REPORT OF
GEOTECHNICAL ENGINEERING EVALUATION

DEESON SUBDIVISION
Lakeland, Polk County, Florida

PREPARED FOR:

SWAN CAPITAL PARTNERS

6706 N. Nebraska Avenue
Tampa, Florida 33604

FES PROJECT NO.: 21-5064

June 17, 2021

PREPARED BY:

FAULKNER
ENGINEERING SERVICES, Inc.

2734 Causeway Center Drive
Tampa, Florida 33619

June 17, 2021

Mr. Eric K. Swanson
Swan Campbell Rd LLC
6706 North Nebraska Avenue # 9797
Tampa, Florida 33604

RE: Report of Geotechnical Engineering Evaluation
Deeson Subdivision
Lakeland, Polk County, Florida
FES Project No.: 21-5064

Dear Mr. Swanson:

Faulkner Engineering Services, Inc. (FES) has completed a geotechnical engineering evaluation of the referenced project. We provided our services in general accordance with our proposal No. P21-7664 dated March 23, 2021. The purpose of our geotechnical engineering evaluation was to analyze the subsurface soil and groundwater conditions at the property in order to provide information for stormwater pond design; assess the suitability and depth of subsurface soils for use as structural fill; and provide flexible pavement design recommendations. This report summarizes the field evaluation performed by FES and presents our findings, conclusions, and geotechnical engineering recommendations.

PROJECT INFORMATION

Existing Site

Deeson Subdivision is a planned residential development located at 4235 Deeson Road in Lakeland, Polk County, Florida within Section 20, Township 27 South, and Range 23 East. The property consists of open areas covered with grass and a few scattered trees. There were several low lying wetland/pond areas and ditches within the property. The site topography is generally level to slightly rolling with elevation changes of about five feet. A general site location map is included as **Figure 1**.

Proposed Construction

Based on our review of the Concept Site Plan prepared by Otero Engineering, we understand that the project will consist of constructing a 220 lot residential development with associated stormwater ponds and interior roadways. Our geotechnical engineering evaluation was limited to the planned stormwater pond areas and interior roadways and does not include a geotechnical engineering evaluation of the lots.

SUBSURFACE SOILS EVALUATION

Field Evaluation

A subsurface geotechnical evaluation consisting of twenty-six (26) standard penetration test (SPT) soil borings (PB-1 to PB-26) advanced to a depth of approximately 20 feet below ground surface (bgs) within the planned stormwater pond areas and thirty-five (35) auger borings (AB-1 to AB-35) advanced to depths of approximately 8 feet bgs at generally equal intervals along the planned roadway alignments was performed at the property. The fieldwork was performed on May 13 and 17-19, 2021 using an off road vehicle mounted CME 45 drill rig operated by J&R Precision Drilling, Inc. The procedures employed by FES for field sampling and testing were in general accordance with ASTM procedures, industry standards of care, and established geotechnical engineering practice.

A senior geotechnical engineering technician from FES, experienced in soil sampling and classifications, was onsite during the fieldwork to monitor the drilling and perform a brief cursory site reconnaissance, noting pertinent site and topographic features as well as surface indicators of soil conditions. SPT and auger borings were field located by FES personnel using a handheld GPS unit. The GPS coordinates of the boring locations were obtained by superimposing the site plan over an aerial image using Google Earth. The boring locations were field-adjusted based on field conditions and accessibility. Because of the methods used in locating the borings, the test locations shown on the boring location plan (**Figure 2**) should be considered approximate.

The SPT borings were performed utilizing continuous sampling methods within the first 10 feet and every 5 feet thereafter until the termination depths of the borings, employing wet rotary drilling techniques to keep the boreholes from collapsing. The drillers collected soil samples using a 1.4-inch I.D. split barrel sampler driven by an automatic hammer system with a 140-pound hammer falling a distance of 30 inches, in general accordance with standard penetration test procedures (ASTM D1586). Upon completion, each borehole was backfilled to surface with cuttings.

The auger borings were advanced by mechanically rotating an approximately 4-inch diameter continuous flight auger into the subsurface soils to a depth of approximately 8 feet bgs. The cuttings brought to the surface were logged in the field and representative samples obtained at each change in soil stratigraphy. Upon completion, each borehole was backfilled with cuttings to surface.

Detailed description of the soils encountered during our field exploration are presented on the attached boring logs and profiles in **Appendix A**.

Soil Sample Handling, Laboratory Testing, and Classification

FES field personnel classified the soils obtained from the field sampling using standard visual manual methods in accordance with ASTM D2488. The samples recovered from the SPT and auger borings were placed in sealed containers to retain moisture and transported to the FES soils laboratory accredited by Construction Materials Engineering Council, Inc., (CMEC) for further evaluation and testing. To further aid in classification and evaluation of geotechnical engineering properties, laboratory testing was performed on representative soil samples collected during the field sampling The laboratory testing performed was in general accordance with appropriate sections of ASTM D1140, material finer than the No. 200 sieve. The laboratory test results were in general accordance with field classification of the soils except some soils were reclassified based on the fines content from laboratory testing. The laboratory test results and the soil classifications were reviewed by a professional geotechnical engineer. The results from the laboratory testing are presented on the boring logs and profiles contained in **Appendix A**.

FINDING

Subsurface Conditions

General Soil Profile

The subsurface stratigraphy at the project site is illustrated in the soil boring logs and profiles shown in **Appendix A**. The logs and profiles were developed using field and laboratory data from the SPT and auger borings. The computer generated boring logs and profiles should imply no increased accuracy. Based on this data, three (3) subsurface units or strata, were identified at the site as described below.

Stratum 1	SAND, SAND with clay, SAND with silt; very loose to dense, fine grained quartz
	USCS classification = SP, SP-SC, SP-SM
Stratum 2	CLAYEY SAND; very loose to dense, fine grained quartz
	USCS classification = SC
Stratum 3	CLAY; medium to hard, variably sandy
	USCS classification = CL

Stratum 1 occurred as the surficial stratum at the site in all borings. This stratum extended from existing ground surface to auger boring depths ranging from about 2 feet bgs to boring termination at 8 feet bgs and to SPT borings depths ranging from 4 feet bgs to boring termination depths of 20 feet bgs. The SPT "N" values within this stratum ranged from 3 to 32 blows per foot indicating very loose to dense relative density. The results of laboratory testing performed on representative samples of this stratum indicated a fines content of 8.8 to 10.9 percent.

Stratum 2 was encountered below and occasionally interbedded with Stratum 1 extending to auger boring depths ranging from about 6 feet bgs to boring termination of about 8 feet bgs and to SPT boring depths ranging from about 18 feet bgs to boring termination depths of about 20 feet bgs. The SPT "N" values ranged from 3 to 36 blows per foot indicating very loose to dense relative density. The results of laboratory testing performed on representative samples of this stratum indicated a fines content of 12.5 to 43.4 percent.

Stratum 3 was encountered only in the SPT borings below Strata 1 and 2 extending to the termination of the borings at 20 feet bgs. The SPT "N" values ranged from 7 to 31 blows per foot indicating medium to hard consistency.

The conditions presented above highlight the major subsurface stratifications encountered during our field evaluation of the site. More detailed descriptions of the materials encountered are provided in **Appendix A**. A soil classification key sheet is also included as **Appendix B**. It should be understood that subsurface conditions will vary across this site and between boring locations. Changes in subsurface strata may be more gradual than indicated.

Groundwater

Groundwater was encountered in our SPT borings at depths ranging from 2.5 to not encountered within the depths explored at the time of drilling after which drilling fluid was introduced to keep the boreholes from collapsing. Groundwater was encountered in our auger borings at depths ranging from 3.9 to not encountered within the depths explored at the time of drilling. Groundwater levels will fluctuate with time due to seasonal rainfall and locally heavy precipitation events; therefore, future groundwater levels may be encountered at depths different from those indicated by our borings. The groundwater levels at each of the boring locations are shown on **Table 1**.

The SHGWT is typically encountered during late summer following the rainy season. Several factors can affect the seasonal high groundwater level such as drainage characteristics of the soils; land surface elevation; and relief points such as lakes, rivers and swamps. Based on our experience, evaluation of existing groundwater levels, observation of soil indicators (where encountered), and review of the soil survey for Polk County, we estimate the SHGWT at this site may likely be encountered at depths ranging from about 1.0 to 3.0 feet bgs (**Table 1**).

CONCLUSIONS

Our geotechnical engineering evaluation of this site and our recommendations with respect to the property are based on our site observations, the field exploratory data obtained from our borings, laboratory testing results, and our professional judgment.

We anticipate the soils excavated from the planned stormwater pond areas explored will be used for fill material onsite. The encountered soils consisted of Stratum 1, fine sand (SP), sand with clay (SP-SC) and fine sand with silt (SP-SM) and Stratum 2, clayey sand (SC) and Stratum 3, clay (CL) extending from ground surface to boring termination depths of approximately 20 feet bgs. Stratum 1 soils, if excavated will provide a good source for structural fill during site development. Stratum 2 soils can also be used as structural fill or backfill provided they conform to the criteria specified in the **Recommendations** section below. Stratum 3 soils are unsuitable for use as structural fill or backfill.

The auger borings performed along the planned roadway alignment generally encountered Stratum 1, fine sand (SP), fine sand with clay (SP-SC) and fine sand with silt (SP-SM) and Stratum 2, clayey sand (SC) from ground surface to the auger boring termination depths of approximately 8 feet bgs.

It appears that the shallow subsurface soils encountered in our borings performed within the planned roadway alignment will provide a suitable subgrade for roadway pavement after proper site preparation and in-place densification described in the **Recommendations** section below. The encountered Stratum 1 soils can be reused as backfill material for utility installation after drying back to the soils' optimum moisture content (ASTM D1557). Stratum 2 soils can also be used as backfill, provided these soils conform to the fill suitability criteria specified in the **Recommendations** section below. In addition, we recommend that suitable fill with fines contents of less than 15 percent be placed a minimum of 2 feet below the bottom of the base course (if the subgrade is un-stabilized) or a minimum of 2 feet below the bottom of the subgrade (if the subgrade is stabilized). The existing pavement section described previously in this report once removed can be stockpiled for reuse as roadway subgrade stabilizing material.

The groundwater was encountered in the roadway auger borings at depths of 3.9 feet bgs to not encountered within the depths explored at the time of drilling. We recommend a minimum separation of 18 inches between the bottom of the base course and the estimated SHGWT if a limerock base course is used. If the minimum separation between the bottom of the base course and the estimated SHGWT is less than 18 inches, a moisture tolerant base course such as soil cement or cemented coquina will be required in conjunction with underdrains as specified in the **Flexible Pavement Recommendations** section below. The underdrain system shall be designed by a professional engineer in accordance with the guidelines provided in the Polk County Land Development Code. Any additional fill required to bring the site to final design grades should conform to the fill suitability criteria presented below.

Use of Information

It should be noted that subsurface conditions can vary across this site and between boring locations. Conditions can also vary in areas not explored by our borings. Contractors bidding earthwork requirements are urged to conduct their own borings, test pits or other studies to determine those conditions that may affect their specific work requirements. FES cannot be responsible for interpretations made by others based on the information contained in this report and the attachments.

RECOMMENDATIONS

Site Preparation

Site Stripping / Undercutting

Before earthwork and construction activities begin, all existing topsoil, vegetation, large roots down to finger-size, surface debris, and any other deleterious material should be removed from within the construction limits. Site stripping should extend at least 10 feet beyond the construction area. Any pockets of organics, organic laden-soils and/or deleterious materials should be undercut to suitable soil. The resulting excavations should be backfilled with structural fill placed in maximum one-foot thick lifts. Backfill soils should be of the same composition and compacted to the same criteria as structural fill soils. This process should be observed by a representative of FES to check that organic and/or deleterious materials have been removed.

Proof-Rolling / In-Place Densification

Following site stripping and prior to any fill placement or beginning construction, proof-rolling / in-place densification of the exposed ground surface with a heavy vibratory roller compactor should be performed within the construction area. Based on experience, vibratory rollers should be operated in the static mode within 100 feet of existing structures to avoid transmission of vibrations that could cause structural distress.

Compaction within the construction area should continue until the soils appear relatively firm and unyielding and the soils have achieved a relative compaction of at least 95 percent of the modified Proctor maximum dry density (ASTM D1557) to a depth of at least 2 feet below the existing grade. The subgrade soil 1-foot below new pavement should be compacted to at least 98 percent. The moisture content of the fill soils during placement and compaction shall be maintained within 2 percent of the optimum moisture content (ASTM D1557).

Proof-rolling and densification efforts should be closely monitored by an FES engineering technician to observe any unusual or excessive deflection of the soils beneath the compacting equipment used. If unusual or excessive deflection is observed, then the areas should be undercut to firm soil and backfilled with compacted structural fill placed in maximum one-foot thick lifts.

Borrow Areas

Structural Fill Suitability

Definition

The preferred soil used for structural fill and backfill can be defined as clean fine sand containing less than 12 percent material by weight that is finer than a number 200 sieve (material conforming to SP to SP-SM or SP-SC in the Unified Soils Classification System).

Borrow soils containing up to 35 percent fines (materials conforming to SC, SM, or SC-SM in the Unified Soil Classification System) may also be utilized as structural fill, provided the working subgrade is above the existing groundwater level. However, Florida Building Code (Chapter 18, Section 1803.5.3) states that soils with plasticity index of 15 or greater are considered expansive and hence are unsuitable for use as structural fill. Please note that soils conforming to SC, SM, or SC-SM are difficult to work with and will require additional time and effort for either drying or moisture conditioning during placement and compaction.

Any muck or organic soil if encountered on site will not be suitable for fill and should be disposed of offsite or placed in landscape areas and used for planting purposes. Soils containing organic content, as determined by ASTM D2974, of more than 5 percent shall not be used as structural fill. Because of the variability of the subsurface soils encountered, additional laboratory testing should be performed on the excavated material during grading and earthwork activities to evaluate its suitability for use as fill material.

Soil Suitability

The SPT borings performed within the planned stormwater pond areas at the property suggests sands conforming to SP, SP-SC, SP-SM (Stratum 1) and SC (Stratum 2) are present from existing ground surface to depths ranging from 13 feet bgs to boring termination depth of approximately 20 feet bgs. The Stratum 1 soils can be used as structural fill or backfill. Stratum 2 soils can also be used as structural fill or backfill provided they conform to the criteria specified above.

Placement

Structural fill with less than 12 percent fines should be placed in lifts not to exceed one foot thick. Materials with fines content greater than 12 percent should be placed in maximum 6-inch loose lifts.

The fill material should be compacted to at least 95 percent of its modified Proctor maximum dry density (ASTM D1557) and the moisture content maintained within 2 percent of the optimum moisture content (ASTM D1557) during placement. The upper 1-foot below pavements should be compacted to 98 percent of modified Proctor maximum dry density. Confined areas, such as utility trenches, should be compacted with manually operated portable vibratory compaction equipment.

Field density testing to verify compaction should be performed for each lift of structural fill placed for each 2,500 square feet of area below structures and for each 5,000 square feet below pavements. In pavement areas, the subbase and base materials should be tested to the same frequency. Density tests should be performed for each lift of fill for every 100 lineal feet of backfill placed in utility excavations or other excavations that are within the paving areas.

Depending on the time of year construction occurs, materials excavated containing clay fines may exist in a saturated condition. These soils will require processing and drying to achieve a moisture content to allow placement and proper compaction. Spreading the clayey material in thin lifts (6 inches loose thickness) and aerating by disking can facilitate and hasten the drying process. Disking will also be useful to breakdown larger clods of clayey soils. Specialty equipment typically associated with clayey soils such as a sheep's foot roller will also be required to achieve proper compaction.

The placement and compaction of moisture sensitive soils of this type will require time and effort beyond that typically associated with sandy soils. A grading contractor experienced with placing and compaction of clayey soils can likely reduce costly project delays due to soil conditions.

Groundwater Control

Groundwater will likely be encountered during pond and utility excavation activities. Dewatering may be accomplished by either draining the water to sumps which can then be pumped away from the area or by the use of sanded, vacuum well points. Groundwater fluctuations can occur due to variations in rainfall and other site specific factors. These variations should be considered when planning earthwork activities.

An alternative to dewatering in shallow undercut areas where groundwater is encountered is to use clean sand classified as SP material (less than 5% fines) according to the Unified Soil Classification System as a first lift through any standing water. This first lift will create a platform to place and compact additional fill material upon.

Flexible Pavement Recommendations

The following minimum pavement sections are provided for consideration for this development. However, the project civil engineer should develop the actual minimum pavement thickness based on anticipated traffic loads and other considerations in accordance with Florida Department of Transportation (FDOT) and Polk County standards. A moisture-tolerant base material (cemented coquina, soil cement - no limerock) should be used if an underdrain is required to control groundwater.

Section Description	Light Duty (inches)	Heavy Duty (inches)
Surface Course Type SP-9.5 or SP-12.5 or SP-19.0 Asphaltic Concrete with minimum Marshall stability of 1500 lbs. Compacted to at least 95 percent of the maximum laboratory Marshall density.	1.5	2.0
Base Course Limerock (Section 230, FDOT) having a minimum LBR of 100 and compacted to at least 98 percent of its modified Proctor maximum dry density with a water content within 2 percent of the optimum water content (FM1 – T180). **If the bottom of the base is within 1.5 feet of the seasonal high groundwater level, then a moisture tolerant base will be required such as soil cement (Section 270) or cemented coquina (Section 250).**	6	8
Subbase FDOT Spec. Section No. 160-2 or 160-3. Type B Stabilization (FBV 75/LBR of 40) and compacted to at least 98 percent of the modified Proctor maximum dry density with a water content within 2 percent of the optimum water content (FM1 – T180).	12	12

Underdrains will be required in conjunction with moisture tolerant base course such as soil cement or cemented coquina if the estimated SHGWT or the high water elevation of any detention/retention area adjacent to or in close proximity to the road is less than 18 inches below the bottom of the proposed base course. The underdrains shall be designed by a professional engineer based on the final grades and the estimated SHGWT along the planned roadway alignments.
Methods and materials used for pavement construction should conform to applicable sections of the most recent edition of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction. We further recommend that LBR testing be performed on subgrade / subbase soils to establish an LBR value to determine the level of stabilization required, if any.

Subgrade soils should be compacted as recommended above. Subgrade soils should also be free of ruts or disturbances caused by construction vehicles after compaction has been achieved.

TESTING AND MONITORING

Construction testing and monitoring are essential to proper site construction and performance. Observation and testing of site preparation and earthwork activities is an integral part of the engineering recommendations contained in this report. Having FES provide the construction materials testing and inspection services provides continuity and increases the potential that our recommendations will be properly implemented.

LIMITATIONS

This report has been prepared for the exclusive use of **Swan Campbell Rd LLC** for the specific application to the project previously discussed. Our conclusions and recommendations have been rendered using generally accepted standards of geotechnical engineering and geology practice in the state of Florida. No other warranty is expressed or implied.

Our conclusions and recommendations are based on the design information furnished to us, the data obtained from the previously described subsurface exploration, and our experience. They do not reflect variations in the subsurface conditions that are likely to exist in the region of our borings and in unexplored areas of the site. These variations are due to the inherent variability of the subsurface conditions in this geologic region. Should variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon our on-site observations of the conditions.

Florida is underlain by limestone bedrock that is susceptible to dissolution and the subsequent development of karst features such as voids and sinkholes in the natural soil overburden. Construction in a sinkhole prone area is therefore accompanied by some risk that internal soil erosion and ground subsidence could affect new structures in the future. It is not possible to investigate or design to completely eliminate the possibility of future sinkhole related problems. In any event, the Owner must understand and accept this risk.

The scope of our services does not include any environmental assessments or studies for the possible presence of hazardous or toxic materials in the soil, groundwater or surface water within or in the general vicinity of the site studied. Any statements made in this report or shown on the test boring logs regarding unusual subsurface conditions and/or composition, odor, staining, origin or other characteristics of the surface and/or subsurface materials are strictly for the information of our client and may or may not be indicative of an environmental problem.

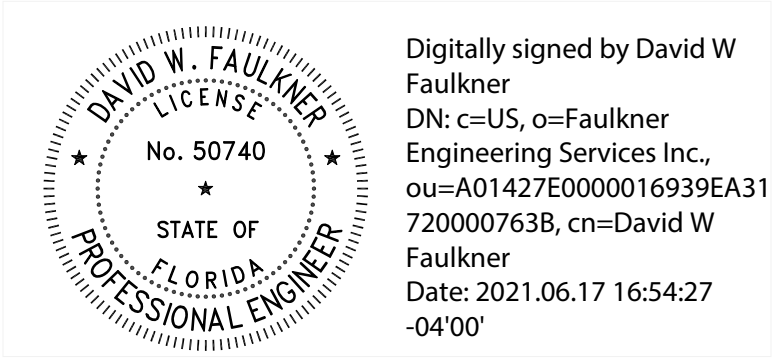
If changes are made in the overall design or the location of the planned stormwater pond areas or the planned roadway alignment, the recommendations presented in this report must not be considered valid unless the changes are reviewed by FES and recommendations modified or verified in writing. We should be given the opportunity to review the grading plan and the applicable portions of the project specifications when the design is finalized. This review will allow us to check whether these documents are consistent with the intent of our recommendations.

CLOSING

Faulkner Engineering Services, Inc. appreciates the opportunity to be of service to **Swan Campbell Rd LLC** by providing these geotechnical consulting services and we look forward to assisting you through project completion. If you have any questions concerning this report, please do not hesitate to contact the undersigned.

Sincerely,

Faulkner Engineering Services, Inc.



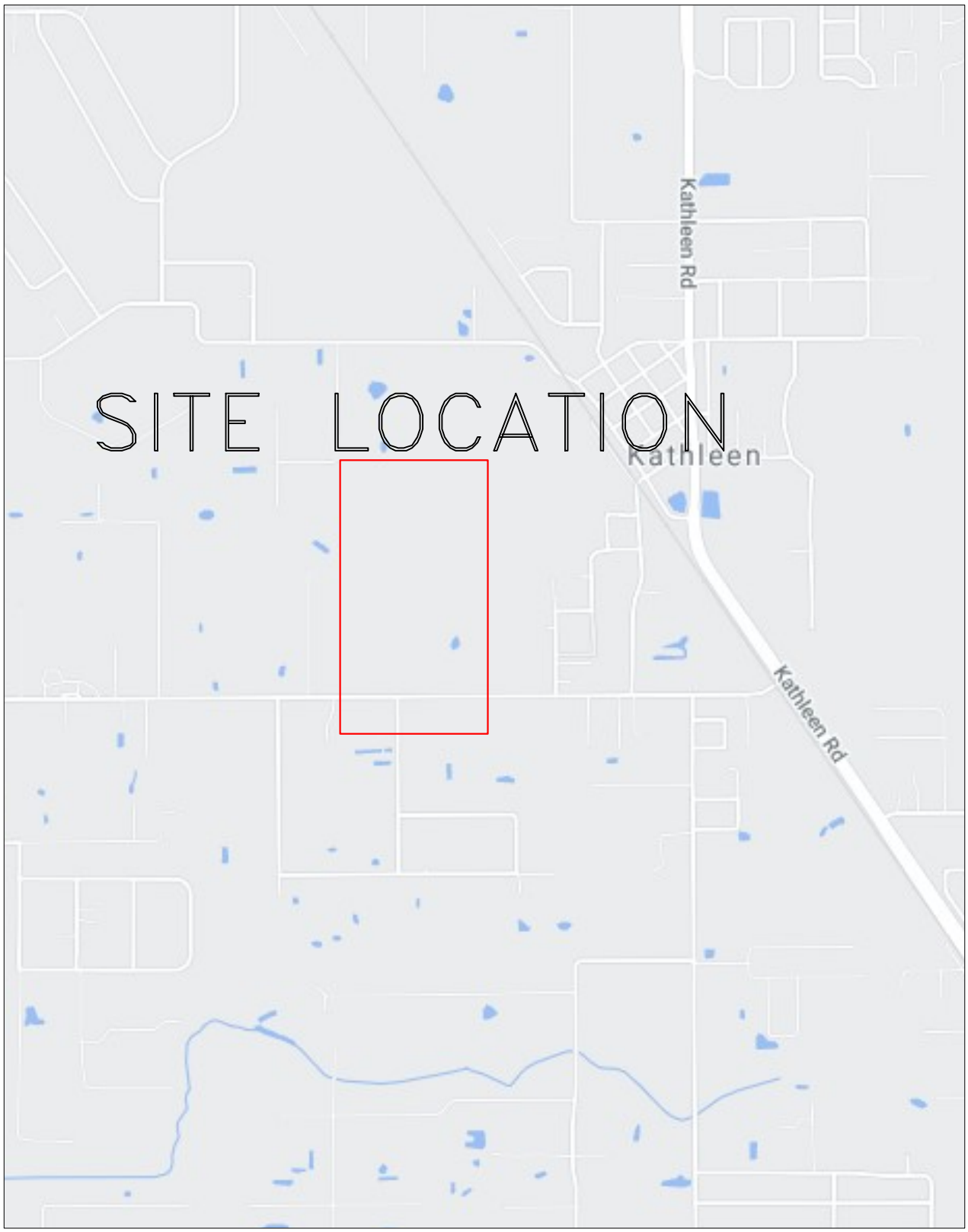
David W. Faulkner, P.E.
Geotechnical Engineer
Florida License No. 50740

This item has been digitally signed and sealed by David W. Faulkner, P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Attachments: Figure 1: Site Location Map
Figure 2: Boring Location Plan
Table 1: Groundwater Data

Appendix A: Logs and Profiles of Soil Borings
Appendix B: Key to Soil Classification

SITE LOCATION MAP



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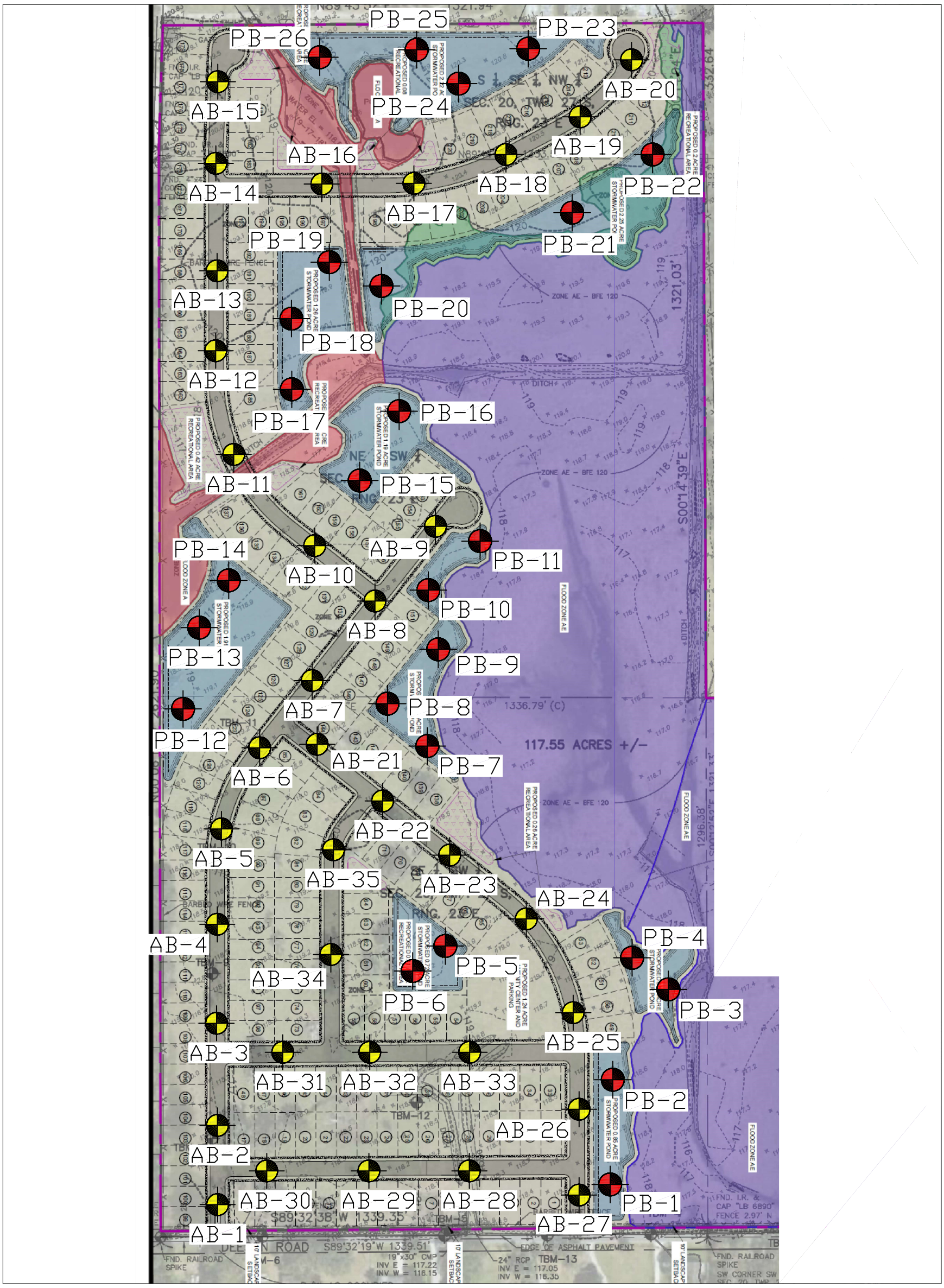
Deeson Subdivision

N.T.S.	DATE 06.09.21	JOB NO. 21-5064
DRAWN: MR CHKD: DF	FIGURE 1	

BORING LOCATION PLAN



LEGEND

- POND SPT BORING
- AUGER BORING

Note:
Basemap prepared by
Otero Engineering

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Deeson Subdivision	N.T.S.	DATE 06.09.21	JOB NO. 21-5064
	DRAWN: MR	FIGURE 2	
	CHKD: DF		

Table 1 - Groundwater Data

Boring	Ground Elevation (feet, NAVD 1988)[1]	Existing Groundwater Table (feet, bgs)[2]	Estimated SHGWT[3] from Field Exploration (feet, bgs)[2]
PB-1	-	5.3	3.0
PB-2	-	5.0	3.0
PB-3	-	6.0	3.0
PB-4	-	5.9	3.0
PB-5	-	5.3	3.0
PB-6	-	5.5	3.0
PB-7	-	5.7	3.0
PB-8	-	5.9	3.0
PB-9	-	5.0	3.0
PB-10	-	5.5	3.0
PB-11	-	6.0	3.0
PB-12	-	5.5	3.0
PB-13	-	5.9	3.0
PB-14	-	6.0	3.0
PB-15	-	6.3	3.0
PB-16	-	6.0	3.0
PB-17	-	NE[4]	2.0
PB-18	-	NE[4]	2.0
PB-19	-	NE[4]	2.0
PB-20	-	4.5	2.0
PB-21	-	4.9	2.0
PB-22	-	5.0	3.0
PB-23	-	2.5	1.0
PB-24	-	3.7	1.5
PB-25	-	3.9	1.5
PB-26	-	4.0	1.5
AB-1	-	NE[4]	1.0
AB-2	-	NE[4]	1.0
AB-3	-	3.9	1.5
AB-4	-	NE[4]	1.5
AB-5	-	5.9	2.0
AB-6	-	6.0	2.5
AB-7	-	NE[4]	2.5
AB-8	-	5.3	2.5
AB-9	-	5.3	2.5
AB-10	-	NE[4]	2.5
AB-11	-	NE[4]	3.0
AB-12	-	NE[4]	2.0

Boring	Ground Elevation (feet, NAVD 1988)[1]	Existing Groundwater Table (feet, bgs)[2]	Estimated SHGWT[3] from Field Exploration (feet, bgs)[2]
AB-13	-	NE[4]	1.0
AB-14	-	6.0	3.0
AB-15	-	4.3	2.0
AB-16	-	4.2	2.0
AB-17	-	NE[4]	2.0
AB-18	-	4.3	2.0
AB-19	-	4.0	1.5
AB-20	-	4.0	2.0
AB-21	-	4.0	2.0
AB-22	-	5.3	2.5
AB-23	-	NE[4]	2.5
AB-24	-	4.5	2.5
AB-25	-	4.3	2.0
AB-26	-	5.2	2.5
AB-27	-	4.0	2.0
AB-28	-	4.9	2.0
AB-29	-	6.0	3.0
AB-30	-	6.3	3.0
AB-31	-	NE[4]	2.0
AB-32	-	4.9	2.5
AB-33	-	5.3	2.0
AB-34	-	NE[4]	3.0
AB-35	-	NE[4]	3.0

[1] - North American Vertical Datum, ground elevations not available at time of drilling

[2] - Below Ground Surface

[3] - Seasonal High Groundwater Table; Groundwater will perch over clayey sand, silty sand, and clay in some locations

[4] - NE - Groundater Not Encountered (at the time of drilling)

APPENDIX A

Logs and Profiles of Soil Borings

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-1

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MB
At Completion ▼ **:** 5.3'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, brown, fine SAND		1	2 3 3	6	
			Medium-Dense, light brown		2	4 5 7	12	
5		SP-SC	Medium-Dense, light brown, fine SAND with clay		3	3 4 8	12	
					4	4 6 6	12	
					5	5 10 9	19	
10								
		SC	Medium-Dense, light brown, clayey SAND (-200=28.6%)		6	7 9 10	19	
15								
			Loose		7	2 3 3	6	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-2

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 5.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance
0								
		SP-SM	Medium-Dense, brown, fine SAND with silt		1	2 3 8	11	
		SP	Medium-Dense, light brown, fine SAND		2	7 6 7	13	
5		SP-SC	Very Loose, brown, fine SAND with clay		3	2 2 2	4	
			Loose		4	2 3 3	6	
					5	2 3 2	5	
10								
		SC	Medium-Dense, gray, clayey SAND		6	6 6 8	14	
15								
		SP-SC	Loose, light brown, fine SAND with clay		7	3 4 2	6	
20			End of Boring					
25								
30								
35								

Penetration Resistance: 10 20 30 40 60 80

This information pertains only to this boring and should not be interpreted as being indicative of the site.

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-3

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 6.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, light brown, fine SAND		1	3 4 4	8	
			Medium-Dense		2	3 5 6	11	
5		SP-SC	Loose, brown, fine SAND with clay		3	4 5 3	8	
					4	2 3 2	5	
		SC	Very Loose, brown, clayey SAND (-200=12.7%)		5	1 2 2	4	
10								
			Medium-Dense, light brown		6	3 5 6	11	
15								
			Very Loose		7	4 2 2	4	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-4

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MB
At Completion ▼ **:** 5.9'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, light brown, fine SAND		1	4 4 6	10	
			Medium-Dense		2	3 5 7	12	
5		SP-SC	Loose, brown, fine SAND with clay		3	4 5 5	10	
					4	2 3 3	6	
					5	2 2 3	5	
10								
15		SP-SM	Medium-Dense, brown, fine SAND with silt		6	4 6 9	15	
20		SP-SC	Medium-Dense, light brown, fine SAND with clay		7	10 13 14	27	
			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-5

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 5.3'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance 10 20 30 40 60 80
0								
		SP	Loose, brown, fine SAND		1	5 4 5	9	
			Medium-Dense		2	5 5 8	13	
5		SP-SC	Loose, light brown, fine SAND with clay		3	4 3 2	5	
			Very Loose		4	1 2 2	4	
			Loose		5	1 2 3	5	
10								
		SP-SM	Medium-Dense, brown, fine SAND with silt		6	3 5 7	12	
15								
					7	8 8 10	18	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-6

FAULKNER ENGINEERING SERVICES, Inc.

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 5.5'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance 10 20 30 40 60 80
0								
		SP	Medium-Dense, brown, fine SAND with fine roots		1	4 6 5	11	
			Medium-Dense, light brown		2	3 5 10	15	
5		SP-SC	Loose, brown, fine SAND with clay (-200=10.9%)		3	5 4 2	6	
		SC	Very Loose, brown, clayey SAND		4	1 1 2	3	
		SP-SC	Very Loose, light brown, fine SAND with clay		5	1 1 2	3	
10								
		SP-SM	Loose, brown, fine SAND with silt		6	2 4 4	8	
15								
			Medium-Dense		7	6 9 11	20	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-7

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ : **At Completion** ▼ : 5.7'

Elevation: NA
Logged By: MB

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, brown, fine SAND		1	4 5 5	10	
			Medium-Dense		2	5 8 9	17	
5		SP-SC	Loose, brown, fine SAND with clay		3	3 3 4	7	
					4	4 4 6	10	
					5	4 5 4	9	
10								
			Medium-Dense		6	7 9 15	24	
15								
		SC	Dense, brown, clayey SAND (-200=21.1%)		7	10 16 20	36	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-8

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 5.9'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, brown, fine SAND		1	4 4 5	9	
			Medium-Dense, light brown		2	7 8 10	18	
5		SP-SC	Medium-Dense, light brown, fine SAND with clay		3	5 6 7	13	
			Loose		4	5 3 4	7	
			Very Loose		5	3 2 2	4	
10								
			Medium-Dense		6	6 8 13	21	
15								
		SC	Medium-Dense, brown, clayey SAND		7	9 14 15	29	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-9

Project No.: 21-5064
Date: 5/13/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MR

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 5.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, brown, fine SAND		1	5 5 5	10	
			Medium-Dense		2	7 6 7	13	
5		SP-SM	Loose, brown, fine SAND with silt		3	2 4 5	9	
					4	3 3 3	6	
			Medium-Dense		5	4 6 5	11	
10								
		SC	Medium-Dense, brown, clayey SAND (-200=19.3%)		6	12 13 17	30	
15								
					7	8 8 9	17	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-10

Project No.: 21-5064
Date: 5/14/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MR

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 5.5'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, gray brown, fine SAND		1	4 4 6	10	
			Medium-Dense, brown		2	4 8 10	18	
5					3	4 6 6	12	
		SP-SM	Medium-Dense, brown, fine SAND with silt		4	5 7 9	16	
		SP-SC	Medium-Dense, light brown, fine SAND with clay		5	6 7 8	15	
10								
		CL	Stiff, gray, CLAY		6	2 4 8	12	
15								
			Medium		7	2 3 4	7	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-11

Project No.: 21-5064
Date: 5/14/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MR

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 6.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, brown, fine SAND		1	2 4 5	9	
			Medium-Dense, dark brown		2	4 7 11	18	
5		SP-SM	Loose, dark brown, fine SAND with silt		3	3 3 6	9	
		SC	Medium-Dense, gray brown, clayey SAND		4	4 8 12	20	
			(-200=24.9%)		5	7 9 6	15	
10								
			Loose, gray		6	3 3 4	7	
15								
					7	2 3 3	6	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-12

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MR
At Completion ▼ **:** 5.5'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, brown, fine SAND		1	2 4 5	9	
			Medium-Dense		2	5 5 6	11	
5		SP-SC	Loose, light brown, fine SAND with clay (-200=8.8%)		3	2 3 3	6	
		SC	Loose, light brown, clayey SAND		4	2 2 3	5	
			Very Loose		5	1 2 2	4	
10								
			Medium-Dense, gray		6	7 10 9	19	
15								
			(-200=17.8%)		7	5 7 10	17	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-13

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MR
At Completion ▼ **:** 5.9'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, brown, fine SAND		1	2 2 3	5	
			Light brown		2	4 3 5	8	
5		SP-SC	Very Loose, light brown, fine SAND with clay		3	3 2 2	4	
		SC	Very Loose, light brown, clayey SAND		4	1 2 2	4	
			Medium-Dense, gray (-200=26.5%)		5	4 8 10	18	
10								
					6	6 7 7	14	
15								
					7	6 9 11	20	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-14

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 6.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP-SM	Loose, brown, fine SAND with silt		1	3 3 4	7	
			Medium-Dense		2	4 7 9	16	
5		SP-SC	Medium-Dense, brown, fine SAND with clay		3	4 5 7	12	
			Loose		4	4 3 3	6	
			Very Loose, gray		5	3 2 2	4	
10								
		SC	Medium-Dense, gray, clayey SAND		6	10 8 9	17	
15								
		CL	Stiff, gray, CLAY		7	4 6 8	14	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-15

Project No.: 21-5064
Date: 5/14/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MR
At Completion ▼ **:** 6.3'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, dark brown, fine SAND		1	2 4 6	10	
			Medium-Dense, brown		2	3 5 7	12	
5		SP-SM	Medium-Dense, brown, fine SAND with silt		3	2 5 9	14	
	▽	SP	Loose, light brown, fine SAND		4	3 2 3	5	
		SC	Medium-Dense, gray, clayey SAND		5	2 9 7	16	
10								
			(-200=17.2%)		6	4 7 10	17	
15								
			Dense		7	15 16 20	36	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-16

Project No.: 21-5064
Date: 5/14/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MR
At Completion ▼ **:** 6.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, dark brown, fine SAND		1	2 4 4	8	
			Brown		2	2 2 4	6	
5		SP-SM	Loose, brown, fine SAND with silt		3	2 2 3	5	
			Very Loose		4	2 2 2	4	
		SP	Loose, brown, fine SAND		5	3 3 2	5	
10								
			Light brown		6	4 5 4	9	
15								
		SC	Medium-Dense, gray, clayey SAND with cementation		7	6 9 9	18	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-17

Project No.: 21-5064
Date: 5/14/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ :

Elevation: NA
Logged By: MR
At Completion ▼ : * NE

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, light brown, fine SAND		1	3 2 4	6	
		SP-SC	Loose, brown, fine SAND with clay		2	3 5 5	10	
5		SC	Medium-Dense, gray, clayey SAND (-200=41.2%)		3	7 8 7	15	
			Gray brown		4	4 7 10	17	
			Gray		5	8 11 12	23	
10								
					6	8 8 10	18	
15								
			(-200=26.6%)		7	9 12 15	27	
20			End of Boring					
25								
30								
35								

**Groundwater not encountered at first 10 feet*

FAULKNER ENGINEERING SERVICES, Inc.

DRILL HOLE LOG
BORING NO.: PB-18

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MR

Depth to Water> **Initial** ▽ : **At Completion** ▼ : * NE

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance 10 20 30 40 60 80
0								
		SP	Loose, gray, fine SAND		1	2 4 4	8	
			Medium-Dense, light brown		2	5 6 7	13	
5		SC	Loose, gray, clayey SAND		3	3 4 5	9	
			Medium-Dense		4	3 6 9	15	
			(-200=26.1%)		5	9 11 13	24	
10								
					6	5 5 7	12	
15								
					7	4 9 12	21	
20			End of Boring					
25								
30								
35								

**Groundwater not encountered at first 10 feet*

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-19

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ :

Elevation: NA
Logged By: MR
At Completion ▼ : * NE

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Loose, gray brown, fine SAND		1	2 2 3	5	
		SP-SC	Medium-Dense, light brown, fine SAND with clay		2	3 6 8	14	
5		SC	Medium-Dense, gray, clayey SAND		3	4 9 10	19	
			(-200=22.3%)		4	5 10 11	21	
					5	9 14 16	30	
10								
					6	8 13 15	28	
15								
		CL	Hard, gray CLAY		7	11 14 17	31	
20			End of Boring					
25								
30								
35								

**Groundwater not encountered at first 10 feet*

DRILL HOLE LOG
BORING NO.: PB-20

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ : **At Completion** ▼ : 4.5'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, gray, fine SAND		1	3 4 4	8	
			Medium-Dense, brown		2	7 8 11	19	
5		SP-SC	Medium-Dense, brown, fine SAND with clay		3	6 10 11	21	
		SC	Medium-Dense, brown, clayey SAND		4	6 7 10	17	
			Gray (-200=36.0%)		5	11 12 15	27	
10								
					6	7 12 13	25	
15								
		CL	Very Stiff, gray, CLAY		7	10 13 14	27	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-21

Project No.: 21-5064
Date: 5/17/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MB
At Completion ▼ **:** 4.9'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Loose, light brown, fine SAND with fine roots		1	3 3 3	6	
			Medium-Dense		2	4 6 5	11	
5		SP-SC	Loose, gray, fine SAND with clay		3	3 3 2	5	
			Very Loose		4	1 1 2	3	
		SC	Very Loose, gray, clayey SAND (-200=34.1%)		5	2 2 2	4	
10								
		SP-SC	Medium-Dense, gray, fine SAND with clay		6	4 6 6	12	
15								
		SC	Medium-Dense, gray, clayey SAND		7	7 9 10	19	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-22

FAULKNER ENGINEERING SERVICES, Inc.

Project No.: 21-5064
Date: 5/18/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 5.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP-SM	Loose, brown, fine SAND with silt		1	3 2 3	5	
					2	2 3 2	5	
5		SP-SC	Loose, brown, fine SAND with clay		3	2 4 3	7	
			Very Loose		4	1 2 1	3	
					5	1 1 2	3	
10								
		SC	Medium-Dense, gray, clayey SAND (-200=36.2%)		6	7 6 6	12	
15								
					7	5 8 9	17	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-23

Project No.: 21-5064
Date: 5/18/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MB
At Completion ▼ **:** 2.5'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0		SP	Very Loose, brown, fine SAND		1	1 1 2	3	
			Loose		2	2 3 3	6	
5			Very Loose, light brown		3	1 2 1	3	
		SP-SC	Very Loose, light brown, fine SAND with clay		4	1 2 2	4	
					5	1 1 2	3	
10								
		SC	Medium-Dense, light brown, clayey SAND		6	4 5 7	12	
15								
		CL	Very Stiff, gray, CLAY		7	3 6 10	16	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-24

Project No.: 21-5064
Date: 5/18/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ **:**

Elevation: NA
Logged By: MB
At Completion ▼ **:** 3.7'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP	Very Loose, brown, fine SAND		1	1 1 2	3	
			Medium-Dense, gray		2	5 7 9	16	
5					3	3 7 10	17	
			Loose		4	5 3 3	6	
		SP-SC	Very Loose, brown, fine SAND with clay		5	3 2 2	4	
10								
		CL	Stiff, gray, CLAY		6	8 5 6	11	
15								
					7	4 4 8	12	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-25

FAULKNER ENGINEERING SERVICES, Inc.

Project No.: 21-5064
Date: 5/18/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45

Elevation: NA
Logged By: MB

Depth to Water> **Initial** ▽ **:** **At Completion** ▼ **:** 3.9'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance (10 20 30 40 60 80)
0								
		SP-SM	Very Loose, brown, fine SAND with silt		1	2 2 1	3	
		SP-SC	Loose, gray, fine SAND with clay		2	3 3 7	10	
5					3	3 5 5	10	
			Very Loose		4	1 1 2	3	
					5	2 2 1	3	
10								
			Medium-Dense		6	10 11 10	21	
15								
			Dense, brown		7	12 14 18	32	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: PB-26

Project No.: 21-5064
Date: 5/18/2021

Project: Deeson Subdivision
Client: Swan Capital Partners
Location: Lakeland, Polk County, Florida
Driller: J&R Precision Drilling, Inc.
Drill Rig: CME 45
Depth to Water> **Initial** ▽ :

Elevation: NA
Logged By: MB
At Completion ▼ : 4.0'

Depth/ Elevation (ft)	Soil Symbols	USCS	Description	Sample Type	Sample No.	Standard Penetration Test Blows	N	Penetration Resistance 10 20 30 40 60 80
0								
		SP-SM	Loose, brown, fine SAND with silt		1	3 4 6	10	
		SP-SC	Loose, brown, fine SAND with clay		2	9 6 3	9	
5			Very Loose		3	1 2 2	4	
		SC	Very Loose, brown, clayey SAND (-200=12.5%)		4	1 1 2	3	
					5	1 2 2	4	
10								
			Medium-Dense, gray		6	7 9 14	23	
15								
			(-200=23.3%)		7	10 15 13	28	
20			End of Boring					
25								
30								
35								

This information pertains only to this boring and should not be interpreted as being indicative of the site.

KEY TO SYMBOLS

Symbol Description

Strata symbols

Poorly graded sand

Poorly graded sand with clay

Clayey sand

Poorly graded sand with silt

Low plasticity clay

Misc. Symbols

Water table at boring completion

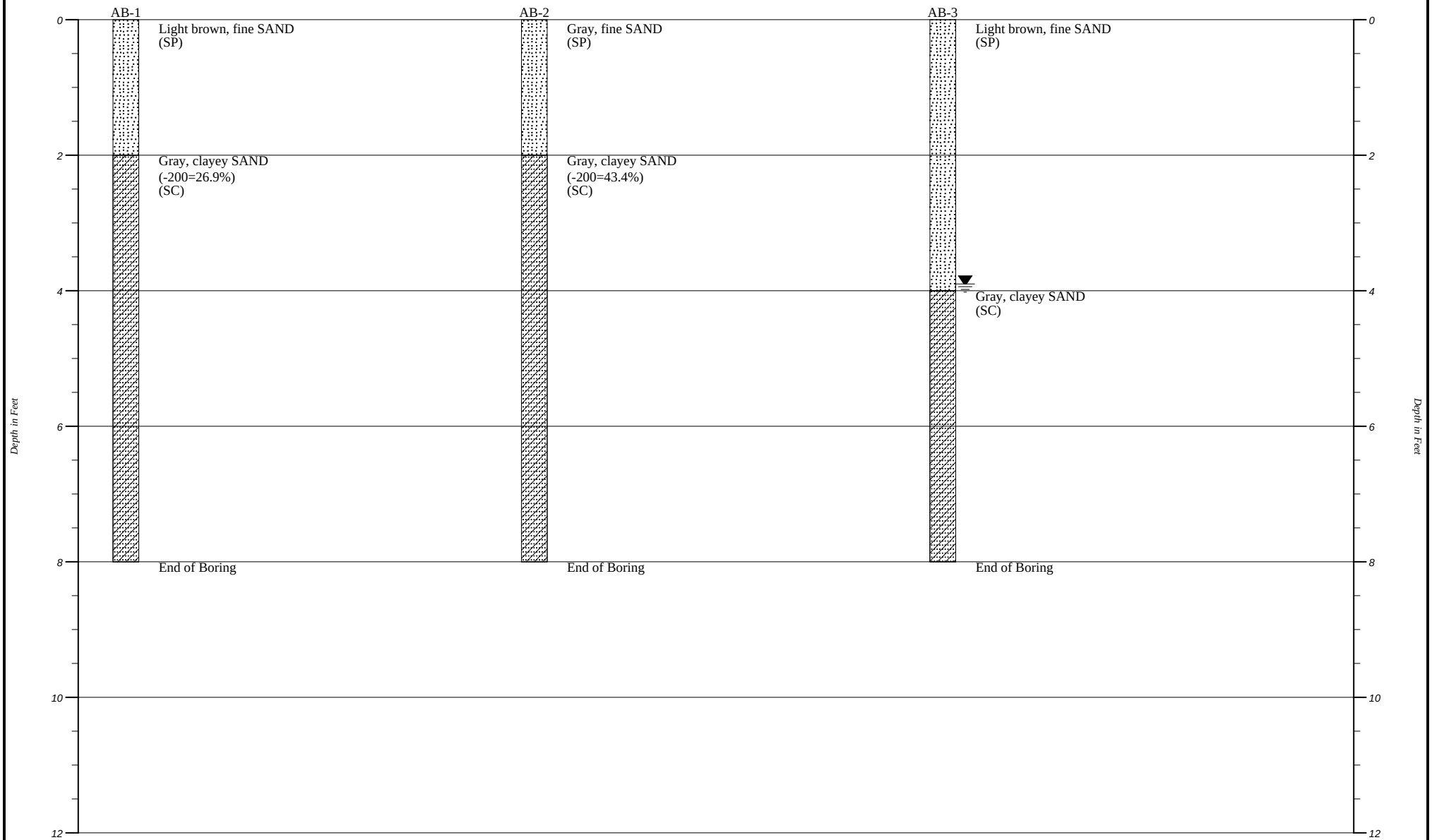
Soil Samplers

Standard penetration test

Notes:

1. Exploratory boring were performed using a 2-inch diameter split barrel sampler driven by a 140 lbs hammer (In accordance with ASTM D1586)

2. These logs are subject to the limitations, conclusions, and recommendations in this report.



Plan View

Strata symbols

Poorly graded sand

Clayey sand

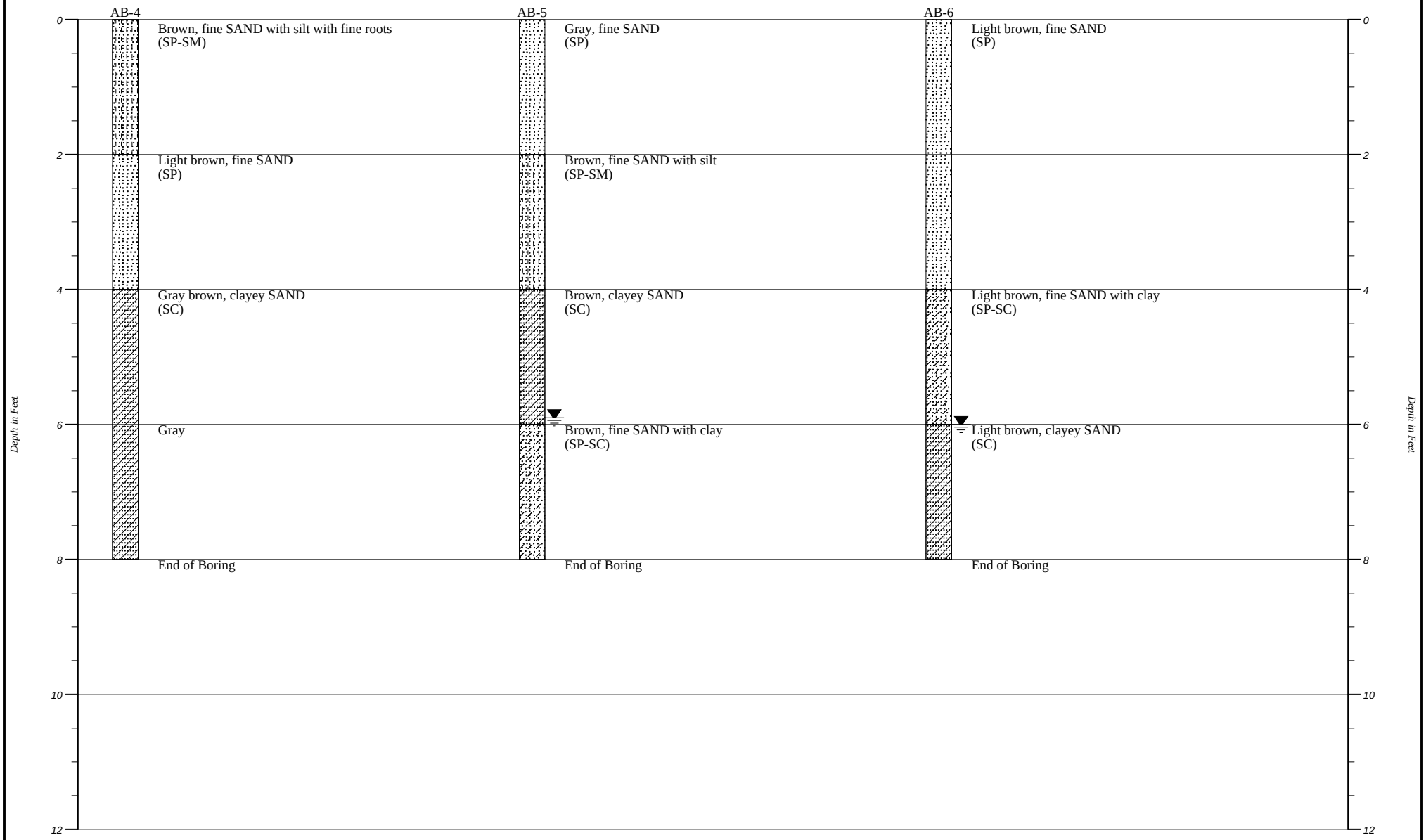
Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

HORIZONTAL SCALE:	DRAWN BY/APPROVED BY MS/PK	DATE PERFORMED
VERTICAL SCALE: 1"=2'		5/19/2021

Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

- Poorly graded sand
- Clayey sand
- Poorly graded sand with silt
- Poorly graded sand with clay

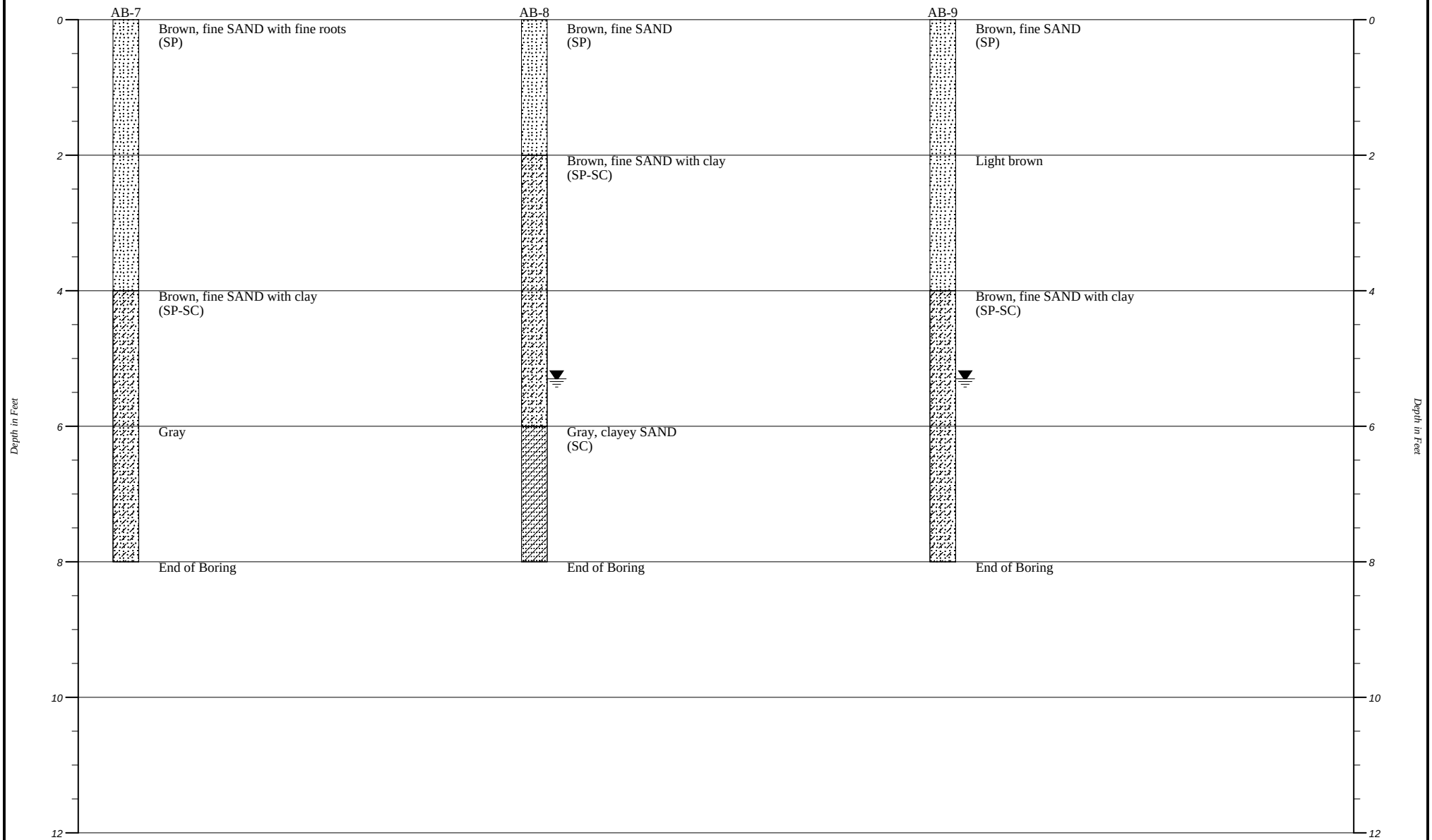
Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

HORIZONTAL SCALE:	DRAWN BY/APPROVED BY MS/PK	DATE PERFORMED
VERTICAL SCALE: 1"=2'		5/19/2021

Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Poorly graded sand with silt
- Poorly graded sand with clay

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AUGER BORING PROFILES

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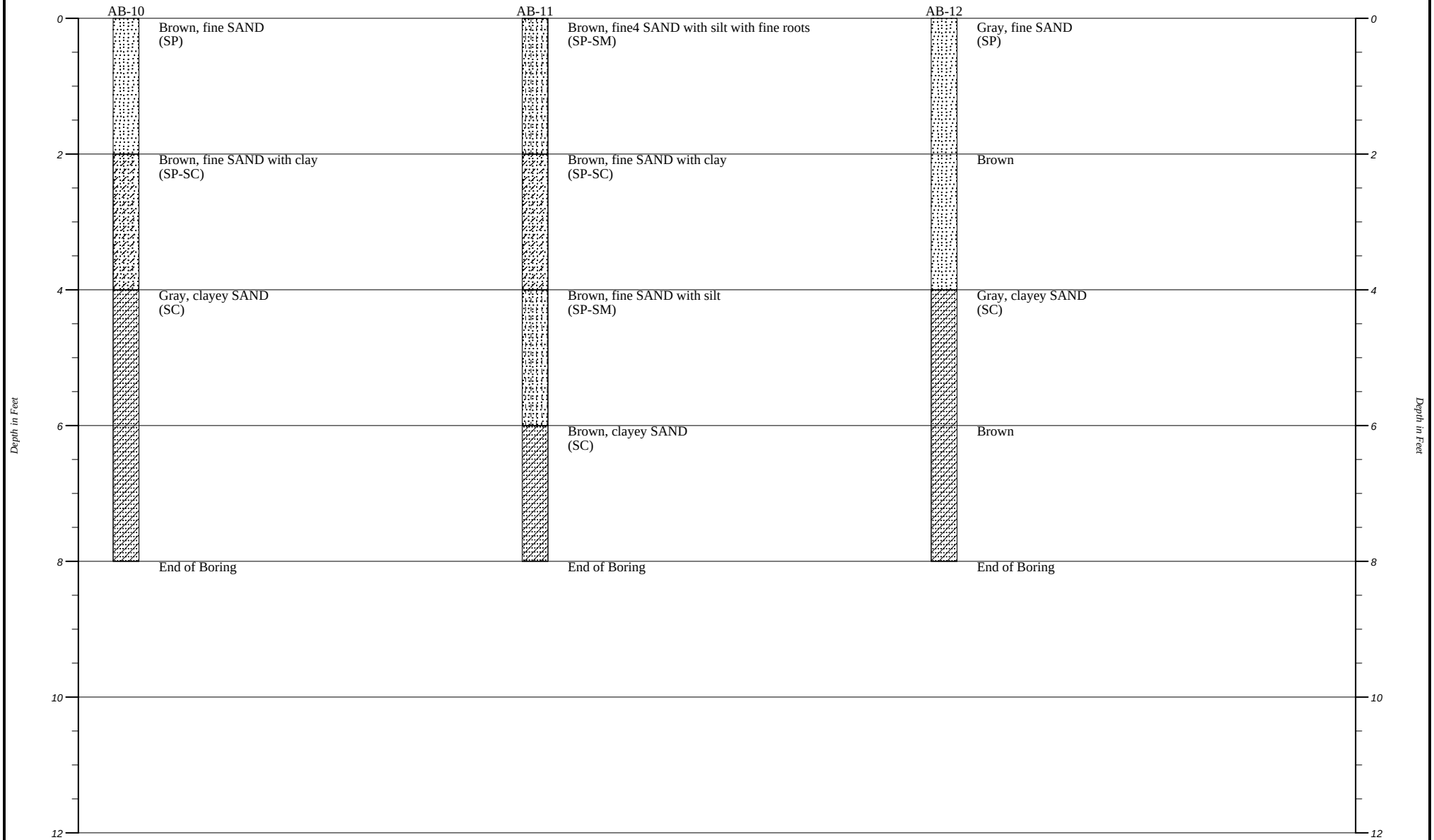
Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Clayey sand
- Poorly graded sand with silt
- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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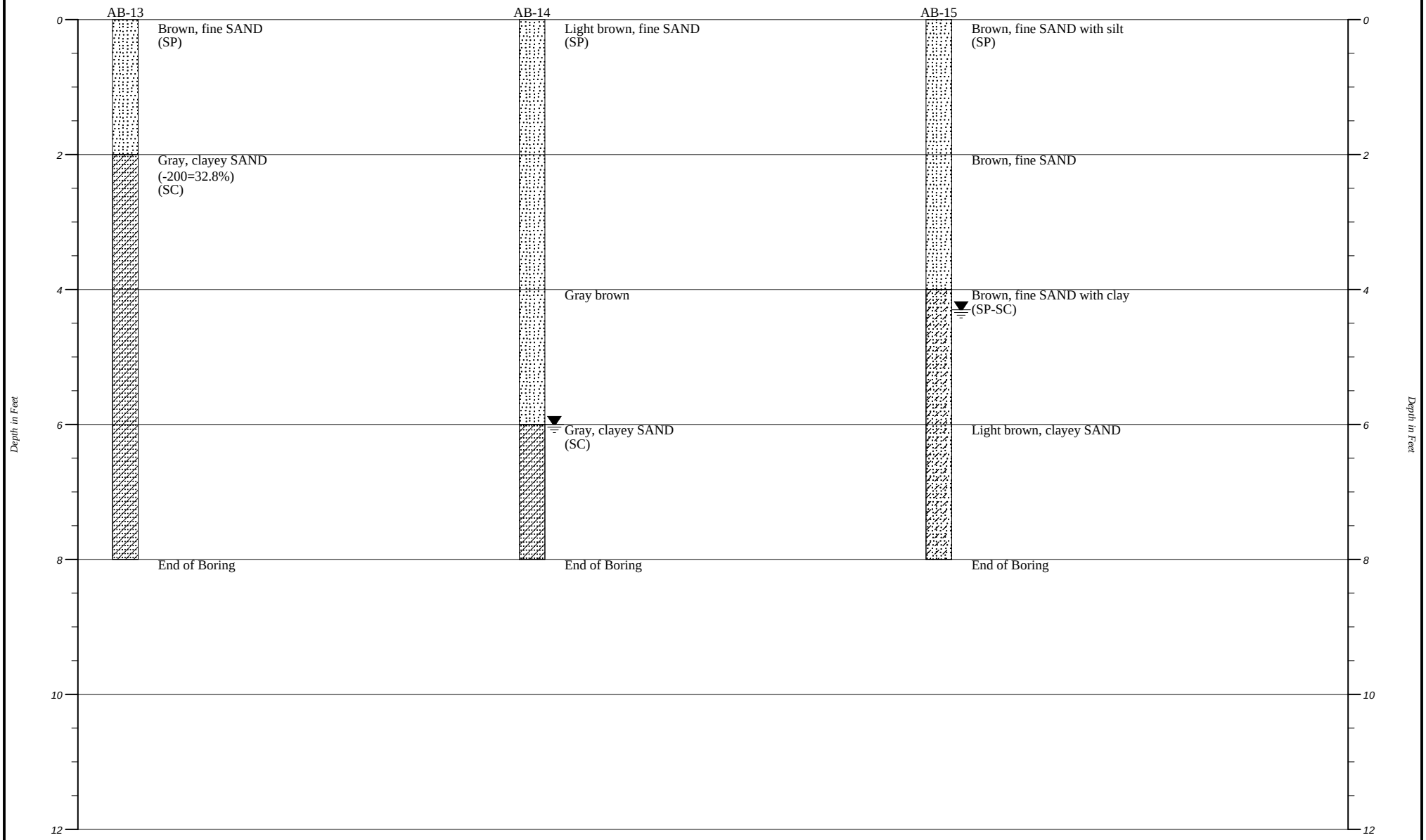
VERTICAL SCALE: 1"=2'		5/19/2021

Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Clayey sand
- Poorly graded sand with silt
- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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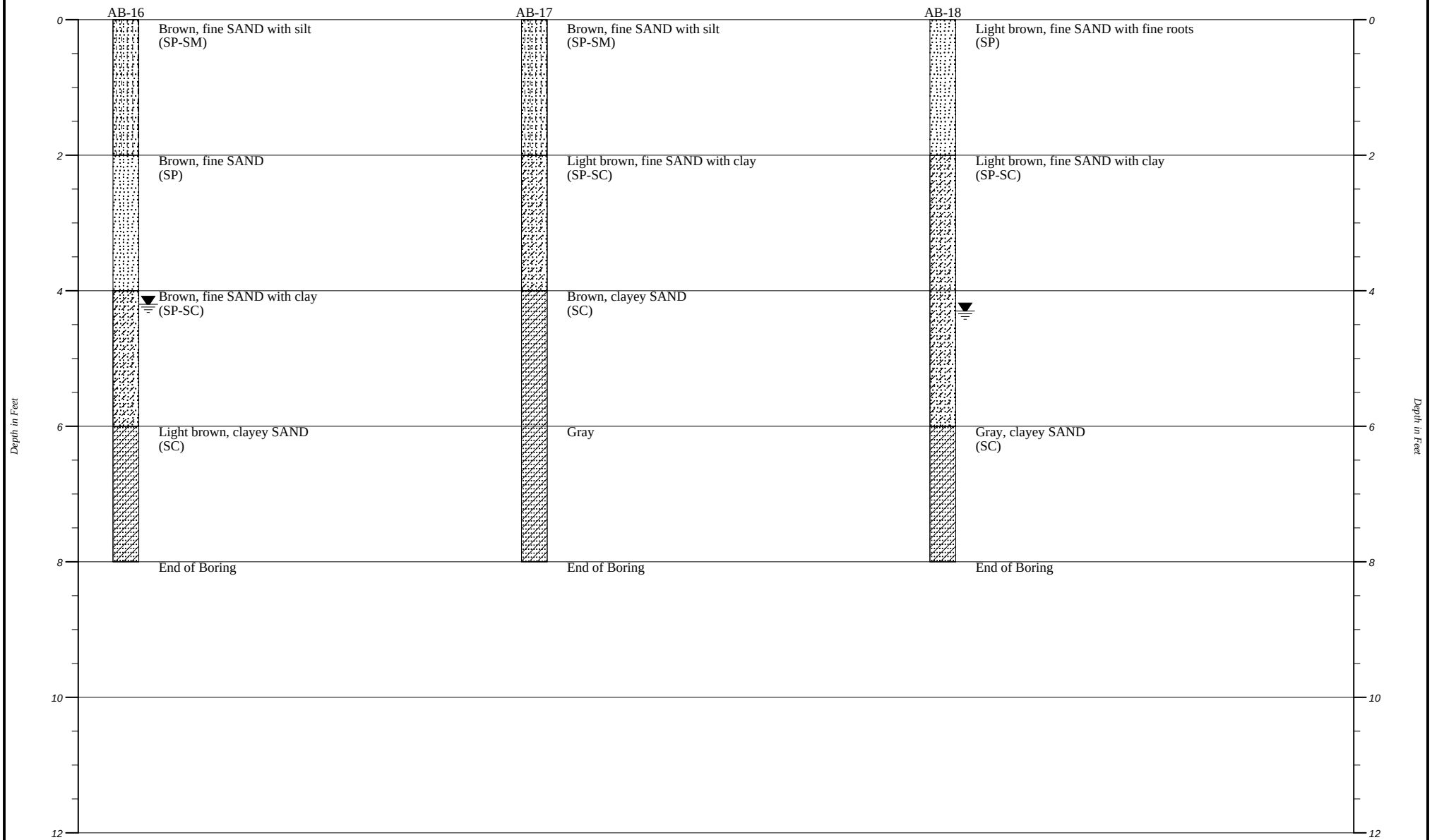
VERTICAL SCALE: 1"=2'		5/19/2021

Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Clayey sand
- Poorly graded sand with silt
- Poorly graded sand with clay

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AUGER BORING PROFILES

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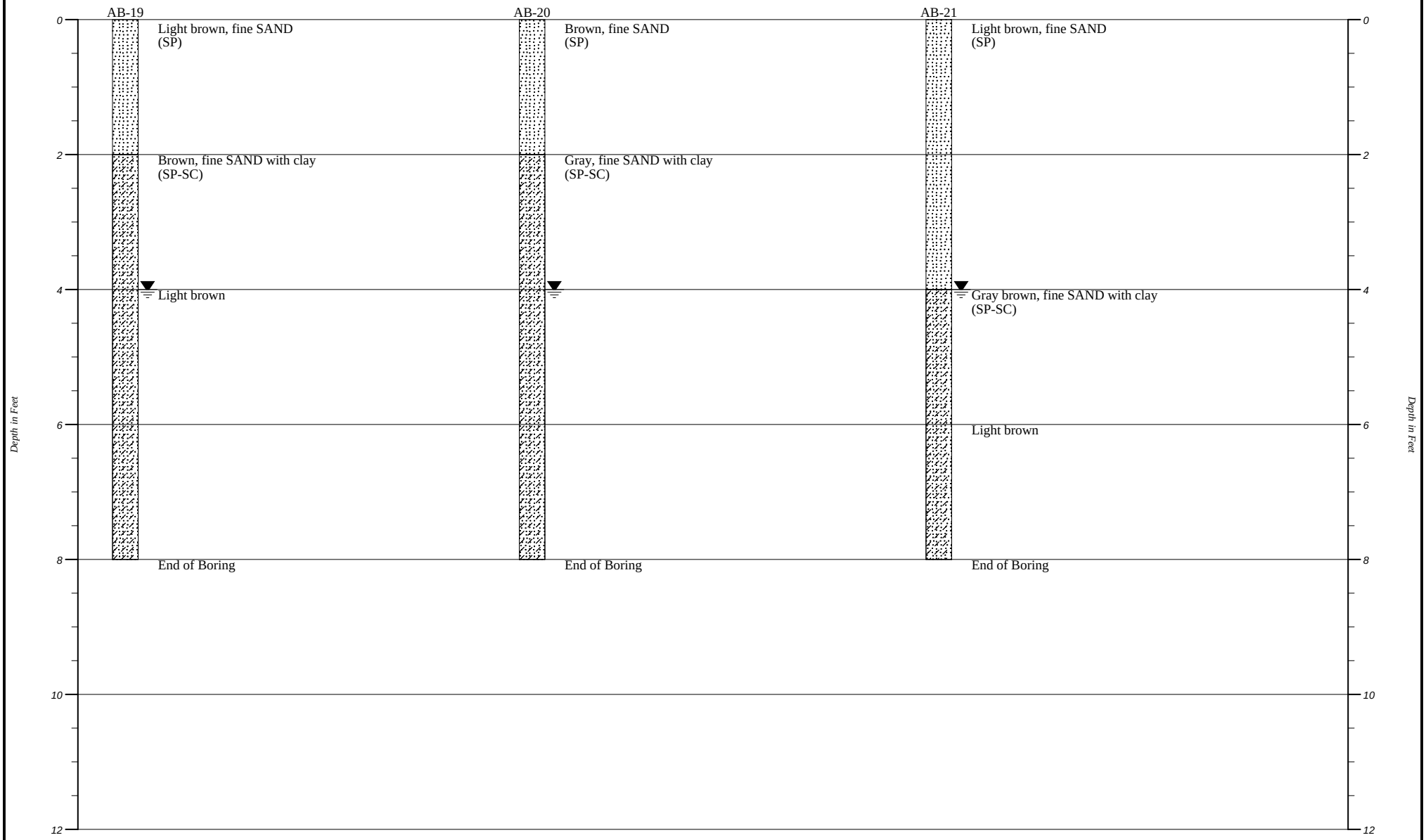
Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Poorly graded sand with silt
- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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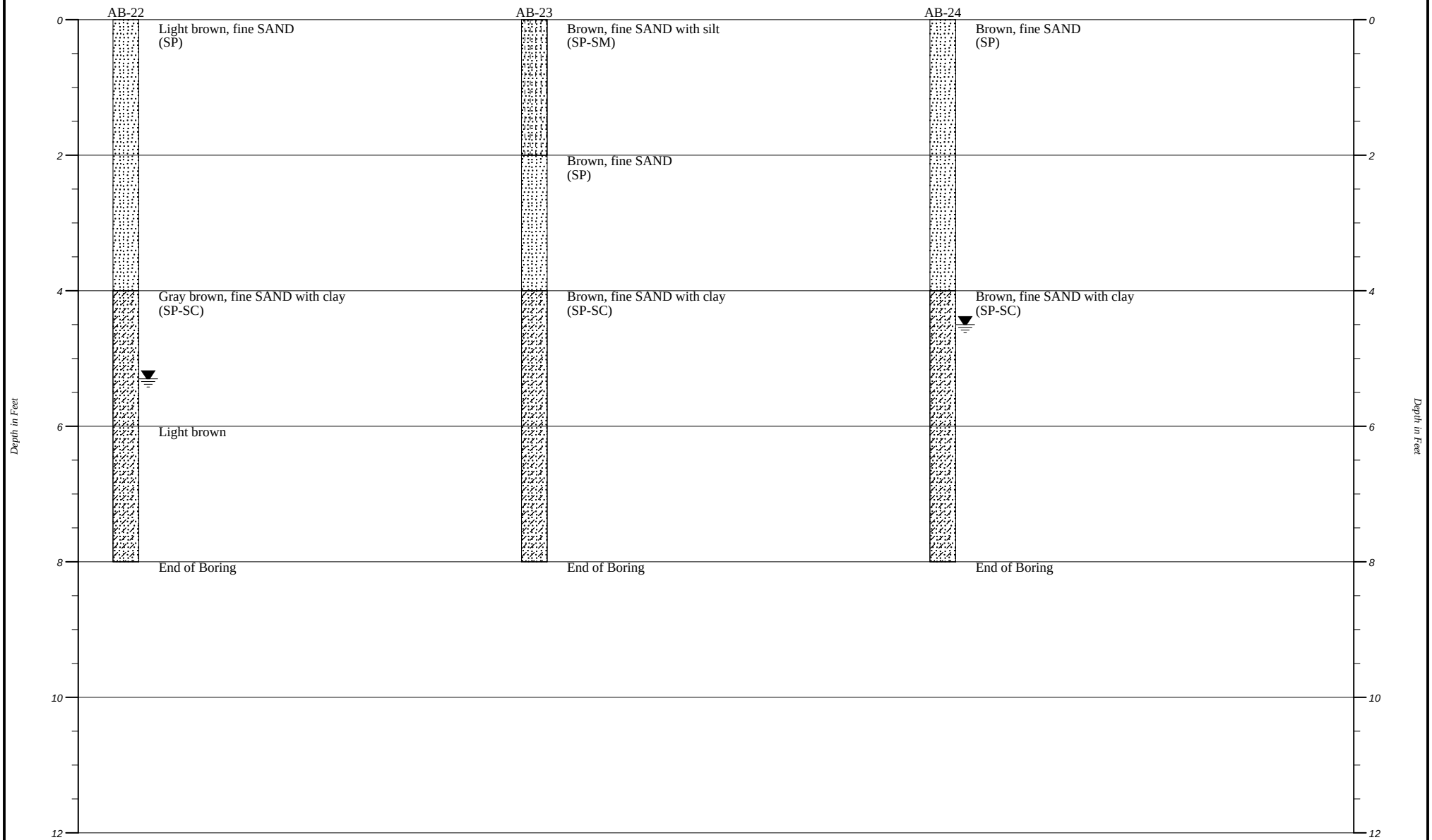
Deeson Subdivision

PROJECT NO. 21-5064



Plan View

Strata symbols

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- Clayey sand
- Poorly graded sand with silt
- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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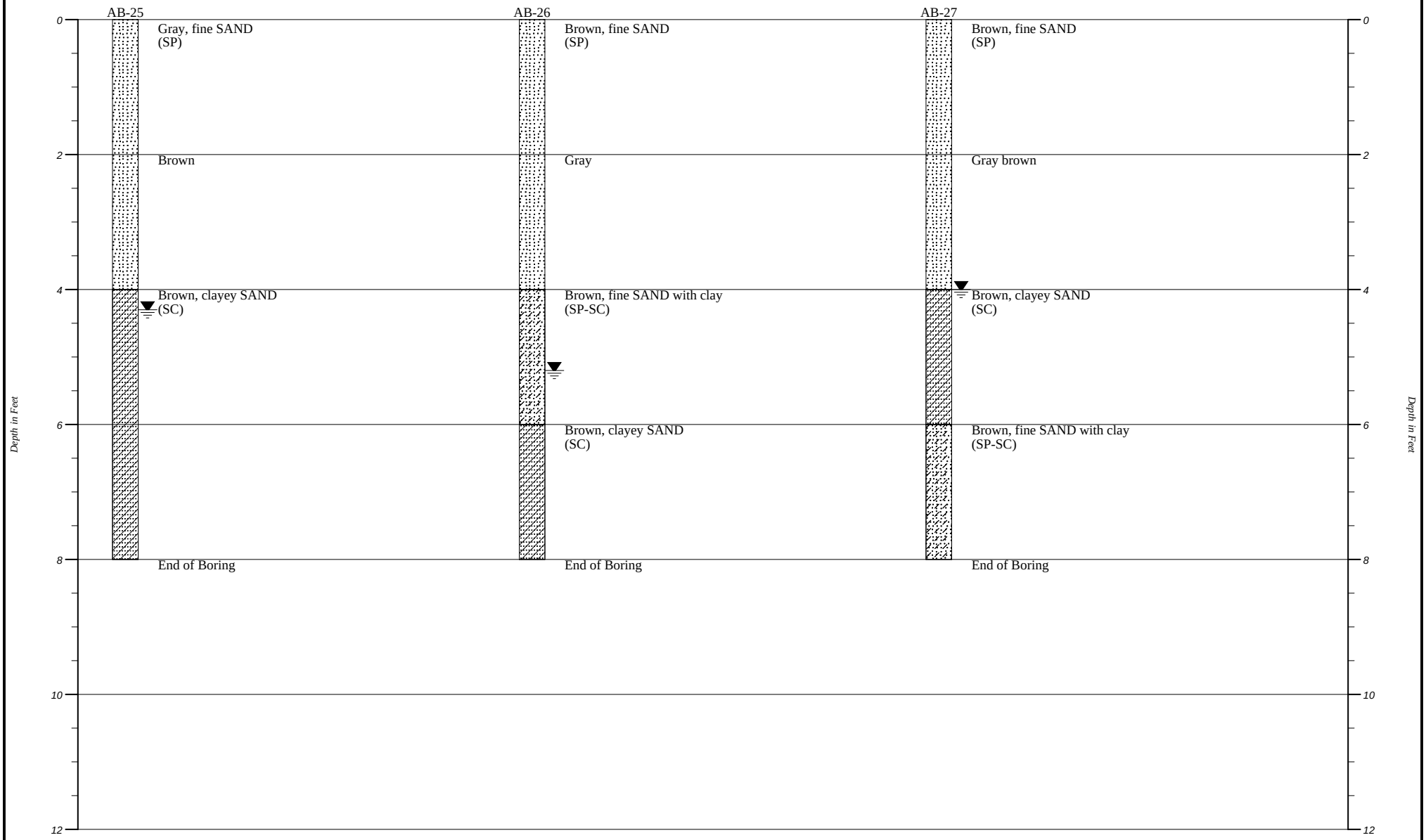

Plan View

Strata symbols

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Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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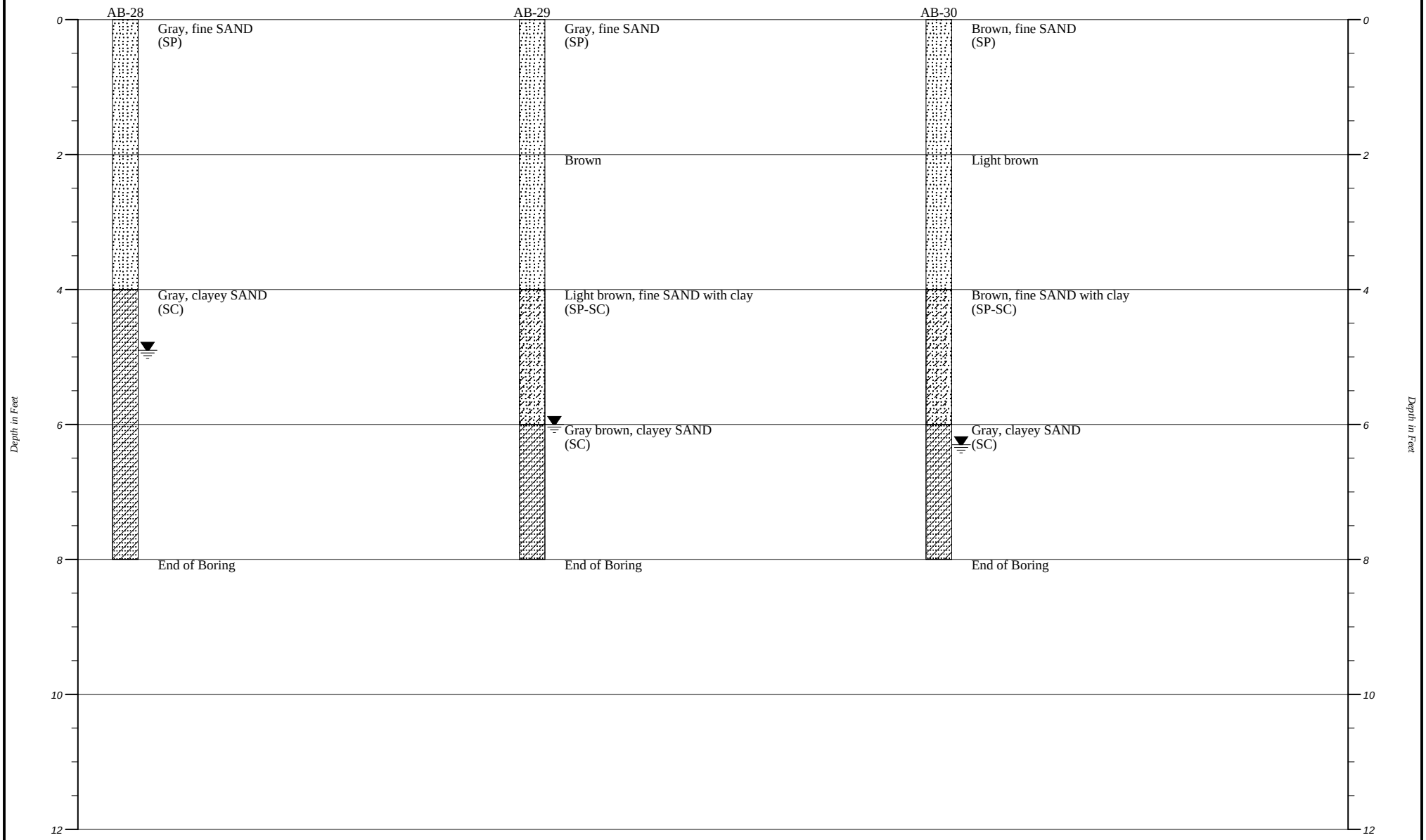

Plan View

Strata symbols

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- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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Deeson Subdivision

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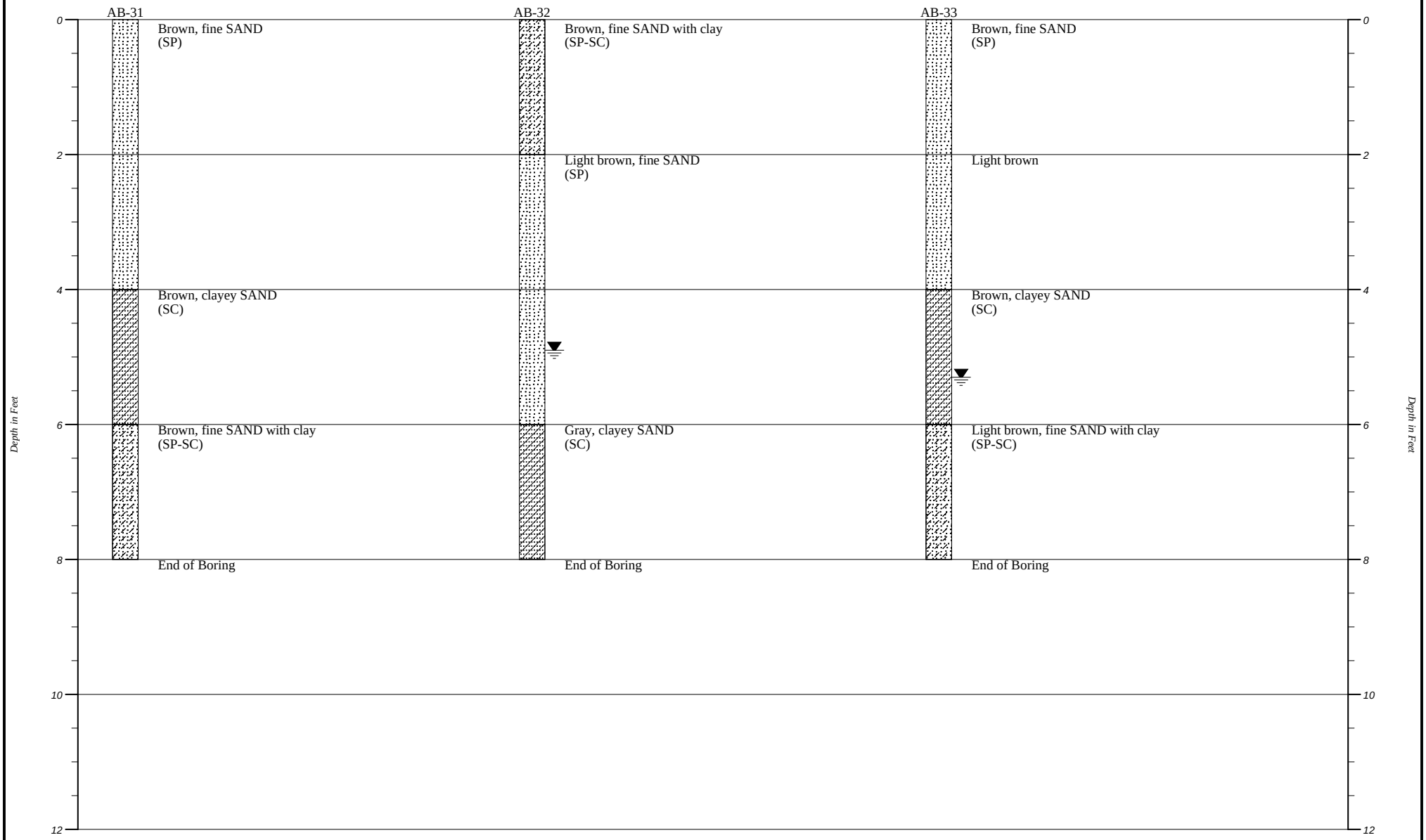

Plan View

Strata symbols

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- Poorly graded sand with silt
- Poorly graded sand with clay

Faulkner Engineering Services, Inc.

AUGER BORING PROFILES

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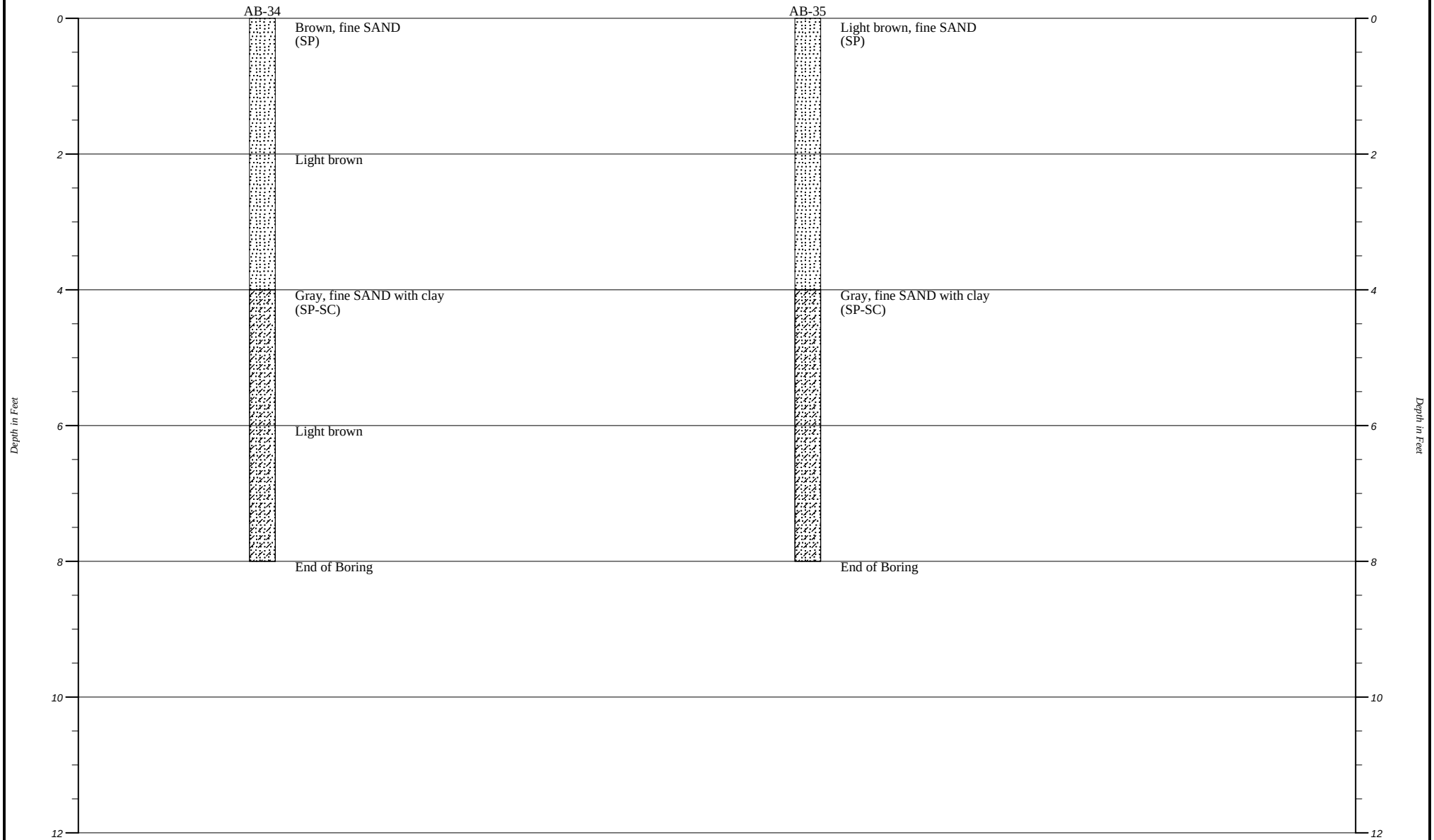

Plan View

Strata symbols

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Deeson Subdivision

PROJECT NO. 21-5064

APPENDIX B

Key to Soil Classification

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

Major Division		Group Symbol	Laboratory Classification Data		Soil Description
			Finer than No. 200 Sieve %	Supplementary Requirements	
Coarse-Grained (Over 50% by Weight Coarser than No. 200 Sieve)	Gravelly Soils (Over Half of Coarse Fraction Larger than No. 4 Sieve)	GW	0 - 5*	$C_u \geq 4$ and $1 \leq C_c \leq 3$	Well-Graded Gravels, Sandy Gravels
		GP	0 - 5*	$C_u < 4$ and / or $1 > C_c > 3$	Gap-Graded or Uniform Gravels, Sandy Gravels
		GM	12 or More*	PI < 4 or Below A-Line	Silty Gravels, Silty Sandy Gravels
		GC	12 of More*	PI ≥ 7 and On or Above A-Line	Clayey Gravels, Clayey Sandy Gravels
	Sandy Soils (Over Half of Coarse Fraction Larger than No. 4 Sieve)	SW	0 - 5*	$C_u \geq 6$ and $1 \leq C_c \leq 3$	Well-Graded Sands, Gravelly Sands
		SP	0 - 5*	$C_u < 6$ and / or $1 > C_c > 3$	Gap-Graded or Uniform Sands, Gravelly Sands
		SM	12 or More*	PI < 4 or Below A-Line	Silty Sands, Silty Gravelly Sands
		SC	12 of More*	PI ≥ 7 and On or Above A-Line	Clayey Sands, Clayey Gravelly Sands
Fine-Grained (Over 50% by Weight Finer than No. 200 Sieve)	LOW Compressibility (Liquid Limit Less Than 50)	ML	Plasticity Chart		Silts, Very Fine Sands, Silty or Clayey Fine Sands, Micaceous Silts
		CL	Plasticity Chart		Low Plasticity Clays, Sandy or Silty Clays
		OL	Plasticity Chart, Organic Odor or Color		Organic Silts and Clays of Low Plasticity
	HIGH Compressibility (Liquid Limit Greater Than 50)	MH	Plasticity Chart		Micaceous Silts, Diatomaceous Silts, Volcanic Ash
		CH	Plasticity Chart		Highly Plastic Clays and Sandy Clays
		OH	Plasticity Chart, Organic Odor or Color		Organic Silts and Clays of High Plasticity
Soils with Fibrous Organic Matter		PT	Fibrous Organic Matter, Will Char, Burn, or Glow		Peat, Sandy Peats, and Clayey Peat

*For Soils having 5 to 12 percent passing the No. 200 Sieve, use a dual symbol such as GW-GC.