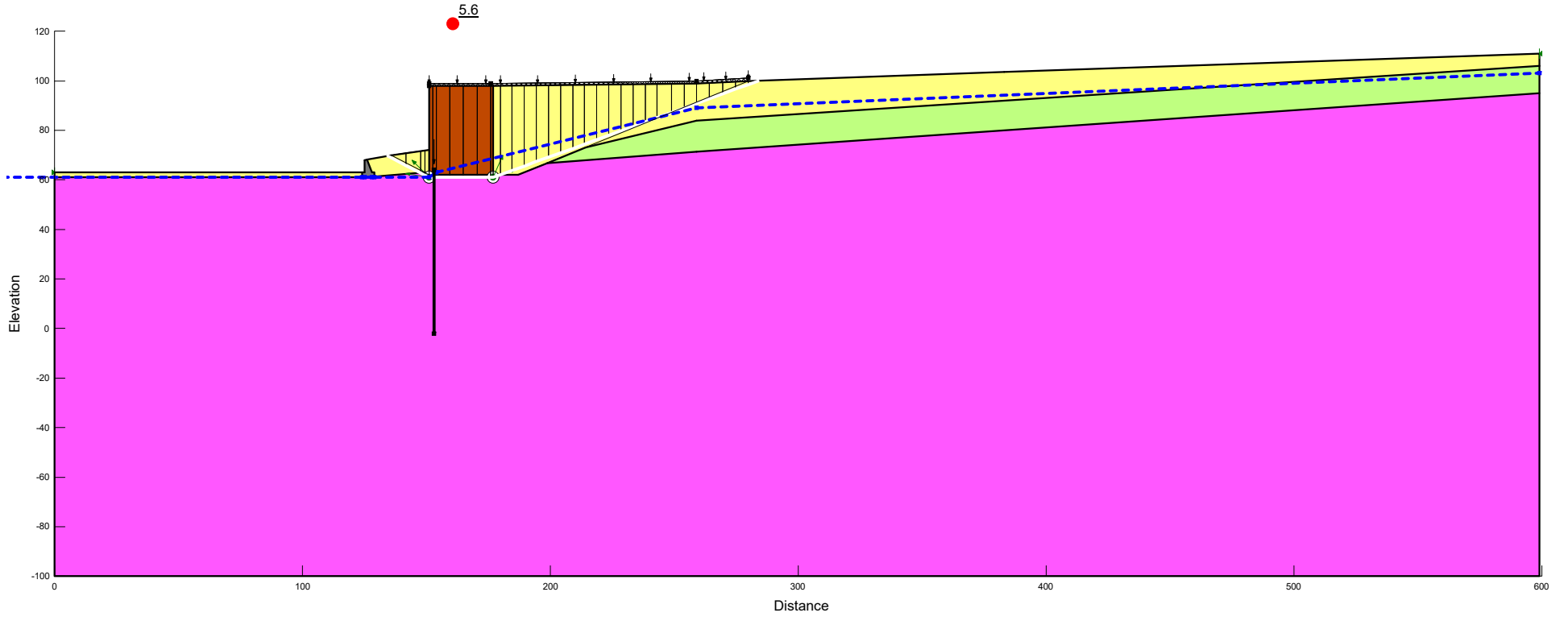
GEI Project 1804446
1601 W Street NE Bus Terminal
Final Condition - Slip Surface

Title: 1601 W ST Bus Terminal MSE Wall
Method: Spencer
Region 1: Potomac - Drained Fully Softened (Correlation)

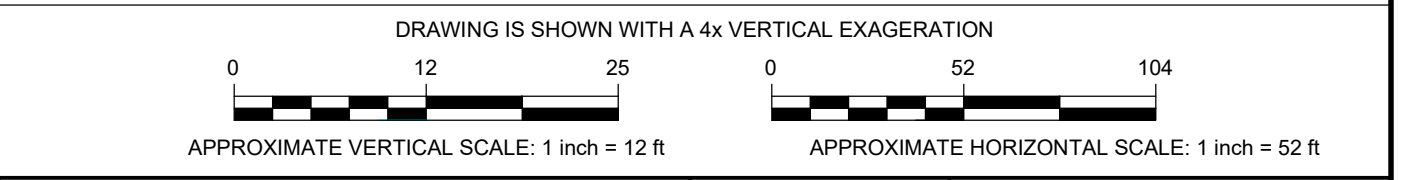
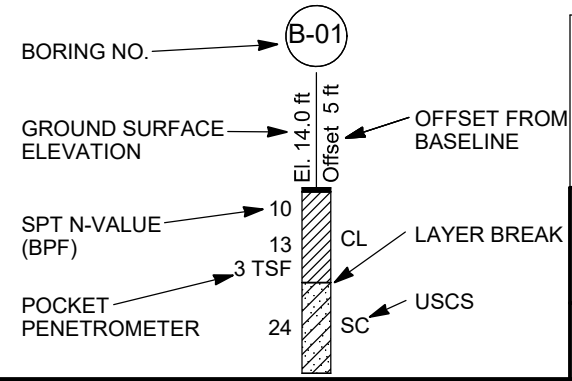
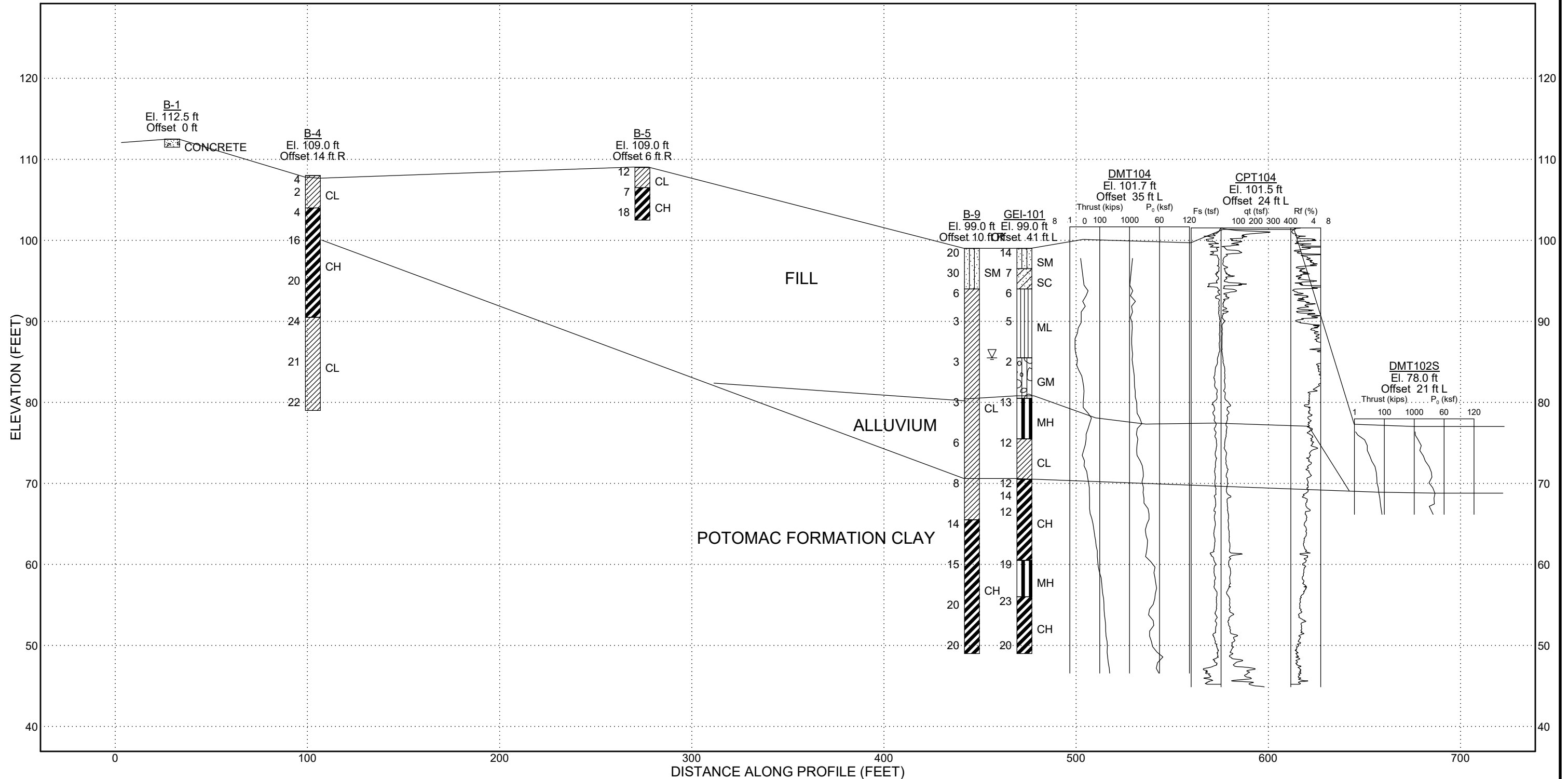


GEI Project 1804446
1601 W Street NE Bus Terminal
Final Condition - Block Failure

Title: 1601 W ST Bus Terminal MSE Wall
Method: Spencer
Region 1: Potomac - Drained Fully Softened (Correlation)

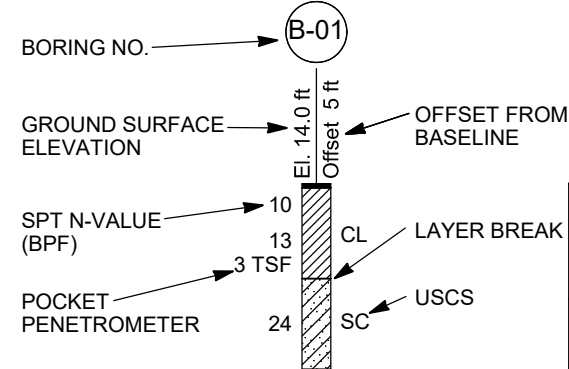
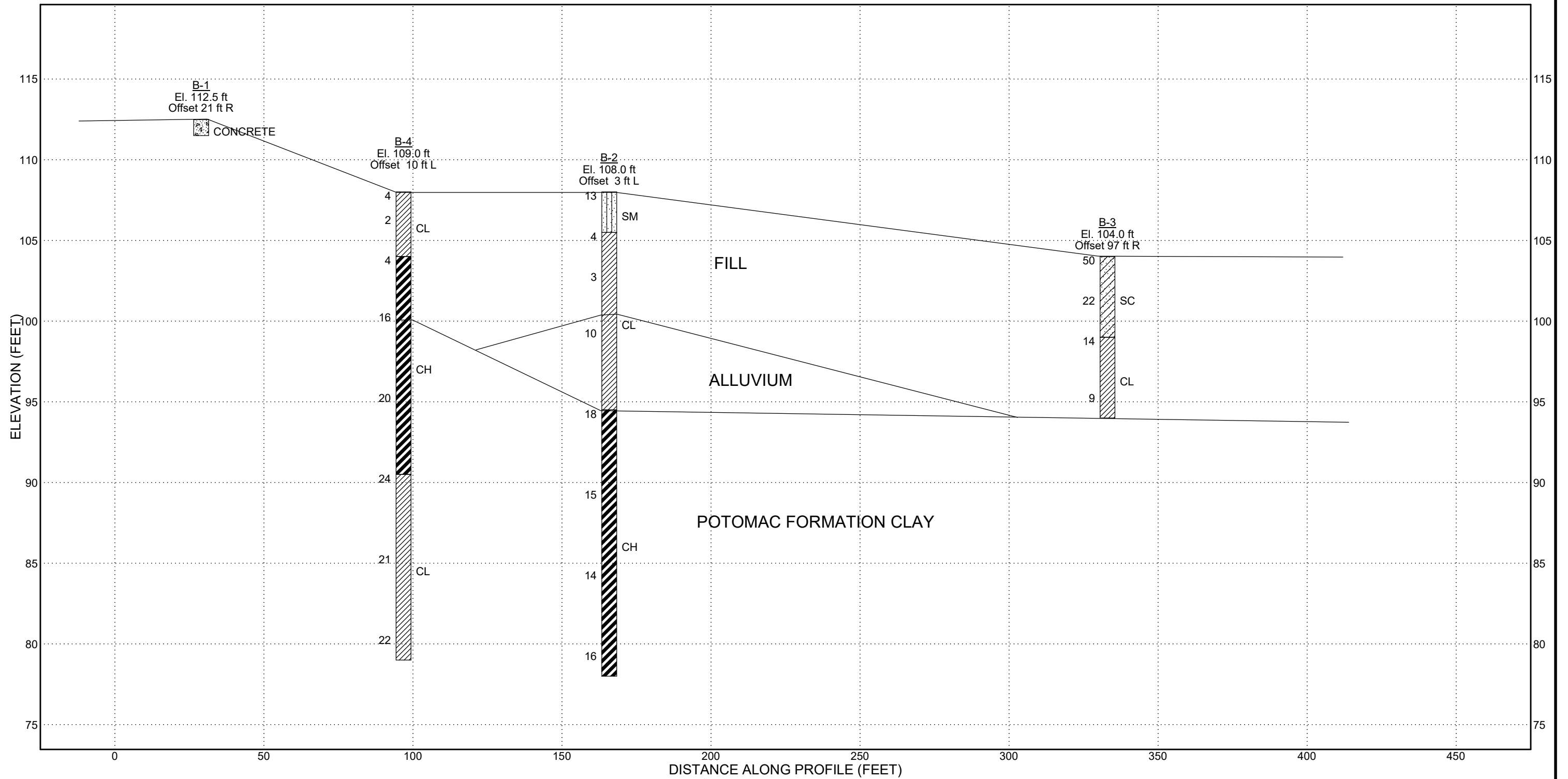


GEI 11X17 FENCE WITH CPT-DMT GINT PROJECT RIVERRENEW-FASTFIELD-04242019.GDT 4/24/19



OSSE Bus Terminal 1601 W Street NE, Washington, DC		Section A-A
Alphatec P.C. Washington, DC		Project: 1804446 August 2019 Fig. 2

GEI 11X17 FENCE WITH CPT GINT PROJECT RIVERRENEW-FASTFIELD-04242019.GDT 4/24/19



DRAWING IS SHOWN WITH A 5.5x VERTICAL EXAGGERATION

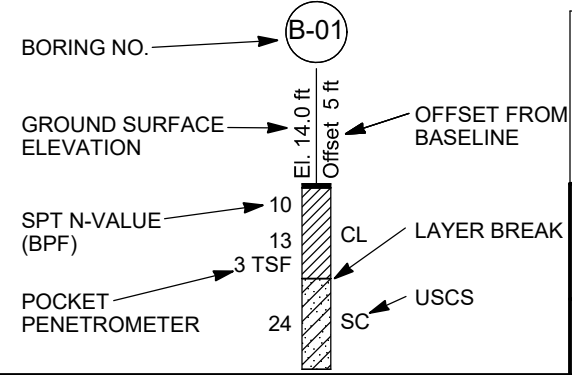
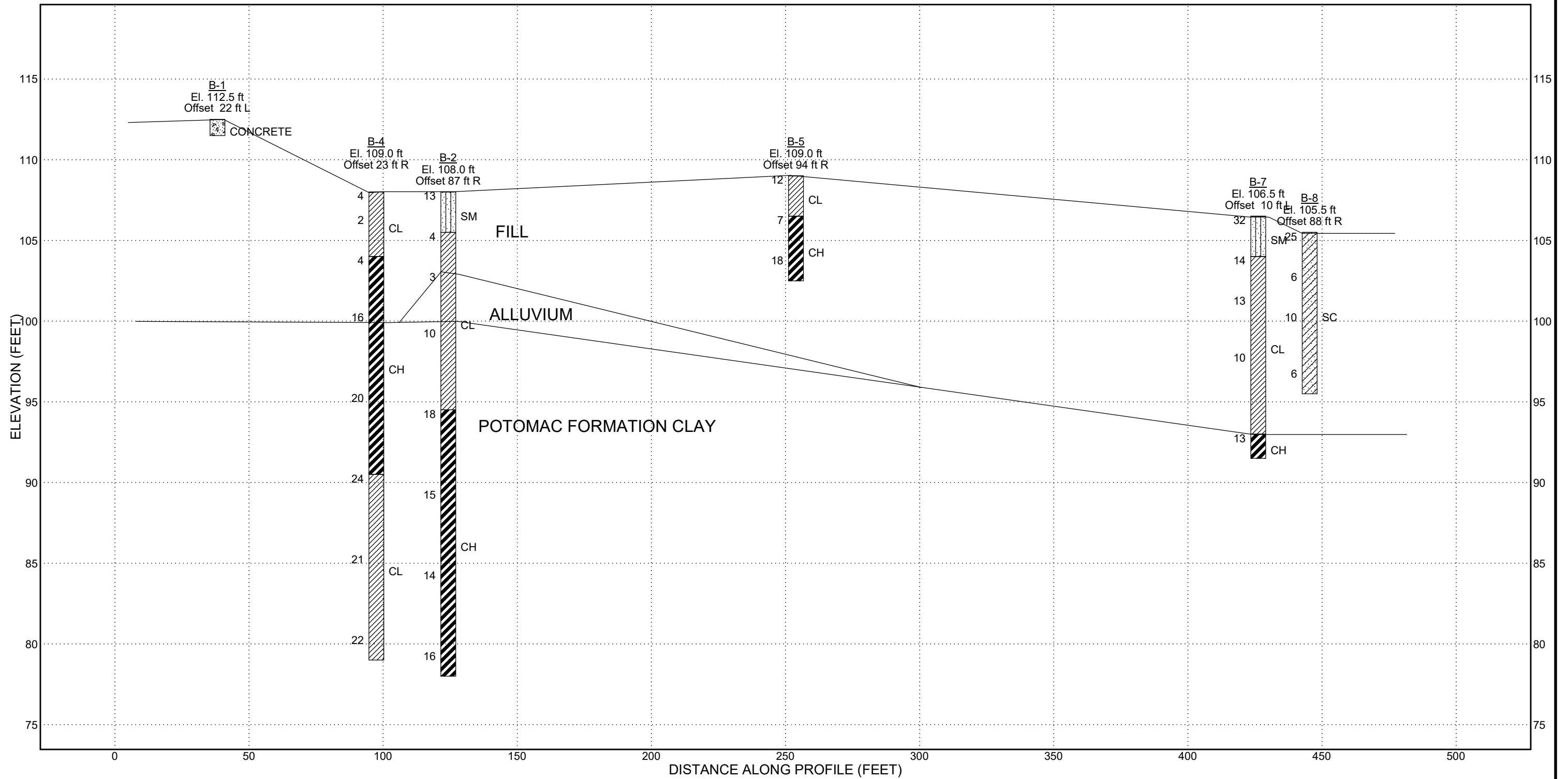
APPROXIMATE VERTICAL SCALE: 1 inch = 6 ft

APPROXIMATE HORIZONTAL SCALE: 1 inch = 33 ft

<p>OSSE Bus Terminal 1601 W Street NE, Washington, DC</p>		<p>Section B-B</p>
<p>Alphatec P.C. Washington, DC</p>	<p>Project: 1804446</p>	<p>August 2019</p>

Fig. 3

GEI 11X17 FENCE WITH CPT GINT PROJECT RIVERRENEW-FASTFIELD-04242019.GDT 4/24/19



DRAWING IS SHOWN WITH A 6x VERTICAL EXAGGERATION

APPROXIMATE VERTICAL SCALE: 1 inch = 6 ft

APPROXIMATE HORIZONTAL SCALE: 1 inch = 37 ft

OSSE Bus Terminal 1601 W Street NE, Washington, DC	 GEI Consultants	Section C-C
Alphatec P.C. Washington, DC		Project: 1804446 August 2019

Fig. 4