Soil Survey Report

Wekiva Parkway (State Road 429/State Road 46) – Section 6
From West of Old McDonald Road to River Oaks Circle
Lake and Seminole Counties, Florida
FDOT FIN: 238275-7-32-02

December 12, 2014
Terracon Project No. H1135080

Prepared for:
GAI Consultants, Inc.
Orlando, Florida

Prepared by:
Terracon Consultants, Inc.
Winter Park, Florida

December 12, 2014

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Attn.: Mr. Stephen A. Boylan, P.E.
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Re: Soil Survey Report
Wekiva Parkway (State Road 429/State Road 46) – Section 6
From West of Old McDonald Road to River Oaks Circle
FDOT FIN: 238275-7-32-02
Lake and Seminole Counties, Florida
Terracon Project No. H1135080

Dear Mr. Boylan:

Terracon Consultants, Inc. (Terracon) is pleased to present this Soil Survey Report for the above-referenced project. This evaluation was performed in general accordance with our Subconsultant Agreement dated June 20, 2013. This report presents the results of our field exploration, laboratory testing and geotechnical engineering recommendations for roadway embankment and pond construction for the proposed State Road 429 and associated access roads, connector roads, services roads, and ramps from West of Old McDonald Road to River Oaks Circle.

Terracon appreciates the opportunity to be of service to you on this project. If you should have any questions concerning the contents of this report, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,

TERRACON CONSULTANTS, INC.
Certificate of Authorization No. 8830

DRAFT

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TABLE OF CONTENTS

Appendix A

Appendix B

SOIL SURVEY REPORT
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) – SECTION 6
FROM
WEST OF OLD MCDONALD ROAD TO RIVER OAKS CIRCLE
FDOT FIN: 238275-7-32-02
Lake and Seminole Counties, Florida
Terracon Project No. H1135080
December 12, 2014

1.0 PROJECT DESCRIPTION

The proposed improvements consist of the construction of Wekiva Parkway (SR 429/SR 46) – Section 6 from West of Old McDonald Road to River Oaks Circle in Lake and Seminole Counties, Florida. The proposed alignment is located along/near existing State Road 46. A vicinity map showing the proposed alignment is presented on the attached **Exhibit A-1** in the **Appendix**. Based on plans and information, it is our understanding that this project consists of the construction of the State Road 429 roadway, which consists of a four (4) lane expressway; and two (2) lanes for service roads, which parallel the proposed expressway. The project also includes the construction of ramps at the west end of the project alignment; and access roads and connector roads. Based on the cross sections, the proposed grades for the roadway alignment, ramps, and auxiliary roadways range from about 5 feet below to about 30 feet above existing grades. It is also our understanding that multiple stormwater areas are proposed along the project alignment. We understand that some of the ponds are proposed to be "dry" ponds, and the others are proposed to be "wet" ponds. Roadside swales/basins will also be utilized on this project.

Geotechnical reports addressing the bridges and retaining walls are presented under separate covers. All stationing in this report is referenced from centerline of construction of State Road 429, unless otherwise noted.

2.0 PROJECT INFORMATION

2.1 Project Description

Item	Description
Site Layout	See **Appendix, Exhibit A-1**.
Drainage	The project will include the construction of multiple stormwater areas throughout the project alignment.

2.2 Site Location and Description

Item	Description
Location	The project alignment is located along/near State Road 46 from West of Old McDonald Road to River Oaks Circle in Lake and Seminole Counties, Florida.
Existing Topography	The USGS topographic quadrangle maps "Sorrento, Florida" and "Sanford SW, Florida" depict the ground surface elevations range from about +5 to +30 feet, NGVD, throughout the project alignment.
Surface Water	The USGS topographic quadrangle maps "Sorrento, Florida" and "Sanford SW, Florida" depict multiple wetland areas throughout the project alignment. The Wekiva River crosses the project alignment near the eastern limit.

3.0 SUBSURFACE CONDITIONS

3.1 Soil Survey

The Soil Surveys of Lake and Seminole Counties, Florida as prepared by the United States Department of Agriculture (USDA), Soil Conservation Service (SCS; later renamed the Natural Resource Conservation Service - NRCS), identifies multiple soil types along the project alignment. Descriptions of the mapped soil units are included in **Appendix A** as **Exhibit A-3**. It should be noted that the Soil Survey is not intended as a substitute for site-specific geotechnical exploration; rather it is a useful tool in planning a project scope in that it provides information on soil types likely to be encountered. Boundaries between adjacent soil types on the Soil Survey maps are approximate (included in **Appendix** as **Exhibit A-2**). A summary of the soil unit types, normal seasonal high groundwater depths, and an average estimated seasonal high groundwater elevation for each pond is presented in **Table 6** in **Appendix A**.

Based on review of the St. John's River Water Management District (SJRWMD) potentiometric maps of the upper Floridan Aquifer for this project area, the estimated elevation of the artesian head appears to range from approximately +20 to +40 feet, NGVD, for the project alignment.

3.2 Fieldwork Program

Roadway: Field exploration performed along the roadway alignments (mainline, ramps and auxiliary roads) consisted of a series of soil borings ranging in depths between 3 and 75 feet below existing grade. In areas where the proposed grades are at or near (generally within 10 feet) the existing grades, these typically consisted of hand and machine auger borings to a maximum depth of about 15 feet. In areas of high fill (proposed embankment generally greater than 10 feet above current grades), Standard Penetration Test (SPT) borings were performed. The SPT borings ranged in depths between about 20 and 75 feet below existing grade. The approximate location and offset for each roadway boring is shown on the attached **Exhibits A-5 through A-26** in the **Appendix**.

Ponds: Multiple auger borings were performed to depths ranging between about 4 to 20 feet below the existing ground surface within or near the proposed retention areas. Soil boring profiles are shown on the attached **Exhibits A-27 through A-30** in the **Appendix**. One (1) piezometer was also installed at the majority of the retention areas. Results of the piezometer readings are included in the **Appendix**.

"Depression" Areas: Two (2) "depression" areas were identified along the proposed project alignment. Multiple SPT borings were performed to depths ranging between about 38.5 to 120 feet below the existing ground surface within or near the "depression" areas. Soil boring profiles are shown on the attached **Exhibits A-31 through A-37** in the **Appendix**. Two (2) undisturbed Shelby Tube samples of buried organic soils were also obtained from the borings performed at the western "depression" area, for consolidation testing in our laboratory. Also, Cone Penetration Test (CPT) soundings were performed to depths of about 46.4 to 73 feet below the existing ground surface near the western "depression" area. The CPT soundings are presented on the attached **Exhibits A-38 and A-39** in the **Appendix**.

Soil Probing: Manual soil probing was performed at locations generally identified as wetland areas along the proposed project alignment. Results of the soil probing are presented on **Exhibits A-40 through A-44** in the **Appendix**.

The station and offset for the majority of the locations are approximate and were obtained by scaling from site plans and existing features. The station and offset for the piezometer locations were based on survey by McKim & Creed. The elevations for the "depression" area SPT borings and CPT soundings were estimated based on review of cross sections. The elevations at each piezometer location were based on survey by McKim & Creed.

The hand auger boring procedure consisted of manually turning a 3-inch-diameter, 6-inch-long sampler into the soil until it was full. The sampler was then retrieved and the soils in the sampler were visually examined and classified. This procedure was repeated until the desired termination depth was achieved. Samples of representative strata were obtained for further visual examination and classification in our laboratory. These borings were then backfilled upon completion.

The machine auger borings were performed by hydraulically turning a 4-inch diameter continuous flight auger into the ground in 5 foot increments. Additional flights were added until the desired termination depth was achieved. The auger was then extracted without further rotation and representative soil samples were retrieved from the auger. Samples were visually classified in the field, and were then packaged and returned to our soils laboratory for further classification and testing. These borings were then backfilled upon completion.

Typically, Standard Penetration Tests were performed continuously in the SPT borings from existing grade to a depth of about 10 feet and at 5 foot depth intervals thereafter. A hand auger boring was initially performed to a depth of about 4 feet at a few locations due to suspected

nearby underground utilities. Each sample was removed from the sampler in the field and was examined and visually classified by an engineering technician. Representative portions of each sample were packaged and sealed for transportation to our office for further examination and visual classification. Water levels were measured in the boreholes at the time of our field exploration to evaluate the depth to groundwater. The SPT borings were backfilled upon completion and sealed with cement grout.

Adjacent to the SPT boring profile are the "N" values. These "N" values are the number of hammer blows required to advance the split spoon sampler a distance of 12 inches. The "N" values have been empirically correlated with various soil properties and are considered to be indicative of the relative density of cohesionless soils and consistency of cohesive soils. Based on the results of the SPT borings, relative densities ranged from very loose to very dense for the encountered cohesionless soils; and the consistencies of encountered cohesive soils ranged from very soft to very stiff.

The CPT soundings, performed in general accordance with ASTM Specification D-3441, consisted of pushing a cone penetrometer into the soil and electronically measuring the corresponding tip resistance, sleeve friction resistance, and dynamic pore water pressure. These measured properties can be used to classify soils, estimate soil shear strength, and analyze the hydro-geologic characteristics of the explored area. CPT data was obtained continuously in the soundings as the cone was pushed from the ground surface to the depths previously indicated. The CPT equipment and technique is limited if very dense materials (i.e. limestone) are encountered.

The piezometers were installed using a hollow-stem auger drilling rig. This consisted of installing 2-inch inner diameter polyvinyl chloride (PVC) well pipe with a 10-foot section of 0.006-inch slotted screen, and solid PVC casing riser extending to stick up above ground surface. Native soils were placed in the remaining annulus space to the ground surface. A transducer was placed in the well pipe to record the water level in the piezometer on a daily basis.

The manual soil probe procedure consisted of pushing a slender metal rod into the surficial soil and evaluating the relative resistance of the soil to this manual penetration. Highly organic soils such as muck and/or peat are characteristically very soft and/or fibrous and will typically yield the manual soil probe penetration. However, manual soil probes cannot detect peat or muck layers which exist beneath layers of sand or dense soils which cannot be penetrated. The probes can also penetrate to some extent in loose granular soils which may exist beneath peat or muck layers.

4.0 GENERAL SUBSURFACE CONDITIONS

The soil conditions encountered in the roadway and pond borings are shown on **Exhibits A-5 through A-30** in the **Appendix**. The soil survey encountered eleven (11) generalized soil strata within the survey limits to the maximum depths explored in the borings. In general, the soil stratification, based on visual examination and laboratory testing, is as follows:

Stratum No.	Description	AASHTO Classification
1	Light gray to dark brown fine sand to fine sand with silt	A-3
2	Brown to dark brown silty fine sand	A-2-4
3	Light brown and light gray to greenish-gray clayey fine sand	A-2-6, A-2-7
4	Reddish-brown to dark brown fine sand to silty fine sand with cementation (hardpan)	A-3, A-2-4
5	Brown to dark brown sandy muck/peat	A-8
6	Light brown to grayish-brown and greenish-gray clay	A-6, A-7-6
7	Brown silty to clayey fine sand, with trace to some organics	A-2-4, A-2-6
8	Greenish-gray sandy clay to clay with occasional trace to some shell	A-7-5, A-7-6
9	Brown sandy silt	A-4
10	Gray silty fine sand to clayey find sand, with phosphates or cemented sands or shell	A-2-4, A-2-6, A-2-7
11	Light gray to light brown dolostone or weathered limestone	-

4.1 Roadway Borings

Within the top 5 to 10 feet, the borings generally encountered Stratum 1 and/or Stratum 2 soils. Below a depth of 10 feet, Stratum 1, Stratum 2 and Stratum 3 soils were typically encountered. Stratum 4 (hardpan), Stratum 6, Stratum 7, Stratum 8, and Stratum 9 soils were intermittently encountered at various depths in the borings. Stratum 10 and Stratum 11 soils were typically only encountered in the borings performed to depths below about 25 feet.

The above subsurface conditions are only general descriptions. For details at individual boring locations, refer to the boring profiles in the **Appendix**.

Groundwater levels observed in the open boreholes during our field exploration indicate that the groundwater ranged from existing grade to about 14 feet below existing grade. The relatively large difference in encountered groundwater depths was primarily due to the elevation differences between the borings throughout the project alignment. Many of the borings did not encounter groundwater to the boring termination depths, and are denoted as "GNE" on the soil profile sheets. A seasonal high groundwater level was not estimated for these borings.

Seasonal high groundwater levels were estimated based on observed groundwater levels, USDA Lake County and Seminole County Soil Surveys, the existing profile grades, rainfall history and geotechnical engineering judgment. The observed and estimated seasonal high groundwater levels are shown adjacent to each of the boring profiles, where applicable, on the attached **Exhibits A-5 through A-26** in the **Appendix**. Groundwater levels will fluctuate with the amount of local rainfall and with site development.

4.2 Pond Borings

In general, the pond borings typically encountered Stratum 1 (A-3), Stratum 2 (A-2-4) and Stratum 3 (A-2-6, A-2-7) soils. Stratum 4 (A-3, A-2-4)(hardpan), Stratum 5 (A-8), Stratum 6 (A-6), Stratum 7 (A-2-4, A-2-6), and Stratum 8 (A-7-6) materials were occasionally encountered at various depth and thicknesses in several of the ponds.

The above subsurface conditions are only general descriptions. For details at individual boring locations, refer to the boring profiles in the **Appendix**.

Groundwater levels observed in the open boreholes during our field exploration indicate that the groundwater ranged between depths of about 1 and 17 feet below existing grade. Two (2) of the borings did not encounter groundwater to the boring termination depths, and are denoted as "GNE" on the soil profile sheets.

Seasonal high groundwater levels were estimated based on observed groundwater levels, USDA Lake County and Seminole County Soil Surveys, the existing profile grades, review of piezometer data, rainfall history and geotechnical engineering judgment. The observed and estimated seasonal high groundwater levels are shown adjacent to each of the boring profiles on the attached **Exhibits A-27 through A-30** in the **Appendix**. Groundwater levels will fluctuate with the amount of local rainfall and with site development.

As previously mentioned, a piezometer was installed at the majority of the retention areas. The initial and subsequent data obtained from the piezometers, as well as rainfall data (based on data from the NOAA Sanford station gauge), are presented in **Appendix A** of this report. Groundwater readings were recorded daily in the piezometers.

4.3 "Depression" Area Borings

Subsurface conditions encountered in the borings performed at the "depression" areas are shown on **Exhibits A-31 through A-37** in the **Appendix.** Several of the borings performed at the "depression" area observed at about Station 686+00 encountered surficial and buried organic soils. The borings performed at the "depression" area observed at about Station 741+00 primarily encountered fine sand (A-3, SP, SP-SM), silty fine sand (A-2-4, SM), and clayey fine sand (A-2-6, SC) from the existing ground surface to the boring termination depths of about 60 feet.

For details at the individual boring locations, refer to **Exhibits A-31 through A-37** in the **Appendix**. The results of the CPT soundings are presented on **Exhibits A-38 and A-39** in the **Appendix.**

Groundwater was observed in the "depression" area borings at or above existing grade to a depth of about 7.5 feet below existing grade. The encountered and estimated seasonal high groundwater levels are shown adjacent to the boring profiles on **Exhibits A-31 through A-37** in the **Appendix**. Groundwater levels will fluctuate with the amount of local rainfall and with site development, and therefore, may be different at other times.

5.0 LABORATORY TESTING

The soil samples retrieved from the boring locations were transported to our laboratory for visual examination and selective soil testing. The results of our laboratory testing are presented on the attached **Report of Soil Survey** sheet **(Exhibit A-4), Report of SPT Borings** sheets **(Exhibits A-31 through A-37),** and **Tables 1 and 2** in the **Appendix.** Laboratory testing was performed in general accordance with the appropriate Florida methods.

5.1 Corrosion Series Testing

A series of 77 corrosion tests were performed on soil samples obtained along the project alignment. These results indicate that the subsurface environment ranges from slightly to extremely aggressive (pH = 4.1) for use in selection of an appropriate class of concrete or steel in accordance with the Florida Department of Transportation (FDOT) Standards. The environmental classifications are based on the Structures Design Guidelines. The corrosion series test results are summarized on **Tables 3 and 4** in the **Appendix**.

5.2 Permeability Testing

Permeability testing was performed on soil samples collected from the pond areas. The testing was typically performed on Strata 1 and 2 materials, obtained at various depths. A summary of the results including the measured vertical permeability rate and the estimated horizontal permeability rate are presented in **Table 5** in the **Appendix**.

5.3 Consolidation Testing

Consolidation testing was performed on selected undisturbed samples. **Consolidation Test Reports** are presented in the **Appendix,** presenting a summary of key parameters interpreted from consolidation tests plotted against depth.

6.0 EVALUATION AND RECOMMENDATIONS

The following conclusions and recommendations are based on the project characteristics previously described, the data obtained in our field exploration and our experience with similar subsurface conditions and construction types. If the final roadway and pond locations or grades are significantly different from those previously described, or if subsurface conditions different from those disclosed by the borings are encountered during construction, we should be notified immediately so that we might review the following recommendations regarding such changes.

6.1 Roadway Borings

The material from Strata 1, 2 and 4 (A-3, A-2-4) can be classified as Select (S) and can be used as embankment material in accordance with Index 505. The material from Strata 2 and 4 (A-2-4) may retain excess moisture and may be difficult to dry and compact. The Stratum 4 soils (A-3, A-2-4) (hardpan) are classified as Select (S) by Index 505 in the FDOT Roadway and Traffic Design Standards. However, they may require pulverization in accordance with Specification 120-7.2 to make them suitable for roadway embankment fill.

The material from Strata 3, 6, 7, 9 and 10 (A-2-6, A-2-7, A-4, A-6) should be classified as Plastic (P) and can be utilized as embankment material in accordance with Index 505. The material from Stratum 8 (A-7-5, A-7-6) should be classified as High Plastic (H) and can be utilized as embankment material in accordance with Index 505.

The material from Strata 4 and 10 may be difficult to excavate or penetrate. If these materials are encountered during construction, they may require specialized equipment and/or procedures, as necessary, to facilitate excavation/penetration/dewatering.

The material from Stratum 5 (A-8) shall be classified as Muck (M), and shall be removed in accordance with Index 500. Based on the manual soil probing performed, organic soils and surficial organics/loose sediments were observed to depths of about 0.5 to 9 feet. This material should be removed in accordance with Index 500. Based on the results of the borings and soil probing, over-excavation of organic material is anticipated at the following locations:

- Station 684+50 to Station 687+50 (west "depression" area; surficial stratum),
- Station 693+50 to Station 699+50,
- Station 711+50 to Station 725+50
- Stations 101+00 and 103+00 (referencing baseline of Service Road 1),

If plastic and/or organic material is encountered along the project alignment during construction, at locations that were not indicated in this report or where soil borings were not performed, these materials should be removed in accordance with Index 500 and 505.

For freeways and a rural multilane mainline, a minimum separation of 3 feet is recommended between the estimated seasonal high groundwater level and the bottom of a limerock base. Based on cross sections, this minimum separation was achieved throughout the State Road 429 mainline expressway. For ramps, a minimum separation of 2 feet is recommended between the estimated seasonal high groundwater level and the bottom of a limerock base. Based on cross sections, this minimum separation was achieved throughout Ramps P and Q. For the other two-lane facilities for this project, a minimum separation of 1 foot was achieved.

6.2 Pond Borings

Below is a summary of the proposed pond names and types. A summary of the soil unit types, normal seasonal high groundwater depths, and an average estimated seasonal high groundwater elevation for each pond is presented in **Table 6** in **Appendix A**.

Pond Name(s)	Pond Type
RS7-E-1A	Wet
RS7-E-4A, 4B & 4C	Dry
RS7-E-2A	Dry
RS8-E-1	Wet
RS9-E-1	Dry
BW1A-E-6	Dry
BW1-E-2	Wet
BW1-E-3	Wet
BW1-E-4	Wet
BW2-E-5A	Wet
BW2-E-1	Wet
BW2-E-2	Wet
WR1-E-6	Wet
WR1-E-1	Wet
WR1-E-5A	Dry
WR1-E-7	Dry
WR1-E-7 alternate	Dry
WR2A-S-2	Dry

The material from Strata 1, 2 and 4 can be classified as Select (S) and can be used as embankment material in accordance with Index 505. The material from Strata 2 and 4 will retain excess moisture and be difficult to dry and compact. The Stratum 4 material may be difficult to excavate and/or penetrate, and may require special equipment and/or procedures to facilitate

excavation and/or penetration. The material from Stratum 4 shall be pulverized prior to use as fill. The material from Strata 3, 6 and 7 shall be classified as Plastic (P) material. The material from Stratum 8 shall be classified as High Plastic (H) material. The material from Stratum 5 shall be treated as muck/peat (M).

If plastic and/or organic material is encountered along the project alignment during construction, at locations that were not indicated in this report or where soil borings were not performed, these materials should be removed in accordance with Index 500 and utilized in accordance with 505.

Piezometers: A total of 15 piezometers were installed throughout the ponds sites. The initial and subsequent data obtained from the piezometers, as well as rainfall data (based on data from the NOAA Sanford station gauge), are presented in the **Appendix** of this report. Groundwater readings were recorded daily in the piezometers.

6.3 "Depression" Areas

Two (2) locations along the proposed project alignment were identified as "depression" areas. Multiple SPT borings were performed to depths ranging between about 38.5 to 120 feet below the existing ground surface, to evaluate subsurface conditions in these areas.

West "Depression" Area: Several of the borings performed at the "depression" area observed at about Station 686+00 encountered surficial and buried organic soils. Based on cross sections, up to about 28 feet of new embankment is proposed at this area. A significant amount of settlement is anticipated. Mitigation for this area may include:

- Construction of a bridge structure (extension of the nearby Wildlife Crossing bridge),
- Performing a surcharge program for the area,
- Subsoil grouting and/or ground improvements.

East "Depression" Area: The borings performed at the "depression" area observed at about Station 741+00 primarily encountered fine sand (A-3, SP, SP-SM), silty fine sand (A-2-4, SM), and clayey fine sand (A-2-6, SC) from the existing ground surface to the boring termination depths of about 60 feet. Standard construction is anticipated for this area.

7.0 REPORT LIMITATIONS

This report is based on the results of a limited number of borings and may not accurately reflect conditions between or away from boring locations. Variations of the subsoil conditions between or away from boring locations may occur. If conditions not discussed in this report are observed, we request the opportunity to review our recommendations.

APPENDIX

INDEX TO APPENDIX
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APPENDIX A

APPENDIX B

Soil Boring Profiles (Reported by Nadic Engineering Services for Line and Grade Study)

TABLES

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
1	B-1	640+00	80 LT	13.5	100	98	91	52	9	20	-	-	-	A-3
	A-1	645+00	240 LT	2.5	100	97	89	37	5	3	-	-	-	A-3
	A-4	648+00	140 LT	3.5	100	98	90	45	10	6	-	-	-	A-3
	A-11	653+00	60 LT	4.0	100	97	88	37	4	3	-	-	-	A-3
	A-14	654+00	15 LT	2.0	100	98	87	36	4	3	-	-	-	A-3
	B-5	659+00	60 RT	3.0	-	-	-	-	4	4	-	-	-	A-3
	A-66	768+00	125 LT	1.0	100	95	78	25	4	3	-	-	-	A-3
	B-17	687+00	60 LT	33.5	-	-	-	-	10	40	-	-	-	A-3
	A-25	696+00	30 LT	2.0	100	97	85	36	6	27	-	-	-	A-3
	B-33	702+00	80 LT	0.5	100	98	86	39	8	20	-	-	-	A-3
	B-58	734+00	80 RT	6.0	-	-	-	-	10	9	-	-	-	A-3
	A-45	739+00	120 LT	4.0	100	97	83	32	4	15	-	-	-	A-3
	B-101	770+00	80 RT	4.0	-	-	-	-	4	4	-	-	-	A-3
	A-73	774+00	160 LT	5.5	100	95	78	25	4	1	-	-	-	A-3
	A-78	779+00	180 LT	4.5	100	96	80	30	9	8	-	-	-	A-3
	B-108	779+00	CL	0.5	100	96	74	21	4	3	-	-	-	A-3
	A-80	781+00	160 LT	3.5	100	96	78	25	5	5	-	-	-	A-3
	A-82	783+00	180 LT	1.5	100	96	77	25	6	1	-	-	-	A-3
	A-86	785+00	40 LT	4.0	100	96	78	27	8	18	-	-	-	A-3
	A-88	787+00	40 RT	8.0	100	96	79	27	9	20	-	-	-	A-3
	A-92	792+00	20 LT	13.5	100	89	36	4	1	22	-	-	-	A-3
	A-97	843+00	140 LT	0.5	100	95	75	27	8	18	-	-	-	A-3
	A-98	844+00	60 RT	4.0	100	95	74	26	5	19	-	-	-	A-3
	A-101	847+00	160 LT	0.5	100	95	75	28	9	22	-	-	-	A-3
	A-101	847+00	160 LT	6.0	100	94	75	29	10	19	-	-	-	A-3
	B-125	847+50	60 RT	2.0	100	94	73	23	4	15	-	-	-	A-3
	A-99	845+00	60 LT	4.0	100	95	75	27	4	21	1	-	-	A-3
	A-108	854+00	180 LT	0.5	100	95	76	28	9	17	-	-	-	A-3
	A-112	856+50	60 LT	28.5	-	-	-	-	4	19	-	-	-	A-3
	A-119	863+00	180 LT	0.5	100	94	73	25	9	22	-	-	-	A-3
	A-121	864+00	50 RT	2.0	100	95	76	24	5	16	-	-	-	A-3

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
1	A-127	871+00	220 RT	0.5	100	95	73	26	7	9	-	-	-	A-3
	B-151	878+50	30 RT	0.5	100	96	78	28	9	6	-	-	-	A-3
	A-135	880+00	CL	2.0	100	88	41	13	5	5	-	-	-	A-3
	B-154	881+00	80 LT	2.0	100	95	74	24	6	7	-	-	-	A-3
	A-143	902+00	60 LT	2.0	100	96	80	25	7	4	-	-	-	A-3
	A-143	902+00	60 LT	28.5	100	99	93	26	6	29	-	-	-	A-3
	A-147	51+00[4]	40 RT	1.0	100	97	81	31	6	2	-	-	-	A-3
	A-152	93+00[5]	40 LT	2.0	100	96	79	27	10	5	-	-	-	A-3
	A-159	2018+00[7]	30 RT	3.0	100	97	84	36	8	4	-	-	-	A-3
	SDB-59	55+00[8]	CL	9.0	100	98	90	43	8	7	-	-	-	A-3
	SDB-60	56+00[8]	15 RT	4.5	100	97	84	33	3	3	-	-	-	A-3
	SDB-2	3+00[1]	20 RT	33.5	-	-	-	-	9	19	-	-	-	A-3
	SDB-5	5+95[1]	CL	4.5	100	98	88	37	6	2	-	-	-	A-3
	SDB-37	107+00[6]	15 LT	3.0	100	96	81	27	5	3	-	-	-	A-3
	SDB-24	134+00[3]	15 LT	1.0	99	97	85	34	5	2	-	-	-	A-3
	SDB-39	4001+00[2]	25 RT	4.0	100	94	72	27	7	19	-	-	-	A-3
	SDB-49	993+00[10]	15 RT	10.0	100	98	91	41	1	2	-	-	-	A-3
	SDB-52	996+00[10]	15 LT	2.0	100	98	90	40	3	5	-	-	-	A-3
	SDB-53	997+00[10]	CL	8.0	100	99	91	47	9	12	-	-	-	A-3
	SDB-63	85+00[5]	15 LT	4.0	100	94	77	23	4	15	-	-	-	A-3
	SDB-66	90+00[5]	15 RT	4.0	100	96	79	28	10	6	-	-	-	A-3
	RPB-2	43+00[11]	15 RT	2.0	100	98	90	37	4	8	-	-	-	A-3
	RPB-4	45+00[11]	15 RT	10.0	100	98	90	43	7	7	-	-	-	A-3
	RPB-9	50+00[11]	CL	13.5	100	98	91	49	8	11	-	-	-	A-3
	RPB-10	51+00[11]	15 RT	4.0	100	97	89	40	3	4	-	-	-	A-3
	RPB-11	52+00[11]	CL	2.0	100	97	87	37	4	4	-	-	-	A-3
	RPB-18	59+00[11]	15 RT	4.0	100	97	89	40	4	3	-	-	-	A-3
	RPB-24	35+00[12]	CL	6.0	100	98	91	50	6	9	-	-	-	A-3
	RPB-26	37+00[12]	CL	2.0	100	97	88	36	3	3	-	-	-	A-3
	RPB-33	44+00[12]	15 LT	4.0	100	98	90	45	8	7	-	-	-	A-3

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
	B-2	642+50	CL	18.5	100	98	89	49	11	24	-	-	-	A-2-4
	B-3	645+00	80 RT	4.0	100	98	90	51	11	12	-	-	-	A-2-4
	A-6	650+00	150 LT	4.0	100	98	90	49	14	9	-	-	-	A-2-4
	B-4	650+00	60 LT	7.5	100	98	90	50	17	23	-	-	-	A-2-4
	A-7	651+00	50 LT	23.5	100	98	90	47	13	23	-	-	-	A-2-4
	A-23	689+50	60 LT	6.0	100	99	91	54	22	18	-	NP	NP	A-2-4
	A-24	692+50	60 LT	2.0	100	98	86	40	11	19	-	-	-	A-2-4
	B-35	708+00	80 RT	4.0	100	98	87	41	15	19	-	-	-	A-2-4
	A-34	710+00	60 RT	2.0	100	97	85	38	15	19	-	-	-	A-2-4
	A-37	726+00	CL	4.0	100	98	86	49	25	19	-	NP	NP	A-2-4
	B-54	728+00	80 RT	9.0	100	97	84	38	13	12	-	-	-	A-2-4
	B-63	738+00	80 RT	5.0	-	-	-	-	17	17	-	NP	NP	A-2-4
	A-46	739+00	30 LT	4.0	100	97	82	43	26	11	-	-	-	A-2-4
	A-47	740+00	30 RT	13.5	-	-	-	-	20	20	-	NP	NP	A-2-4
	B-65	743+70	80 RT	23.5	100	98	89	47	19	20	-	NP	NP	A-2-4
	B-69	746+00	80 RT	8.0	100	99	91	51	24	15	-	NP	NP	A-2-4
	A-53	747+00	140 LT	6.0	100	97	85	43	16	11	-	-	-	A-2-4
2	A-57	754+00	120 LT	6.0	100	98	90	54	25	12	-	-	-	A-2-4
	A-58	758+00	160 LT	8.0	100	98	87	45	22	11	-	-	-	A-2-4
	A-60	762+00	120 LT	8.0	100	98	87	51	27	15	-	22	8	A-2-4
	A-63	765+00	160 LT	6.5	100	96	83	44	26	13	-	25	9	A-2-4
	A-65	767+00	60 LT	13.5	-	-	-	-	17	14	-	NP	NP	A-2-4
	B-99	768+50	80 RT	10.0	100	97	84	43	25	16	-	26	10	A-2-4
	B-109	781+00	60 LT	13.5	100	97	79	33	19	18	-	-	-	A-2-4
	A-92	792+00	20 LT	1.0	100	96	78	32	14	21	-	-	-	A-2-4
	A-93	794+00	40 LT	28.5	100	90	76	52	24	28	-	NP	NP	A-2-4
	A-94	795+00	140 LT	6.5	-	-	-	-	14	16	-	-	-	A-2-4
	A-95	837+00	20 LT	6.0	100	95	78	33	15	21	-	-	-	A-2-4
	A-99	845+00	60 LT	13.5	100	94	71	27	14	23	-	NP	NP	A-2-4
	A-104	850+00	60 RT	2.0	100	96	79	32	14	18	-	-	-	A-2-4
	A-104	850+00	60 RT	8.0	100	96	77	30	13	18	-	NP	NP	A-2-4
	B-129	852+00	80 RT	13.5	100	97	77	29	13	24	-	-	-	A-2-4
	A-107	853+00	100 LT	2.5	100	95	78	30	13	25	-	-	-	A-2-4
	A-112	856+50	60 LT	38.5	-	-	-	-	19	34	-	NP	NP	A-2-4
	A-113	857+00	180 LT	1.5	100	95	76	32	15	26	-	-	-	A-2-4

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
2	B-134	858+00	80 RT	2.5	100	95	77	30	14	19	-	-	-	A-2-4
	A-115	859+00	120 LT	4.5	100	95	76	33	18	15	-	26	9	A-2-4
	A-121	864+00	50 RT	13.5	100	96	78	31	14	23	-	-	-	A-2-4
	B-144	871+00	80 RT	28.5	100	100	99	92	29	31	-	NP	NP	A-2-4
	B-145	872+50	80 LT	4.0	100	96	79	36	19	19	-	-	-	A-2-4
	A-131	875+00	CL	6.0	100	96	79	37	22	22	-	-	-	A-2-4
	A-132	875+00	180 RT	2.5	100	97	81	45	29	21	-	26	7	A-2-4
	B-150	877+50	80 LT	8.0	100	97	82	42	24	21	-	-	-	A-2-4
	B-152	878+50	185 RT	6.0	100	96	81	41	23	16	-	-	-	A-2-4
	B-153	880+00	180 RT	18.5	100	97	84	37	18	23	-	-	-	A-2-4
	B-155	881+50	180 RT	13.5	100	95	77	29	12	23	-	-	-	A-2-4
	A-136	882+50	40 LT	13.5	100	95	76	32	16	21	-	-	-	A-2-4
	A-137	883+00	180 RT	23.5	-	-	-	-	24	33	-	NP	NP	A-2-4
	A-142	901+00	120 RT	7.0	100	97	82	32	17	15	-	-	-	A-2-4
	A-143	902+00	60 LT	6.0	100	96	82	39	24	14	-	NP	NP	A-2-4
	A-145	903+50	60 RT	18.5	-	-	-	-	18	34	-	-	-	A-2-4
	B-178	906+00	80 LT	3.5	100	97	87	37	20	9	-	-	-	A-2-4
	A-146	907+50	60 LT	13.5	100	81	65	44	21	21	-	NP	NP	A-2-4
	A-156	2015+00[7]	30 LT	1.0	100	85	79	49	17	5	-	-	-	A-2-4
	SDB-2	3+00[1]	20 RT	6.0	-	-	-	-	19	14	-	-	-	A-2-4
	SDB-4	5+00[1]	10 LT	8.0	-	-	-	-	22	17	-	-	-	A-2-4
	SDB-8	9+00[1]	15 LT	8.0	100	98	90	46	16	17	-	-	-	A-2-4
	SDB-13	1015+00[2]	15 LT	0.5	100	87	78	50	14	5	-	-	-	A-2-4
	SDB-21	131+00[3]	15 RT	4.0	100	99	89	48	23	11	-	NP	NP	A-2-4
	SDB-57	53+00[8]	CL	10.0	100	98	91	51	19	12	-	-	-	A-2-4
	SDB-61	57+00[8]	CL	12.0	100	99	92	55	25	16	-	NP	NP	A-2-4
	SDB-67	91+00[5]	15 LT	4.5	100	96	81	35	21	17	-	NP	NP	A-2-4
	SDB-29	57+00[4]	CL	11.0	100	99	89	45	22	9	-	-	-	A-2-4
	SDB-40	4027+50[2]	30 RT	3.0	100	96	79	32	15	13	-	-	-	A-2-4
	SDB-42	101+00[9]	15 LT	2.0	100	96	77	29	12	23	-	-	-	A-2-4
	RPB-14	55+00[11]	15 LT	8.0	100	99	92	55	16	14	-	-	-	A-2-4
	RPB-19	60+00[11]	CL	9.0	100	98	88	45	11	19	-	-	-	A-2-4
	RPB-29	40+00[12]	15 LT	7.0	100	98	90	51	14	21	-	-	-	A-2-4

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
3	B-17	687+00	60 LT	13.5	-	-	-	-	20	20	-	28	11	A-2-6
	B-40	713+00	80 RT	28.5	100	99	93	68	33	23	-	-	-	A-2-6
	A-40	731+00	160 LT	9.0	100	98	87	49	21	9	-	28	11	A-2-6
	B-61	737+00	CL	18.5	100	98	90	53	31	16	-	39	22	A-2-6
	A-52	745+00	120 LT	5.0	100	98	89	54	31	14	-	28	13	A-2-6
	B-87	760+00	170 LT	10.0	100	98	89	53	29	15	-	35	20	A-2-6
	A-59	761+50	20 RT	6.0	-	-	-	-	27	17	-	28	12	A-2-6
	B-102	771+95	35 LT	6.0	-	-	-	-	28	14	-	35	18	A-2-6
	A-72	773+00	CL	13.5	100	100	97	33	20	14	-	32	15	A-2-6
	A-77	777+00	20 RT	8.0	100	97	82	39	25	18	-	-	-	A-2-6
	A-83	783+00	60 RT	4.0	100	97	83	41	26	17	-	31	15	A-2-6
	A-86	785+00	40 LT	13.5	100	97	81	44	26	17	-	25	11	A-2-6
	A-96	839+50	150 LT	8.0	-	-	-	-	27	17	-	38	23	A-2-6
	B-122	842+00	80 RT	8.0	100	95	78	38	23	16	-	29	12	A-2-6
	A-100	846+00	60 RT	6.0	100	94	71	32	19	16	-	31	14	A-2-6
	A-101	847+00	160 LT	18.5	100	97	82	40	20	18	-	33	14	A-2-6
	B-126	848+00	50 LT	5.5	100	95	78	35	19	19	-	-	-	A-2-6
	A-103	850+00	120 LT	4.0	100	96	82	41	26	22	-	33	15	A-2-6
	A-108	854+00	180 LT	4.5	100	97	80	41	27	21	-	29	12	A-2-6
	A-109	854+00	60 RT	4.0	100	96	78	38	21	17	-	41	25	A-2-7
	A-111	856+00	100 LT	3.5	100	97	82	44	31	22	-	28	13	A-2-6
	A-112	856+50	60 LT	2.0	-	-	-	-	26	15	-	35	19	A-2-6
	A-113	857+00	180 LT	4.0	100	96	81	41	28	21	-	38	19	A-2-6
	A-122	865+00	120 LT	3.0	100	97	82	42	30	24	-	40	19	A-2-6
	B-142	869+00	80 LT	4.0	-	-	-	-	24	19	-	33	14	A-2-6
	A-131	875+00	CL	33.5	100	100	100	90	29	31	-	40	15	A-2-6
	A-138	887+00	30 RT	2.0	100	96	81	46	30	15	-	35	18	A-2-6
	A-140	898+50	60 LT	6.0	100	95	79	36	22	18	-	29	11	A-2-6
	A-141	899+00	140 RT	4.0	100	97	83	42	28	17	-	32	13	A-2-6
	SDB-1	1+90[1]	38 RT	59.0	-	-	-	-	18	45	-	85	43	A-2-7
	SDB-23	133+00[3]	15 RT	3.5	100	99	89	48	29	13	-	36	19	A-2-6
	SDB-38	139+00[6]	25 LT	4.5	-	-	-	-	27	17	-	33	15	A-2-6
	SDB-29	57+00[4]	CL	6.0	100	98	89	52	28	14	-	40	22	A-2-6
	SDB-55	51+00[8]	CL	8.0	-	-	-	-	31	15	-	31	14	A-2-6

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
4	A-19	657+00	140 LT	6.0	-	-	-	-	10	20	-	-	-	A-3
	A-43	734+00	80 LT	7.5	100	98	87	49	29	7	-	-	-	A-2-4
	A-90	790+00	120 LT	0.5	-	-	-	-	14	26	-	-	-	A-2-4
	A-106	852+00	140 LT	2.0	93	88	71	26	9	17	-	-	-	A-3
	A-125	869+00	120 RT	2.5	100	95	77	29	11	15	-	-	-	A-2-4
	A-128	872+00	160 RT	1.5	100	95	74	31	15	19	-	-	-	A-2-4
	A-130	874+00	140 RT	2.0	100	94	77	32	15	15	-	-	-	A-2-4
	A-151	92+00[5]	40 RT	4.5	100	95	81	36	21	5	-	-	-	A-2-4
	RPB-15	56+00[11]	CL	8.0	100	98	90	50	9	15	-	-	-	A-3
	RPB-30	41+00[12]	CL	3.0	100	97	87	46	13	25	-	-	-	A-2-4
5	B-31	698+00	60 LT	0.5	97	90	78	47	26	67	15	-	-	A-8
	A-33	708+00	100 LT	0.5	99	96	81	37	12	52	15	-	-	A-8
	B-40	713+00	80 RT	0.0	-	-	-	-	13	39	7	-	-	A-8
	SDB-42	101+00[9]	15 LT	0.5	100	95	73	28	12	31	7	-	-	A-8
	SDB-44	103+00[9]	15 RT	0.5	100	95	76	27	10	34	7	-	-	A-8
6	B-3	645+00	80 RT	23.5	100	100	99	84	53	28	-	30	11	A-6
	A-21	660+00	60 LT	28.5	100	100	99	94	75	31	-	45	25	A-7-6
	A-25	696+00	30 LT	18.5	100	100	97	84	63	30	-	43	27	A-7-6
	A-121	864+00	50 RT	38.5	100	99	97	83	44	22	-	49	27	A-7-6
	A-138	887+00	30 RT	23.5	100	100	100	97	68	35	-	49	24	A-7-6
	SDB-1	1+90[1]	38 RT	39.0	-	-	-	-	44	93	7	41	15	A-7-6
	SDB-2	3+00[1]	20 RT	18.5	-	-	-	-	38	15	-	34	20	A-6
7	B-31	698+00	60 LT	5.0	100	98	89	48	23	24	4	-	-	A-2-4
	A-137	883+00	180 RT	2.0	-	-	-	-	26	30	5	-	-	A-2-4
	A-24	692+50	60 LT	0.5	100	97	85	41	12	31	3	-	-	A-2-4
	A-26	700+00	140 LT	2.0	100	98	86	41	12	28	4	-	-	A-2-4
	A-32	706+00	40 RT	4.0	100	97	85	42	19	45	5	-	-	A-2-4
	A-117	861+00	140 LT	2.0	100	95	79	36	21	18	-	-	-	A-2-4
	A-139	897+00	100 RT	1.0	100	96	79	33	18	23	4	-	-	A-2-4
	A-145	903+50	60 RT	6.0	100	98	90	41	24	18	6	-	-	A-2-4
	RPB-24	35+00[12]	CL	13.0	100	98	90	47	10	21	3	-	-	A-3
	RPB-35	46+00[12]	CL	11.0	100	98	90	52	17	22	5	-	-	A-2-4

TABLE 1
LABORATORY TESTING RESULTS (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
8	B-1	640+00	80 LT	28.5	100	100	100	97	85	25	-	73	44	A-7-6
	A-20	658+00	60 LT	23.5	100	100	98	90	60	30	-	54	35	A-7-6
	A-27	700+00	CL	18.5	100	100	98	89	59	25	-	75	52	A-7-6
	A-35	715+00	40 RT	13.5	100	100	99	91	70	37	-	53	32	A-7-6
	B-49	722+00	80 RT	18.5	-	-	-	-	56	31	-	54	35	A-7-6
	A-37	726+00	CL	23.5	100	100	100	99	96	59	-	164	123	A-7-5
	A-59	761+50	20 RT	28.5	-	-	-	-	43	39	-	68	43	A-7-6
	A-65	767+00	60 LT	43.5	-	-	-	-	74	81	-	140	67	A-7-5
	B-111	788+00	80 RT	12.0	100	99	97	89	71	33	-	68	48	A-7-6
	A-92	792+00	20 LT	38.5	92	83	81	78	69	32	-	59	20	A-7-5
	A-95	837+00	20 LT	23.5	100	100	100	97	73	45	-	140	107	A-7-5
	A-131	875+00	CL	43.5	100	98	94	84	56	19	-	86	57	A-7-6
	A-138	887+00	30 RT	43.5	98	97	97	96	94	71	-	105	67	A-7-5
	A-140	898+50	60 LT	43.5	99	98	98	96	84	65	-	92	52	A-7-5
	A-145	903+50	60 RT	28.5	-	-	-	-	92	55	-	69	41	A-7-6
	A-146	907+50	60 LT	33.5	99	98	95	78	70	57	-	113	80	A-7-5
	SDB-3	4+20[1]	30 LT	18.5	-	-	-	-	36	17	-	52	33	A-7-6
9	B-44	717+50	60 RT	23.5	100	100	98	81	38	28	-	27	5	A-4
	A-59	761+50	20 RT	33.5	-	-	-	-	46	83	-	-	-	A-4
	B-105	774+55	75 RT	18.5	-	-	-	-	38	49	-	NP	NP	A-4
	B-118	837+50	60 RT	10.0	100	99	97	94	78	53	-	-	-	A-4
10	A-24	692+50	60 LT	33.5	98	88	67	39	29	43	-	50	29	A-2-7
	B-102	771+95	35 LT	38.5	-	-	-	-	21	36	-	NP	NP	A-2-4
	A-77	777+00	20 RT	38.5	95	58	49	37	33	50	-	72	32	A-2-7

NP = Non-Plastic

[1] *References Centerline of Access Road 1*
[2] *References Centerline of SR 46*
[3] *References Baseline of SR 46A*
[4] *References Baseline of Tree Frog Court*
[5] *References Baseline of Wekiva River Road*
[6] *References Centerline of Access Road 2*
[7] *References Baseline of SR 46 Connector Road*
[8] *References Baseline of Connector Road*
[9] *References Baseline of Service Road 1*
[10] *References Baseline of Service Road 2*
[11] *References Centerline of Ramp Q*
[12] *References Centerline of Ramp P*

TABLE 2
LABORATORY TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
	PB-1	652+43	255 RT	10.0	100	98	87	36	6	15	-	-	-	A-3
	RS7-1	653+00	330 RT	10.0	-	-	-	-	1	6	-	-	-	A-3
	PB-2	654+10	300 RT	15.5	100	98	89	37	5	25	-	-	-	A-3
	PB-3	656+53	310 RT	2.0	100	98	87	32	4	4	-	-	-	A-3
	PB-3	656+53	310 RT	8.0	100	98	90	37	5	11	-	-	-	A-3
	PB-4	658+75	217 RT	5.0	100	98	90	39	7	10	-	-	-	A-3
	PB-5	652+68	510 RT	7.0	100	98	89	37	5	5	-	-	-	A-3
	PB-5	652+68	510 RT	15.0	100	98	90	36	4	21	-	-	-	A-3
	PB-6	655+30	474 RT	3.0	100	97	87	31	2	4	-	-	-	A-3
	PB-6	655+30	474 RT	10.0	100	98	90	40	8	19	-	-	-	A-3
	PB-7	657+93	509 RT	7.0	100	98	89	37	6	6	-	-	-	A-3
	PB-8	653+89	683 RT	7.0	100	99	91	42	8	9	-	-	-	A-3
	PB-9	657+25	705 RT	6.0	100	98	89	33	4	4	-	-	-	A-3
	PB-10	655+13	815 RT	2.0	100	98	89	37	7	7	-	-	-	A-3
	RS7-2	659+00	450 RT	6.0	-	-	-	-	4	4	-	-	-	A-3
1	SH-1	670+50	140 LT	2.0	-	-	-	-	4	5	-	-	-	A-3
	WL1-HA2	673+00	CL	4.0	-	-	-	-	5	3	-	-	-	A-3
	SH-4	676+20	70 RT	2.0	-	-	-	-	5	5	-	-	-	A-3
	PB-15	679+18	589 LT	5.0	100	98	89	42	10	7	-	-	-	A-3
	SH-5	679+30	140 LT	2.0	-	-	-	-	6	6	-	-	-	A-3
	AP-1	681+10	570 LT	7.0	-	-	-	-	5	6	-	-	-	A-3
	AP-2	681+70	310 LT	1.5	-	-	-	-	7	7	-	-	-	A-3
	AP-2	681+70	310 LT	4.0	100	98	87	36	7	6	-	-	-	A-3
	PB-17	734+60	1580 LT	9.0	100	97	82	31	3	4	-	-	-	A-3
	BW1-1	735+40	1715 LT	5.5	-	-	-	-	3	3	-	-	-	A-3
	PB-19	737+10	1590 LT	7.0	100	97	86	37	5	4	-	-	-	A-3
	TPB-2	770+70	255 RT	4.0	99	95	78	28	8	4	-	-	-	A-3
	TPB-4	781+45	400 RT	2.5	100	95	78	26	6	3	-	-	-	A-3
	TPB-4	781+45	400 RT	6.0	100	95	79	30	8	4	-	-	-	A-3
	TPB-5	786+50	200 RT	2.5	100	95	77	28	8	5	-	-	-	A-3
	TPB-7	791+60	160 RT	3.5	100	96	78	28	8	17	-	-	-	A-3

TABLE 2
LABORATORY TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
1	TPB-7	791+60	160 RT	11.0	100	89	66	19	5	27	-	-	-	A-3
	PB-20	839+75	295 LT	4.0	100	94	73	24	6	21	-	-	-	A-3
	PB-20	839+75	295 LT	5.0	100	95	76	29	10	21	-	-	-	A-3
	PB-21	842+62	318 LT	4.0	100	94	75	28	9	20	-	-	-	A-3
	PB-22	840+20	545 LT	3.0	100	94	76	27	9	19	-	-	-	A-3
	PB-24	837+95	750 LT	0.5	100	94	76	28	10	17	-	-	-	A-3
	PB-25	840+45	660' LT	3.0	100	94	75	25	5	24	-	-	-	A-3
	PB-27	840+60	750' LT	2.0	100	94	75	28	7	16	-	-	-	A-3
	PB-28	839+75	950 LT	2.0	100	95	76	23	5	17	-	-	-	A-3
	PB-28	839+75	950 LT	5.0	100	95	77	28	10	20	-	-	-	A-3
	PB-29	842+80	895 LT	0.5	100	95	74	25	5	17	-	-	-	A-3
	PB-29	842+80	895 LT	2.0	100	94	75	26	6	25	-	-	-	A-3
	AP-3	840+90	350 LT	4.5	100	94	73	24	6	23	-	-	-	A-3
	TPB-11	881+05	255 LT	3.0	99	94	73	23	7	6	-	-	-	A-3
	AP-4	886+00	430 LT	4.0	-	-	-	-	6	7	-	-	-	A-3
	AP-6	892+70	480 LT	2.0	-	-	-	-	9	10	-	-	-	A-3
	PB-32	903+00	308 RT	2.5	100	95	79	26	8	5	-	-	-	A-3
	AP-7	904+87	267 LT	4.0	-	-	-	-	5	5	-	-	-	A-3
	AP-8	906+45	393 LT	1.0	-	-	-	-	4	4	-	-	-	A-3
	WR1-2	907+00	325 RT	3.0	-	-	-	-	6	2	-	-	-	A-3
	CHA-1	910+15	270 LT	1.5	100	96	80	25	4	4	-	-	-	A-3
	PP-1	926+60	40 LT	3.0	100	93	66	21	5	10	-	-	-	A-3
	PB-36	927+67	55 LT	2.0	100	99	87	23	3	5	-	-	-	A-3
	PB-36	927+67	55 LT	15.0	100	99	94	53	8	27	-	-	-	A-3
	PB-37	928+14	78 RT	2.0	100	98	88	25	6	22	-	-	-	A-3
	PB-37	928+14	78 RT	10.0	100	98	86	23	8	21	-	-	-	A-3
	PP-4	928+45	75 RT	4.0	100	98	86	25	3	6	-	-	-	A-3
	AR-1*	1015+15	235 RT	2.0	-	-	-	-	6	4	-	-	-	A-3
2	PB-4	658+75	217 RT	13.0	100	99	94	59	21	18	-	NP	NP	A-2-4
	PB-9	657+25	705 RT	11.0	100	99	94	56	21	11	-	NP	NP	A-2-4
	PB-15	679+18	589 LT	10.0	100	99	90	50	20	18	-	NP	NP	A-2-4

TABLE 2
LABORATORY TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
	PZ-4	680+64	497 LT	7.0	100	99	91	52	20	11	-	-	-	A-2-4
	PZ-4	680+64	497 LT	10.0	100	98	86	44	20	18	-	NP	NP	A-2-4
	AP-1	681+10	570 LT	9.5	100	98	91	47	16	12	-	-	-	A-2-4
	PB-16	682+69	234 LT	5.5	100	98	89	42	11	8	-	-	-	A-2-4
	PB-16	682+69	234 LT	12.0	100	99	91	46	12	19	-	-	-	A-2-4
	PB-11	710+16	429 LT	0.5	100	97	83	38	13	23	-	-	-	A-2-4
	PB-11	710+16	429 LT	6.5	100	98	87	43	16	21	-	-	-	A-2-4
	PB-11	710+16	429 LT	14.0	100	98	87	46	25	18	-	NP	NP	A-2-4
	PB-12	715+90	404 LT	7.5	100	97	84	42	16	13	-	NP	NP	A-2-4
	PZ-3	736+58	483 LT	6.5	100	98	87	46	16	9	-	-	-	A-2-4
	PB-14	738+51	382 LT	6.5	100	98	88	49	22	13	-	-	-	A-2-4
	PB-13	739+26	690 LT	4.5	100	98	86	48	19	12	-	NP	NP	A-2-4
	PB-17	734+60	1580 LT	18.5	100	98	88	45	16	17	-	-	-	A-2-4
	PB-18	734+55	1685 LT	18.0	100	98	76	20	11	16	-	-	-	A-2-4
	PZ-5	736+20	1640 LT	8.5	100	99	91	56	27	10	-	-	-	A-2-4
2	PB-19	737+70	1590 LT	13.0	100	99	91	50	20	16	-	NP	NP	A-2-4
	TPB-1	768+40	180 RT	9.5	100	97	82	38	19	18	-	-	-	A-2-4
	TPB-1	768+40	180 RT	11.5	100	98	86	44	25	15	-	27	8	A-2-4
	TPB-2	770+70	255 RT	11.5	100	96	82	40	24	11	-	-	-	A-2-4
	TPB-3	776+50	300 RT	6.5	100	96	78	28	11	8	-	-	-	A-2-4
	TPB-3	776+50	300 RT	10.5	100	96	77	31	17	19	-	-	-	A-2-4
	TPB-3	776+50	300 RT	13.5	100	97	80	34	22	19	-	23	5	A-2-4
	TPB-4	781+45	400 RT	10.5	100	94	74	41	12	20	-	-	-	A-2-4
	TPB-5	786+50	200 RT	11.5	100	97	81	32	17	22	-	-	-	A-2-4
	TPB-5	786+50	200 RT	13.0	100	98	82	35	21	21	-	25	6	A-2-4
	TPB-6	788+20	245 RT	6.5	100	95	78	31	11	17	-	-	-	A-2-4
	TPB-6	788+20	245 RT	12.5	100	96	79	29	13	25	-	-	-	A-2-4
	TPB-7	791+60	160 RT	15.5	100	96	81	40	18	21	-	NP	NP	A-2-4
	PB-20	839+75	295 LT	15.0	100	94	74	35	21	17	-	-	-	A-2-4
	PB-20	839+75	295 LT	18.0	100	94	72	29	15	20	-	NP	NP	A-2-4
	PB-22	840+20	545 LT	15.0	100	95	75	32	18	19	-	NP	NP	A-2-4

TABLE 2
LABORATORY TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
	PB-23	842+67	505 LT	5.5	100	95	77	27	11	20	-	-	-	A-2-4
	PB-23	842+67	505 LT	11.0	100	96	78	36	21	19	-	23	6	A-2-4
	PB-24	837+95	750 LT	9.0	100	96	80	33	15	21	-	-	-	A-2-4
	PB-25	840+45	660' LT	15.0	100	94	75	27	11	24	-	-	-	A-2-4
	PB-25	840+45	660' LT	19.0	100	93	74	34	18	20	-	NP	NP	A-2-4
	PB-27	840+60	750' LT	16.0	100	92	73	32	18	19	-	NP	NP	A-2-4
	PB-26	842+75	695' LT	5.0	100	95	78	30	12	23	-	-	-	A-2-4
	PB-26	842+75	695' LT	13.0	100	94	76	34	19	19	-	NP	NP	A-2-4
	PB-28	839+75	950 LT	15.5	100	94	73	28	13	25	-	-	-	A-2-4
	PB-28	839+75	950 LT	19.5	100	93	73	35	20	20	-	26	9	A-2-4
	PB-29	842+80	895 LT	10.0	100	95	78	32	14	20	-	-	-	A-2-4
	TPB-8	850+85	190 LT	4.5	100	96	80	36	21	25	-	-	-	A-2-4
	TPB-8	850+85	190 LT	11.0	100	97	80	38	21	20	-	29	8	A-2-4
	TPB-9	859+26	277 LT	8.5	100	96	79	39	22	19	-	-	-	A-2-4
	TPB-10	867+10	182 LT	2.5	100	96	77	30	14	17	-	-	-	A-2-4
2	TPB-10	867+10	182 LT	6.5	100	97	82	40	22	18	-	29	9	A-2-4
	TPB-11	881+05	255 LT	7.5	100	96	80	36	19	20	-	26	7	A-2-4
	AP-5	890+95	280 LT	6.5	100	88	68	31	20	17	-	25	6	A-2-4
	AP-6	892+70	480 LT	8.0	100	96	80	37	20	13	-	28	6	A-2-4
	PB-30	890+90	700 RT	9.0	100	95	79	33	16	20	-	NP	NP	A-2-4
	PZ-12	896+45	635 RT	3.5	100	96	82	43	26	19	-	-	-	A-2-4
	PB-31	898+15	780 RT	3.5	100	96	83	46	28	14	-	-	-	A-2-4
	PB-31	898+15	780 RT	14.0	100	97	86	41	21	19	-	-	-	A-2-4
	PB-32	903+00	308 RT	0.5	100	98	91	49	20	23	-	-	-	A-2-4
	PB-32	903+00	308 RT	7.5	100	91	61	20	15	21	-	-	-	A-2-4
	AP-7	904+87	267 LT	9.5	100	95	78	26	12	10	-	-	-	A-2-4
	AP-8	906+45	393 LT	6.5	100	95	80	36	22	12	-	NP	NP	A-2-4
	PZ-13	906+30	280 RT	5.0	100	96	81	34	16	9	-	-	-	A-2-4
	PB-33	908+34	285 RT	4.5	100	97	83	38	25	14	-	23	10	A-2-4
	PB-34	905+65	275 LT	3.0	100	96	80	31	12	12	-	-	-	A-2-4
	PZ-14	907+00	338 LT	9.0	100	74	51	30	23	18	-	36	4	A-2-4

TABLE 2
LABORATORY TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Stratum Number	Boring Number	Station	Offset (feet)	Approximate Sample Depth (feet)	Passing Sieve Number (%)					Moisture Content (%)	Organic Content (%)	Atterberg Limits		AASHTO Soil Classification
					10	40	60	100	200			LL	PI	
2	PB-35	908+25	380 LT	8.5	100	76	45	21	14	20	-	-	-	A-2-4
	CHA-3	912+05	465 LT	4.5	100	96	82	41	21	19	-	-	-	A-2-4
	CHA-4	912+10	260 LT	3.0	100	96	84	38	22	17	-	-	-	A-2-4
3	PB-14	738+51	382 LT	9.0	100	98	88	51	22	16	-	32	14	A-2-6
	PB-14	738+51	382 LT	15.0	100	99	90	55	31	15	-	47	34	A-2-7
	PB-18	734+55	1685 LT	5.5	100	99	92	56	28	15	-	31	15	A-2-6
	PB-21	842+62	318 LT	8.5	100	95	75	35	22	19	-	26	11	A-2-6
	PB-29	842+80	895 LT	15.5	100	93	75	33	17	19	-	25	11	A-2-6
	PZ-12	896+45	635 RT	11.5	100	97	86	43	24	17	-	28	12	A-2-6
	PB-32	903+00	308 RT	4.5	100	96	83	42	25	19	-	37	17	A-2-6
	AP-9	907+78	355 LT	5.5	100	97	85	36	22	15	-	30	11	A-2-6
	PB-33	908+34	285 RT	12.5	100	92	75	53	27	16	-	33	17	A-2-6
	CHA-1	910+15	270 LT	5.5	100	97	86	41	25	18	-	27	11	A-2-6
	CHA-3	912+05	465 LT	5.5	100	96	84	48	32	19	-	35	19	A-2-6
4	TPB-9	859+26	277 LT	4.0	100	96	79	39	21	18	-	27	8	A-2-4
5	PB-28	839+75	950' LT	16.5	100	95	79	42	26	68	20	-	-	A-8
6	PB-12	715+90	404 LT	14.5	100	99	91	61	43	17	-	47	34	A-7-6
	PZ-3	736+58	483 LT	16.5	100	99	91	59	37	15	-	44	30	A-7-6
	PB-13	739+26	690 LT	13.5	100	99	92	64	41	18	-	48	34	A-7-6
	PB-33	908+34	285 RT	17.0	100	100	96	84	45	50	-	37	14	A-6
7	PB-27	840+60	750' LT	13.5	100	97	85	57	34	36	6	-	-	A-2-4
	PB-27	840+60	750' LT	14.5	100	92	73	34	20	20	2	-	-	A-2-4
8	PZ-5	736+20	1640 LT	19.5	100	99	93	77	58	24	-	-	-	A-7-6
	PB-30	890+90	700 RT	18.0	100	100	97	91	63	33	-	54	38	A-7-6
	PZ-13	906+30	280 RT	19.5	100	97	91	84	42	50	-	50	35	A-7-6

NP = Non-Plastic

* Referencing centerline of Access Road 1

TABLE 3
CORROSION SERIES TESTING RESULTS - ROADWAY AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Boring Number	Station & Offset	Sample Depth (feet)	pH	Minimum Resistivity (ohm-cm)	Chlorides (ppm)	Sulfates (ppm)	Substructural Environmental Classification	
							Concrete	Steel
A-3	647+00; 220' LT	2.0	6.1	86,000	60	30	Slightly Aggressive	Moderately Aggressive
A-7	651+00; 50' LT	4.0	5.2	15,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-10	652+00; 20' LT	4.0	5.6	89,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-16	655+00; 70' RT	0.5	5.3	45,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-21	660+00; 60' LT	6.0	5.4	41,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-27	700+00; Centerline	2.0	4.8	21,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-28	701+00; 160' LT	3.0	5.6	65,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-36	719+85; 60' RT	4.0	5.0	2,000	60	265.8	Moderately Aggressive	Extremely Aggressive
A-41	732+00; Centerline	0.5	5.7	26,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-48	741+00; 160' LT	4.5	4.8	28,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-56	751+00; 120' LT	5.0	5.8	170,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-62	764+00; 140' LT	1.5	7.1	25,000	60	< 5	Slightly Aggressive	Slightly Aggressive
A-71	773+00; 140' LT	1.0	5.3	61,000	60	30	Moderately Aggressive	Extremely Aggressive
A-77	777+00; 20' RT	4.0	5.8	160,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-79	780+00; 120' LT	3.5	5.0	66,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-84	784+00; 160' LT	2.0	5.8	30,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-89	788+00; 70' LT	1.0	4.2	4,500	60	43.5	Extremely Aggressive	Extremely Aggressive
A-93	794+00; 40' LT	2.0	4.9	55,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-99	845+00; 60' LT	2.0	4.8	9,800	60	49.5	Extremely Aggressive	Extremely Aggressive
A-105	851+00; 100' LT	1.5	5.2	27,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-111	856+00; 100' LT	1.0	5.3	9,200	60	< 5	Moderately Aggressive	Extremely Aggressive
A-116	860+00; 160' LT	1.0	4.9	20,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-124	868+00; 200' RT	2.0	4.5	23,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-129	873+00; 200' RT	3.0	4.6	14,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-131	875+00; Centerline	2.0	5.7	37,000	60	< 5	Moderately Aggressive	Extremely Aggressive
B-152	878+50; 185' RT	1.0	6.1	39,000	60	< 5	Slightly Aggressive	Moderately Aggressive
B-155	881+50; 180' RT	7.0	4.6	9,400	60	72.3	Extremely Aggressive	Extremely Aggressive
A-136	882+50; 40' LT	4.0	5.7	57,000	60	< 5	Moderately Aggressive	Extremely Aggressive
B-158	888+00; 80' LT	7.5	4.3	18,000	60	37.5	Extremely Aggressive	Extremely Aggressive
A-144	902+00; 60' LT	4.0	4.4	18,000	60	< 5	Extremely Aggressive	Extremely Aggressive
A-145	903+80; 70' RT	4.5	5.6	13,000	60	< 5	Moderately Aggressive	Extremely Aggressive
A-153	2012+20; 25 LT[7]	2.0	7.3	5,400	60	< 5	Slightly Aggressive	Slightly Aggressive
A-158	2017+00; 30' LT[7]	2.5	7.5	31,000	60	< 5	Slightly Aggressive	Slightly Aggressive

TABLE 3
CORROSION SERIES TESTING RESULTS - ROADWAY AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Boring Number	Station & Offset	Sample Depth (feet)	pH	Minimum Resistivity (ohm-cm)	Chlorides (ppm)	Sulfates (ppm)	Substructural Environmental Classification	
							Concrete	Steel
RPB-7	48+00; Centerline[11]	3.0	5.8	4,400	60	< 5	Moderately Aggressive	Extremely Aggressive
RPB-9	50+00; Centerline[11]	9.0	6.2	19,000	60	< 5	Slightly Aggressive	Moderately Aggressive
RPB-14	55+00; 15' LT[11]	5.0	6.6	77,000	60	< 5	Slightly Aggressive	Moderately Aggressive
RPB-19	60+00; Centerline[11]	2.5	5.8	35,000	60	< 5	Moderately Aggressive	Extremely Aggressive
RPB-27	38+00; 15' LT[12]	3.5	6.5	40,000	60	< 5	Slightly Aggressive	Moderately Aggressive
RPB-34	45+00; 15' LT[12]	2.5	4.8	16,000	60	< 5	Extremely Aggressive	Extremely Aggressive
SDB-2	3+00; 20' RT[1]	2.0	5.4	81,000	60	< 5	Moderately Aggressive	Extremely Aggressive
SDB-7	8+00; Centerline[1]	2.5	5.5	120,000	60	< 5	Moderately Aggressive	Extremely Aggressive
SDB-10	1012+00; 15' RT[2]	6.0	5.7	41,000	60	< 5	Moderately Aggressive	Extremely Aggressive
SDB-14	1016+00; 15' RT[2]	0.5	7.2	26,000	60	< 5	Slightly Aggressive	Slightly Aggressive
SDB-15	1017+00; 15' LT[2]	1.0	5.1	18,000	60	< 5	Moderately Aggressive	Extremely Aggressive
SDB-18	128+00; 15' LT[3]	3.0	7.4	45,000	60	< 5	Slightly Aggressive	Slightly Aggressive
SDB-25	135+00; 15' RT[3]	3.0	8.0	48,000	60	< 5	Slightly Aggressive	Slightly Aggressive
SDB-28	56+00; Centerline[4]	2.5	6.4	68,000	60	< 5	Slightly Aggressive	Moderately Aggressive
SDB-33	103+00; Centerline[6]	2.0	6.5	94,000	60	< 5	Slightly Aggressive	Moderately Aggressive
SDB-40	4027+00; 30' RT[2]	1.5	7.2	22,000	60	< 5	Slightly Aggressive	Slightly Aggressive
SDB-48	992+00; Centerline[10]	1.0	7.2	8,700	60	< 5	Slightly Aggressive	Slightly Aggressive
SDB-51	995+00; 15' RT[10]	5.0	7.0	62,000	60	< 5	Slightly Aggressive	Moderately Aggressive
SDB-55	51+00; Centerline[8]	6.5	6.6	50,000	60	24.9	Slightly Aggressive	Moderately Aggressive
SDB-64	86+00; 15' RT[5]	2.0	6.0	29,000	60	< 5	Slightly Aggressive	Moderately Aggressive

[1] *References Centerline of Access Road 1*
[2] *References Centerline of SR 46*
[3] *References Baseline of SR 46A*
[4] *References Baseline of Tree Frog Court*
[5] *References Baseline of Wekiva River Road*
[6] *References Centerline of Access Road 2*
[7] *References Baseline of SR 46 Connector Road*
[8] *References Baseline of Connector Road*
[9] *References Baseline of Service Road 1*
[10] *References Baseline of Service Road 2*
[11] *References Centerline of Ramp Q*
[12] *References Centerline of Ramp P*

TABLE 4
CORROSION SERIES TESTING RESULTS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Boring Number	Station & Offset	Sample Depth (feet)	pH	Minimum Resistivity (ohm-cm)	Chlorides (ppm)	Sulfates (ppm)	Substructural Environmental Classification	
							Concrete	Steel
PB-4	658+75; 217' RT	2.0	5.0	81,000	60	24.9	Moderately Aggressive	Extremely Aggressive
PB-7	657+93; 509' RT	4.0	6.8	150,000	60	33.6	Slightly Aggressive	Moderately Aggressive
PB-10	655+13; 815' RT	7.5	5.0	16,000	60	45.3	Moderately Aggressive	Extremely Aggressive
PB-12	715+90; 404' LT	1.5	6.8	15,000	60	< 5	Slightly Aggressive	Moderately Aggressive
PB-13	739+26; 690' LT	6.0	4.7	35,000	60	43.5	Extremely Aggressive	Extremely Aggressive
PB-14	738+51; 382' LT	2.0	6.4	25,000	60	< 5	Slightly Aggressive	Moderately Aggressive
PB-15	679+18; 589' LT	2.0	5.1	71,000	60	174.6	Moderately Aggressive	Extremely Aggressive
PB-16	682+69; 234' LT	7.0	5.1	79,000	60	< 5	Moderately Aggressive	Extremely Aggressive
PB-18	734+55; 1685' LT	7.0	4.8	45,000	60	47.4	Extremely Aggressive	Extremely Aggressive
PB-19	737+70; 1590' LT	3.0	4.9	40,000	60	9.9	Extremely Aggressive	Extremely Aggressive
TPB-1	768+40; 180' RT	6.0	5.2	9,900	60	72.3	Moderately Aggressive	Extremely Aggressive
TPB-5	786+50; 200' RT	0.5	4.7	34,000	60	< 5	Extremely Aggressive	Extremely Aggressive
TPB-7	791+60; 160' RT	0.5	4.1	27,000	60	75.6	Extremely Aggressive	Extremely Aggressive
PB-22	840+20; 545' LT	2.0	4.4	17,000	60	14.7	Extremely Aggressive	Extremely Aggressive
PB-25/PZ-11	840+45; 660' LT	0.5	4.2	10,000	60	1107	Extremely Aggressive	Extremely Aggressive
PB-27	840+60; 750' LT	0.5	3.8	1,700	60	< 5	Extremely Aggressive	Extremely Aggressive
TPB-8	850+85; 190' LT	0.5	5.5	15,000	60	49.5	Moderately Aggressive	Extremely Aggressive
TPB-11	881+05; 255' LT	0.5	8.0	15,000	60	< 5	Slightly Aggressive	Slightly Aggressive
PB-31	898+15; 780' RT	5.0	5.1	14,000	60	63	Moderately Aggressive	Extremely Aggressive
PB-33	908+34; 285' RT	1.5	5.7	39,000	60	60.0	Moderately Aggressive	Extremely Aggressive
PZ-13	906+30; 280' RT	6.5	4.6	35,000	60	< 5	Extremely Aggressive	Extremely Aggressive
PB-34	905+65; 275' LT	4.0	5.2	50,000	60	41.4	Moderately Aggressive	Extremely Aggressive
PB-36/PZ-15	927+67; 55' LT	5.5	7.1	4,700	60	63.0	Slightly Aggressive	Moderately Aggressive
PB-37	928+14; 78' RT	0.5	7.4	3,600	60	< 5	Slightly Aggressive	Moderately Aggressive

TABLE 5
SUMMARY OF PERMEABILITY TESTING - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

Pond Name	Station & Offset	Boring Number	Test Depth (feet)	Stratum Number	Measured Vertical Permeability (feet/day)	Estimated Horizontal Permeability (feet/day)
RS7-E-1A	653+00; 330' RT	RS7-1	10.0	1	15	15
RS7-E-1A	659+00; 450' RT	RS7-2	6.0	1	13	13
SMA RS7-E-4	673+00; Centerline	WL1-HA2	4.0	1	20	20
RS7-E-4A	670+50; 140' LT	SH-1	2.0	1	13	13
RS7-E-4B	676+20; 70' RT	SH-4	2.0	1	20	20
RS7-E-4C	679+30; 140' LT	SH-5	2.0	1	17	17
RS7-E-2A	681+10; 570' LT	AP-1	7.0	1	17	17
RS7-E-2A	681+70; 310' LT	AP-2	1.5	1	24	24
BW1A-E-6	735+40; 1715' LT	BW1-1	5.5	1	14	14
BW1-E-2	768+40; 180' RT	TPB-1	9.5	2	< 1	< 1
BW1-E-2	770+70; 255' RT	TPB-2	4.0	1	24	24
BW1-E-3	776+50; 300' RT	TPB-3	6.5	2	29	29
BW1-E-3	781+45; 400' RT	TPB-4	6.0	1	6	6
BW1-E-3	786+50; 200' RT	TPB-5	2.5	1	15	15
BW1-E-4	788+20; 245' RT	TPB-6	6.5	2	< 1	< 1
BW1-E-4	791+60; 160' RT	TPB-7	3.5	1	12	12
WR1-E-6	886+00; 430' LT	AP-4	4.0	1	20	20
WR1-E-6	892+70; 480' LT	AP-6	2.0	1	20	20
WR1-E-5A	907+00; 325' RT	WR1-2	3.0	1	13	13
WR1-E-7	804+87; 267' LT	AP-7	4.0	1	16	16
WR1-E-7	906+45; 393' LT	AP-8	1.0	1	26	26
WR1-E-7 alternate	910+15; 270' LT	CHA-1	1.5	1	14	14
WR1-E-7 alternate	912+05; 260' LT	CHA-3	4.0	2	1	1
WR2A-S-2	926+60; 40' LT	PP-1	3.0	1	30	30
WR2A-S-2	928+45; 75' RT	PP-4	4.0	1	24	24
Access Road 1 swale	1015+15; 235' RT*	AR-1	2.0	1	9	9

* Referencing centerline of Access Road 1

TABLE 6
SUMMARY OF SOIL SURVEY SOIL UNIT TYPES AND
NORMAL SEASONAL HIGH GROUNDWATER DEPTHS - POND AREAS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02
TERRACON PROJECT NO. H1135080

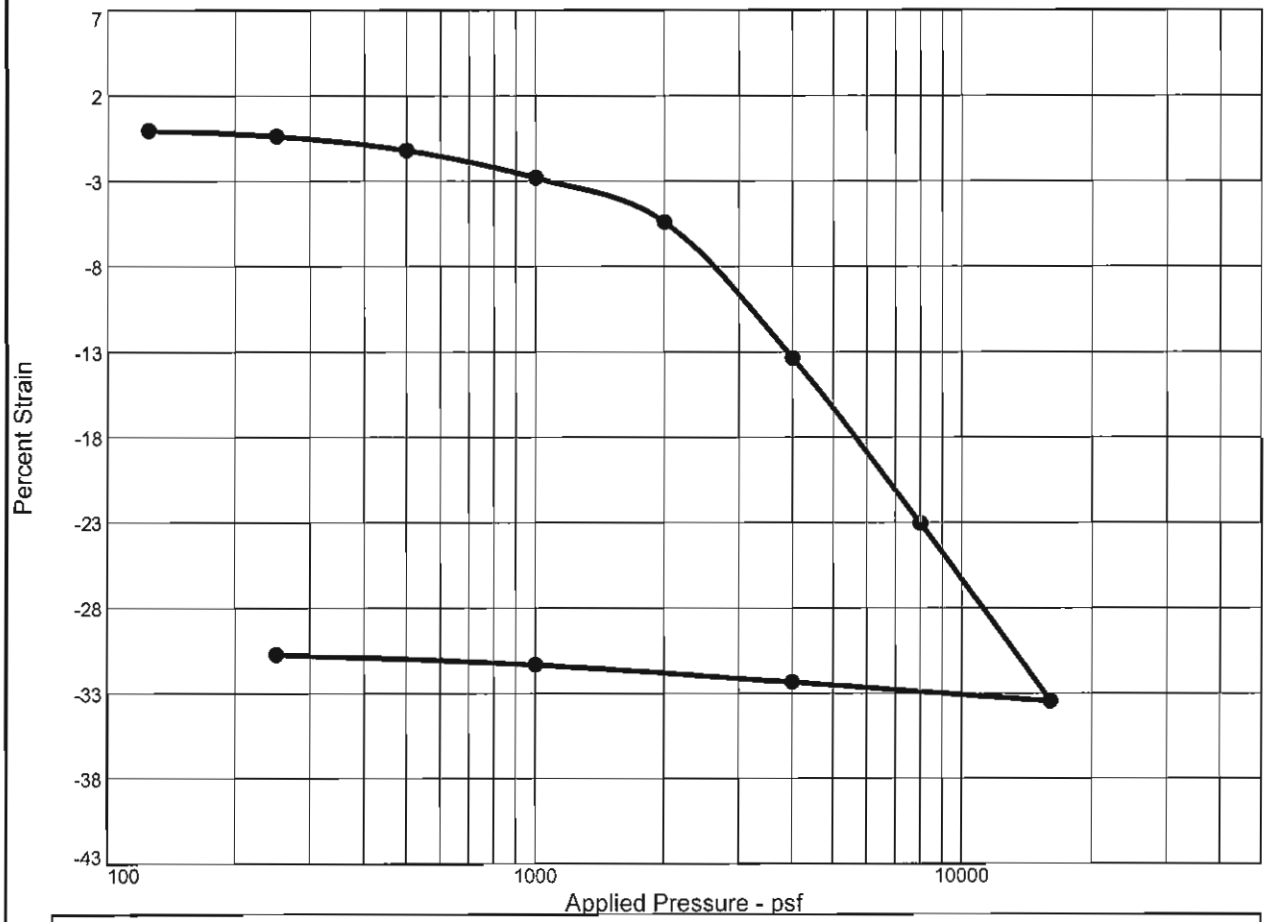
Pond Name	Mapped Soil Unit Symbol(s)	Range of Normal Seasonal High Groundwater Depths (based on soil unit types)	Range of Normal Seasonal High Groundwater Depths (based on soil borings)	Average Estimated Seasonal High Groundwater Elevation (based on soil borings and piezometers)	Average Estimated Seasonal Low Groundwater Elevation (based on soil borings and piezometers)
RS7-E-1A	Ca, Po, Ta	0.5 to 5 feet	5 to 8 feet	+56 feet	-
SMA RS7-E-4	Ta	3.5 to 5 feet	6 to 8 feet	+54.7 feet	n/a
RS7-E-4A	Ta	3.5 to 5 feet	7.5 to 8.5 feet	+54.5 feet	n/a
RS7-E-4B	Ta	3.5 to 5 feet	8 to 8.5 feet	+54.7 feet	n/a
RS7-E-4C	Ta	3.5 to 5 feet	7 to 7.5 feet	+54.3 feet	n/a
RS7-E-2A	Ca, Po, Ta	0.5 to 5 feet	5 to 9 feet	+52.7 feet	n/a
RS8-E-1	Am, Is, MpC, Pn	+0.0 to 4 feet	0 to 6.5 feet	+38 feet	+36 feet
RS9-E-1	AtB, Ta	3.5 to 10+ feet	7 to 12 feet	+48.7 feet	n/a
BW1A-E-6	AbB, Ta	1.5 to 5 feet	5 to 8 feet	+46 feet	n/a
BW1-E-2	AtB, PmA, Ta	3.5 to 10+ feet	10 to 13 feet	+45 feet	-
BW1-E-3	Ca, Ta	1 to 5 feet	1.5 to 6 feet	+42.5 feet	-
BW1-E-4	Mk, MpC	0 to 1.5 feet	1.5 feet	+40.4 feet	-
BW2-E-5A	Is, MpC, Pe	0 to 1 feet	0.0 feet	+30 feet	-
BW2-E-1	Is, Mk	0 to 1.5 feet	0 to 1 feet	+36 feet	-
BW2-E-2	Ca, Mk	0.5 to 1.5 feet	1 to 4 feet	+41 feet*	-
WR1-E-6	Ca, Te	1 to 3.5 feet	5.5 to 6 feet	+41.8 feet	-
WR1-E-1	Is	within 1 foot	2 to 3 feet	+38 feet	+33.5 feet
WR1-E-5A	Mk, Pn	0.5 to 4 feet	3.5 to 5 feet	+35 feet	n/a
WR1-E-7	Pn	3.5 to 4 feet	1 to 5 feet	+34.5 feet	n/a
WR2A-S-2	13, 28, 31	within 1 foot to 5 feet	1 to 3.5 feet	+20.5 feet	n/a

Note: Soil unit symbols are per Lake County soil survey except Pond WR2A-S-2 which is per Seminole County.

** For design, and based anticipated pond bottom, +39 feet can be considered for design.*

CONSOLIDATION TEST REPORTS

CONSOLIDATION TEST REPORT



Coefficients of Consolidation and Secondary Consolidation

No.	Load (psf)	C_v (ft.2/day)	C_α	No.	Load (psf)	C_v (ft.2/day)	C_α	No.	Load (psf)	C_v (ft.2/day)	C_α
1	125.00	0.013	0.000	9	4000	0.050					
2	250.00	0.134	0.000	10	1000.00	0.063					
3	500.00	0.147	0.002	11	250.00	0.009					
4	1000.00	0.507	0.003								
5	2000	0.350	0.005								
6	4000	0.243	0.012								
7	8000	0.578	0.014								
8	16000	0.750	0.014								

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
99.3 %	139.6 %	31.0			1.65		2137	1.04	0.05	2.320

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Brown Muck w/ Sand		

Project No. H1135080 **Client:**

Project: Wekiva-6

Location: DB-2A-3 @ 29.5-30.0'

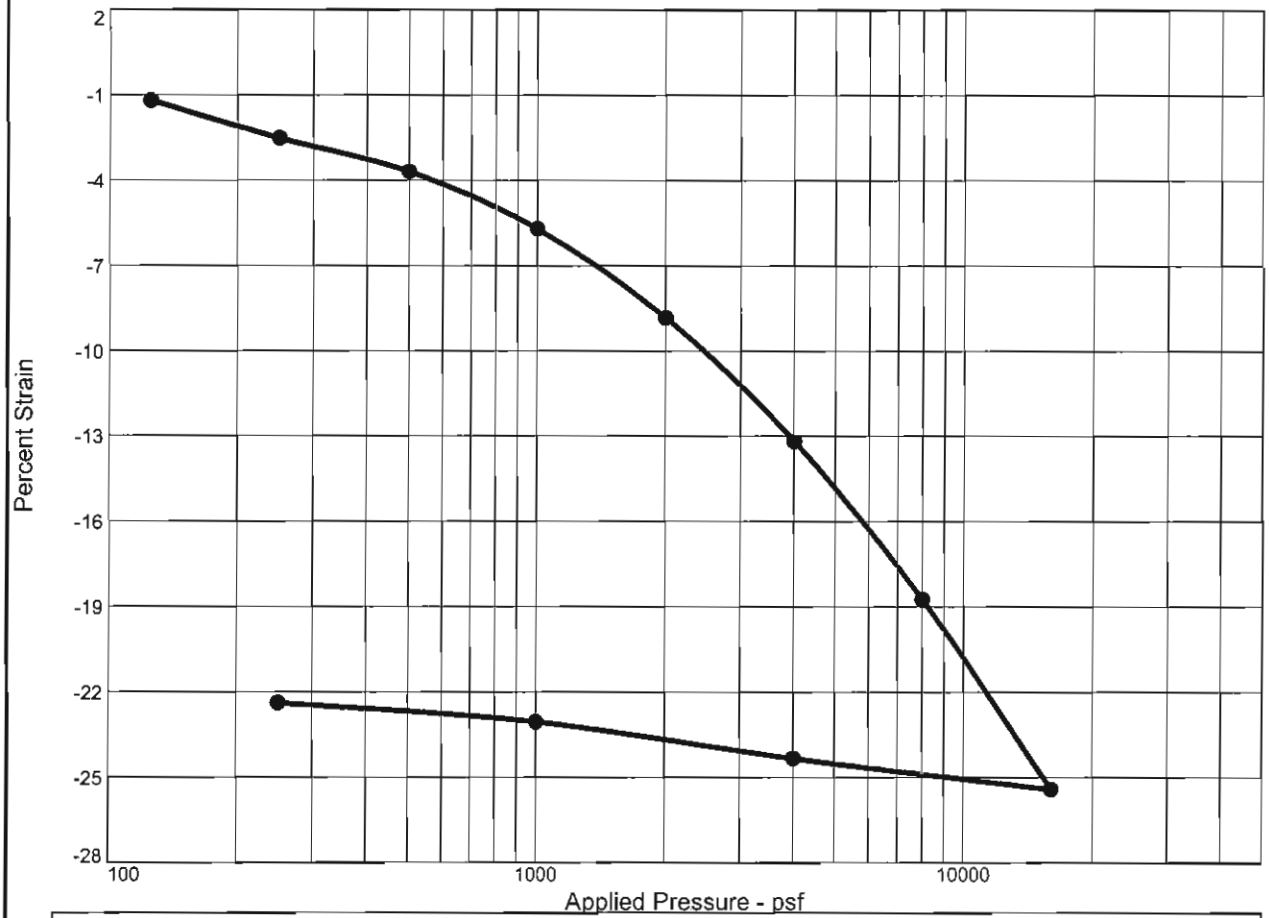
Remarks:

Organic Content = 39.4%

Terracon Consultants, Inc.

Figure 1

CONSOLIDATION TEST REPORT



Coefficients of Consolidation and Secondary Consolidation

No.	Load (psf)	C_v (ft.2/day)	C_α	No.	Load (psf)	C_v (ft.2/day)	C_α	No.	Load (psf)	C_v (ft.2/day)	C_α
1	125.00	0.622	0.002	9	4000	0.868					
2	250.00	0.090	0.002	10	1000.00	0.070					
3	500.00	0.358	0.003	11	250.00	0.838					
4	1000.00	1.067	0.004								
5	2000	0.488	0.006								
6	4000	1.131	0.006								
7	8000	0.627	0.017								
8	16000	0.563	0.016								

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
100.9 %	162.1 %	29.2			1.89		1978	0.90	0.07	3.035

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Brown Muck		

Project No. H1135080 **Client:**

Project: Wekiva-6

Location: B-12a @ 26-28'

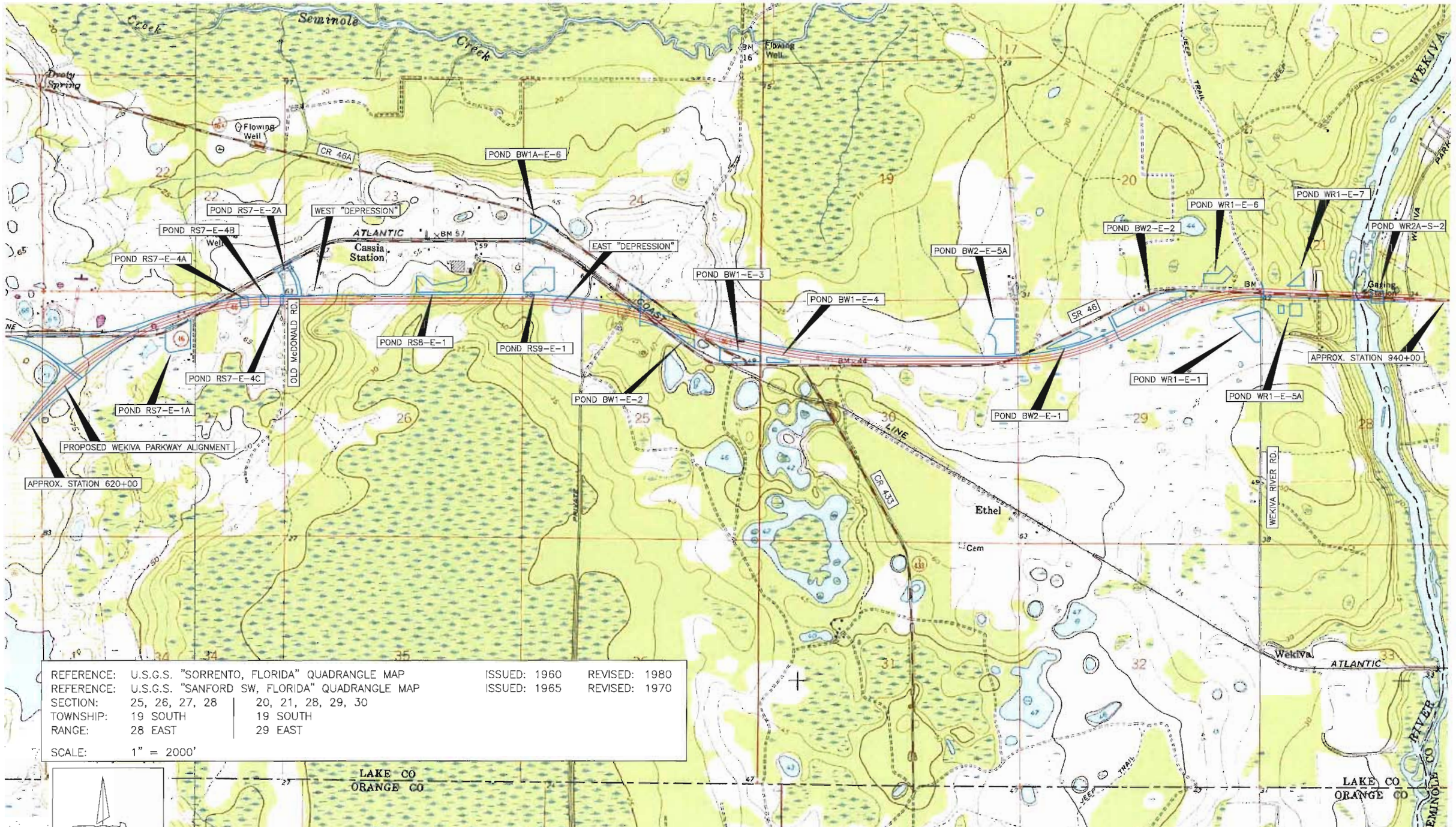
Remarks:

Organic Content = 46.4%
-200 = 91.8%

Terracon Consultants, Inc.

Figure 2

EXHIBITS

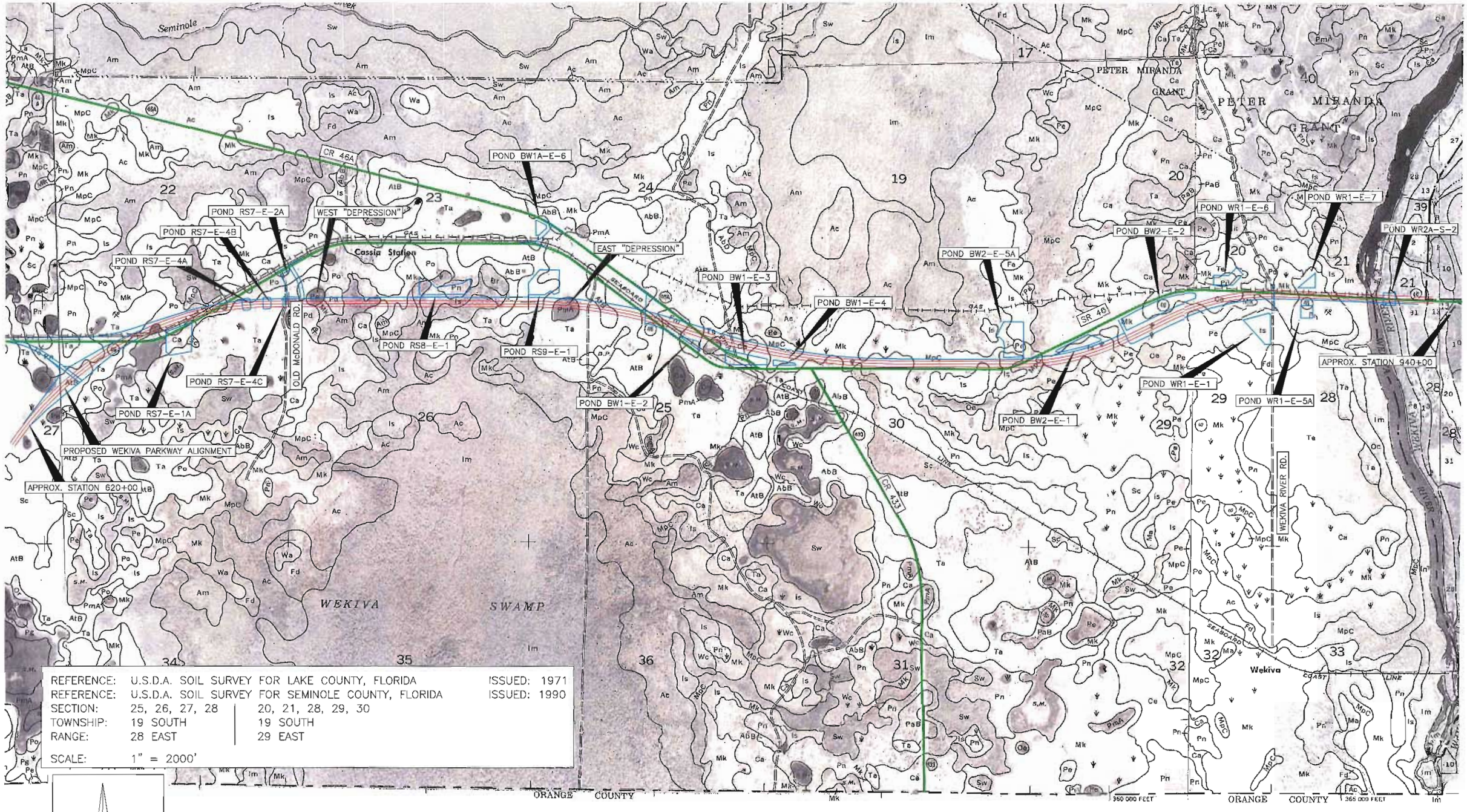


REFERENCE:	U.S.G.S. "SORRENTO, FLORIDA" QUADRANGLE MAP	ISSUED: 1960	REVISED: 1980
REFERENCE:	U.S.G.S. "SANFORD SW, FLORIDA" QUADRANGLE MAP	ISSUED: 1965	REVISED: 1970
SECTION:	25, 26, 27, 28 | 20, 21, 28, 29, 30		
TOWNSHIP:	19 SOUTH | 19 SOUTH		
RANGE:	28 EAST | 29 EAST		
SCALE:	1" = 2000'		

Project Mngr: ENJ	Project No. H1135080	Terracon Consulting Engineers and Scientists	U.S.G.S. TOPOGRAPHIC MAP
Drawn By: SW	Scale: AS SHOWN	1675 LEE ROAD WINTER PARK, FLORIDA 32789	GEOTECHNICAL ENGINEERING EVALUATION
Checked By: ENJ	File No. H1135080-1	PH. (407) 740-6110 FAX. (407) 740-6112	WEKIVA PARKWAY (SR 429 / SR 46)
Approved By: RGA	Date: 12-8-14		FROM OLD McDONALD RD. TO RIVER OAKS CIRCLE
			LAKE AND SEMINOLE COUNTIES, FLORIDA

EXHIBIT A-1

Dec06, 2014-3:14pm N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\usgs1.dwg



REFERENCE:	U.S.D.A. SOIL SURVEY FOR LAKE COUNTY, FLORIDA		ISSUED: 1971
REFERENCE:	U.S.D.A. SOIL SURVEY FOR SEMINOLE COUNTY, FLORIDA		ISSUED: 1990
SECTION:	25, 26, 27, 28	20, 21, 28, 29, 30	
TOWNSHIP:	19 SOUTH	19 SOUTH	
RANGE:	28 EAST	29 EAST	
SCALE:	1" = 2000'		

Project Mngr:	ENJ
Drawn By:	SW
Checked By:	ENJ
Approved By:	RGA

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-2
Date:	12-8-14

Terracon
Consulting Engineers and Scientists
1675 LEE ROAD WINTER PARK, FLORIDA 32789
PH. (407) 740-6110 FAX. (407) 740-6112

U.S.D.A. SOILS MAP
GEOTECHNICAL ENGINEERING EVALUATION
WEKIVA PARKWAY (SR 429 / SR 46)
FROM OLD McDONALD RD. TO RIVER OAKS CIRCLE
LAKE AND SEMINOLE COUNTIES, FLORIDA

EXHIBIT
A-2

Soil Survey Descriptions

Lake County

AbB / 1 – Sparr sand, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and somewhat poorly drained. It is typically found on uplands of the Coastal Plain. This soil type has a seasonal high water table at a depth of 18 to 42 inches (1.5 to 3.5 feet). This soil type is predominantly sandy to a depth of 48 inches (4 feet). Thereafter, to the maximum defined depth of 99 inches (8.3 feet), this soil type exists as sandy clay or loam.

Ac / 3 – Anclote fine sand. This soil type is nearly level and very poorly drained. It is typically found in depressions, drainageways, and swamps in the Lower Coastal Plain. In its natural state and during years of normal rainfall, groundwater is at the surface to 2 feet above the surface of this soil type from June through December (apparent water table). This soil type is generally predominantly sandy through the defined profile of 80 inches. The upper 16 inches of Anclote fine sand typically has an organic content of between 2 and 9 percent.

Am / 4 – Anclote and Myakka soils. This soil type is nearly level and very poorly drained. It is typically found in depressions, drainageways, and swamps in the Lower Coastal Plain and on the flatwoods. In its natural state and during years of normal rainfall, groundwater is at the surface to 2 feet above the surface of this soil type from June through December (apparent water table). This soil type is generally predominantly sandy through the defined profile of 80 inches.

AtB / 8 – Candler sand, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and excessively drained. It is typically found on rolling uplands of the central ridge. This soil type has a seasonal high water table at a depth of greater than 120 inches (10 feet). This soil type is predominantly sandy to a typical depth of 95 inches (7.9 feet). Thereafter, to the maximum defined depth of 99 inches (8.3 feet), this soil type exists as silty sand.

Ca / 12 – Cassia sand. This soil type is nearly level and somewhat poorly drained. It is typically found on low ridges and knolls that are slightly higher than nearby flatwoods. This soil type has a seasonal high water table at a depth of 10 to 40 inches (0.8 to 3.3 feet). This soil type is predominantly sandy through the defined profile of 80 inches.

Fm / 17 – Arents. This soil type consists of heterogenous soil that has been excavated, reworked, and reshaped by earth-moving equipment. Arents occur as areas of filled-in sloughs, marshes, shallow depressions, swamps and other low-lying areas, or as final cover for sanitary landfills. In normal rainfall years, the seasonal high water table is typically between depths of 24 and 36 inches (2.0 and 3.0 feet) for 2 to 4 months. During extended dry periods, the water table recedes to below a depth of 5 feet (60 inches). Although the composition somewhat variable, Arents are generally predominantly sandy throughout the defined depth of 60 inches (5.0 feet).

Im / 19 – Bluff and Manatee soils, frequently flooded. This soil type is nearly level and very poorly drained. It is typically found in low areas and is covered with shallow water during much of the rainy season. Organic matter is typically found within the surficial 18 inches (1.5 feet) of this soil type. In its natural state and during years of normal precipitation, this soil type has a seasonal high water table at or above the surface.

Is / 20 – Immokalee sand. This soil type is nearly level and poorly drained. It is typically found in broad areas in the flatwoods and in low areas between sand ridges and lakes, ponds, and sloughs. In its natural state and during years of normal precipitation, this soil type has a seasonal high water table within 10 inches (0.8 feet) of the surface.

Mk / 28 – Myakka sand. This soil map unit consists of areas of poorly drained soils. This soil map unit is typically found on the flatwoods. In its natural state, during years of normal rainfall, the groundwater table is normally between depths of about 6 to 18 inches (0.5 to 1.5 feet) below the ground surface from June through November. This soil type is predominantly sandy throughout the defined profile of 80 inches (6.7 feet).

MpC / 29 – Myakka and Placid sand, 2 to 8 percent slopes. This soil group is nearly level to gently sloping and very poorly drained and poorly drained. It is typically found in low depressional areas. In its natural state and during years of normal precipitation, the water table is at or near the surface most of the year. This soil is predominantly sandy throughout the defined profile of 80 inches (6.7 feet). The upper 20 inches (1.7 feet) of Placid soils have a typical organic content of between 2 and 10 percent. The upper 6 inches of Myakka soils have a typical organic content of between 2 and 7 percent.

Pe / 38 – Placid sand, depressional. This soil type is nearly level and very poorly drained and poorly drained. It is typically found in low depressional areas. In its natural state and during years of normal precipitation, the water table is within 12 inches (1 foot) of the surface most of the year. This soil is predominantly sandy throughout the defined profile of 80 inches (6.7 feet). The upper 20 inches (1.7 feet) have a typical organic content of between 2 and 10 percent.

PmA / 40 Placid and Myakka sands, depressional. This soil group is nearly level and very poorly drained and poorly drained. It is typically found in low depressional areas. In its natural state and during years of normal precipitation, the water table is at or near the surface most of the year. This soil is predominantly sandy throughout the defined profile of 80 inches (6.7 feet). The upper 20 inches (1.7 feet) of Placid soils have a typical organic content of between 2 and 10 percent. The upper 6 inches of Myakka soils have a typical organic content of between 2 and 7 percent.

Pn / 41 – Pomello sand, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and moderately well drained. It is typically found throughout the flatwoods. This soil type has a seasonal high water table at depth of about 45 inches (3.8 feet) during years of normal rainfall.

Po / 42 – Pompano sand. This soil type is nearly level and poorly drained. It is typically found on broad, low flats and in poorly defined drainageways on the flatwoods. During years of normal precipitation, this soil type has a seasonal high water table within 10 inches (0.8 feet) of the surface for 2 to 6 months, and within a depth of 30 inches (2.5 feet) for more than 9 months. This soil type is predominantly sand throughout the defined profile.

Ta / 45 – Tavares sand, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and moderately well drained. In its natural state and during years of normal precipitation, this soil type has a seasonal high water table between depths of 40 and 60 inches (3.3 and 5.0 feet) of the surface for 6 months. This soil is predominantly sandy throughout the defined profile of 80 inches (6.7 feet).

Te / 46 – Orsino sand. This soil type is nearly level to gently sloping and moderately well drained. In its natural state and during years of normal precipitation, this soil type has a seasonal high water table between depths of 24 and 42 inches (2 and 3.5 feet) of the surface for 6 months. This soil is predominantly sandy throughout the defined profile of 80 inches (6.7 feet).

Seminole County

13 – EauGallie and Immokalee fine sands. This soil type is nearly level and poorly drained. It is typically found in broad plains on the flatwoods areas. During years of normal precipitation, this soil type has a seasonal high water table within 12 inches (1.0 foot) of the surface for 1 to 4 months.

28 – Pompano fine sand, occasionally flooded. This soil type is nearly level and poorly drained. It is typically found on the floodplains. During years of normal precipitation, this soil type has a seasonal high water table within 12 inches (1.0 foot) of the surface for 2 to 6 months. This soil type is subject to occasional flooding, typically following heavy rains.

31 – Tavares-Millhopper fine sands, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and moderately well drained. It is typically found on low ridges and knolls on the uplands. In its natural state and during years of normal rainfall, the soils in this map unit have a seasonal high water table at a depth of between 36 and 60 inches (3.0 and 5.0 feet) for 2 to 6 months. The seasonal high water table is apparent in Tavares soil but perched in Millhopper soil.

PROJECT No. 238275-7-32-02
ROAD No. SR 429
DISTRICT No. 5
SUBMITTED BY: ELIAS JAMMAL, P.E. AND RICHARD ACREE, P.E.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH CROSS SECTION OF SOIL SURVEY REPORT OF TESTS
MECHANICAL ANALYSIS

DATE OF SURVEY: JUNE 2013 TO AUGUST 2014
SURVEYED BY: TERRACON
SURVEY BEGINS: 640+00
SURVEY ENDS: 931+20
DATE REPORTED: NOVEMBER 2014

STRATUM NO.	LBR VALUE	% PASSING 10 MESH	% PASSING 40 MESH	% PASSING 60 MESH	% PASSING 100 MESH	% PASSING 200 MESH	CHARACTERISTICS OF MATERIAL PASSING No. 40 SIEVE: LIQUID LIMIT	PLASTICITY INDEX	ORGANIC CONTENT	NO. LBR TESTS	NO. GRAD. TESTS	NO. LL-PI TESTS	NO. ORGANIC CONTENT TESTS	CLASS GROUP	MATERIAL DESCRIPTION	pH	RESISTIVITY OHM-CM	CHLORIDES PPM	SULFATES PPM	SUBSTRUCTURE ENVIRONMENTAL CLASSIFICATION: CONCRETE	STEEL
1	–	99–100	88–99	36–94	4–53	1–10	–	–	1	–	98(FULL) 18(–200)	–	1	A–3	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT	3.8–8.0	1700–170000	60	<5–1107	EXTREMELY AGGRESSIVE	EXTREMELY AGGRESSIVE
2	–	100	74–100	45–99	20–92	11–29	NP–36	NP–10	–	–	125(FULL) 9(–200)	51	–	A–2–4	BROWN TO DARK BROWN SILTY FINE SAND	4.3–7.1	9400–79000	60	<5–72	EXTREMELY AGGRESSIVE	EXTREMELY AGGRESSIVE
3	–	100	92–100	75–100	32–90	17–33	25–85	11–43	–	–	34(FULL) 9(–200)	40	–	A–2–6 A–2–7	LIGHT BROWN AND LIGHT GRAY TO GREENISH–GRAY CLAYEY FINE SAND	4.6–5.0	2000–45000	60	<5–266	EXTREMELY AGGRESSIVE	EXTREMELY AGGRESSIVE
4	–	93–100	88–98	71–90	26–50	9–29	27	8	–	–	9(FULL) 2(–200)	1	–	A–3 A–2–4	REDDISH–BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN)	4.4–4.6	14000–18000	60	<5	EXTREMELY AGGRESSIVE	EXTREMELY AGGRESSIVE
5	–	97–100	90–96	73–81	27–47	10–26	–	–	7–20	–	5(FULL) 1(–200)	–	6	A–8	BROWN TO DARK BROWN SANDY MUCK/PEAT	–	–	–	–	–	–
6	–	100	99–100	91–99	59–97	37–75	30–49	11–34	7	–	9(FULL) 2(–200)	11	1	A–6 A–7–6	LIGHT BROWN TO GRAYISH–BROWN AND GREENISH–GRAY CLAY	–	–	–	–	–	–
7	–	100	92–98	73–90	33–57	10–34	–	–	2–6	–	11(FULL) 1(–200)	–	11	A–2–4 A–2–6	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS	–	–	–	–	–	–
8	–	92–100	83–100	81–100	77–99	36–96	50–164	20–123	–	–	15(FULL) 5(–200)	19	–	A–7–5 A–7–6	GREENISH–GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL	–	–	–	–	–	–
9	–	100	99–100	97–98	81–94	38–78	NP–27	NP–5	–	–	2(FULL) 2(–200)	2	–	A–4	BROWN SANDY SILT	–	–	–	–	–	–
10	–	95–98	58–88	49–67	37–39	21–33	NP–72	NP–32	–	–	2(FULL) 1(–200)	3	–	A–2–4 A–2–6 A–2–7	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL	–	–	–	–	–	–
11	–	–	–	–	–	–	–	–	–	–	–	–	–	–	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE	–	–	–	–	–	–

NOTES:

1) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES THAT ARE SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2–4. FOR FURTHER DETAILS SEE SECTION 120–3.

2) WATER TABLE SHOWN AS ▼ WHERE ENCOUNTERED AT TIME OF SURVEY. GROUNDWATER NOT ENCOUNTERED SHOWN AS "GNE". ESTIMATED SEASONAL HIGH GROUNDWATER SHOWN AS ▽.

3) REMOVAL OF MUCK AND PLASTIC MATERIAL OCCURRING WITHIN ROADWAY SHALL BE ACCOMPLISHED IN ACCORDANCE WITH INDEX NO. 500, UNLESS OTHERWISE SHOWN ON THE PLANS, AND THE MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH INDEX 505.

4) SOIL ANALYSIS INCLUDES DATA FROM ROADWAY AND POND AREAS.

5) THE SYMBOL "–" REPRESENTS AN UNMEASURED PARAMETER.

6) THE SYMBOL "NP" REPRESENTS NON–PLASTIC.

7) STRATA 1, 2 AND 4 CAN BE CLASSIFIED AS SELECT (S). ALSO, SEE NOTE 13.

8) STRATA 3, 6, 7, 9 AND 10 SHOULD BE TREATED AS PLASTIC MATERIAL (P). ALSO, SEE NOTE 13.

9) STRATUM 8 SHOULD BE TREATED AS HIGH PLASTIC MATERIAL (H).

10) THE MATERIAL FROM STRATUM 4 CAN BE CLASSIFIED AS SELECT. HOWEVER, SEE NOTE 13. THIS MATERIAL MAY NEED TO BE PULVERIZED IN ACCORDANCE WITH SPECIFICATION 120–7–2 TO BE USED AS EMBANKMENT MATERIAL.

11) STRATUM 5 SHOULD BE TREATED AS MUCK/PEAT (M).

12) STRATA 2 AND 4 MAY RETAIN EXCESS MOISTURE AND MAY BE DIFFICULT TO DRY AND COMPACT. THEY SHOULD BE USED IN THE EMBANKMENT ABOVE THE WATER LEVEL EXISTING AT THE TIME OF CONSTRUCTION. THEY MAY BE USED IN THE SUBGRADE PORTION OF THE ROADBED WHEN APPROVED BY THE DISTRICT GEOTECHNICAL ENGINEER.

13) LAYERS OF VERY HARD MATERIALS SUCH AS CEMENTED SAND/SILT, HARDPAN, ETC. MAY BE ENCOUNTERED IN VARIOUS AREAS OF THIS PROJECT. SUCH MATERIALS WILL BE DIFFICULT TO EXCAVATE OR PENETRATE. THE CONTRACTOR SHALL EXPECT TO ENCOUNTER THESE VERY VERY HARD MATERIALS IN ALL EXCAVATION AND SHALL USE SPECIALIZED EQUIPMENT AND/OR PROCEDURES AS NECESSARY TO FACILITATE EXCAVATION/PENETRATION.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11–21–14
CHECKED BY: ENJ 11–21–14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA DEPARTMENT OF TRANSPORATATION

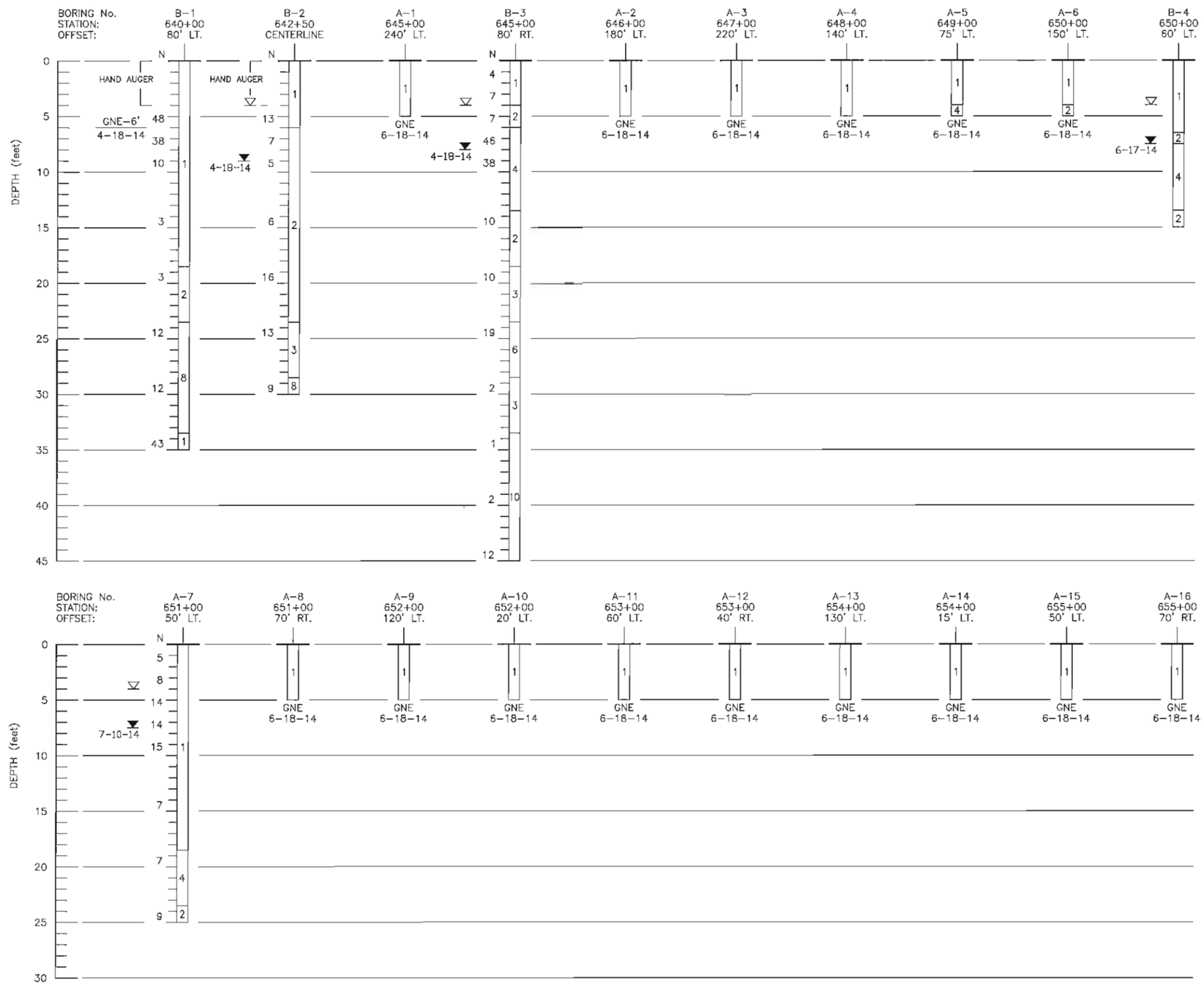
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275–7–32–02

SHEET TITLE: REPORT OF SOIL SURVEY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. –



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14 ▼	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES
WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

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P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-5

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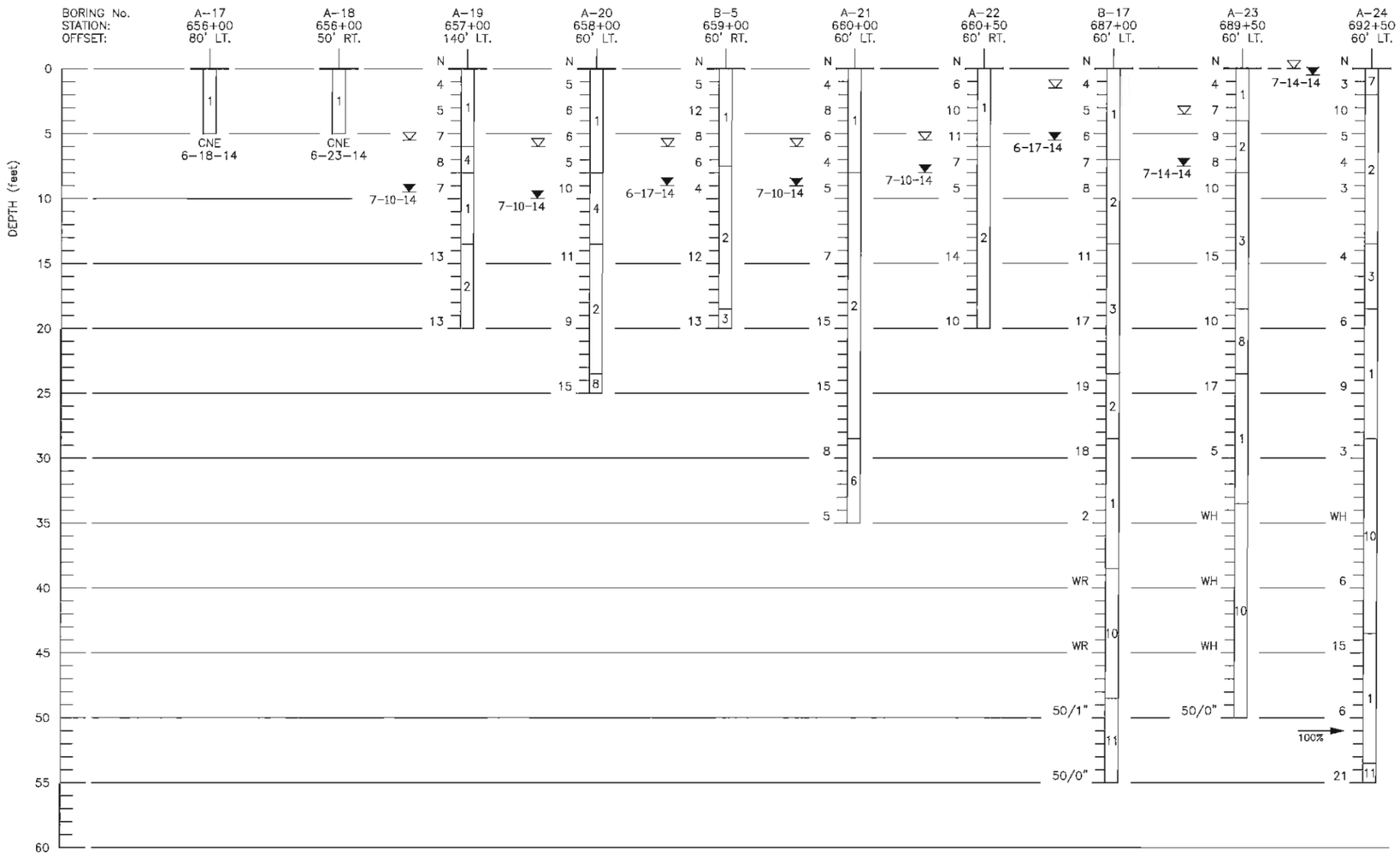

100%
LOSS OF DRILLING FLUID CIRCULATION (APPROX. PERCENT NOTED)

1 LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)

2 BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)

3 LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)

4 REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)

5 BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)

6 LICHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)

7 BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)

8 GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)

9 BROWN SANDY SILT (A-4)

10 GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)

11 LICHT GRAY TO LICHT BROWN DOLOSTONE OR WEATHERED LIMESTONE

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

4-3-14 ENCOUNTERED GRDUNDWATER LEVEL (DATE OF READING)

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS DTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

WH WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

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WINTER PARK, FLORIDA 32789
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

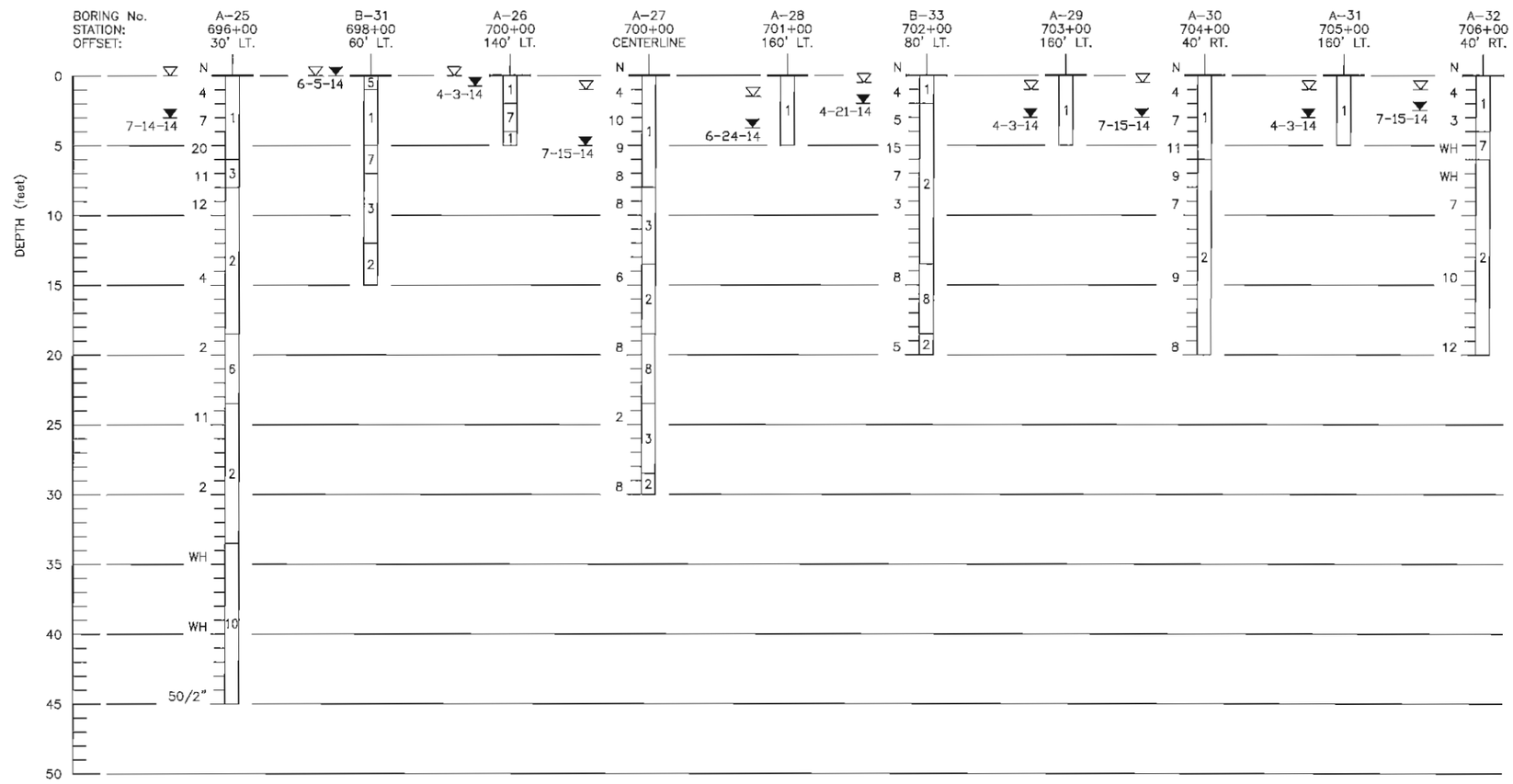
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-6



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
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(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
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NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES
WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

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SPOON OUTSIDE DIA.	2 in.
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DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

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HARD	GREATER THAN 24

REVISIONS

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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

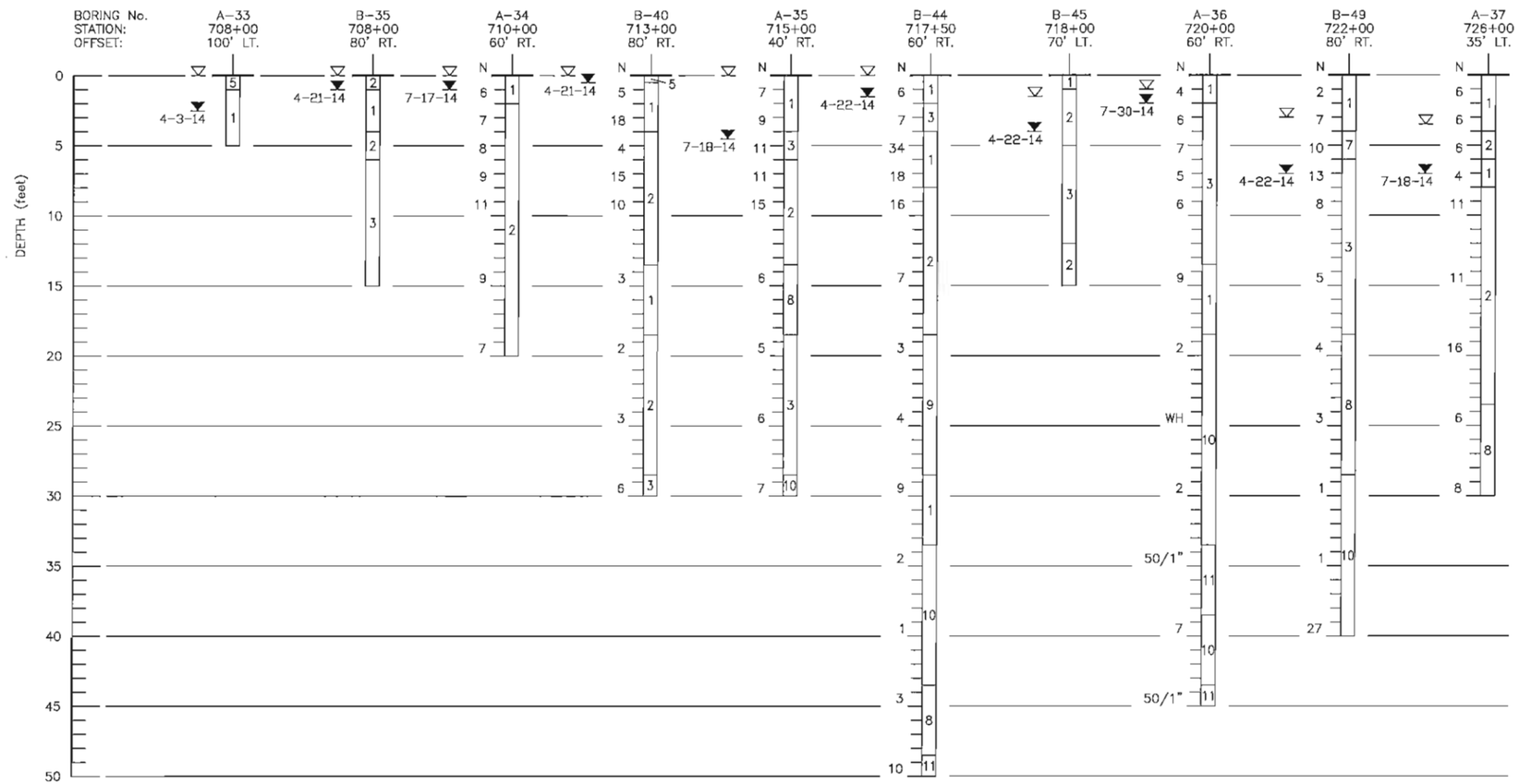
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-7



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4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14 ▼	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES
WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-8

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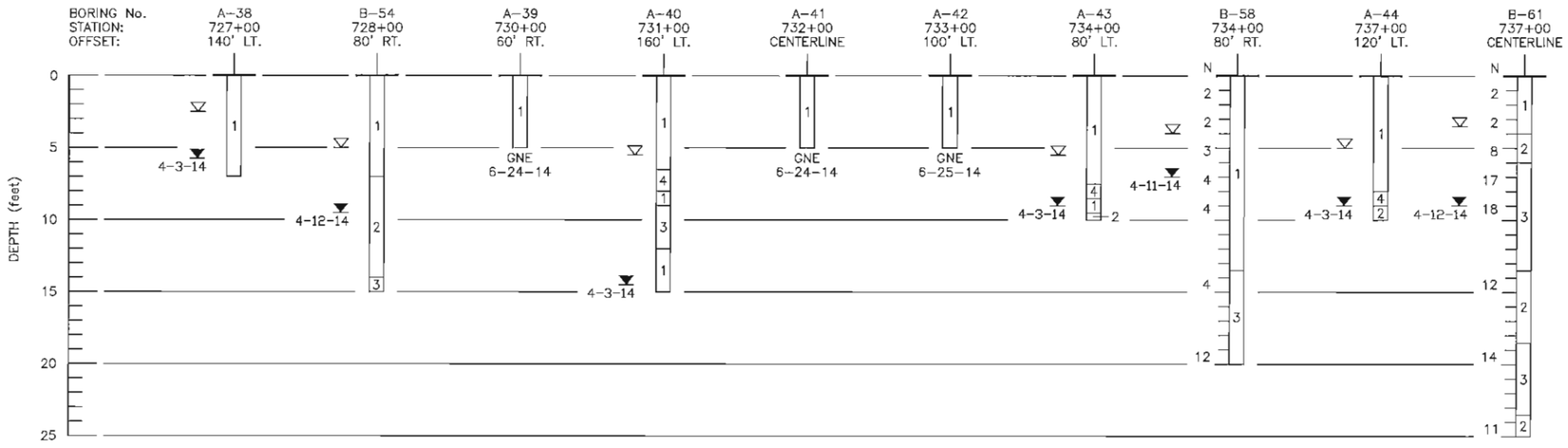

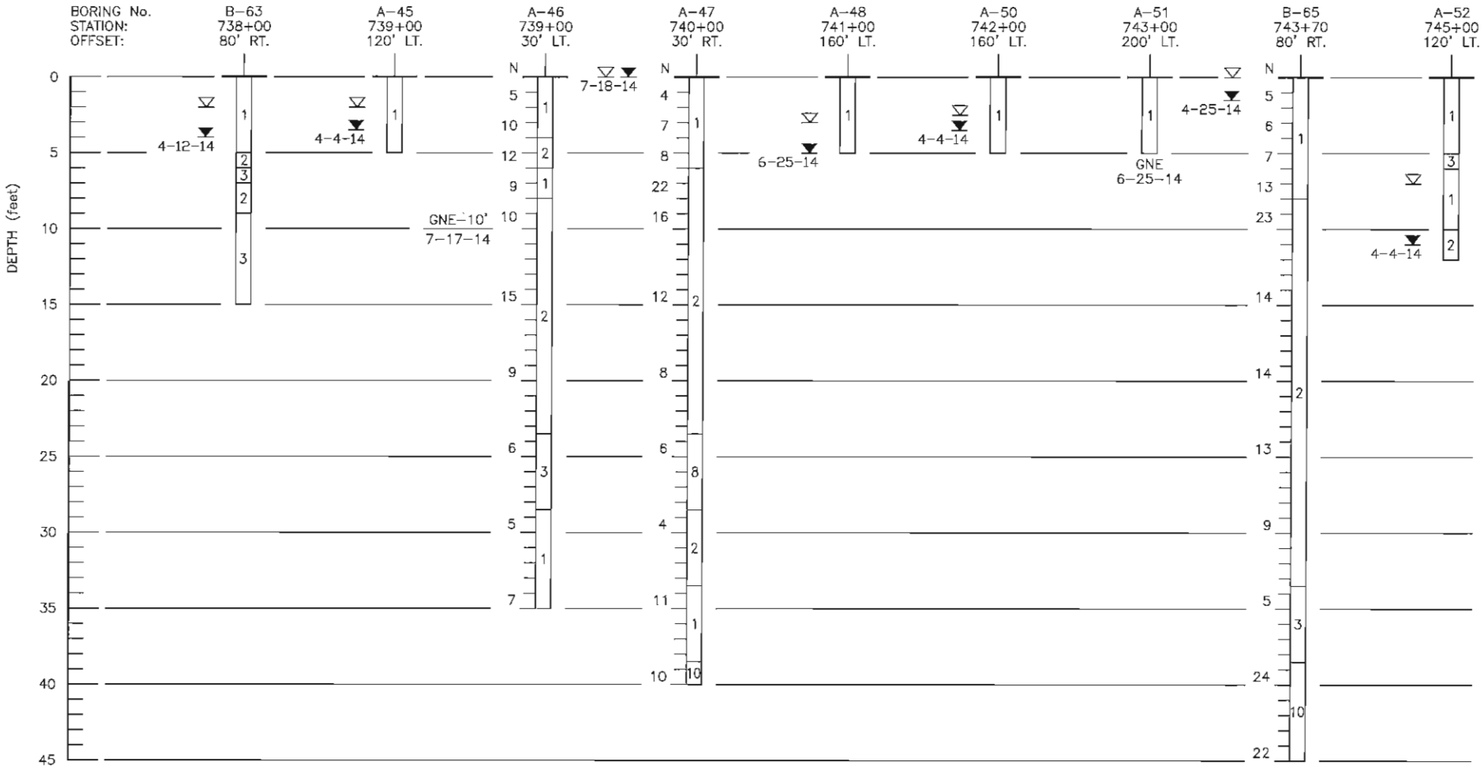

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(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14 ▼	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
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STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

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AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

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LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
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SILTS AND CLAYS

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SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

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P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
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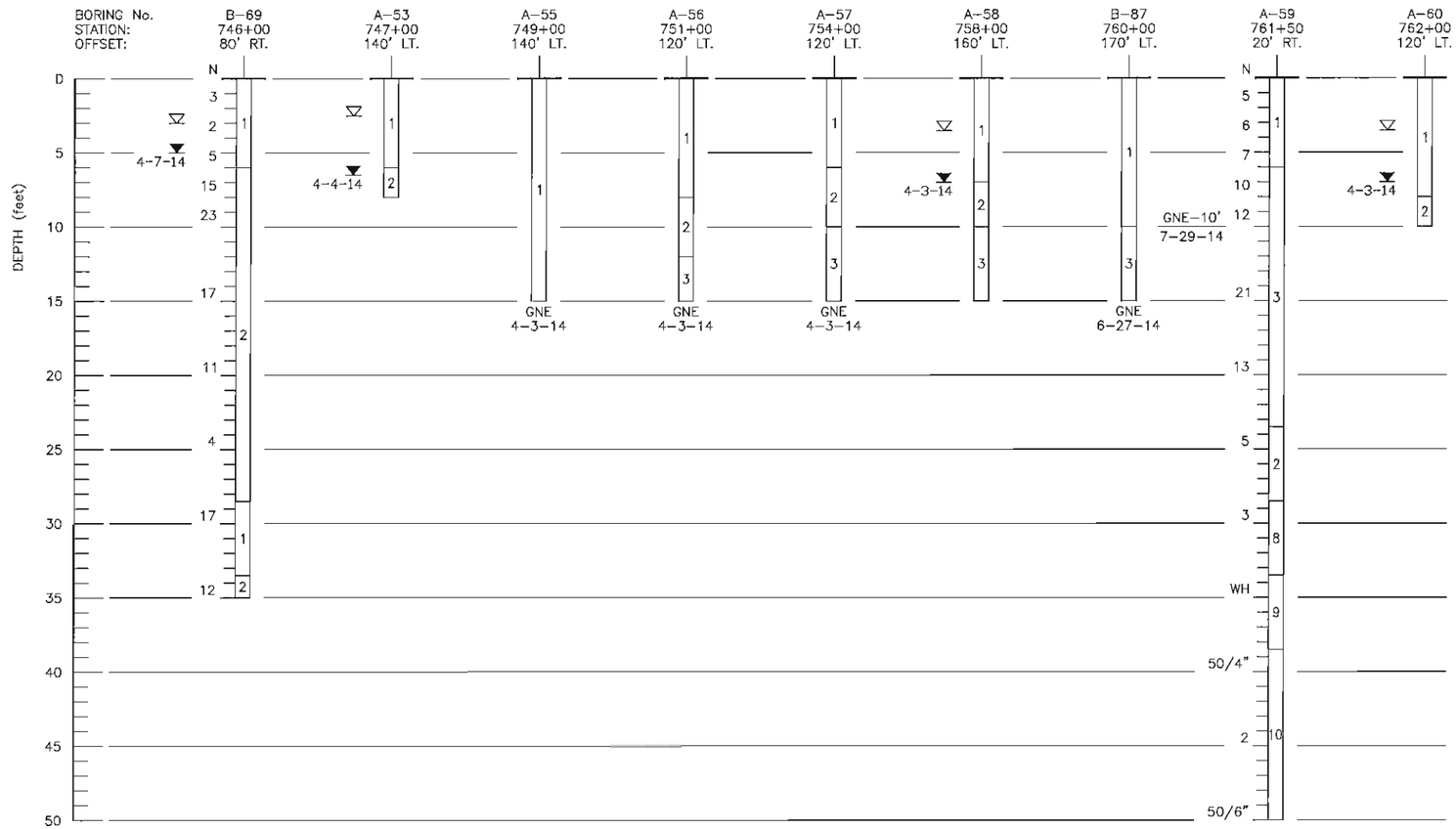
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-9



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AUTOMATIC HAMMER

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AVG. HAMMER DROP	30 in.
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SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
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SOFT	1-3
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STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

Nov04, 2014-10:33am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

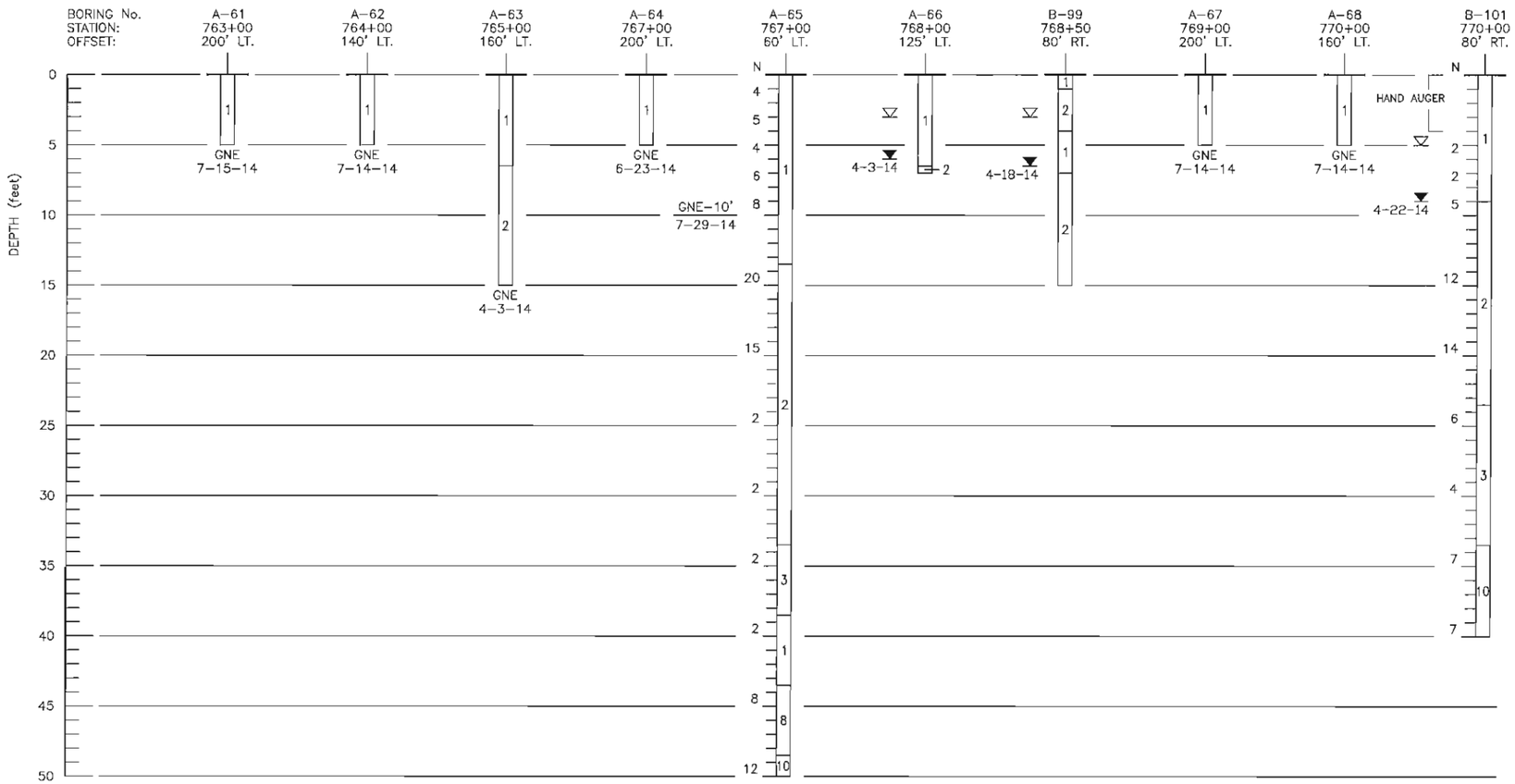
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -



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STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

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AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

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VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

Nov04, 2014-10:34am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh11.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

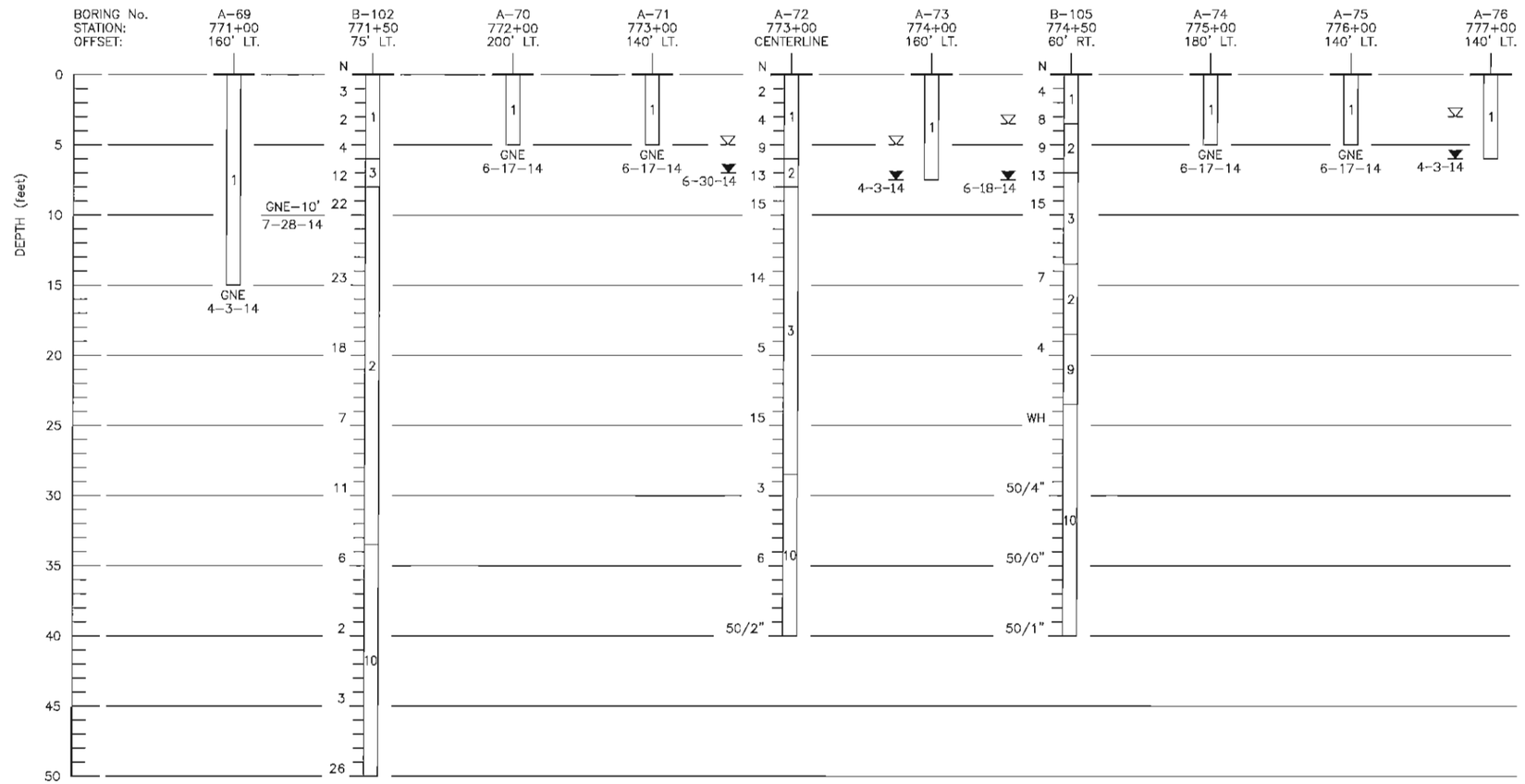
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -



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(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

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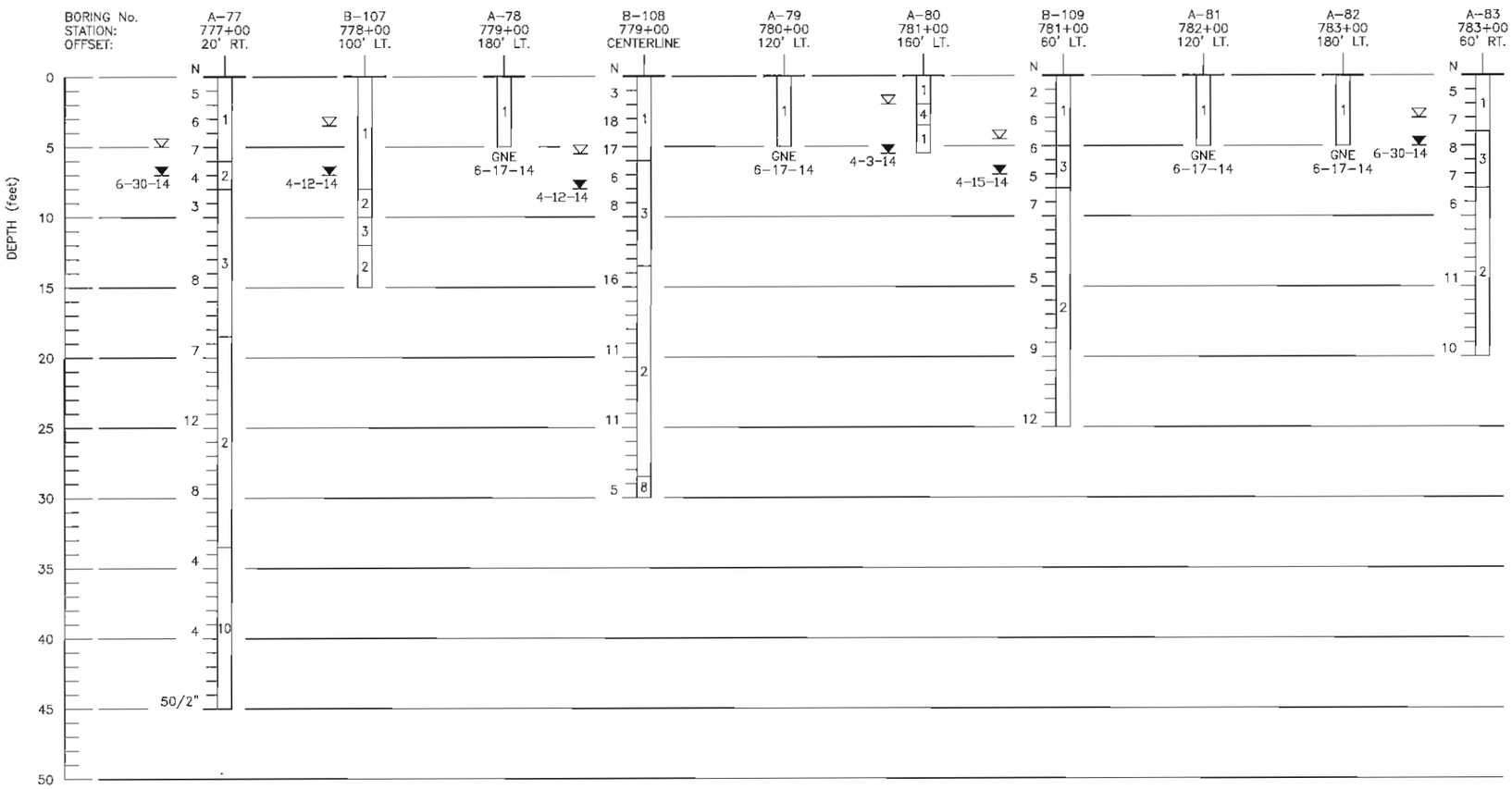

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Nov04, 2014-10:54am N:\Projects\2013\H113508D\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh13.dwg

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

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PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

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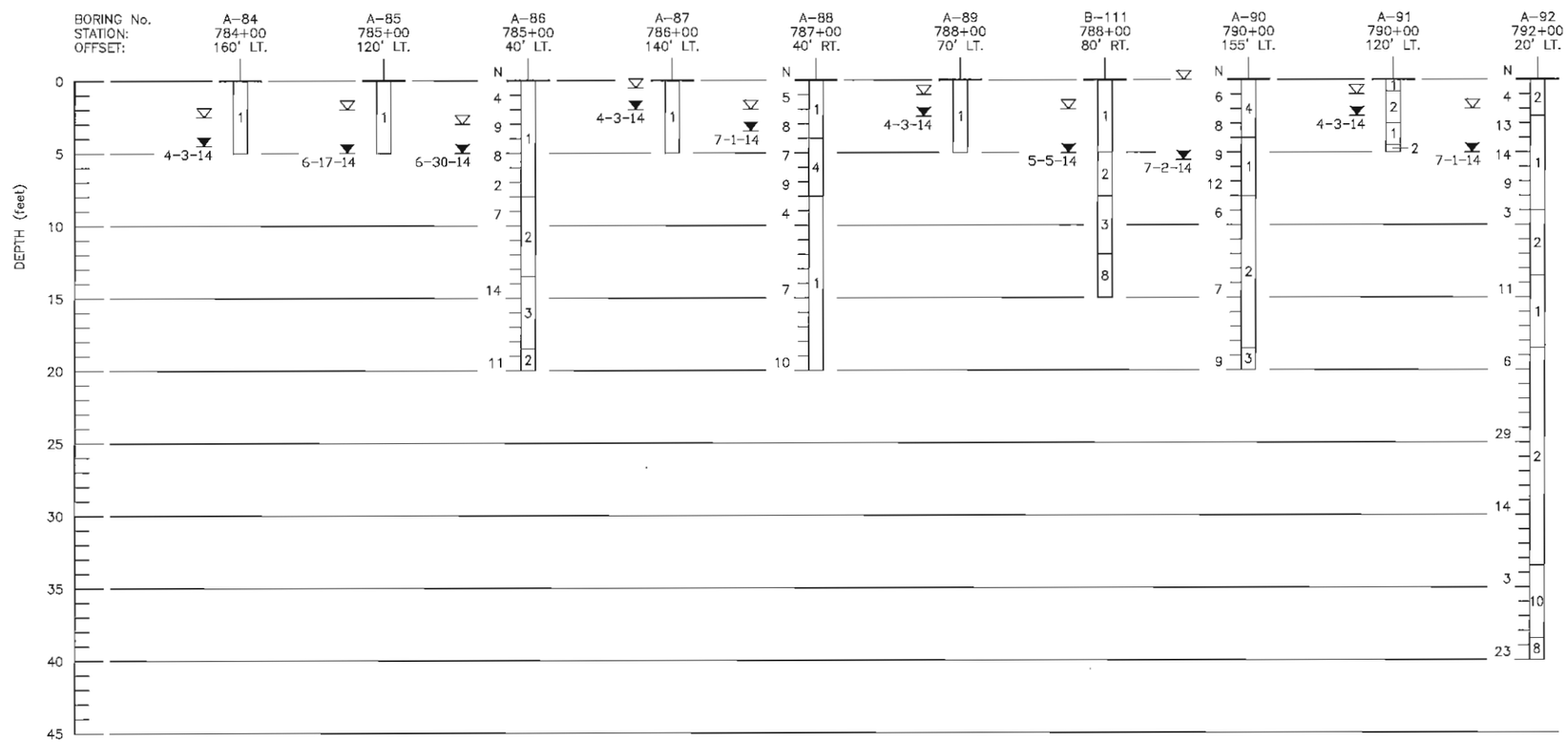


(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

4-3-14 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

WH WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

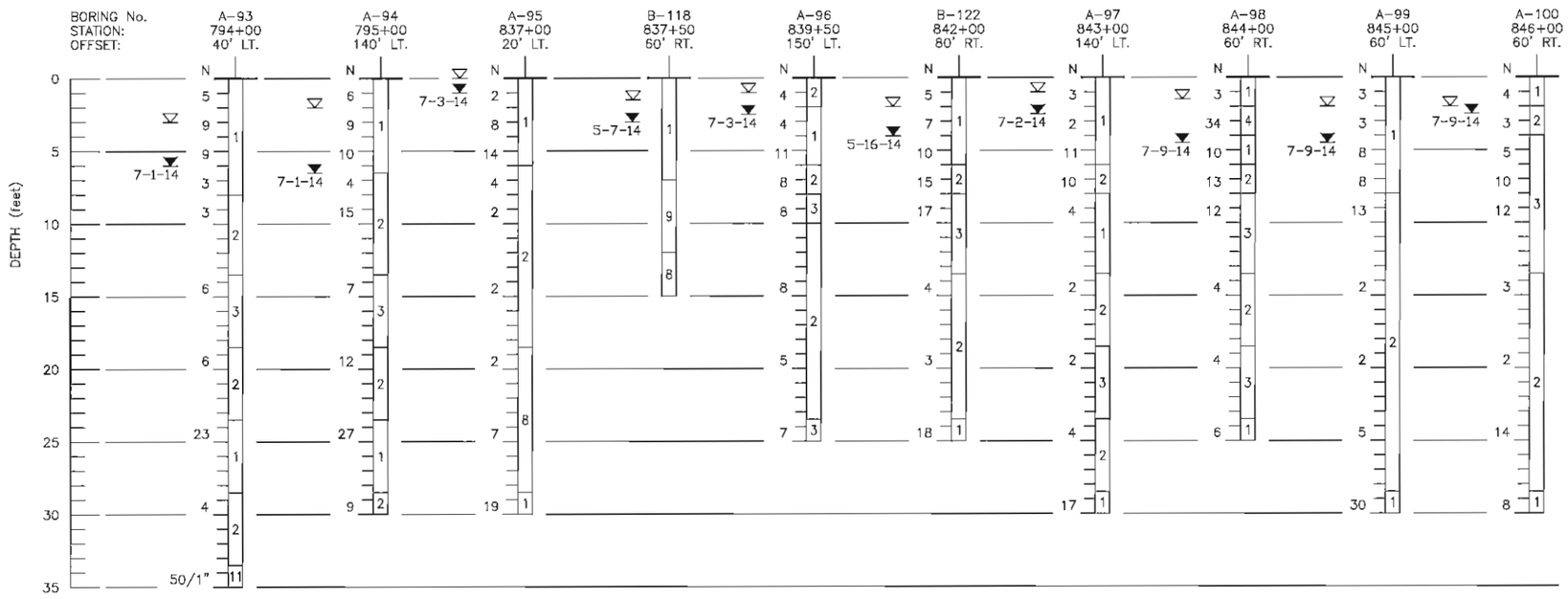
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

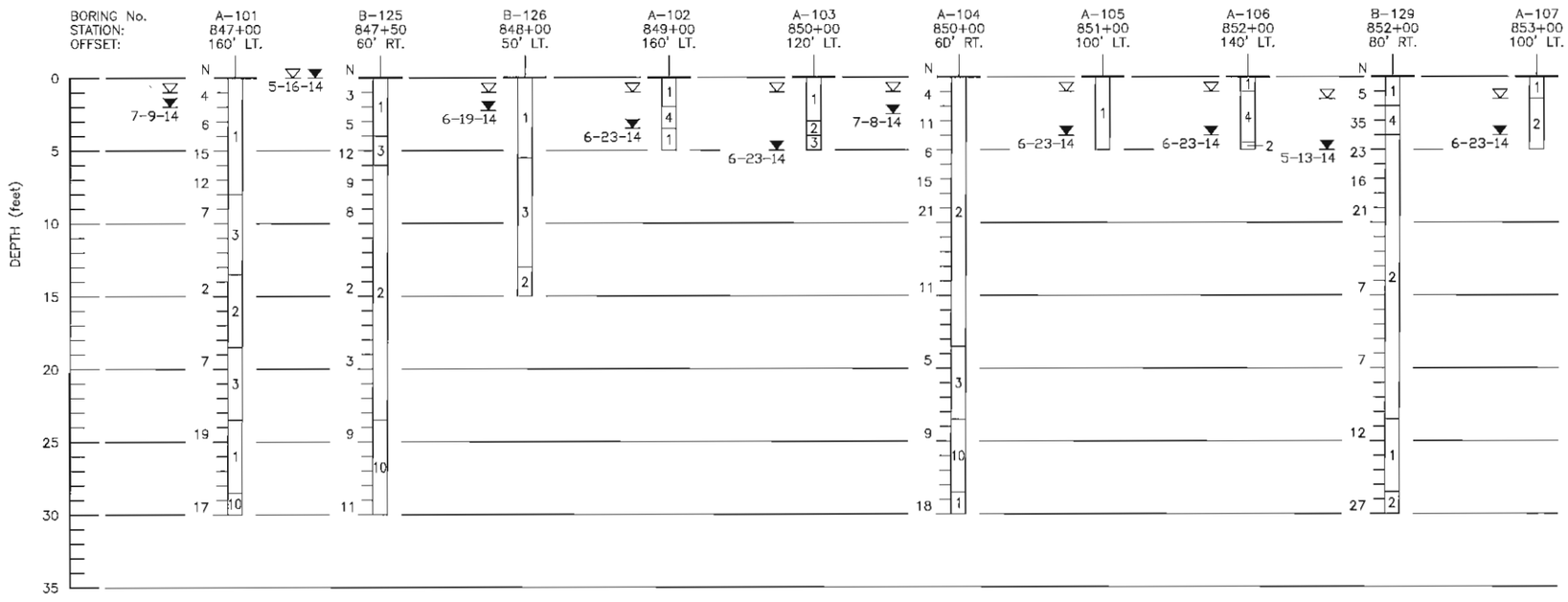
REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-14

Nov04, 2014-10:55am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh14.dwg





1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A--2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2--6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
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NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS DTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES
WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

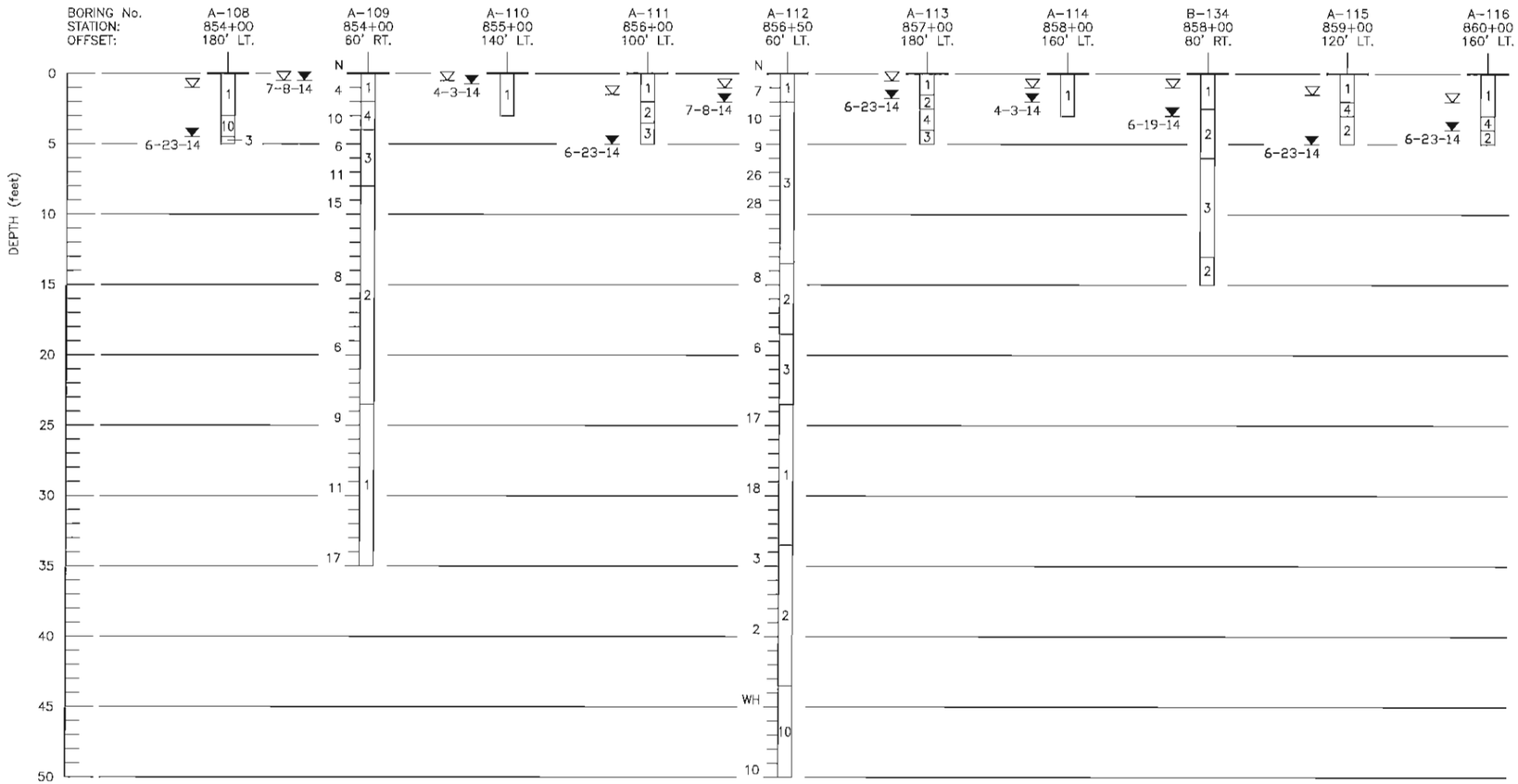
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-15

Nov04, 2014 - 10:58am N:\Projects\2013\H113508D\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh15.dwg



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5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

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WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-16

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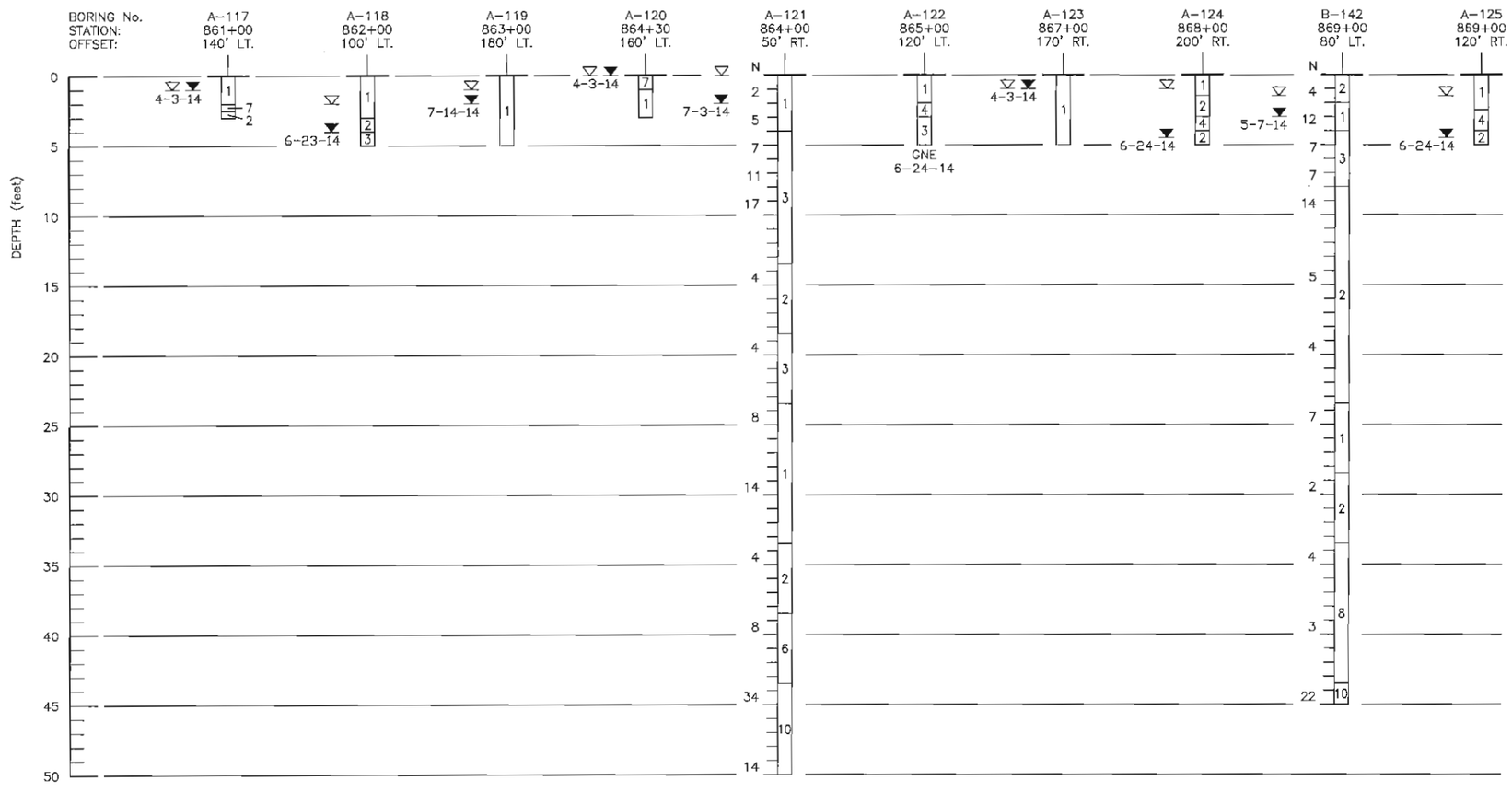

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5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
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11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
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NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

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STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
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LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

Nov21, 2014-9:19am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh17.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

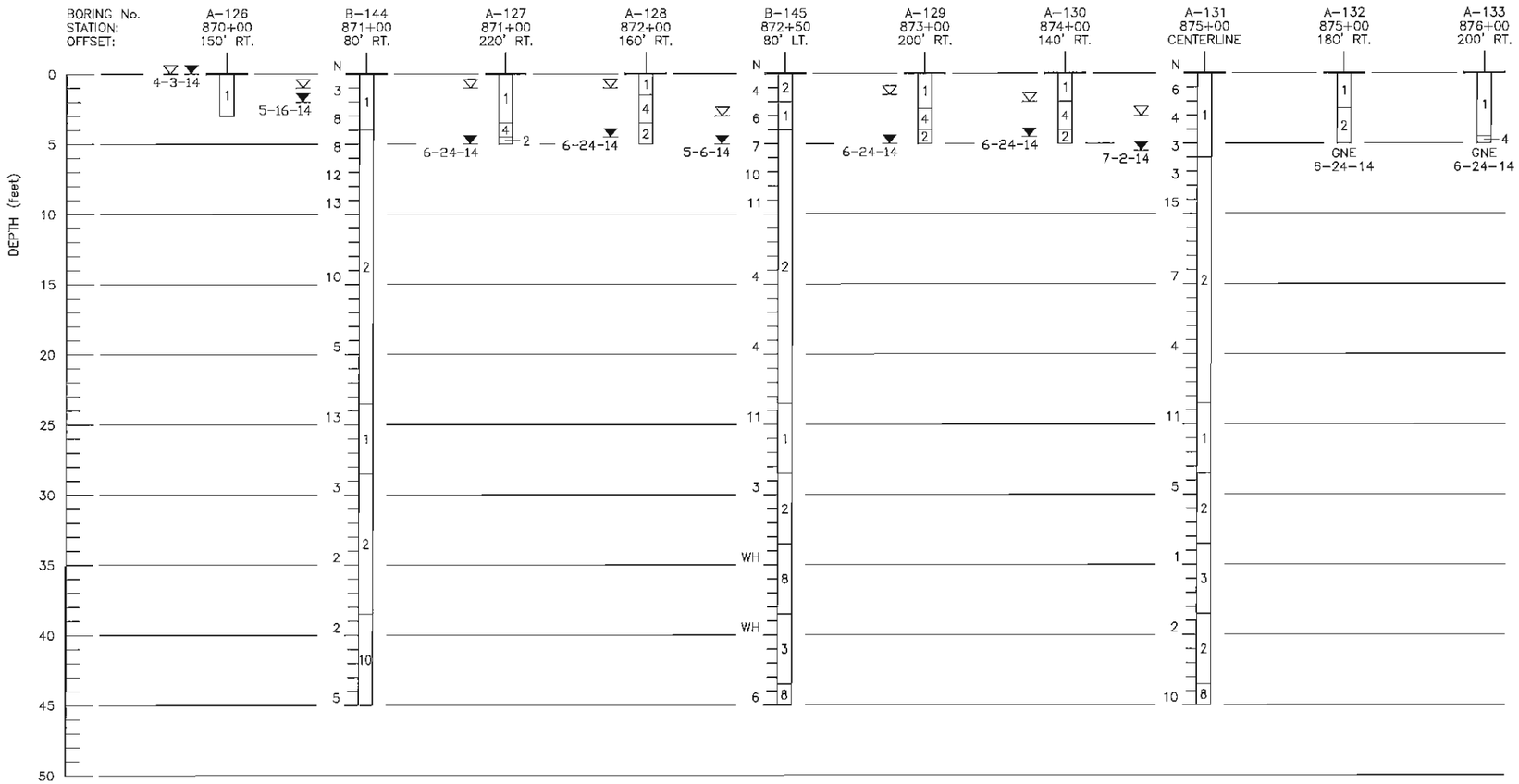
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-17



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(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
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GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
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NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

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STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

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SILTS AND CLAYS

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REVISIONS

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1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHEGKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

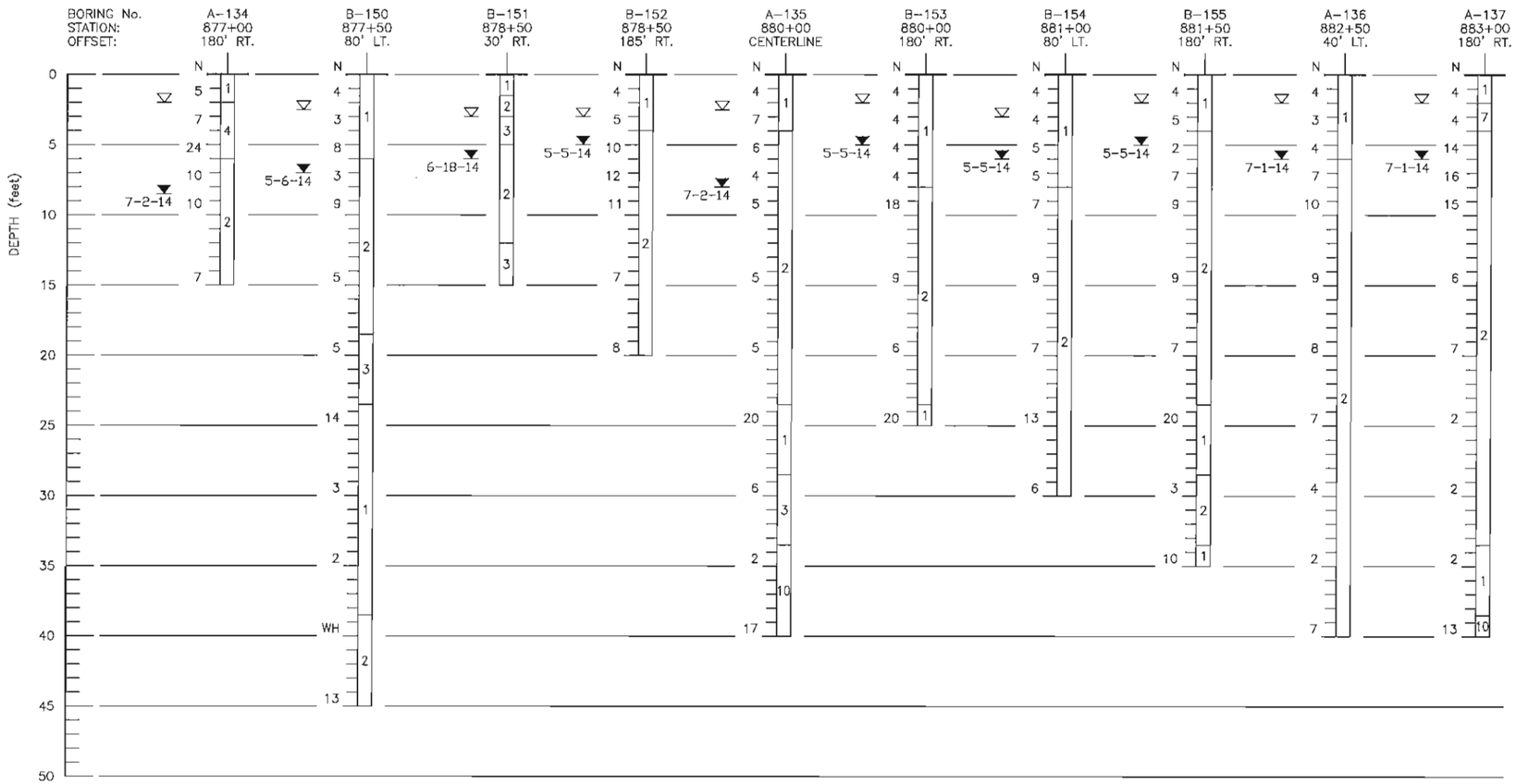
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-18



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Nov04, 2014-11:02am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh19.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

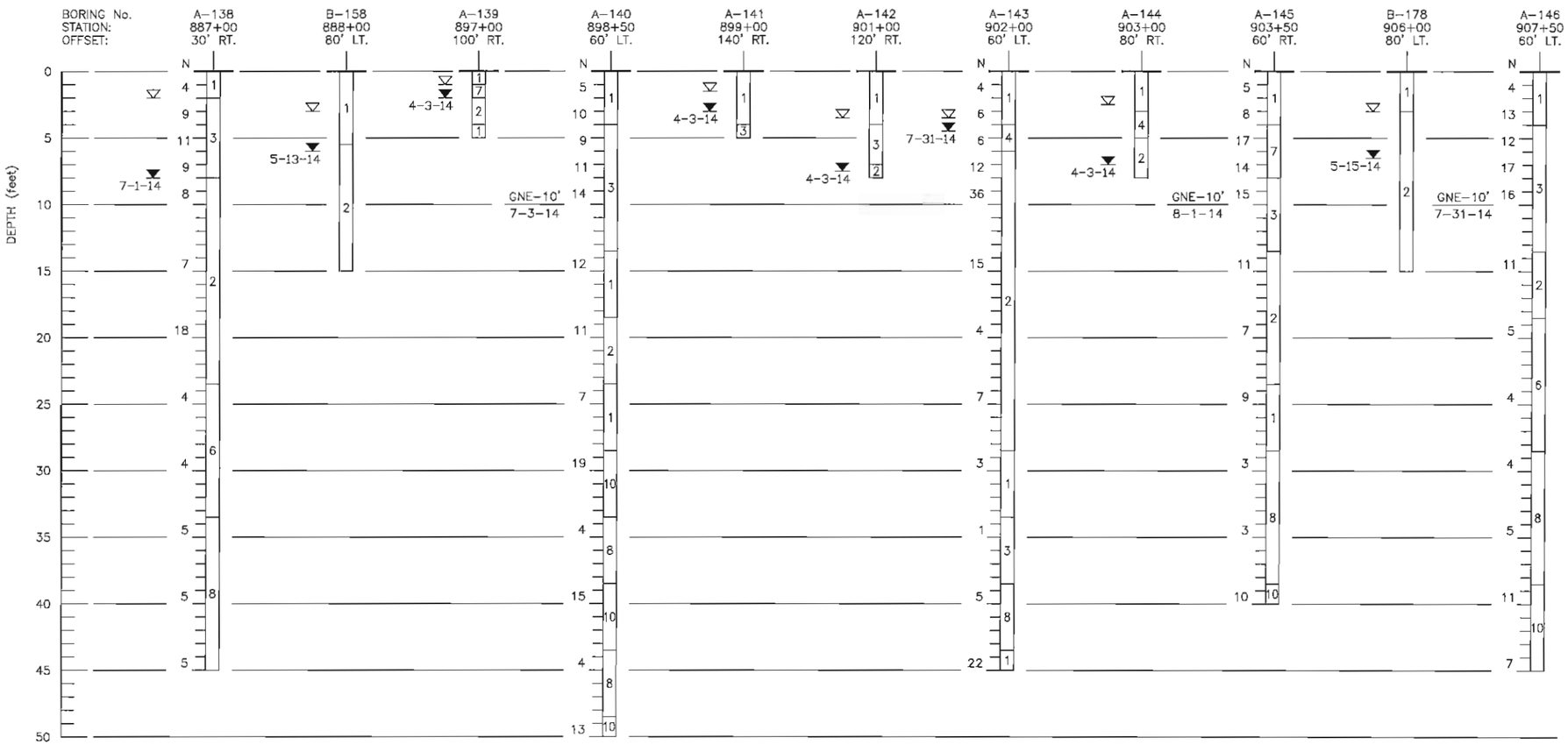
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. --



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3 LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)

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8 GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)

9 BROWN SANDY SILT (A-4)

10 GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)

11 LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

4-3-14 ▼ ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)

▽ ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429 UNLESS NOTED OTHERWISE.

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

WH WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

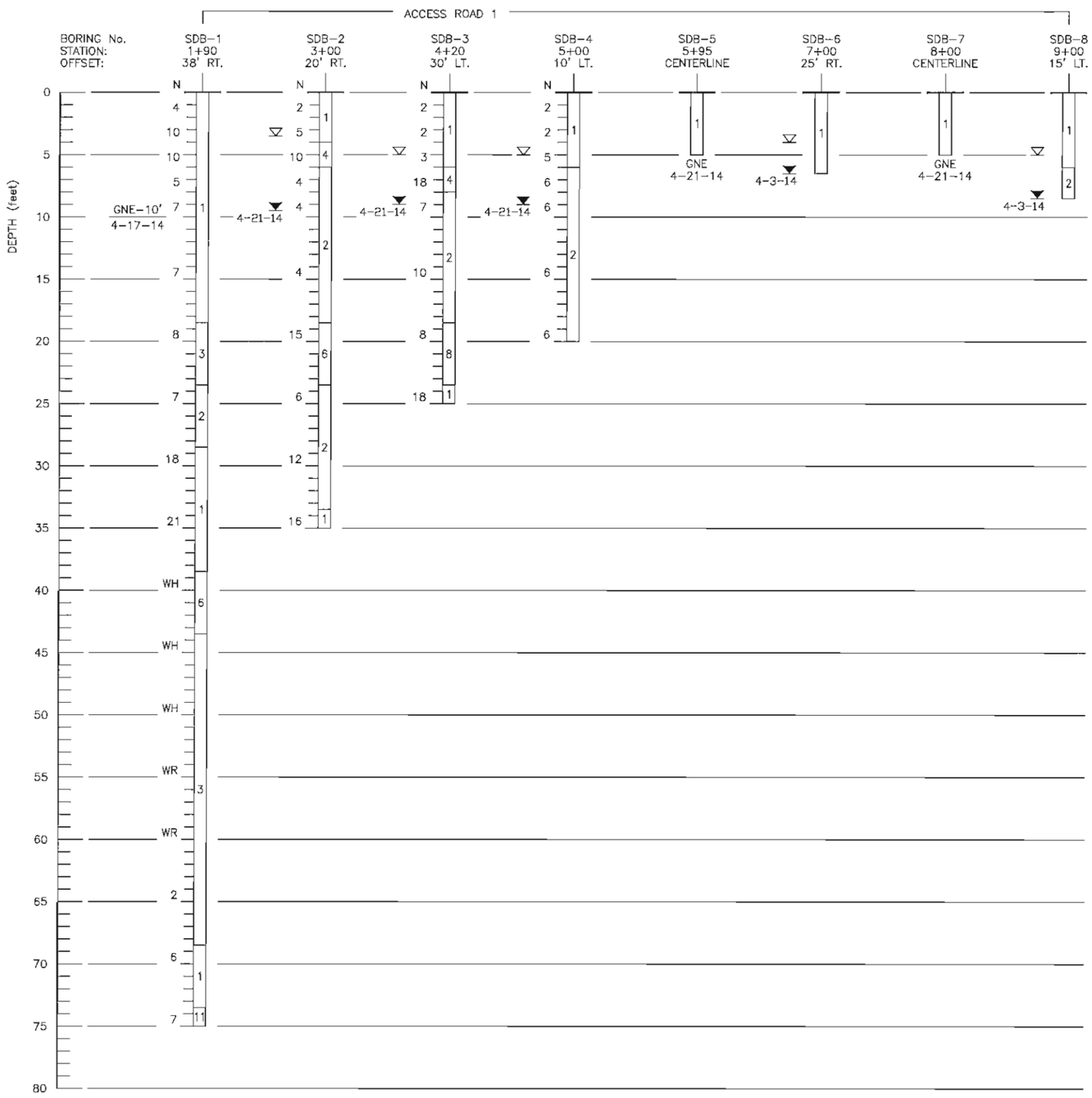
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-20

Nov21, 2014-9:20am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\roadway borings exh20.dwg



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTEREO GROUNOWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

N	STANDARD PENETRATIDN RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED
50/6"	NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES
WR	WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON
WH	WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

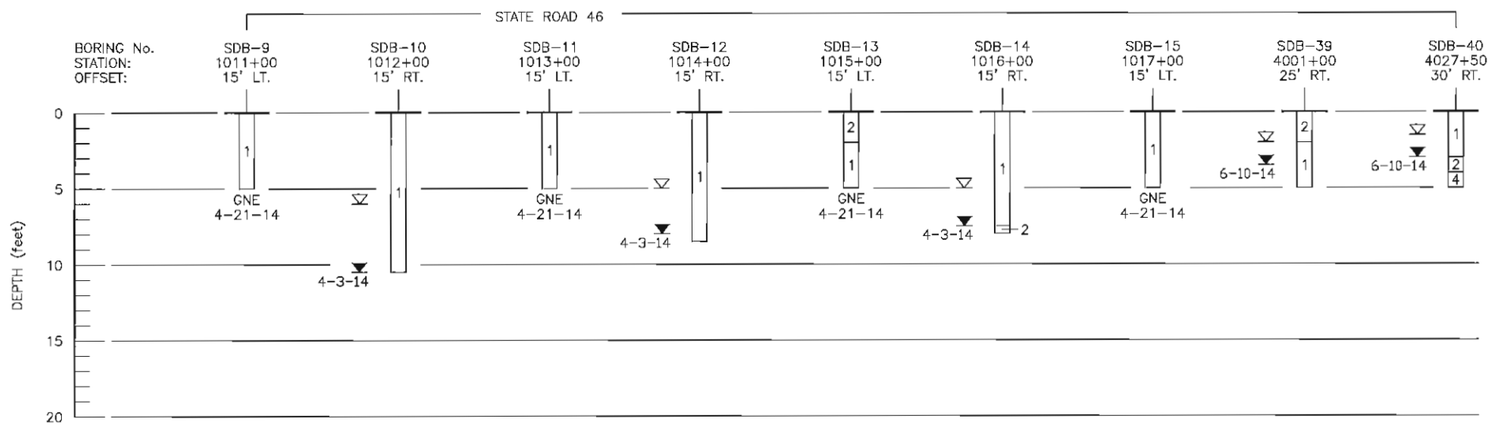
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

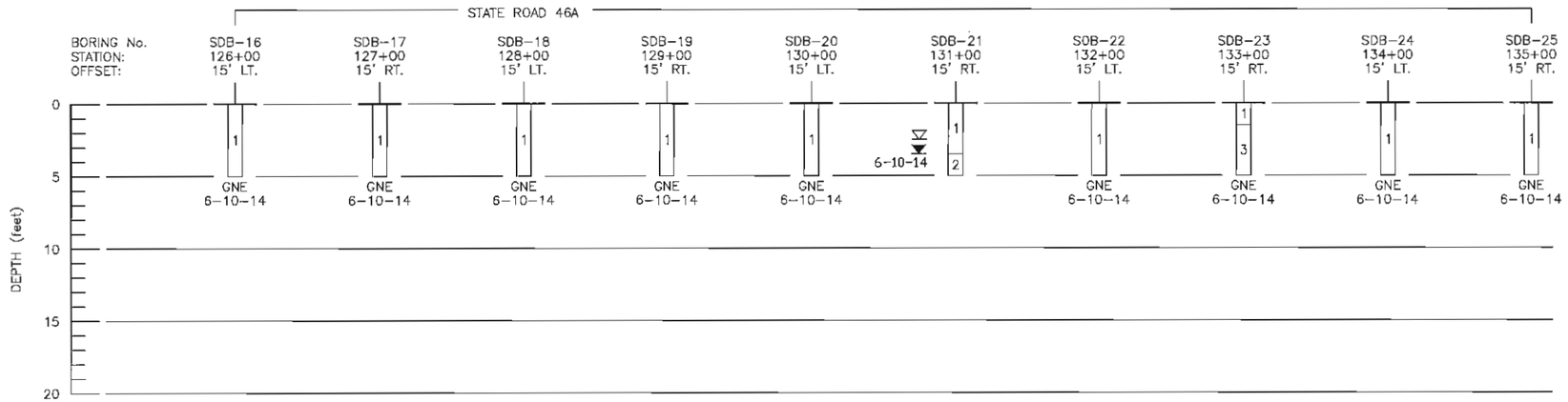
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

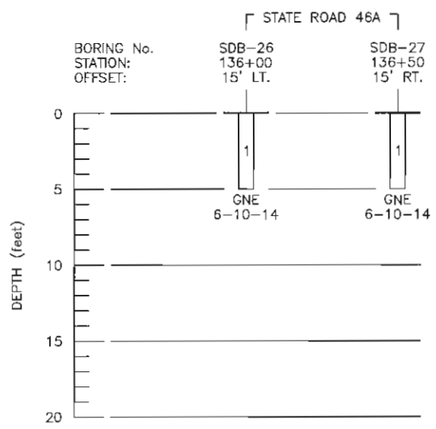
REF. DWG. NO.
SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-21

Nov04, 2014-11:06am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\side road borings exh21.dwg







1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

Nov04, 2014-11:09am N:\Projects\2013\H113508O\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\side road borings ext22.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

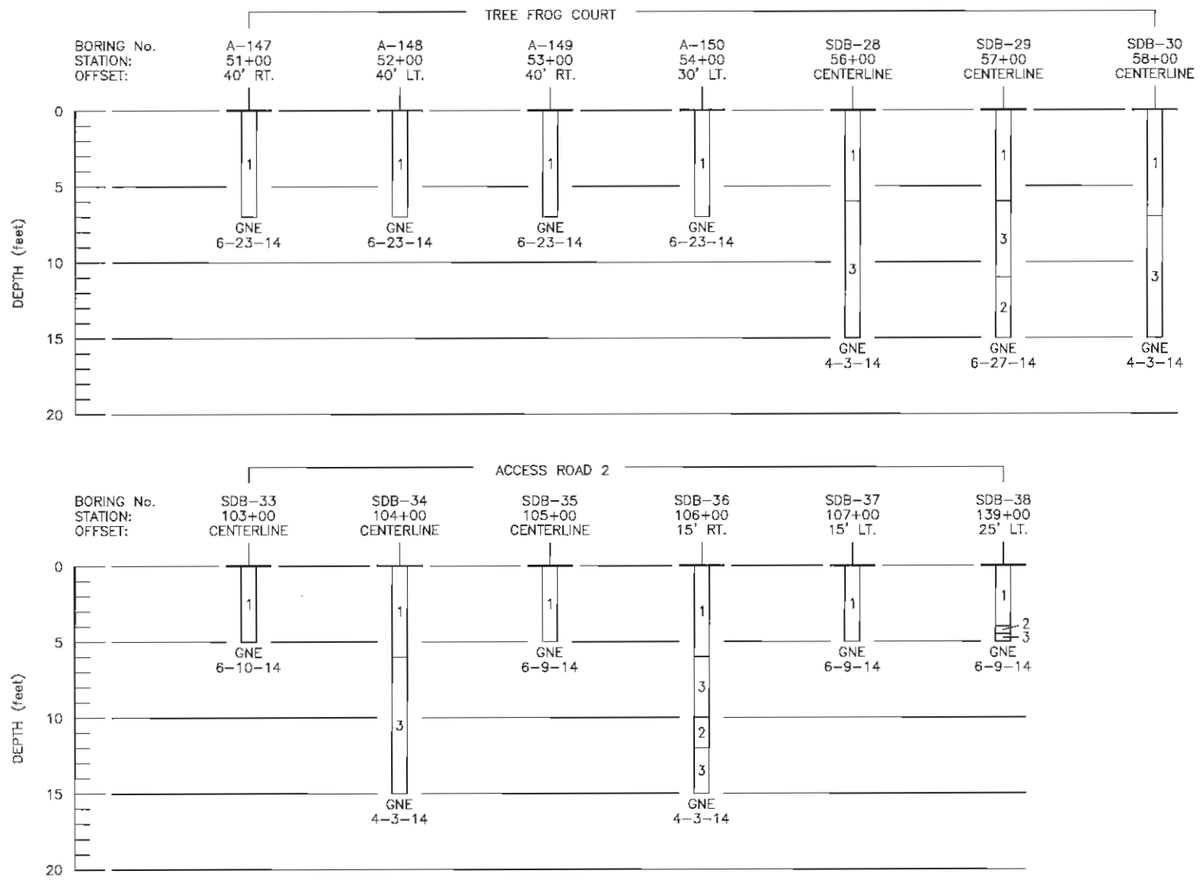
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

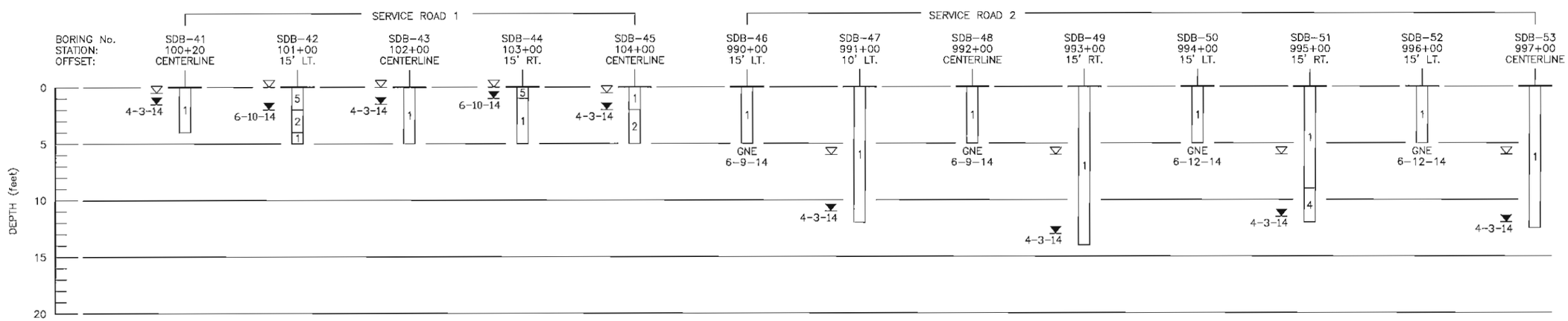
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-22





1 LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)

2 BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)

3 LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)

4 REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)

5 BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)

6 LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)

7 BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)

8 GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)

9 BROWN SANDY SILT (A-4)

10 GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)

11 LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

4-3-14 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-23

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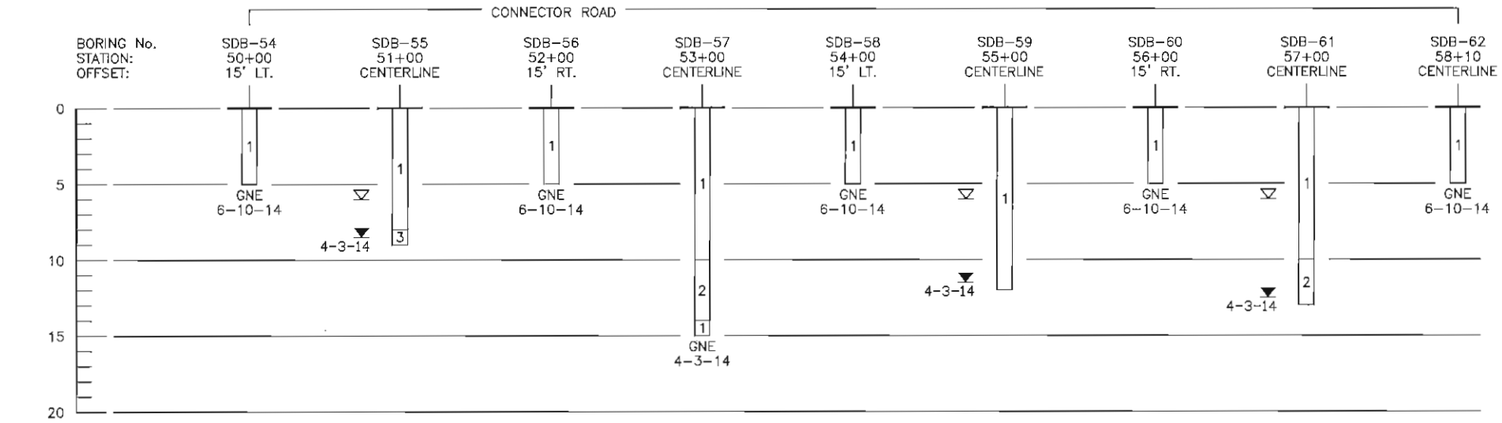
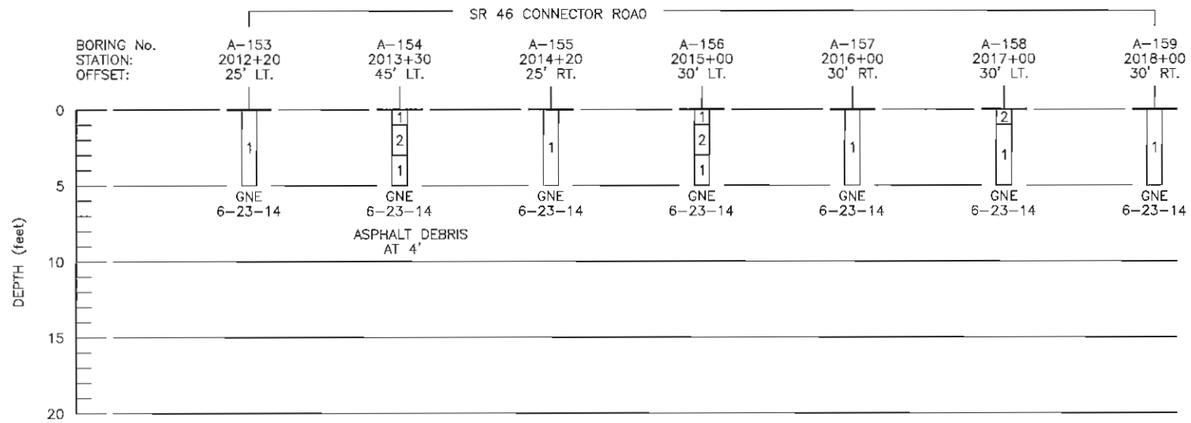
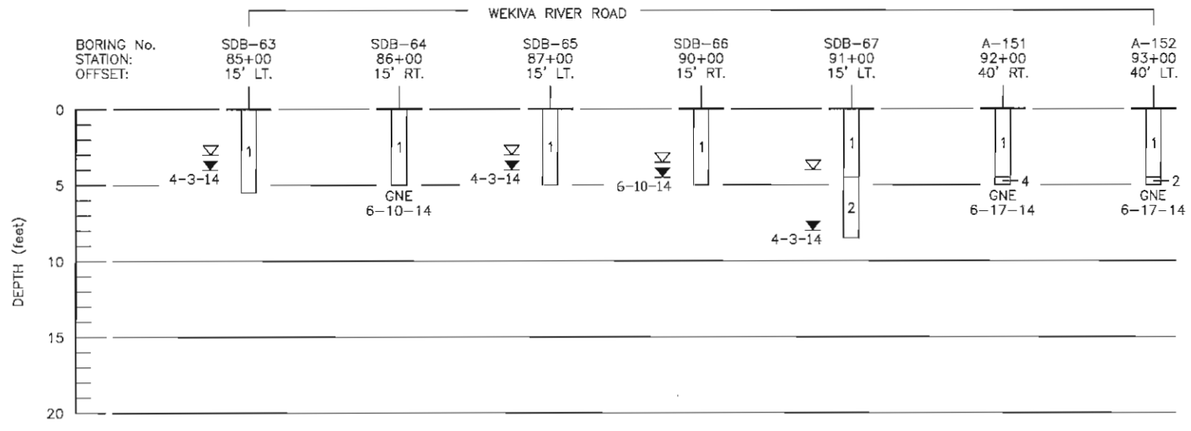






1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

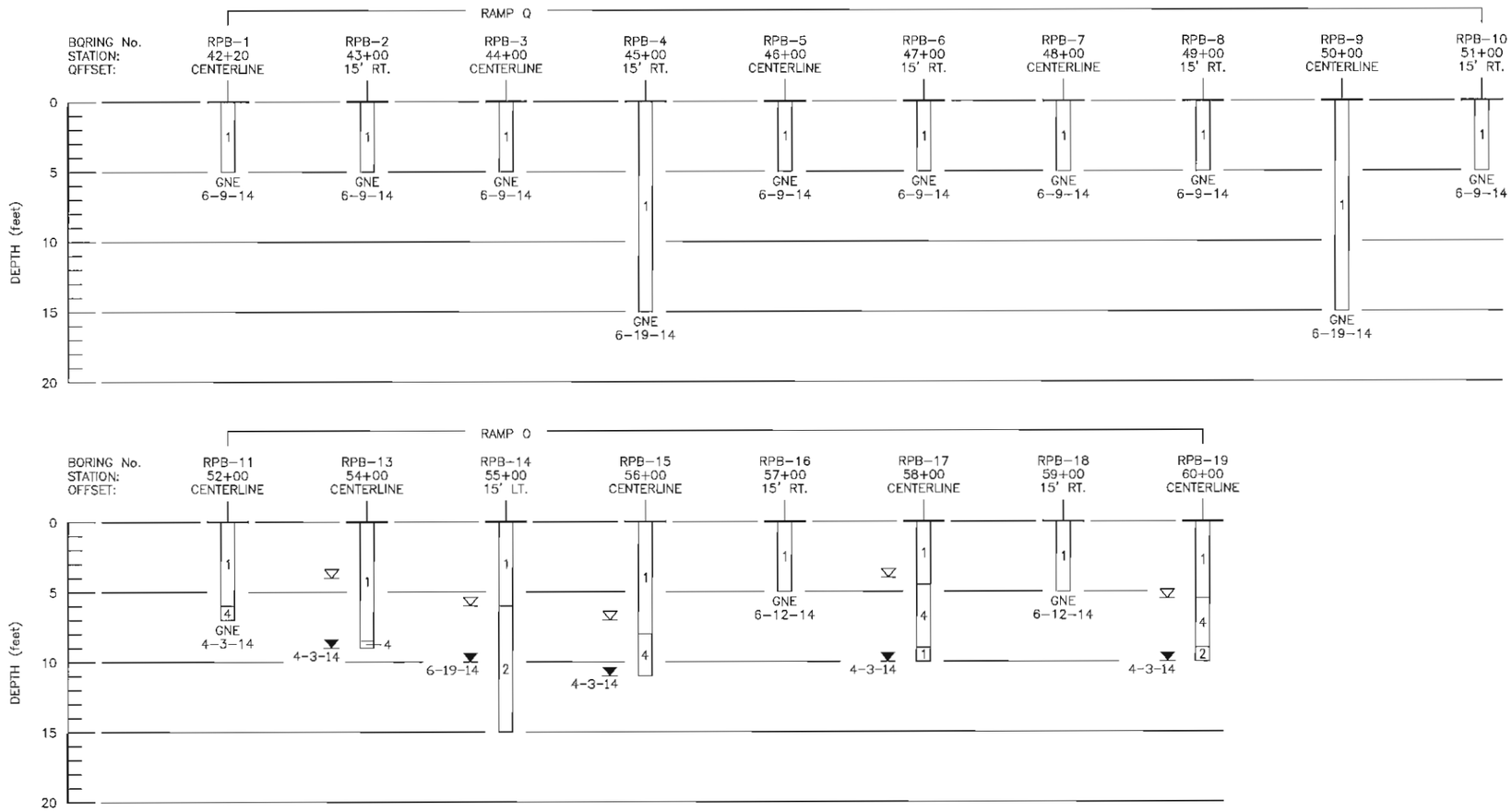
STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A-24

Nov04, 2014-11:10am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\side road borings exh24.dwg



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY GLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY WITH OCASSIONAL TRACE TO SOME SHELL (A-7-5)(A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SANO TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)(A-2-7)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION CROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

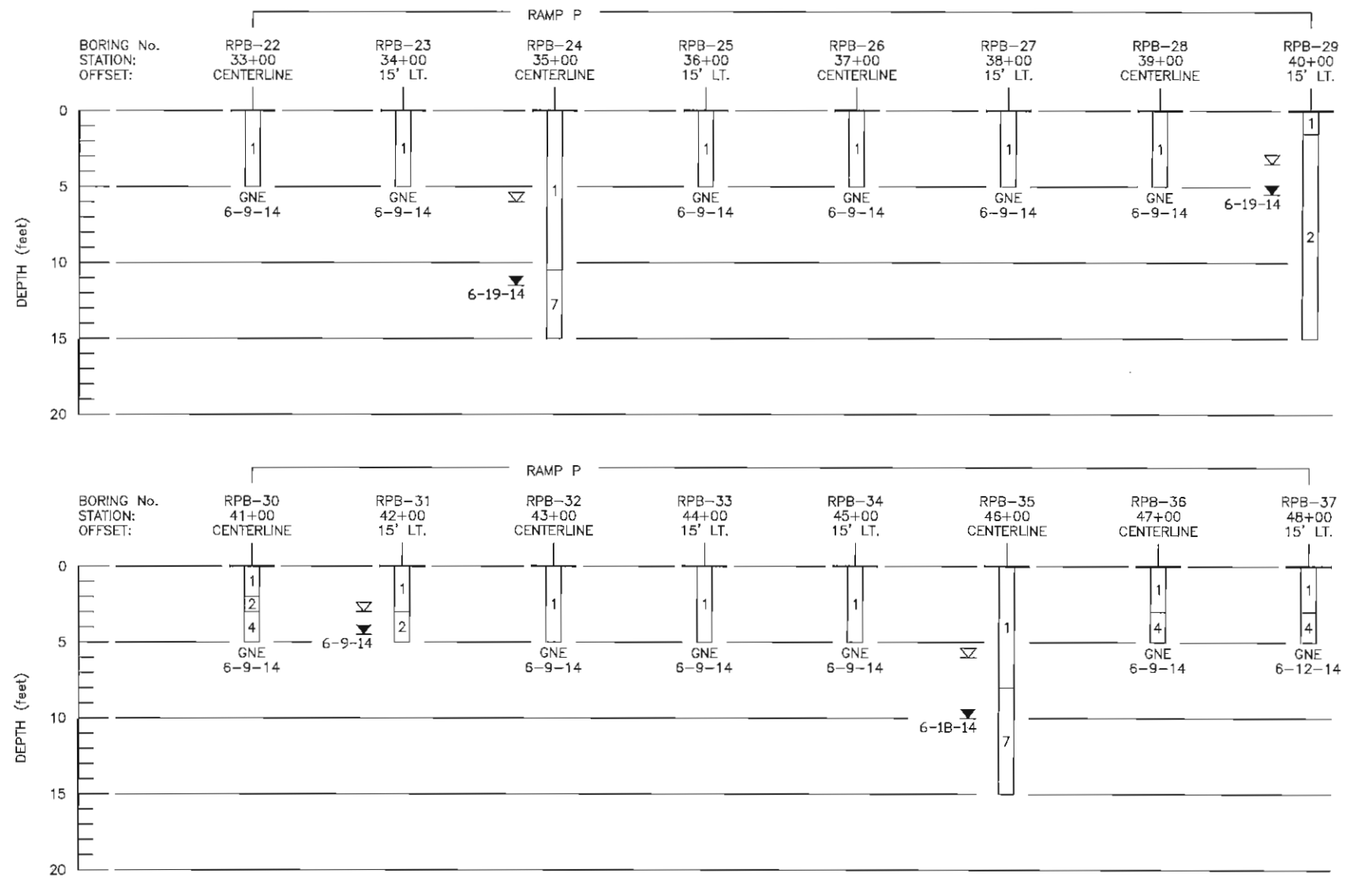
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-25



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
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11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 4-3-14	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE-10'	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE/BASELINE OF ROADWAY AS NOTED.

Nov21, 2014-9:22am N:\Projects\2013\H113S080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\roadway\ramp borings ext26.dwg

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

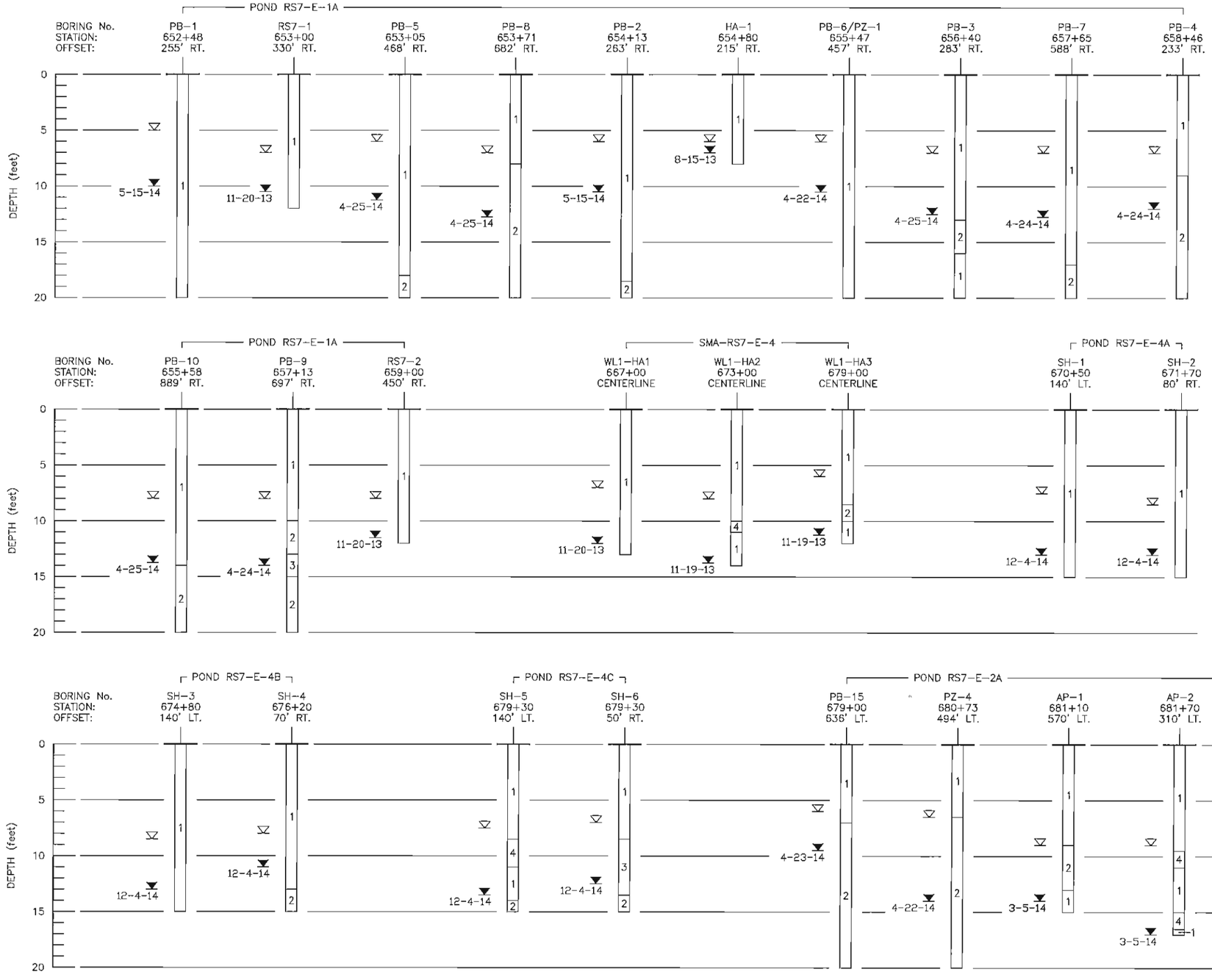
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -



1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
3	LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)
4	REDDISH-BROWN TO DARK BROWN FINE SAND TO SILTY FINE SAND, WITH CEMENTATION (HARDPAN) (A-3)(A-2-4)
5	BROWN TO DARK BROWN SANDY MUCK/PEAT (A-8)
6	LIGHT BROWN TO GRAYISH-BROWN AND GREENISH-GRAY CLAY (A-6)(A-7-6)
7	BROWN SILTY TO CLAYEY FINE SAND, WITH TRACE TO SOME ORGANICS (A-2-4)(A-2-6)
8	GREENISH-GRAY SANDY CLAY TO CLAY (A-7-6)
9	BROWN SANDY SILT (A-4)
10	GRAY SILTY FINE SAND TO CLAYEY FINE SAND, WITH PHOSPHATES OR CEMENTED SANDS OR SHELL (A-2-4)(A-2-6)
11	LIGHT GRAY TO LIGHT BROWN DOLOSTONE OR WEATHERED LIMESTONE
(A-3)	A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
▼ 11-8-03	ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)
▽	ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL
GNE	GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429, EXCEPT BORINGS AR-1 AND AR-2 WHICH REFERENCE THE CENTERLINE OF CONSTRUCTION OF ACCESS ROAD 1.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 12-9-14
CHECKED BY: ENJ 12-9-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. -

TERRACON No. H1 13 508D EXHIBIT: A-27

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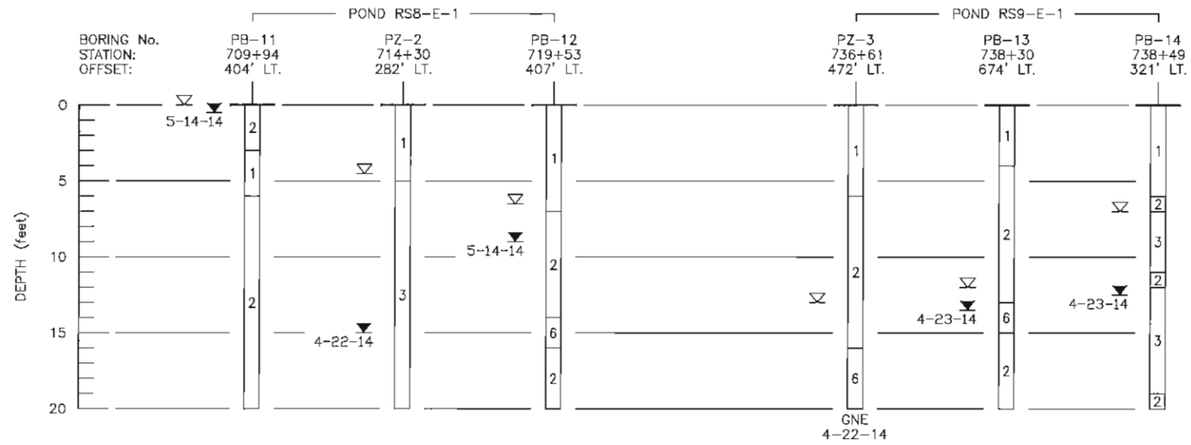

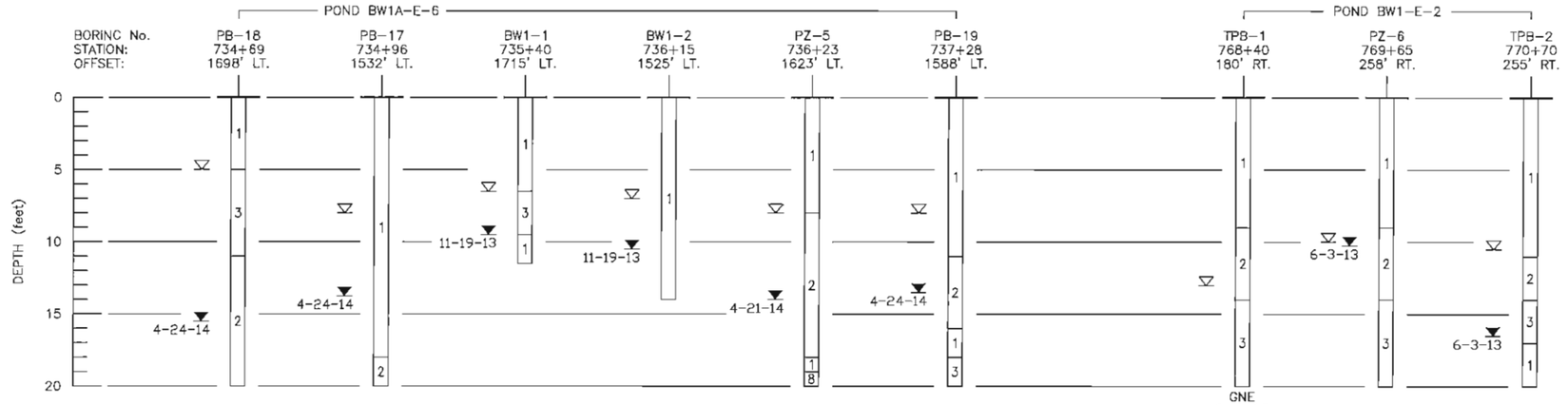

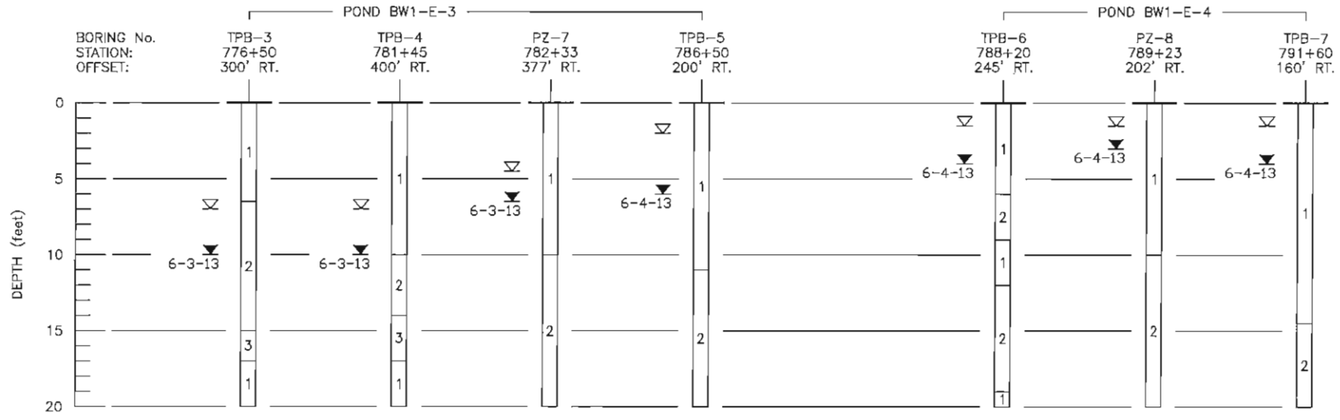

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2 BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)

3 LIGHT BROWN AND LIGHT GRAY TO GREENISH-GRAY CLAYEY FINE SAND (A-2-6)(A-2-7)

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(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

11-8-03 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO OEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429, EXCEPT BORINGS AR-1 AND AR-2 WHICH REFERENCE THE CENTERLINE OF CONSTRUCTION OF ACCESS ROAD 1.

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P.E. LICENSE NUMBER 53962
1675 LEE ROAD
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CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 12-5-14
CHECKED BY: ENJ 12-5-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-28

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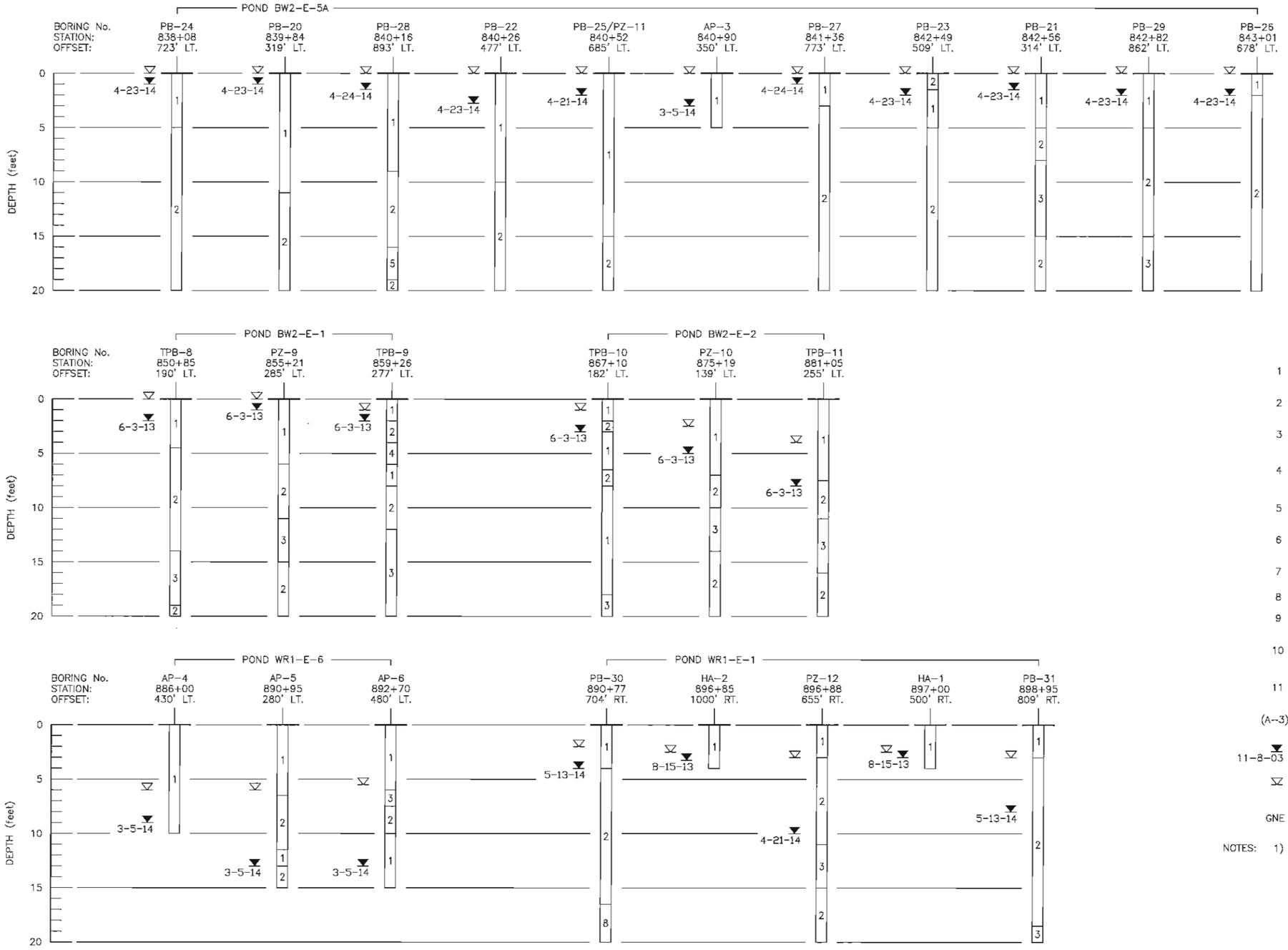

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11-8-03 ENCOUNTERED GROUNDWATER LEVEL (DATE OF READING)

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF BORING

NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429, EXCEPT BORINGS AR-1 AND AR-2 WHICH REFERENCE THE CENTERLINE OF CONSTRUCTION OF ACCESS ROAD 1.

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 12-5-14
CHECKED BY: ENJ 12-5-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

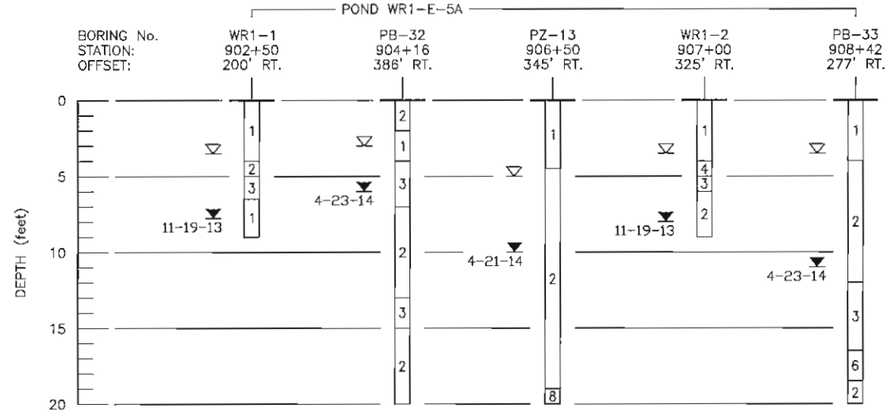
SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS

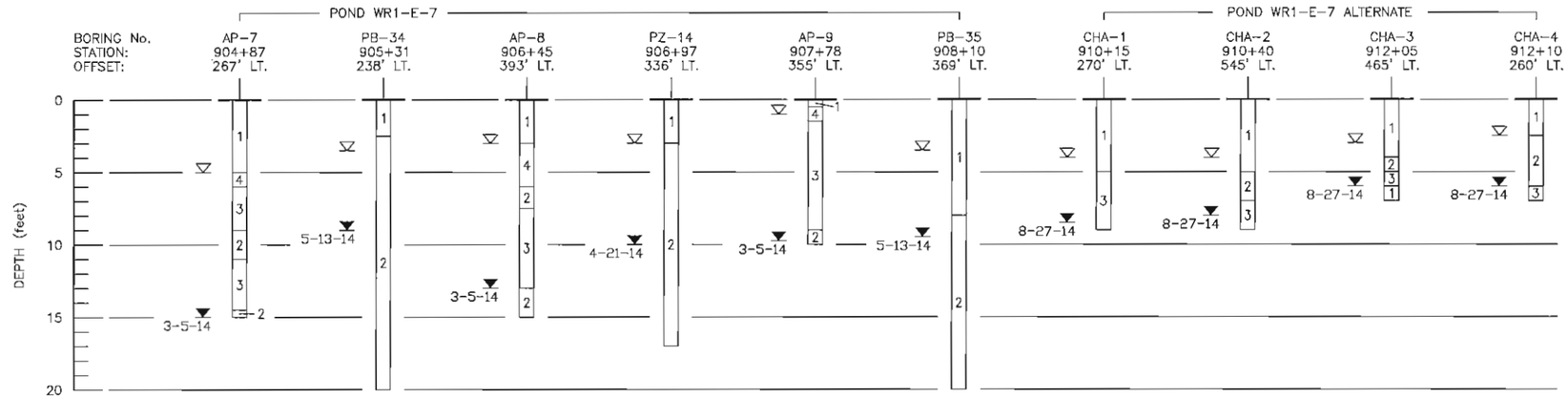
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

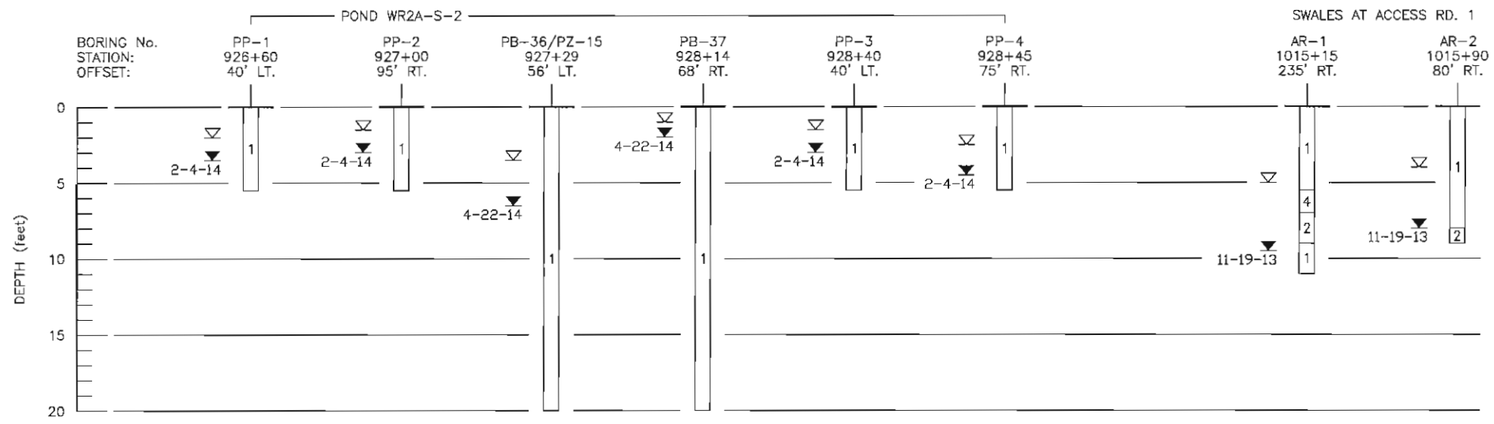
REF. DWG. NO.

SHEET NO. –

TERRACON No. H1 13 508D EXHIBIT: A-29







1	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT (A-3)
2	BROWN TO DARK BROWN SILTY FINE SAND (A-2-4)
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NOTES: 1) STATIONS AND OFFSETS REFERENCED FROM THE CENTERLINE OF CONSTRUCTION OF SR 429, EXCEPT BORINGS AR-1 AND AR-2 WHICH REFERENCE THE CENTERLINE OF CONSTRUCTION OF ACCESS ROAD 1.

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 12-5-14	STATE OF FLORIDA DEPARTMENT OF TRANSPORATATION		
CHECKED BY: ENJ 12-5-14	ROAD NO.	COUNTY	FINANCIAL PROJECT ID
DESIGNED BY:	SR 429	LAKE / SEMINOLE	238275-7-32-02
CHECKED BY:			

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS

REF. DWG. NO.:

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

SHEET NO.: -

TERRACON No. H1 13 5080 EXHIBIT: A-30

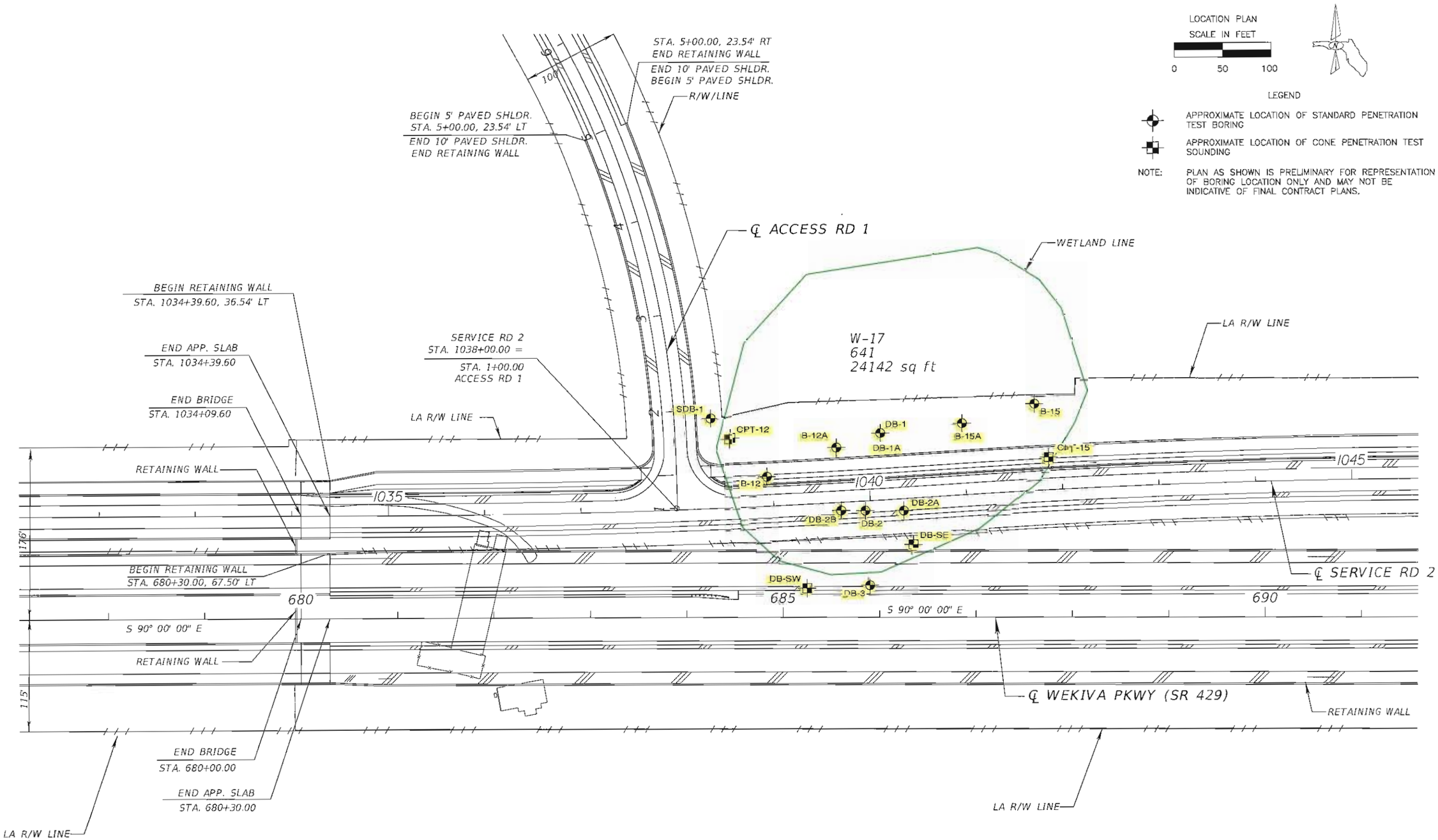
LOCATION PLAN
SCALE IN FEET
0 50 100

LEGEND

APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

APPROXIMATE LOCATION OF CONE PENETRATION TEST SOUNDING

NOTE: PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATION ONLY AND MAY NOT BE INDICATIVE OF FINAL CONTRACT PLANS.



WEKIVA 6 WEST "DEPRESSION" AREA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14	
CHECKED BY: ENJ 11-21-14	
DESIGNED BY:	
CHECKED BY:	

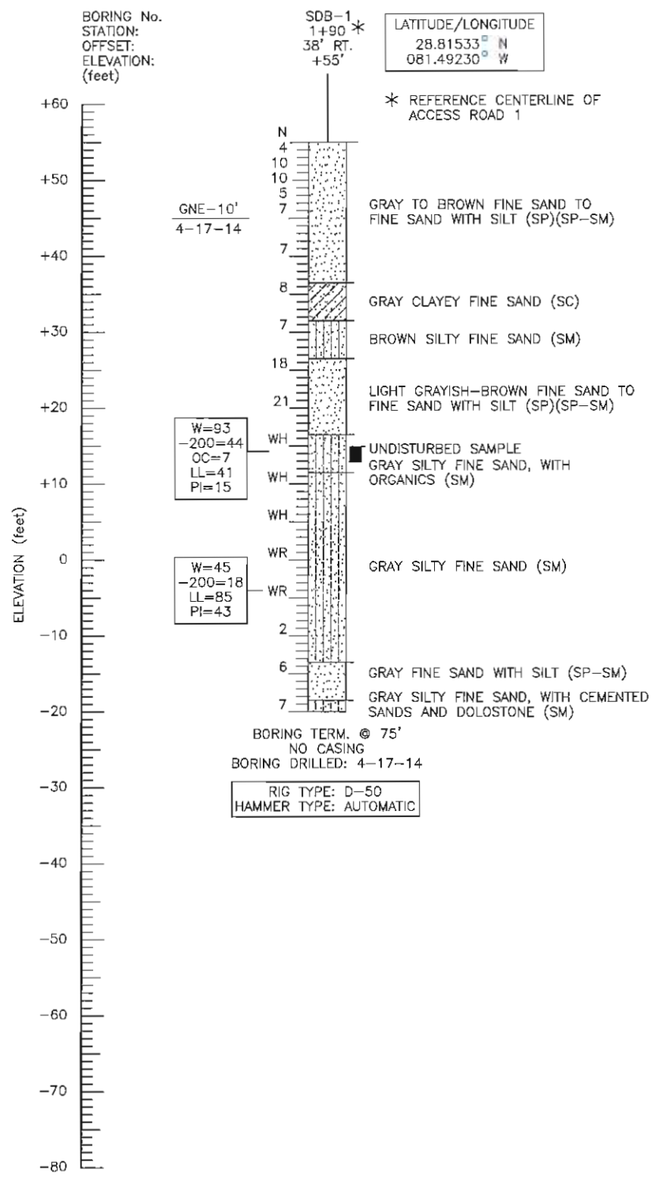
STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

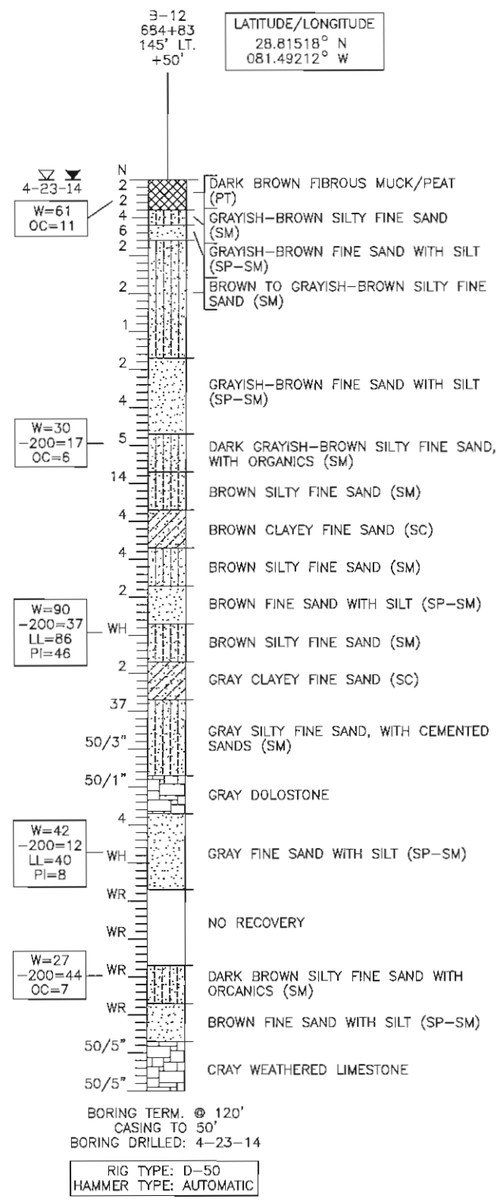
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

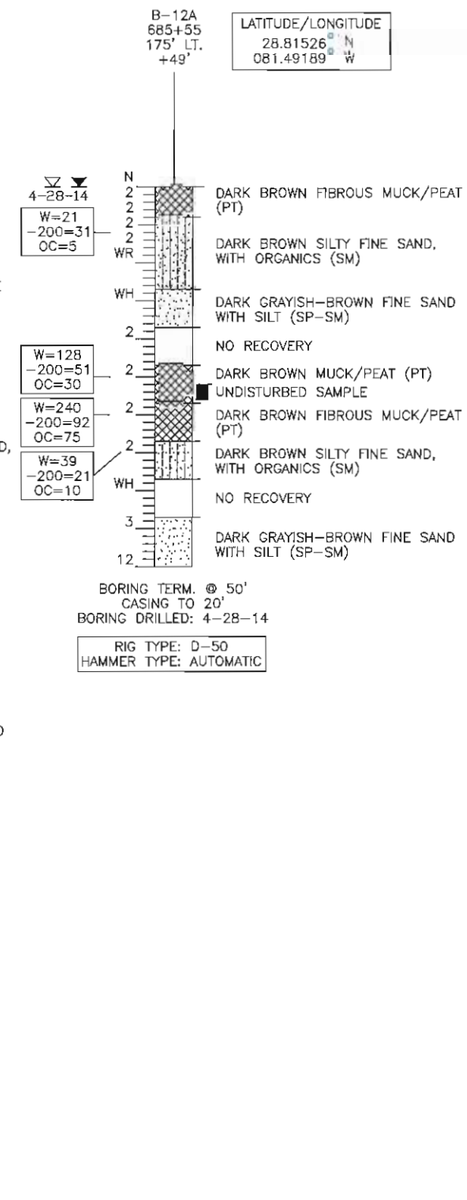
SHEET TITLE: REPORT OF SPT BORINGS
REF. DWG. NO.:
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
SHEET NO.: –

TERRACON No. H1 13 5080 EXHIBIT: A-31

Nov21, 2014-9:49am







SAND, SAND WITH SILT
SILTY SAND
CLAYEY SAND
MUCK
SANDY CLAY
DOLOSTONE, LIMESTONE

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL

4-23-14 ENCOUNTERED GROUNDWATER LEVEL DATE NOTED

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

W=0 NATURAL MOISTURE CONTENT (%)
-200=0 FINES PASSING No. 200 SIEVE (%)
LL=0 LIQUID LIMIT (%)
PI=0 PLASTICITY INDEX
OC=0 ORGANIC CONTENT (%)

UNDISTURBED SAMPLE (SHELBY TUBE)

100% LOSS OF DRILLING FLUID CIRCULATION (PERCENT NOTED)

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

WH WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.

2) ARTESIAN CONDITIONS WERE NOT OBSERVED BY THE DRILLER AT THE BORING LOCATIONS. BASED ON REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE FLORIDAN AQUIFER FOR THE PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +30 FEET, (NGVD).

3) STATIONS AND OFFSETS REFERENCE THE CENTERLINE OF CONSTRUCTION OF SR 429 (WEKIVA PARKWAY).

4) BORING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

Nov21, 2014-9:55am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

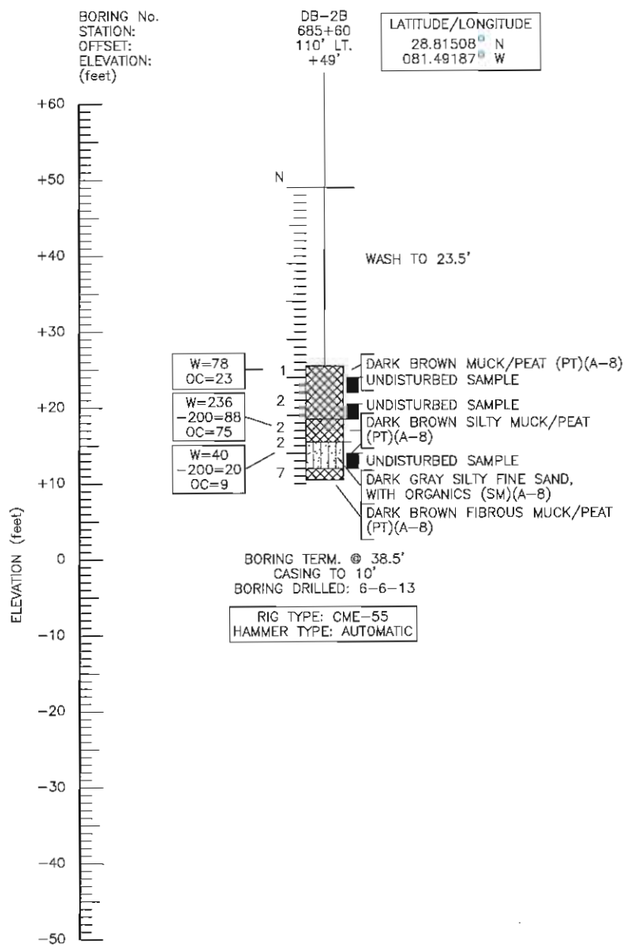
SHEET TITLE: REPORT OF SPT BORINGS

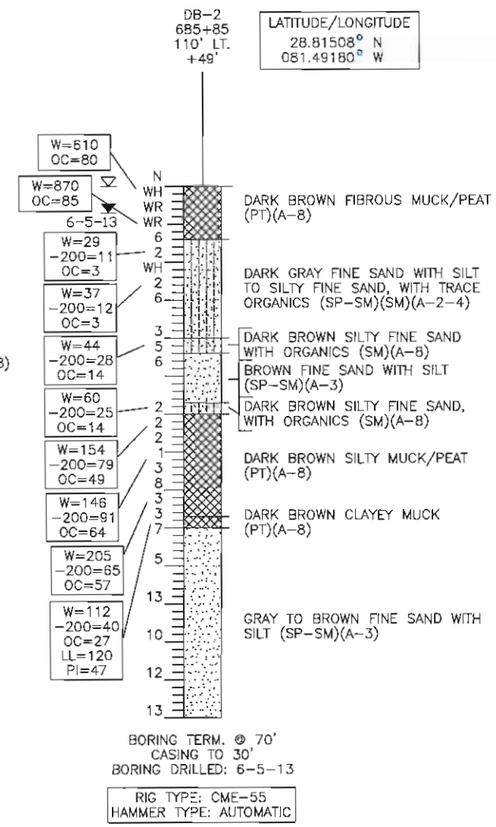
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

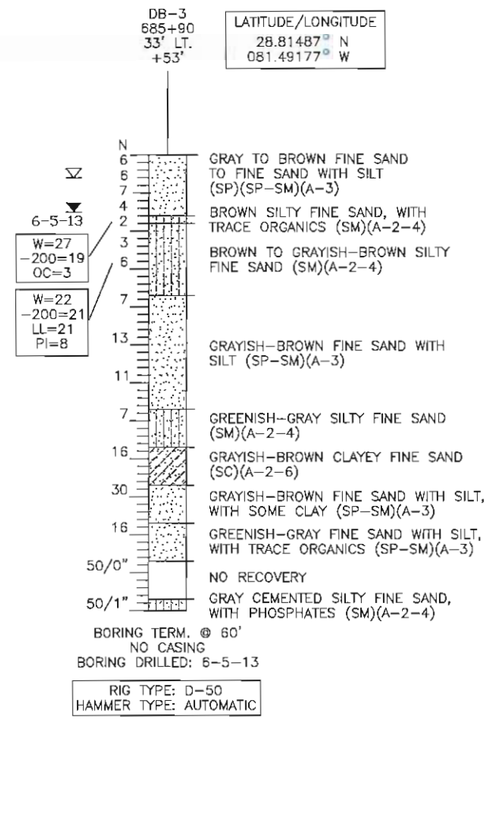
REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-32







SAND, SAND WITH SILT
SILTY SAND
CLAYEY SAND
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SANDY CLAY
DOLOSTONE, LIMESTONE

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL

4-23-14 ENCOUNTERED GROUNDWATER LEVEL DATE NOTED

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NOTES:

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4) BORING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

Nov21, 2014-9:55am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
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STATE OF FLORIDA
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

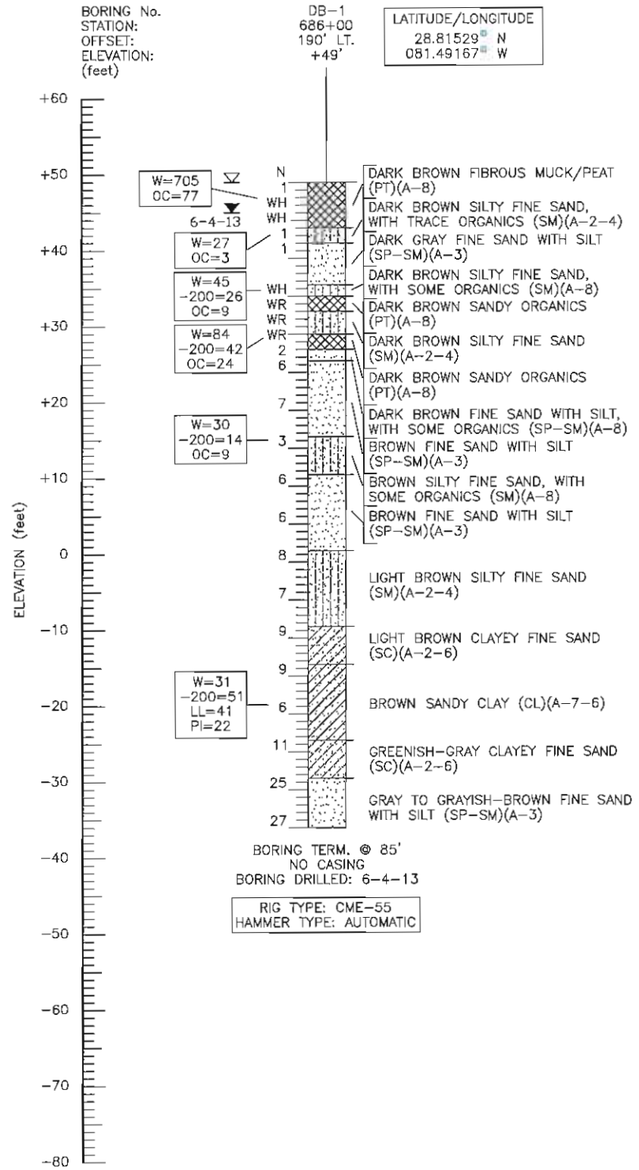
SHEET TITLE: REPORT OF SPT BORINGS

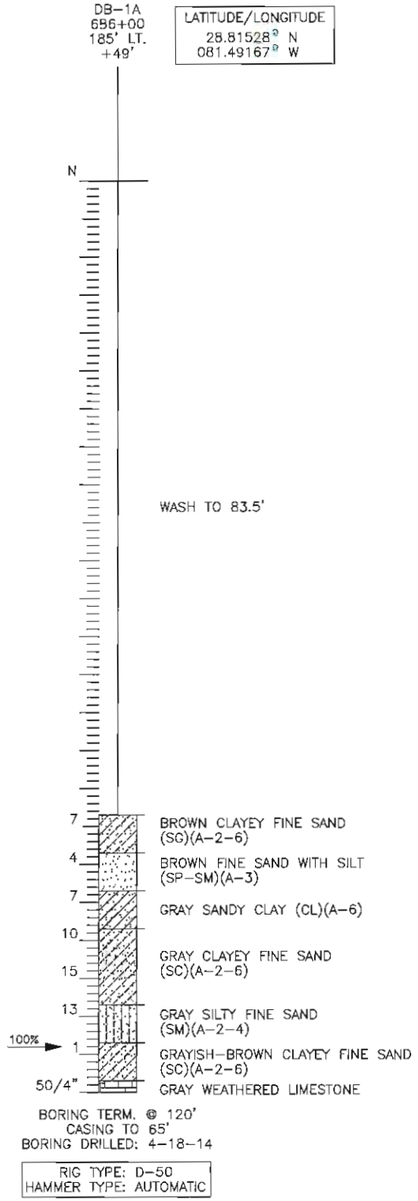
REF. DWG. NO.

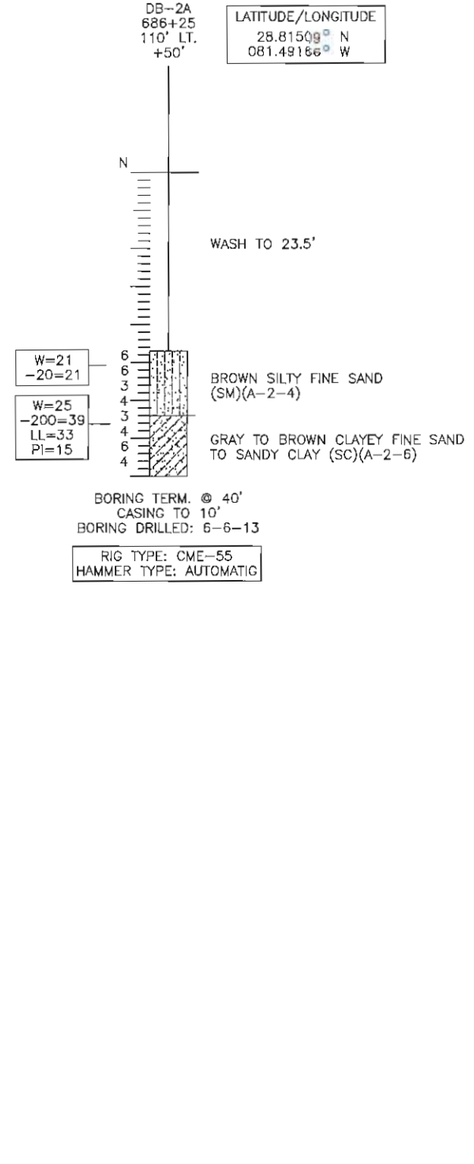
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

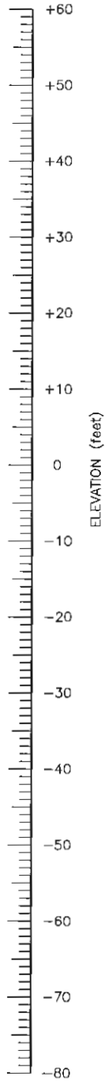
SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-33









SAND, SAND WITH SILT
SILTY SAND
CLAYEY SAND
MUCK
SANDY CLAY
DOLOSTONE, LIMESTONE

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL

4-23-14 ENCOUNTERED GROUNDWATER LEVEL DATE NOTED

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

W=0	NATURAL MOISTURE CONTENT (%)
-200=0	FINES PASSING No. 200 SIEVE (%)
LL=0	LIQUID LIMIT (%)
PI=0	PLASTICITY INDEX
OC=0	ORGANIC CONTENT (%)

UNDISTURBED SAMPLE (SHELBY TUBE)

100% LOSS OF DRILLING FLUID CIRCULATION (PERCENT NOTED)

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

WH WEIGHT OF ROD AND HAMMER SUFFICIENT TO ADVANCE SAMPLE SPOON

STANDARD PENETRATION TEST DATA
AUTOMATIC HAMMER

SPOON INSIDE DIA.	1 3/8 in.
SPOON OUTSIDE DIA.	2 in.
ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FOOT)
VERY LOOSE	LESS THAN 3
LOOSE	3-8
MEDIUM DENSE	8-24
DENSE	24-40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1-3
FIRM	3-6
STIFF	6-12
VERY STIFF	12-24
HARD	GREATER THAN 24

NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.

2) ARTESIAN CONDITIONS WERE NOT OBSERVED BY THE DRILLER AT THE BORING LOCATIONS. BASED ON REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE FLORIDAN AQUIFER FOR THE PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +30 FEET, (NGVD).

3) STATIONS AND OFFSETS REFERENCE THE CENTERLINE OF CONSTRUCTION OF SR 429 (WEKIVA PARKWAY).

4) BORING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

Nov21, 2014 - 9:56am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

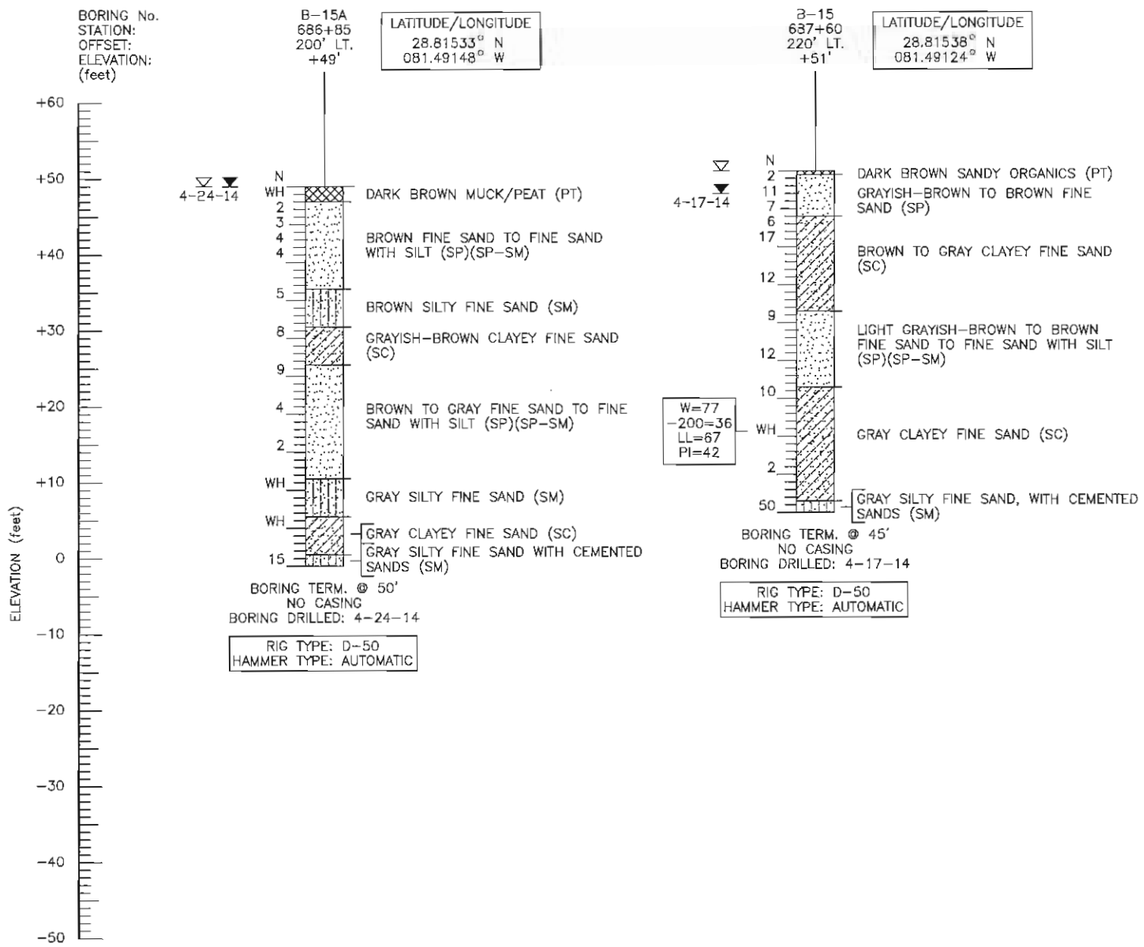
SHEET TITLE: REPORT OF SPT BORINGS

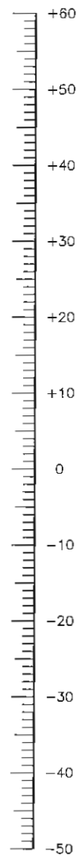
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-34





SAND, SAND WITH SILT
SILTY SAND
CLAYEY SAND
MUCK
SANDY CLAY
OOLOSTONE, LIMESTONE

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

(A-3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL

4-23-14 ENCOUNTERED GROUNDWATER LEVEL, DATE NOTED

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

GNE-10' GROUNDWATER LEVEL NOT ENCOUNTERED TO DEPTH OF 10 FEET

W=0	NATURAL MOISTURE CONTENT (%)
-200=0	FINES PASSING No. 200 SIEVE (%)
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UNDISTURBED SAMPLE (SHELBY TUBE)

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N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

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FIRM	3-6
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VERY STIFF	12-24
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NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.

2) ARTESIAN CONDITIONS WERE NOT OBSERVED BY THE DRILLER AT THE BORING LOCATIONS. BASED ON REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE FLORIDAN AQUIFER FOR THE PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO BE +30 FEET, (NGVD).

3) STATIONS AND OFFSETS REFERENCE THE CENTERLINE OF CONSTRUCTION OF SR 429 (WEKIVA PARKWAY).

4) BORING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF SPT BORINGS

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

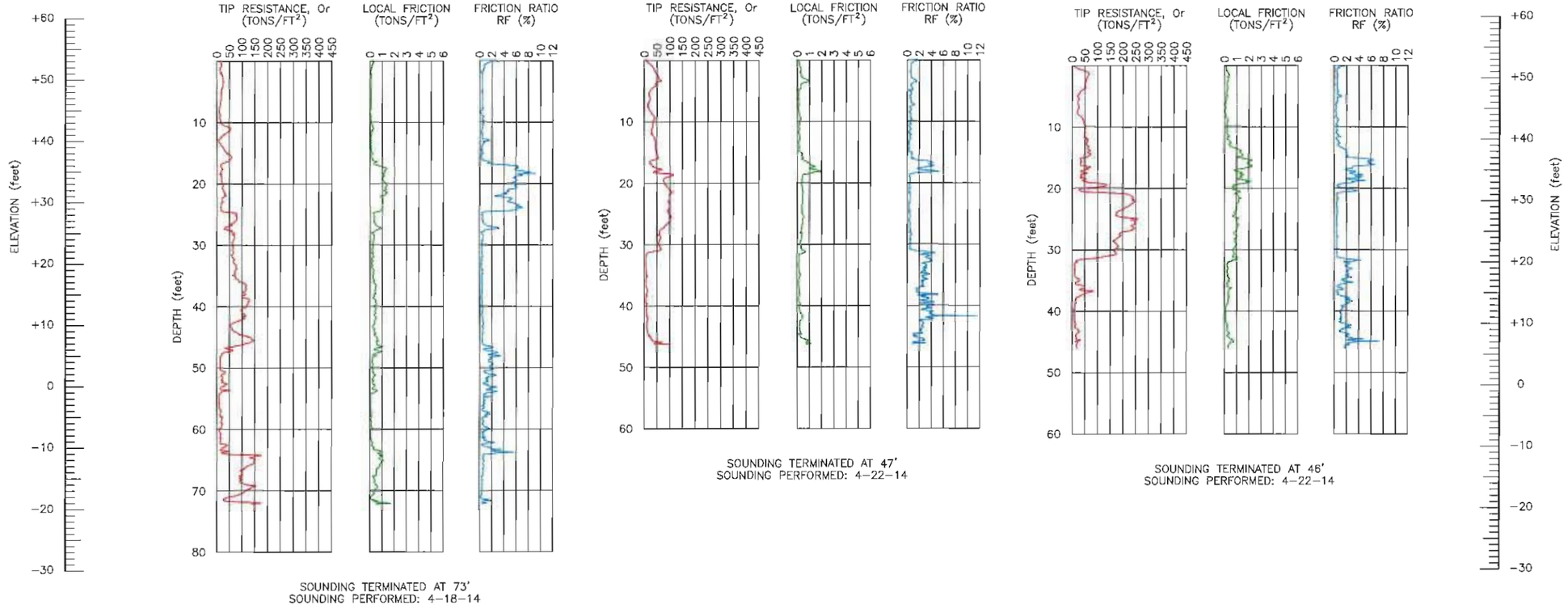
REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-35

Nov21, 2014-9:57am

SOUNDING No.	CPT-12	DB-SW	DB-SE
STATION:	684+45	685+25	686+35
OFFSET:	185' LT.	30' LT.	75' LT.
ELEVATION: (feet)	+53'	+53'	+52'



NOTES:

1) SUBSURFACE VARIATIONS BETWEEN SOUNDINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.

2) ARTESIAN CONDITIONS WERE NOT OBSERVED BY THE DRILLER AT THE BORING LOCATIONS. BASED ON REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE FLORIDAN AQUIFER FOR THE PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO RANGE FROM +20 TO +40 FEET, (NGVD).

3) STATIONS AND OFFSETS REFERENCE THE BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).

4) CONE SOUNDING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
SW 11-21-14	ENJ 11-21-14		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF CONE SOUNDINGS

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

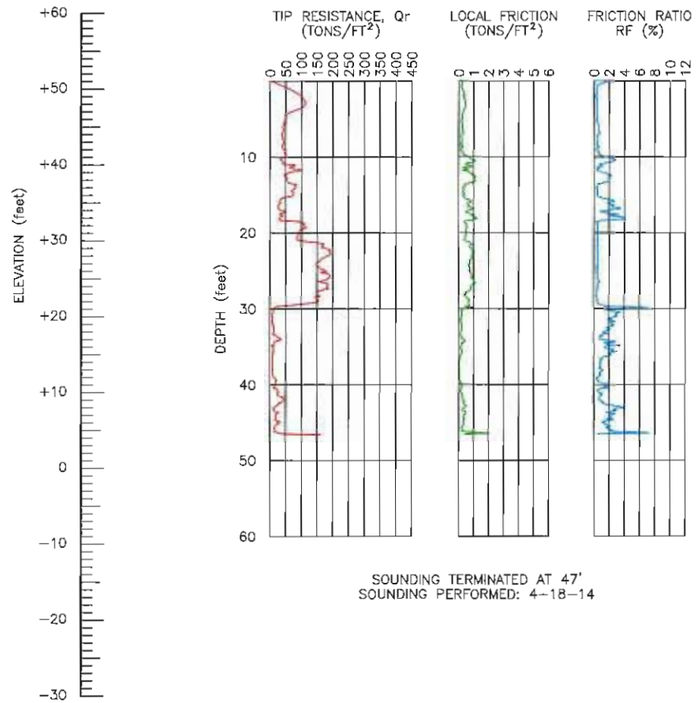
REF. DWG. NO.:

SHEET NO.: -

TERRACON No. H1 13 5080 EXHIBIT: A-36

Dec08, 2014-4:17pm

SOUNDING No. CPT-15
STATION: 687+75
OFFSET: 165' LT.
ELEVATION: +51'
(feet)



SOUNDING TERMINATED AT 47'
SOUNDING PERFORMED: 4-18-14

NOTES:
1) SUBSURFACE VARIATIONS BETWEEN SOUNDINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.
2) ARTESIAN CONDITIONS WERE NOT OBSERVED BY THE DRILLER AT THE BORING LOCATIONS. BASED ON REVIEW OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT POTENTIOMETRIC MAPS OF THE FLORIDAN AQUIFER FOR THE PROJECT AREA, THE POTENTIAL ARTESIAN HEAD ELEVATION IS ESTIMATED TO RANGE FROM +20 TO +40 FEET, (NGVD).
3) STATIONS AND OFFSETS REFERENCE THE BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).
4) CONE SOUNDING LOCATIONS AND ELEVATIONS ESTIMATED FROM REVIEW OF PROJECT PLANS.

WEKIVA 6 WEST "DEPRESSION" AREA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14
CHECKED BY: ENJ 11-21-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE / SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF CONE SOUNDINGS
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.:
SHEET NO.: -

TERRACON No. H1 13 508D EXHIBIT: A-37

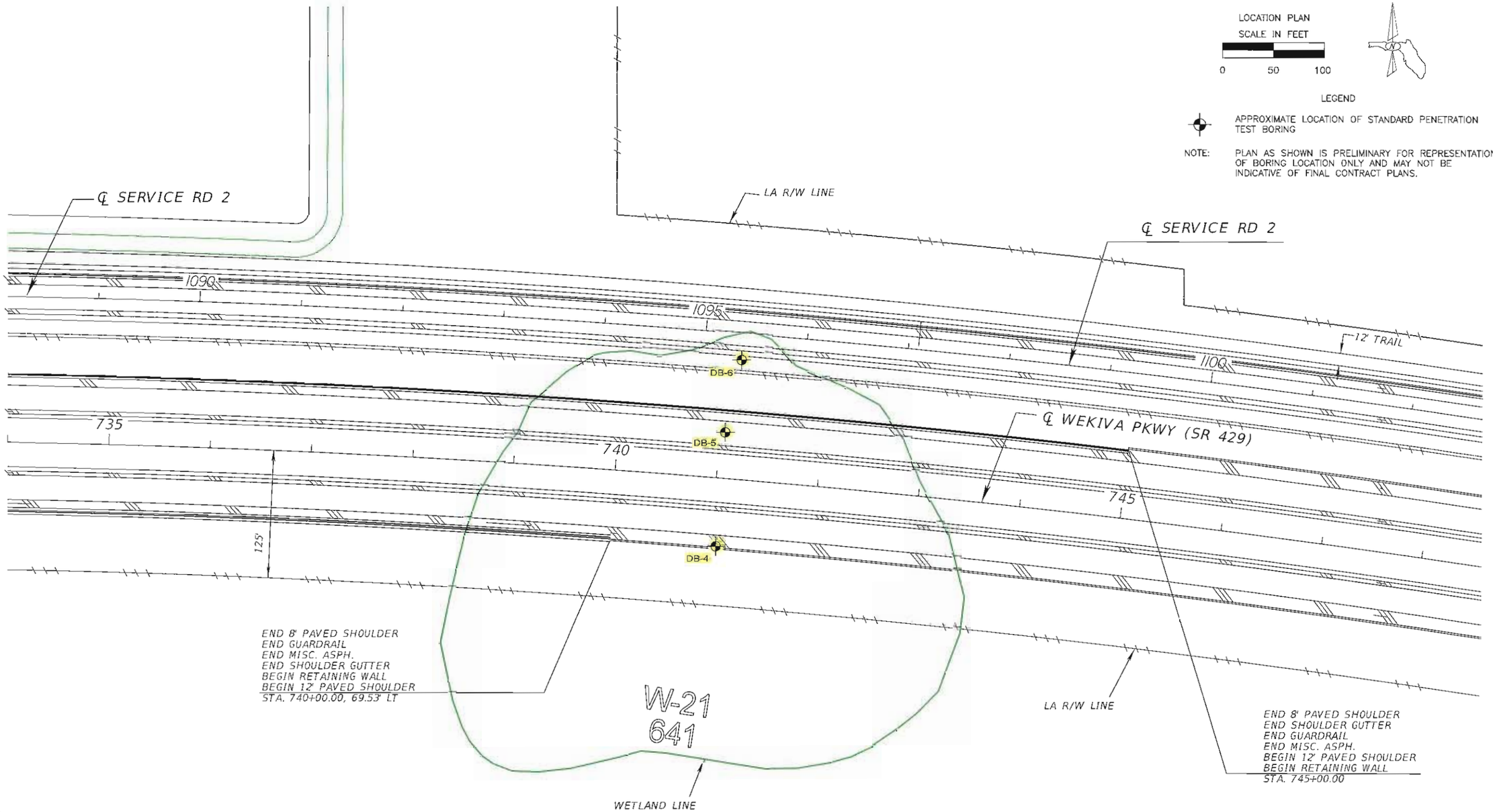
Dec08, 2014-4:17pm

LOCATION PLAN
SCALE IN FEET
0 50 100

LEGEND

APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

NOTE: PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF BORING LOCATION ONLY AND MAY NOT BE INDICATIVE OF FINAL CONTRACT PLANS.



WEKIVA 6 EAST "DEPRESSION" AREA

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-21-14	
CHECKED BY: ENJ 11-21-14	
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.:

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

SHEET NO.: –

TERRACON No. H1 13 5080 EXHIBIT: A-38

Dec08, 2014 - 4:18pm

BORING No.
STATION:
OFFSET:
ELEVATION:
(feet)

ELEVATION (feet)

+60 +50 +40 +30 +20 +10 0 −10 −20 −30 −40 −50

DB−4
741+05
67' RT.
+55'

LATITUDE/LONGITUDE
28.81456° N
081.47458° W

6−18−13

N	
7	GRAY TO LIGHT BROWN FINE SAND WITH SILT (SP−SM)(A−3)
11	
16	GRAY CLAYEY FINE SAND (SC)(A−2−6)
26	GRAY FINE SAND WITH SILT (SP−SM)(A−3)
15	
12	GRAYISH−BROWN CLAYEY FINE SAND (SC)(A−2−6)
9	
7	GRAY TO BROWN FINE SAND WITH SILT (SP−SM)(A−3)
4	
WH	
4	GREENISH−GRAY SANDY SILT (ML)(A−4)
12	
6	GREENISH−GRAY TO GRAY SILTY FINE SAND (SM)(A−2−4)
3	
30	GREENISH−GRAY SILTY FINE SAND, WITH PHOSPHATES (SM)(A−2−4)
30	

BORING TERM. @ 60'
NO CASING
BORING DRILLED: 6−18−13

RIG TYPE: CME−55
HAMMER TYPE: AUTOMATIC

DB−5
741+05
45' LT.
+55'

LATITUDE/LONGITUDE
28.81486° N
081.47456° W

6−11−13

N	
5	GRAY TO BROWN FINE SAND WITH SILT (SP−SM)(A−3)
9	
9	GRAYISH−BROWN TO BROWN CLAYEY FINE SAND (SC)(A−2−6)
14	
13	
13	GRAY FINE SAND WITH SILT (SP−SM)(A−3)
9	
6	
5	GRAY SANDY CLAY (CL)(A−6)
3	GRAY SILTY FINE SAND (SM)(A−2−4)
7	GRAY CLAYEY FINE SAND (SC)(A−2−6)
3	GRAY SILTY FINE SAND (SM)(A−2−4)
33	
29	GRAY CLAYEY FINE SAND (SC)(A−2−6)
39	

BORING TERM. @ 60'
NO CASING
BORING DRILLED: 6−11−13

RIG TYPE: CME−55
HAMMER TYPE: AUTOMATIC

DB−6
741+15
117' LT.
+55'

LATITUDE/LONGITUDE
28.81506° N
081.47456° W

6−10−13

N	
6	GRAY TO BROWN FINE SAND TO FINE SAND WITH SILT (SP)(SP−SM)(A−3)
9	
9	
15	
10	
15	
9	GREENISH−GRAY SILTY FINE SAND (SM)(A−2−4)
6	
6	GREENISH−GRAY CLAYEY FINE SAND (SC)(A−2−6)
6	
5	
7	
29	GREENISH−GRAY SANDY SILT (ML)(A−4)
34	
54	

BORING TERM. @ 60'
NO CASING
BORING DRILLED: 6−10−13

RIG TYPE: CME−55
HAMMER TYPE: AUTOMATIC

SAND, SAND WITH SILT
SILTY SAND
CLAYEY SAND
MUCK
SANDY CLAY
SANDY SILT

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

(A−3) A.A.S.H.T.O. SOIL CLASSIFICATION GROUP SYMBOL

4−23−14 ENCOUNTERED GROUNDWATER LEVEL DATE NOTED

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

4−23−14 ENCOUNTERED GROUNDWATER LEVEL LEVEL ABOVE GROUND SURFACE

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL WILL BE ABOVE GROUND SURFACE

W=0	NATURAL MOISTURE CONTENT (%)
−200=0	FINES PASSING No. 200 SIEVE (%)
LL=0	LIQUID LIMIT (%)
PI=0	PLASTICITY INDEX
OC=0	ORGANIC CONTENT (%)

UNDISTURBED SAMPLE (SHELBY TUBE)

100% LOSS OF DRILLING FLUID CIRCULATION (PERCENT NOTED)

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT UNLESS OTHERWISE NOTED

50/6" NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SAMPLE SPOON (6) INCHES

WR WEIGHT OF DRILL ROD SUFFICIENT TO ADVANCE SAMPLE SPOON

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AUTOMATIC HAMMER

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ASTM STANDARD AUTOMATIC HAMMER	
AVG. HAMMER DROP	30 in.
HAMMER WEIGHT	140 lbs.

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MEDIUM DENSE	8−24
DENSE	24−40
VERY DENSE	GREATER THAN 40

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FOOT)
VERY SOFT	LESS THAN 1
SOFT	1−3
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NOTES:
1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2−4 OF THE STANDARD SPECIFICATIONS.
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WEKIVA 6 EAST "DEPRESSION" AREA

Dec08, 2014−4:15pm

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

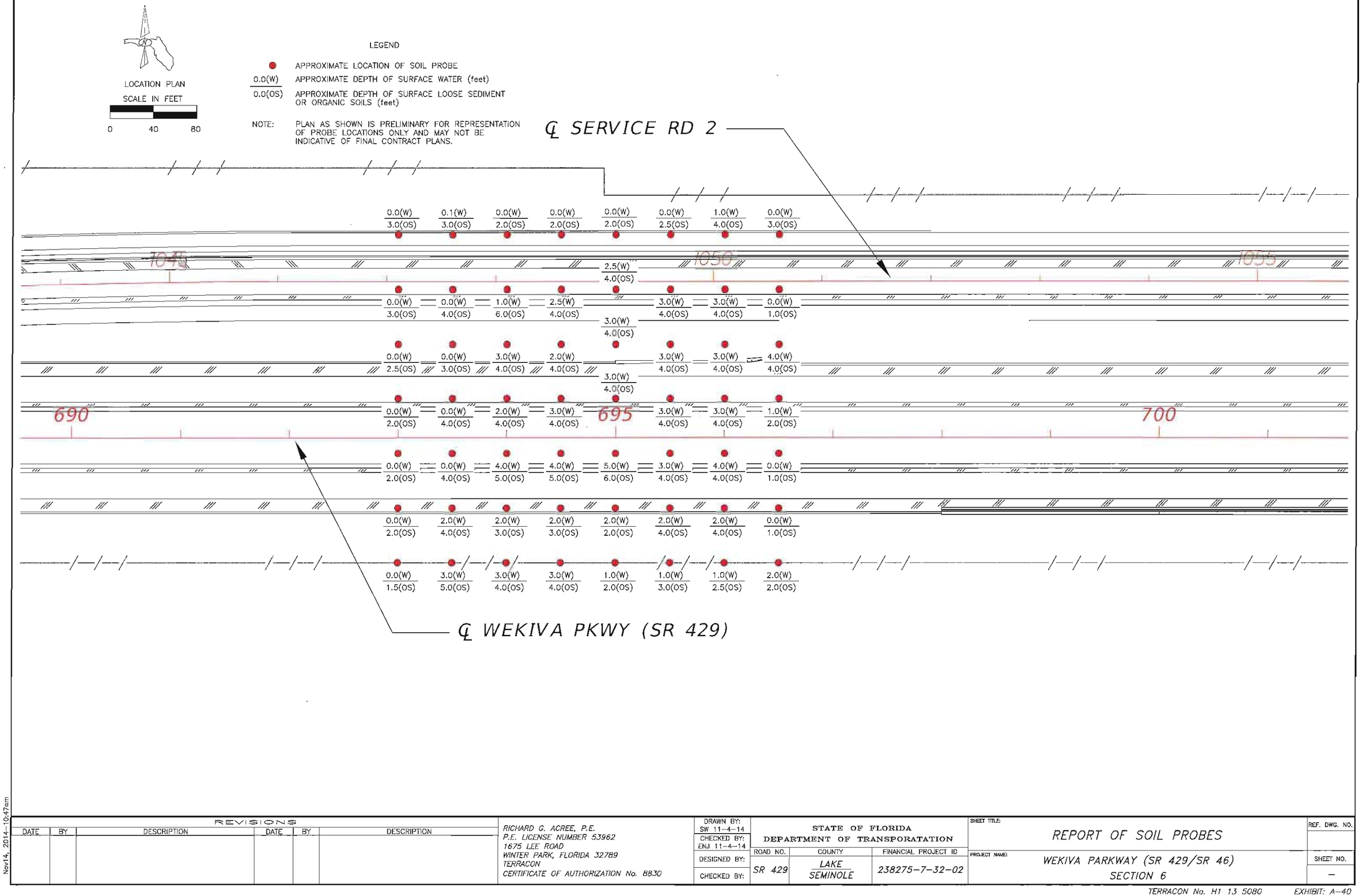
DRAWN BY: SW 11−21−14
CHECKED BY: ENJ 11−21−14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275−7−32−02

SHEET TITLE: REPORT OF SPT BORINGS
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. −

TERRACON No. H1 13 5080 EXHIBIT: A−39



Nov14, 2014 - 10:47am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY:	SW 11-4-14
CHECKED BY:	ENJ 11-4-14
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF SOIL PROBES

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-40

℄ SERVICE RD 2

PROPOSED MAINLINE GANTRY

℄ WEKIVA PKWY (SR 429)

LOCATION PLAN
SCALE IN FEET
0 40 80

LEGEND

- APPROXIMATE LOCATION OF SOIL PROBE
- 0.0(W) APPROXIMATE DEPTH OF SURFACE WATER (feet)
- 0.0(OS) APPROXIMATE DEPTH OF SURFACE LOOSE SEDIMENT OR ORGANIC SOILS (feet)

NOTE: PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF PROBE LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL CONTRACT PLANS.

Nov14, 2014 - 10:48am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY:	SW 11-4-14
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

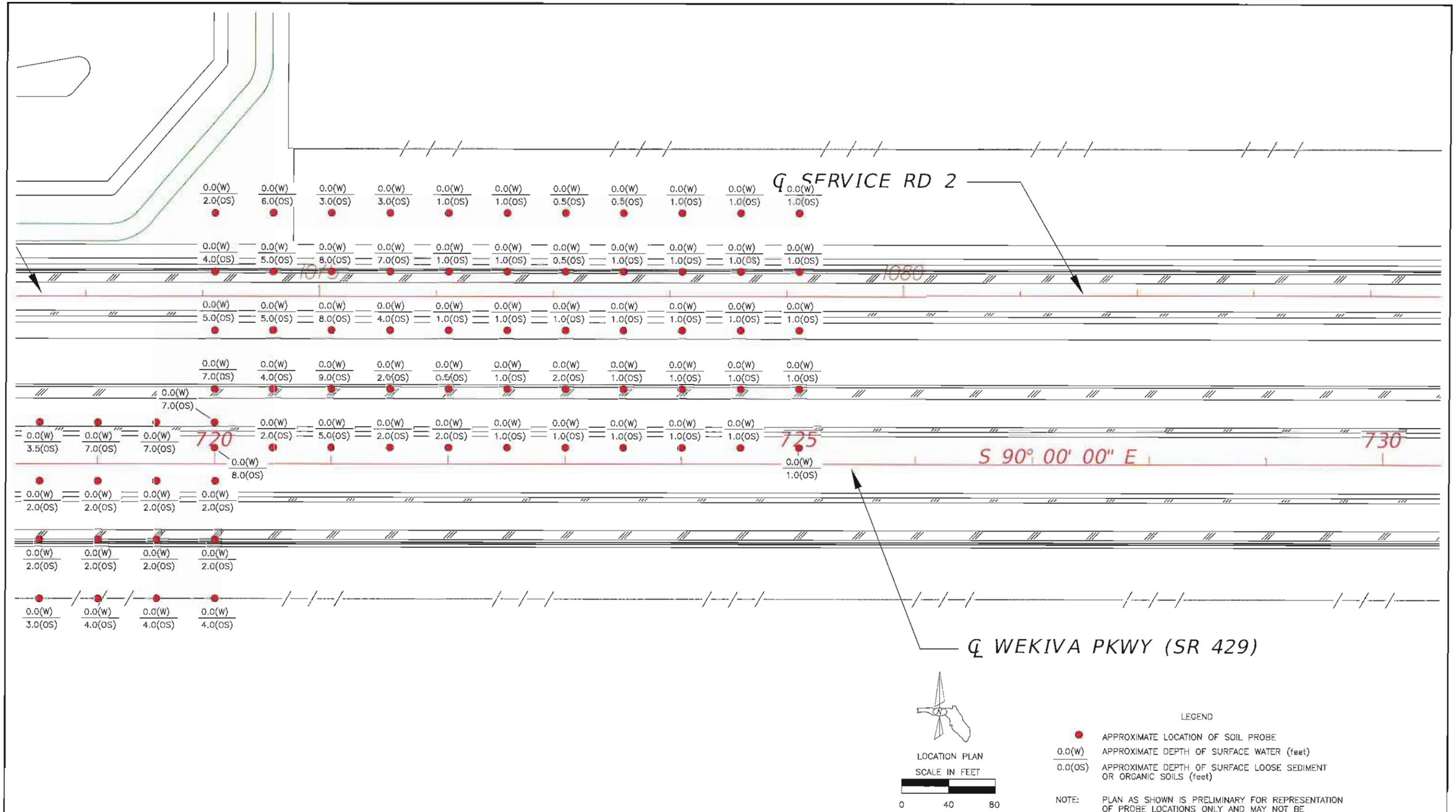
SHEET TITLE: REPORT OF SOIL PROBES

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A-41



LOCATION PLAN
SCALE IN FEET
0 40 80

LEGEND

- APPROXIMATE LOCATION OF SOIL PROBE
- 0.0(W) APPROXIMATE DEPTH OF SURFACE WATER (feet)
- 0.0(OS) APPROXIMATE DEPTH OF SURFACE LOOSE SEDIMENT OR ORGANIC SOILS (feet)

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Nov 14, 2014 - 10:48am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
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1675 LEE ROAD
WINTER PARK, FLORIDA 32789
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CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11-4-14
CHECKED BY: ENJ 11-4-14
DESIGNED BY:
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

SHEET TITLE: REPORT OF SOIL PROBES
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
REF. DWG. NO.
SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A-42

℄ SERVICE RD 2

EXIST SR 46

845

850

℄ WEKIVA PKWY (SR 429)

0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)
0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)	0.0(W) / 1.5(OS)	0.0(W) / 1.0(OS)	0.0(W) / 1.0(OS)
0.0(W) / 1.0(OS)	0.0(W) / 0.0(OS)	0.0(W) / 0.0(OS)	0.0(W) / 2.0(OS)	0.0(W) / 2.0(OS)
0.0(W) / 1.0(OS)	0.0(W) / 0.0(OS)	0.0(W) / 0.0(OS)	0.0(W) / 2.5(OS)	0.0(W) / 2.0(OS)

LOCATION PLAN

SCALE IN FEET

0 40 80

LEGEND

- APPROXIMATE LOCATION OF SOIL PROBE
- 0.0(W) — APPROXIMATE DEPTH OF SURFACE WATER (feet)
- 0.0(OS) — APPROXIMATE DEPTH OF SURFACE LOOSE SEDIMENT OR ORGANIC SOILS (feet)

NOTE: PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF PROBE LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL CONTRACT PLANS.

Nov14, 2014–10:48am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11–4–14
CHECKED BY: ENJ 11–4–14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275–7–32–02

SHEET TITLE: REPORT OF SOIL PROBES

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A–43

EXIST SR 46

℄ SERVICE RD 2

POND BW2-E-1

ESHGWT EL. = 32.6 FT

℄ WEKIVA PKWY (SR 429)

860

865

855

LOCATION PLAN

SCALE IN FEET

0 40 80

LEGEND

- APPROXIMATE LOCATION OF SOIL PROBE
- 0.0(W) APPROXIMATE DEPTH OF SURFACE WATER (feet)
- 0.0(OS) APPROXIMATE DEPTH OF SURFACE LOOSE SEDIMENT OR ORGANIC SOILS (feet)

NOTE: PLAN AS SHOWN IS PRELIMINARY FOR REPRESENTATION OF PROBE LOCATIONS ONLY AND MAY NOT BE INDICATIVE OF FINAL CONTRACT PLANS.

Nov14, 2014–10:49am

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

RICHARD G. ACREE, P.E.
P.E. LICENSE NUMBER 53962
1675 LEE ROAD
WINTER PARK, FLORIDA 32789
TERRACON
CERTIFICATE OF AUTHORIZATION No. 8830

DRAWN BY: SW 11–4–14
CHECKED BY: ENJ 11–4–14
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275–7–32–02

SHEET TITLE: REPORT OF SOIL PROBES

PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

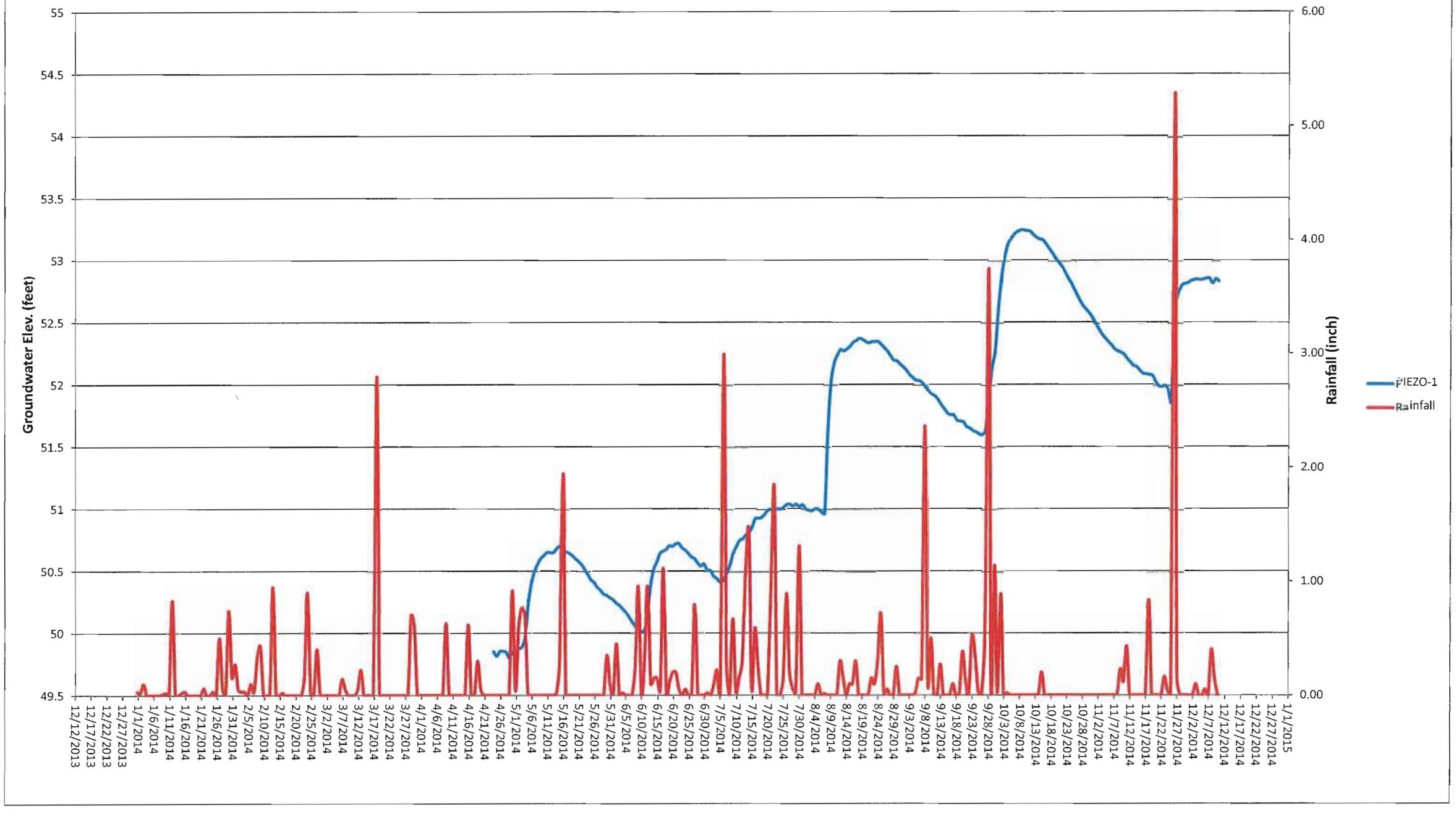
SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A–44

PIEZOMETER DATA

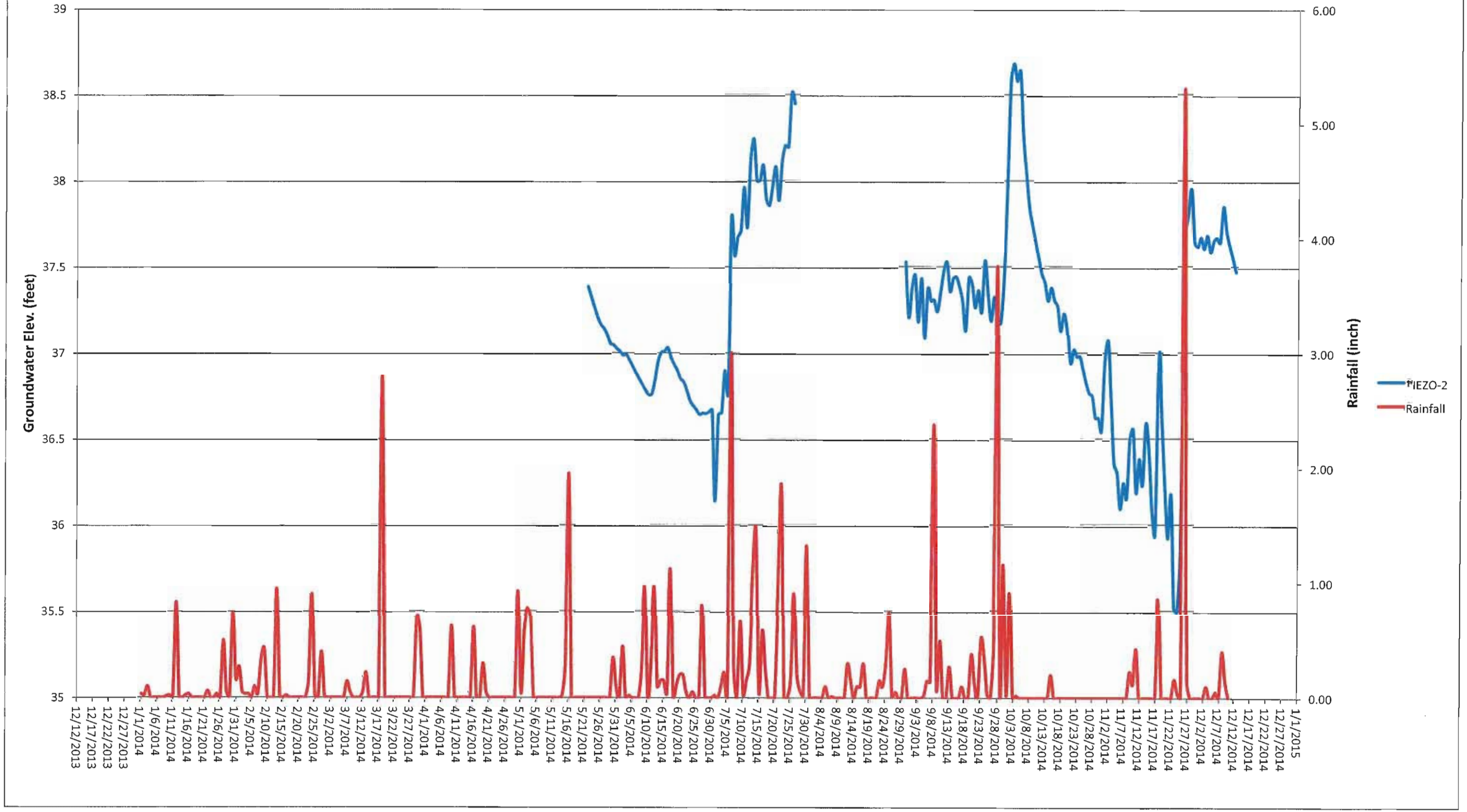
PIEZO-1 (Pond RS7-E-1A)

GSE: +60.3'



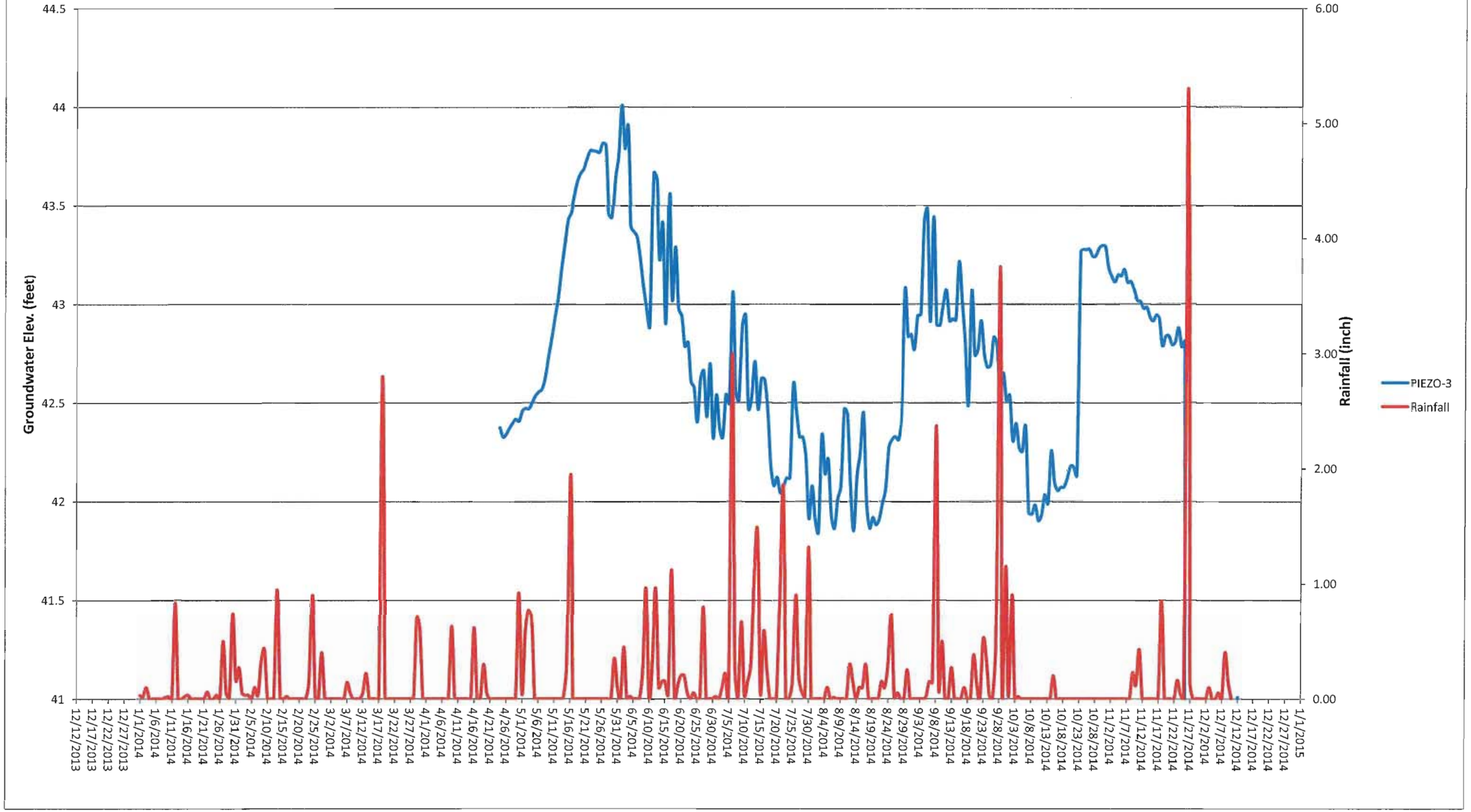
PIEZO-2 (Pond RS8-E-1)

GSE: +42.9'



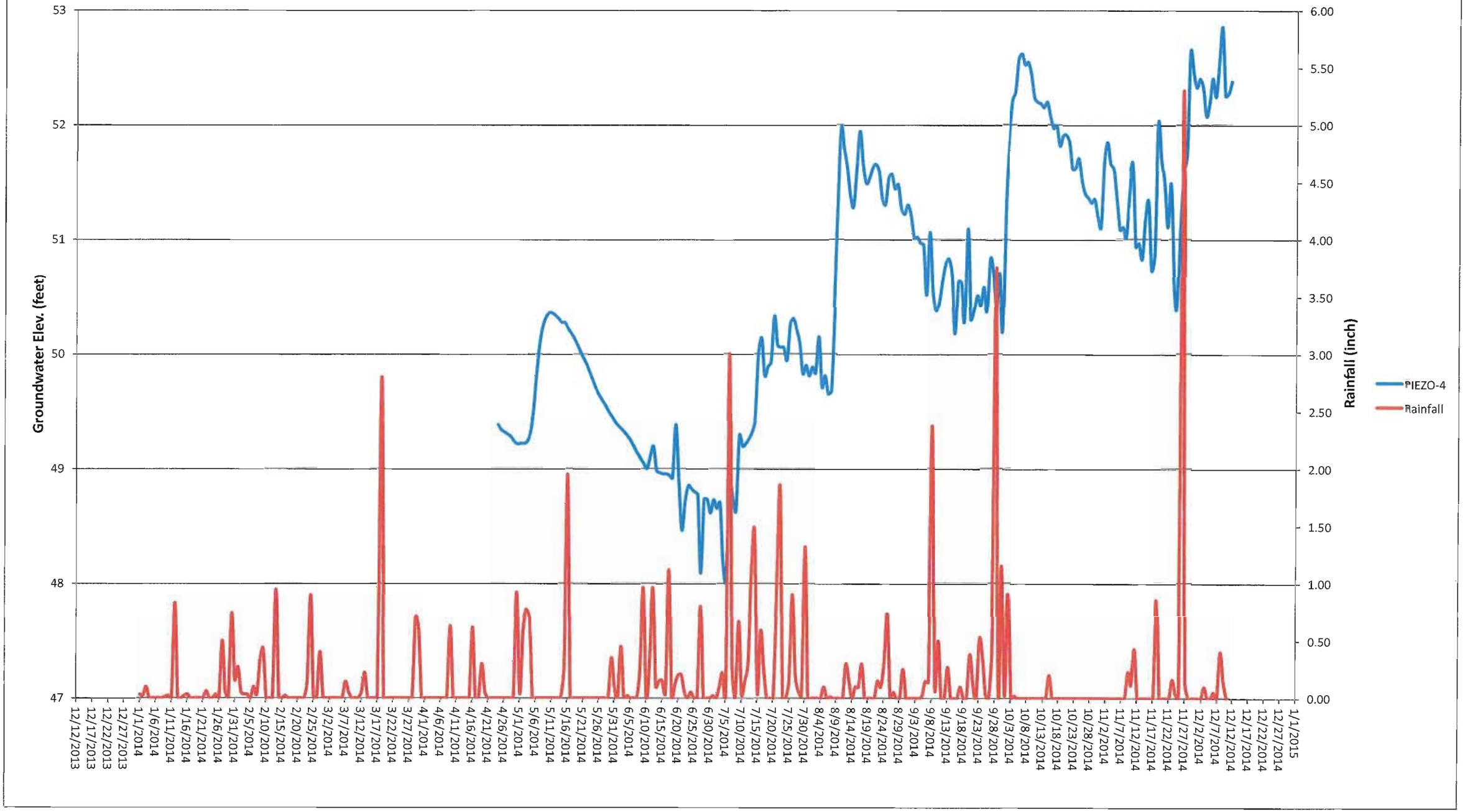
PIEZO-3 (Pond RS9-E-1)

GSE: +59.2'



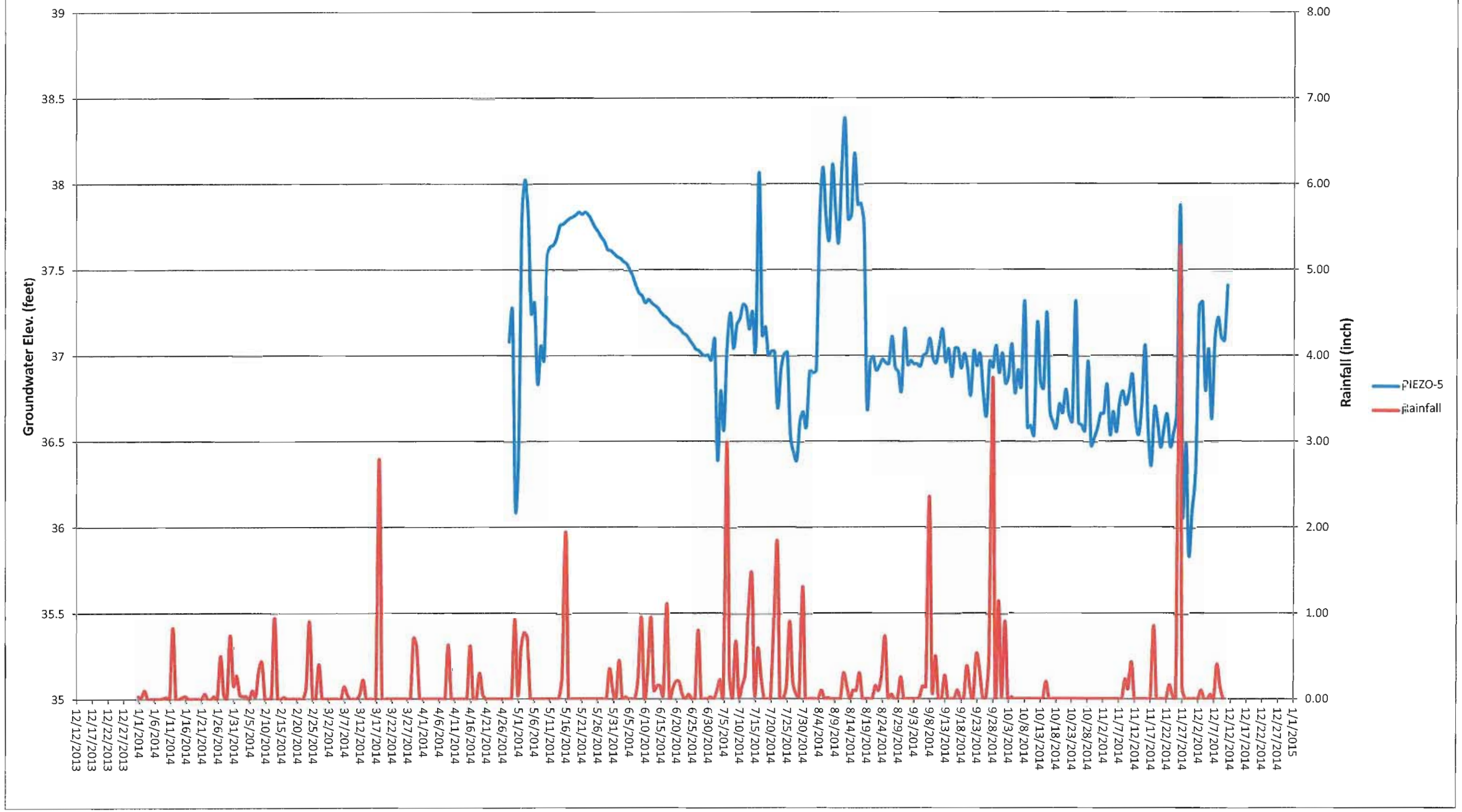
PIEZO-4 (Pond RS7-E-2A)

GSE: +59.8'



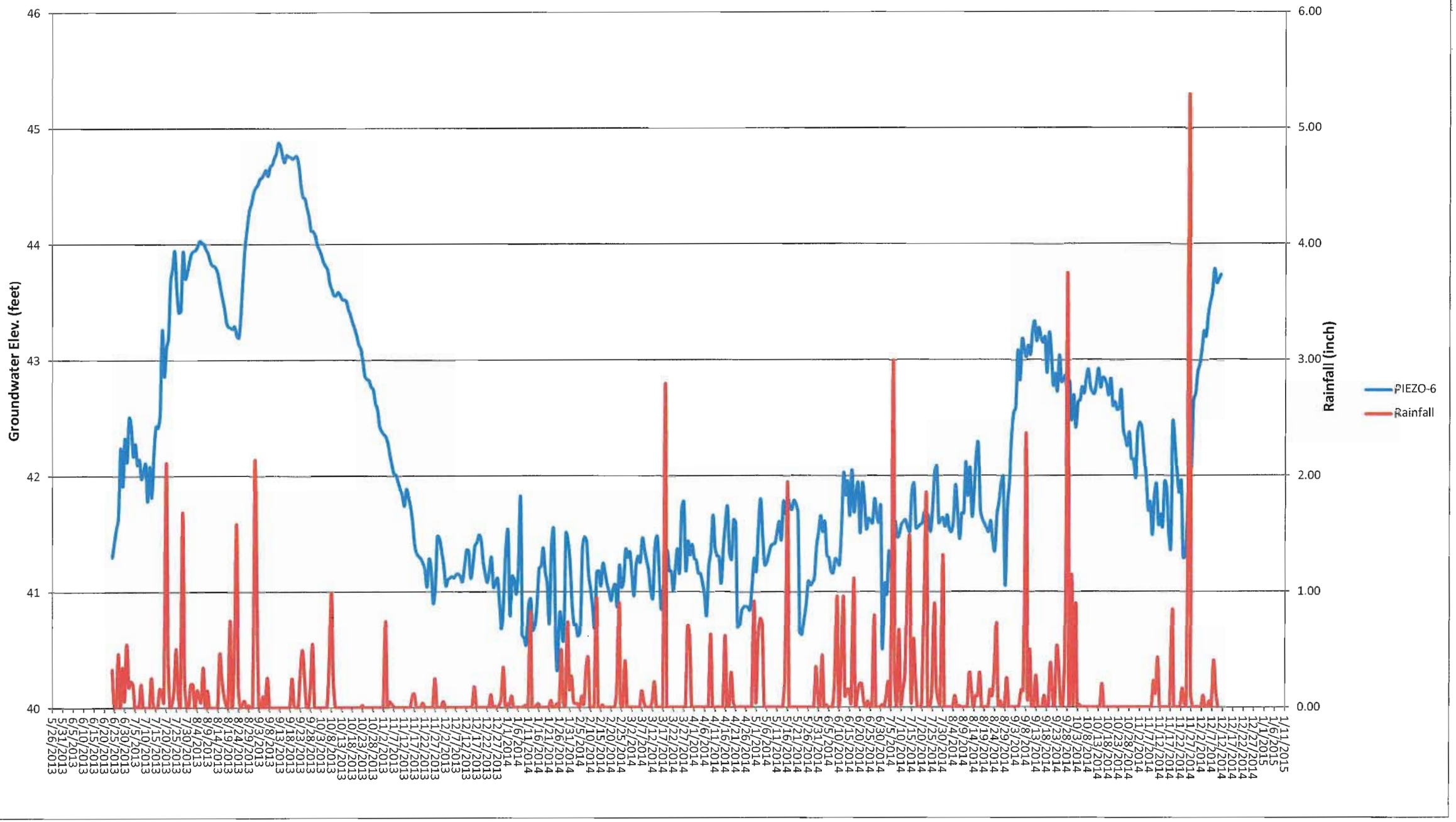
PIEZO-5 (Pond BW1A-E-6)

GSE: +51.8'



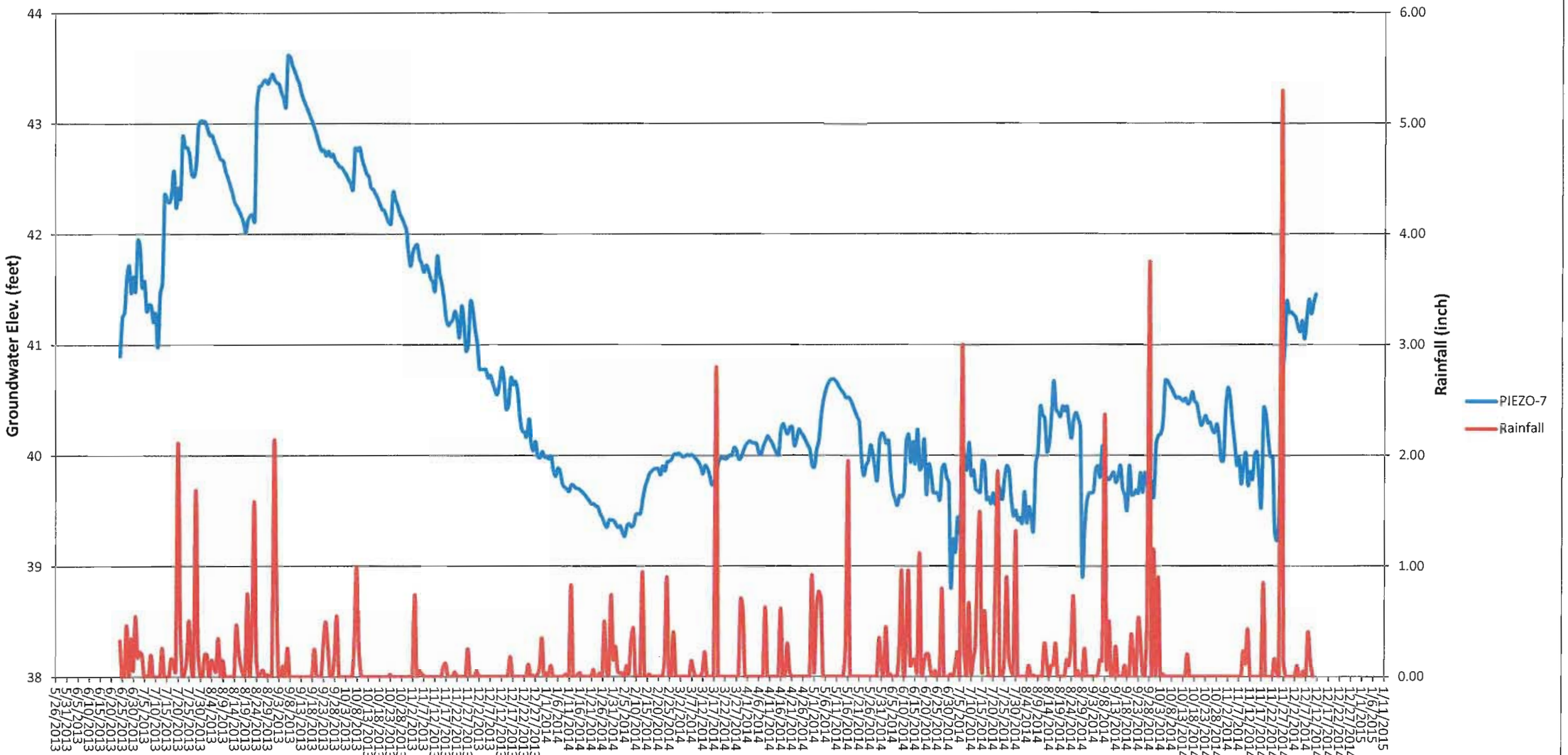
PIEZO-6 (Pond BW1-E-2)

GSE: +55.5'



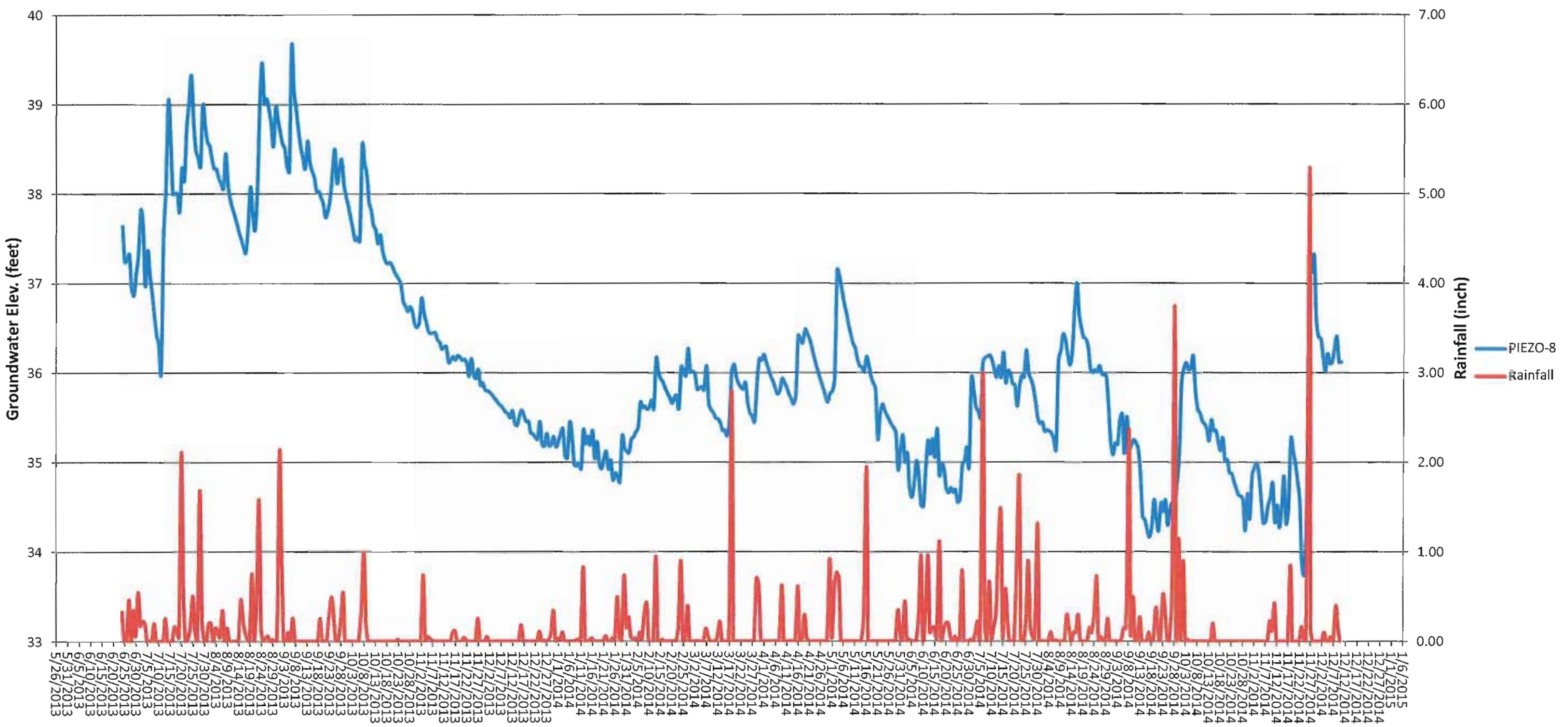
PIEZO-7 (Pond BW1-E-3)

GSE: +47.4'



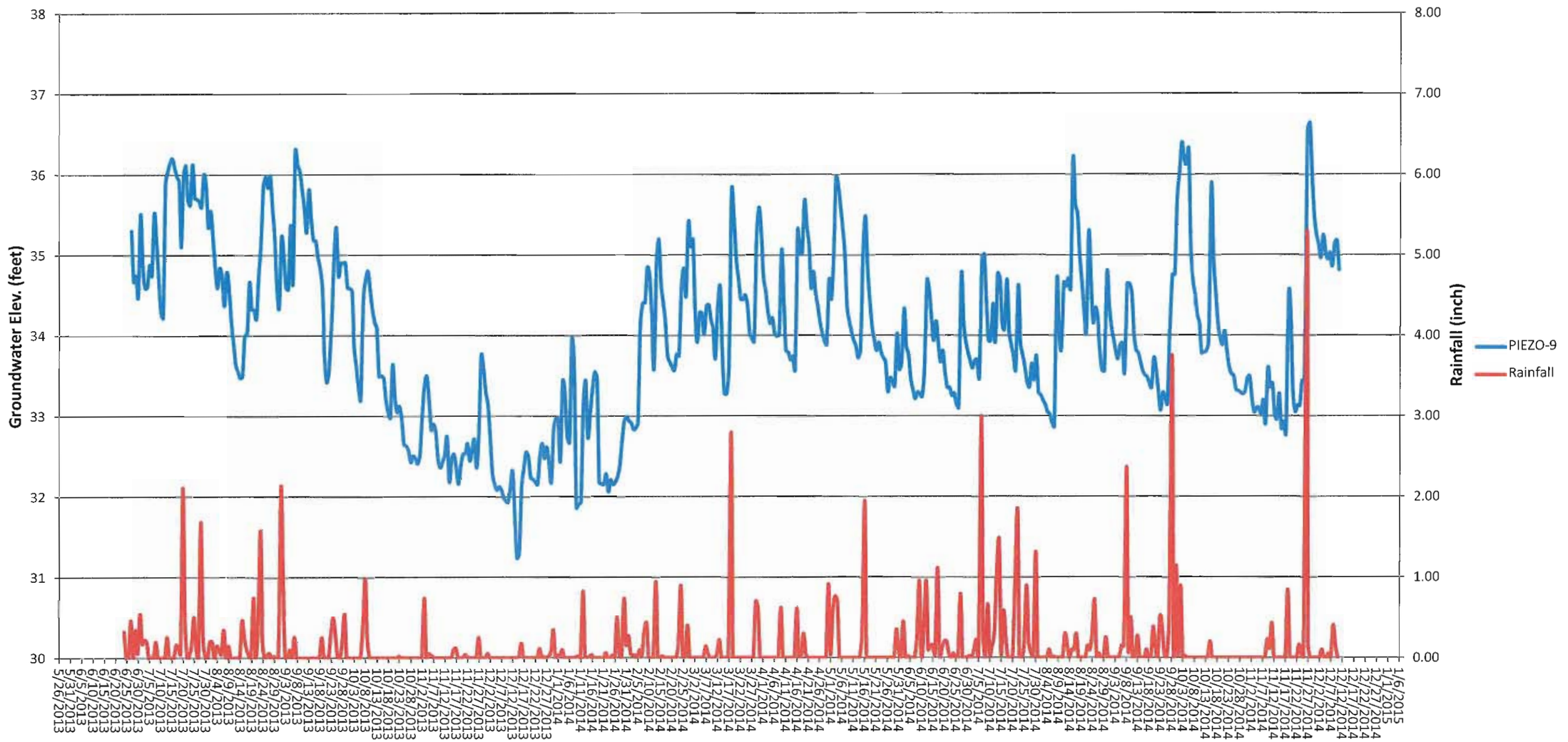
PIEZO-8 (Pond BW1-E-4)

GSE: +40.6



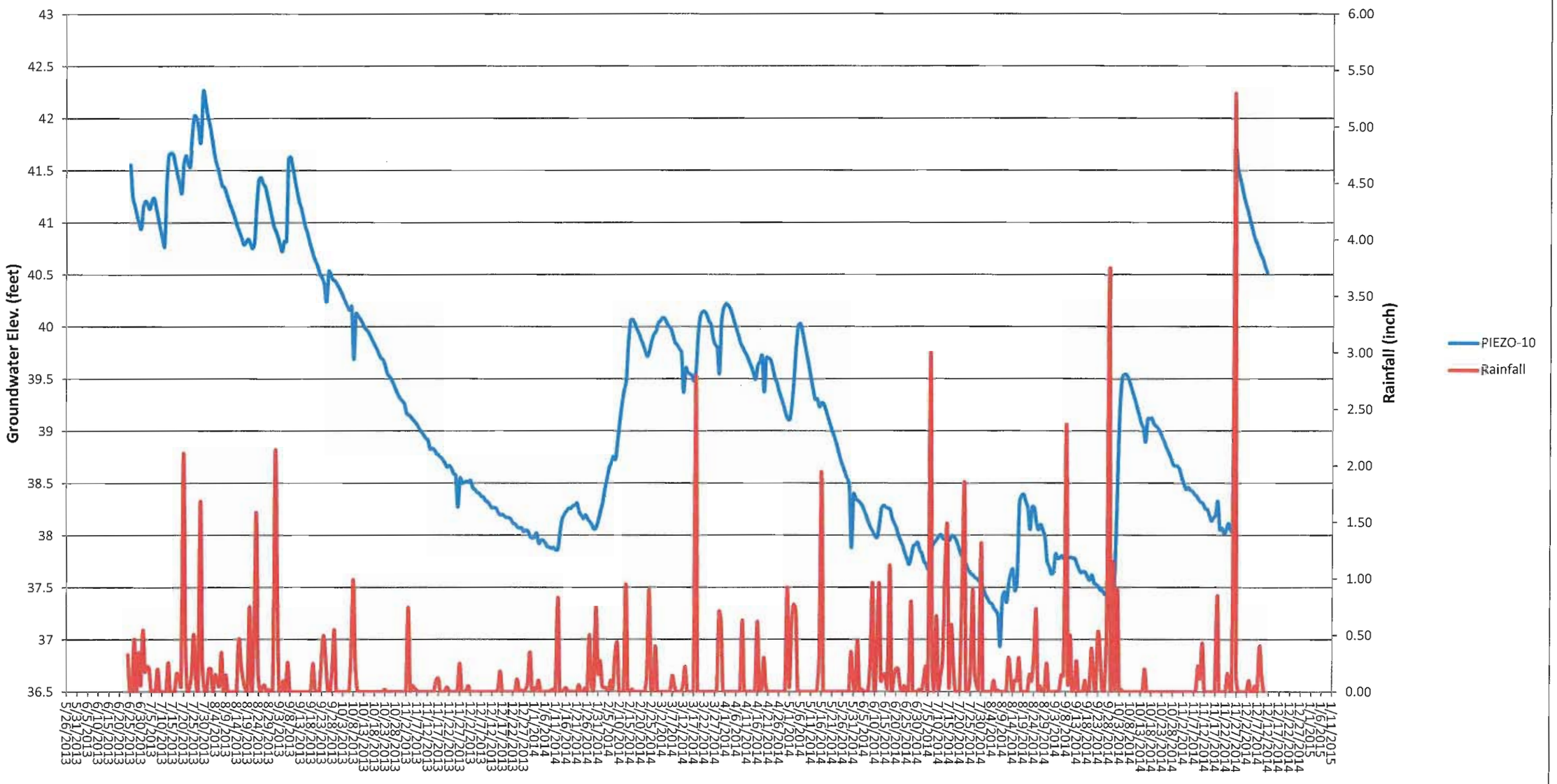
PIEZO-9 (Pond BW2-E-1)

GSE: +36.1'



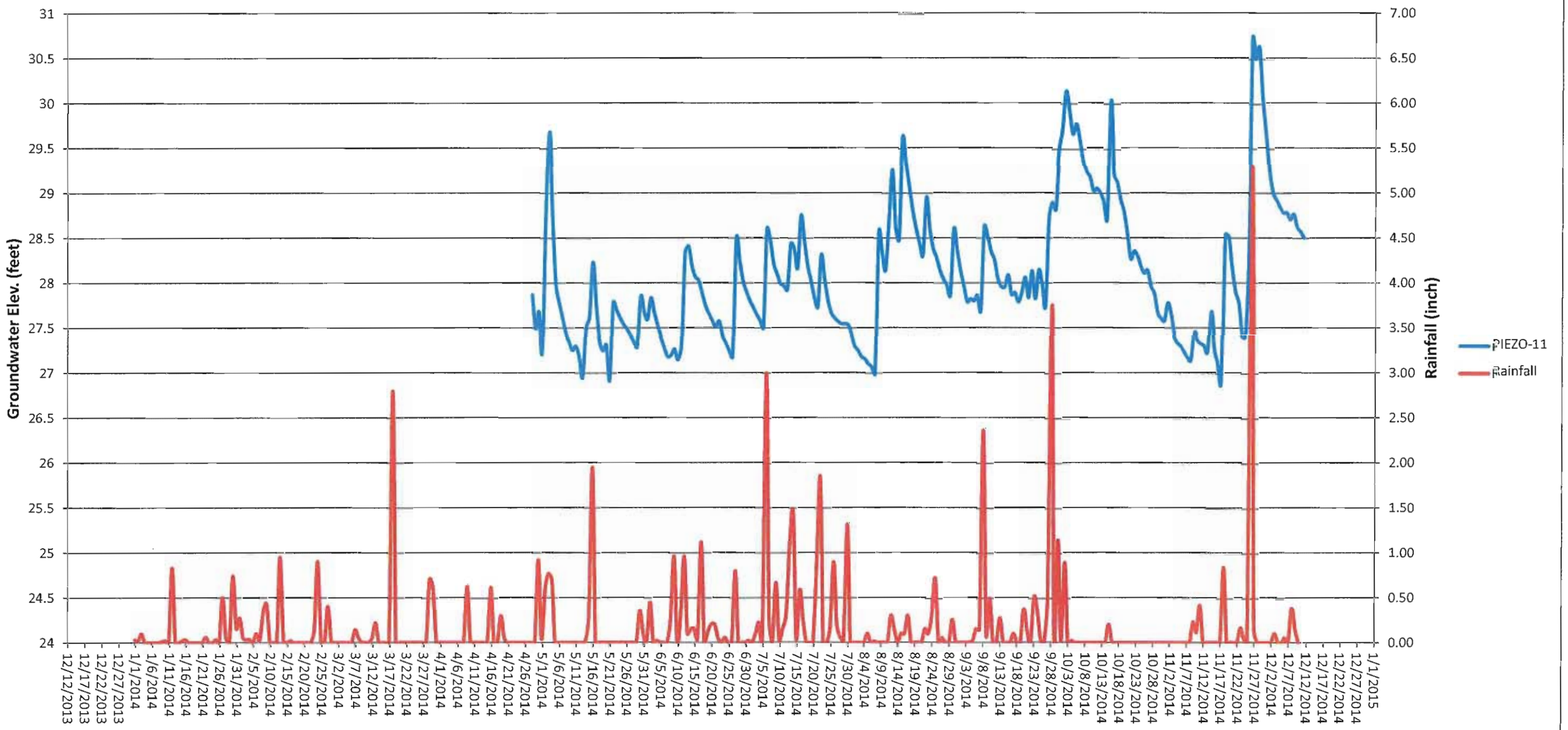
PIEZO-10 (Pond BW2-E-2)

GSE: +44.7'



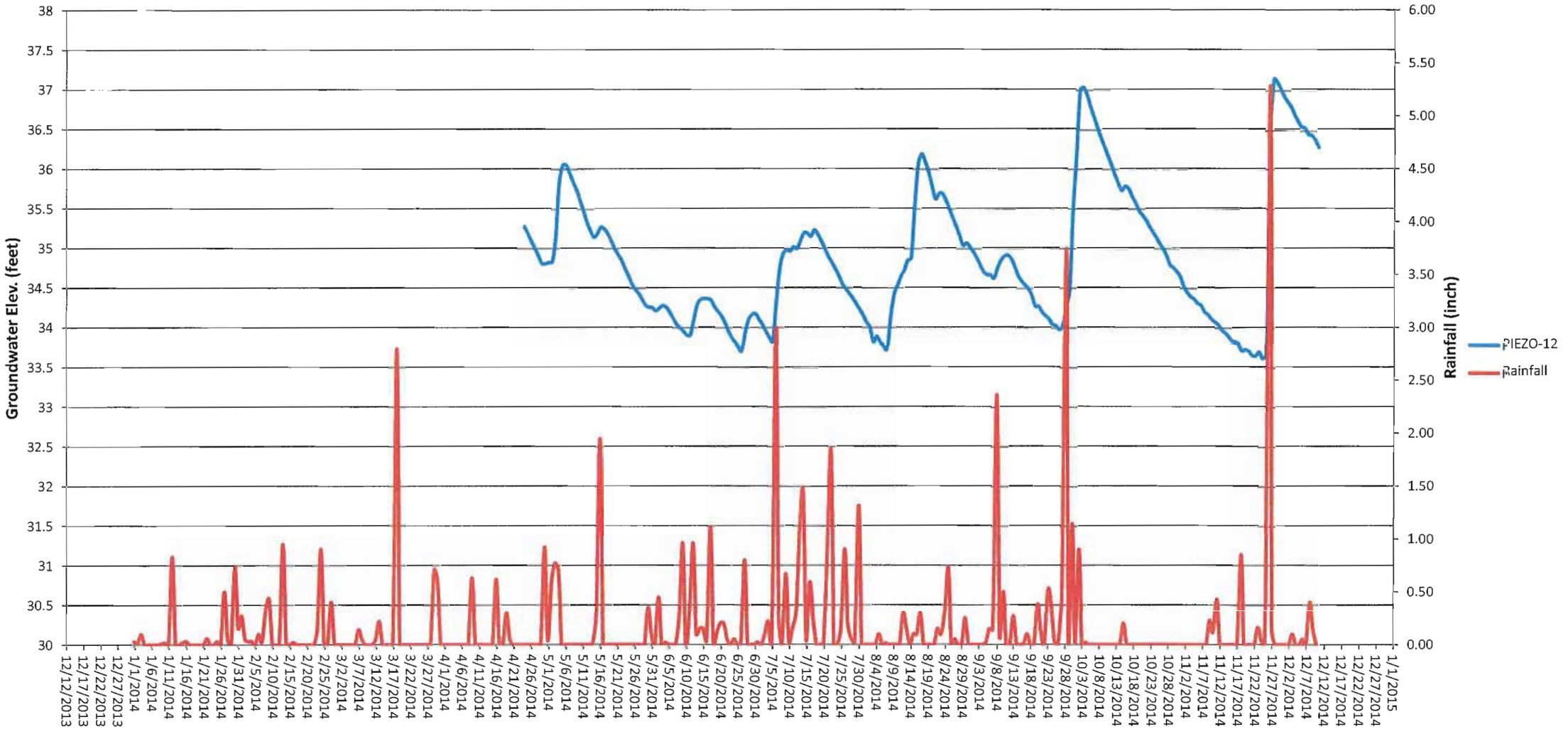
PIEZO-11 (Pond BW2-E-5A)

GSE: +30.5'



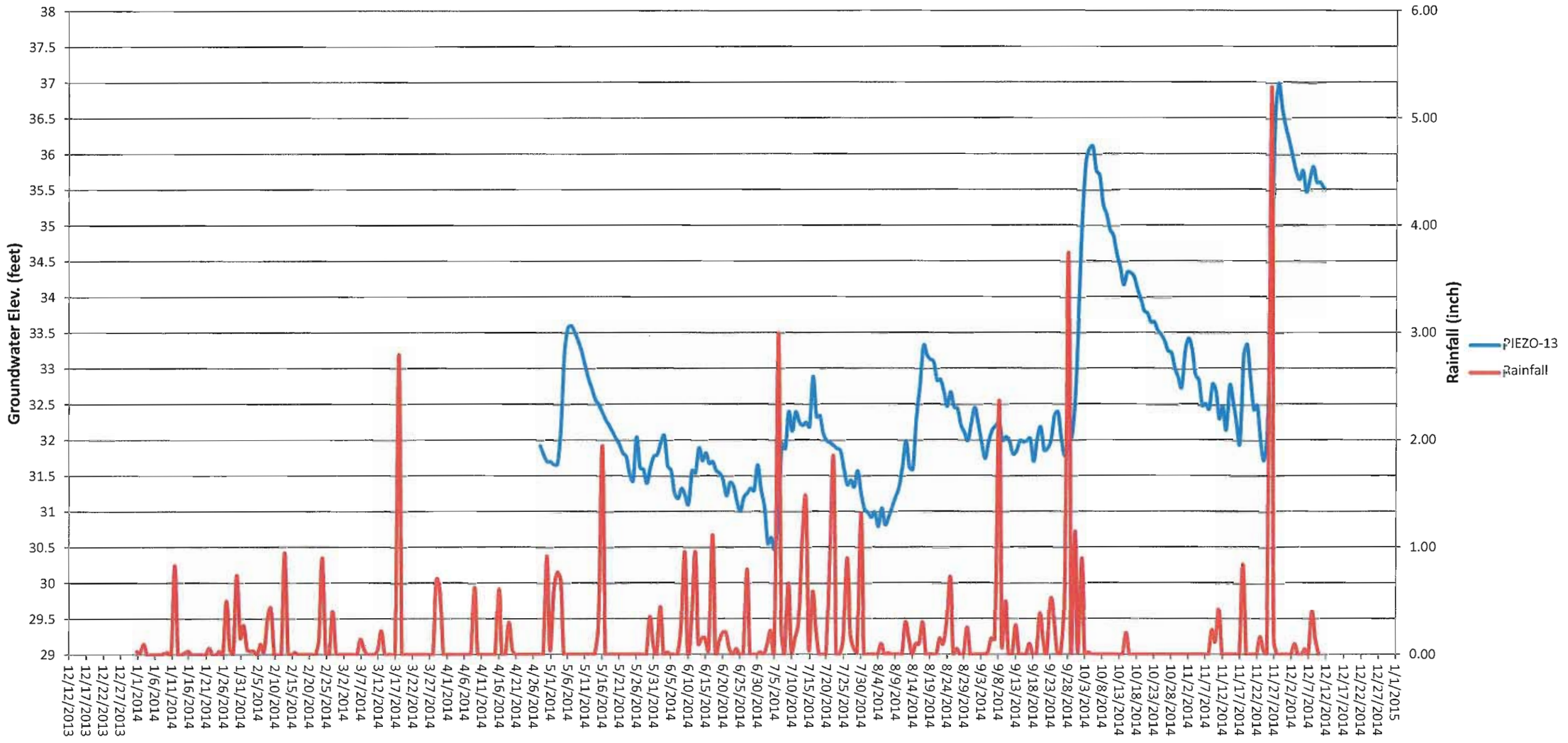
PIEZO-12 (Pond WR1-E-1)

GSE: +40.5'



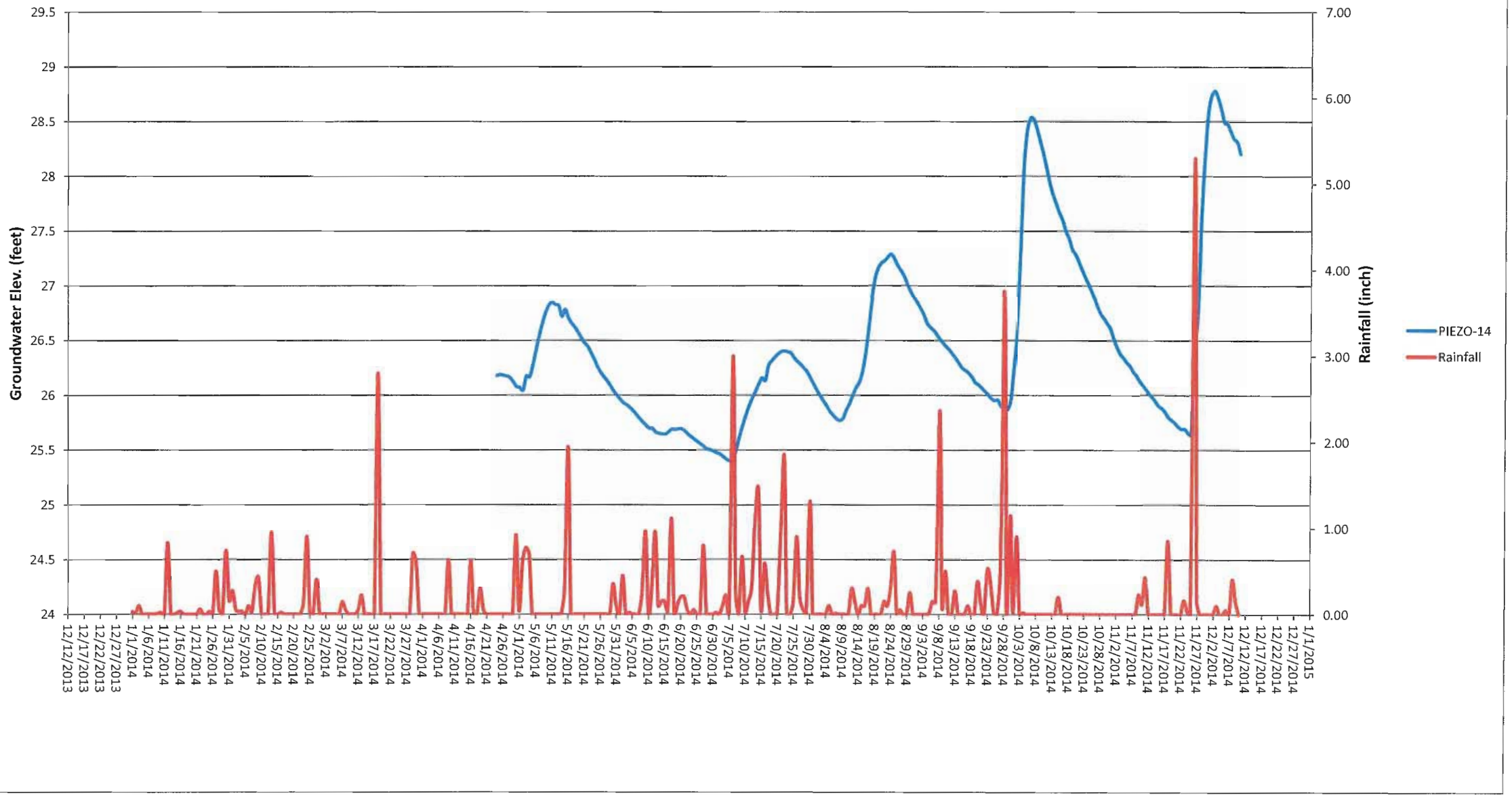
PIEZO-13 (Pond WR1-E-5A)

GSE: +38.6'



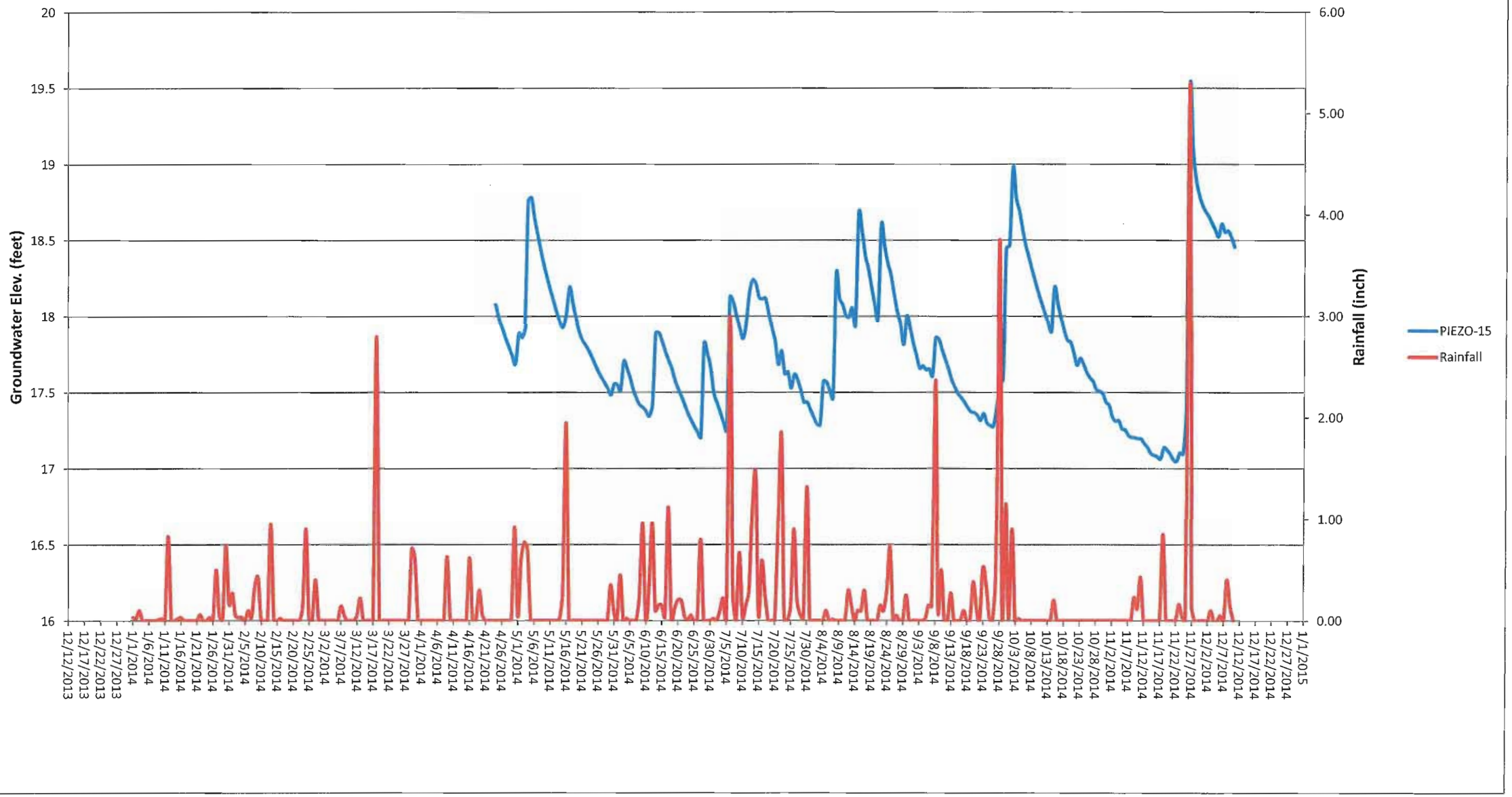
PIEZO-14 (Pond WR1-E-7)

GSE: +37.1'

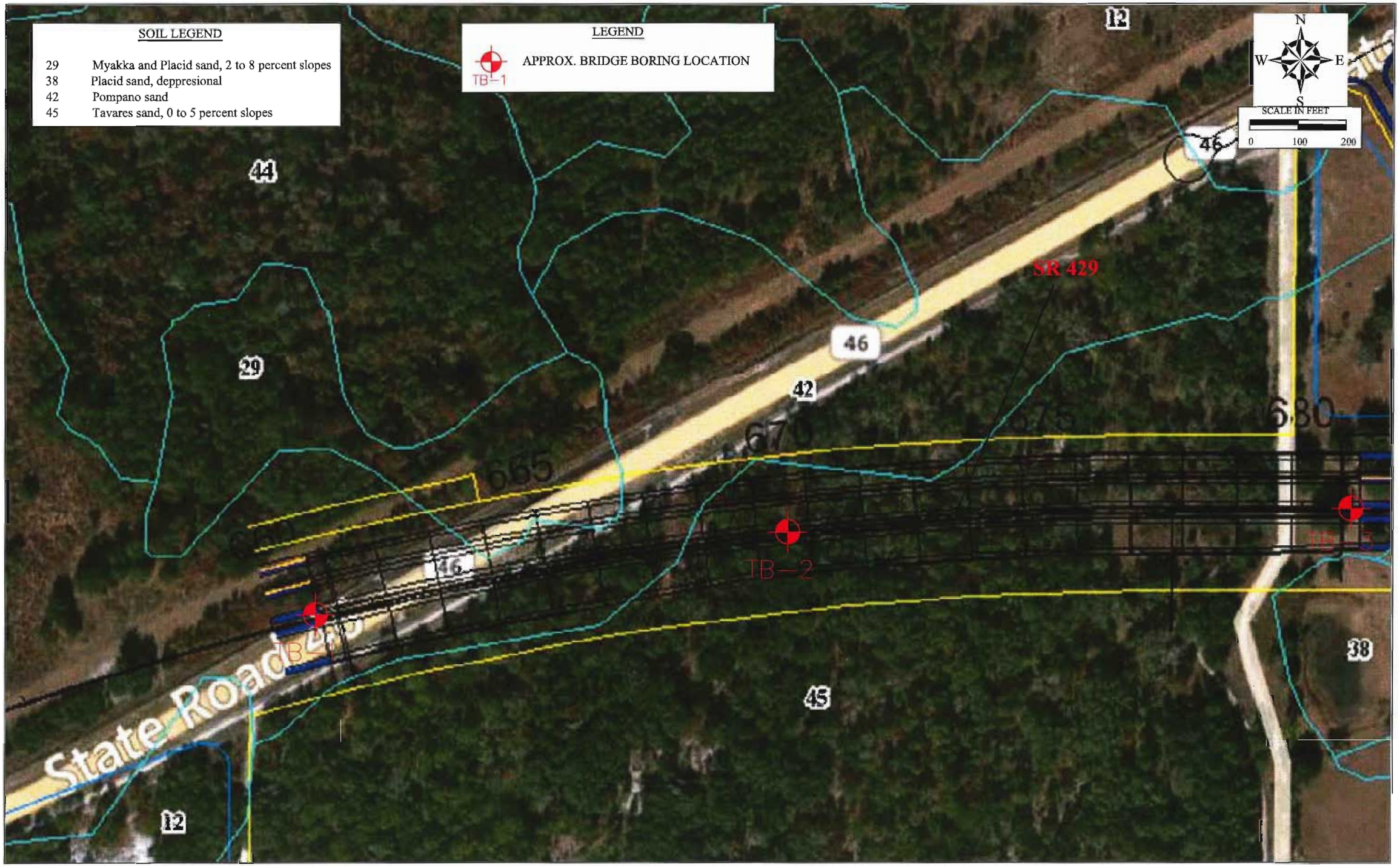


PIEZO-15 (Pond WR2A-S-2)

GSE: +22.4'



SOIL BORING PROFILES
(REPORTED BY NADIC ENGINEERING SERVICES FOR LINE AND GRADE STUDY)



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	IAU	5-2-12
Checked by:	GNN	5-2-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

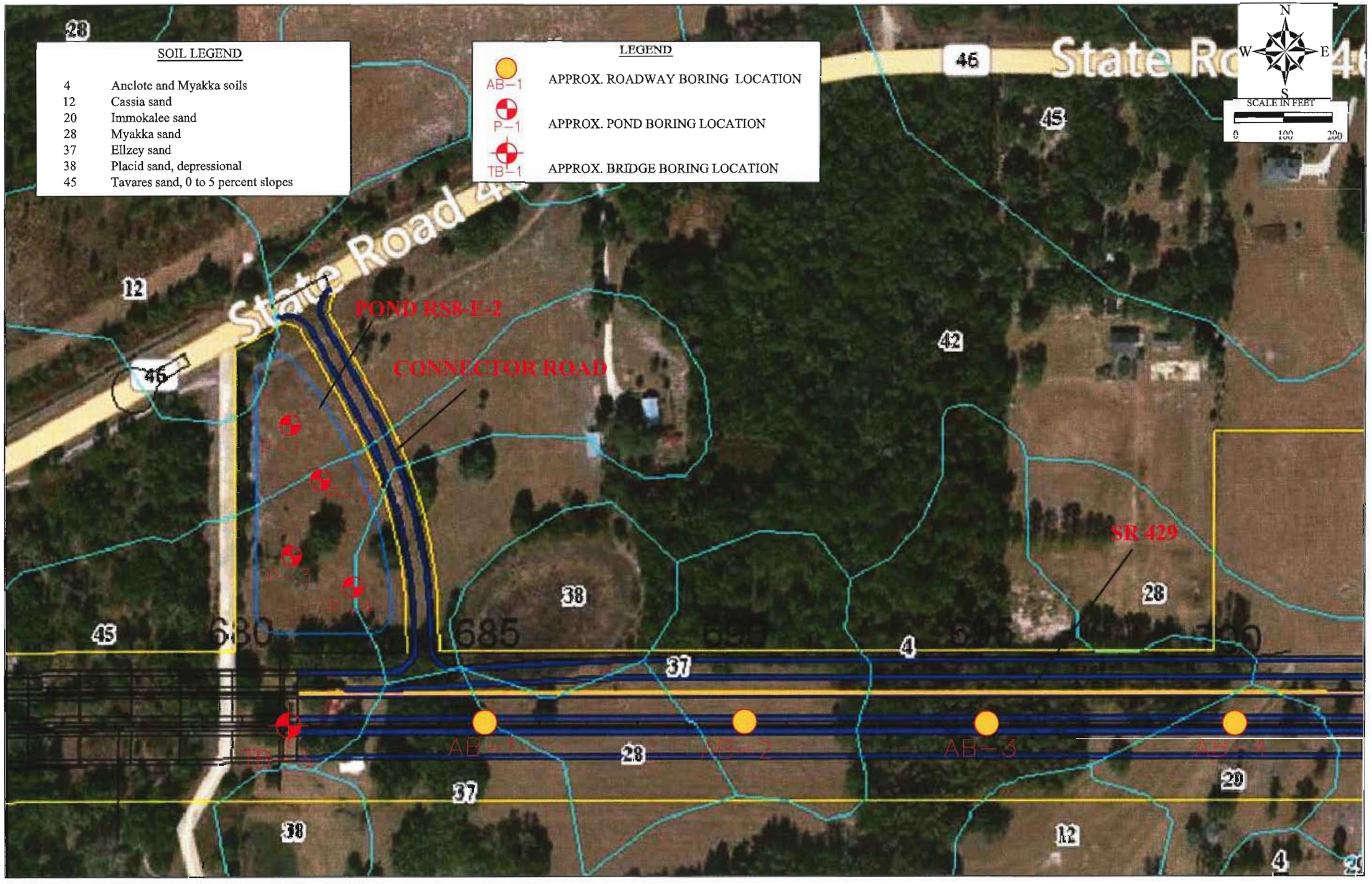
COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE 5A



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

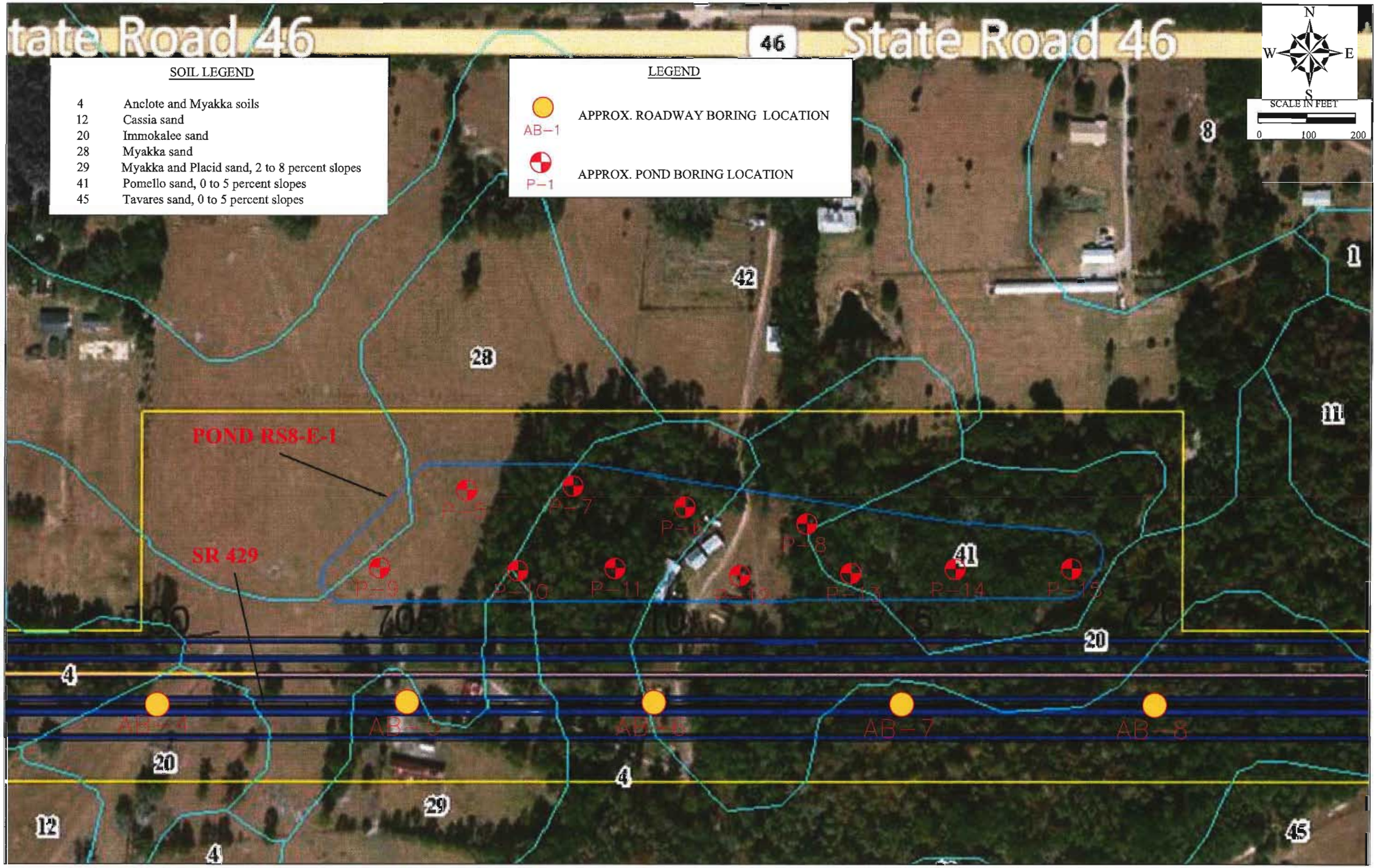
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE 5B

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

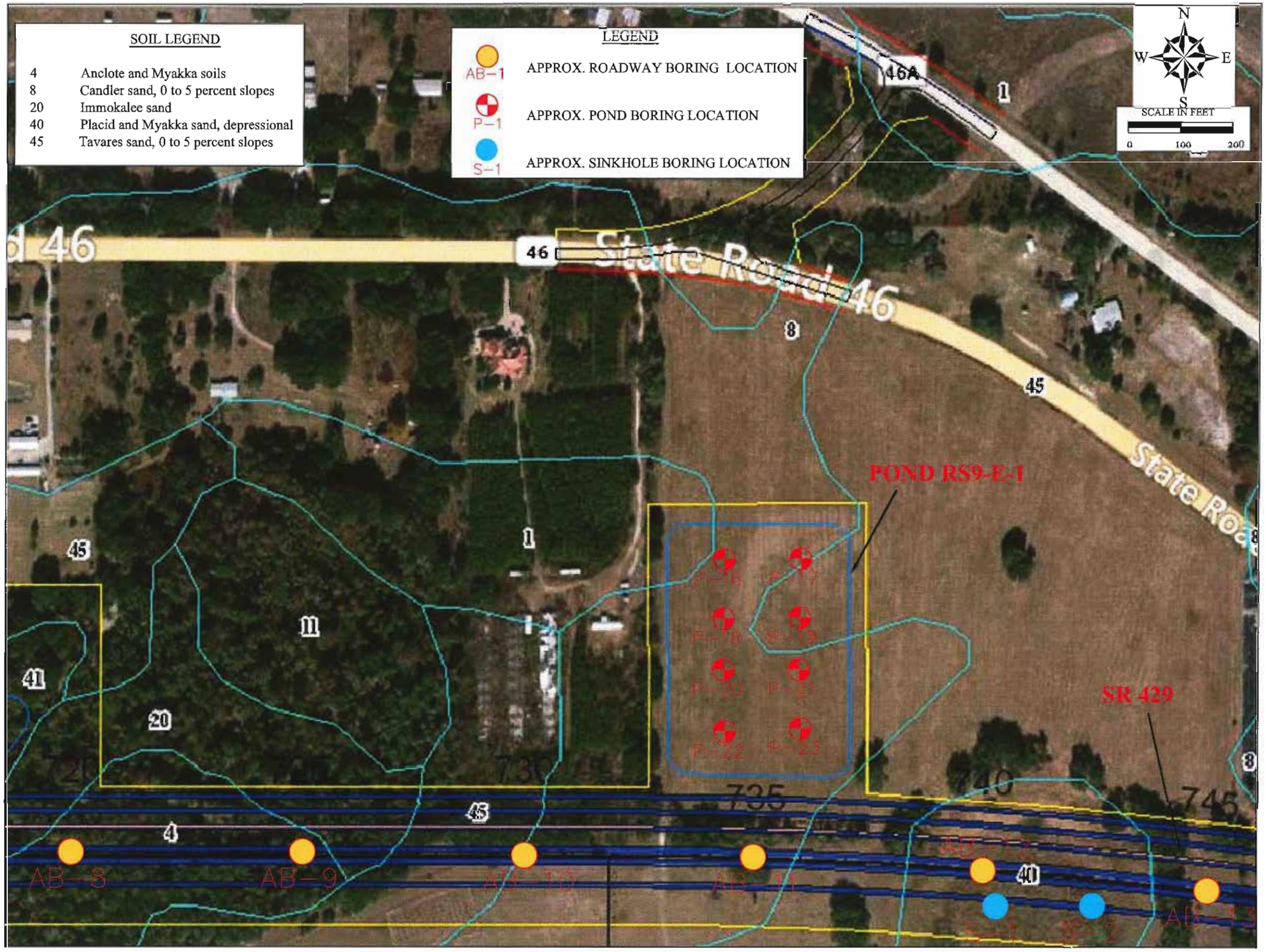
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

FIGURE 5C



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

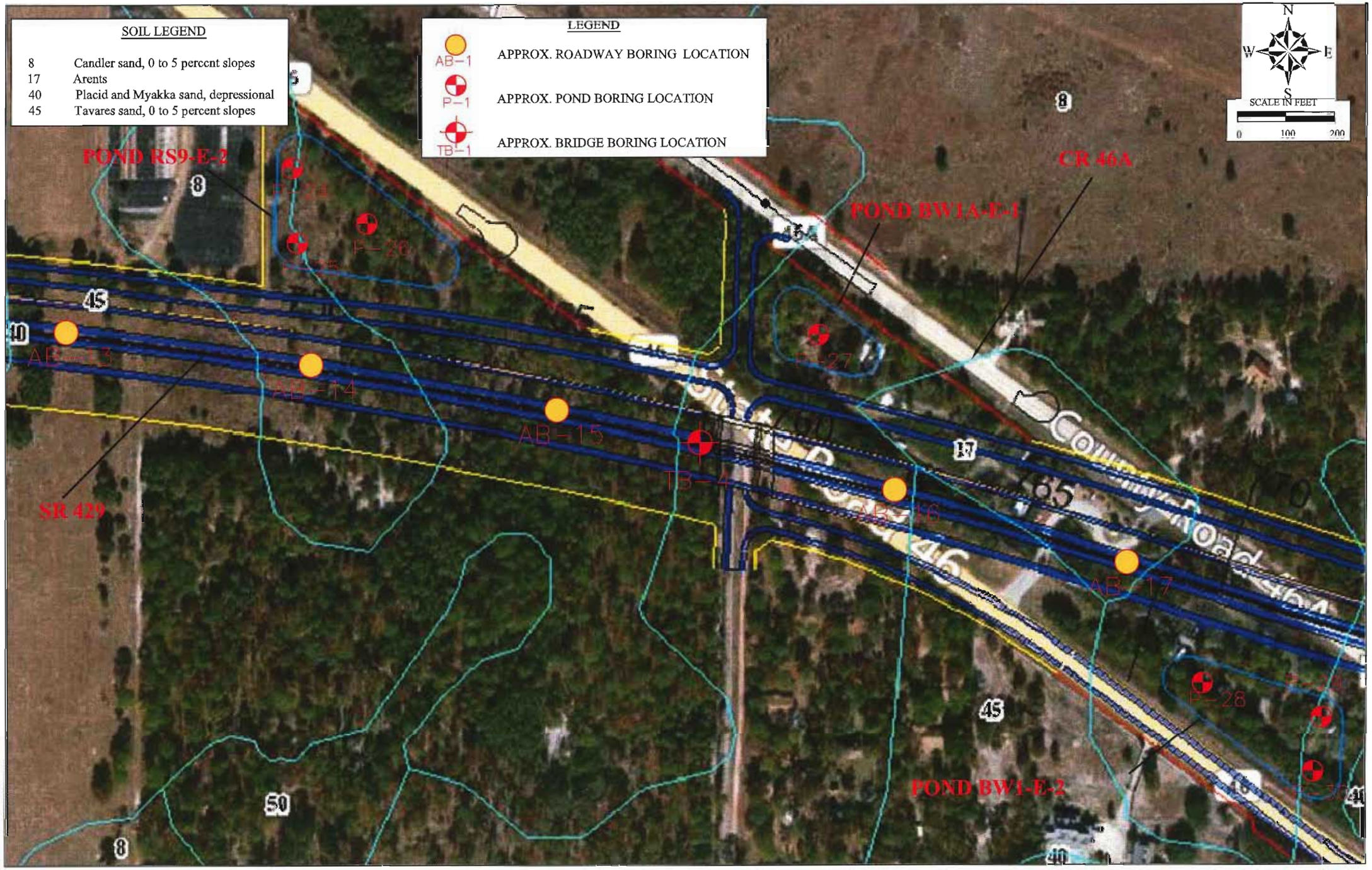
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE 5D

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.



REVISIONS							NAMES	DATES
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	Drawn by:	AGA	5-15-12
						Checked by:	GNN	5-15-12
						Designed by:	N/A	N/A
						Checked by:	N/A	N/A
						Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

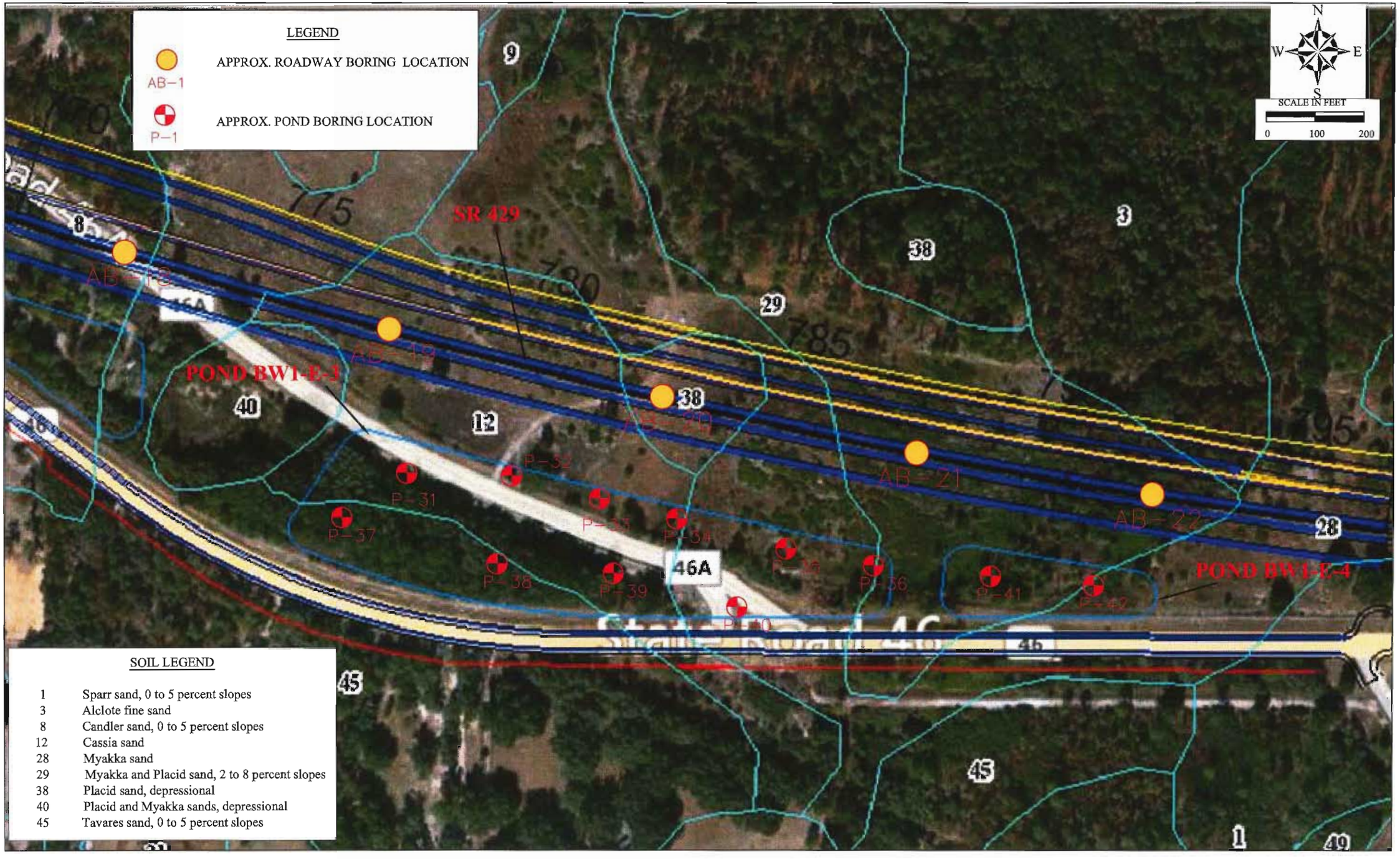
TITLE: BORING LOCATION MAP

PROJECT NAME: WEKIVA PARKWAY LINE & GRADE - Lake County East Section

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

FIGURE 5E



SOIL LEGEND

1	Sparr sand, 0 to 5 percent slopes
3	Alclote fine sand
8	Candler sand, 0 to 5 percent slopes
12	Cassia sand
28	Myakka sand
29	Myakka and Placid sand, 2 to 8 percent slopes
38	Placid sand, depressional
40	Placid and Myakka sands, depressional
45	Tavares sand, 0 to 5 percent slopes

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE 5F

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

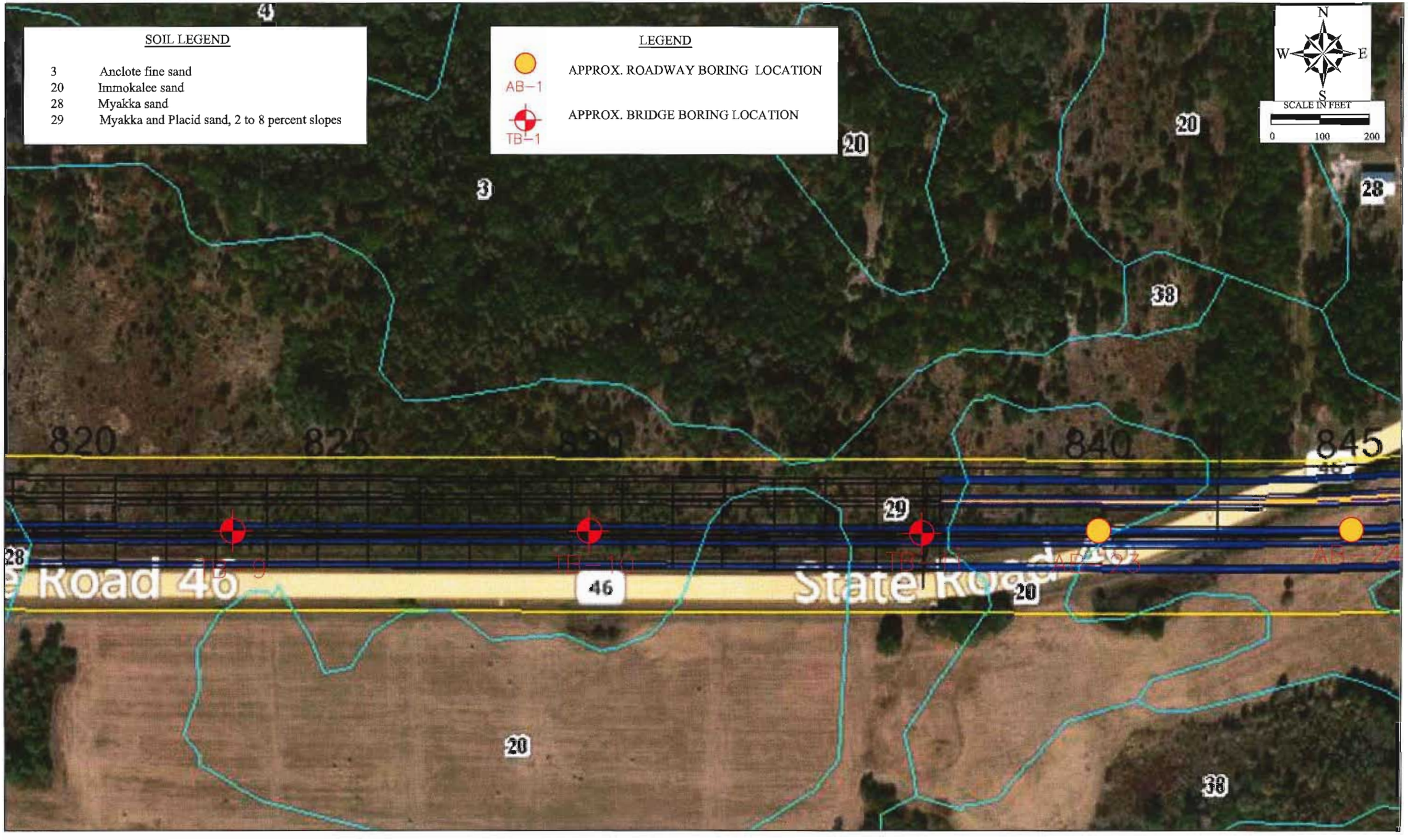
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

FIGURE 5G



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

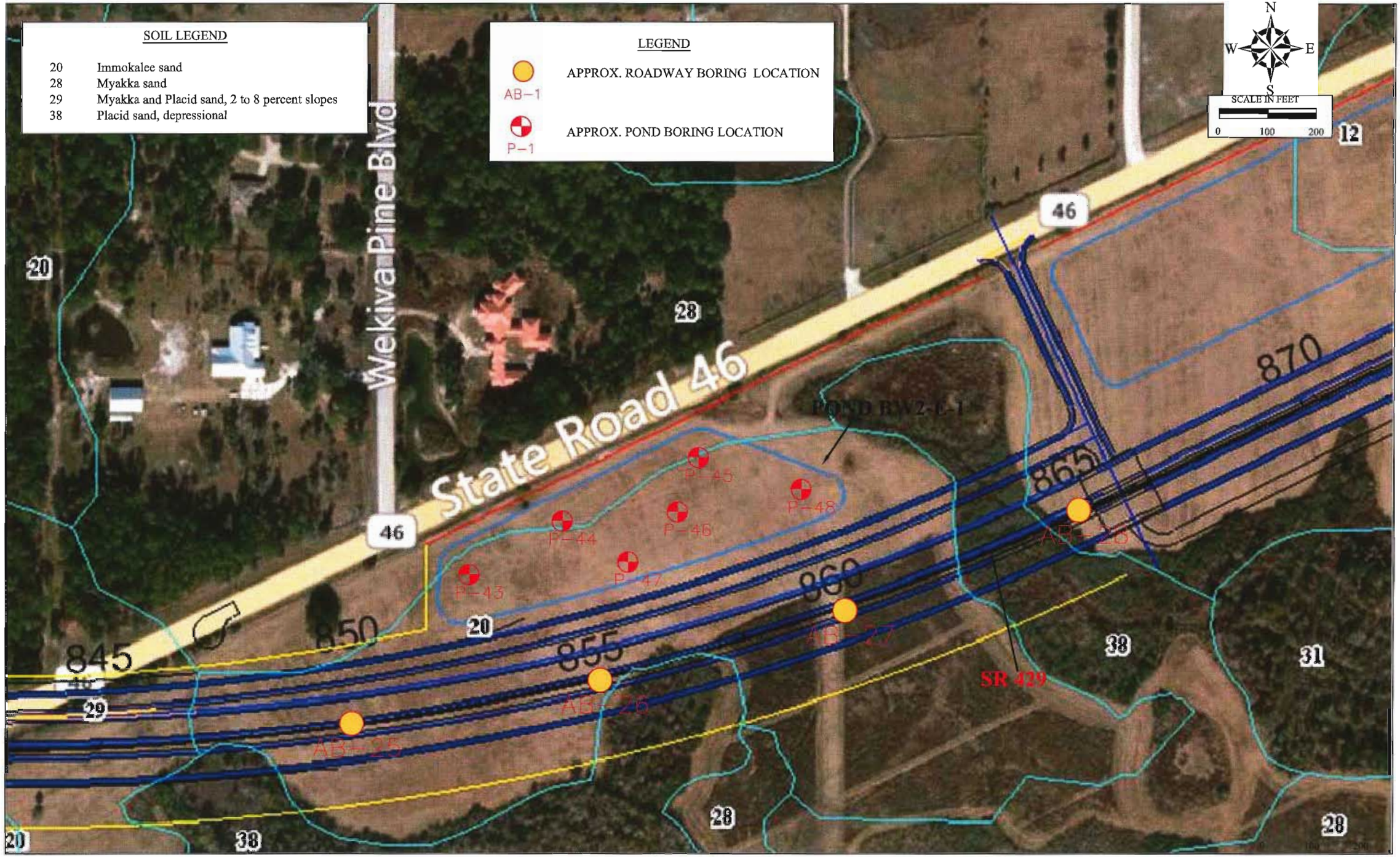
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE SH

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

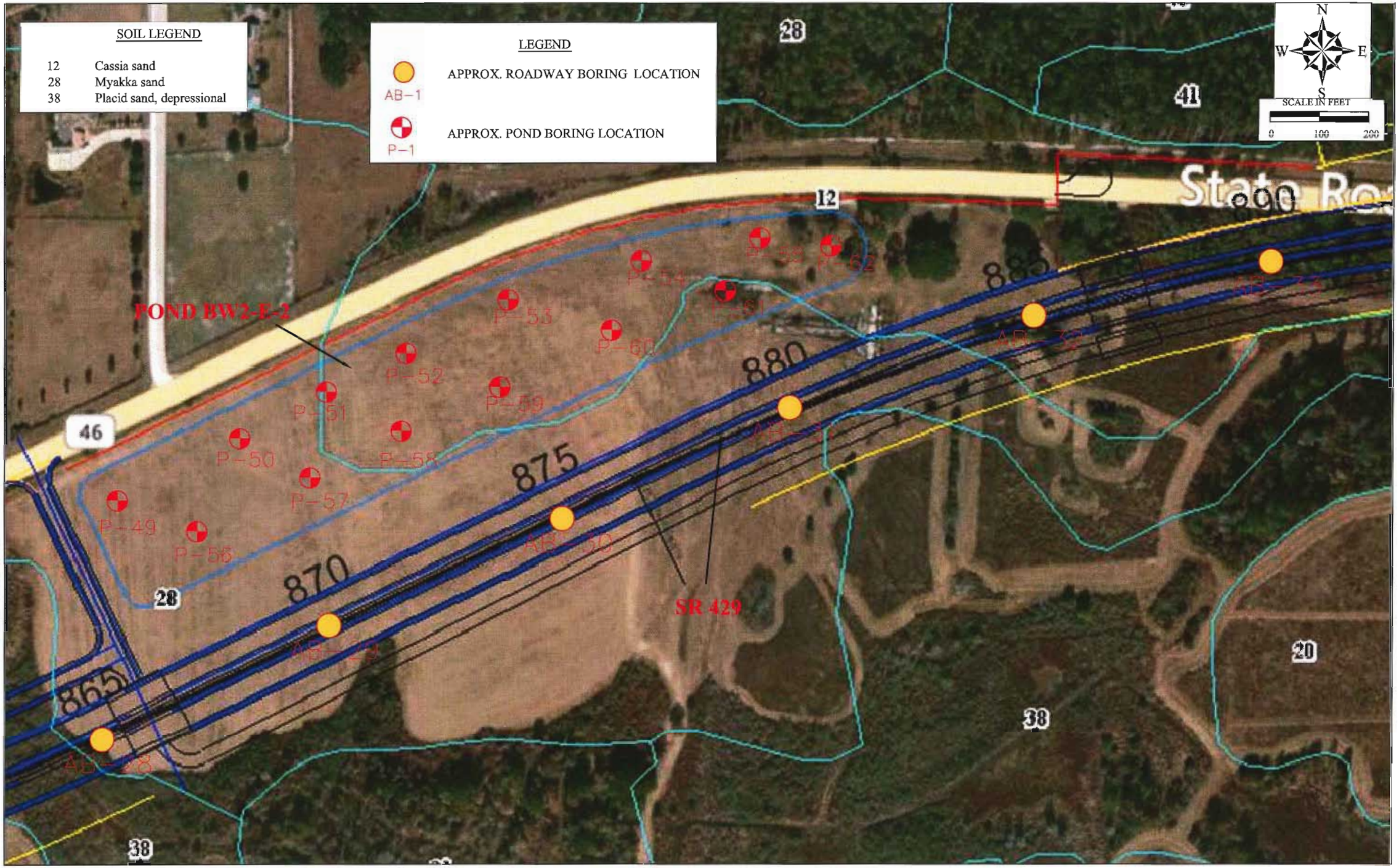
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

FIGURE 5I



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

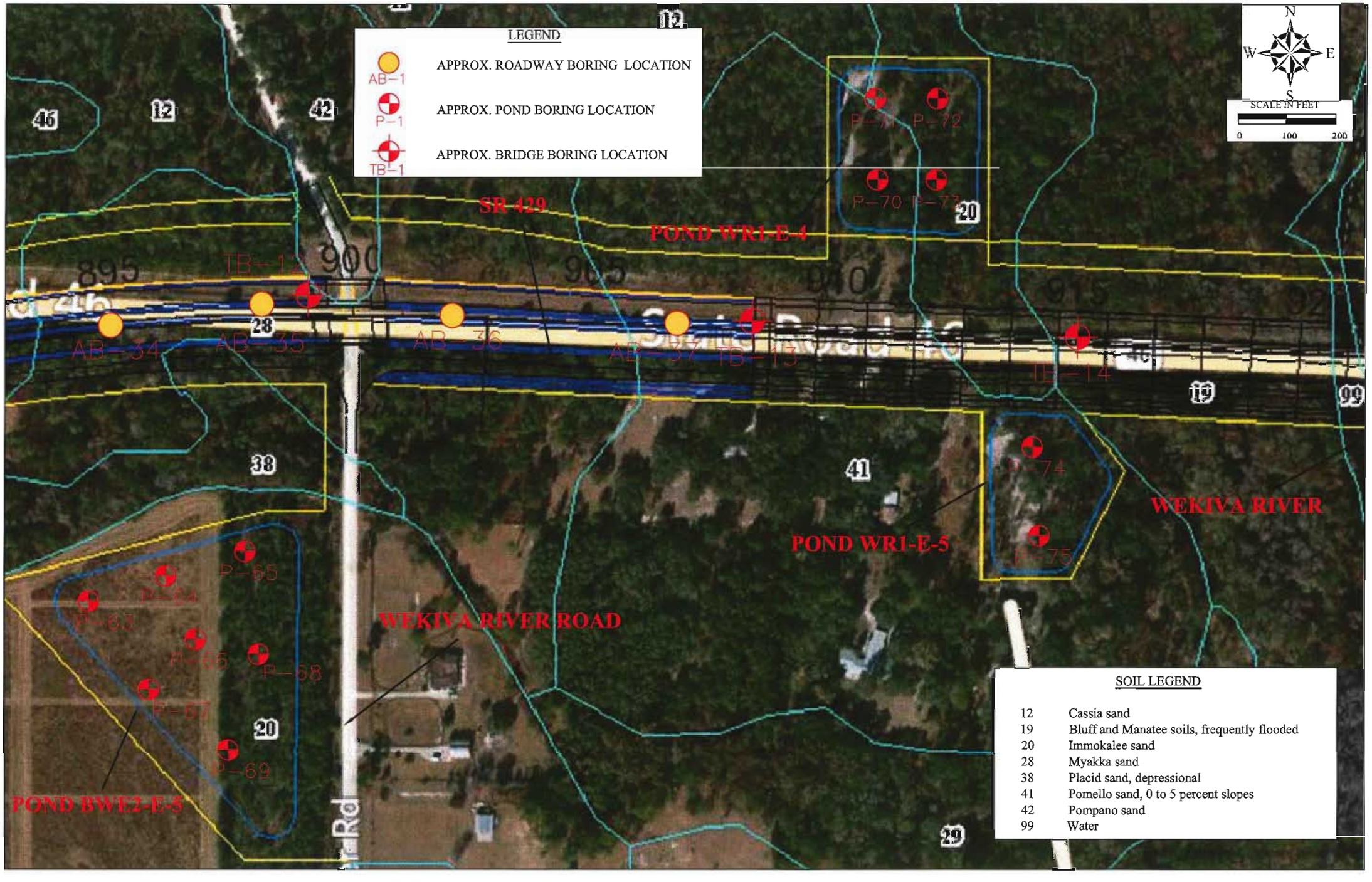
TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

FIGURE 5J



REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	5-15-12
Checked by:	GNN	5-15-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:		

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	431081-3-32-01

TITLE:
BORING LOCATION MAP

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- Lake County East Section

SHEET NO.

FIGURE 5K

NES PROJECT No.: R11032
ROADWAY: WEKIVA PARKWAY
SUBMITTED BY: NES

NADIC ENGINEERING SERVICES, INC

ROADWAY CROSS SECTION OF SOIL SURVEY

REPORT OF TESTS

SECTION: 22 through 27 TOWNSHIP: 19 SOUTH RANGE: 28 EAST

SECTION: 20, 21, 28, 29 & 30 TOWNSHIP: 19 SOUTH RANGE: 29 EAST

SURVEYED BY: BSA
SURVEY BEGINS: 660+00, SR 429
SURVEY ENDS: 921+00, SR 429
DATE SURVEYED: DECEMBER, 2011
DATE REPORTED: MARCH, 2012

	ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS % PASS						ATTERBERG LIMITS (%)					CORROSION TEST RESULTS					SUBSTRUCTURE ENVIRONMENTAL CLASSIFICATION	
STRATUM NO.	No. OF TESTS	% ORGANIC	No. OF TESTS	% MOISTURE CONTENT	No. OF TESTS	% PASSING 10 MESH	% PASSING 40 MESH	% PASSING 60 MESH	% PASSING 100 MESH	% PASSING 200 MESH	No. OF TESTS	LIQUID LIMIT	PLASTICITY INDEX	AASHTO GROUP	DESCRIPTION	No. OF TESTS	pH	RESISTIVITY OHM-CM	CHLORIDES PPM	SULFATE PPM	CONCRETE	STEEL
1	3	3-5	19	2-25	32	82-100	54-98	24-86	10-38	3-9	-	-	-	A-3	LIGHT GRAY TO DARK BROWN FINE SAND TO FINE SAND WITH SILT	7	5.8 - 7.0	37450 - 92890	25.8 - 78.6	10 - 18	SA-EA	MA-EA
2	6	2-6	33	3-31	34	100	48-100	34-96	13-36	12-26	2	35-0	8-NP	A-2-4	BROWN TO DARK BROWN FINE SAND WITH SILT TO SILTY FINE SAND	2	4.9 - 6.3	1880 - 58140	63.2 - 275	14 - 785	SA-EA	MA-EA
3	-	-	24	10-34	32	100	73-98	43-86	18-59	12-33	8	32-64	7-28	A-2-5, A-2-6, A-2-7	LIGHT BROWN TO GRAY CLAYEY FINE SAND	-	-	-	-	-	-	-
4	-	-	5	14-37	7	99-100	76-96	61-89	24-80	42-75	2	70-90	50-62	A-7, A-7-5	LIGHT GRAY TO GRAY SANDY CLAY	-	-	-	-	-	-	-
5	3	7-48	3	17-368	3	99-100	75-95	61-72	25-65	15-54	-	-	-	A-8	DARK BROWN MUCKY FINE SAND TO MUCK/PEAT	-	-	-	-	-	-	-
6	1	6	1	18	1	100	94	73	29	15	-	-	-	A-3, A-2-4	DARK BROWN CEMENTED FINE SAND WITH SILT TO SILTY FINE SAND (Hardpan)	-	-	-	-	-	-	-

NOTES:

(1) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN FDOT SECTION 2-4. FOR FURTHER DETAILS SEE FDOT STANDARD SPECIFICATIONS SECTION 120-3.

(2) SOIL PARAMETER NOT TESTED DENOTED AS "-" ABOVE.

(3) ▼ INDICATES WATER TABLE WHERE ENCOUNTERED AT THE TIME OF SURVEY.

GNE INDICATES GROUNDWATER LEVEL NOT ENCOUNTERED AT THE TIME OF SURVEY.

▽ INDICATES ESTIMATED SEASONAL HIGH WATER LEVEL.

(4) REMOVAL OF PLASTIC MATERIAL OCCURING WITHIN THE ROADWAY SHALL BE ACCOMPLISHED IN ACCORDANCE WITH INDEX No. 500 UNLESS OTHERWISE STATED IN THE PLANS. THE MATERIAL UTILIZED IN EMBANKMENT CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDOT STANDARD INDEX No. 505.

(5) STRATA 1, 2 AND 6 SHALL BE TREATED AS SELECT (S) MATERIALS PER FDOT INDEX No. 505.

(6) STRATA 3 AND 4 SHALL BE TREATED AS PLASTIC (P) AND HIGH PLASTIC (HP) MATERIALS, RESPECTIVELY PER INDEX NOS. 500 AND 505.

(7) STRATUM 5 SHALL BE TREATED AS MUCK (M) MATERIALS PER INDEX NOS. 500 AND 505.

(8) ENVIRONMENTAL CLASSIFICATION:

SA INDICATES SLIGHTLY AGGRESSIVE.
MA INDICATES MODERATELY AGGRESSIVE.
EA INDICATES EXTREMELY AGGRESSIVE.

(9) NP NON-PLASTIC

VERIFICATION CHECKER: Green Check or Circle & Remark Incorrect — GNN Date: 04/24/12
REMARK INCORPORATION (Blue Highlight) — IAU Date: 04/25/12
CHECKED Corrected (Green) Change (Red) — GNN Date: 04/26/12

CHECKED Corrected (Yellow) Change (Red) — GNN Date: 04/23/12
CONCURRENCE, ORIGINATOR (Red Check) — IAU Date: 04/23/12
CHANGE INCORPORATION (Blue Highlight) — GNN Date: 04/24/12

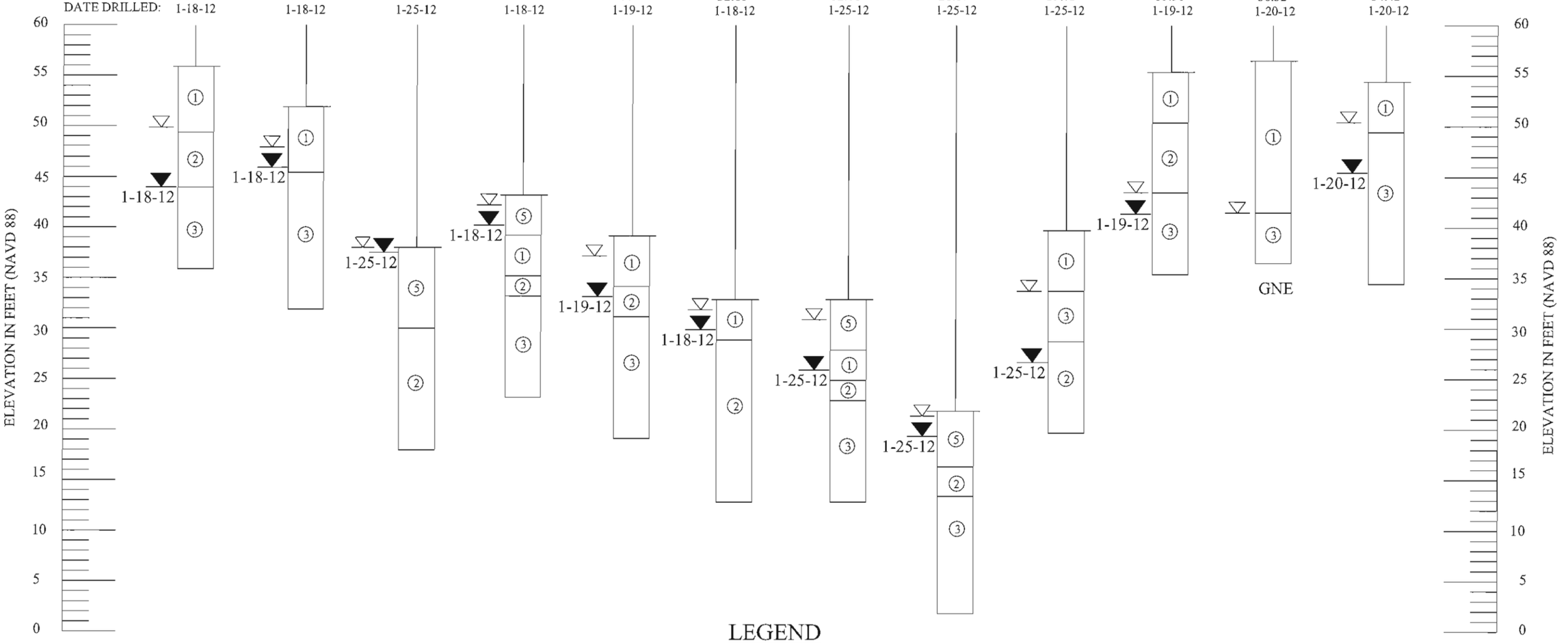
ORIGINATOR IAU Date 9/17/12

QC/QA REVIEW

Z:\Roadways\GNnadi\Wekiva Parkway\ATKINS_Lake County\Roadway\CADD

LAKE COUNTY	REVISIONS DATE / BY / DESCRIPTION	NES Civil Geotechnical Environmental Consulting Engineering	ENGINEER OF RECORD: GODWIN N. NNADI, P.E. #50637 NES 601 N. Hart Boulevard ORLANDO, FLORIDA 32818	SEAL:	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	SHEET TITLE: ROADWAY SOIL SURVEY	Project No.
					ROAD NAME: SR 429 / COUNTY: LAKE	PROJECT NAME: WEKIVA PARKWAY LINE & GRADE - Lake County East Section	Sheet No.

BORING NO.	AB-1	AB-2	AB-3	AB-4	AB-5	AB-6	AB-7	AB-8	AB-9	AB-10	AB-11	AB-12
STATION:	685+01	689+99	694+99	700+00	705+00	710+00	715+00	720+00	725+00	730+03	735+00	738+99
OFFSET:	0.65' RT	1.66' LT	3.73' RT	0.38' LT	0.50' LT	2.05' RT	0.01' RT	3.04' RT	1.02' RT	0.18' LT	0.19' LT	0.65' LT
GSE:	55.86'	51.89'	37.99'	43.20'	39.16'	32.86'	32.88'	21.87'	39.73'	55.38'	56.52'	54.42'
DATE DRILLED:	1-18-12	1-18-12	1-25-12	1-18-12	1-19-12	1-18-12	1-25-12	1-25-12	1-25-12	1-19-12	1-20-12	1-20-12



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

⑤ Dark brown mucky fine sand to muck/peat, (A-8)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

1-21-12 Groundwater Level on date shown

Estimated seasonal high groundwater level

GSE Ground Surface Elevation

GNE Groundwater Not Encountered

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAME	DATE
DRAWN BY:	DG	06-03-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES CONSULTING ENGINEERS
GODWIN N. NNADI, Ph.D., P.E.
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CERTIFICATE OF AUTHORIZATION NO. 8215

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

SHEET NO.

SHEET 2

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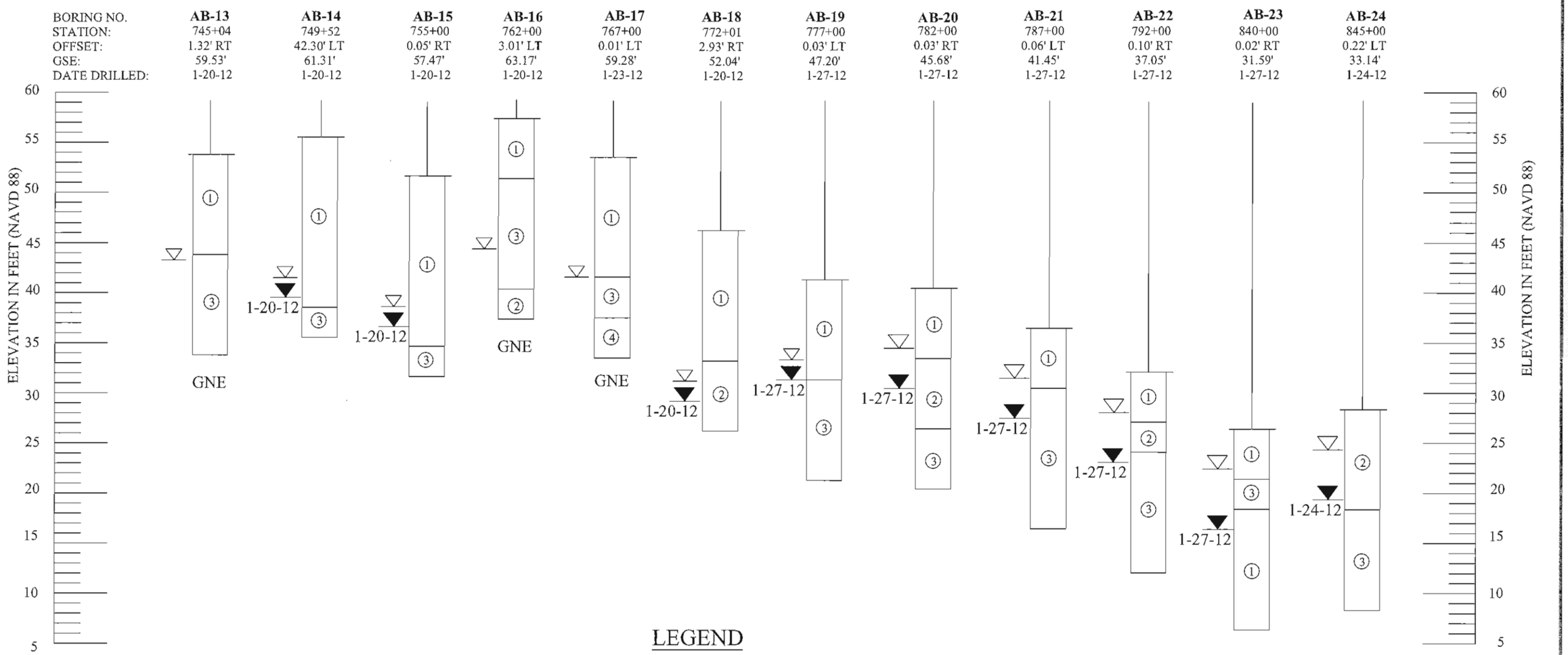

LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

④ Light gray to gray sandy clay, (A-7), (A-7-5)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

1-21-12 Groundwater Level on date shown

Estimated seasonal high groundwater level

GSE Ground Surface Elevation

GNE Groundwater Not Encountered

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DESIGNED BY:	DG	02-05-12
DRAWN BY:		
CHECKED BY:	N/A	N/A
APPROVED BY:	N/A	N/A

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CERTIFICATE OF AUTHORIZATION NO. 8214

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

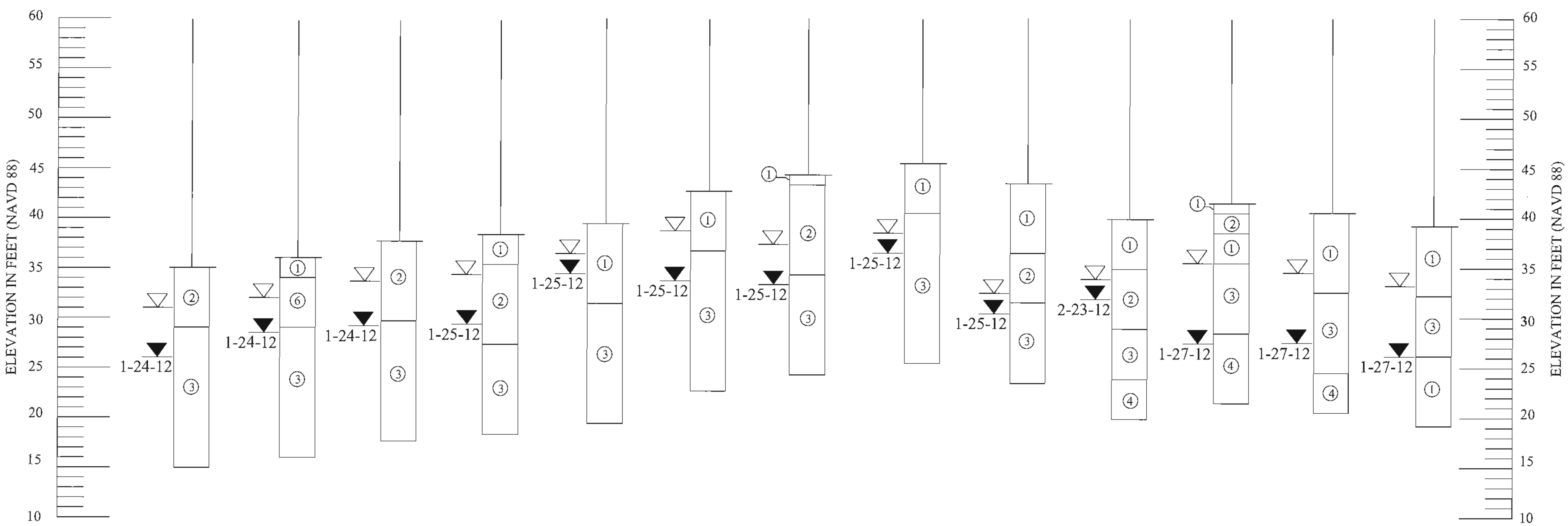
PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

SHEET NO.

SHEET 3

$USER$ mrk $DATE$ 2/3/12 $TIME$ 10:55 am $FILE$ Z:\Roadways\Orlando\Wekiva Parkway\ATKINS\Roadway\CADD\auger-borings.dgn

BORING NO.	AB-25	AB-26	AB-27	AB-28	AB-29	AB-30	AB-31	AB-32	AB-33	AB-34	AB-35	AB-36	AB-37
STATION:	850+00	855+00	860+00	865+00	870+00	875+00	880+00	885+00	889+99	895+00	898+00	902+00	907+00
OFFSET:	0.08' RT	0.33' RT	0.17' RT	0.05' LT	CL	0.14' RT	0.13' RT	0.08' RT	0.32' RT	0.11' LT	19.80' LT	9.98' LT	0.06' RT
GSE:	35.01'	36.00'	37.66'	38.33'	39.44'	42.72'	44.36'	45.50'	43.50'	39.91'	41.50'	40.54'	39.21'
DATE DRILLED:	1-24-12	1-24-12	1-24-12	1-25-12	1-25-12	1-25-12	1-25-12	1-25-12	1-25-12	2-23-12	1-27-12	1-27-12	1-27-12



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

④ Light gray to gray sandy clay, (A-7), (A-7-5)

⑥ Dark brown cemented fine sand with silt to silty fine sand (hardpan), (A-3), (A-2-4)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

▼ 1-21-12 Groundwater Level on date shown

▽ Estimated seasonal high groundwater level

GSE Ground Surface Elevation

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY:	DG	02-03-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES

GODWIN K. NNADI, Ph.D., P.E.
NADIC ENGINEERING SERVICES, INC.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

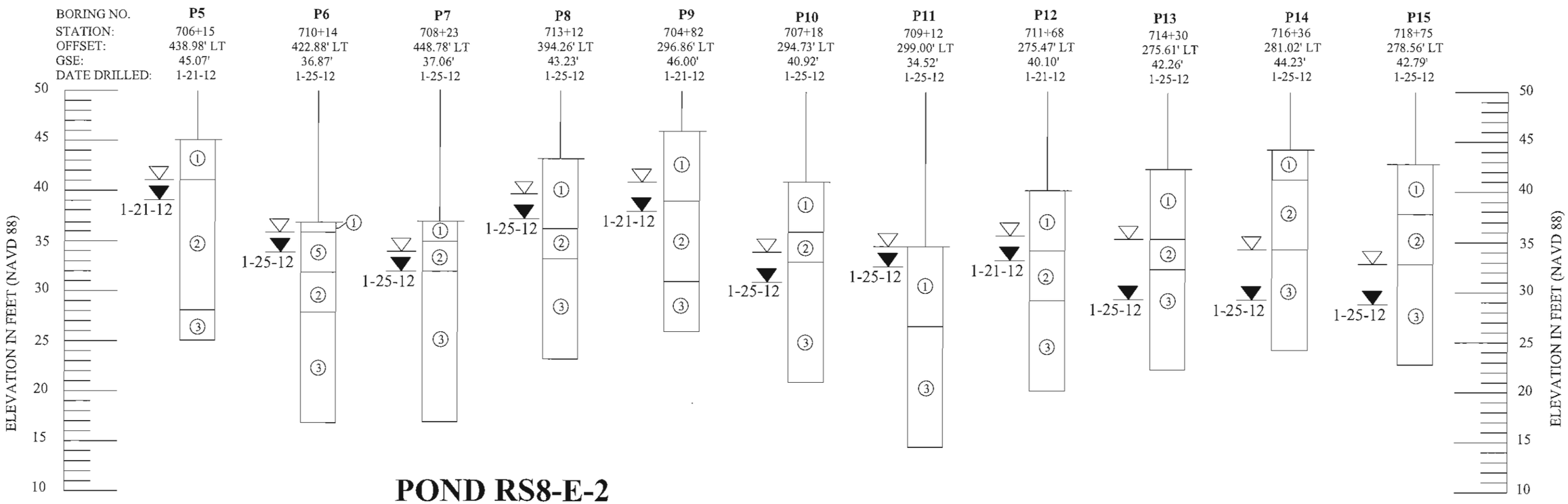
SHEET TITLE: REPORT OF AUGER BORINGS FOR ROADWAY

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

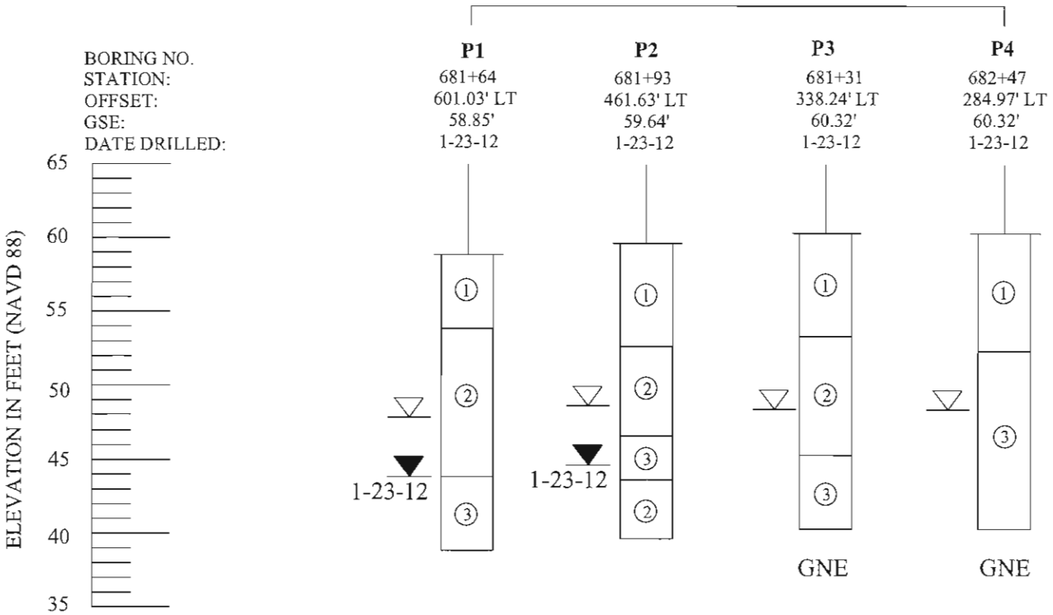
SHEET NO.

SHEET 4

POND RS8-E-1



POND RS8-E-2



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

⑤ Dark brown mucky fine sand to muck/peat, (A-8)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

1-21-12 Groundwater Level on date shown

Estimated seasonal high groundwater level

GSE Ground Surface Elevation

GNE Groundwater Not Encountered

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

		DATES
DRAWN BY:	BG	02-02-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES
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CERTIFICATE OF AUTHORIZATION NO. 9218

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS RS8-E-2 & RS8-E-1

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

SHEET NO.

SHEET 5

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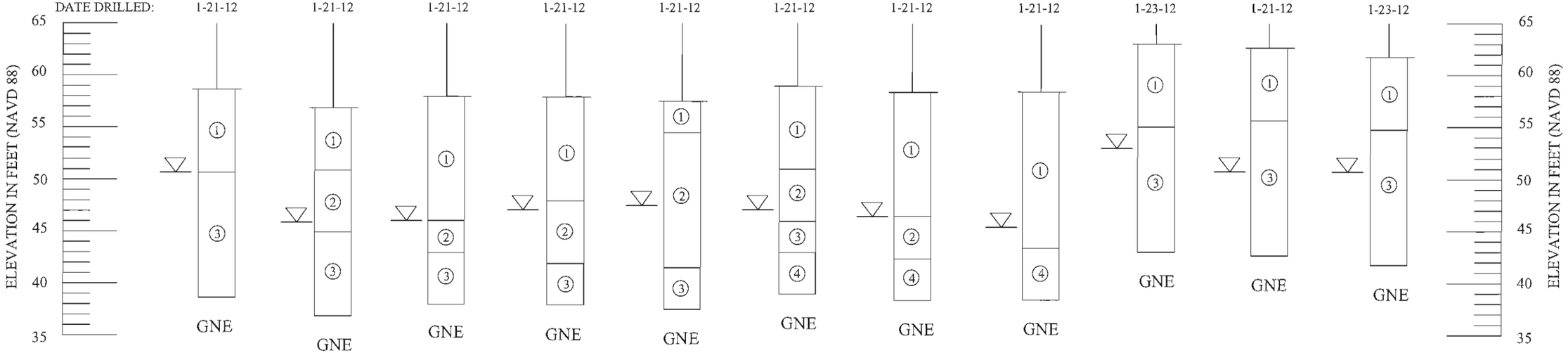
POND RS9-E-1

BORING NO.	P16	P17	P18	P19	P20	P21	P22	P23
STATION:	734+14	736+13	734+14	736+09	734+15	736+23	734+18	736+23
OFFSET:	659.79' LT	666.76' LT	521.49' LT	521.90' LT	380.42' LT	390.99' LT	246.74' LT	251.12' LT
GSE:	58.63'	56.83'	57.93'	57.89'	57.49'	58.96'	58.36'	58.41'
DATE DRILLED:	1-21-12	1-21-12	1-21-12	1-21-12	1-21-12	1-21-12	1-21-12	1-21-12

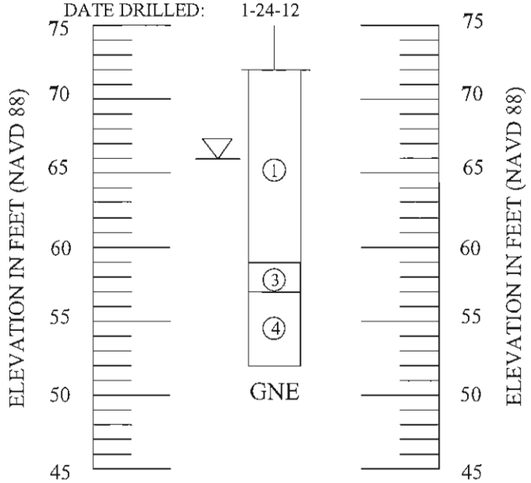


POND RS9-E-2

BORING NO.	P24	P25	P26
STATION:	748+76	749+30	750+62
OFFSET:	379.18' LT	244.87' LT	300.06' LT
GSE:	63.04'	62.66'	61.75'
DATE DRILLED:	1-23-12	1-21-12	1-23-12

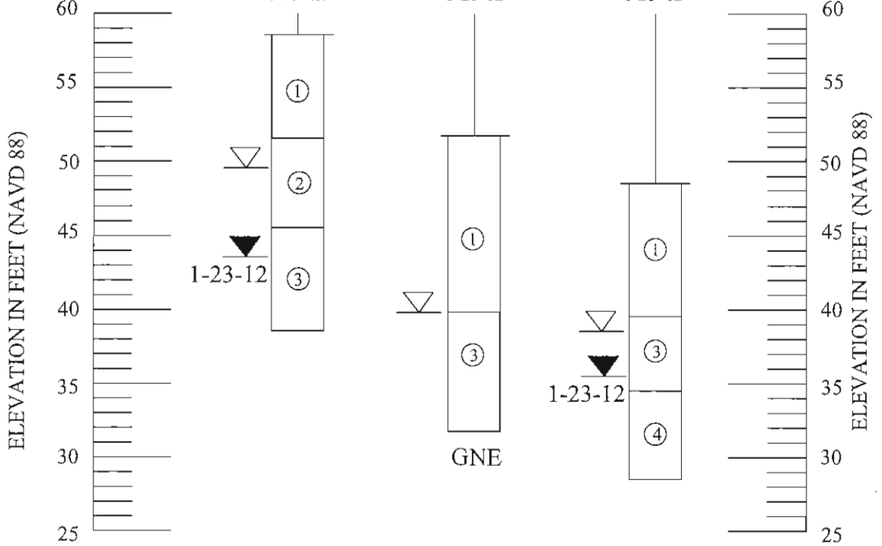
POND BW1A-E-1

BORING NO.	P27
STATION:	759+20
OFFSET:	266.91' LT
GSE:	71.98'
DATE DRILLED:	1-24-12



POND BW1-E-2

BORING NO.	P28	P29	P30
STATION:	770+03	771+86	771+93
OFFSET:	192.29' RT	172.04' RT	255.96' RT
GSE:	58.59'	51.78'	48.46
DATE DRILLED:	1-23-12	1-23-12	1-23-12



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

④ Light gray to gray sandy clay, (A-7), (A-7-5)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

1-21-12 Groundwater Level on date shown

Estimated seasonal high groundwater level

GSE Ground Surface Elevation

GNE Groundwater Not Encountered

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY:	DG	2-2-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES CONSULTING ENGINEERS
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CER CERTIFICATE OF AUTHORIZATION NO. 8216

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS RS9-E-1, RS9-E-2, BW1A-E-1 & BW1-E-2

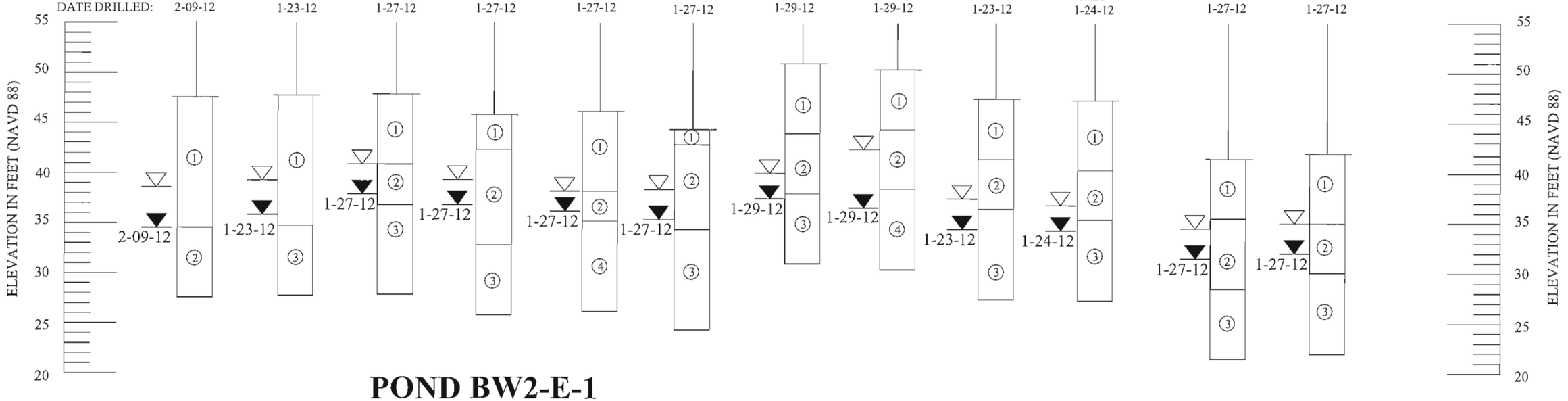
SHEET NO.

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

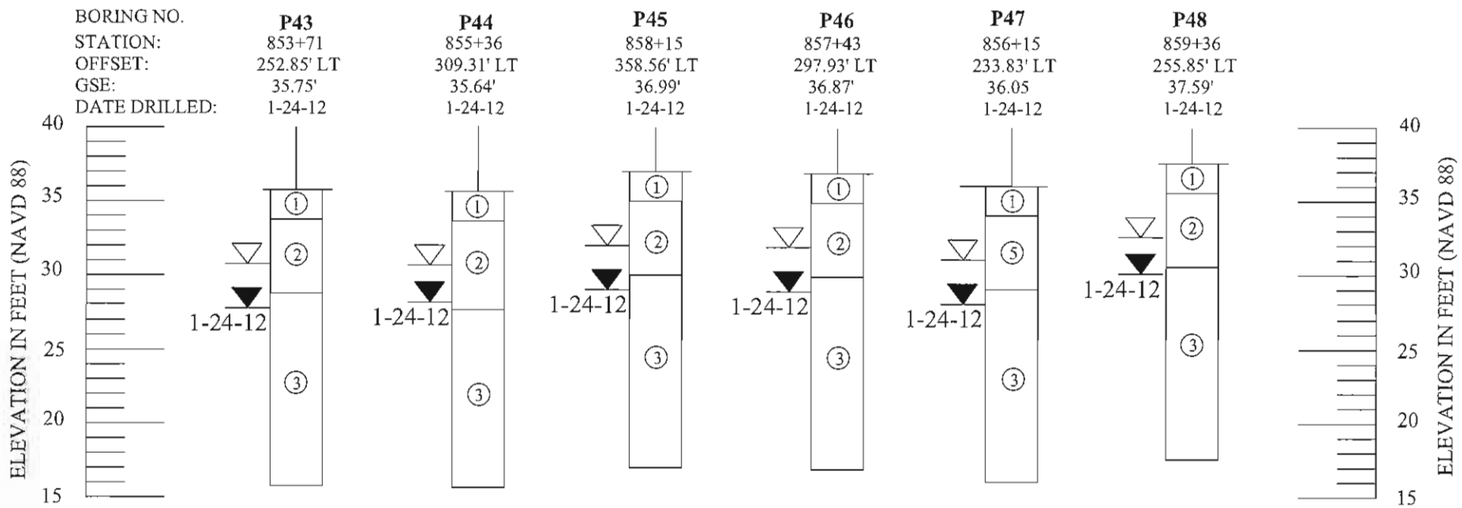
$USER$ dg $DATE$ 2/2/12 $TIME$ 1:55 pm $FILE$ Z:\Roadways\GN\nadi\Wekiva Parkway\ATKINS\Ponds\CADD\augerborings2.dgn

POND BW1-E-3

POND BW1-E-4



POND BW2-E-1



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

④ Light gray to gray sandy clay, (A-7), (A-7-5)

⑤ Dark brown mucky fine sand to muck/peat, (A-8)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

1-21-12 Groundwater Level on date shown

Estimated seasonal high groundwater level

GSE Ground Surface Elevation

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY:	BQ	02-02-12
CHECKED B		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES
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CERTIFICATE OF AUTHORIZATION NO. 8215

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS BW1-E-3&4 AND BW2-E-1

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

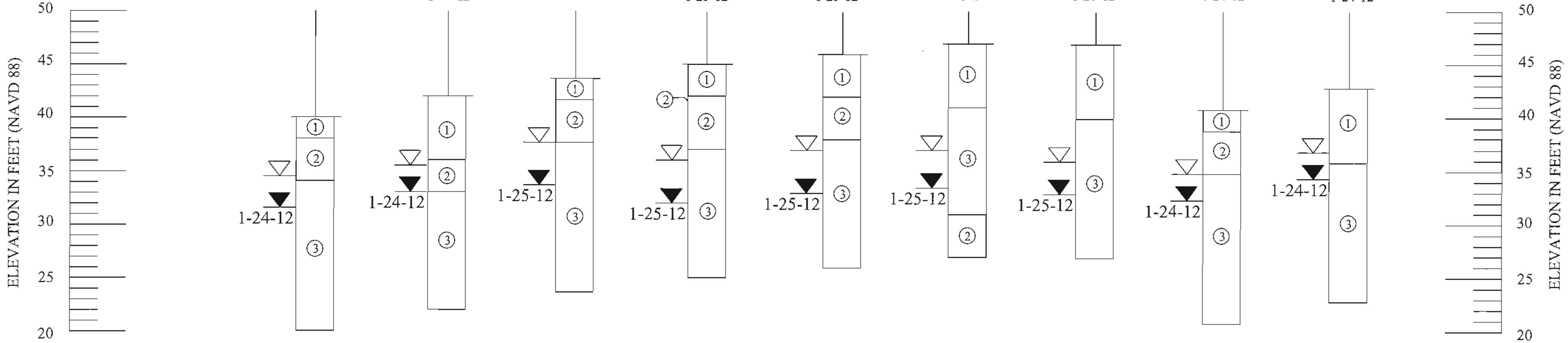
SHEET NO.

SHEET 7

USER mrk *DATE* 2/3/13 *TIME* 1:55 pm *FILE* 7:\Road...\GNnadi\Wekiva ...Parkway\ATKINS\Pond\CADD\augerborings.dgn

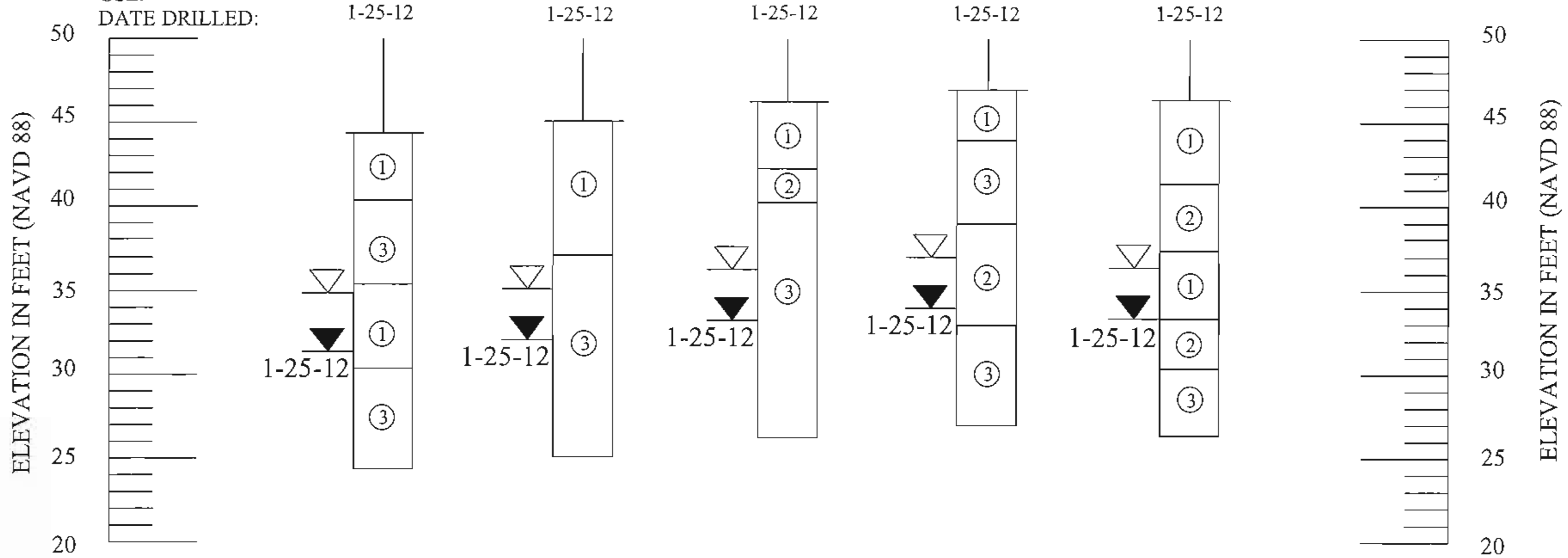
POND BW2-E-2

BORING NO.	P49	P50	P51	P52	P53	P54	P55	P56	P57
STATION:	867+47	869+60	871+77	873+79	875+95	878+68	880+41	868+60	870+79
OFFSET:	406.15' LT	420.56' LT	417.59' LT	427.62' LT	425.98' LT	374.22' LT	351.23' LT	299.52' LT	305.87' LT
GSE:	40.07'	42.03'	43.70'	45.09'	45.96'	46.98'	46.89'	40.79'	42.77'
DATE DRILLED:	1-24-12	1-24-12	1-25-12	1-25-12	1-25-12	1-25-12	1-25-12	1-24-12	1-24-12



POND BW2-E-2 (cont.)

BORING NO.	P58	P59	P60	P61	P62
STATION:	873+00	875+11	877+49	879+76	881+76
OFFSET:	311.90' LT	313.92' LT	310.48' LT	282.21' LT	270.24' LT
GSE:	44.40'	45.09'	46.25'	46.98'	46.37'
DATE DRILLED:	1-25-12	1-25-12	1-25-12	1-25-12	1-25-12



LEGEND

① Light gray to dark brown fine sand to fine sand with silt, (A-3)

② Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)

③ Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)

(A-3) A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination

▼ 1-21-12 Groundwater Level on date shown

▽ Estimated seasonal high groundwater level

GSE Ground Surface Elevation

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY:	DG	02-03-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES
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FL. REG. NO. 59637
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601 N. HART BOULEVARD
ORLANDO, FL 32818

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

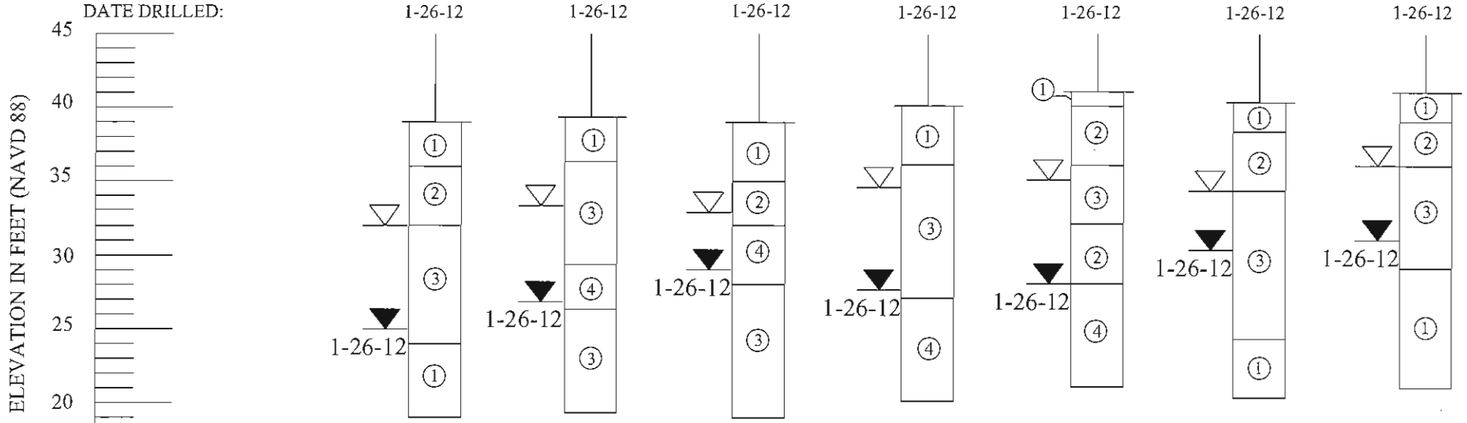
SHEET TITLE: REPORT OF AUGER BORINGS FOR POND BW2-E-2

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

SHEET NO.

POND BWE2-E-5

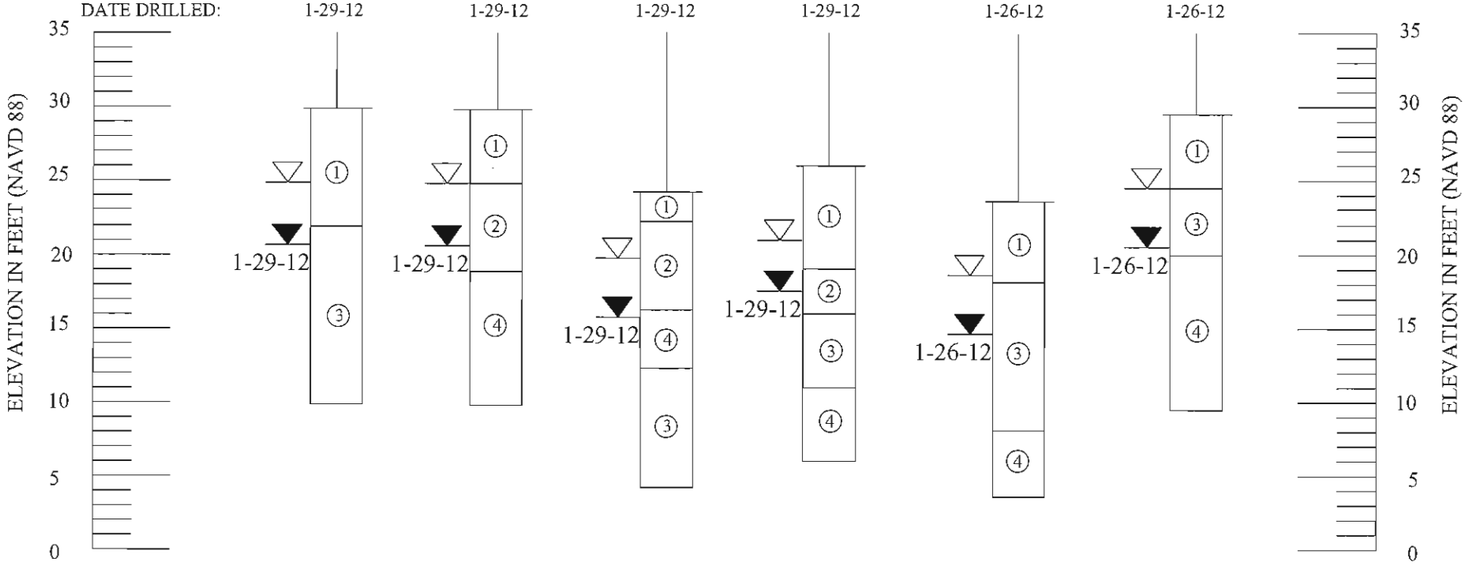
BORING NO.	P63	P64	P65	P66	P67	P68	P69
STATION:	893+81	895+64	897+40	895+83	894+39	896+95	896+16
OFFSET:	558.84' RT	522.92' RT	479.92' RT	666.74' RT	758.36' RT	725.76' RT	893.21' RT
GSE:	39.00'	39.57'	39.01'	40.14'	41.13'	40.40'	41.06'
DATE DRILLED:	1-26-12	1-26-12	1-26-12	1-26-12	1-26-12	1-26-12	1-26-12



POND WR1-E-4

POND WR1-E-5

BORING NO.	P70	P71	P72	P73	P74	P75
STATION:	910+81	910+74	912+44	912+31	914+43	914+46
OFFSET:	285.95' LT	464.36' LT	469.19' LT	289.94' LT	228.55' RT	416.48' RT
GSE:	29.84	29.76'	24.31'	25.98'	23.32'	29.47'
DATE DRILLED:	1-29-12	1-29-12	1-29-12	1-29-12	1-26-12	1-26-12



LEGEND

①	Light gray to dark brown fine sand to fine sand with silt, (A-3)
②	Brown to dark brown fine sand with silt to silty fine sand, (A-2-4)
③	Light brown to gray clayey fine sand, (A-2-5), (A-2-6), (A-2-7)
④	Light gray to gray sandy clay, (A-7), (A-7-5)
(A-3)	A.A.S.H.T.O.: Soil classification group symbol as determined by visual examination
1-21-12 ▼	Groundwater Level on date shown
▽	Estimated seasonal high groundwater level
GSE	Ground Surface Elevation

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
DRAWN BY:	DG	2-3-12
CHECKED BY:		
DESIGNED BY:	N/A	N/A
CHECKED BY:	N/A	N/A
APPROVED BY:		

NES GEOTECHNICAL ENTERPRISES, INC. CONSULTING ENGINEERING
GODWIN N. NNADI, Ph.D., P.E.
FL. REG. NO. 50637
NADIC ENGINEERING SERVICES, INC.
601 N. HART BOULEVARD
ORLANDO, FL 32818
PH (407) 521-1771 FAX (407) 521-1772
CERTIFICATE OF AUTHORIZATION NO. 9211

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE	431081-3-32-01

SHEET TITLE: REPORT OF AUGER BORINGS FOR PONDS BWE2-E-5, WR1-E-4&5

SHEET NO.

PROJECT NAME: WEKIVA PARKWAY- LINE & GRADE

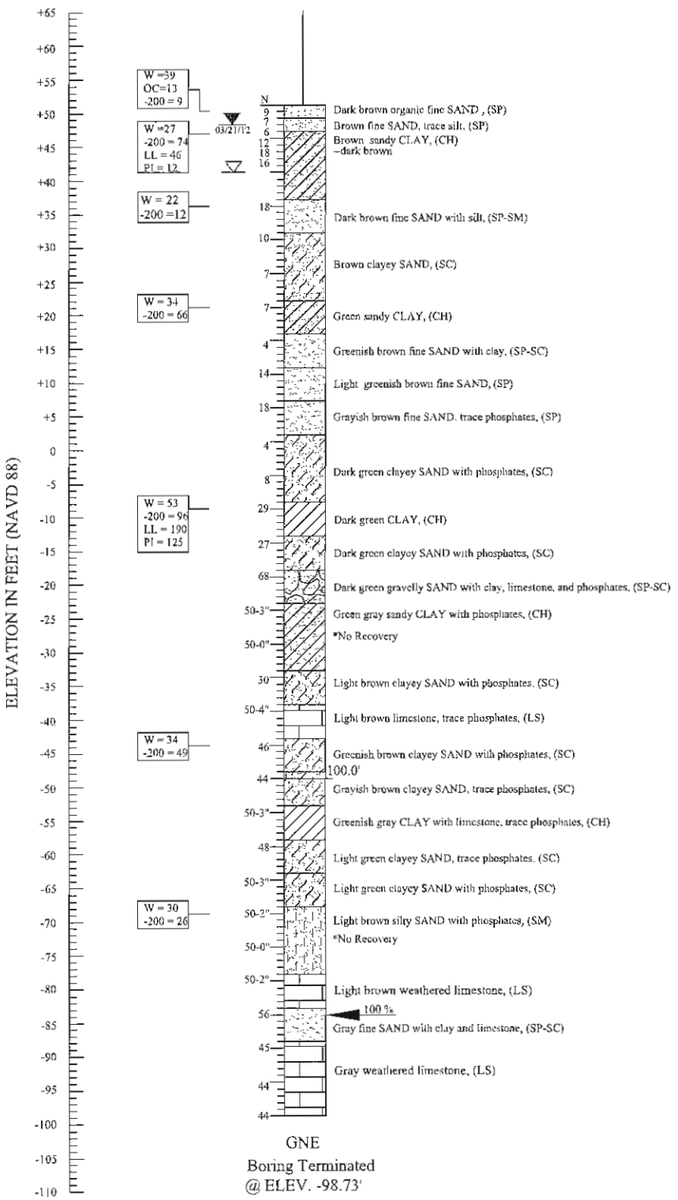
SHEET 9

$USER$ mrk $DATE$ 2/3/12 $TIME$ 10:37 AM $FILE$ Z:\Roadway\GNnad\Wekiva Parkway\ATKINS\Pond\CADD\augerbor...

Boring No:	S-1
Approximate Station:	739+94.8
Offset:	26' RT
Elevation:	51.27'
Date Drilled:	03/21/2012

NORTHING: 1629212.65

EASTING: 504085.74

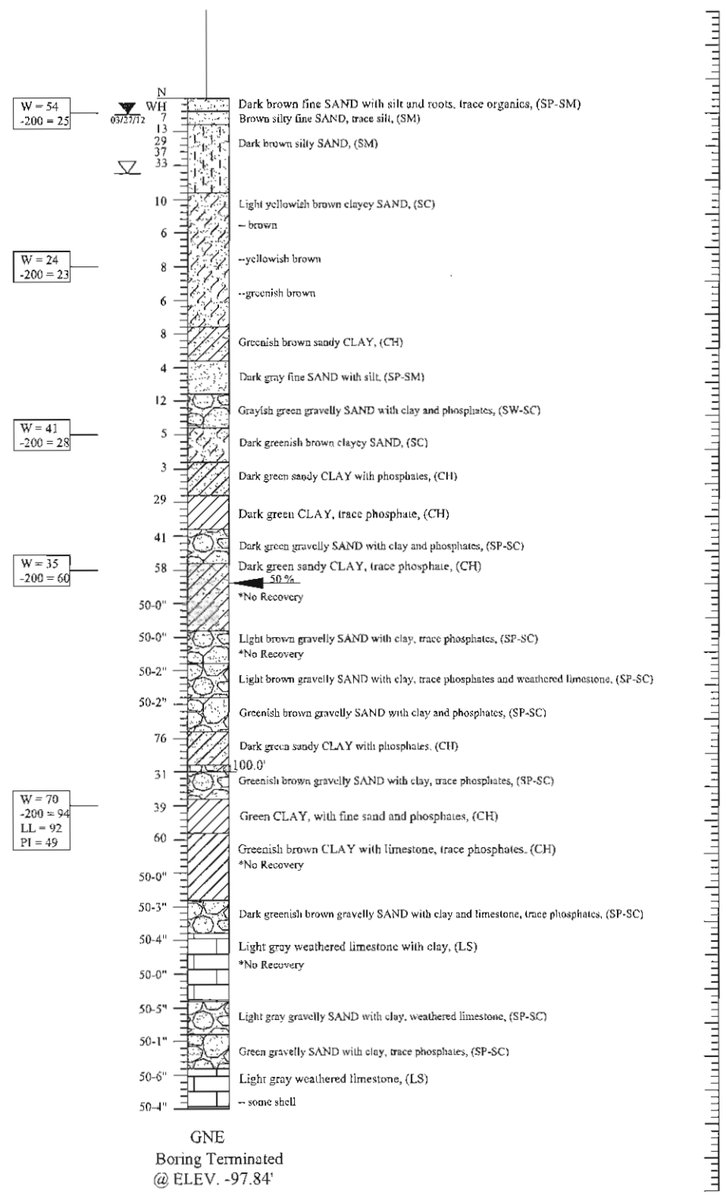


GNE
Boring Terminated
@ ELEV. -98.73'

	S-2
	741+82.8
	51.07' RT
	52.16'
	03/27/2012

NORTHING: 1629172.82

EASTING: 504270.58



GNE
Boring Terminated
@ ELEV. -97.84'

LEGEND

SAND | SANDY CLAY | LIMESTONE

CLAYEY SAND | CLAY | SILTY SAND

GRAVELLY SAND

(SP) Unified soil classification group symbol

Estimated seasonal high groundwater level

03/21/12 Groundwater level on date shown

GNE Gronndwater not encountered in top 10 feet

110.0' Depth to which NW casing was driven in feet

100 % Percent Loss of Circnlation of Drilling Fluid

recovery Recovery of Drilling Fluid

W =	Natural moisture content (%) (FM 1-T 265)
-200=	Percent passing no. 200 U.S. standard sieve (%)(FM 1-T 088)
LL =	Liquid Limit (%) (FM 1-T 089)
PI =	Plasticity Index (%) (FM 1-T 090)
OC =	Organic Content (%) (FM 1-T 267)

N Standard penetration resistance in blows per foot

Standard Penetration Test Data

Spoon Inside Dia.	1 3/8 in.
Spoon Ontside Dia.	2 in.
ASTM Standard Automatic Hammer	
Avg. Hammer Drop	30 in.
Hammer Weight	140 lbs.

NOTES

1. Plan view is preliminary for showing boring locations only and may not be indieative of final plans.
2. Substrface variations between borings should be anticipated as indicated in Section 2-4 of the Standard Specifications.

GRANULAR MATERIALS

RELATIVE DENSITY	SPT (BLOWS/FT.)
Very loose	Less than 3
Loose	3-7
Medium Dense	7-21
Dense	21-35
Very Dense	

SILTS AND CLAYS

CONSISTENCY	SPT (BLOWS/FT.)
Very soft	Less than 1
Soft	1-3
Firm	3-6
Stiff	6-11
Very Stiff	11-21
Hard	

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

	NAMES	DATES
Drawn by:	AGA	05-14-12
Checked by:	GNN	05-14-12
Designed by:	N/A	N/A
Checked by:	N/A	N/A
Approved by:	GNN	

ENGINEER OF RECORD:
NES
NADIC ENGINEERING SERVICES, INC.
601 N. HART BLVD.
ORLANDO, FL 32818
CERTIFICATE OF AUTHORIZATION NO. 00008214
DR. GODWIN N. NNADI P.E. NO. 50637

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

COUNTY	FPID PROJECT NO.
LAKE	R11032

SHEET TITLE:
REPORT OF SPT BORINGS - RELIC SINKHOLE

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- LAKE COUNTY

SHEET NO.

NOTICE: The official record of this plan sheet is the electronic file signed and sealed under rule 61G15-23.003, F.A.C.

Z:\Roadways\GNnadi\Wekiva Parkway\ATKINS_Lake County\Bridges\Acad