Report
Geotechnical Engineering Services
Eagle Cove Subdivision
North Range Road
Cocoa, Florida
PSI Project No. 07572635

Project Number: 07572635
August 20, 2021

Professional Service Industries, Inc.
1748 33rd Street, Orlando, FL 32839
Phone: (407) 304-5560
Fax: (407) 304-5561

Dr. Srinivas Seela & Dr. Hari Sheela
Karali Associates, LLC
2642 Fawnlake Trail
Orlando, Florida 32828

RE: Report
Geotechnical Engineering Services
Eagle Cove Subdivision
North Range Road
Cocoa, Florida

Dear Mr. Crawford:

In general accordance with PSI Proposal 0757-330324 and your authorization, **Professional Service Industries, Inc. (PSI), an Intertek company**, has provided geotechnical engineering services in connection with the referenced project. This report provides an overview of the field work and laboratory testing carried out by us on the project, plus it provides geotechnical engineering recommendations related to site preparation, stormwater considerations, retaining wall design and pavement considerations.

PROJECT CONSIDERATIONS

The site under consideration herein is an undeveloped tract of land located on the east side of North Range Road, in Cocoa, Florida. More specifically, the property is bordered by wetlands to the east, residential homes that front onto Kathi Kim Street to the south, North Range Road to the west, and undeveloped vacant land, plus further wetlands to the north. The overall site encompasses approximately 57.2 ± acres and comprises mostly uplands that are densely wooded in the south with moderate tree cover and some open areas in the north. The eastern limits of the property consist of contiguous wetlands. A few smaller isolated wetland areas are also present in the upland portions of the site. An existing maintained underground gas utility easement crosses the property diagonally from the southeast to the northwest. An existing wet well/lift station is also present on the west edge of the site off North Range Road.

Based on the information provided to us, we understand the project is a new residential development comprising 56± residential lots and two storm water management ponds. Included with the construction will be civil infrastructure, retaining walls (primarily at select areas along the edges of the uplands with the easterly wetlands) and borrow fill from the pond areas that will be placed in low-lying portions of the site to raise site grades. The conceptual plan for the proposed development layout is included on **Sheet 1**.

The foregoing information has been used for the purpose of preparing this report. Adjustments to the evaluations and recommendations may be necessary if the planned development differs from the noted project information.

REVIEW OF PUBLISHED DATA

USGS Topographic Map

The topographic survey maps published by the USGS entitled "Lake Poinsett, Florida" and "Sharpes, Florida" were reviewed for ground surface features in the area of the proposed development. Based on this review, the natural ground surface elevation is on the order of +20 feet NGVD29. A review of the site-specific topographic information provided to PSI indicates current ground surface elevations at the site generally range from approximately +19 to +22 feet NAVD88 (approximately +20 to +23 feet NGVD29).

The survey also indicates a shallow east-west ditch that is some 2 to 3 feet deep generally crossing the site on an alignment from Hooper Road in the west to Ivy Drive in the east. It appears the material excavated from the east-west ditch were placed in areas adjacent to the ditch. Additionally, two areas appeared to have been excavated north and south of the east-west ditch, where elevations are lower than the adjacent prevailing grades. A series of existing roadside drainage ditches are present along the west side of North Range Road with these features shown to have bottom elevations in the range +15 to +17 feet NAVD88. The elevation of North Range Road where depicted on the survey plan is generally indicated to be at +22 feet NAVD88.

SCS Soil Survey

The "Soil Survey of Brevard County, Florida," published by the USDA SCS, was reviewed for general near-surface soil information within the general project vicinity. This information indicates that there are four soil groups within the vicinity of the proposed project. The general information provided by the SCS for the mapped soil units is summarized in the following table.

Soil Series	Depth (inches)	Unified Classification	USDA Seasonal High Groundwater Table
			Depth (feet)
36 – Myakka sand, 0 to 2 percent slopes	0 to 80	SP-SM	0.5 to 1.5
49 – Pomello sand, 0 to 5 percent slopes	0 to 80	SP, SP-SM, SM	1.5 to 3.5
54 – St. Johns sand, 0 to 2 percent slopes	0 to 60	SP-SM	0 to 0.5
64 – Terra Ceia muck, frequently flooded	0 to 70	PT	+2.0 to 0

The site is primarily mapped as Soil Series 36, with Soil Series 54 being mapped in a transitional zone from uplands to wetlands in the southeastern portion of the site. Soil Series 49 is mapped in a small zone in the very northern edge of the site (in a few of the proposed residential lots), The easterly wetlands are mapped as Soil Series 64 and encroach slightly into the planned development area in a few select zones.

FIELD EXPLORATION

General

To evaluate subsoil conditions in the proposed development area, we drilled/sampled a series of four Standard Penetration Test (SPT) borings and twenty auger borings across the site. The SPT borings were drilled near planned retaining wall areas and advanced to depths of 20 feet below the existing ground surface. In the SPT borings, the upper 4 feet were augered by hand to confirm utility clearance. Below 4 feet, SPT samples were recovered virtually continuously to 10 feet with the sampling frequency thereafter being at 5-foot centers to boring termination. The auger borings comprised 5 explorations drilled in in the planned stormwater pond areas to depths of 20 feet below existing grade, plus 15 borings to depths of 5 to 7 feet below the existing ground surface in the planned roadways of the development. In the auger borings, soil samples were collected at regular intervals and or at each change in stratum.

The approximate locations of the borings are presented on **Sheet 1**. The SPT and auger borings were performed in general accordance with the procedures of ASTM D-1586 and ASTM D-1452, respectively. The soil types encountered at the specific boring locations are presented in the form of soil profiles on **Sheets 2** through **4**, along with a legend describing the encountered soils in USCS format, laboratory testing results and the measured groundwater levels. The SPT borings were performed using an automatic hammer to advance the sample spoon.

The stratification presented is based on visual observation of the recovered soil samples, laboratory testing and interpretation of field logs by a geotechnical engineer. It should be noted that variations in the subsurface conditions are expected and may be encountered between and away from PSI's borings. Also, whereas the individual boring logs indicate distinct strata breaks, the actual transition between the soil layers may be more gradual than shown on the soil profiles.

In addition to the borings, PSI completed a series of muck probes in select wetland areas along the eastern edge of the site where organic soils were mapped by the Soil Survey to potentially encroach into the proposed development footprint. The location and results of the muck probes are presented on **Sheet 5**. For the most part, the muck probes disclosed little to no muck with only a few probes indicating muck/organic soils on the order of 1 foot thick. However, it should be noted that other areas not explored may contain deeper deposits of organic soils. More detailed discussions related to the muck probing are presented in a later section of this report.

Soil Conditions

Based on the borings completed for the project, subsurface conditions are reasonably consistent across the site. Subsoils in the depth interval drilled (5 to 20 feet below the existing ground surface) generally comprise a varying sequence of fine sands that grade from being relatively clean to slightly silty in composition (i.e. SP and SP-SM materials). Intermixed in the upper soils are trace amounts of roots/organic debris associated with the vegetation that covers most of the site.

Recorded SPT blow counts indicate the sands for the most part to be in a loose to medium dense condition, with a few discontinuous zones of very loose or dense materials. In general, the looser sands are present in the upper 13.5 feet followed by the denser sands that persist to boring termination.

Groundwater Conditions

At the time of our field work, groundwater was encountered in the borings at depths in the range 1.3 to 3 feet below the existing ground surface. It should be noted that the measured groundwater levels may not have been fully stabilized before needing to backfill the boreholes.

The estimated normal seasonal high groundwater levels presented herein are based on the observed soil stratigraphy, conditions observed in the borings, groundwater levels and USDA Soil Survey information**.** In this regard, we estimate the normal seasonal high groundwater table (SHWT) to occur within 0.5 to 1.5 feet (0 to 18 inches) of the natural ground surface across most of the site, with levels being above the ground surface in the low-lying areas and the wetlands of the site. The noted depths generally correspond to elevations in the range +19 to +20.5 feet NAVD88 across the site. A groundwater contour map of the estimated seasonal high groundwater table is presented on **Figure 1**.

In general, the normal seasonal high groundwater level is not intended to define a limit or ensure that future seasonal fluctuations in groundwater levels will not exceed the estimated levels. Groundwater conditions will vary with environmental changes and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as swales, drainage ponds, underdrains and areas of covered soil (buildings, paved parking lots, sidewalks, etc.).

A detailed description of the individual borings is shown on the soil profiles on **Sheets 2** through **4**.

Muck Probes

Muck probing was completed in the two planned retaining wall areas in the northeast and southeast where wetlands/areas mapped as potentially having surficial organic soils encroach into the development area. The purpose of the muck probes was to assess the relative depth/thickness and lateral extent of surficial organic soils (if any) in these areas. The muck probes were carried out by manually advancing a one-half inch diameter rod into the ground and measuring the depth to practical refusal to manual penetration of the rod. This refusal depth is taken as the thickness of the surface organic soils. The approximate locations and results of the muck probes are shown on **Sheet 5**.

For the most part, PSI's muck probes did not indicate any appreciable amount (i.e. less than one-half foot) of very soft/loose surficial organic soils with the probe rod typically meeting practical refusal/sands very near the ground surface. An exception to the foregoing was at two probe locations furthest east into the wetland where the thickness of muck ranged from 0.7 to 1.2 feet.

It should be noted that manual penetration of the probe can be stopped by roots, sand lenses, or other obstructions that could result in the underestimation of the thickness of organic soils. Muck probe data should only be used for general characterization of soil conditions. Muck probe data should not be used for determining soil removal quantities. Based on experience, we expect the existing wetlands and other low-lying areas/water bodies that are to be reclaimed/infilled will contain some organic soils and or bottom silts/sediment (typically at least a few inches thick) that will need to be removed prior to infilling. This work should be carried out in the dry to allow confirmation all unsuitable soils/sediment is removed and to facilitate compaction of the stripped grade and backfill.

Laboratory Testing

Selected soil samples were tested to determine percent fines passing the U.S. Standard No. 200 sieve. Additionally, two relatively undisturbed Shelby tube samples collected from the stormwater pond areas were subject to falling-head permeability tests. These tests were carried out following appropriate ASTM procedures. The results of the tests are included with the soil profiles on **Sheets 2** and **4** adjacent to the depth increment of the test specimen.

SITE SUITABILITY

Based on the results of PSI's borings, it is our opinion that the subsoil and groundwater conditions are generally suitable for the proposed residential development from geotechnical engineering perspective. Provided the subgrade is properly prepared, shallow spread foundations can be used for support of the retaining walls. Such foundations can be designed for a net allowable bearing pressure of 2,500 pounds per square foot (psf).

Provided adequate separation is maintained between the normal seasonal high groundwater table and the bottom of pavement base, pavements can be constructed using conventional asphalt sections.

Based on the encountered soil and groundwater conditions at the site, it appears the site is suitable for the design of wet bottom ponds, similar to other nearby existing ponds.

More detailed recommendations regarding site preparation, pavements, stormwater and retaining wall considerations for the project are provided in the following sections of this report.

SITE PREPARATION CONSIDERATIONS

General

The following recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there is any change in the project criteria, including the location or orientation of the planned development, a review must be made by PSI to determine if additional fieldwork and/or any modifications to our recommendations will be required.

Once final design plans and specifications are available, a general review by PSI is strongly recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork recommendations are properly interpreted and implemented.

Site Clearing/Stripping

At the outset of construction, clearing and grubbing including removal of any organic-laden topsoil that remains on the site should be completed. This normally includes removing the surface vegetation/trees, stripping topsoil, grubbing major root systems, and removing any miscellaneous debris, organic soils and/or deleterious materials. At a minimum, it is recommended that the clearing/stripping operations extend at least ten feet beyond the proposed development perimeter. Material generated during stripping operations should be disposed of off-site in a proper manner as directed by the Owner. Initial site clearing and preparation work should be carried out under the observation of a representative of PSI's Geotechnical Engineer.

Fill Placement and Subgrade Preparation

Following the clearing/stripping operations, the exposed subgrade should be evaluated as directed by PSI's Geotechnical Engineer or his representative to confirm that all unsuitable materials have been removed. The development areas should then be proof rolled to provide a stable/unyielding subgrade prior to placing fill. Proof rolling should consist of compaction with a large diameter, vibratory drum roller. The roller should be capable of imparting a maximum dynamic drum force of at least 36,000 pounds. Proof rolling should consist of a minimum of ten overlapping coverages of the roller in a criss-cross pattern with a maximum travel speed of 2 feet per second. The limits of proof rolling should encompass the development areas, plus a horizontal distance of 10 feet beyond the outside edges of the same where practical.

Compaction can be completed in the vibratory or static mode in order to meet the minimum density requirements stated below. Based on past experience, we recommend compaction equipment be operated in the static mode within 75 feet of existing structures to reduce vibrations that could cause structural distress or disturb building occupants. Careful observations should be made during proof rolling to help identify any areas of soft/yielding soils that may indicate the presence of unsuitable soils that require over-excavation and replacement filling.

It is recommended that the subgrade, to a minimum depth of one foot below stripped grade, be compacted to at least 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density within the building and pavement areas. Following satisfactory completion of initial compaction of the stripped subgrade, the proposed development area may be brought up to finished grades as required.

Engineered Fill

Any fill for the project should consist of clean fine sand with less than 10 percent by dry weight passing the U.S. Standard No. 200 sieve and be free of rubble, organics, clay, debris and other deleterious material. Fill should be tested and approved prior to import and placement. Each lift should have a loose thickness not exceeding 12 inches. Density tests should be performed to confirm the required compaction is being achieved prior to placing the next lift.

Prior to beginning compaction, soil moisture conditioning may be required. Soil moisture contents should be controlled in order to facilitate proper compaction. A moisture content within two percentage points of the material's optimum indicated by the modified Proctor test (ASTM D-1557) is recommended prior to compaction of the natural ground and fill. All engineered fill should be compacted to at least 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density.

On-Site Soil Suitability

Materials to be used for backfill or compacted fill for construction should be evaluated and, if necessary, tested by PSI prior to placement to determine if they are suitable for the intended use. In general, based on the boring and laboratory testing results, the relatively clean on-site sandy soils (Strata 1, 2, 3 and 5) appear to be suitable for use as engineered fill, provided the material is free of debris, rubble, clay, roots and organics.

For the most part, the soils in Stratum 4 grade slightly silty (SP-SM materials) but occasionally the sands locally contain a higher amount of silt fines whereby the soil may grade as silty fine sand (SM materials). Silty sands (if encountered) potentially could be difficult to moisture condition and compact, especially during the wet season.

Due to the lower permeability characteristics of siltier materials, such soils should not be used within 24 inches of pavement base materials. If it is desired to use the siltier sands as fill, they should be thoroughly blended with other, more suitable materials (clean sands) in such a way that the content of fines of the hybrid material is less than 10 percent passing the No. 200 sieve. Samples of the soil to be used as fill should be taken during excavation as necessary to verify that the soils meet this requirement.

OTHER CONSIDERATIONS

Pavement Support

Recommendations for a medium-duty pavement section for the interior residential roadways are included in the following. Provided that pavements are designed to provide at least 18 inches of clearance between the bottom of the base material and the estimated normal season high groundwater table, the basecourse for asphalt sections can comprise limerock or crushed concrete. Recommendations for a medium-duty pavement section are included in the following.

Medium-Duty (Interior Roads)

2.0 inches	Type SP Asphaltic Concrete (min. PG 67-22)
8.0 inches	Limerock (LBR = 100) or crushed concrete (LBR = 150) basecourse
12.0 inches	Stabilized subgrade (LBR = 40)

The recommended pavement section is based on past experience with similar projects and the encountered subsurface conditions at the site. All pavement materials and construction should meet the more stringent of the Florida Department of Transportation (FDOT) and local city/county requirements. The noted pavement sections should be considered recommended minimums based on anticipated traffic loadings and our past experience.

Stormwater Management

We understand stormwater management for the site will be handled by two stormwater ponds to be excavated/constructed in the west-central and northeast portions of the site. Based on the prevailing subsoil and groundwater conditions, the site appears suitable for wet-bottom ponds. We expect the excavations for stormwater facilities will for the most part generate granular (sandy) materials suitable for use as fill on the project.

To evaluate shallow soil permeability characteristics in the noted pond areas, PSI collected two relatively undisturbed Shelby tube samples from select pond borings for laboratory permeability testing. The results of these tests are included with the corresponding pond boring profiles on **Sheet 4** with a summary of the same being provided in the following table.

Boring / Sample Depth (feet)	Percent Fines Passing the No. 200 Sieve	Coefficient of Vertical Permeability, Kv (feet/day)
PB-1 / 0.5	1.7	30*
PB-5 / 1.0	1.3	26*

*Permeability rates based on raw laboratory test results and does not include a factor of safety.

The following parameters are recommended for design of the stormwater facilities based on the corresponding boring results, permeability testing results and groundwater conditions.

East Pond (Borings PB-1 and PB-2)	
Estimated Normal Seasonal High Groundwater Table	+20.0 feet NAVD88
Estimated Average Wet Season High Groundwater Table	+19.0 feet NAVD88
Base of Aquifer	+0 feet NAVD88
Coefficient of Horizontal Permeability, Kh	+45 feet/day
West Pond (Borings PB-3, PB-4 and PB-5)	
Estimated Normal Seasonal High Groundwater Table	+19.5 feet NAVD88
Estimated Average Wet Season High Groundwater Table	+18.5 feet NAVD88
Base of Aquifer	+0 feet NAVD88
Coefficient of Horizontal Permeability, Kh	+39 feet/day

The recovery of a given stormwater system is dependent on the soil permeability as well as the groundwater table, system bottom elevation, system geometry, confining layer and water level in the system. We recommend a commercially available computer program such as PONDS or MODRET be used by an engineer experienced in groundwater modeling to evaluate the proposed stormwater system. The system should be designed and constructed in accordance with Water Management District requirements. We recommend an appropriate safety factor be applied to the stormwater model.

Retaining Walls

Based on the information provided, we understand several retaining walls may be constructed as part of the project including along portions of the eastern limits of the site where development approaches the wetland buffer, and in the west near the existing wet well/lift station. No detailed information of the wall designs are available at this time; however, we anticipate the walls will comprise a geogrid/geosynthetic reinforced modular block-type retaining wall (i.e. Keystone Wall or similar designed by others) or a cast in place concrete wall that is relatively low in height.

Shallow foundations for walls (if any) should bear on properly placed and compacted cohesionless (sand) fills or on compacted native sands. All footings should be embedded so that the bottom of the foundation is a minimum of 18 inches below adjacent finished grades on all sides. Wall foundations should be a minimum of 24 inches wide. A net allowable bearing pressure of 2,500 psf can be used for design of the shallow foundations.

The retaining walls should be designed to resist pressures exerted by the adjacent soils and hydrostatic head. If the walls are not restrained during backfilling but are free to rotate at the top, active earth pressure should be used in design. If the walls will be restrained, they should be designed assuming at-rest pressures.

Recommended soil parameters for the near-surface granular soils encountered at the site and clean sand backfill are presented on the following page.

Total Unit Weight, γ_T	=	120 lb/ft^3
Angle of Internal Friction, ϕ	=	30°
Coeff. of Sliding Friction	=	0.40
Active Soil Pressure coeff., K_a	=	0.33
At-rest Soil Pressure coeff., K_o	=	0.50
Passive Soil Pressure coeff., K_p	=	3.00

The recommended parameters assume that adequate drainage is provided behind the walls to prevent the buildup of excess hydrostatic pressures. The design should incorporate hydrostatic effects and any surcharge loads that may be placed behind the walls. In order to avoid wall damage due to excessive compaction, hand operated mechanical tampers should be used to densify backfill soils; heavy compaction equipment should not be allowed within five feet of walls. The soils behind the walls should be compacted to approximately 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density.

As noted earlier, it is our assumption that the actual design of the retaining walls will be by others using the parameters provided herein. In the event that there are any questions on the parameters, please do not hesitate to contact us.

Dewatering

Dewatering is anticipated to be required for most excavations. Excavations that are only a few feet below the water table can likely be dewatered with a sump system. Deeper excavations will most likely require well-pointing or horizontal sock drains to achieve adequate drawdown. In either case, the dewatering system should be designed and operated to lower the groundwater table to a depth at least 2 feet below the bottom of surfaces to be compacted in any given area. The design and discharge of the dewatering system should be in accordance with Water Management District regulatory criteria.

Utility Excavations

All utility excavations should be made in accordance with recommendations outlined by the Occupational Safety and Health Administration Document *Construction Standards for Excavations (29CFR Part 1926.650-.652 Subpart P)*. Shoring should be designed in accordance with OSHA 2226, taking into consideration loads resulting from equipment, existing construction and/or fill stockpiles.

Difficulty may also arise during construction when trying to compact materials containing higher percentages of fines. If such soils become unstable during compaction operations due to moisture related conditions, we recommend those soils be undercut at least 12 inches below pipe inverts and drainage structures and the resultant excavation be infilled with compacted clean fine sand with less than 10 percent by dry weight passing the No. 200 sieve and gravel bedding of Florida Department of Transportation (FDOT) crushed stone (No. 57 stone). Utility bedding material should be an equal mixture of No. 57 stone and clean sand. Gravel/sand backfill should be compacted such that it is firm and unyielding. Unsuitable soils should be removed for the full width of the trench and to the depth required to reach suitable foundation material.

Excavations

In Federal Register, Volume 54, No. 209 (October 1989) the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to insure better the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, general construction excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed the Owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain the stability of both the excavation sides and bottom. The contractor's "responsible person," as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

LIMITATIONS

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This company is not responsible for the conclusions, opinions or recommendations made by others based on these data.

The scope of our exploration was intended to evaluate generally soil and groundwater conditions within the proposed development area and does address possible deep geologic conditions such as sinkholes. The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated. If any subsoil variations become evident during the course of this project, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature or location of the proposed development.

The scope of our services presented herein does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site studied. Any statements in this report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

CLOSURE

PSI appreciates the opportunity to provide our services to Karali Associates and FEG on this project and we trust the information presented herein is sufficient for your needs at this time. If you have any questions regarding the contents of this report, or if we may be of further service, please contact the undersigned.

Sincerely,

PROFESSIONAL SERVICE INDUSTRIES, INC.
Certificate of Authorization No. 3684

Max S. McGahan, P.E.
Project Engineer
Florida License No. 86580

Robert A. Trompke, P.E.
Florida Geotechnical Practice Leader
Florida License No. 55456

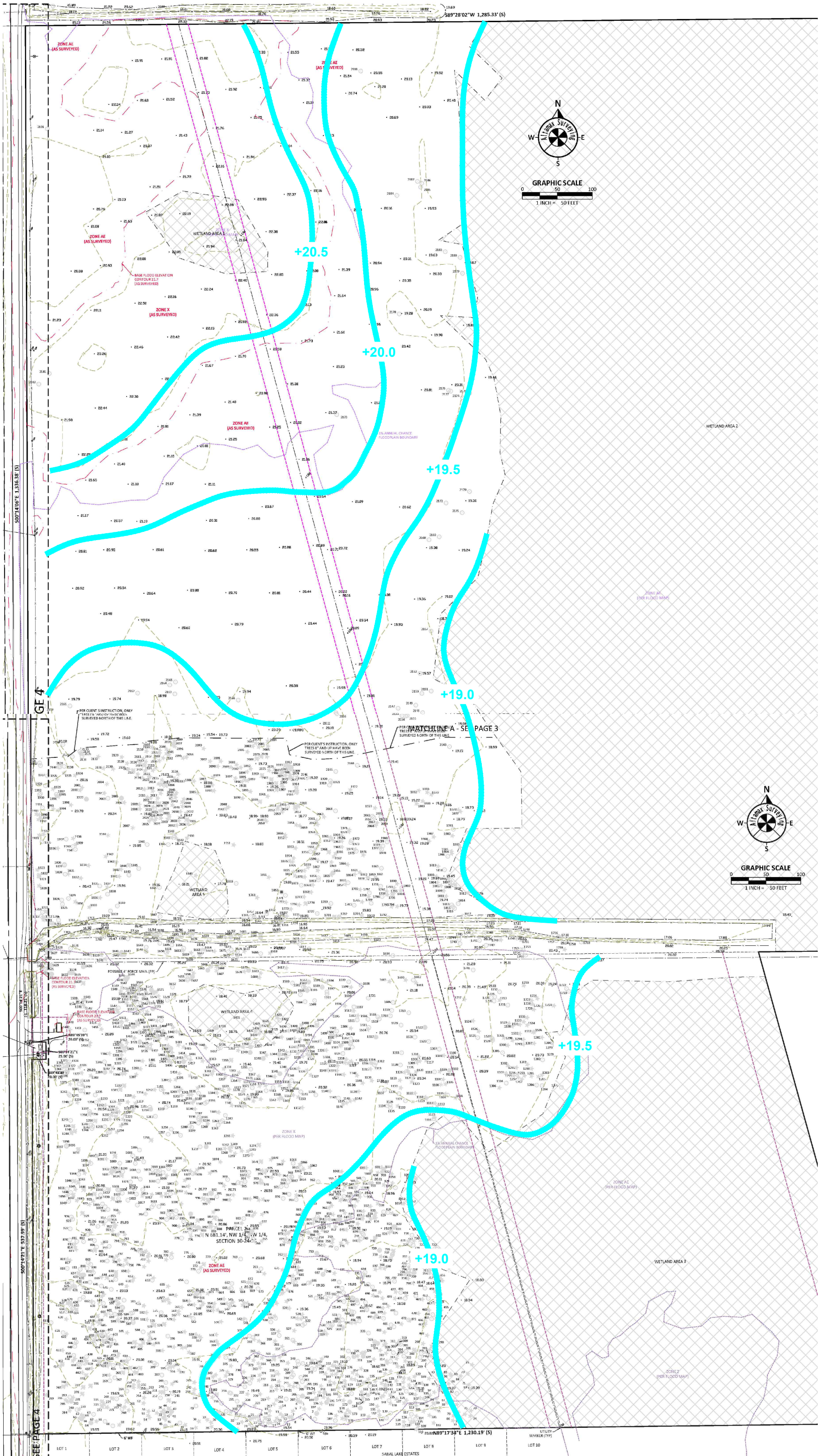
07572635 (Eagle Cove Subdivision, N. Range Rd, Cocoa)

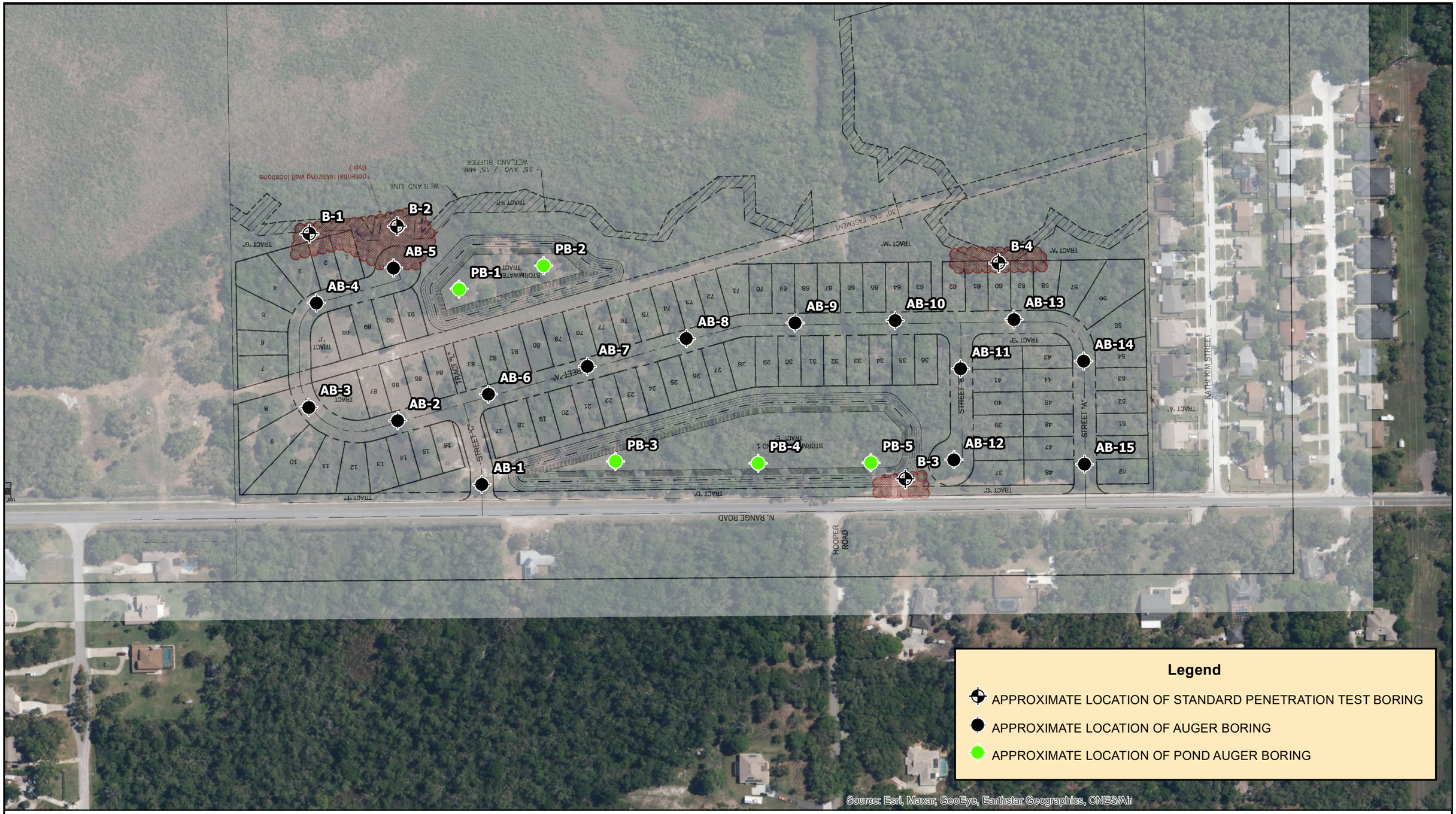
Attachments:

- Figure 1 – Groundwater Contour Map
- Sheet 1 – Boring Location Plan
- Sheets 2 through 4 – Boring Profiles
- Sheet 5 – Muck Probes Results

ATTACHMENTS

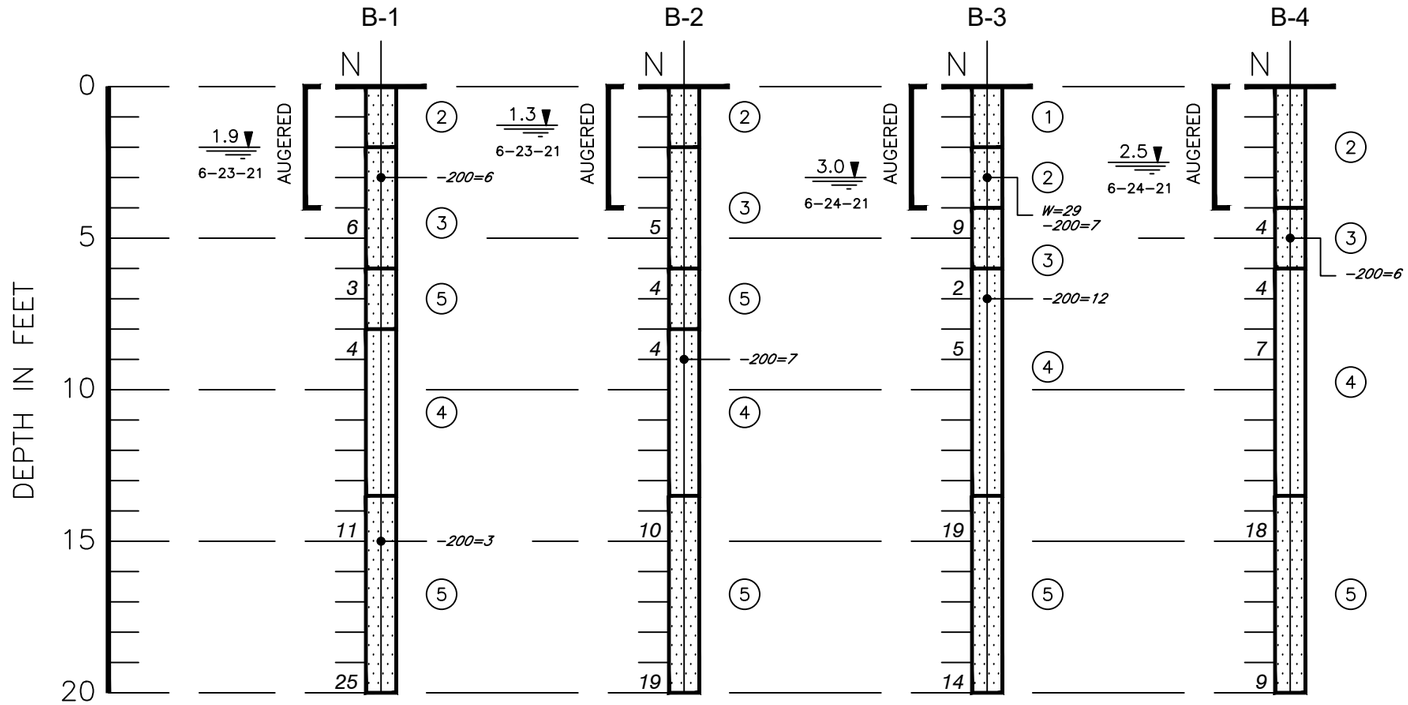
BOUNDARY & TOPOGRAPHIC SURVEY





REFERENCE: THE 2017 AERIAL PHOTOGRAPH WAS OBTAINED FROM ESRI. THE PRESENTED DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. INTERTEK-PSI ASSUMES NO RESPONSIBILITY FOR ANY DECISIONS MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON INFORMATION OBTAINED FROM THE ABOVE DATA.

PROJECT NO. **07572635** SCALE: **NOTED** DATE CREATED **7-30-21**	intertek psi 1748 33rd Street Orlando, FL 32839 (407)304-5560 (407)304-5561 fax	GEOTECHNICAL ENGINEERING SERVICES **EAGLE COVE SUBDIVISION** **NORTH RANGE ROAD** OCALA, FLORIDA	SHEET: **1** DRAWN: **DJW** CHECKED: **MM**	0 100 200 Feet 1 inch = 200 feet



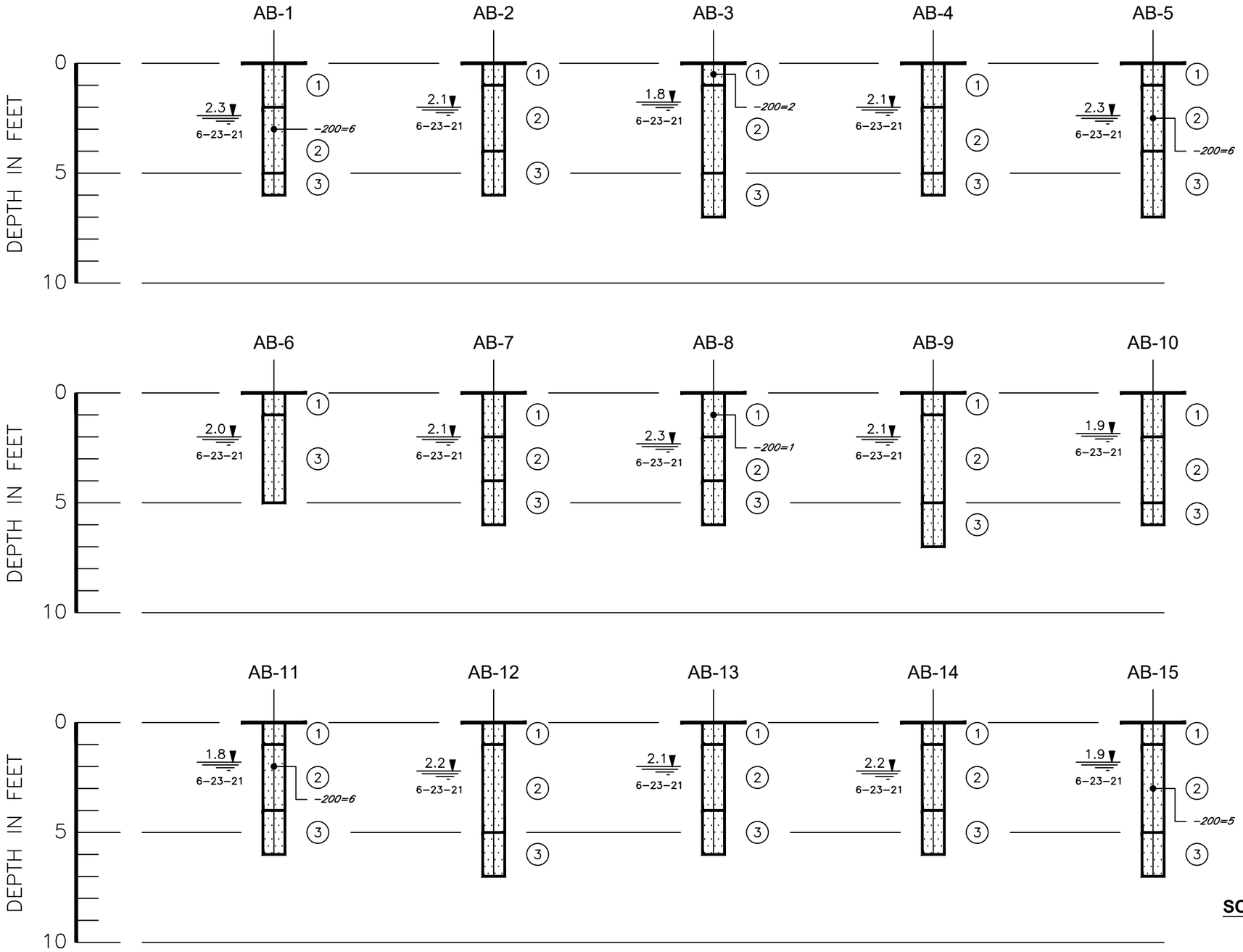
SOIL PROFILES

SCALE: 1"=5'

LEGEND

①	*GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ROOTS, (SP), (SP-SM)*
②	*DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE ROOTS, (SP), (SP-SM)*
③	*GRAY-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE CEMENTED SANDS, (SP), (SP-SM)*
④	*LIGHT GRAY-BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND, (SP-SM)*
⑤	*LIGHT GRAY TO GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM)*
(SP)	*UNIFIED SOIL CLASSIFICATION GROUP SYMBOL*
N	*STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT USING AN AUTOMATIC HAMMER*
1.9 ▼ 6–23–21	*DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING*
W	*NATURAL MOISTURE CONTENT IN PERCENT*
-200	*FINES PASSING #200 SIEVE IN PERCENT*

PROJECT NO. 07572635	intertek psi	1748 33rd Street Orlando, FL 32839 (407)304-5560 (407)304-5561 fax	GEOTECHNICAL ENGINEERING SERVICES **EAGLE COVE SUBDIVISION** **NORTH RANGE ROAD** COCOA, FLORIDA	SHEET: 2
SCALE: NOTED				DRAWN: DJW
DATE CREATED: 7-30-21				CHECKED: MM



LEGEND

(1)	*GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ROOTS, (SP), (SP-SM)*
(2)	*DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE ROOTS, (SP), (SP-SM)*
(3)	*GRAY-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE CEMENTED SANDS, (SP), (SP-SM)*
(4)	*LIGHT GRAY-BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND, (SP-SM)*
(5)	*LIGHT GRAY TO GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM)*
(SP)	*UNIFIED SOIL CLASSIFICATION GROUP SYMBOL*
1.9 / 6-23-21	*DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING*
W	*NATURAL MOISTURE CONTENT IN PERCENT*
-200	*FINES PASSING #200 SIEVE IN PERCENT*

SOIL PROFILES

SCALE: 1"=5'

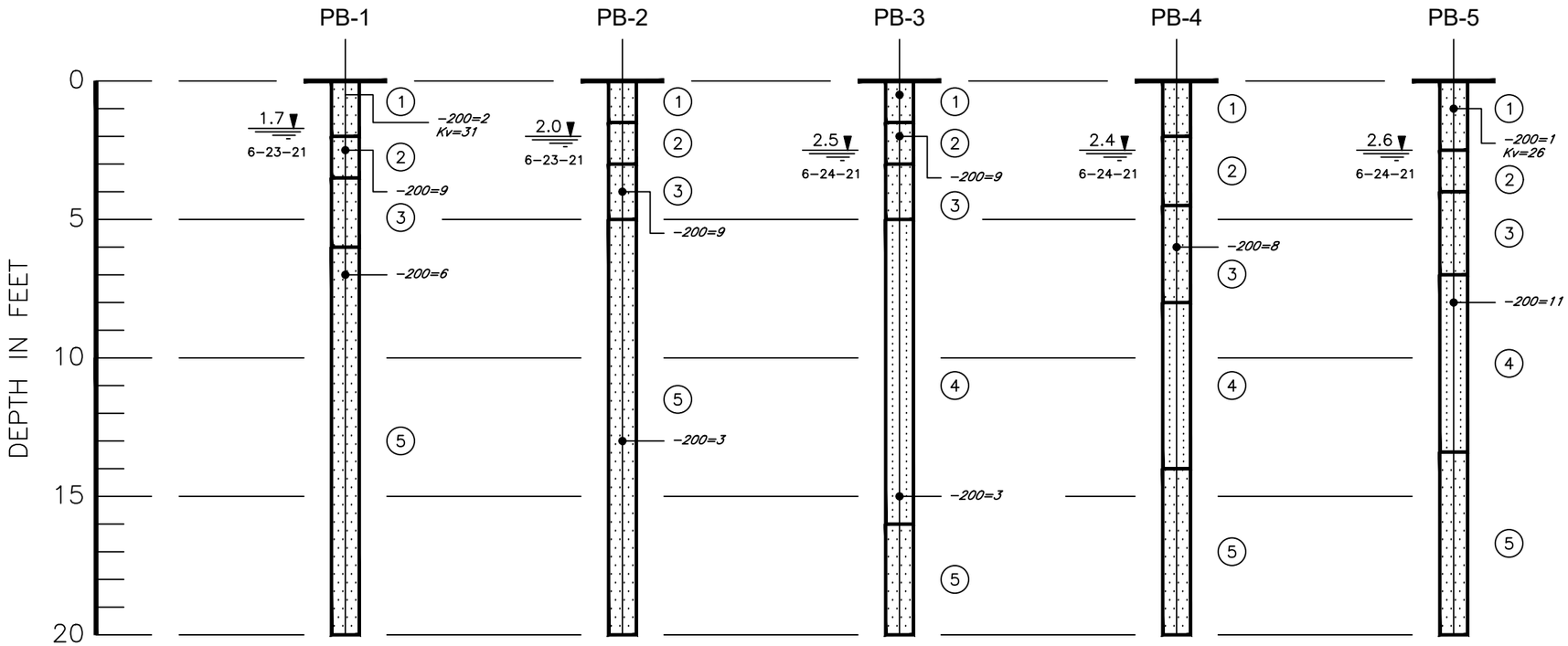
PROJECT NO. 07572635
SCALE: NOTED
DATE CREATED: 7-30-21

intertek psi
1748 33rd Street
Orlando, FL 32839
(407)304-5560
(407)304-5561 fax

GEOTECHNICAL ENGINEERING SERVICES

EAGLE COVE SUBDIVISION
NORTH RANGE ROAD
COCOA, FLORIDA

SHEET: 3
DRAWN: DJW
CHECKED: MM



SOIL PROFILES

SCALE: 1"=5'

LEGEND

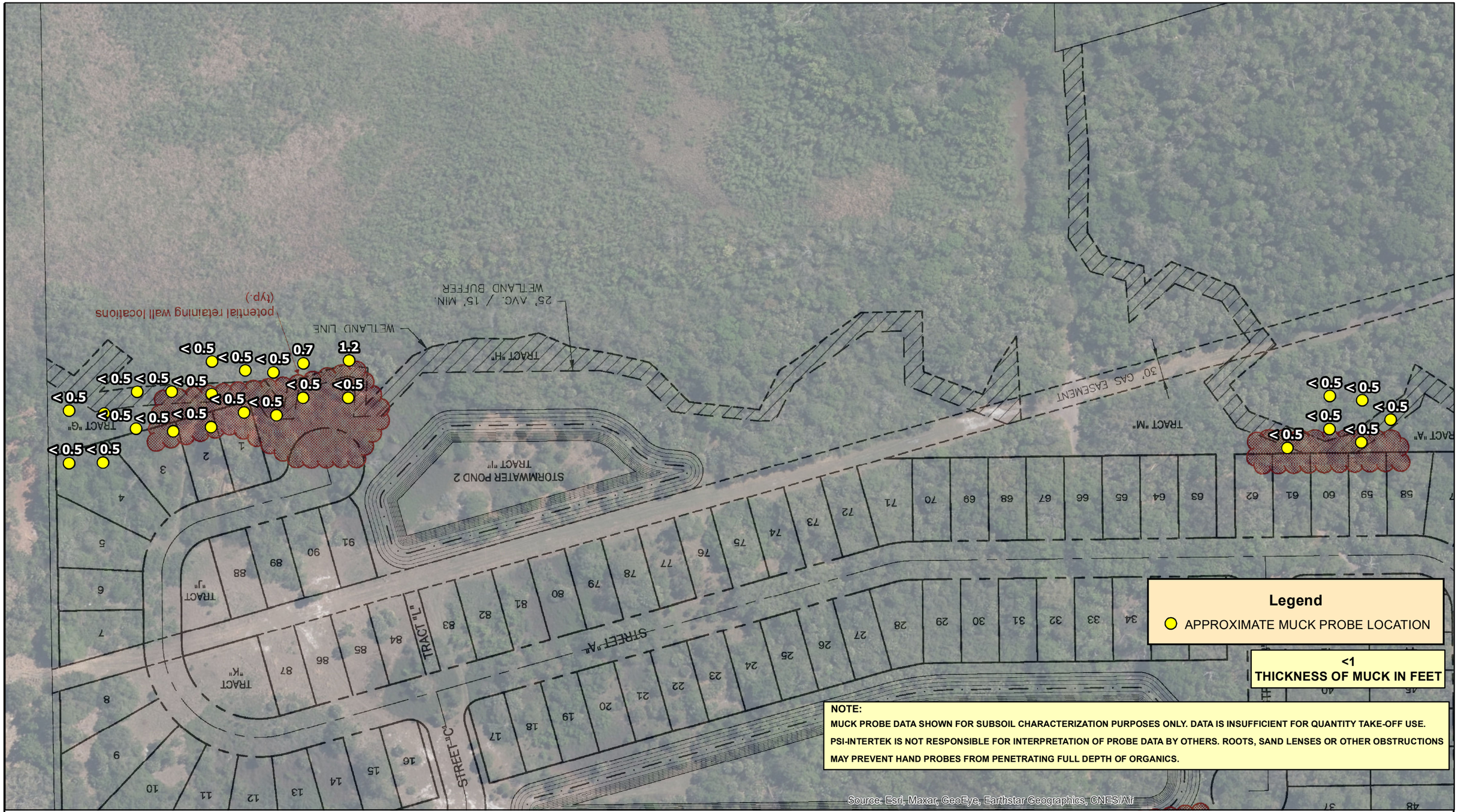
①	*GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ROOTS, (SP), (SP-SM)*
②	*DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE ROOTS, (SP), (SP-SM)*
③	*GRAY-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE CEMENTED SANDS, (SP), (SP-SM)*
④	*LIGHT GRAY-BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND, (SP-SM)*
⑤	*LIGHT GRAY TO GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM)*
(SP)	*UNIFIED SOIL CLASSIFICATION GROUP SYMBOL*
1.9 ▼ 6-23-21	*DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING*
W	*NATURAL MOISTURE CONTENT IN PERCENT*
-200	*FINES PASSING #200 SIEVE IN PERCENT*

PROJECT NO. 07572635
SCALE: NOTED
DATE CREATED: 7-30-21

intertek psi
1748 33rd Street
Orlando, FL 32839
(407)304-5560
(407)304-5561 fax

GEOTECHNICAL ENGINEERING SERVICES
EAGLE COVE SUBDIVISION
NORTH RANGE ROAD
COCOA, FLORIDA

SHEET: 4
DRAWN: DJW
CHECKED: MM



REFERENCE: THE 2017 AERIAL PHOTOGRAPH WAS OBTAINED FROM ESRI. THE PRESENTED DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. INTERTEK-PSI ASSUMES NO RESPONSIBILITY FOR ANY DECISIONS MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON INFORMATION OBTAINED FROM THE ABOVE DATA.

PROJECT NO. 07572635 SCALE: NOTED DATE CREATED 8-20-21	intertek psi	1748 33rd Street Orlando, FL 32839 (407)304-5560 (407)304-5561 fax	GEOTECHNICAL ENGINEERING SERVICES **EAGLE COVE SUBDIVISION** **NORTH RANGE ROAD** COCOA, FLORIDA	SHEET: 5 DRAWN: DJW CHECKED: MM

0 60 120 Feet
1 inch = 120 feet