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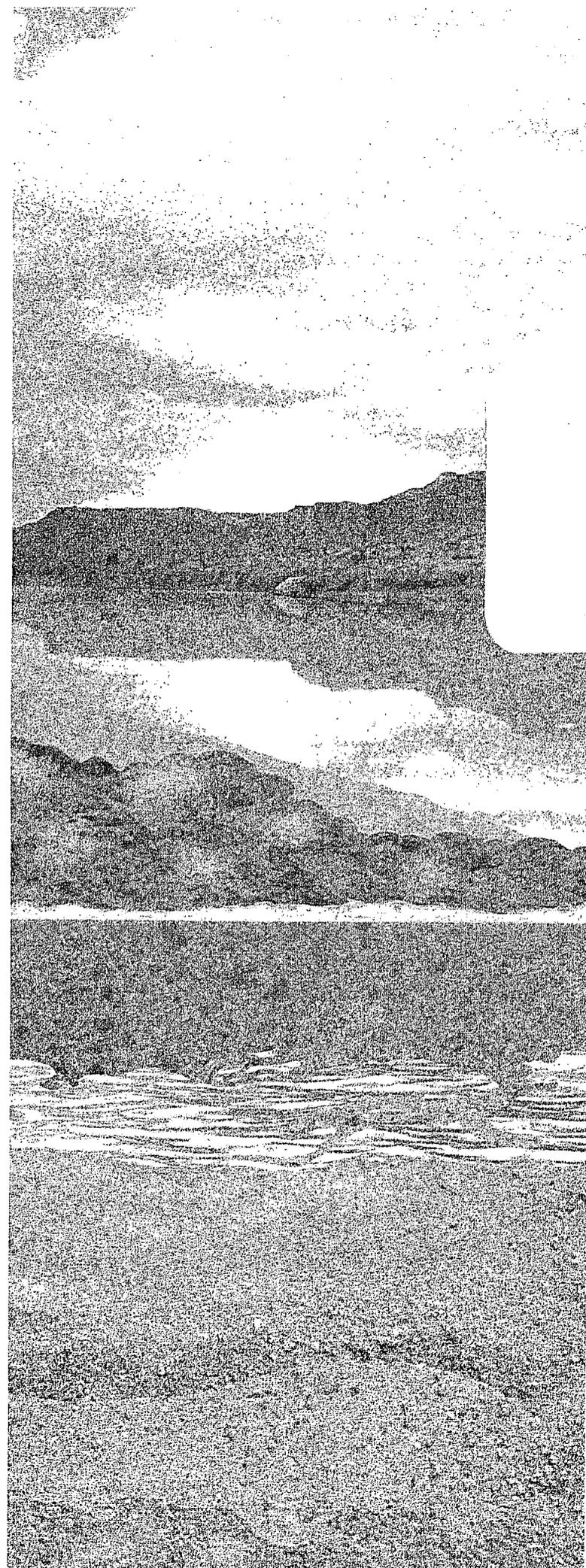
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**Andreyev
Engineering,
Inc.**

- ▼ *Groundwater*
- ▼ *Environmental*
- ▼ *Geotechnical*
- ▼ *Materials Testing*



**Report of
Geotechnical Engineering Services
North Hancock Road
Extension Project
Segment A
Lake County, Florida**

March 31, 2011

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Andreyev Engineering, Inc.

CLERMONT OFFICE
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Clermont, Florida 34711
352-241-0508
Fax: 352-241-0977

▼ Groundwater ▼ Environmental ▼ Geotechnical ▼ Construction Materials Testing

June 4, 2010
Project No.: CPGT-09-0048

To: TY Lin International
225 East Robinson Street
Suite 490
Orlando, Florida 32801

Attention: Mr. Dino Lucarelli, P.E.

Subject: Report of Geotechnical Engineering Study
N. Hancock Road Extension Project – Segment A
Lake County, Florida

Dear Mr. Lucarelli:

Andreyev Engineering, Inc. (AEI) has completed the geotechnical engineering study for the proposed N. Hancock Road Extension – Segment A Project located in Lake County, Florida.

The purpose of this study was to obtain geotechnical data to assist in planning, design, and permitting of the proposed roadway and stormwater management system.

Presented herein are the results of our findings together with our conclusions and recommendations.

Should you have any questions or comments concerning the contents of this report, please do not hesitate to contact the undersigned.

Sincerely,
ANDREYEV ENGINEERING, INC.

Ed Miguens
Ed Miguens, P.E.
Vice President
Florida Registration No. 47535

Ray Jones KK
Raymond W. Jones, P.E.
Vice President
Florida Registration No. 58079

1.0 INTRODUCTION

1.1 Site Location

The N. Hancock Road Extension – Segment A project is located within portions of Sections 8, 9, and 16, Township 22 South, Range 26 East in southern Lake County, Florida. The project will extend from the existing N. Hancock Road just south of Old CR 50 northward to near the intersection of Turkey Farms Road and Gatewood Avenue.

1.2 Project Description

Based on the design information provided to us, it is our understanding that the proposed North Hancock Road Extension – Segment A Project will include the following:

- **North Hancock Road**

This is the main section of the project and will encompass approximately 7,500 lineal feet of roadway (Sta. 188+50.00 to Sta. 263+54.13). Cutting and filling is planned along a majority of the proposed alignment. The maximum depth of cut will be approximately 18 feet and the maximum fill height is about 9 feet. Milling and resurfacing will take place between Station 188+50 and 197+40 where the proposed roadway ties into the existing roadway.

- **East Old Highway 50**

The project will include improvements to East Old Highway 50 between Station 700+00 (Centerline of N. Hancock Road) and Station 707+40. The improvements will include milling and resurfacing, and widening. The widening will require up to 12 feet of filling and about 7 feet of cutting to establish the final grades.

- **West Old Highway 50**

The project will include construction of approximately 900 feet of roadway between Station 37+23.39 (existing West Old Highway 50) and Station 46+22.03 (Centerline of N. Hancock Road). This section of roadway will be constructed at existing grade within the western portion. The eastern portion will require filling up to 15 feet above the existing grades.

- **Jim Hunt Road**

This aspect of the project will consist of constructing approximately 1,017 feet of new roadway between Station 400+00 (intersection with Turkey Farms Road) and Station 410+16.95 where it will tie into the existing road. The new road will be constructed about 25 feet north of the existing alignment.

- **Turkey Farms Road**

The project will include the construction of a cul-de-sac on Turkey Farms Road at the intersection with Bridger Trail Court. This will be the northern terminus of Turkey Farms Road

- **Stormwater Retention Pond No. 1**

Pond No. 1 will consist of modifying the existing pond that is located northeast of the intersection of N. Hancock Road and Old CR 50. The bottom and top elevations will be set at 108 and 119 feet, respectively.

- **Stormwater Retention Pond No. 2**

The proposed Pond No. 2 site is located on the east side of N. Hancock Road between approximate Stations 219+00 and 226+00. The bottom and top elevations will be set at 90 and 101 feet, respectively. The existing grades range from about 90 to 112 feet.

- **Stormwater Retention Pond No. 3**

Pond No. 3 will consist of modifying the existing pond that is located west of the proposed N. Hancock Road between Stations 234+80 and 236+50. The bottom and top elevations will be set at 124 and 131 feet, respectively.

- **Traffic Signal Structures**

The project will also include several traffic signal structures. However, the exact locations have not been finalized at this time. The geotechnical engineering study for this part of the project will be issued at a later date.

The proposed pavement section for the new roads will consist of an asphaltic concrete wearing course, a limerock base, and stabilized subbase.

2.0 PURPOSE AND SCOPE OF SERVICES

2.1 Purpose

The purpose of this study was to obtain geotechnical data to assist in planning, design, and permitting of the proposed roadway and stormwater management system.

2.2 Scope of Services

The scope of our geotechnical engineering study consisted of subsurface exploration, field and laboratory testing, engineering evaluations, and report preparation. Specifically, our scope of services included the following:

- Reviewed U.S.G.S. Topographic Maps and U.S.D.A. Soil Survey Maps to obtain general information of the site and vicinity.
- Planned and implemented a subsurface exploration program consisting of auger borings, Standard Penetration Test borings, field permeability tests, and coring of existing pavement sections.
- Visually classified the soil samples collected from the borings.
- Performed laboratory testing on collected soil samples including Limerock Bearing Ratio tests, pass No. 200 sieve tests, and falling head permeability tests.
- Analyzed the collected information and data.
- Prepared this report presenting the results of our findings together with our conclusions and recommendations.

3.0 REVIEW OF PUBLISHED LITERATURE

3.1 U.S.G.S. Topographic Map

For your reference, we have included a U.S.G.S. Topographic Map on the attached **Sheet 1** which depicts the location of the project alignment. Referencing the data presented on the U.S.G.S. Topographic Map, the ground surface elevations along the roadway alignment range from approximately 110 to 220 feet, NGVD. The highest terrain is located at the north end of the alignment and the lowest terrain appears to be just south of Jim Hunt Road.

3.2 U.S.D.A. Soil Survey Map

Details of the near surface soil groups present at the site are summarized in the USDA SCS Soil Survey of Lake County, Florida. There are four soil map units identified along the project alignment as shown on the attached **Sheet 2**. A brief description of each unit is presented below.

AtB, Astatula Sand, Dark Surface, 0 to 5 percent slopes: Nearly level to gently sloping, very rapidly permeable, excessively drained sandy soil.

AtD, Astatula Sand, Dark Surface, 5 to 12 percent slopes: These soils are similar to other Astatula soils, except that they are sloping to strongly sloping. If the surface is not protected, this soil has a high potential to erode.

AtF - Astatula Sand, Dark Surface, 12 to 40 percent slopes- This is an excessively sandy soil that occurs on very steep to excessively steep slopes. The water table is at depths greater than 6 feet.

LaB, Lake Sand, 0 to 5 percent slopes: This is a nearly level to gently sloping, well drained to excessively drained soil. The water table is at depths greater than 120 inches.

4.0 FIELD INVESTIGATIONS

4.1 General

The scope of our field investigation included boring layout, underground utility clearance, drilling auger borings and Standard Penetration Test borings, conducting field permeability tests, collecting soil samples, and performing pavement coring. The approximate boring, pavement core, and LBR sample locations are illustrated on the attached **Sheets 3 through 10**.

4.2 Auger Borings

4.2.1 Roadways

Auger borings were drilled along the proposed roadway sections at approximate intervals of 200 feet. A total of fifty (50) auger borings were drilled to depths ranging from 7 to 25 feet below existing grades. The boring designations and general locations are summarized in the following table:

Boring Nos.	Roadway Section
RB-101 through RB-136	N. Hancock Road
RB-201 through RB-205	Jim Hunt Road
RB-301 through RB-303	E. Old Highway 50
RB-401 through RB-405	W. Old Highway 50
RB-501	Turkey Farms Road

The auger borings were conducted in general accordance with the procedures of ASTM D-1452.

4.2.2 Stormwater Retention Areas

Auger borings were drilled in each of the three (3) proposed stormwater retention ponds. The auger borings were drilled to depths ranging from 10 to 40 feet below existing grades. Slotted 1-inch diameter pvc pipes were installed in some of the deeper auger borings for measuring stabilized groundwater levels. The boring designations and general locations are summarized in the following table:

Boring Nos.	Pond Designation
PB-1, PB-4, PB-5	Pond #1
PB-2, PB-6, PB-7	Pond #2
PB-8, PB-9	Pond #3

The auger borings were conducted in general accordance with the procedures of ASTM D-1452.

4.3 Standard Penetration Test Borings

A total of two (2) Standard Penetration Test (SPT) borings were drilled within the Hancock Road right-of-way within the maximum cut areas (Stations 205+00 and 208+00). These borings,

designated as TB-1 and TB-2 were each drilled to a depth of 50 feet. Slotted 1-inch diameter pvc pipes were installed in each boring for measuring stabilized groundwater levels.

The SPT borings were conducted in general accordance with the procedures of ASTM D-1586.

4.4 Pavement Cores

Coring of the existing pavement section was conducted at five locations. The locations were selected by TY Lin International. The pavement core designations and general locations are summarized in the following table:

Pavement Core No.	General Location
PC-1	Old CR 50 East of N. Hancock Road
PC-2	N. Hancock Road South of East Old Highway 50
PC-3	Old CR 50 West of Turkey Farms Road
PC-4	Turkey Farms Road South of Bridger Trail Court
PC-5	Turkey Farms Road North of Fosgate Road

4.5 LBR Sampling

Three (3) bulk soil samples were collected along the proposed N. Hancock Road alignment for the purpose of performing laboratory Limerock Bearing Ratio (LBR) tests. The LBR designation and sample locations are summarized in the following table:

LBR No.	Sample Location	Sample Depth
LBR-1	N. Hancock Road Station 212+00, 37' Right	4.0' Below Existing Grade
LBR-2	N. Hancock Road Station 232+00, Centerline	1.5' Below Existing Grade
LBR-3	N. Hancock Road Station 252+00, 20' Right	2.0' Below Existing Grade

4.6 Field Permeability Tests

Two (2) field permeability tests were performed to measure the soils' saturated horizontal hydraulic conductivity. The tests were performed at Pond 2 and Pond 3 adjacent to borings PB-6 and PB-8. The tests were performed using the constant head method.

5.0 LABORATORY TESTING PROGRAM

5.1 Visual Classification of Soil Samples

Soil samples collected from the borings were returned to our laboratory facility where they were visually classified by an AEI geotechnical engineer. The samples were classified in accordance with the AASHTO Classification system. The soils collected from the borings were segregated into a total of eleven (11) soil strata. The soil descriptions for each stratum are summarized below and also are presented on the soil profile sheets in the Appendix.

Soil Stratum No.	Soil Description	Soil Classification
1	Grayish Brown Fine Sand	A-3
2	Orangish Brown to Reddish Brown Slightly Clayey to Clayey Fine Sand	A-3/A-2-4
3	Orangish Brown to Reddish Brown Fine Sand to Slightly Silty Fine Sand	A-3
4	Light Brown to Light Yellowish/Orangish Brown to Brown Fine Sand to Slightly Silty Fine Sand	A-3
5	Brown Fine Sand with Limerock (Fill)	A-3
6	Orangish Brown Clayey Fine Sand with Limerock (Fill)	A-2-4
7	Light Brown Limerock with Reddish Brown Clayey Fine Sand	A-2-4
8	Dark Brown Organic Slightly Silty Fine Sand with Roots (Topsoil)	A-8
9	Light Brown Limerock (Fill)	
10	Light Gray Fine Sand	A-3
11	Brown Fine Sand	A-3

5.2 Pass No. 200 Sieve Tests

The laboratory testing program consisted of performing twenty-six (26) percent passing the No. 200 sieve analysis and moisture content tests. The results of the tests are shown adjacent to the soil profiles presented as **Sheets 17 through 23 in the Appendix.**

5.3 Falling Head Permeability Tests

Additionally, twelve (12) falling head permeability tests were conducted on relatively undisturbed and remolded samples. The tests were performed to determine the soils' saturated vertical hydraulic conductivity. The results of the tests are shown adjacent to the Pond Boring Soil Profiles presented as **Sheets 21 and 22 in the Appendix.**

5.4 LBR Tests

Three (3) Limerock Bearing Ratio Tests were performed on bulk soil samples collected along the N. Hancock Road alignment. The locations and results of the LBR tests are summarized in the following table:

LBR No.	Location	Sample Depth (ft.)	Sample Description	LBR Value (%)
LBR-1	Sta. 212+00, 37' Right	4.0	Orangish Brown Slightly Clayey to Clayey Fine Sand	60
LBR-2	Sta. 232+00, Centerline	1.5	Brown Fine Sand	30
LBR-3	Sta. 252+00, 20' Right	2.0	Orangish Brown Fine Sand	40

6.0 SOIL AND GROUNDWATER CONDITIONS

6.1 General

The results of the subsurface exploration program are presented as soil profiles on the attached **Sheets 17 through 23**. The information presented on the soil profiles represents the subsurface conditions encountered at the specific boring locations. Accordingly, the materials between and away from the boring locations may vary from those encountered at the specific boring locations. The strata boundaries presented on the soil profiles have been approximated. The actual boundaries may be gradual or otherwise not clearly defined.

6.2 Soil Conditions

Based on the results of our findings, the majority of the borings encountered fine sand to slightly silty fine sand soils (A-3) materials within the explored depths of 7 to 50 feet below grade. In several of the borings, predominantly in the main cut areas along N. Hancock Road (Borings RB-107, RB-108, RB-109, RB-111, RB-112, and RB-113), slightly clayey to clayey fine sand soils were encountered from depths ranging from approximately 0.5 to 24 feet below grade. These soils were also found in the upper 1 to 2 feet of borings RB-133 and RB-134, from approximately 35 to 40 feet below grade in boring PB-4, and also from 6 to 13.5 feet below grade in boring TB-1. Fine sand and clayey fine sand with limerock was encountered from about 0.5 to 2.5 feet below grade in borings RB-114 and RB-303. At several boring locations, topsoil was encountered within the upper few inches of the soil column. A layer of limerock was present below the topsoil in boring RB-108.

Please refer to the soil profiles on the **Sheets 17 through 23** for specific boring data.

6.3 Groundwater Conditions

At the time of our field investigations (June of 2009 and April of 2010), the groundwater table was encountered at depths of approximately 23.5, 31.3, 13.1, and 27.4 feet below existing grade in borings PB-2, PB-5, PB-6, and PB-7, respectively. In all of the other borings, the groundwater table was not encountered within the explored depths of 7 to 50 feet. Fluctuation of the groundwater table should be anticipated throughout the year due to variations in seasonal rainfall.

Based on the time of year, the encountered groundwater levels and the amount of rainfall received to date, we estimate that the normal wet season high water table at boring locations PB-2, PB-5, PB-6 and PB-7 will be approximately 3 to 4 feet above the observed levels. Based on the encountered groundwater levels and surrounding lake levels, we estimate that the normal wet season high groundwater table within the project site will be near elevation 90 feet or less. However, groundwater may temporarily perch atop the Stratum 2 slightly clayey to clayey soils during periods of prolonged rainfall or after heavy rainfall events.

6.4 Pavement Core Results

The results of the pavement coring are summarized in the following table:

Core No./Location	Surface Course Thickness (inches)	Surface Course Material	Base Course Thickness (inches)	Base Course Material	Sub Base Thickness (inches)	Sub Base Material
PC-1 E. Old Highway 50 Sta. 701+25 Westbound, Right Turn Lane	2.8	Asphaltic Concrete	6.0	Limerock	24.0 (min.)	Brown Slightly Silty Fine Sand with Pieces of Clayey Fine Sand and Limerock
PC-2 N. Hancock Road Sta. 193+00 Northbound, Left Turn Lane	2.7	Asphaltic Concrete	6.0	Limerock	24.0 (min.)	Brown Slightly Silty Fine Sand with Pieces of Clayey Fine Sand and Limerock
PC-3 W. Old Highway 50 Sta. 35+22 Eastbound Lane	6.3	Asphaltic Concrete	4.0	Limerock	24.0 (min.)	Brown Slightly Silty Fine Sand with Pieces of Limerock
PC-4 Turkey Farm Road 50' South of Bridger Trail Court Centerline Northbound Lane	1.4	Asphaltic Concrete	6.0	Limerock	24.0 (min.)	Brown Slightly Silty Fine Sand with Pieces of Clayey Fine Sand and Limerock
PC-5 N. Hancock Road (Turkey Farm Road) Sta. 254+50 Southbound, Right Turn Lane	4.2	Asphaltic Concrete	11.0	Limerock	24.0 (min.)	Brown Slightly Silty Fine Sand with Pieces of Clayey Fine Sand and Limerock

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 Conclusions

Based on the results of our findings, we do not foresee any major constraints from a geotechnical engineering perspective for the planned construction. The majority of the soils encountered consist of well draining fine sand and slightly silty fine sand soils. The groundwater table is relatively deep with respect to planned roadway grades and we do not anticipate the need for dewatering during the earthwork operations. The subsurface conditions encountered are considered suitable for the proposed flexible pavement section. The free draining soils coupled with the relatively deep groundwater table are suitable for dry bottom stormwater retention ponds.

The main constraint for planning and design of the roadway is the presence of shallow clayey soils encountered in borings RB-107 through RB-113 which are located in the main cut areas.

Normal site preparation procedures are anticipated to facilitate the planned construction.

7.2 Recommendations

7.2.1 Roadways

The site conditions appear suitable for an asphaltic concrete pavement with a limerock base and stabilized subbase. Roadway construction should be performed in accordance with the appropriate sections of the current edition of FDOT Standard Specifications for Road and Bridge Construction.

Along the proposed roadway alignment, we recommend that the poorly draining clayey soils (Stratum 2) be overexcavated at least 2 feet below the bottom of the pavement section. The limits of overexcavation should extend the entire width of the roadway plus within a zone of 2 horizontal: 1 vertical extending downward and outward from the edge of curb. The replacement soils should consist of free draining fine sands.

To reduce erosion potential on the embankment slopes in cut areas, we recommend that the Stratum 2 clayey soils be overexcavated/replaced to a depth of 2 feet below final grade and replaced with free draining fine sand. The project should be designed with a conveyance system to prevent surface runoff from entering and flooding the roadway. Additionally, we recommend installing an interceptor drain on the upgradient side of the roadway in the cut areas where the Stratum 2 clayey soils exist in order to prevent surface water/perched groundwater from seeping below the roadway pavement structure.

We recommend that all surficial organic soils (Stratum 8) and any other deleterious materials be removed prior to any filling and pavement construction.

Site preparation procedures at this site are anticipated to consist of clearing vegetation and unwanted trees, stripping topsoil, proof-rolling and compacting existing subsoils followed by placement and compaction of engineered fill and pavement materials.

7.2.2 Design LBR

The laboratory LBR test results revealed LBR values of 30, 40, and 60 percent for the three (3) soil samples collected along the N. Hancock Road alignment. The highest LBR value of 60 percent was for the slightly clayey to clayey Stratum 2 soils. Because these soils are recommended to be removed at least 2 feet below the bottom of the pavement section, we do not recommend using this test result for the design LBR value. For the two remaining test values of 30 and 40 percent, we recommend that the design LBR for the project be based on the lower value of 30 percent (**Design LBR=30**).

7.2.3 Stormwater Retention Ponds

Based on the results of our field and laboratory testing programs, we do not foresee any major geotechnical related constraints for the design of the proposed stormwater management system. The free draining soils coupled with the relatively deep groundwater table are suitable for dry bottom stormwater retention ponds.

For analysis and design purposes, the following aquifer characteristics should be assumed. These aquifer characteristics were determined from the results of the field and laboratory investigations:

Pond No.	Bottom of Aquifer Elevation	High Groundwater Table Elevation	Horizontal Hydraulic Conductivity	Unsaturated Vertical Hydraulic Conductivity	Storage Coefficient
	(feet)	(feet)	(fpd)	(fpd)	
Pond #1	81	92	40	26	0.25
Pond #2	56	80	32	21	0.25
Pond #3	90	91	40	26	0.25

Please note that the elevations presented in the above table are based on interpretation of topographic information presented on the site plans.

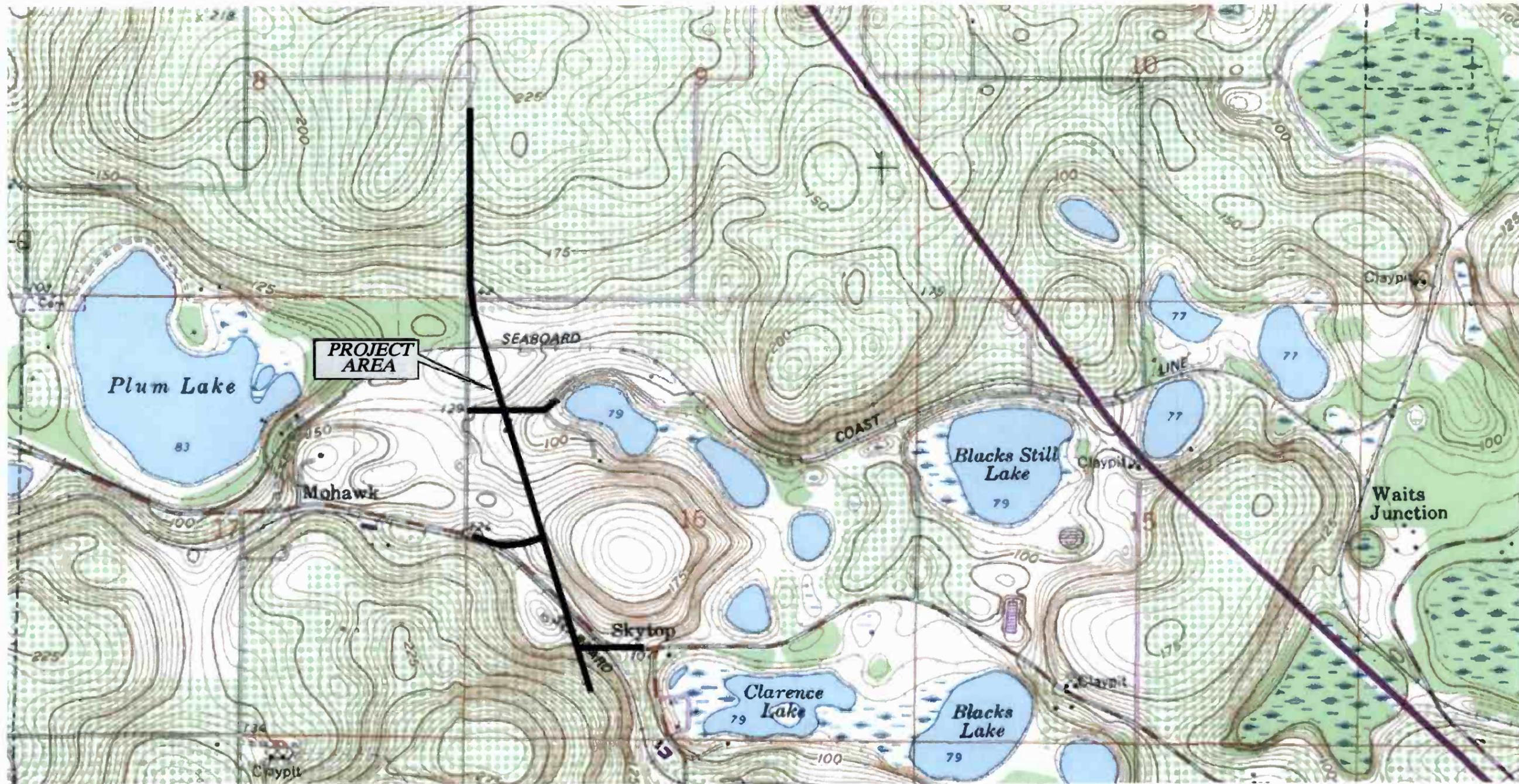
The soils that will be excavated from the pond areas (fine sand and slightly silty fine sand soils) are considered a good source of engineered fill provided that they are free of any deleterious materials.

7.2.4 Excavations

All excavations should be constructed in accordance with applicable local, state and federal regulations including those outlined by the Occupational Safety and Health Administration (OSHA). It is the contractor's sole responsibility for designing and constructing safe and stable excavations. Excavations should be sloped, benched or braced as required to maintain stability of the excavation sides and bottoms. Excavations should take into account loads resulting from equipment, fill stockpiles and existing construction. Any shoring needed to maintain a safe excavation should be designed by a professional engineer registered in the State of Florida in accordance with local, state and federal guidelines.

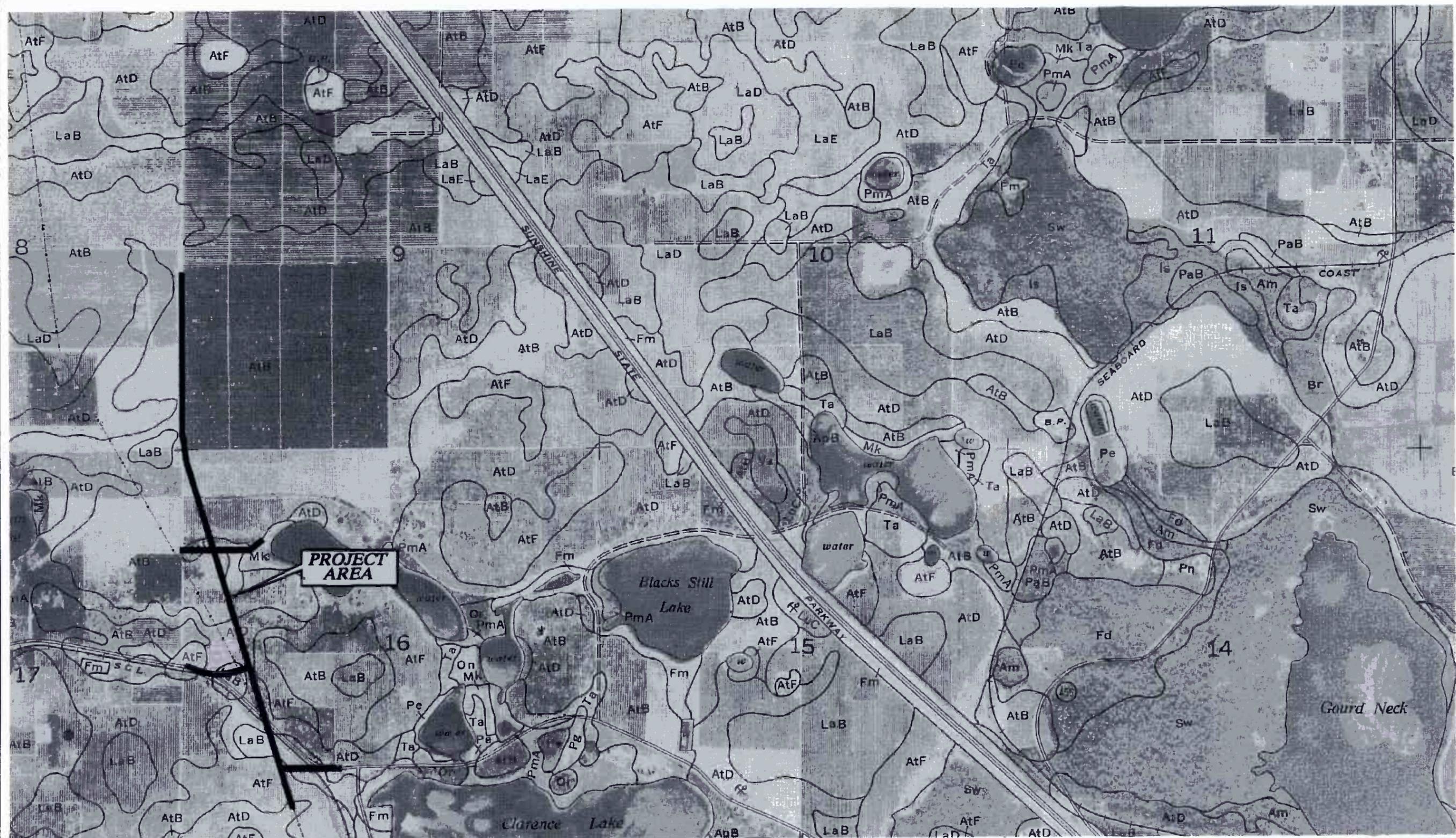
8.0 GENERAL CONDITIONS

This report has been prepared for the exclusive use of TY Lin International and its designers. The recommendations presented in this report have been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty, expressed or implied, is made as to the professional advice presented herein.

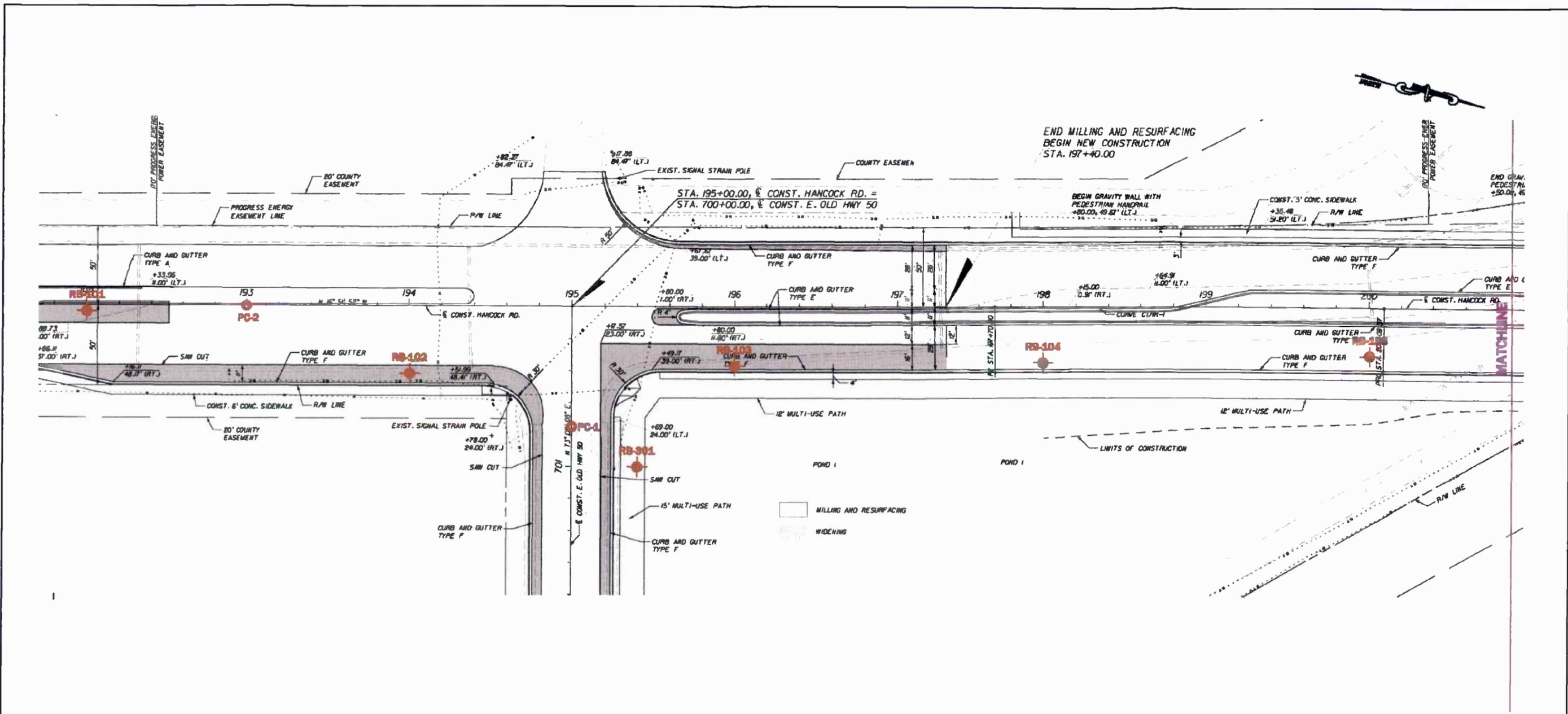


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 TOWNSHIP: 22 SOUTH PHOTOREVISED: 1980
 RANGE: 26 EAST

REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0877 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1"=1200'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048	SHEET NO. 1 OF 23 U.S.G.S. TOPOGRAPHIC MAP
					DATE		
					ED MIGUENS, P.E. NO. 47535		



REVISIONS 	DATE 	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1"=800'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778		SIGNATURE DATE ED MIGUENS, P.E. NO. 47636	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA A/E PROJECT NUMBER: CPGT-09-0048	SHEET NO. 2 OF 23
				U.S.D.A. SOILS MAP				



NORTH HANCOCK ROAD

LEGEND:

- ◆ APPROXIMATE LOCATION OF ROAD BORING
- APPROXIMATE LOCATION OF CORE



REVISIONS	DATE

Andreyev Engineering, Inc.
 1170 W. MINNEOLA AVENUE
 CLERMONT, FLORIDA 34711
 P 352-241-0508 F 352-241-0877
 CERTIFICATE OF AUTHORIZATION 00007834

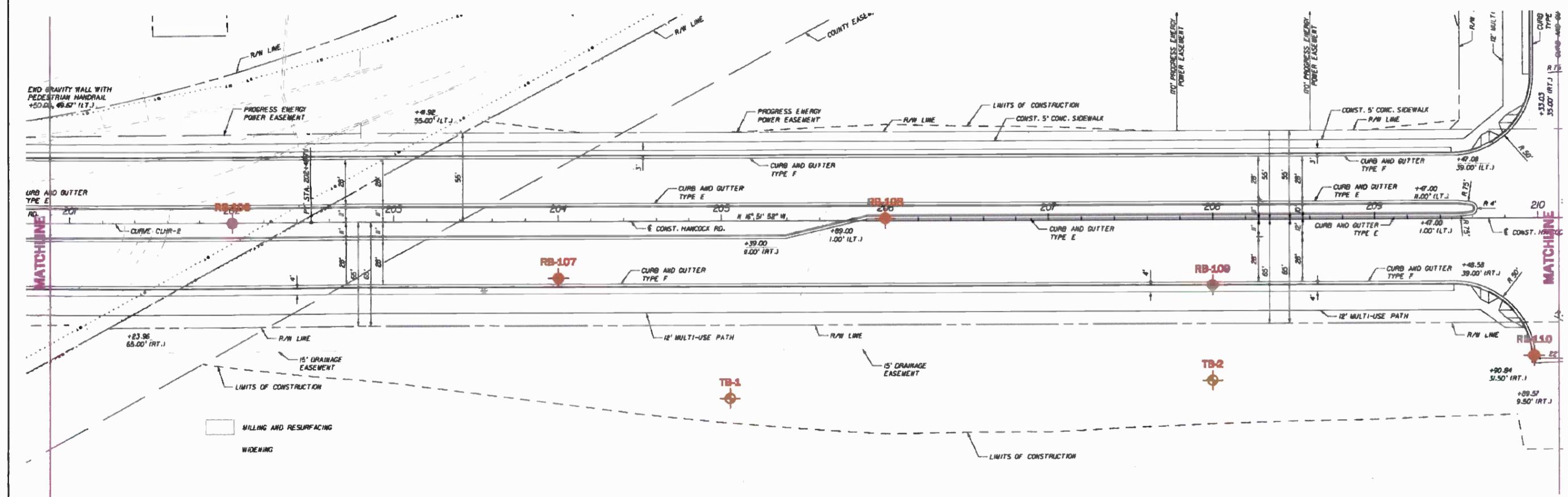
APPROXIMATE SCALE:
 1" = 60'

LAKE COUNTY
 DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
 123 N. SINCLAIR AVENUE
 TAVARES, FLORIDA 32778

SIGNATURE
 DATE
 ED MIGUENS, P.E. NO. 47635

GEOTECHNICAL ENGINEERING STUDY
N. HANCOCK ROAD EXTENSION PROJECT
SEGMENT A
 LAKE COUNTY, FLORIDA
 AEI PROJECT NUMBER: CP07-09-0048

SHEET NO.
3 OF 23
 BORING LOCATION PLAN



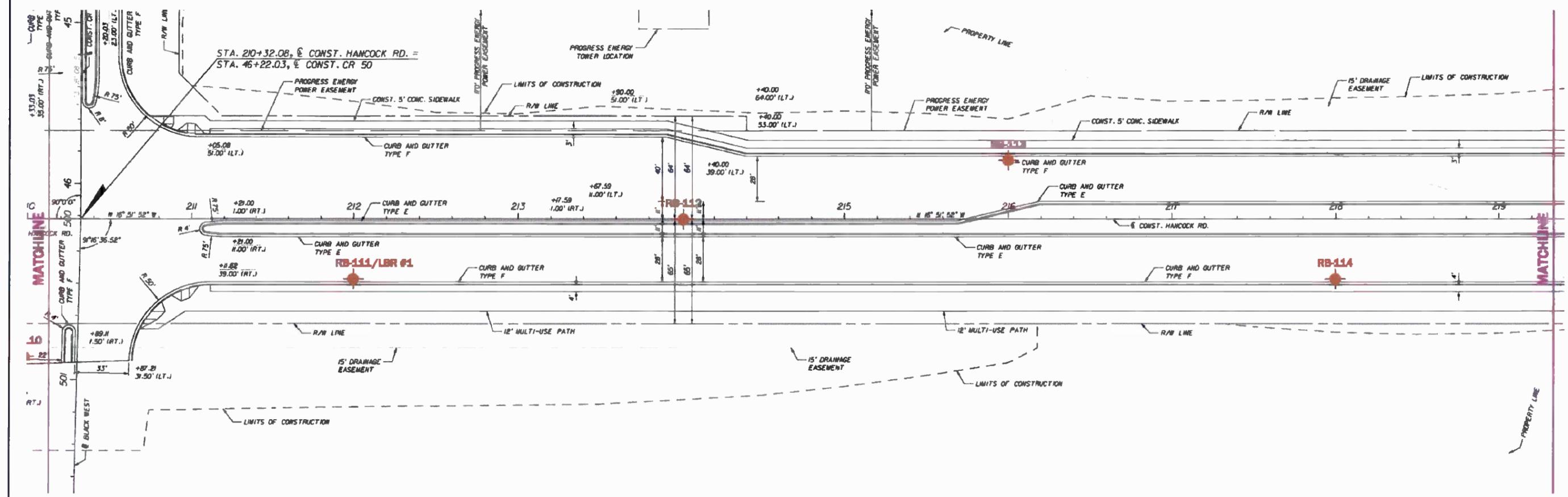
NORTH HANCOCK ROAD

LEGEND:

- ◆ APPROXIMATE LOCATION OF ROAD BORING
- ◆ APPROXIMATE LOCATION OF SPT BORING



REVISIONS	DATE	Andrew Engineering, Inc. 1170 W. MINNEOLA AVENUE CLEERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0877 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE _____ DATE _____ ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-08-0048	SHEET NO. 4 OF 23 BORING LOCATION PLAN

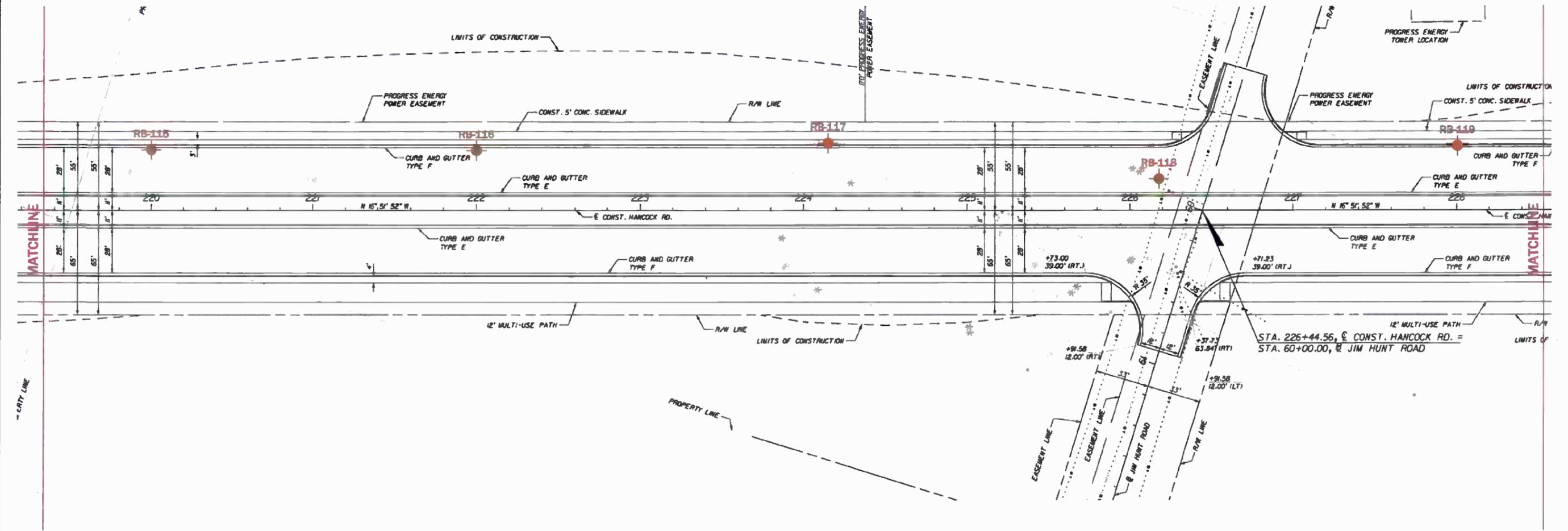


NORTH HANCOCK ROAD

LEGEND:
 APPROXIMATE LOCATION OF ROAD BORING



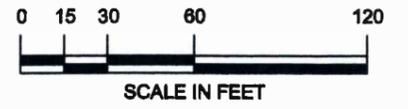
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							BORING LOCATION PLAN



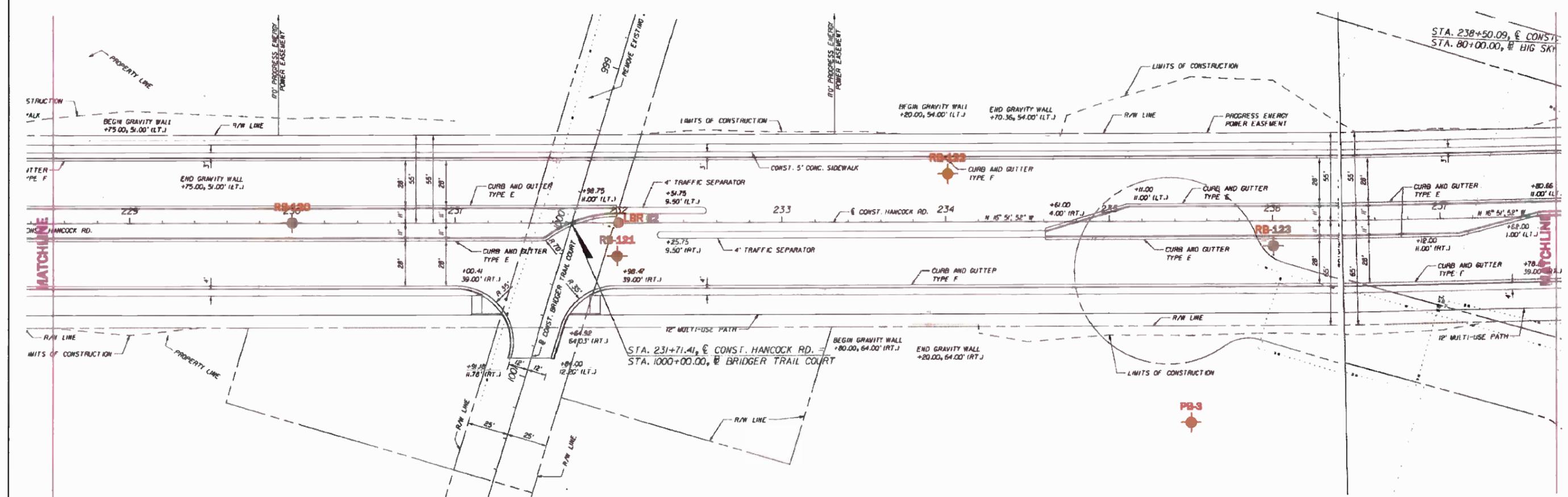
NORTH HANCOCK ROAD

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◆ APPROXIMATE LOCATION OF ROAD BORING

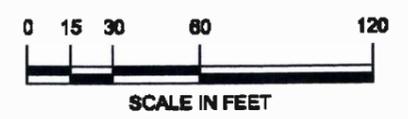


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					DATE		
					ED MIGUENS, P.E. NO. 47535		

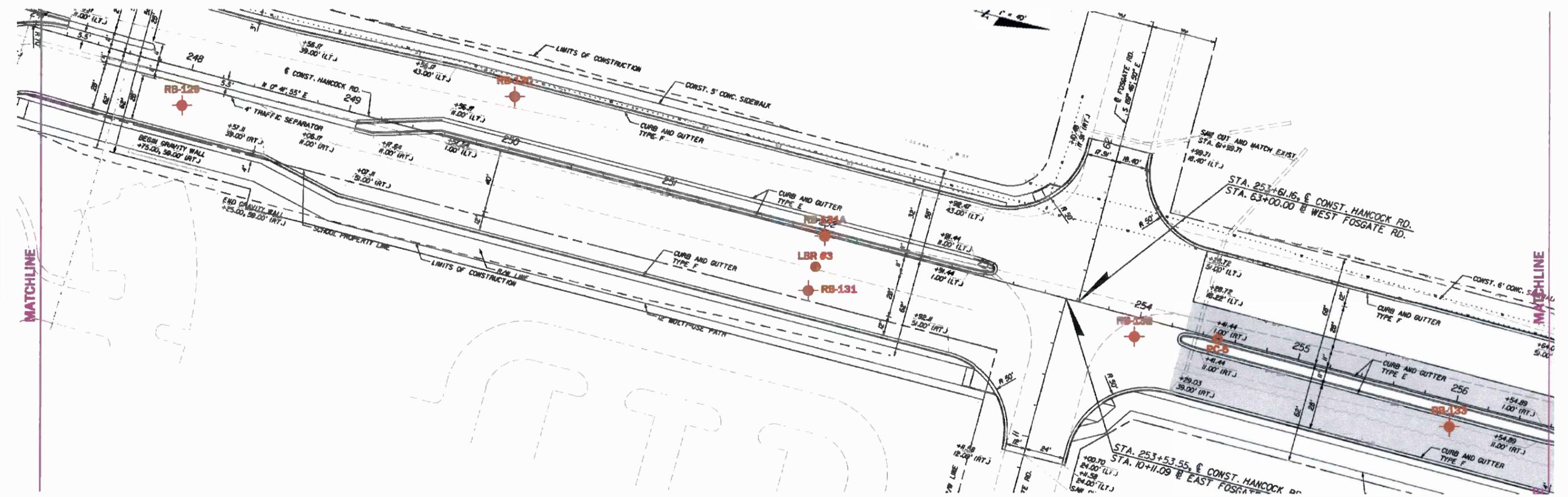


NORTH HANCOCK ROAD

- LEGEND:**
- ◆ APPROXIMATE LOCATION OF ROAD BORING
 - APPROXIMATE LOCATION OF LBR



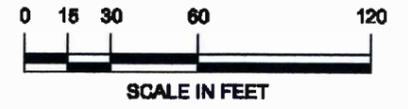
REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0877 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE DATE ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-08-0048	SHEET NO. 7 OF 23 BORING LOCATION PLAN



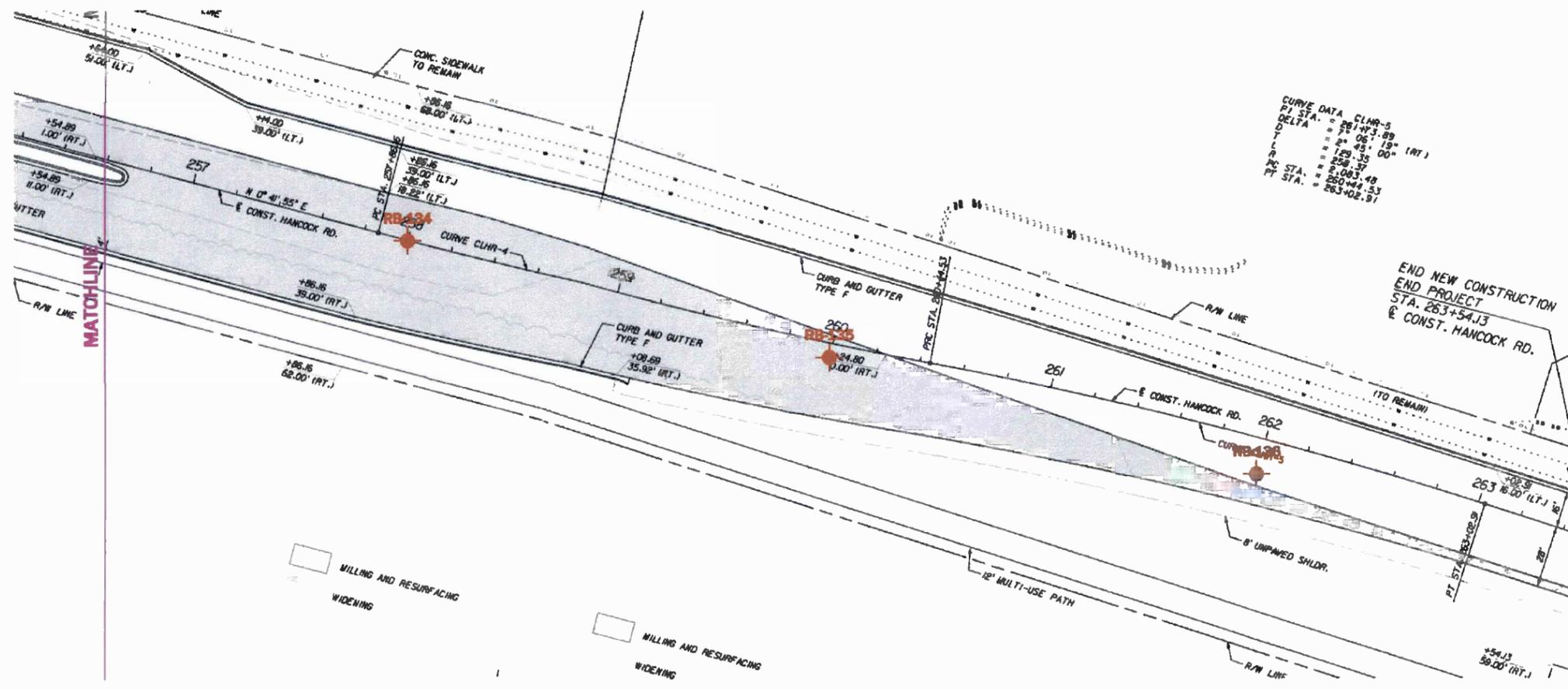
NORTH HANCOCK ROAD

LEGEND:

- ◆ APPROXIMATE LOCATION OF ROAD BORING
- APPROXIMATE LOCATION OF LBR
- APPROXIMATE LOCATION OF CORE



REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE DATE ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AE PROJECT NUMBER: CPGT-09-0048	SHEET NO. 9 OF 23	



CURVE DATA CLWR-5
 P1 STA. = 251+43.89
 DELTA = 71° 06' 19" (RT)
 D = 8" 43' 19" (RT)
 L = 129' 36" 00" (RT)
 R = 258' 37"
 PC STA. = 250+44.53
 PT STA. = 263+02.91

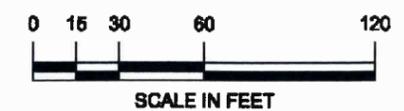
END NEW CONSTRUCTION
 END PROJECT
 STA. 263+54.13
 @ CONST. HANCOCK RD.

MILLING AND RESURFACING
 WIDENING

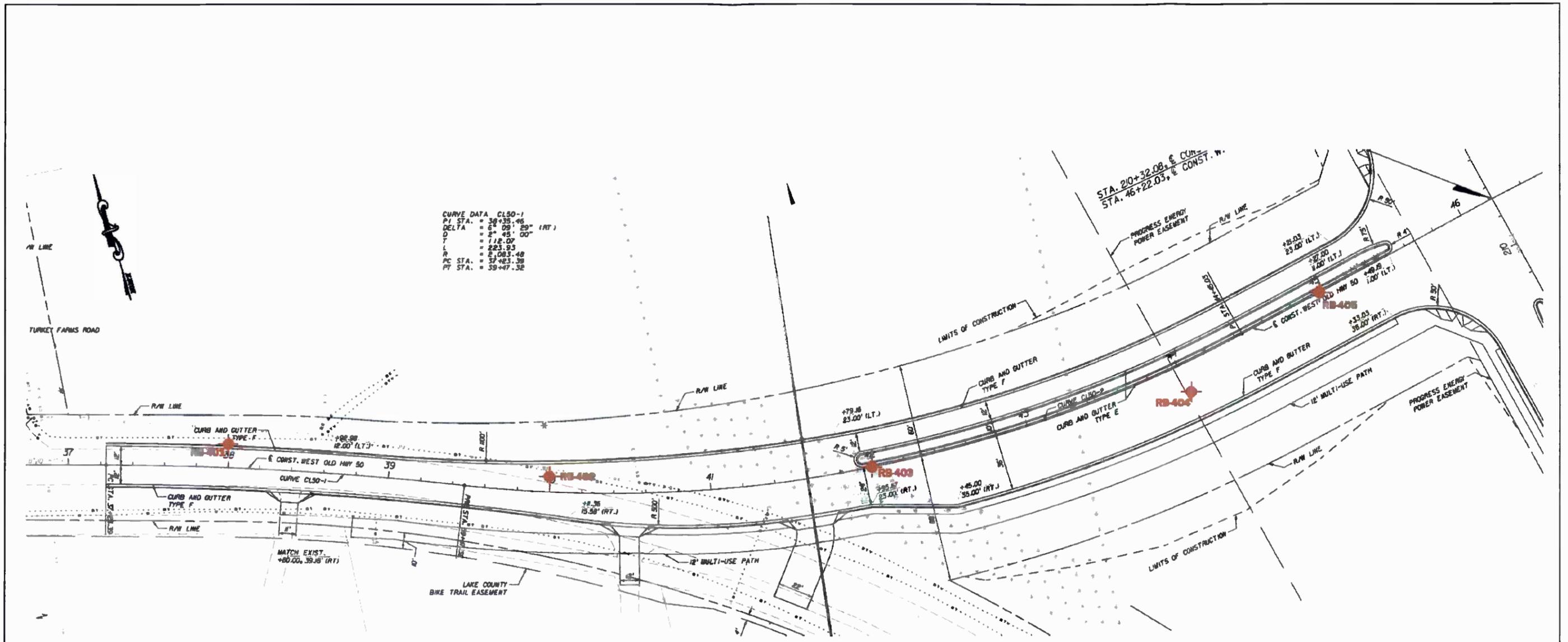
MILLING AND RESURFACING
 WIDENING

NORTH HANCOCK ROAD

LEGEND:
 APPROXIMATE LOCATION OF ROAD BORING



REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA A/E PROJECT NUMBER: CPGT-09-0048	SHEET NO. 10 OF 23 BORING LOCATION PLAN
					DATE		
					ED MIGUENS, P.E. NO. 47535		

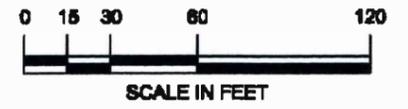


CURVE DATA CL50-1
 PI STA. = 39+35.46
 DELTA = 6° 09' 29" (RT)
 D = 2° 45' 00"
 T = 112.02'
 L = 223.93'
 R = 2,083.48'
 PC STA. = 37+43.39
 PT STA. = 39+47.32

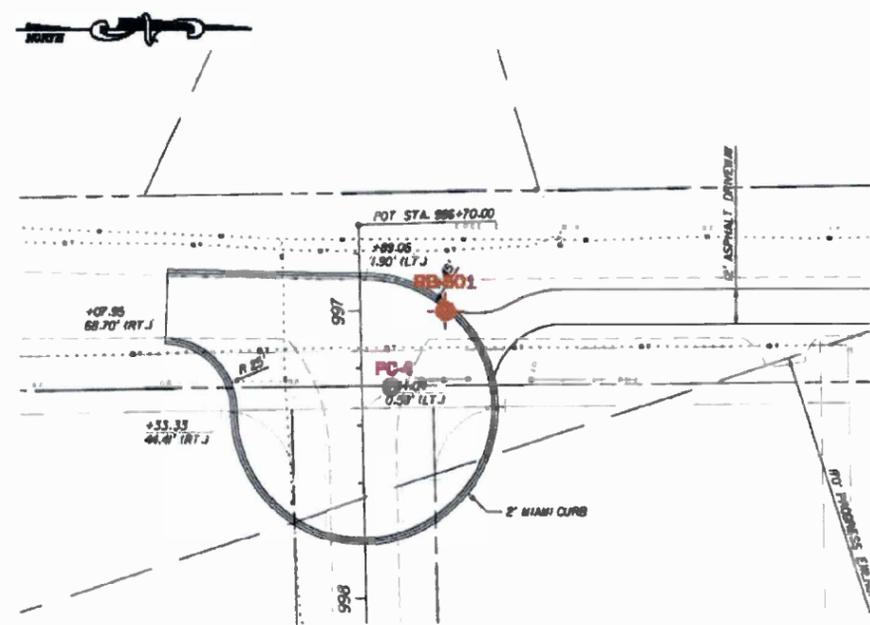
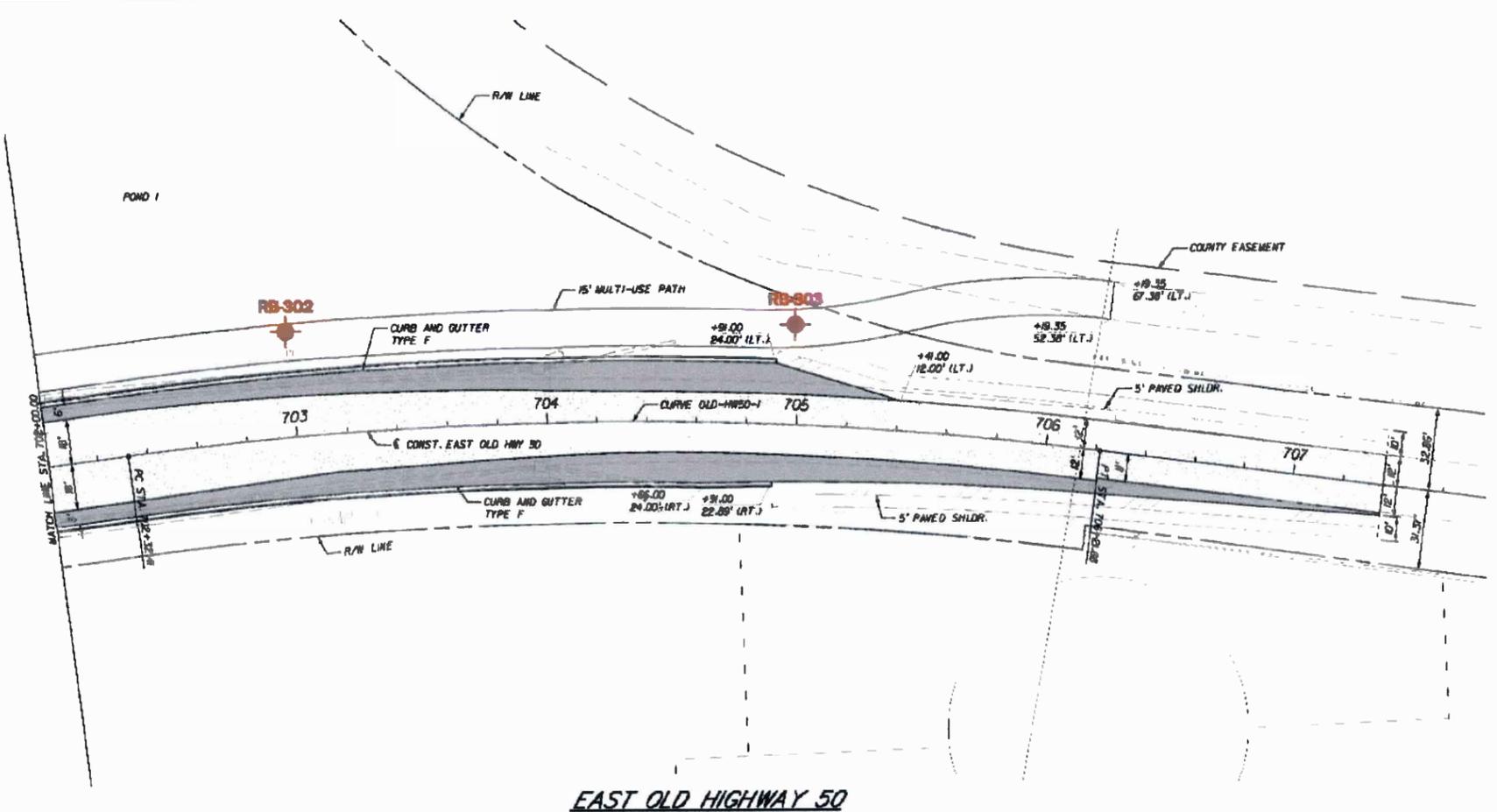
STA. 210+32.08 & CON-
 STA. 46+22.03 & CONST. W.

WEST OLD HIGHWAY 50

LEGEND:
 APPROXIMATE LOCATION OF ROAD BORING



REVISIONS 	DATE 	 Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0877 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE DATE ED MIOUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA A&J PROJECT NUMBER: CP&T-08-0048	SHEET NO. 12 OF 23
							BORING LOCATION PLAN

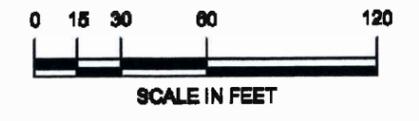


EAST OLD HIGHWAY 50

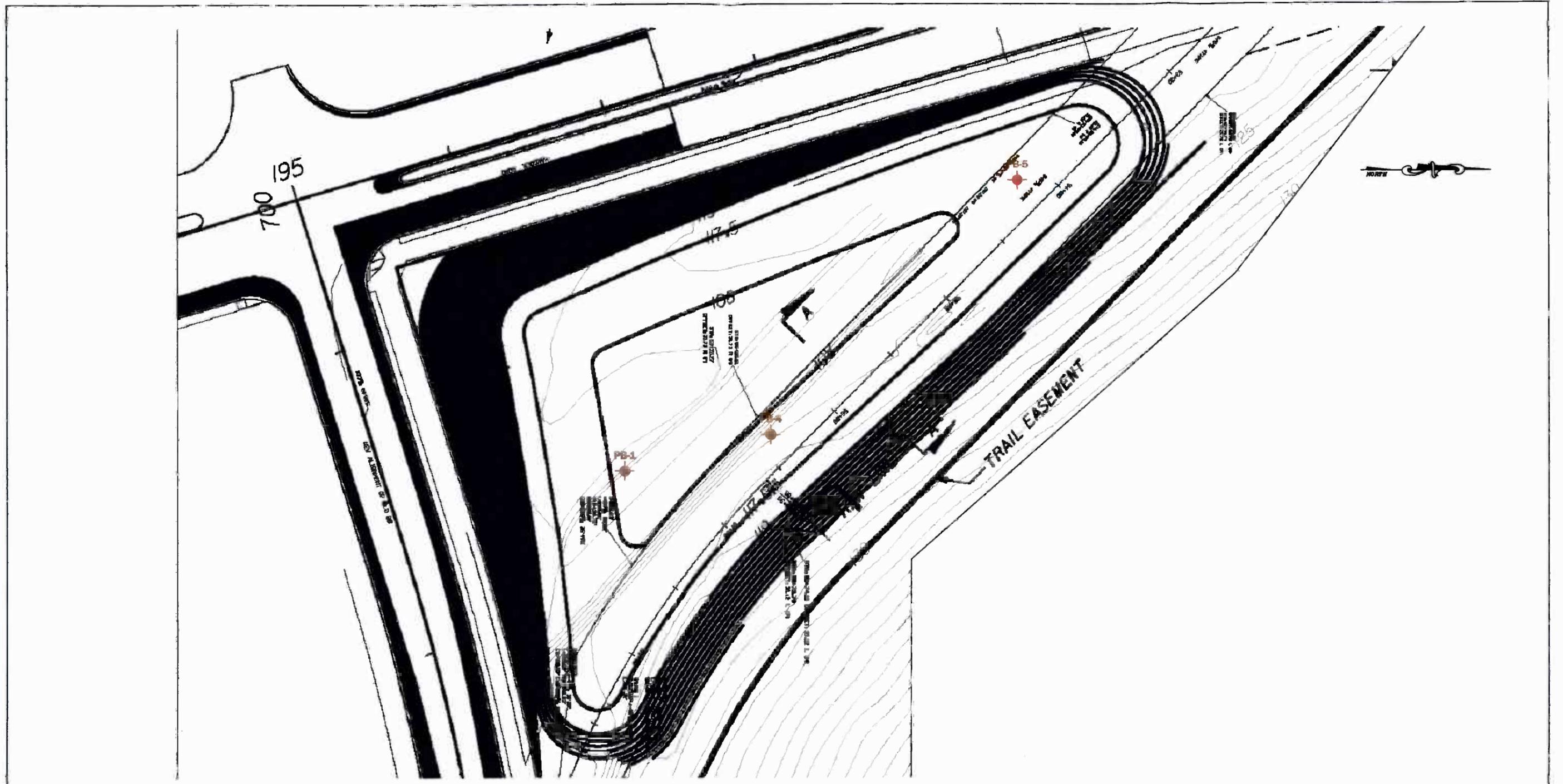
TURKEY FARMS ROAD

LEGEND:

- APPROXIMATE LOCATION OF ROAD BORING
- APPROXIMATE LOCATION OF CORE



REVISIONS _____ _____ _____	DATE _____ _____ _____	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 382-241-0808 F 382-241-0877 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	_____ SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPCT-09-0048	_____ DATE	_____ ED MIGUENS, P.E. NO. 47838	_____ SHEET NO. 13 OF 23
					BORING LOCATION PLAN				



POND 1

LEGEND:

◆ APPROXIMATE LOCATION OF ROAD BORING



REVISIONS	DATE

Andreyev Engineering, Inc.
 1170 W. MINNEOLA AVENUE
 CLERMONT, FLORIDA 34711
 P 352-241-0508 F 352-241-0977
 CERTIFICATE OF AUTHORIZATION 00007834

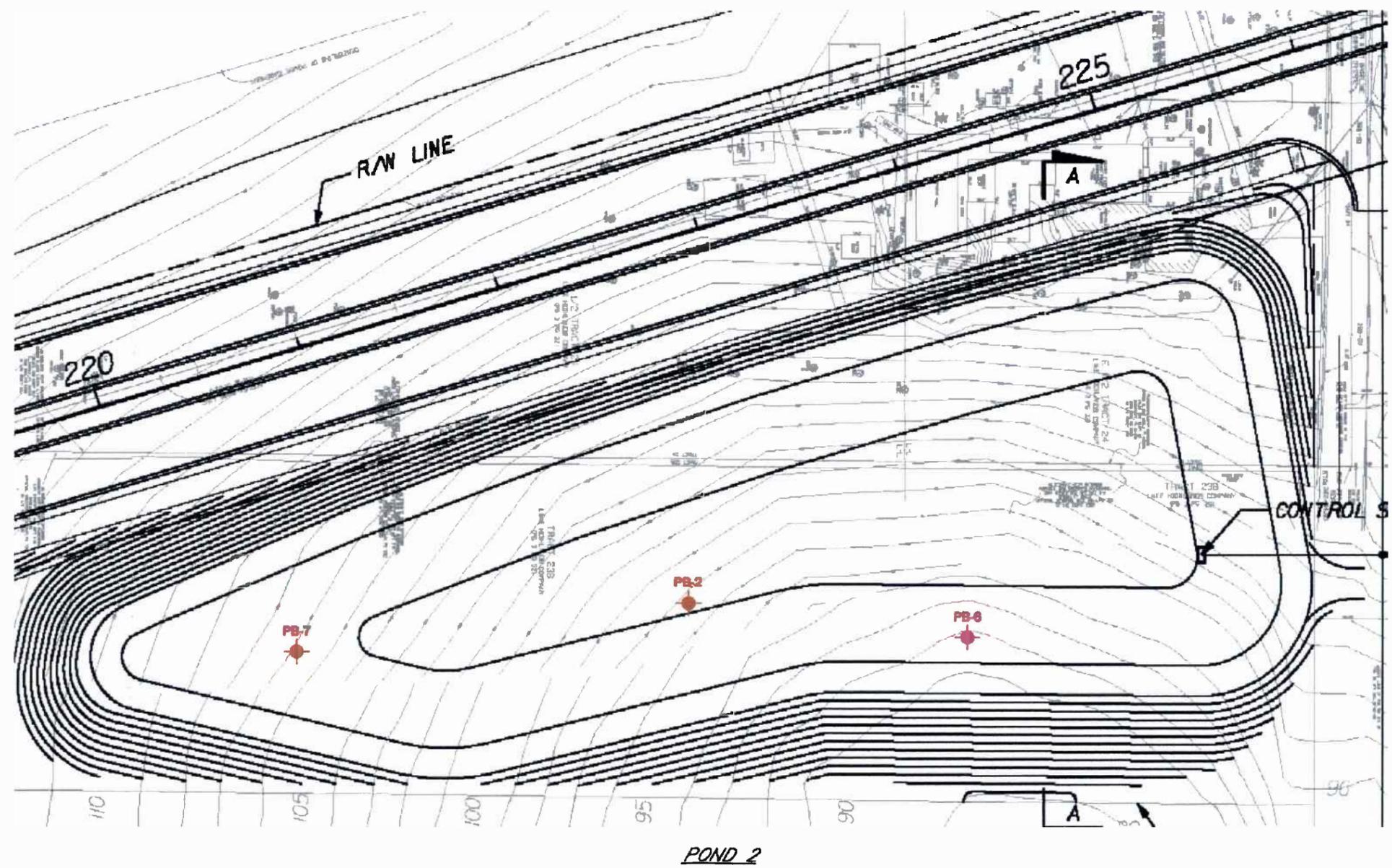
APPROXIMATE SCALE:
 1" = 60'

LAKE COUNTY
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING DIVISION
 123 N. SINCLAIR AVENUE
 TAVARES, FLORIDA 32778

SIGNATURE
 DATE
 ED MIGUENS, P.E. NO. 47535

GEOTECHNICAL ENGINEERING STUDY
 N. HANCOCK ROAD EXTENSION PROJECT
 SEGMENT A
 LAKE COUNTY, FLORIDA
 A/E PROJECT NUMBER: CPGT-09-0048

SHEET NO.
 14 OF 23
 BORING LOCATION PLAN



POND 2

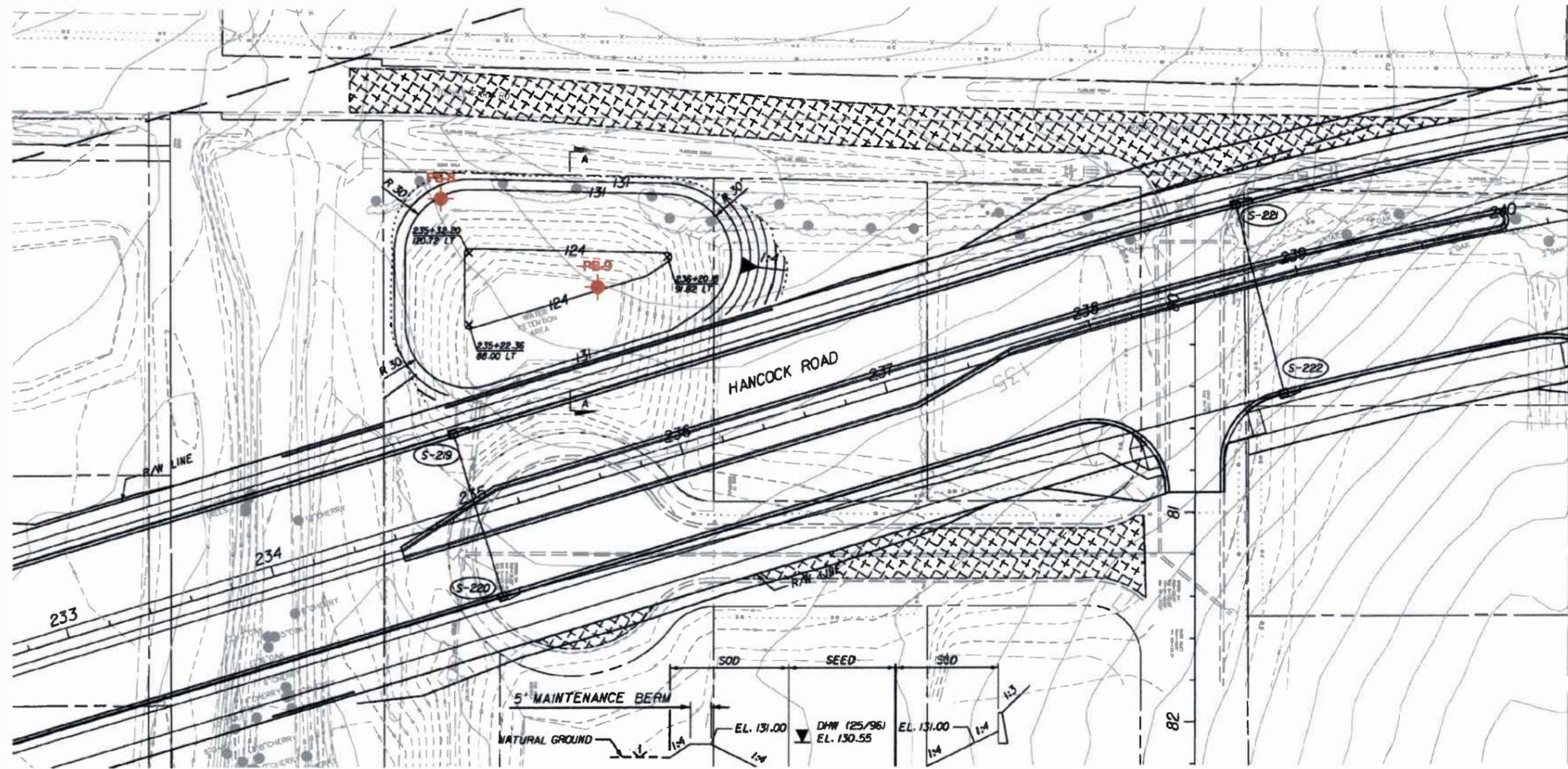
LEGEND:

● APPROXIMATE LOCATION OF ROAD BORING



SCALE IN FEET

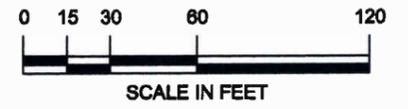
REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048	SHEET NO. 15 OF 23
					DATE		BORING LOCATION PLAN
					ED MIGUENS, P.E. NO. 47535		



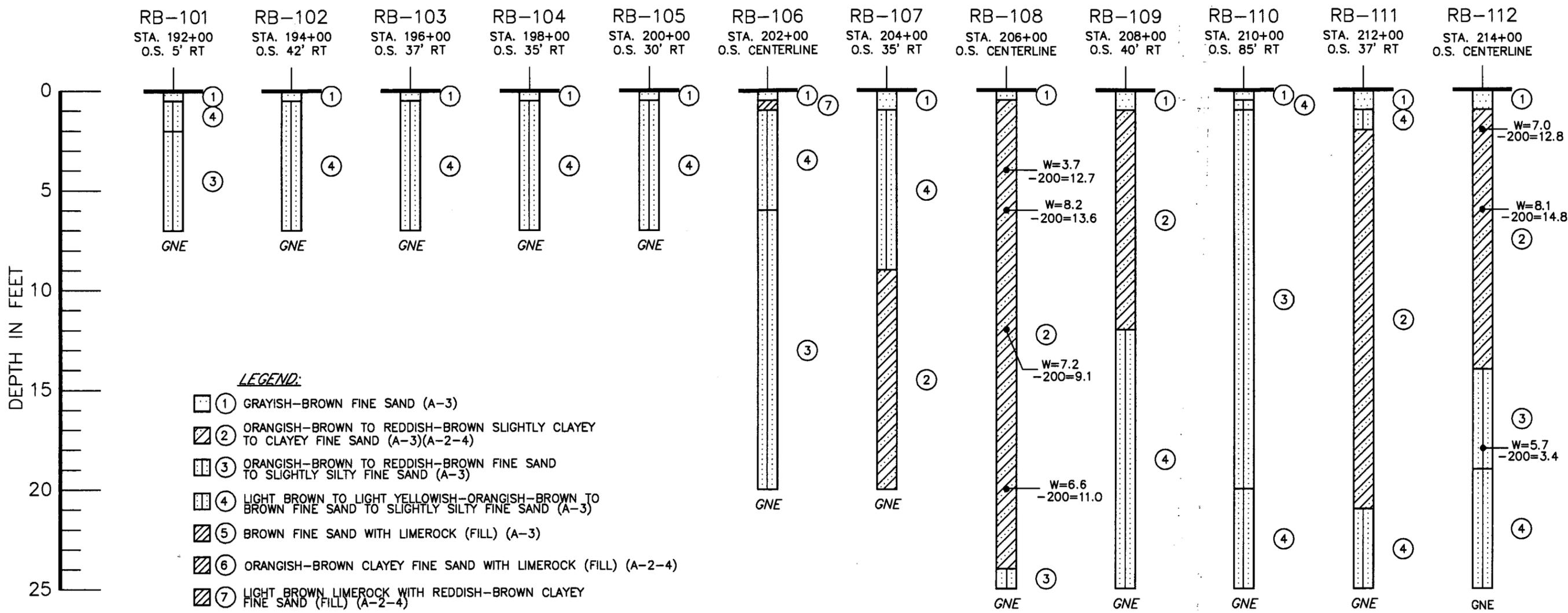
POND 3

LEGEND:

◆ APPROXIMATE LOCATION OF ROAD BORING



REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 60'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA A/E PROJECT NUMBER: CPGT-09-0048	SHEET NO. 16 OF 23 BORING LOCATION PLAN



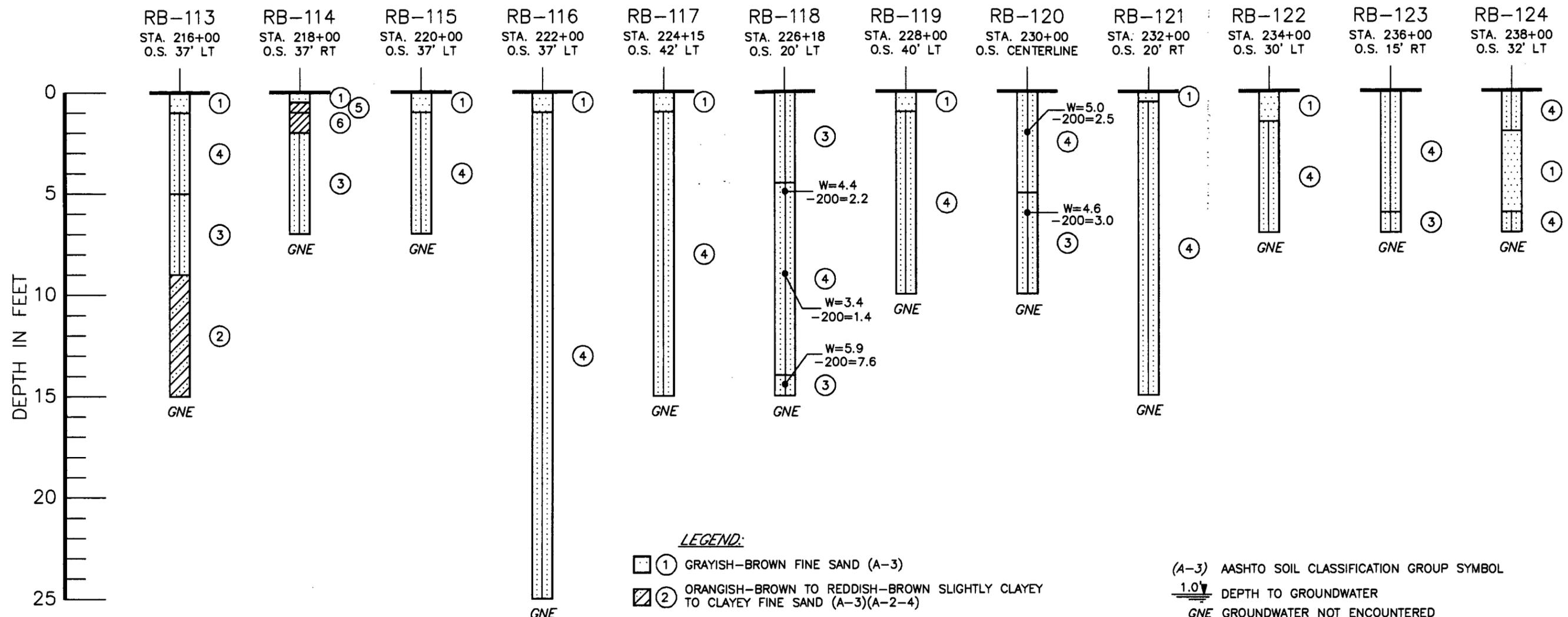
LEGEND:

- ① GRAYISH-BROWN FINE SAND (A-3)
- ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
- ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
- ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
- ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
- ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (A-8)
- ⑨ LIGHT BROWN LIMEROCK (FILL)
- ⑩ LIGHT GRAY FINE SAND (A-3)
- ⑪ BROWN FINE SAND (A-3)

(A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
 1.0' DEPTH TO GROUNDWATER
 GNE GROUNDWATER NOT ENCOUNTERED
 W MOISTURE CONTENT, IN PERCENT
 -200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
 K_v VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
 STA. STATION
 O.S. OFFSET

NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION HANCOCK ROAD

REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P. 352-241-0508 F. 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 5'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAYARES, FLORIDA 32778	SIGNATURE DATE ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048	SHEET NO. 17 OF 23 SOIL PROFILES



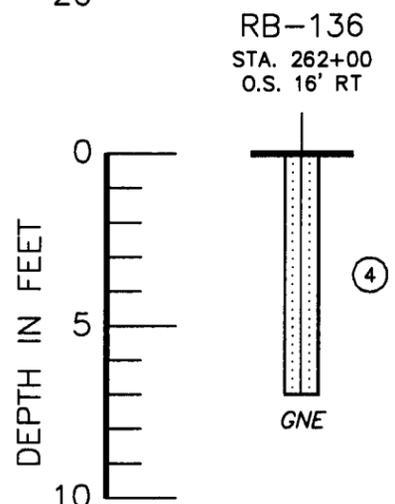
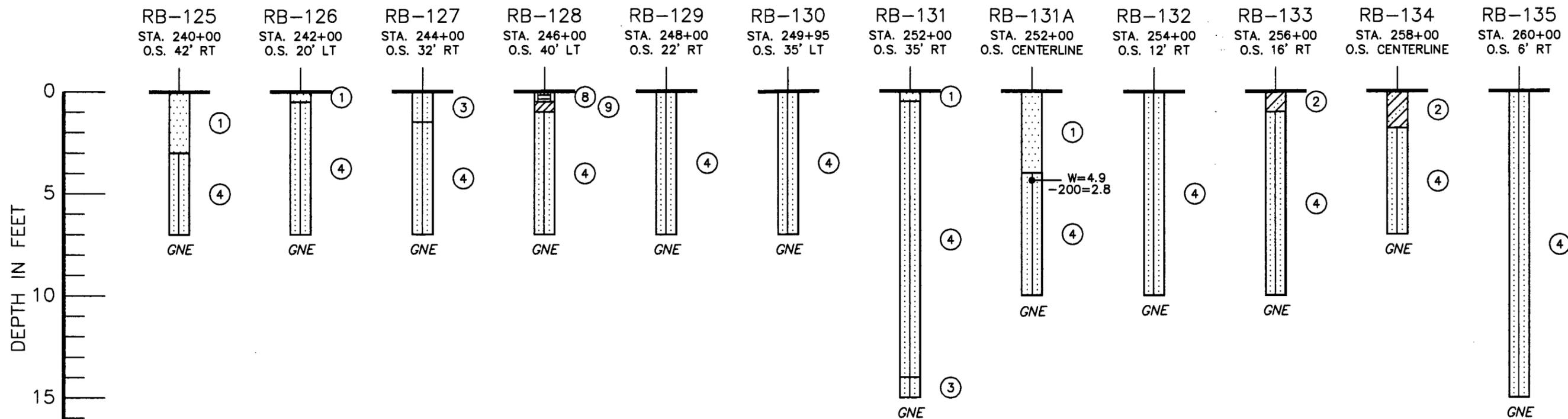
LEGEND:

- ① GRAYISH-BROWN FINE SAND (A-3)
- ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
- ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
- ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
- ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
- ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (A-8)
- ⑨ LIGHT BROWN LIMEROCK (FILL)
- ⑩ LIGHT GRAY FINE SAND (A-3)
- ⑪ BROWN FINE SAND (A-3)

- (A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
- 1.0' DEPTH TO GROUNDWATER
- GNE GROUNDWATER NOT ENCOUNTERED
- W MOISTURE CONTENT, IN PERCENT
- 200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
- Kv VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
- STA. STATION
- O.S. OFFSET

NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION HANCOCK ROAD

REVISIONS	DATE	<p>Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION D0007634</p>	APPROXIMATE SCALE: 1" = 5'	<p>LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778</p>	<p>SIGNATURE DATE ED MIGUENS, P.E. NO. 47535</p>	<p>GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048</p>	<p>SHEET NO. 18 OF 23 SOIL PROFILES</p>	



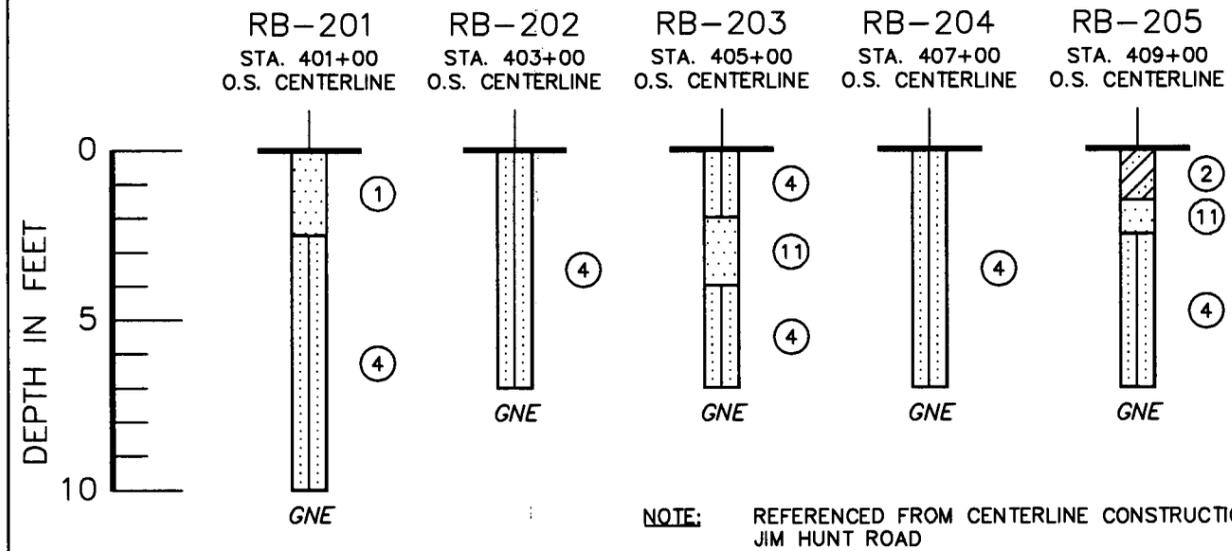
LEGEND:

- ① GRAYISH-BROWN FINE SAND (A-3)
- ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
- ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
- ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
- ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
- ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
- ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (PT)
- ⑨ LIGHT BROWN LIMEROCK (FILL)
- ⑩ LIGHT GRAY FINE SAND (A-3)
- ⑪ BROWN FINE SAND (A-3)

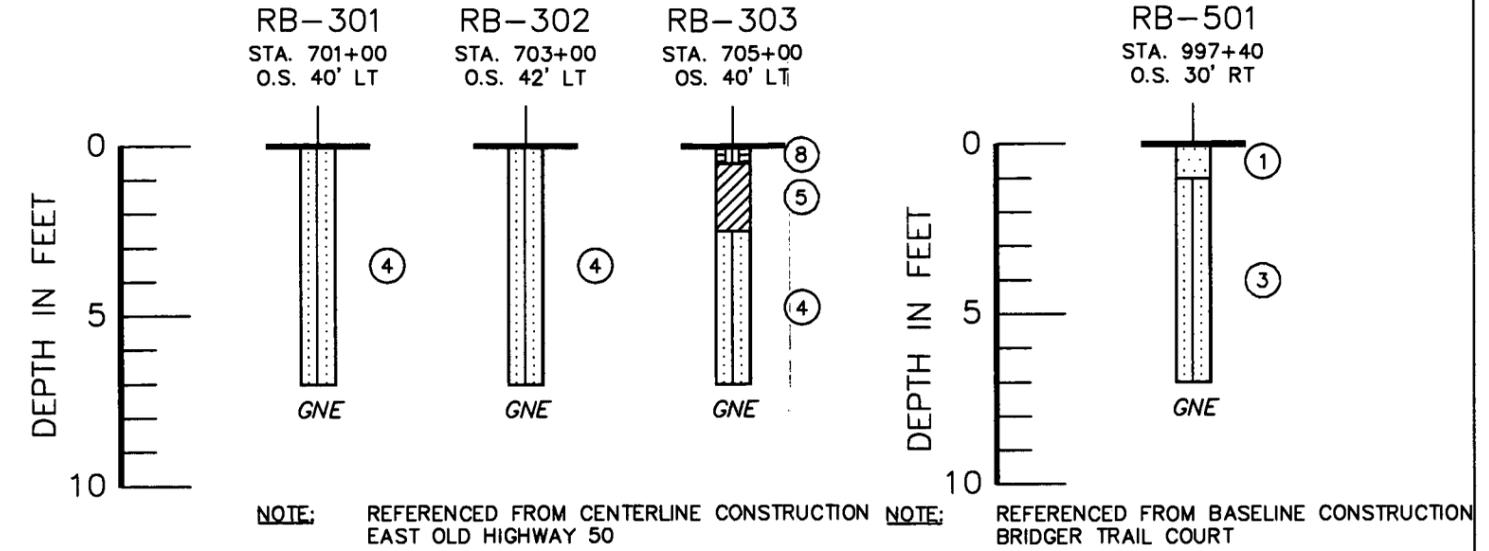
- (A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
- 1.0' ▾ DEPTH TO GROUNDWATER
- GNE GROUNDWATER NOT ENCOUNTERED
- W MOISTURE CONTENT, IN PERCENT
- 200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
- Kv VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
- STA. STATION
- O.S. OFFSET

NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION HANCOCK ROAD

REVISIONS	DATE	<p>Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634</p>	APPROXIMATE SCALE: 1" = 5'	<p>LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778</p>	<p>SIGNATURE DATE ED MIGUENS, P.E. NO. 47535</p>	<p>GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048</p>	<p>SHEET NO. 19 OF 23 SOIL PROFILES</p>	

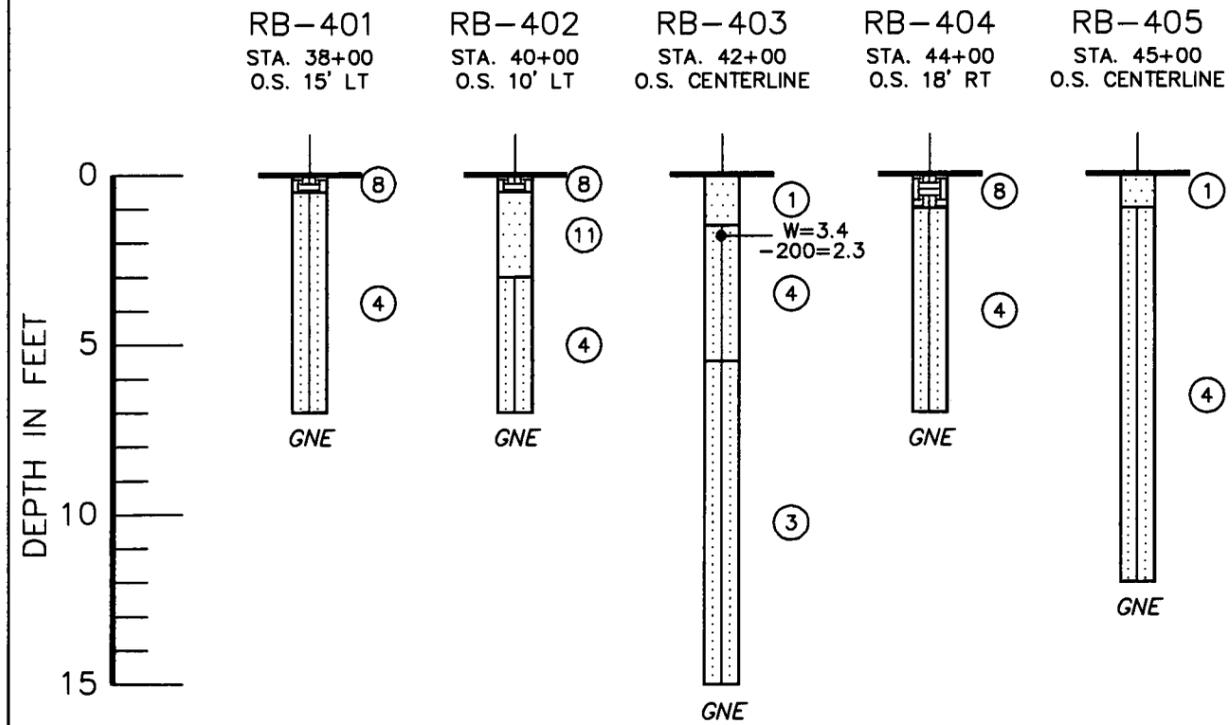


NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION
JIM HUNT ROAD



NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION
EAST OLD HIGHWAY 50

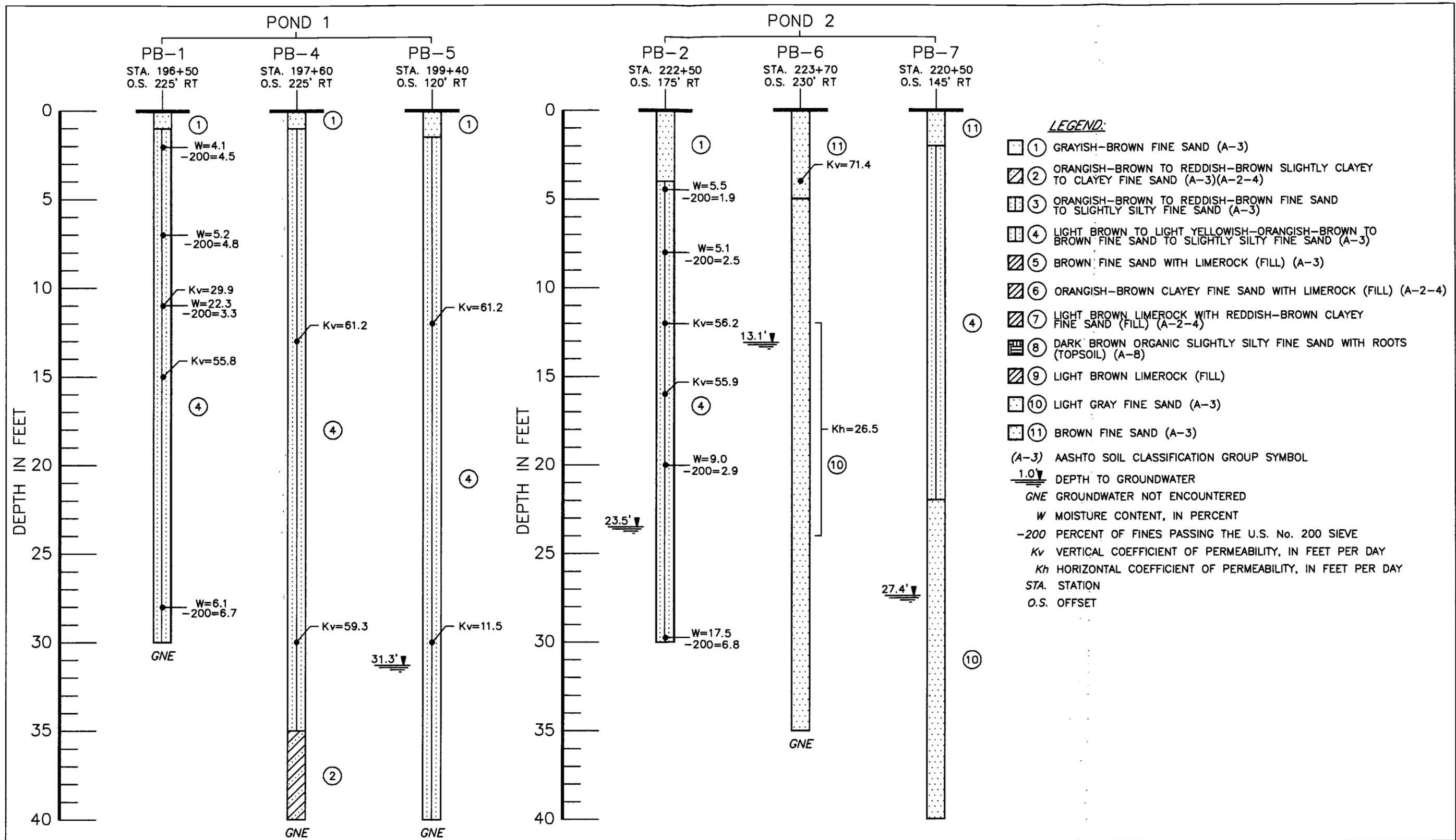
NOTE: REFERENCED FROM BASELINE CONSTRUCTION
BRIDGER TRAIL COURT



NOTE: REFERENCED FROM CENTERLINE CONSTRUCTION
WEST OLD HIGHWAY 50

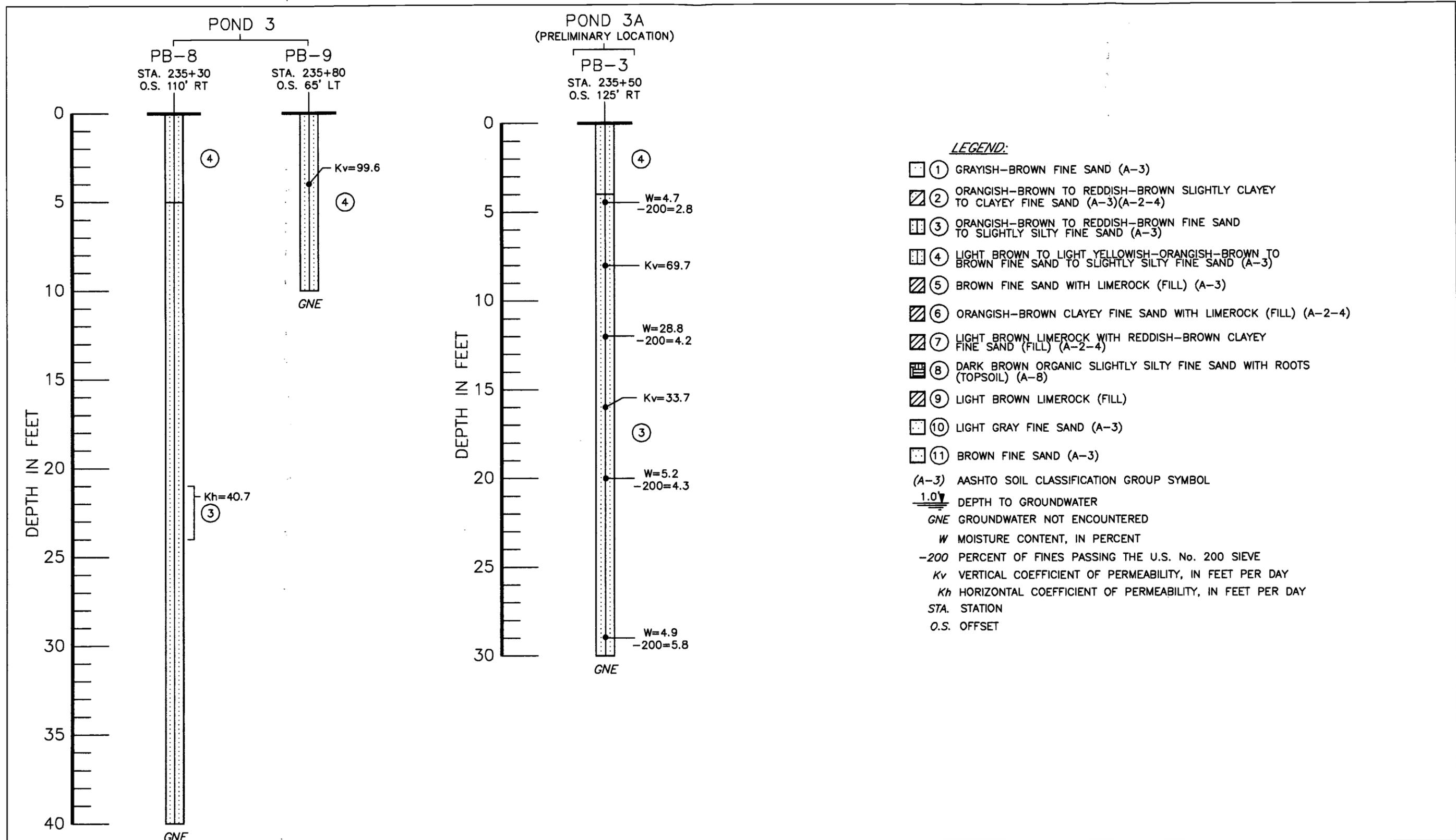
- LEGEND:**
- ① GRAYISH-BROWN FINE SAND (A-3)
 - ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
 - ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
 - ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
 - ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
 - ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (A-8)
 - ⑨ LIGHT BROWN LIMEROCK (FILL)
 - ⑩ LIGHT GRAY FINE SAND (A-3)
 - ⑪ BROWN FINE SAND (A-3)
- (A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
- 1.0' DEPTH TO GROUNDWATER
- GNE GROUNDWATER NOT ENCOUNTERED
- W MOISTURE CONTENT, IN PERCENT
- 200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
- Kv VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
- STA. STATION
- O.S. OFFSET

REVISIONS	DATE	Andreyev Engineering, Inc. 117D W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1" = 5'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE DATE ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-DD48	SHEET NO. 20 OF 23
							SOIL PROFILES

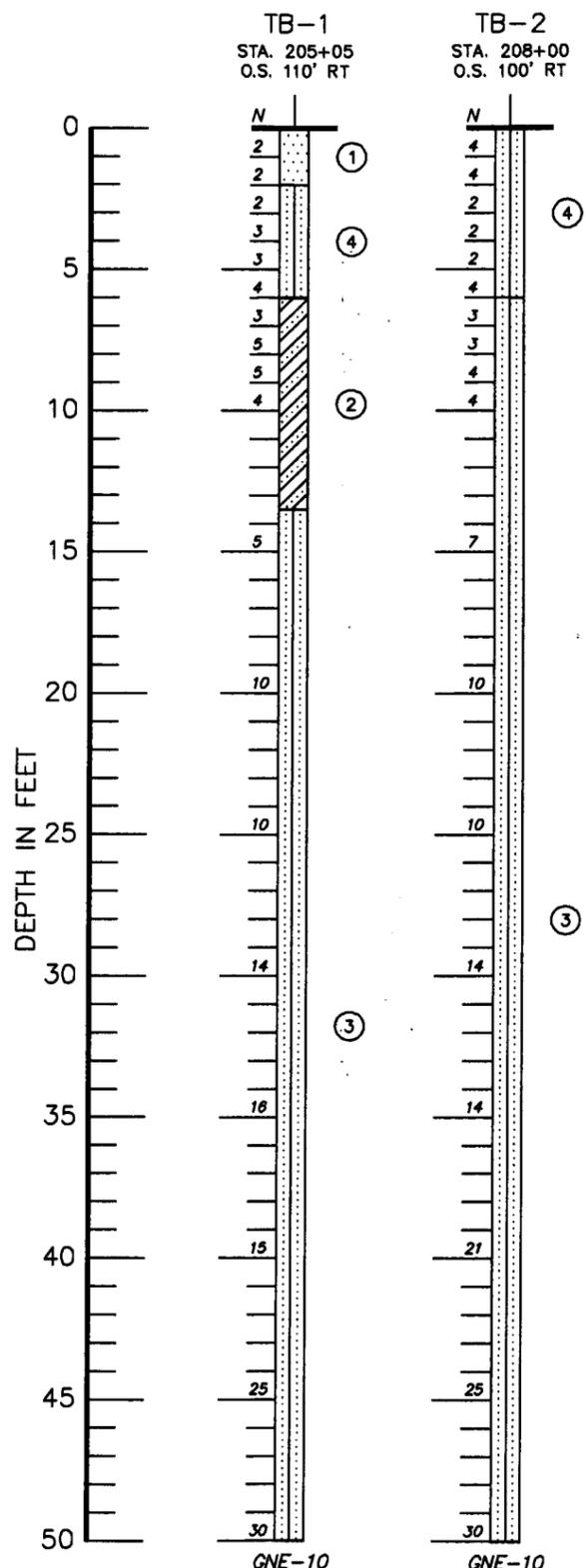


- LEGEND:**
- ① GRAYISH-BROWN FINE SAND (A-3)
 - ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
 - ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
 - ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
 - ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
 - ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (A-8)
 - ⑨ LIGHT BROWN LIMEROCK (FILL)
 - ⑩ LIGHT GRAY FINE SAND (A-3)
 - ⑪ BROWN FINE SAND (A-3)
- (A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
 1.0'▼ DEPTH TO GROUNDWATER
 GNE GROUNDWATER NOT ENCOUNTERED
 W MOISTURE CONTENT, IN PERCENT
 -200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
 Kv VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
 Kh HORIZONTAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
 STA. STATION
 O.S. OFFSET

REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 5'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE _____ DATE _____ ED MIGUENS, P.E. NO. 47535	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-D9-D048	SHEET NO. 21 OF 23 SOIL PROFILES
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REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007834	APPROXIMATE SCALE: 1" = 5'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048	SHEET NO. 22 OF 23
					DATE		SOIL PROFILES
					ED MIGUENS, P.E. NO. 47535		



NORTH HANCOCK ROAD MAXIMUM CUT AREAS

- LEGEND:**
- ① GRAYISH-BROWN FINE SAND (A-3)
 - ② ORANGISH-BROWN TO REDDISH-BROWN SLIGHTLY CLAYEY TO CLAYEY FINE SAND (A-3)(A-2-4)
 - ③ ORANGISH-BROWN TO REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ④ LIGHT BROWN TO LIGHT YELLOWISH-ORANGISH-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (A-3)
 - ⑤ BROWN FINE SAND WITH LIMEROCK (FILL) (A-3)
 - ⑥ ORANGISH-BROWN CLAYEY FINE SAND WITH LIMEROCK (FILL) (A-2-4)
 - ⑦ LIGHT BROWN LIMEROCK WITH REDDISH-BROWN CLAYEY FINE SAND (FILL) (A-2-4)
 - ⑧ DARK BROWN ORGANIC SLIGHTLY SILTY FINE SAND WITH ROOTS (TOPSOIL) (A-8)
 - ⑨ LIGHT BROWN LIMEROCK (FILL)
 - ⑩ LIGHT GRAY FINE SAND (A-3)
 - ⑪ BROWN FINE SAND (A-3)
- (A-3) AASHTO SOIL CLASSIFICATION GROUP SYMBOL
 1.0' DEPTH TO GROUNDWATER
 GNE GROUNDWATER NOT ENCOUNTERED
 GNE-10 GROUNDWATER NOT ENCOUNTERED WITHIN UPPER 10 FEET OF BORING
 W MOISTURE CONTENT, IN PERCENT
 -200 PERCENT OF FINES PASSING THE U.S. No. 200 SIEVE
 K_v VERTICAL COEFFICIENT OF PERMEABILITY, IN FEET PER DAY
 STA. STATION
 O.S. OFFSET

50126-4
 RECEIVED IN
 ALTAMONTE SPRINGS
 MAY 8 1 2011
 REGULATORY
 INFORMATION MGT.

REVISIONS	DATE	Andreyev Engineering, Inc. 1170 W. MINNEOLA AVENUE CLERMONT, FLORIDA 34711 P 352-241-0508 F 352-241-0977 CERTIFICATE OF AUTHORIZATION 00007634	APPROXIMATE SCALE: 1" = 6'	LAKE COUNTY DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION 123 N. SINCLAIR AVENUE TAVARES, FLORIDA 32778	SIGNATURE	GEOTECHNICAL ENGINEERING STUDY N. HANCOCK ROAD EXTENSION PROJECT SEGMENT A LAKE COUNTY, FLORIDA AEI PROJECT NUMBER: CPGT-09-0048	SHEET NO. 23 OF 23
					DATE		SOIL PROFILES