ECS Mid-Atlantic, LLC

Report of Subsurface Exploration and Geotechnical Engineering Services

1425 N Quincy Street
Arlington, VA

ECS Project Number 01:29354

September 19, 2019

September 19, 2019

Bridget Sanna Ahmad
Grimm and Parker Architecture
11720 Beltsville Drive
Suite 600
Calverton, MD 20705

ECS Project No. 01:29354

Reference: Letter of Subsurface Exploration and Geotechnical Engineering Services
1425 N Quincy Street
Washington, DC

Dear Bridget:

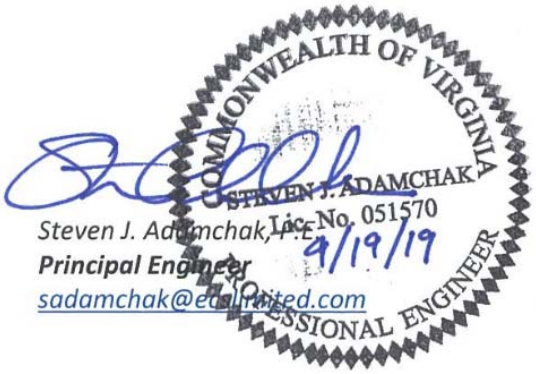
ECS Mid-Atlantic, LLC (ECS) has completed this letter for the above-referenced project. Our services were performed in general accordance with our Proposal No. 01:59167-GPR, dated August 7, 2019. This report presents the results of the field exploration and laboratory testing conducted.

It has been our pleasure to be of service to Grimm and Parker Architecture during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Mid-Atlantic, LLC,

Mariam Borga
Staff Project Manager
mborga@ecslimited.com



Steven J. Adamchak, P.E.
Principal Engineer
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APPENDICES

EXECUTIVE SUMMARY

The following summarizes the main findings of the subsurface exploration. Information gleaned from the executive summary should not be utilized in lieu of reading the entire report.

The purpose of our exploration included evaluating the subsurface conditions to assist the design team with the proposed construction of the new ramp at the north side of the subject adjoining the existing building and provide information of the existing foundation dimensions of the existing building.

The subsurface exploration performed for the planned development included two soil borings drilled to depth of 10 feet below the existing grade and two test pits to expose the footings and document size and location of the footing. Additionally, bulk soil samples were taken from the borings for California Bearing Ratio (CBR) testing. Please note that ECS and the SER observed that the existing building on the west corner of the building has a below-grade level which was not anticipated by the SER. Therefore, the third test pit which was located at the west corner was not performed as the footings were going to be deeper than 4 feet. Additionally, the test pits couldn't be performed from inside of the building as the building was shut down for environmental reasons.

The ground surface at borings B-1 and B-2 consisted of up to 6 inches of asphalt and 6 inches of gravel layer. Fill materials were encountered beneath the surface cover in borings B-1 and B-2; the fills extended throughout the remainder of the depth explored for B-2. The fill soils were underlain by natural soils for B-1 which extended throughout the remainder of the depths explored.

1.0 INTRODUCTION

1.1 GENERAL

The purpose of this study was to provide subsurface conditions to assist the design team with the proposed construction of the new ramp at the north side of the subject adjoining the existing building and provide information of the existing foundation dimensions of the existing building.

In preparing this letter, we have had the opportunity to discuss the overall project with you. This letter contains the results of our subsurface exploration, laboratory testing programs, and site characterization and test pit data for use by the project team.

1.2 SCOPE OF SERVICES

Per the direction of the Structural Engineer of record (Saranath Weerakoon with McMullan Consulting Engineers) and you, ECS performed 2 soil borings and 2 test pits at locations selected and approved by you. A laboratory testing program was implemented to characterize the physical and engineering properties of the subsurface soils.

This report discusses our exploratory and testing procedures, presents our findings and includes the following:

- Observations from our site reconnaissance including current site conditions, surface drainage features, and surface topographic conditions.
- A review of the published geologic conditions and their relevance to your planned development.
- A subsurface characterization and a description of the field exploration and laboratory tests performed.
- Final logs of the soil borings and records of the field exploration prepared in accordance with the standard practice for geotechnical engineering. A boring location plan and the results of the laboratory tests plotted on the final boring logs or included on a separate test report sheet.
- Documentation of the test pit results, including footing dimensions.
- Results of the California Bearing Ratio (CBR) testing for the Civil Engineers use in determining pavement designs.

1.3 AUTHORIZATION

Our services were provided in accordance with our Proposal No. 01:59167-GP dated August 7, 2019.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The site is located at the physical address of 1425 N Quincy Street in Arlington, VA. The site is bounded to the north by at-grade asphalt parking lots and Custis Memorial Pkwy, to the east by existing asphalt parking lots and existing structures, to the south by 14th Street N and to the west by N Quincy Street. The site is currently occupied by a one level above-grade structure and asphalt paved parking lots. The western portion of the building was observed to have one below-grade level while the eastern portion of the building was observed to be an at-grade building. The project team is unaware of the below-grade level and ECS was not provided with the footprint of the below-grade level. Based on the publically available Arlington County GIS topographic map, the existing site grades ranging from EL. +242 feet to EL. +256 feet, sloping from northeast to southwest, respectively. Please see Figure 2.1.1 for further details.

Figure 2.1.1. Site Location

2.2 PROPOSED CONSTRUCTION

Based on our conversation with you and the provided documents, we understand the project site will include the addition of new ramp at the north side of the subject adjoining the existing building.

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

The field exploration was planned with the objective of characterizing the project site in general geotechnical and geological terms and to evaluate subsequent field and laboratory data.

3.1.1 Soil Borings

The subsurface conditions were explored by drilling two (2) soil borings (Borings B-1 & B-2) within the proposed footprints of the site.

A track-mounted drill rig was utilized to drill the soil test borings. Borings B-1 & B-2 were advanced to 10 feet below the existing ground surface. Additionally, bulk soil samples were taken from the borings. The recovered sample was returned to the laboratory for California Bearing Ratio (CBR) testing for the samples located in the proposed parking lots.

Boring locations were identified in the field by ECS personnel by referencing from existing features prior to mobilization of our drilling equipment. The approximate as-drilled boring locations are shown on the Boring Location Diagram in Appendix A. Ground surface elevations noted on our boring logs were referenced using the publically available DC GIS website.

Standard penetration tests (SPTs) were conducted in the borings at regular intervals in general accordance with ASTM D 1586. Small representative samples were obtained during these tests and were used to classify the soils encountered. The standard penetration resistances obtained provide a general indication of soil shear strength and compressibility.

3.1.2 Test Pits

In addition to the borings, two test pits were excavated using Bobcat backhoe excavator to a depth of 4 feet below the existing ground surface. ECS field crews observed the dimensions and materials encountered within the test pits. The dimensions of the existing foundations (where observed) were also measured and photographs were taken. Logs of the test pits are included in the Appendix B of this report.

Upon arrival, ECS and the SER observed that the existing building on the west corner of the building has a below-grade level which was not anticipated by the SER. Therefore, the third test pit which was located at the west corner was not performed as the footings were going to be deeper than 4 feet. Additionally, the test pits couldn't be performed from inside of the building as the building was shut down for environmental reasons.

3.2 REGIONAL/SITE GEOLOGY

The site is located within the Coastal Plain Physiographic Province of Arlington, Virginia. The near surface soils in the area typically consist of man-placed fill soils or natural soils which have been disturbed by previous construction.

Beneath these near surface fill or disturbed soils, Coastal Plain river terrace deposits of the middle Pleistocene age are generally encountered. These deposits vary in their percentages of sand, silt, clay and gravel, both laterally and vertically. A typical soil profile in the vicinity of the project consists of clayey sands and sandy clays with varying amounts of silt and gravel. Within the sandy soils, clay and gravel seams are often encountered.

Typically underlying the Coastal Plain soils are residual soils which have developed from the in-place chemical and physical weathering of the underlying parent bedrock material. The soils associated with this geology typically consist of sand and silt materials, along with varying amounts of weathered rock fragments and mica content. With increasing depth, apparent granularity increases, as well as the soil profile strength and density, eventually transitioning into a layer of highly weathered or disintegrated rock and rock materials.

The weathered rock materials in this region are underlain by competent parent bedrock. The bedrock in this particular vicinity is the Cambrian-Age Mather Gorge-Sykesville Motif, which is part of the Wissahickon Terrace. Rock of this formation is generally gneiss and schist and commonly is differentially weathered.

In this particular vicinity, the soil profile is expected to be shallow, predominantly granular deposits of Quaternary colluvium and alluvium. The soil profile generally transitions very quickly through decomposed and weathered metamorphic rock into competent bedrock. An overview of the general site geology is illustrated in Figure 3.2.1.

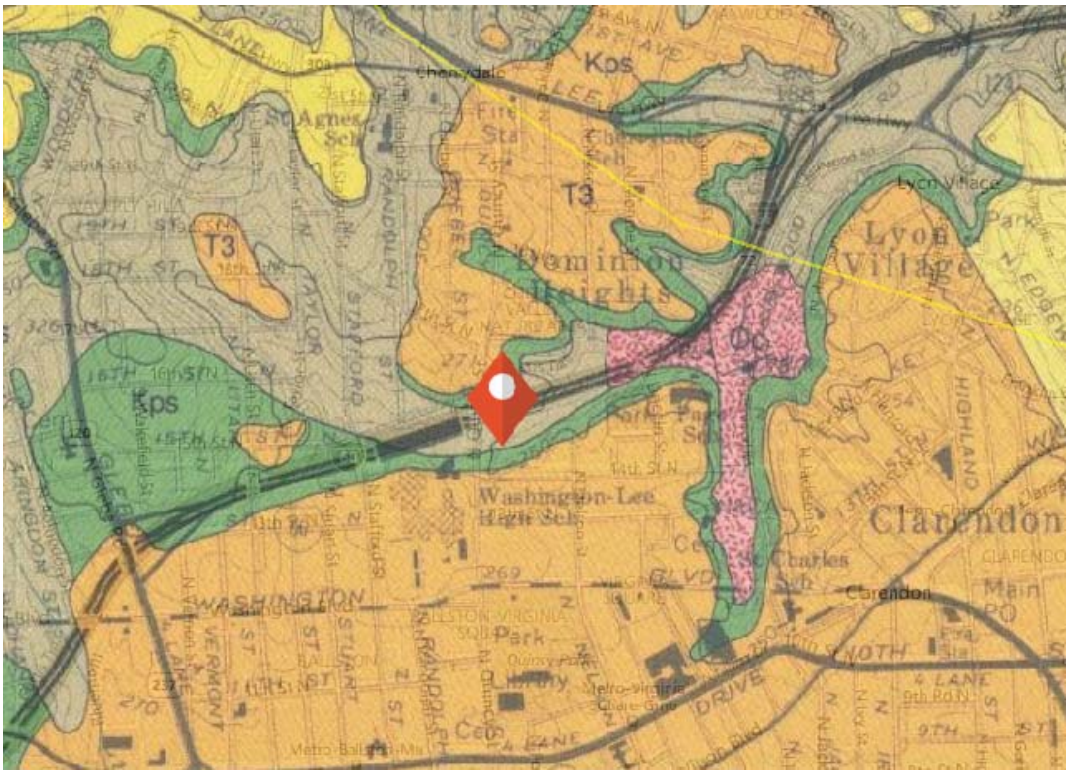


Figure 3.2.1

Geologic map for Figure 3.2.1 obtained from the U.S. Geologic Service website, https://ngmdb.usgs.gov/maps/mapview/

3.3 SUBSURFACE CHARACTERIZATION

The subsurface conditions encountered were generally consistent with published geological mapping. The following sections provide generalized characterizations of the soil strata encountered during our subsurface exploration. For additional subsurface information, refer to the Boring Logs in Appendix B.

Table 3.3.1 Subsurface Stratigraphy

Approximate Depth Range (ft)	Approximate Bottom Elevation of Stratum (ft)	Stratum	Description	Ranges of SPT N-values (bpf)
0-1 ft (Surface cover)	EL.+246 to 245	N/A	Ground cover generally consisted of 6 inches of asphalt and 6 inches of gravel base.	N/A
1-10 ft	EL. +238.5 to +235.5	I	FILL – SILTY SAND (SM), trace gravel, contains roots, brick, mica and asphalt.	6 to 13
7.5-10 ft	EL. +235.5	II	ALLUVIUM – CLAYEY SAND (SC) with gravel.	6

3.4 GROUNDWATER OBSERVATIONS

Observations for groundwater were made during the subsurface exploration. In auger drilling operations, water is not introduced into the boreholes, and the groundwater position can often be determined by observing water flowing into or out of the boreholes. Furthermore, visual observation of the soil samples retrieved during auger drilling explorations can often be used in evaluating the groundwater conditions. During our current exploration, groundwater was not observed within the test borings.

4.0 LABORATORY TESTING

ECS performed laboratory testing on selected samples obtained during our field exploration operations. Classification and index property tests were performed on representative soil samples obtained in order to aid in classifying soils according to the Unified Soil Classification System.

A geotechnical engineer visually classified each soil sample from the test borings on the basis of texture and plasticity in accordance with the Unified Soil Classification System (USCS) and ASTM D-2488 (Description and Identification of Soils-Visual/Manual Procedures). After classification, the geotechnical engineer grouped the various soil types into the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses following the soil descriptions on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual.

Bulk soil samples were taken from the borings. The recovered samples were returned to the laboratory for California Bearing Ratio (CBR) testing.

5.0 CLOSING

The description of the proposed project is based on information provided to ECS by you. If any of this information is inaccurate, ECS should be contacted immediately so that we can review the report in light of the changes.

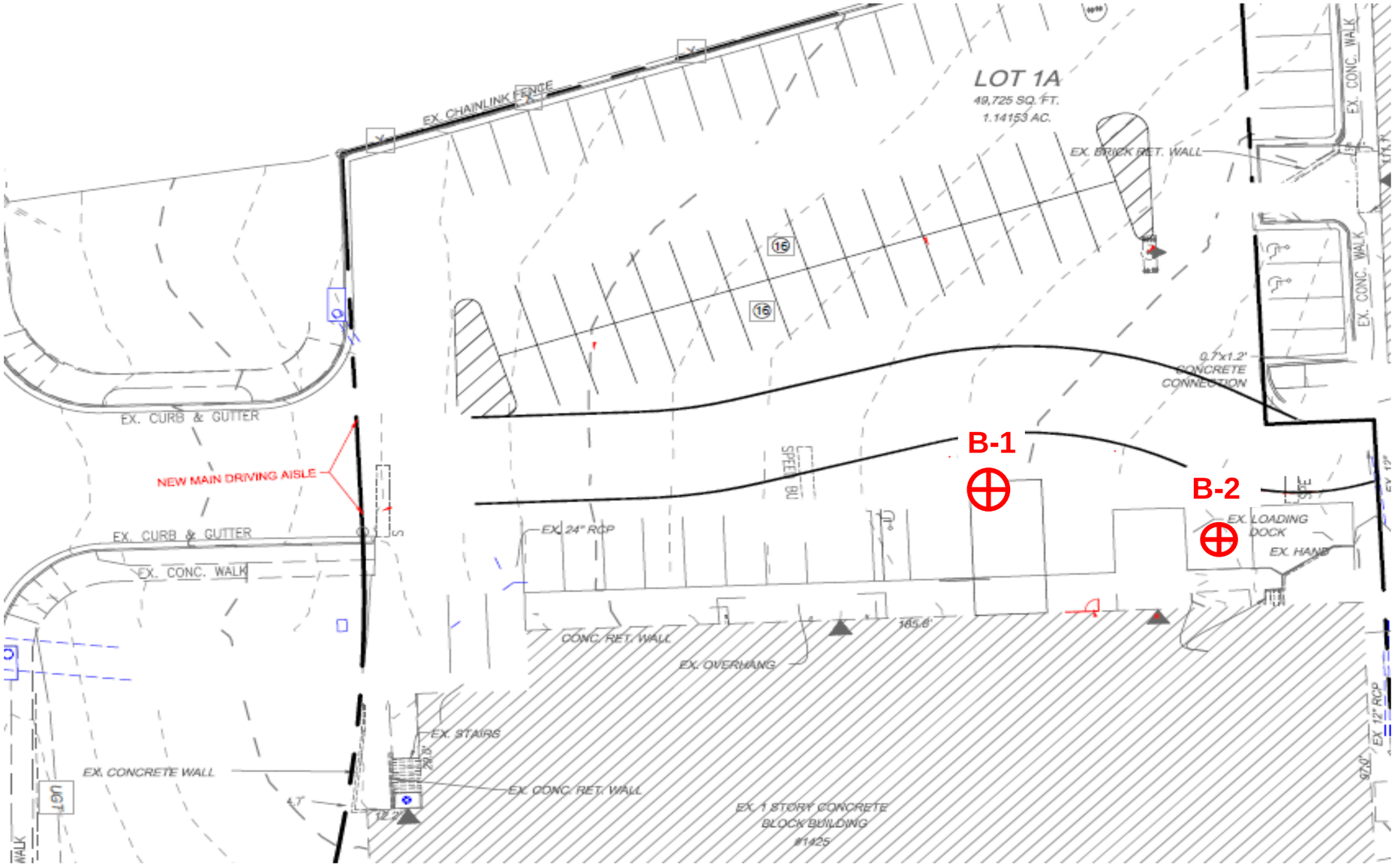
In addition to geotechnical engineering services, ECS Mid-Atlantic, LLC has the in-house capability to perform multiple additional services as this project moves forward. These services include the following:

- Construction Material Testing / Special Inspections; and
- Third Party Inspections / Code Compliance for MEP, Elevators, etc.
- Pre-Construction and Post-Construction Surveys;
- 3D Adjacent Structure/Vibration Monitoring

We would be pleased to provide these services for you. If you have any questions with regard to this information or need any further assistance during the design and construction of the project please feel free to contact us.

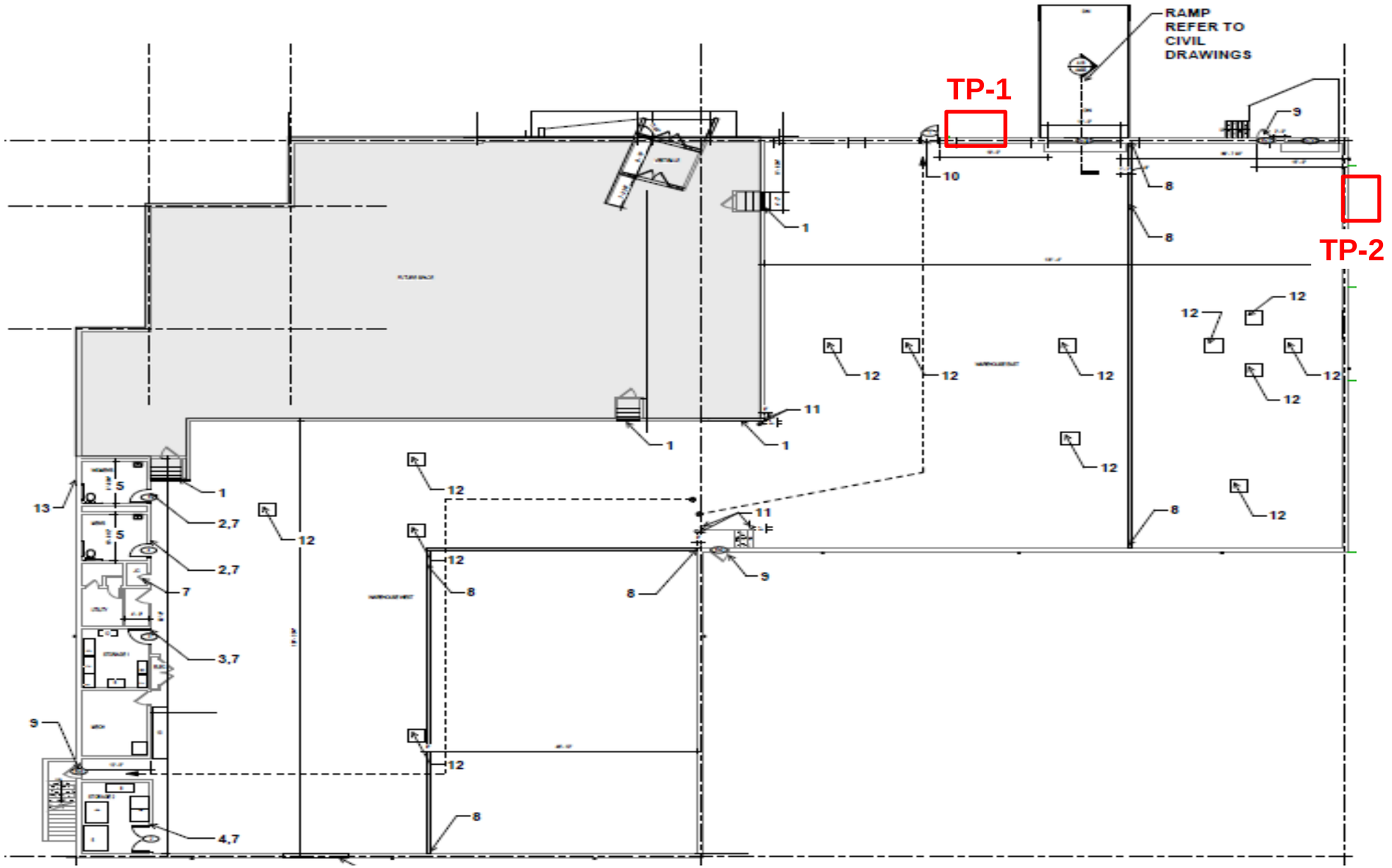
APPENDIX A – Drawings & Reports

Boring Location Diagram
Test Pit Location Diagram



⊕ **Approx. Boring Location**

Boring Location Plan 1425 N Quincy Street Arlington VA	ECS LLC MID-ATLANTIC	Project Engineer: MKB Principal Engineer: SJA	N	ECS Project No.: 01:29354 Scale: NTS Date: 9/18/2019 Drawing Number: 1 of 1



Test Pit Location Plan
1425 N Quincy Street
Arlington VA

ECS LLC MID-ATLANTIC

Project Engineer:	MKB
Principal Engineer:	SJA

N

ECS Project No.:	01:29354
Scale:	NTS
Date:	9/9/2019
Drawing Number:	1 of 1

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Boring Logs
Test Pit Logs TP-1 and TP-2

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
GW	**WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GP	**POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
GM	**SILTY GRAVEL** gravel-sand-silt mixtures
GC	**CLAYEY GRAVEL** gravel-sand-clay mixtures
SW	**WELL-GRADED SAND** gravelly sand, little or no fines
SP	**POORLY-GRADED SAND** gravelly sand, little or no fines
SM	**SILTY SAND** sand-silt mixtures
SC	**CLAYEY SAND** sand-clay mixtures
ML	**SILT** non-plastic to medium plasticity
MH	**ELASTIC SILT** high plasticity
CL	**LEAN CLAY** low to medium plasticity
CH	**FAT CLAY** high plasticity
OL	**ORGANIC SILT or CLAY** non-plastic to low plasticity
OH	**ORGANIC SILT or CLAY** high plasticity
PT	**PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15 - 25
Adjective *(ex: "Silty")*	≥25	≥30

WATER LEVELS[6]		
	WL	Water Level (WS)(WD)
		(WS) While Sampling
		(WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	SWT	Stabilized Water Table
	DCI	Dry Cave-In
	WCI	Wet Cave-In

[1] *Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.*

[2] *To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.*

[3] *Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] *Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).*

[5] *Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).*

[6] *The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.*

[7] *Minor deviation from ASTM D 2488-09 Note 16.*

[8] *Percentages are estimated to the nearest 5% per ASTM D 2488-09.*

CLIENT	Job #:	BORING #	SHEET
Grimm and Parker Architecture	01:29354	B-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
1425 N. Quincy Street	

SITE LOCATION: 1425 N. Quincy Street, Arlington, VA

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 246

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [6.00"]			
					Gravel Thickness [6.00"]		245	
	S-1	SS	18	18	(SM FILL) FILL, SILTY SAND, trace gravel, contains roots and brick, dark brown, moist, loose			1 4 5
	S-2	SS	18	3				5 5 5
5	S-3	SS	18	10			240	3 4 4
					(SC) CLAYEY SAND WITH GRAVEL, tan and light brown, moist, loose			
	S-4	SS	18	18				2 3 3
10					END OF BORING @ 10'		235	
15							230	
20							225	
25							220	
30								

9 10 8 7.0 19 29 6

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL Dry WS ☐ WD ☒	BORING STARTED 08/22/19	CAVE IN DEPTH 6
WL(SHW) N/A WL(ACR) Dry	BORING COMPLETED 08/22/19	HAMMER TYPE Auto
WL N/A	RIG CME LC-2 FOREMAN Brandon M	DRILLING METHOD 3.25 HSA

CLIENT	Job #:	BORING #	SHEET
Grimm and Parker Architecture	01:29354	B-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
1425 N. Quincy Street	

SITE LOCATION: 1425 N. Quincy Street, Arlington, VA

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

BOTTOM OF CASING | LOSS OF CIRCULATION

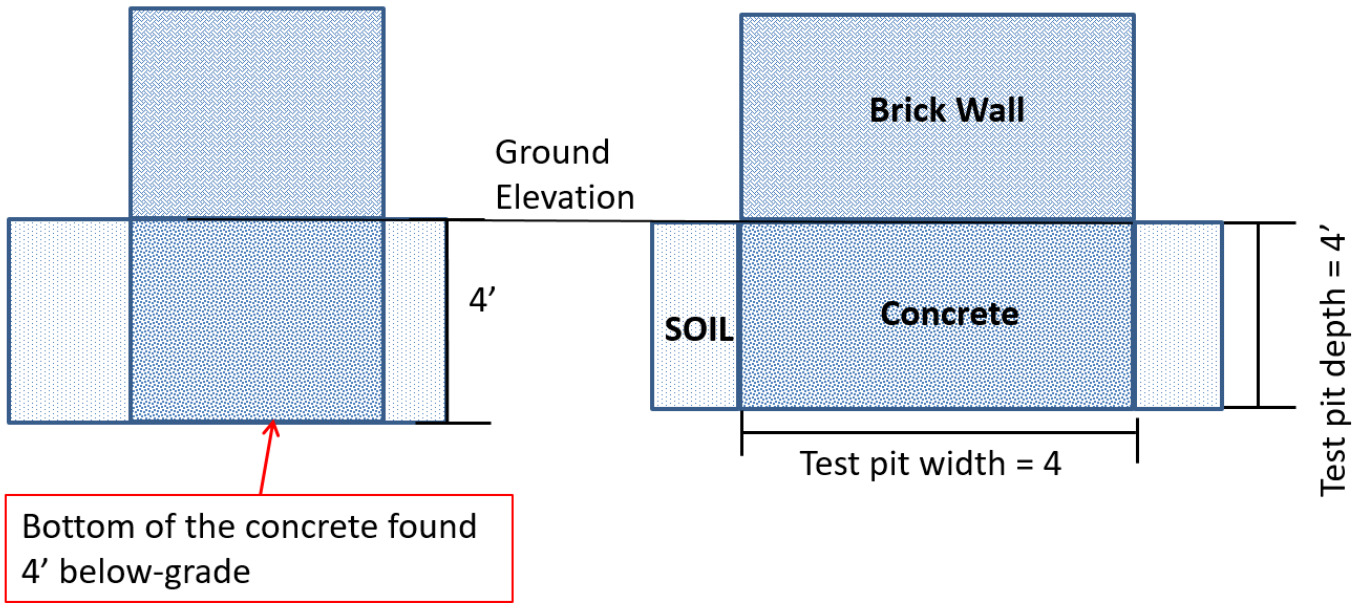
SURFACE ELEVATION 246

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Asphalt Thickness [6.00"]		246	
					Concrete Thickness [6.00"]			
	S-1	SS	18	18	(SM FILL) FILL, SILTY SAND, contains roots, mica and asphalt, dark brown, dark gray and tan, moist, loose to medium dense		245	3 3 4 4 3 3
	S-2	SS	18	18				
5							240	3 5 2
	S-3	SS	18	10				
	S-4	SS	18	8				3 6 7
10					END OF BORING @ 10'		235	
15							230	
20							225	
25							220	
30								

7 6 7 NP NP 13 16.4

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

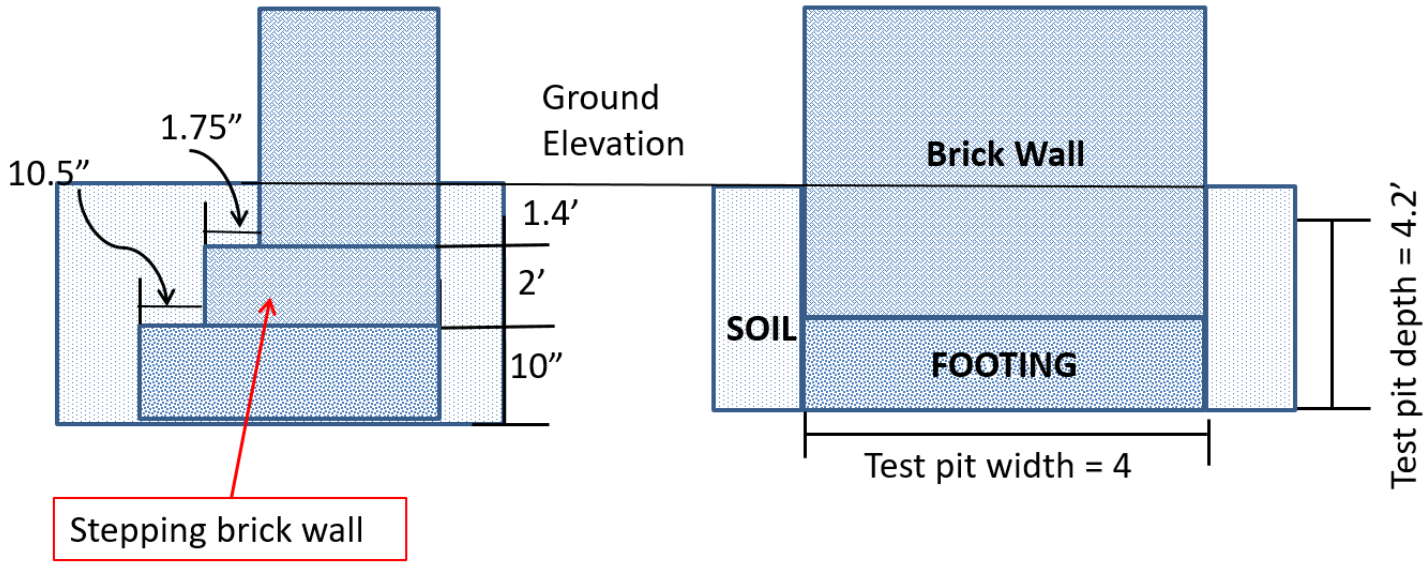
WL Dry WS ☐ WD ☒	BORING STARTED 08/22/19	CAVE IN DEPTH 5
WL(SHW) N/A WL(ACR) Dry	BORING COMPLETED 08/22/19	HAMMER TYPE Auto
WL N/A	RIG CME LC-2 FOREMAN Brandon M	DRILLING METHOD 3.25 HSA



1. Schematic sketch of footing at test pit TP-1 (N.T.S.)

2. View of Test Pit TP-1

1425 N Quincy Street **Arlington VA** **Project No. 01: 29354**		**Diagram/Photographs** **Test Pit TP-1**



3. Schematic sketch of footing at test pit TP-2 (N.T.S.)

4. View of Test Pit TP-2

1425 N QUINCY STREET **ARLINGTON VA** **PROJECT NO. 01: 29354**	ECS	**DIAGRAM/PHOTOGRAPHS** **TEST PIT TP-2**

APPENDIX C – Laboratory Testing

Laboratory Test Results Summary
Plasticity Chart
Grain Size Analysis
CBR Test
Compaction Test Report

Laboratory Testing Summary

Sample Source	Sample Number	Start Depth (feet)	End Depth (feet)	Sample Distance (feet)	MC[1] (%)	Soil Type[2]	Atterberg Limits[3]			Percent Passing No. 200 Sieve[4]	Moisture - Density (Corr.)[5]		CBR Value[6]	Other
							LL	PL	PI		Maximum Density (pcf)	Optimum Moisture (%)		
B-1	S-4	8.5	10.0	1.5	7.0	SC	29	19	10	18.3	129.0	8.1	16.3	
B-2	S-4	8.5	10.0	1.5	16.4	SM	NP	NP	NP	20.4				

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 1140, 5. See test reports for test method, 6. See test reports for test method

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content (ASTM D 2974)

Project No. 01:29354
Project Name: 1425 N. Quincy Street
PM: Mariamawit K. Borga
PE: Steven J. Adamchak
Printed On: Monday, September 9, 2019

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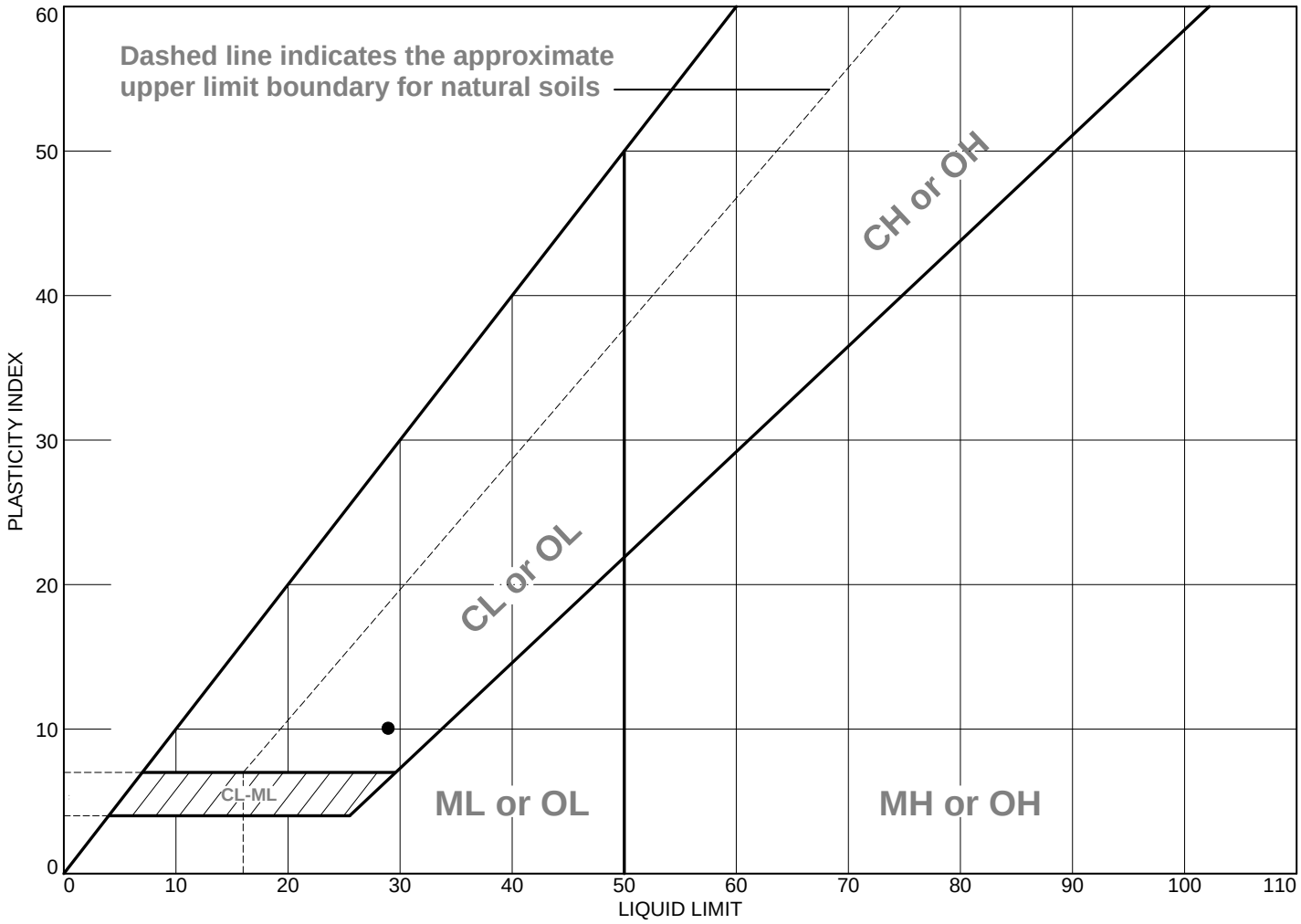
14026 Thunderbolt Place, Suite 100
Chantilly, VA 20151-3232
Phone: (703) 471-8400
Fax: (703) 834-5527

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	CLAYEY SAND WITH GRAVEL	29	19	10	34.1	18.3	SC
■	FILL, SILTY SAND	NP	NP	NP	75.2	20.4	SM

Project No. 29354 **Client:** Grimm and Parker Architecture

Project: 1425 N. Quincy Street

●**Source of Sample:** B-1 **Depth:** 8.5 **Sample Number:** S-4

■**Source of Sample:** B-2 **Depth:** 8.5 **Sample Number:** S-4

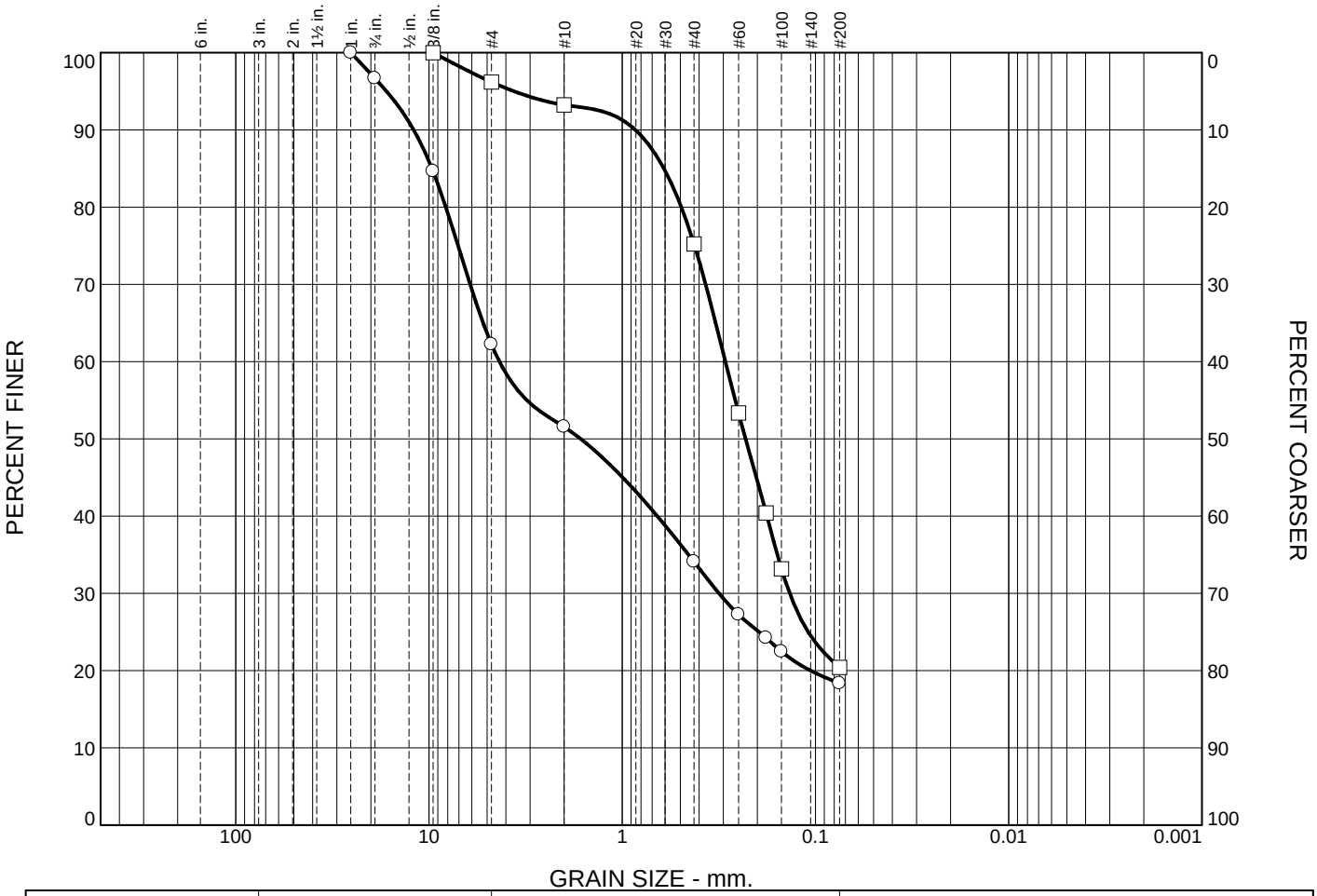
Remarks:

ECS MID-ATLANTIC, LLC
14026 Thunderbolt Place, Suite 100
Chantilly, VA 20151-3232
Phone: (703) 471-8400
Fax: (703) 834-5527

Figure 1 of 1

Tested By: HTN1 **Checked By:** MBK

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	3.3	34.5	10.6	17.5	15.8	18.3	
□	0.0	0.0	3.8	3.0	18.0	54.8	20.4	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-1	S-4	8.5	CLAYEY SAND WITH GRAVEL	SC
□	B-2	S-4	8.5	FILL, SILTY SAND	SM

ECS MID-ATLANTIC, LLC
14026 Thunderbolt Place, Suite 100
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Phone: (703) 471-8400
Fax: (703) 834-5527

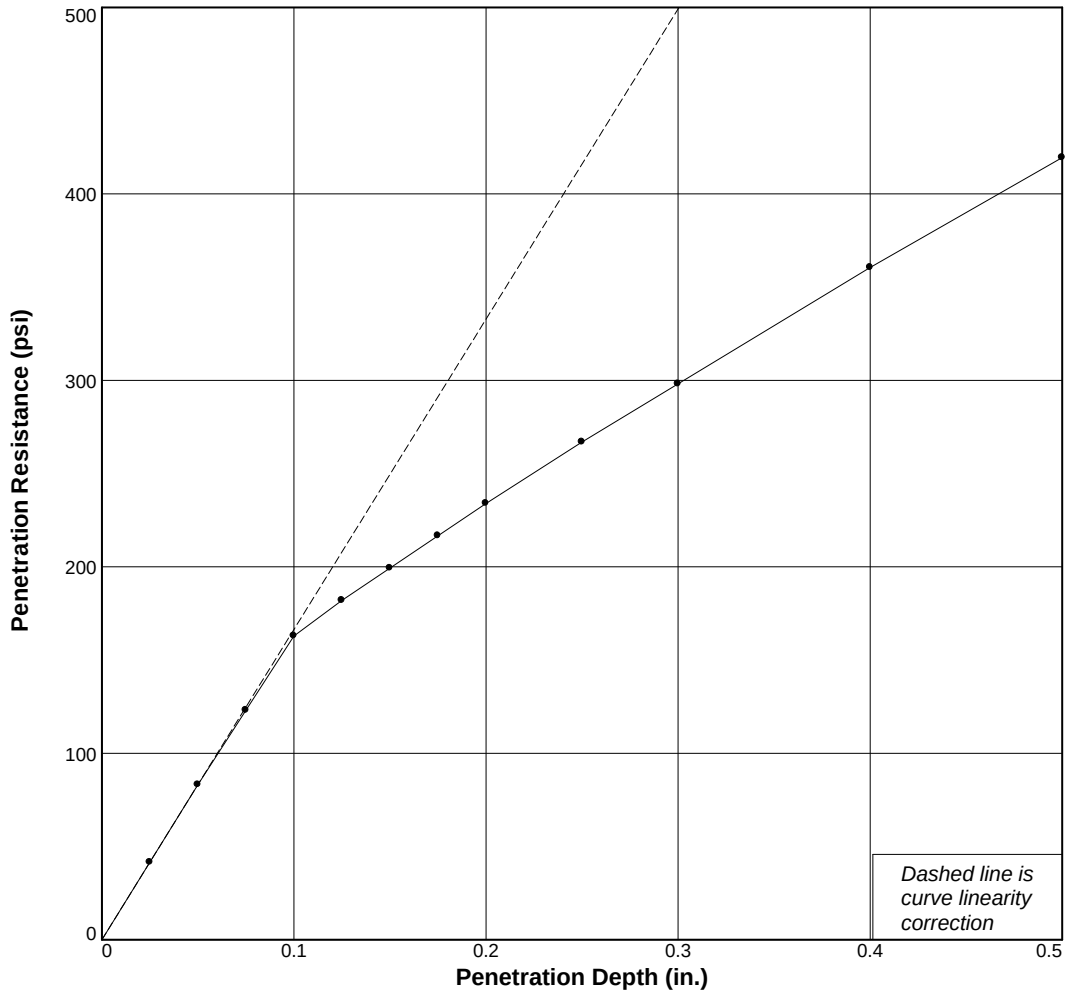
Client: Grimm and Parker Architecture

Project: 1425 N. Quincy Street

Project No.: 29354 **Figure** 1 of 1

Tested By: ○ HNT1 □ HTN1 **Checked By:** MBK

BEARING RATIO TEST REPORT
VTM-8 (2013)



	Molded			Soaked			CBR (%)		Linearity Correction (in.)	Surcharge (lbs.)	Max. Swell (%)
	Density (pcf)	Percent of Max. Dens.	Moisture (%)	Density (pcf)	Percent of Max. Dens.	Moisture (%)	0.10 in.	0.20 in.			
1 ○	129.0	100	8.4	128.9	99.9	11.7	16.3	15.6	0.000	10	0
2 △											
3 □											

Material Description	USCS	Max. Dens. (pcf)	Optimum Moisture (%)	LL	PI
CLAYEY SAND WITH GRAVEL	SC	129.0	8.1	29	10

Project No: 29354

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Source of Sample: B-1 **Depth:** 8.5

Sample Number: S-4

Date Sampled: 8/30/19 **Date Received:** 8/27/19

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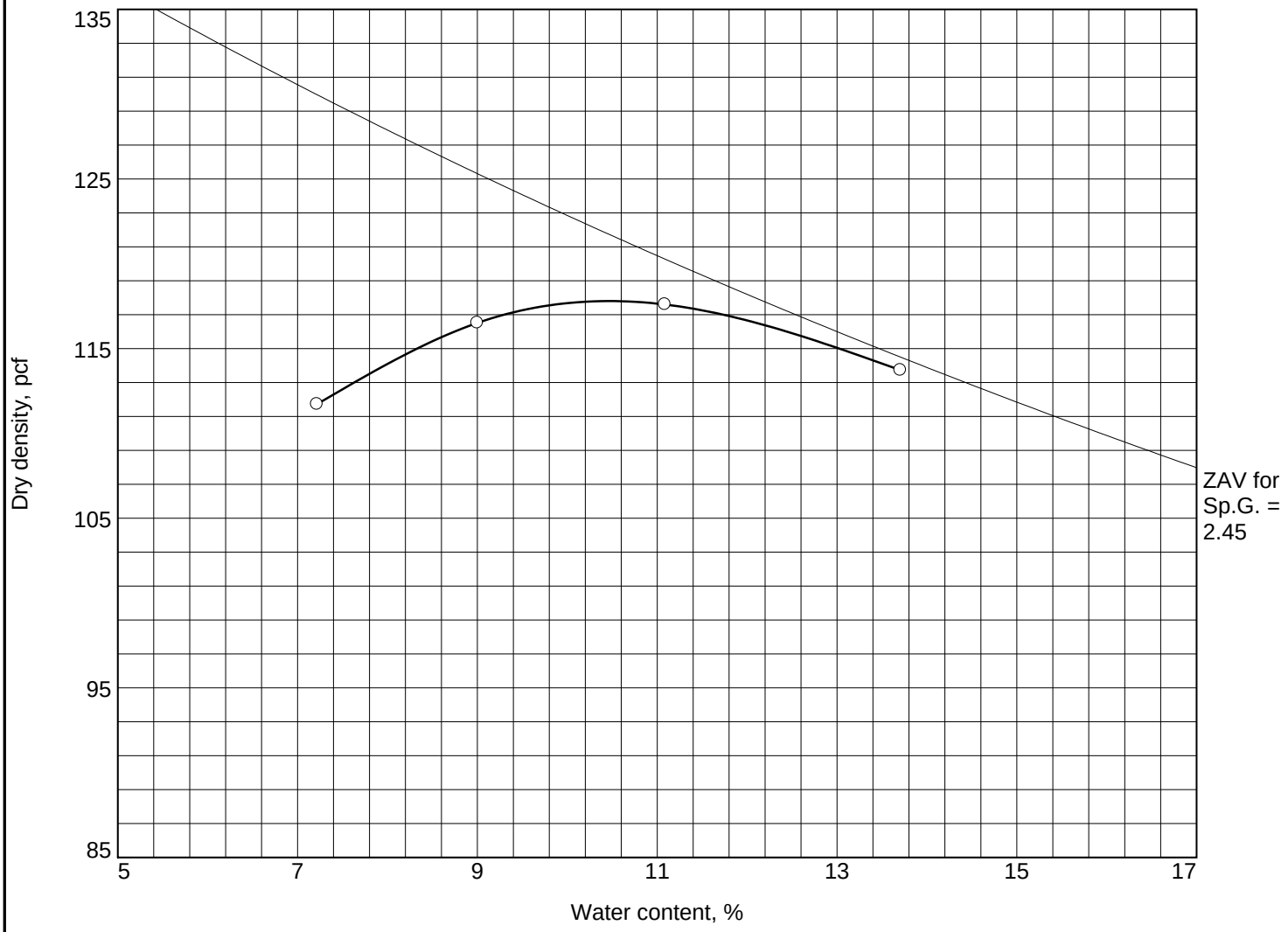
Test Description/Remarks:

Tested By: HTN1 **Checked By:** MBK

COMPACTION TEST REPORT



Test specification: Virginia Test Method - 1
AASHTO T 224-01 Oversize Correction Applied to Final Results

Elev/ Depth	Classification		Nat. Moist.	Sp.G.	LL	PI	% > #4	% < No.200
	USCS	AASHTO						
8.5	SC	A-2-4(0)	7.0	2.45	29	10	37.8	18.3

ROCK CORRECTED TEST RESULTS	UNCORRECTED	MATERIAL DESCRIPTION
Maximum dry density = 129.0 pcf	117.8 pcf	CLAYEY SAND WITH GRAVEL
Optimum moisture = 8.1 %	10.5 %	

Project No. 29354 **Client:** Grimm and Parker Architecture
Project: 1425 N. Quincy Street
Date: 8/27/19
○ **Source of Sample:** B-1 **Sample Number:** S-4

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Remarks:
Date Received: 8/27/19

Figure 1 of 1

Tested By: HT1 **Checked By:** MBK