St. Andrew's Tennis Courts

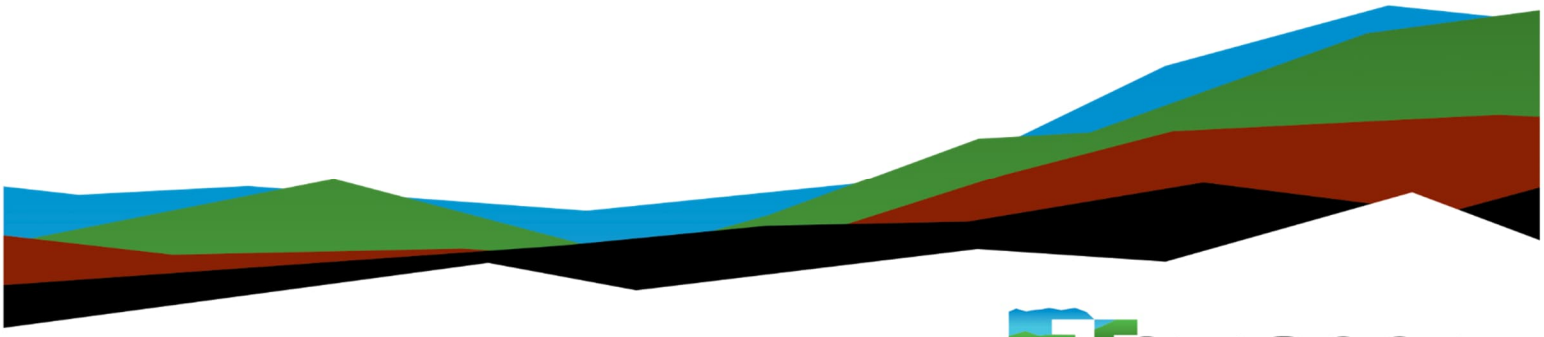
Geotechnical Engineering Report

Charleston, South Carolina

February 27, 2026 | Terracon Project No. EN255198

Prepared for:

St. Andrew's Parks and Playground Commission
1095 Playground Road
Charleston, South Carolina 29407



Terracon
Explore with us

Nationwide
Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials

1800 Reynolds Ave
North Charleston, SC
P (843) 884-1234
Terracon.com

February 27, 2026

Andrew's Parks and Playground Commission
1095 Playground Road
Charleston, South Carolina 29407

Attn: Ms. Susan Klugman, Executive Director
P: (843) 763-4360
E: sklugman@standrewsparks.com

Re: Geotechnical Engineering Report
St. Andrew's Tennis Courts
1095 Playground Road
Charleston, South Carolina
Terracon Project No. EN255198

Dear Ms. Klugman:

We have completed our scope of Geotechnical Engineering services for the above referenced project in general accordance with Terracon Proposal No. PEN255198 dated January 14, 2026. This report describes our understanding of the project, presents the findings of the site subsurface exploration, and provides geotechnically related design and construction recommendations for tennis court improvements.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon

Andrew Russell, E.I.T.
Staff Engineer

Will J. Botts, P.E.
Senior Engineer
SC Registration No. 35805

SOUTH CAROLINA TERRACON CONSULTANTS, INC. No. 2220 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 35805 WILLIAM BOTTS

Thomas C. Smoak III., P.E.
Principal | Operations Manager
SC Registration No. 30792

Table of Contents

Attachments

Note: This report was originally delivered in a web-based format. Blue Bold text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the terracon logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration and Geotechnical Engineering services performed for the proposed improvements to the St. Andrew's Tennis Courts located at 1095 Playground Road in Charleston, South Carolina. The purpose of these services was to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Tennis court repair recommendations

The geotechnical engineering Scope of Services for this project included pavement coring, hand auger borings with Dynamic Cone Penetrometer tests (DCP), engineering analysis, and preparation of this report. Our field procedures are described in Exploration and Testing Procedures. Drawings showing the site and boring locations are shown on the Site Location and Exploration Plans, respectively. The results of our field testing are included on the boring logs in the Exploration Results section.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	An e-mail request for proposal was provided by Ms. Susan Klugman of St. Andrew's Parks and Playground Commission on 11/18/2025. Additional information was provided during a kickoff site visit on January 9, 2026.
Project Description	Based on the information provided, we understand plans are to improve the existing tennis courts to repair observable distresses. These distresses were shown to Terracon personnel during our site visit on January 9, 2026. The planned improvements will consist of repair, resurfacing, and/or demolition of the current tennis courts and replacing with new courts.
Grading/Slopes	Grading plans were not provided. We assume that final grades will remain relatively consistent with existing and that minimal cut/fill (1 foot or less) will be necessary for the improvements.

Terracon should be notified if any of the above information is inconsistent with the planned construction, especially the grading and structural information, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is based on observations from our site visit in association with the field exploration, and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project site is located at 1095 Playground Road in the West Ashley area of Charleston, South Carolina. TMS#350-04-00-002 The approximate center of the site is located at the following coordinates: ■ Latitude: 32.79705° ■ Longitude: -80.00256° See Site Location
Site Description	The site is currently developed with 11 tennis courts with associated parking and clubhouse. Based on our review of publicly available aerial imagery, it appears the eight courts on the west side of the facility were resurfaced between 2012 and 2013. The front three courts on the east side of the facility appear to have been constructed prior to 2003 and appear not to have been resurfaced since.   Site Circa 2003 Site Circa 2013
Existing Topography	Based on our site visit and exploration, the site appears visually level.

Site Characterization

Subsurface Profile

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, geologic setting and our understanding of the project. This characterization forms the basis of our geotechnical calculations and evaluation of the site. Conditions observed at each exploration point are indicated on the individual logs. The individual logs can be found in the Exploration Results attachment of this report.

As part of our analyses, we identified the following model layers within the subsurface profile.

Model Layer	Layer Name	General Description
NA	Surface	Tennis Court Surface
1	Base Course	Graded aggregate base course
2	Sand	Loose to medium dense sand mixtures
3	Clay	Soft to medium stiff clay mixtures

Groundwater Conditions

At the time of our exploration, groundwater was only encountered at two test locations at a depth of about 2¾ feet below the existing ground surface. Groundwater depths were determined by field measurements of the voids made by hand auger borings. The water levels as observed during the field exploration are summarized on the boring logs, in Exploration Results.

Groundwater conditions may change because of seasonal variations in rainfall, runoff, and other conditions not apparent at the time of exploration. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project. The groundwater surface should be checked prior to construction to assess its effect on site work and other construction activities. Long-term groundwater monitoring was outside the scope of services for this project.

The fine-grained soils located near the existing ground surface are relatively impermeable and tend to impede percolation of rainfall into the site. Therefore, shallow "perched" groundwater conditions should be expected during wet months of the year, especially right after heavy

rainfall. During periods of heavy precipitation, water will tend to move laterally across the site and collect in low-lying areas before it slowly descends into the groundwater table.

Existing Tennis Court Conditions

Based on the information provided, we understand the St. Andrew's Parks and Playground Commission has concerns with the current condition with the courts at the St. Andrew's Tennis Center. The main concern is the three front tennis courts located closest to Playground Road. Based on historical aerial imagery these courts appear to be at least approximately 23 years old, having been constructed prior to 2003 and appear not to have been resurfaced since. Based on our observations during our site visit on January 9, 2026, and subsequent exploration on January 19 and 20, 2026, cracking, poor drainage, small depressions, and water stains were observed by Terracon personnel at these three front courts. In addition, based on provided descriptions from the client, we understand water seeping and mushroom growth from the court subgrade through cracks is also occurring. Pictures showing the distresses described are shown below.

Photo 1: Cracking, depressions, and water stains at DCP-1

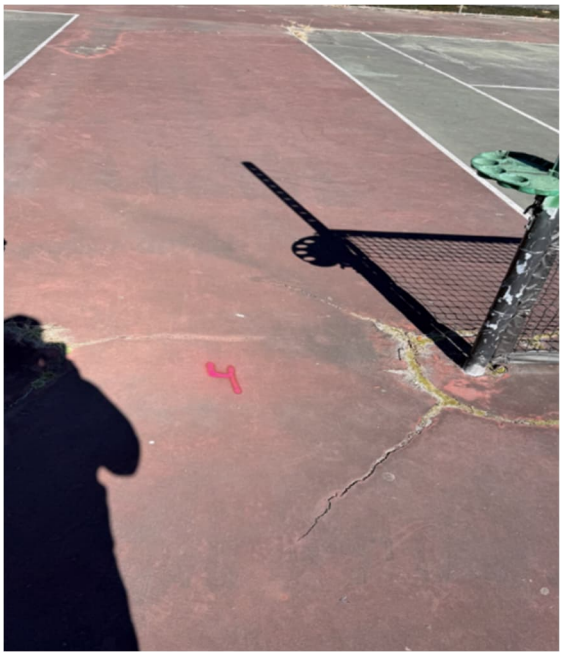


Photo 2: Cracking at net poles at DCP-4

Additionally, Terracon also evaluated the condition of the other eight tennis courts. Based on a review of historical aerial imagery it appears these eight courts on the west end of the facility were resurfaced between 2012 and 2013. This was corroborated during our exploration as the surface conditions on these courts appeared much less severe with only minor cracking as shown below.

Photo 3: Small cracking at DCP-18

Photo 4: Small cracking at net poles at DCP-12

To evaluate the distressed areas and conditions across all courts, Terracon performed twenty pavement cores with Dynamic Cone Penetrometers (DCPs) to 4 feet below existing grades to investigate the subgrade. It should be noted, at the instruction of the client, Terracon limited the testing to outside the court of play to limit impact on use of the courts as shown in the attached Exploration Plan.

Conclusion

Based on the results of our field testing and observations, we were able to identify some likely potential causes of the conditions observed across the tennis courts. At the front three courts the thickness of the court surface ranged from 1 to 3¾ inches, overlying an aggregate base course that ranged from 1½ to 6¼ inches thick. This variability in the court section thickness could result in uneven compression and expansion due to temperature fluctuation resulting in heaving and cracking. The courts were also constructed prior to 2003, being at least 23 years old and do not appear to have been improved during that time. These courts may be at the end of their design life period.

The subsurface conditions underlying the front three tennis courts were relatively consistent and the DCP testing results indicate the near surface subgrade soils are relatively dense. However, there is a layer of soft fine-grained soils with trace organics roughly 2 feet below the court surface. These soils have a higher fines content and may be causing a perched water condition. These perched conditions and water fluctuations can

lead to piping of fine sands and the creation of voids within soils and/or organics. As these voids enlarge, the potential for settlement of the surface increases.

Therefore, in our opinion, the observed distresses at the front three courts are caused primarily by variable court surface thickness, poor surface drainage, and perched water conditions. As cracks developed over time, surface water was able to enter the subgrade and due to the presence of a more clayey soil, the water perched between the court and underlying subgrade causing further distress and cracking. To improve performance of these courts in the future, consideration should be given to the following options.

- Installing a more uniform tennis court section would prevent cracking due to environmental factors such as temperature and moisture fluctuations.
- Existing grades can be modified to promote positive drainage.
- Consideration can be given to removing the clayey soils and replacing with a better draining material.
- Underdrains can be incorporated to carry surface water away from the court subgrade soils.

For the other eight tennis courts, only minor cracking was observed. These courts have been resurfaced within the last 13 to 14 years and the encountered subsurface conditions were much more consistent than those at the other three courts. The observed cracking is likely due to settlement over time as it appears to be isolated to small areas and at the net poles where a larger force is present due to the torquing of the net.

Tennis Court Repair Recommendations

The recommendations contained in this report are based upon the results of field testing (presented in the Exploration Results), engineering analyses, and our current understanding of the proposed project. The General Comments section provides an understanding of the report limitations.

Recommended Repair Option – Front Three Courts

We recommend the front three tennis courts closest to Playground Road be removed and an improved subgrade be established as described in Earthwork. This would create a uniform subgrade and reduce settlements across the entire court. A new tennis court surface uniform in thickness could then be placed on this stable subgrade. A new subgrade would also prevent the piping of water under the tennis court. Consideration should be given to modifying existing grades to promote positive drainage and/or underdrains should be incorporated to carry surface water away from the court subgrade soils.

Partial crack/surface repairs may be available to cover or hide existing distresses of the front three courts, however, these are mostly cosmetic and don't address the underlying problems previously discussed. Future distress at new locations is possible. We can look further into these alternative method(s) upon your request.

Recommended Repair Option – Rear Eight Courts

The remaining eight courts generally appear to be in good condition and are not exhibiting signs of severe distress. Since subgrade and moisture issues are not a concern here, the rear eight courts are candidates for resurfacing or they can simply be repaired in a manner that is typical of the industry. A crack repair system similar to Figure 1 below may be a feasible option.

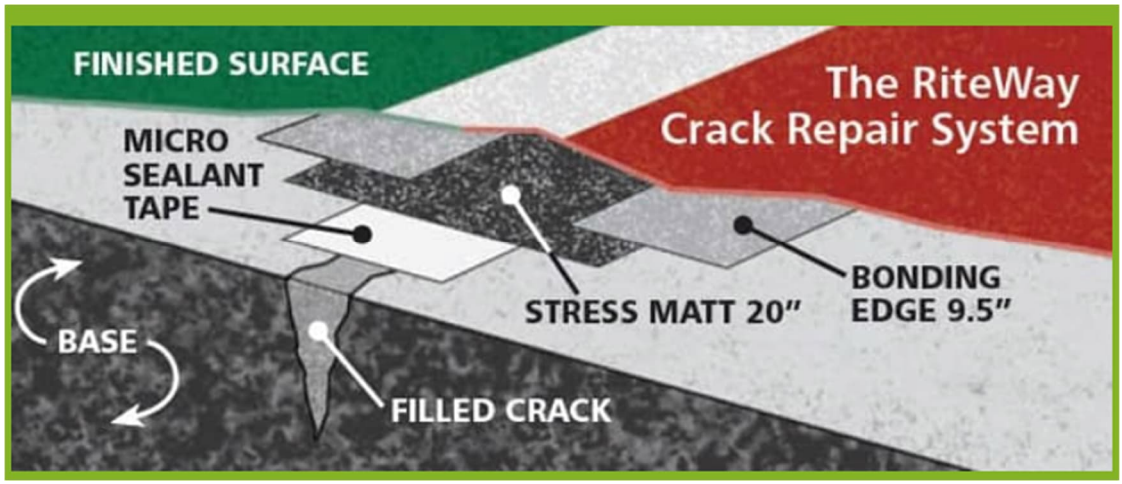


Figure 1: RiteWay Crack Repair System by Talbot Tennis

Earthwork

Earthwork is anticipated to potentially include demolition and replacement of some of the current tennis courts. The following sections provide recommendations for use in the preparation of specifications for the work.

Site Drainage

We recommend that a comprehensive site drainage plan be developed and implemented prior to construction activities. Developing and implementing a drainage control plan will be critical before and during site work, since near-surface clayey soils and potential perched groundwater conditions are present. Initial site drainage can be accomplished with a series of limited clearing operations in which demolition of the current courts

across the project site are undertaken. The implementation of site drainage measures can be incorporated into the final site grading plans.

Site and Subgrade Preparation

The proposed construction area should be cleared of the court surface, base course, organic material and any other deleterious material. Clearing/removal should extend at least five feet beyond the construction footprint unless prohibited by existing site features/boundaries. To avoid future organic growth, the subgrade should be treated with an approve soil sterilant. Voids remaining from the clearing operation should be backfilled with properly compacted structural fill.

Once removed, the exposed subgrade soils should be compacted and sealed with a smooth drum vibratory roller. After compaction, proof-rolling should be performed using a tandem dump truck or other similar heavy construction equipment. We recommend proof-rolling be done after a period of relatively dry weather to prevent degradation of the subgrade. A geotechnical engineer should monitor the proofrolling operations. Areas excessively deflecting during the proofroll should be delineated and subsequently addressed by the Geotechnical Engineer. Such areas should be removed and replaced with structural fill. Excessively wet or dry material should either be removed, or moisture conditioned and recompacted.

All exposed areas (if any) which will receive fill, should be scarified to a minimum depth of 10 inches, moisture conditioned as necessary, and compacted per the compaction requirements in this report. Compacted structural fill soils should then be placed to the proposed design grade and the moisture content and compaction of subgrade soils should be maintained until court construction.

Based upon the subsurface conditions determined from the geotechnical exploration, near-surface subgrade soils exposed during construction are anticipated to be relatively workable; however, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below, or within 5 feet of courts or constructed slopes. General fill is material used to achieve grade outside of these areas.

Reuse of On-Site Soil: Significant portions of the on-site soil have an elevated fines content and will be sensitive to moisture conditions (particularly during seasonally wet

periods) and may not be suitable for reuse when above optimum moisture content. The base course can be stockpiled for re-use.

Material property requirements for on-site soil for use as general fill and structural fill are noted in the following table:

Property	General Fill	Structural Fill
Composition	Free of deleterious material	Free of deleterious material
Fines content	Not limited	Less than 60% Passing No. 200 sieve
Plasticity	Not limited	Maximum plasticity index of 25

1. Soils with fines contents up to 60% may be used as structural fill, provided they meet compaction requirements. However, when fines content exceeds 25%, the soils will likely be difficult to dry for compaction and may require extensive mechanical manipulation and drying time or chemical modification with Quicklime or portland cement.

Imported Fill Materials: Imported fill materials should meet the following material property requirements. Regardless of its source, compacted fill should consist of approved materials that are free of organic matter and debris.

Soil Type [1]	USCS Classification	Acceptable Parameters (for Structural Fill)
Imported Granular Fill	GW, GP, GM, GC, SW, SP, SM, SC	Less than 12% passing No. 200 sieve

1. Structural and general fill should consist of approved materials free of organic matter and debris. A sample of each material type should be submitted to the Geotechnical Engineer for evaluation prior to use on this site.

Fill Placement and Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill	General Fill
Maximum Lift Thickness	10 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment is used, such as a jumping jack or plate compactor	Same as structural fill

Item	Structural Fill	General Fill
Minimum Compaction Requirements [1]	95% of the maximum dry density	92% of maximum dry density
Water Content Range [1]	-3% to +3% of optimum	As required to achieve minimum compaction requirements

1. Maximum density and optimum water content as determined by the modified Proctor test (ASTM D 1557).

Grading and Drainage

All grades must provide effective drainage away from the courts during and after construction and should be maintained throughout the life of the structure. Exposed ground should be sloped and maintained at a minimum 2% away from the courts for at least 10 feet beyond the perimeter. Locally, flatter grades may be necessary to transition ADA access requirements for flatwork.

Earthwork Construction Considerations

Construction traffic over the completed subgrades should be avoided. The site should be graded to prevent ponding of surface water on the prepared subgrades. Water collecting over or adjacent to construction areas should be removed. If the subgrade desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to construction.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety or the contractor's activities; such responsibility shall neither be implied nor inferred.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing

services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly effect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Attachments

Exploration and Testing Procedures

Field Exploration

Type of Test	Test Location	Number of Tests	Test Depth
Hand Auger Boring (HAB) with Dynamic Cone Penetrometer Test (DCP) and Pavement Cores	Existing Tennis Court Areas	20	4 feet

Boring Layout and Elevations: Terracon personnel provided the boring layout using handheld GPS equipment (estimated horizontal accuracy of about ±10 feet) and referencing existing site features.

Subsurface Exploration Procedures: The borings were performed with the appropriate ASTM Standards. Pavement coring and Hand Auger Borings with DCP were performed at each location to observe upper soils and obtain samples. The field exploration included observations for groundwater, which occurred during the exploration program after the auger borings were being advanced.

No provisions have been made to collect water level data other than the observations made during the advancement of the auger borings. The field data was reviewed and processed by the geotechnical engineer to create the final hand auger boring logs.

Site Location and Exploration Plans

Contents:

Note: All attachments are one page unless noted above.

Site Location

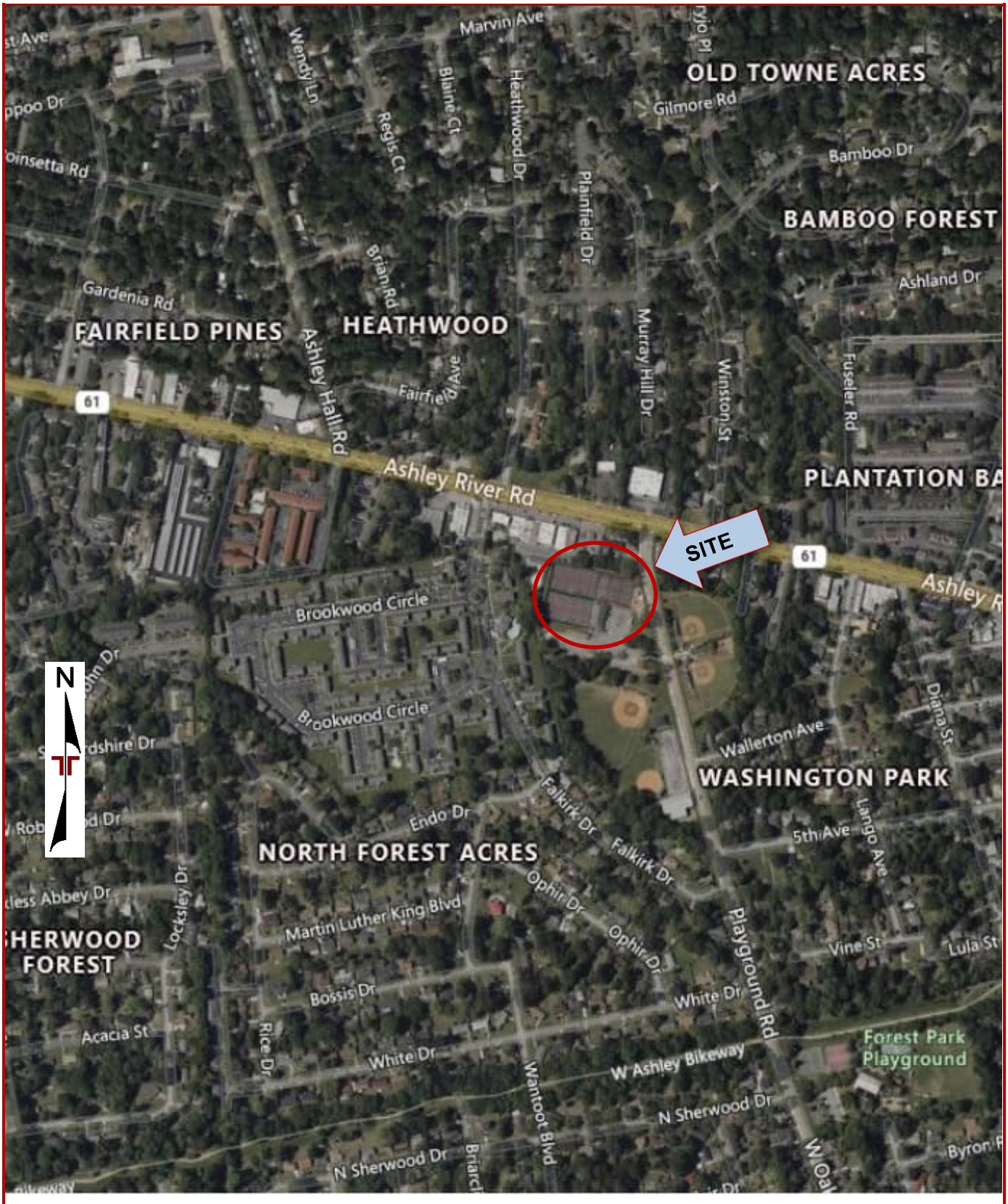


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Exploration Plan

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exploration Results

Contents:

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-1

Location: See Exploration Plan

Latitude: 32.7972° Longitude: -80.0020°

Depth (Ft.)	Graphic Log	Material Description	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.3		**ASPHALT**, Approx. 3.75 inches of Asphalt			
0.8		**AGGREGATE BASE COURSE**, Approx. 6.25 inches of Base			
1		**SILTY SAND (SM)**, light gray to brown			5
					8
					6
					6
					6
					7
2					8
					7
					6
					5
					5
		Ground water encountered at approx. 2.75 ft	▽		7
3					4
					5
					6
					6
					5
					4
4					4
4.0		***Boring Terminated at 4 Feet***			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ While sampling

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-2

Location: See Exploration Plan

Latitude: 32.7972° Longitude: -80.0022°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1 inch of Asphalt	
	AGGREGATE BASE COURSE, Approx. 4 inches of Base	
0.4	**SILTY SAND (SM)**, grayish brown	4
		3
		4
1		4
		4
		6
		6
		5
		6
2		6
		5
		3
		2
	Ground water encountered at approx. 2.75 ft	1
2.8	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	1
		1
3		1
		2
		2
		2
		2
4.0		2
	Boring Terminated at 4 Feet	
4		

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
▽ While sampling

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-3

Location: See Exploration Plan

Latitude: 32.7973° Longitude: -80.0023°

Depth (Ft.)	Graphic Log	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2		**ASPHALT**, Approx. 1.75 inches of Asphalt				
0.3		**AGGREGATE BASE COURSE**, Approx. 2.25 inches of Base				
1.5		**SILTY SAND (SM)**, dark brown	1			2, 3, 3, 4, 5, 3
4.0		**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	2			1, 1, 1, 1, 1, 1, 1, 2, 2, 2, 3, 3, 3, 4, 4
		Boring Terminated at 4 Feet	3			
			4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-4

Location: See Exploration Plan

Latitude: 32.7971° Longitude: -80.0021°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1.5 inches of Asphalt				
0.3	**AGGREGATE BASE COURSE**, Approx. 2.5 inches of Base				
1.5	**SILTY SAND WITH GRAVEL (SM)**, dark brown	1			5, 12, 13, 10, 4, 3
4.0	**SANDY LEAN CLAY (CL)**, dark brown to black, w/ trace organics	2			1, 2, 3, 2, 1, 2, 3, 3, 4
	Boring Terminated at 4 Feet	3			3, 5, 6, 4, 6, 5
		4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-5

Location: See Exploration Plan

Latitude: 32.7971° Longitude: -80.0023°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1.5 inches of Asphalt				
	AGGREGATE BASE COURSE, Approx. 4 inches of Base				
0.5	**SILTY SAND WITH GRAVEL (SM)**, brown	1			3
					4
					4
					5
					7
					11
					10
					11
		2			8
					7
					7
					2
					2
					2
3.0					1
	CLAYEY SAND (SC), dark brown to brown, w/ trace organics	3			2
					1
					2
					3
					4
4.0					3
	Boring Terminated at 4 Feet	4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-6

Location: See Exploration Plan

Latitude: 32.7969° Longitude: -80.0020°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1.5 inches of Asphalt	
0.3	**AGGREGATE BASE COURSE**, Approx. 1.5 inches of Base	
	SILTY SAND (SM), brown	8, 9, 5, 6, 10, 6, 8, 4, 4
1.8	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	5, 4, 4, 5, 6, 5, 3, 6, 6, 4, 5, 6, 4
4.0	***Boring Terminated at 4 Feet***	

Depth (Ft.): 1, 2, 3, 4

Water Level Observations

Sample Type

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Boring Started
01-19-2026

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-7

Location: See Exploration Plan

Latitude: 32.7970° Longitude: -80.0025°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1.5 inches of Asphalt	
	AGGREGATE BASE COURSE, Approx. 4.5 inches of Base	
0.5	**SILTY SAND (SM)**, dark brown, w/ shells	3
		4
		5
1		6
		8
		6
		6
		2
		1
2		3
		6
2.3	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	6
		5
		4
		2
3		2
		1
		2
		2
		3
4.0		2
4	***Boring Terminated at 4 Feet***	

Water Level Observations: Groundwater not encountered

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes

Advancement Method
Hand Auger

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Drill Rig
Hand Auger

Driller
AF

Logged by

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-8

Location: See Exploration Plan

Latitude: 32.7973° Longitude: -80.0025°

Graphic Log	Depth (Ft.)		Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
	0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
	0.7	**AGGREGATE BASE COURSE**, Approx. 6 inches of Base				
	1.5	**SILTY SAND (SM)**, light gray to brown	1			4, 5, 3, 2, 1
	4.0	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	2			1, 1, 2, 1, 1, 2, 2, 1, 2, 3, 3, 3, 4, 5, 6, 7
		Boring Terminated at 4 Feet	4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-9

Location: See Exploration Plan

Latitude: 32.7974° Longitude: -80.0027°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.7	**AGGREGATE BASE COURSE**, Approx. 6 inches of Base				
2.7	**SILTY SAND (SM)**, dark brown	1			7, 5, 6, 6, 3, 3, 1, 1
		2			1, 1, 1, 1, 2, 2, 2
4.0	**SANDY LEAN CLAY (CL)**, black, w/ trace organics	3			3, 3, 4, 3, 3, 3
	Boring Terminated at 4 Feet	4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-10

Location: See Exploration Plan

Latitude: 32.7974° Longitude: -80.0030°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.7	**AGGREGATE BASE COURSE**, Approx. 6 inches of Base				
2.1	**SILTY SAND WITH GRAVEL (SM)**, brown	1			2, 2, 1, 2, 7, 6, 3, 1
4.0	**SANDY LEAN CLAY (CL)**, dark brown	2			2, 1, 2, 2, 2, 3, 3, 5, 5, 4, 5, 5
	Boring Terminated at 4 Feet	3			
		4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-11

Location: See Exploration Plan

Latitude: 32.7972° Longitude: -80.0029°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.7	**AGGREGATE BASE COURSE**, Approx. 6 inches of Base				
1.7	**SILTY SAND (SM)**, brown	1			9, 9, 5, 3, 4, 3
4.0	**SANDY LEAN CLAY (CL)**, brown	2			6, 8, 6, 5, 9, 2, 1, 1, 2, 1, 2, 3, 2, 2
	Boring Terminated at 4 Feet	3, 4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-19-2026

Boring Completed
01-19-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-12

Location: See Exploration Plan

Latitude: 32.7972° Longitude: -80.0026°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.6	**AGGREGATE BASE COURSE**, Approx. 5 inches of Base				
1.5	**SILTY SAND (SM)**, gray to dark brown, w/ trace organics	1			1 3 5 6 7
4.0	**SANDY LEAN CLAY (CL)**, brown	2			7 8 7 5 6 3 2 2 2 2 2 2 3 3 3
	Boring Terminated at 4 Feet	3 4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-13

Location: See Exploration Plan

Latitude: 32.7971° Longitude: -80.0030°

Depth (Ft.)	Graphic Log	Material Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2		**ASPHALT**, Approx. 2.75 inches of Asphalt				
0.6		**AGGREGATE BASE COURSE**, Approx. 5.25 inches of Base				
2.2		**SILTY SAND (SM)**, brown	1			5, 3, 4, 6
			2			4, 4, 7, 8
4.0		**CLAYEY SAND (SC)**, brown	3			5, 5, 3, 3, 4, 4, 6, 4, 3, 4, 4
		Boring Terminated at 4 Feet	4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-14

Location: See Exploration Plan

Latitude: 32.7971° Longitude: -80.0028°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.5	**AGGREGATE BASE COURSE**, Approx. 4 inches of Base				
	SILTY SAND (SM), brown	1			5
					6
					6
					6
					7
					5
					3
		2			2
					3
					3
					6
					4
					4
3.0					4
	SANDY LEAN CLAY (CL), dark brown	3			2
					1
					2
					2
					2
4.0					2
	Boring Terminated at 4 Feet	4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-15

Location: See Exploration Plan

Latitude: 32.7970° Longitude: -80.0026°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.5	**AGGREGATE BASE COURSE**, Approx. 4 inches of Base				
1.3	**SILTY SAND (SM)**, dark brown	1			4, 2, 5, 7
4.0	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	2			6, 5, 3, 1, 2, 3, 6, 5, 4, 4
	Boring Terminated at 4 Feet	3			5, 2, 3, 2, 4, 3, 2
		4			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-16

Location: See Exploration Plan

Latitude: 32.7969° Longitude: -80.0030°

Depth (Ft.)		Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt	
0.8	**AGGREGATE BASE COURSE**, Approx. 8 inches of Base	
2.5	**SILTY SAND (SM)**, brown, w/ shell	4, 6, 8, 8, 5, 3, 3, 4, 8, 10
4.0	**CLAYEY SAND (SC)**, dark brown, w/ trace organics	7, 3, 3, 4, 3, 3, 3, 3, 3
	Boring Terminated at 4 Feet	

Depth (Ft.): 1, 2, 3, 4

Water Level Observations

Sample Type

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-17

Location: See Exploration Plan

Latitude: 32.7969° Longitude: -80.0027°

Depth (Ft.)	Description	Depth (Ft.)	Water Level Observations	Sample Type	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt				
0.5	**AGGREGATE BASE COURSE**, Approx. 4 inches of Base				
2.1	**SILTY SAND (SM)**, brown	1			3, 6, 6, 8
		2			7, 7, 5, 1
3.0	**CLAYEY SAND (SC)**, dark brown to brown				2, 3, 4, 4
4.0	**SANDY LEAN CLAY (CL)**, dark brown	3			2, 2, 1, 2
	Boring Terminated at 4 Feet	4			2, 3, 2

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-18

Location: See Exploration Plan

Latitude: 32.7967° Longitude: -80.0029°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.1	**ASPHALT**, Approx. 1.5 inches of Asphalt	
	AGGREGATE BASE COURSE, Approx. 4.5 inches of Base	
0.5	**SILTY SAND (SM)**, brown	2
		8
		6
		2
		1
1.8	**SANDY LEAN CLAY (CL)**, dark brown, w/ trace organics	3
		4
		5
		3
		2
		1
		2
		2
		3
		3
		4
		3
		4
4.0		5
	Boring Terminated at 4 Feet	

Depth (Ft.): 1, 2, 3, 4

Water Level Observations

Sample Type

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Boring Started
01-20-2026

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-19

Location: See Exploration Plan

Latitude: 32.7968° Longitude: -80.0031°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt	
0.8	**AGGREGATE BASE COURSE**, Approx. 8 inches of Base	
1.1	**SILTY SAND WITH GRAVEL (SM)**, brown	3
	CLAYEY SAND (SC), dark brown, w/ debris	1, 1, 2, 1, 2, 2, 2, 2, 2, 3, 1, 2, 2, 2, 3, 2, 3, 2
4.0	***Boring Terminated at 4 Feet***	

Depth (Ft.) | Water Level Observations | Sample Type

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

St Andrew's Parks Core Sampling
1095 Playground Rd | Charleston, SC
Terracon Project No. EN255198

Terracon
1800 Reynolds Ave
North Charleston, SC

Boring Log No. DCP-20

Location: See Exploration Plan

Latitude: 32.7967° Longitude: -80.0027°

Depth (Ft.)	Description	Kessler DCP Blows Per 2 in.
0.2	**ASPHALT**, Approx. 2 inches of Asphalt	
0.8	**AGGREGATE BASE COURSE**, Approx. 8 inches of Base	4
1.3	**SILTY SAND (SM)**, brown	6
		3
		1
		1
		1
		1
		2
		1
		2
		1
		2
		1
		2
		3
		2
		2
		2
		3
4.0	**SANDY LEAN CLAY (CL)**, dark brown to black, w/ debris and trace organics	3
	Boring Terminated at 4 Feet	

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Water Level Observations
Groundwater not encountered

Drill Rig
Hand Auger

Driller
AF

Notes

Advancement Method
Hand Auger

Logged by

Abandonment Method
Boring backfilled with Auger Cuttings
Surface capped with concrete

Boring Started
01-20-2026

Boring Completed
01-20-2026

Supporting Information

Contents:

Unified Soil Classification System

Note: All attachments are one page unless noted above.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]				Soil Classification	
				Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines [C]	Cu≥4 and 1≤Cc≤3 [E]	GW	Well-graded gravel [F]
			Cu<4 and/or [Cc<1 or Cc>3.0] [E]	GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH	GM	Silty gravel [F, G, H]
			Fines classify as CL or CH	GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines [D]	Cu≥6 and 1≤Cc≤3 [E]	SW	Well-graded sand [I]
			Cu<6 and/or [Cc<1 or Cc>3.0] [E]	SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH	SM	Silty sand [G, H, I]
			Fines classify as CL or CH	SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	PI > 7 and plots above "A" line [J]	CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]	ML	Silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried}$ < 0.75	OL	Organic clay [K, L, M, N]
					Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay [K, L, M]
			PI plots below "A" line	MH	Elastic silt [K, L, M]
		Organic:	$\frac{LL\ oven\ dried}{LL\ not\ dried}$ < 0.75	OH	Organic clay [K, L, M, P]
					Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.
[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.
[E] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[F] If soil contains ≥ 15% sand, add "with sand" to group name.
[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[H] If fines are organic, add "with organic fines" to group name.
[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.