Preliminary Geotechnical Engineering Report for Structures

Tree Frog Court Bridge
Service Road Bridge
Wildlife Crossing No. 3
Wekiva River Road Bridge for
Wekiva Parkway (SR 429/SR 46) – Section 6 from
West of Old McDonald Road to River Oaks Circle
Lake and Seminole Counties, Florida

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

GAI Consultants, Inc.
618 E. South Street, Suite 700
Orlando, FL 32801

Attn: Mr. Stephen A. Boylan, P.E.
P: [407] 423-8398 (ext. 3083)
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Re: Preliminary Geotechnical Engineering Report for Structures
- Tree Frog Court Bridge
- Service Road Bridge
- Wildlife Crossing No. 3
- Wekiva River Road Bridge for
Wekiva Parkway (SR 429/SR 46) – Section 6 from
West of Old McDonald Road to River Oaks Circle
Lake and Seminole Counties, Florida
FPID: 238275-7-32-02
Terracon Project Number: H1135080

Dear Mr. Boylan:

Terracon Consultants, Inc. (Terracon) is pleased to present this preliminary geotechnical engineering report for the subject bridges proposed along the referenced project alignment. This evaluation was performed in general accordance with our Agreement dated June 20, 2013.

This preliminary report presents the findings of the subsurface exploration and provides preliminary geotechnical recommendations concerning the design of foundations for the proposed bridge construction. A more detailed evaluation is expected to be performed once loads are finalized and a preferred foundation alterative is selected.

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

Sincerely,
Terracon Consultants, Inc.
Certificate of Authorization Number 8830

DRAFT

Elias N. Jammal, P.E.
Senior Geotechnical Engineer
Florida PE #60126

DRAFT

Richard G. Acree, P.E.
Principal
Florida PE #53962

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FOR WEKIVA PARKWAY (SR 429/SR 46) FROM
WEST OF OLD McDONALD ROAD TO RIVER OAKS CIRCLE
LAKE AND SEMINOLE COUNTIES, FLORIDA
FPID: 238275-7-32-02

Terracon Project No. H1135080
December 12, 2014

1.0 INTRODUCTION

This preliminary geotechnical engineering report has been prepared for the Tree Frog Court Bridge, Service Road Bridge, Wildlife Crossing No. 3, and Wekiva River Road Bridge which are proposed along the Wekiva Parkway (SR 429/SR 46) alignment, in Lake and Seminole Counties, Florida. These bridges are part of the proposed improvements associated with 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 project bridge sites are shown on the Topographic Vicinity Maps included as Exhibits A-1, A-5, A-10, and A-15 in Appendix A. Separate reports are planned to be submitted for other components (roadway, drainage, bridges, and retaining walls) of the project. This preliminary report addresses an initial evaluation of foundations for the proposed bridges described above.

The purpose of these services is to provide information and preliminary geotechnical engineering recommendations relative to preliminary foundation design of the bridges.

2.0 PROJECT INFORMATION

2.1 Project Description

Item	Description
Site Layout	See Appendix A, Exhibits A-3, A-7, A-12, and A-17 (boring location plans).

Item	Description
Structure	The Tree Frog Court Bridge will include the construction of two single-span bridges. The total bridge length is about 94 feet. The Service Road Bridge includes the construction of two single-span bridges. The total bridge length of about 84 feet. Wildlife Crossing No. 3 consists of the construction of three single-span bridges, each approximately 100 feet in length. The Wekiva River Road Bridge will include the construction of two single-span bridges. The total bridge length is about 92 feet.
Pile Loads	Anticipated pile loading for each foundation type evaluated, is presented in Section 4.0 of this report.

2.2 Site Location and Description

Item	Description
Location	The Tree Frog Court Bridge area is located at the intersection of State Road 46 and Tree Frog Court. The bridge begins at about Station 758+31 and ends near Station 759+25, referencing the centerline of construction of State Road 429. The Service Road Bridge area is located along proposed State Road 429 from about Station 865+51 to Station 866+35, referencing the centerline of construction of State Road 429. Wildlife No. Crossing 3 area is located along proposed State Road 429 from about Station 884+50 to Station 885+50, referencing the centerline of construction of State Road 429. The Wekiva River Road Bridge area is located at the intersection of State Road 46 and Wekiva River Road. The bridge begins at about Station 899+46 and ends near Station 900+38, referencing the centerline of construction of State Road 429.
Existing Topography	The Tree Frog Court Bridge, Service Road Bridge, Wildlife Crossing No. 3, and Wekiva River Road Bridge areas are relatively flat. The USGS topographic quadrangle maps "Sorrento, Florida" and "Sanford SW, Florida" depict the ground surface elevations near +65 feet, NGVD for the Tree Frog Court Bridge area; near +40 feet, NGVD for the Service Road Bridge area; near +45 feet, NGVD for the Wildlife Crossing No. 3 area; and near +40 feet, NGVD for the Wekiva River Road Bridge area.
Surface Water	The USGS topographic quadrangle maps "Sorrento, Florida" and "Sanford SW, Florida" depict wetland areas to the west and south of the Tree Frog Court Bridge area. The Service Road Bridge area is depicted to have wetland areas to the northwest and southeast. The Wildlife Crossing No. 3 area is depicted to have a wetland area to the south. The Wekiva River Road Bridge are is depicted to have wetland areas to the southwest and northeast.

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 at the Tree Frog Court Bridge, Service Road Bridge, Wildlife Crossing No. 3, and Wekiva River Road Bridge sites. Descriptions of the mapped soil units are included in Appendix A as Exhibit A-19. 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 Exhibits A-2, A-6, A-11, and A-16).

3.2 Fieldwork Program

Standard Penetration Test (SPT) borings were performed within the areas of the proposed Tree Frog Court Bridge, Service Road Bridge, Wildlife Crossing No. 3, and Wekiva River Road Bridge sites. The designations and depths of the borings performed at each bridge site are summarized below:

Proposed Bridge Site	SPT Boring Numbers	Performed Boring Depths
Tree Frog Court Bridge	TFC-B1 through TFC-B3	75 to 110 feet
Service Road Bridge	SR-B1 through SR-B4	110 feet
Wildlife Crossing No. 3	WL3-B1 through WL3-B6	100 to 112.5 feet
Wekiva River Road Bridge	WRD-B1 through WRD-B3	100 to 105 feet

Profiles of the borings along with a boring location plan for each bridge site are included in Appendix A of this report. Nadic Engineering Services (NES) performed borings at the Tree Frog Court Bridge (designated boring TB-4) and Wekiva River Road Bridge (designated boring TB-12) areas, for the Line & Grade Study. The boring profiles are included in Appendix C of this report.

3.3 Typical Profile

Based on the results of the borings, subsurface conditions at the project areas can be generalized as follows:

Tree Frog Bridge:

Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/ Density
36 to 41	Fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), clayey fine sand (SC)	Very loose to medium dense
75 to 88	Silty fine sand (SM), clayey fine sand (SC), with varying amounts of dolostone, cemented sands, and phosphates	Very loose to very dense
110 (maximum boring termination depth)	Weathered Limestone and Limestone	Dense to very dense

Stiff sandy clay (CL) was also encountered in Boring TFC-B1 at an approximate depth of 13 to 18 feet; and in Boring TFC-B3 at approximate depths of 13 to 16 feet and 26 to 33 feet below the existing ground surface. Weathered limestone and limestone was only encountered at Boring TFC-B3 from an approximate depth of 88 feet to the boring termination depth of about 110 feet.

Service Road Bridge:

Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/ Density
28 to 48	Fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), clayey fine sand (SC)	Loose to medium dense
83 to 91	Fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), clayey fine sand (SC), with varying amounts of cemented sands, shell, and phosphates	Very loose to very dense
110 (maximum boring termination depth)	Silty fine sand (SM), clayey fine sand (SC), with varying amounts of cemented sands, dolostone, and phosphates	Dense to very dense

Very stiff clay (CL, CH) was also encountered in Borings SR-B2 and SR-B4 at varying thicknesses between approximate depths of 66 and 88 feet; and in Boring SR-B3 very soft clay was encountered at varying thicknesses between approximate depths of 36 and 43 feet below the existing ground surface.

Wildlife Crossing No. 3:

Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/ Density
31 to 51	Fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), clayey fine sand (SC)	Very loose to dense
81 to 93	Silty fine sand (SM), clayey fine sand (SC), sandy clay and clay (CL) (CH), silt (ML) (MH), with varying amounts of shell, phosphates, and occasional cemented sands	Very loose to dense / very soft to hard
112.5 (maximum boring termination depth)	Silty fine sand (SM), clayey fine sand (SC), dolostone, with varying amounts of cemented sands and phosphates	Dense to very dense

Wekiva River Road Bridge:

Approximate Depth to Bottom of Stratum (feet)	Material Description	Consistency/ Density
28	Fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), clayey fine sand (SC)	Loose to medium dense
81	Silty fine sand (SM), clayey fine sand (SC), clay (CL) (CH), with varying amounts of shell, and occasional phosphates and cemented sands	Very loose to dense / soft to hard
105 (maximum boring termination depth)	Silty fine sand (SM), clayey fine sand (SC), dolostone with varying amounts of cemented sands and phosphates	Dense to very dense

Conditions encountered at each boring location are indicated on the individual boring profiles. Stratification boundaries on the boring profiles represent the approximate location of changes in soil types; in-situ, the transition between materials may be gradual. Details for each of the borings can be found on the boring profiles in Appendix A of this report. Descriptions of our field exploration are included as Exhibit A-20 in Appendix A.

3.4 Groundwater

The boreholes were observed during drilling for the presence and level of groundwater. Groundwater was observed in a majority of the borings ranging from existing grade to a depth of about 7 feet below existing grade. A few borings (TFC-B2, TFC-B3, SR-B2) did not encounter groundwater to a depth of 10 feet and are designated *GNE-10'* adjacent to the boring profiles.

It should be recognized that fluctuations of the groundwater table will occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. In addition, perched water can develop within higher permeability soils overlying less permeable soils. Therefore, groundwater levels during construction or at other times in the future may be higher or lower than the levels indicated on the boring profiles.

We estimate that during the normal wet season with rainfall and recharge at a maximum, groundwater levels will range from existing grade to a depth of about 7 feet below existing grade. Our estimates of the seasonal groundwater conditions are based on the USDA Soil Survey, available survey data, the encountered soil types, recent weather conditions, and the encountered water levels.

These seasonal water table estimates do not represent the temporary rise in water table that occurs immediately following a storm event, including adjacent to other stormwater management facilities or water bodies. The seasonal high water table may vary from normal when affected by extreme weather changes, localized or regional flooding, karst activity, future grading, drainage improvements, or other construction that may occur on our around the site following the date of this report.

4.0 PRELIMINARY RECOMMENDATIONS FOR DESIGN

4.1 Geotechnical Considerations

The following preliminary 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 final structure locations or grades are significantly different from those previously described in this report, or if subsurface conditions different from those discussed by the borings are encountered during construction, we should be notified immediately so that we might review and modify, if necessary, the following recommendations. Once final loads are known and a preferred pile type is selected, a more detailed foundation evaluation is expected to be performed.

4.2 Foundation Alternatives

Based on the subsurface conditions at the site, deep pile foundation systems appear to be the most feasible foundation alternative for the construction of the proposed bridges, with respect to geotechnical engineering issues. A shallow foundation (spread footings) alternative was not considered for the bridge structures. A drilled shaft foundation was also not considered since drilled shafts are typically used in scenarios where relatively shallow dense soil/rock strata is present, which was not consistently the case at these sites. Thus, the 18 and 24-inch square prestressed concrete pile (PCP), 20-inch steel pipe pile, and the HP14x89 steel H-pile section were evaluated.

4.3 Concrete and Steel Pile Foundations

The FDOT computer model FBDeep was used to evaluate estimated Davisson ultimate capacities for the 18 and 24-inch square prestressed concrete pile (PCP), the 20-inch steel pipe pile, and the HP14x89 steel H-pile section. The input soil parameters were obtained from the SPT borings performed for this preliminary evaluation. The Davisson capacities versus pile tip elevations for the various pile types are presented in **Appendix B,** along with the **FBDeep Computer Outputs**.

The Davisson capacities shown on the curves in **Appendix B** for the various pile sections can be used to find approximate tip elevations and estimate pile lengths for the driven piles using the following formula:

$$\textit{Nominal Bearing Resistance (NBR)} \geq \frac{\textit{Factored Design Load + Net Scour + Downdrag}}{\Phi}$$

Where Φ is a resistance factor and
Φ = 0.75 with static load testing.
Φ = 0.65 with PDA and CAPWAP analysis of test piles.

4.4 Preliminary Pile Tip Estimates

Our estimate of driven pile lengths was based on static pile analysis. The actual driven lengths will be a function of the actual field driving behavior. The driving system used should be a proper type and have sufficient hammer energy in accordance with Specification Section 455.

Test piles with dynamic load tests are anticipated for the bridge structure. Test pile locations should be shown on the foundation layout sheet. We recommend that piles be driven prior to the construction of the proprietary retaining wall system.

The estimated preliminary pile tip elevations are based on review of the borings, our pile capacity analyses, geotechnical engineering judgment, and our understanding of criteria for pile bearing requirements in accordance with the FDOT specifications.

Set-checks and/or restrikes may be required for some of the piles. A note should be added to the plans to alert the Contractor to anticipate that set-checks and re-drives will be required.

Based on the FDOT Structures Design Guidelines, the maximum pile driving resistance for an 18-inch PCP should not exceed 300 tons; and the maximum pile driving resistance for a 24-inch PCP should not exceed 450 tons. However, due to potential difficulties with driving the piles and the potential for pile damage, the maximum pile driving resistances for the concrete piles should be limited. For purposes of preliminary design, the following NBR values were evaluated:

- 240 tons for the 18-inch pile;
- 360 tons for the 24-inch pile;
- 240 tons was used for the 20-inch steel pipe pile;
- 175 tons was used for the HP14x89 steel H-pile.

The following table presents estimated pile tip elevations based on potential pile types and loads for the bridges. Once factored design loads and pile types are finalized, a more detailed foundation evaluation is expected to be performed.

Bridge Site	Pile Type							
	18-inch PCP		24-inch PCP		20-inch steel pipe pile		HP14x89	
	NBR (tons)	Pile Tip (feet)	NBR (tons)	Pile Tip (feet)	NBR (tons)	Pile Tip (feet)	NBR (tons)	Pile Tip (feet)
Tree Frog Court	240	+6 to -31	360	+5 to -34	240	-5 to -40	175	-15 to -40
Service Road	240	-50 to -55	360	-50 to -55	240	-55 to -60	175	-65 to -70
Wildlife No. 3	240	-30 to -50	360	-30 to -50	240	-40 to -55	175	-50 to -60
Wekiva River Road	240	-40 to -45	360	-40 to -45	240	-45 to -50	175	-55 to -60

4.5 Downdrag

Downdrag will need to be further evaluated once grades are finalized and a foundation type has been selected.

4.6 High Rebound

The potential for high rebound conditions may need to be evaluated at the bridge sites. High rebound typically occurs when driving displacement-type piles (solid concrete, closed-end steel or concrete pile, "plugged" pipes, etc.) into saturated soils (very stiff to hard silts/clays). High rebound conditions may adversely affect pile driveability and may affect the assessment of the pile's bearing capacity. To avoid or to account for potential high rebound conditions, this may include:

- Preforming to a depth below the high rebound soils,
- Indicating a minimum pile tip elevation below the high rebound soils,
- Using a low-displacement pile such as an H-pile, and/or
- Using a pile driving system with a larger ram and a shorter stroke.

4.7 Noise/Vibration

Noise and vibration caused by pile driving should be considered for this project. All reasonable precautions to prevent damage to nearby, existing structures in accordance with Section 455 of the FDOT Specifications shall be taken.

4.8 Pile Group Effects

No reduction of the individual pile capacities will be required if piles are spaced center to center at three times width or greater. The pile caps usually contribute to the overall bearing capacity of the pile group, provided they are supported on competent soil outside the outer perimeter of the group. However, we do not recommend taking credit for this additional capacity because of potential for loss of soil cover at the pile cap.

4.9 Pile Data Table

Once final loads and pile types are available, information for a pile data table for incorporation into the project plans can be provided.

4.10 Environmental Classification

Two (2) soil samples were obtained, from the SPT borings, at each of the bridge sites for corrosion series testing to determine subsurface environmental conditions. Corrosion tests were performed in accordance with FDOT Structures Design Guidelines. Testing included pH, chlorides, sulfates and resistivity tests. The environmental classification for the substructures generally ranged from slightly to moderately aggressive for use of concrete; and moderately to extremely aggressive for use of steel (pH ranged from 4.0 to 7.2). The corrosion series test results are summarized on **Exhibit A-22** in **Appendix A.**

Considering the results of the corrosion series testing, the Structures Design Guidelines indicate that steel piles will either need corrosion protection, a sacrificial steel thickness, or should not be used. This may also need to be coordinated with the State Geotechnical Engineer for use of steel piles.

4.11 Artesian Conditions

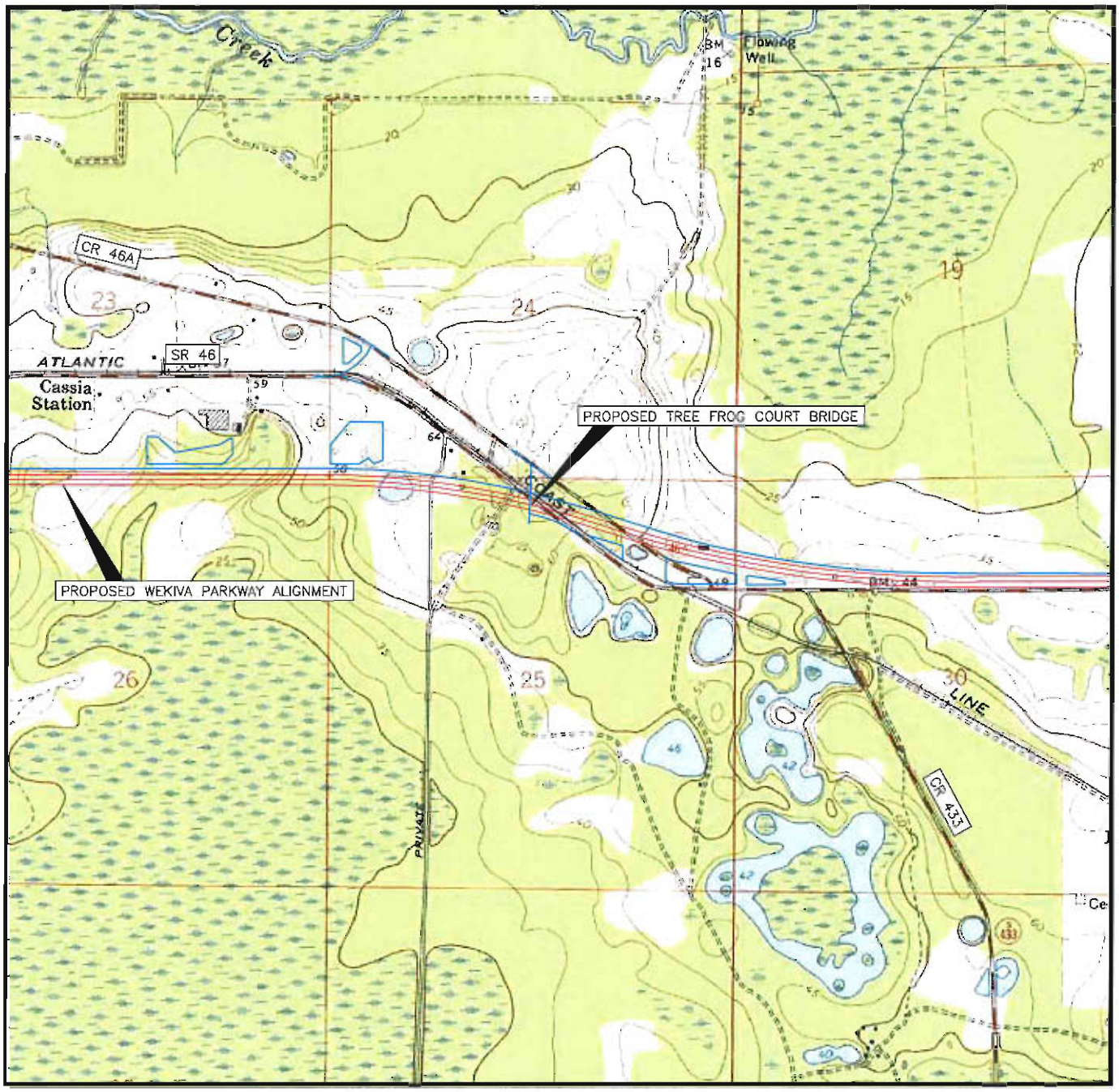
Based on review of the St. Johns River Water Management District potentiometric maps of the upper Floridan Aquifer for the project area, the potential artesian head elevation is estimated to range from +20 to +40 feet, NGVD between the bridge sites. The ground surface elevations at the bridge sites ranged from about +40 to +65 feet, NGVD. Artesian conditions are not anticipated to be a concern considering use of piles for each bridge foundation system.

5.0 GENERAL COMMENTS

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between borings, across the site, or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

APPENDIX A
FIELD EXPLORATION

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



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SECTION: 25
TOWNSHIP: 19 SOUTH
RANGE: 28 EAST

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ISSUED: 1965 REVISED: 1970
7.5 MINUTE SERIES (QUADRANGLE)

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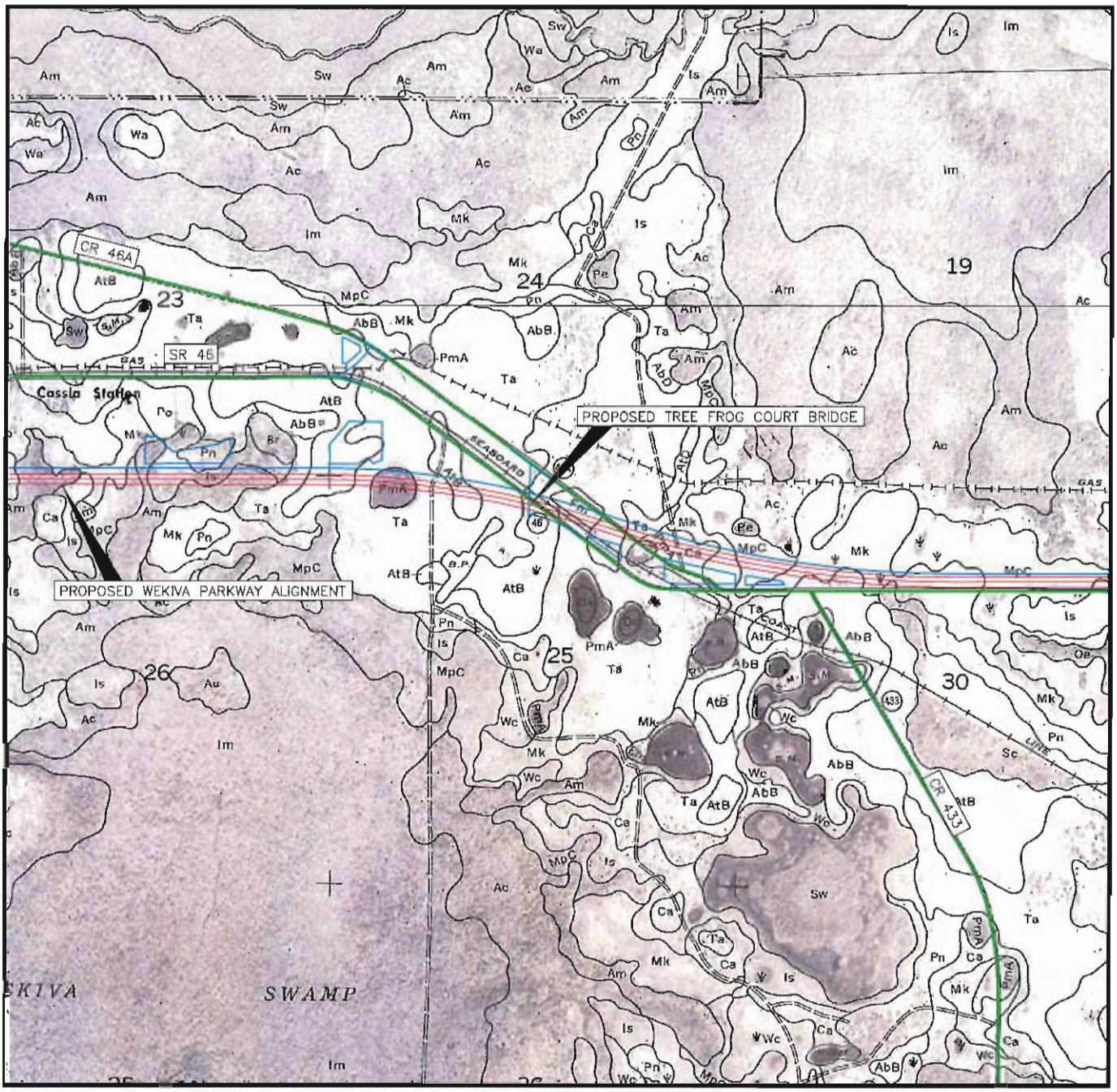
Project Mngr:	ENJ
Drawn By:	SW
Checked By:	ENJ
Approved By:	RGA

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-1
Date:	12-9-14

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

TOPOGRAPHIC VICINITY 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-1



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U.S.D.A. SOIL SURVEY FOR LAKE COUNTY, FLORIDA
ISSUED: 1971

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LAKE COUNTY SOILS MAP INDEX	
AtB	CANDLER--URBAN LAND COMPLEX, 0 TO 5 PERCENT SLOPES
Ta	TAVARES SAND, 0 TO 5 PERCENT SLOPES

SECTION: 25
TOWNSHIP: 19 SOUTH
RANGE: 28 EAST

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

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-2
Date:	8-11-14

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

EXHIBIT
A-2

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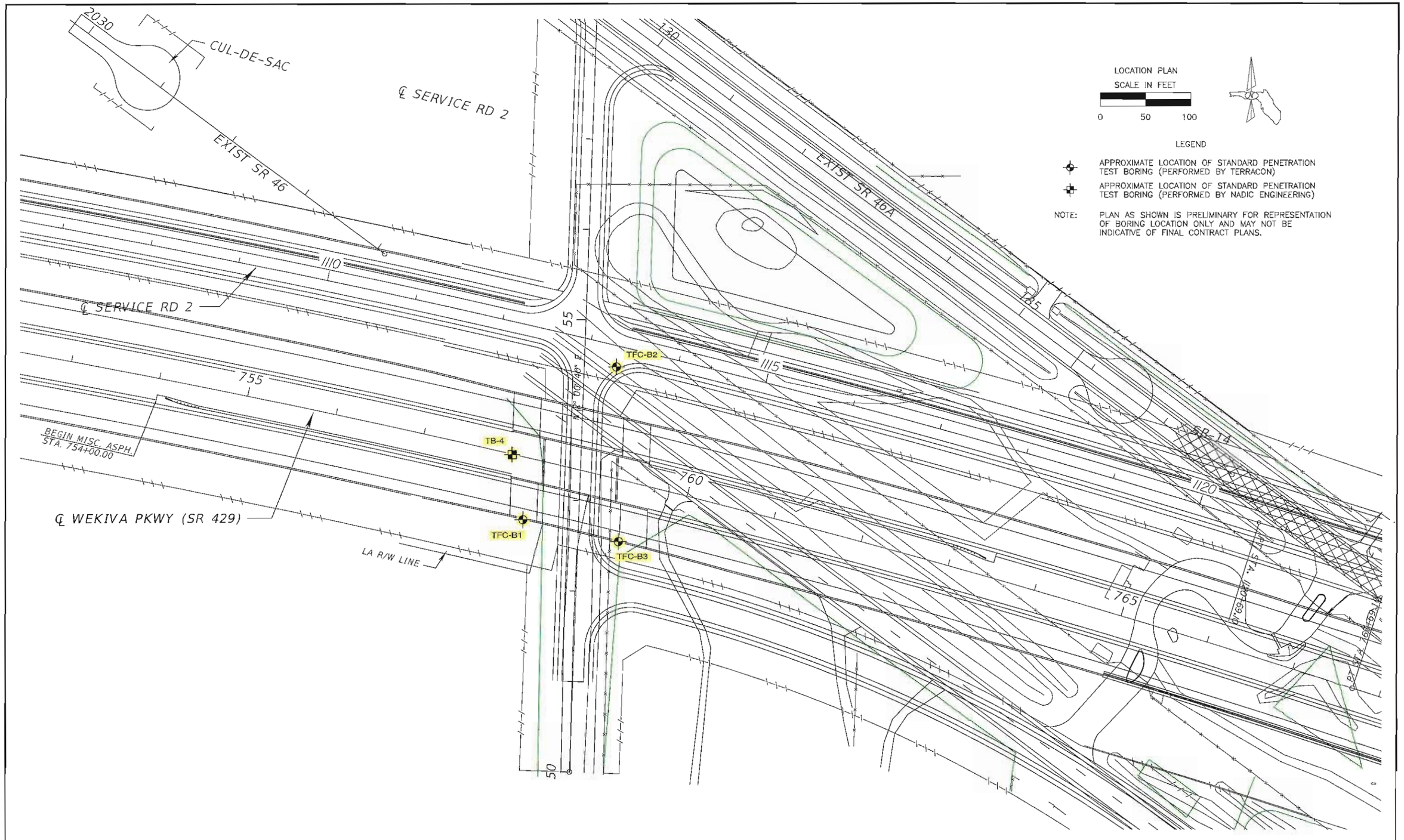


Dec01, 2014–2:17pm

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 12–1–14
CHECKED BY:	ENJ 12–1–14
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

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

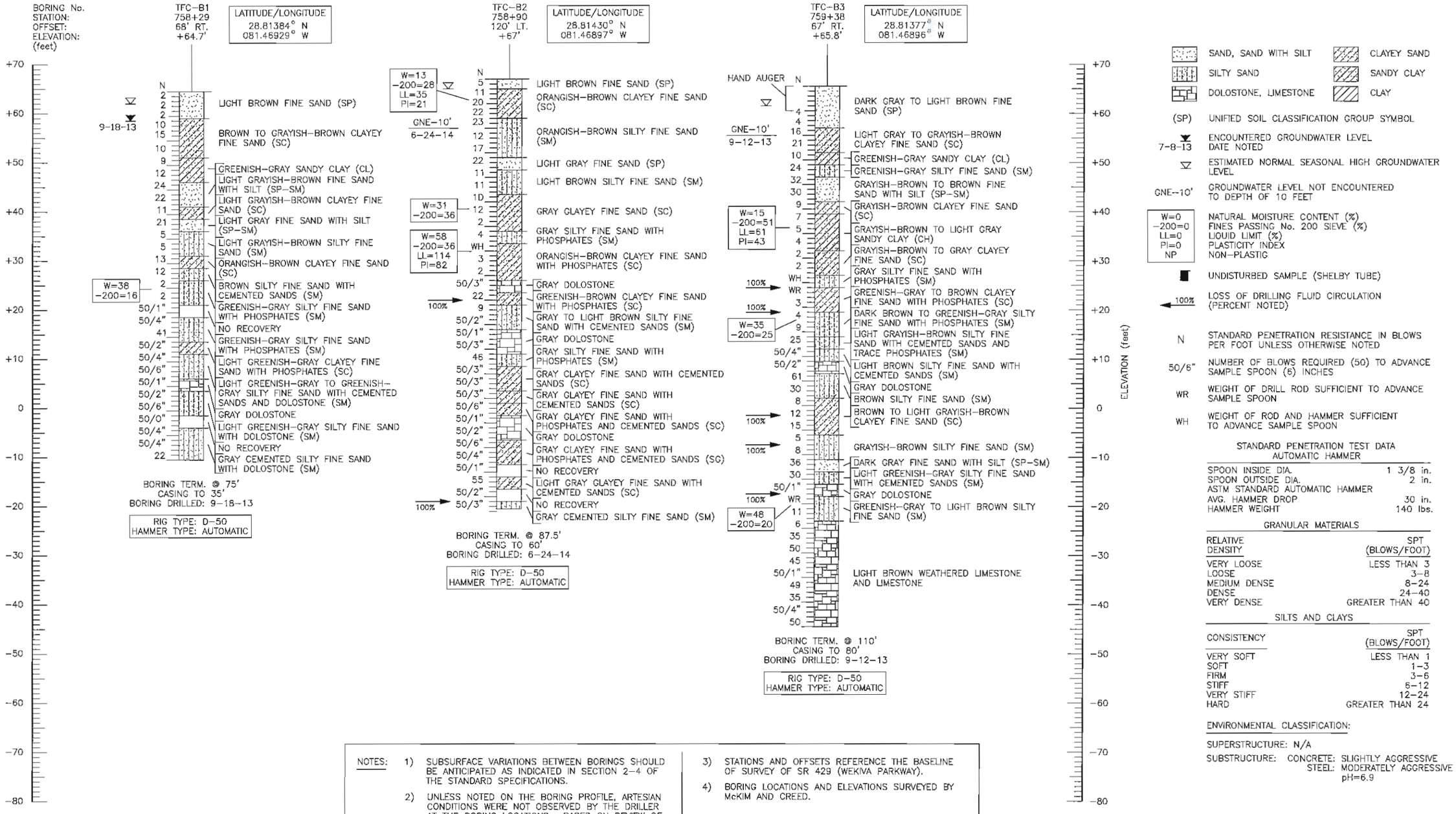
SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

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

REF. DWG. NO.

SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A–3



NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.
2) UNLESS NOTED ON THE BORING PROFILE, 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 +40 FEET, (NGVD).
3) STATIONS AND OFFSETS REFERENCE THE BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).
4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

TREE FROG COURT

Dec01, 2014-12:07pm

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 12-1-14
CHECKED BY: ENJ 12-1-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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

SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

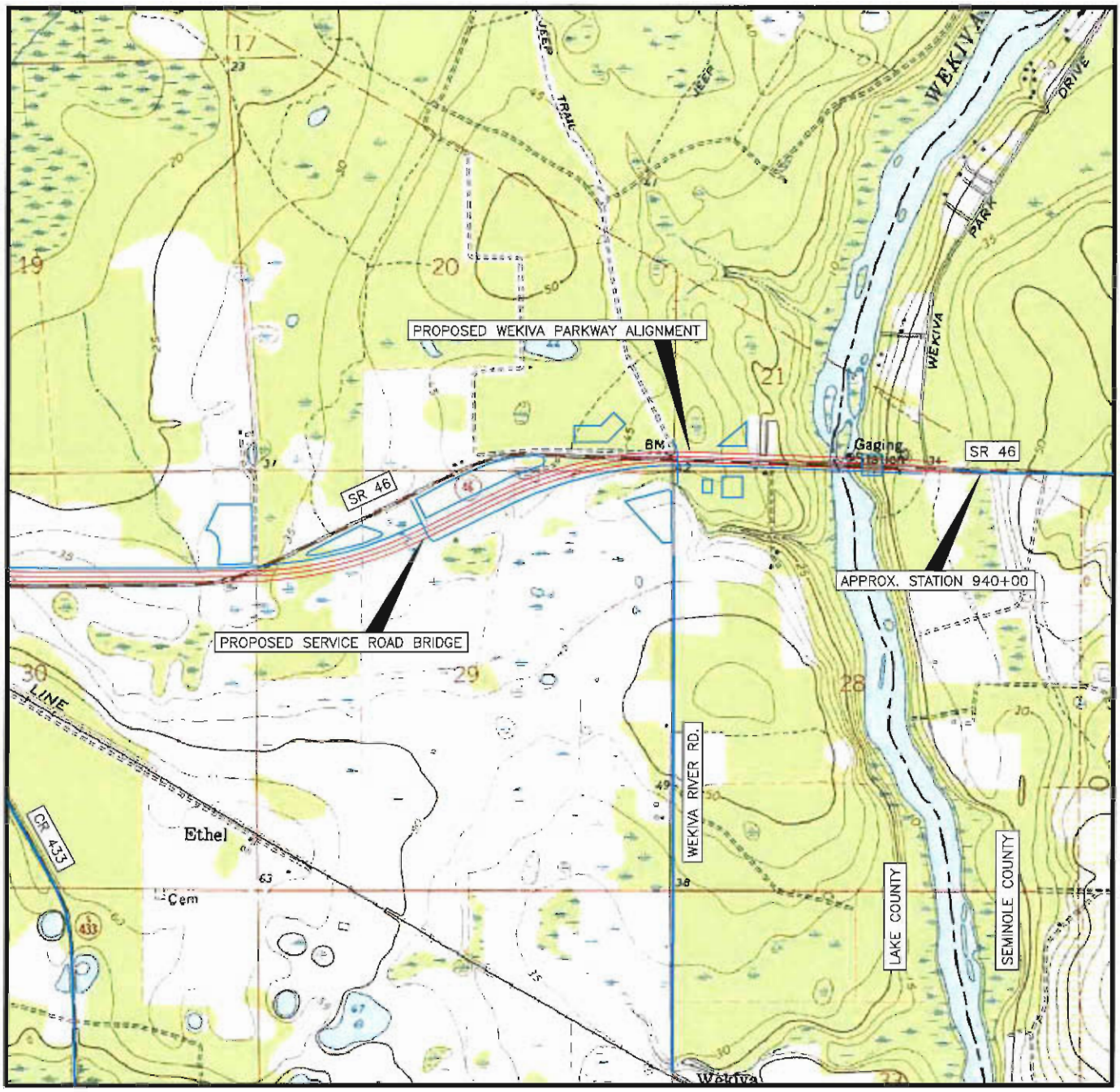
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-4

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



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MILES

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CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

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SECTION: 29
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SANFORD SW, FLORIDA
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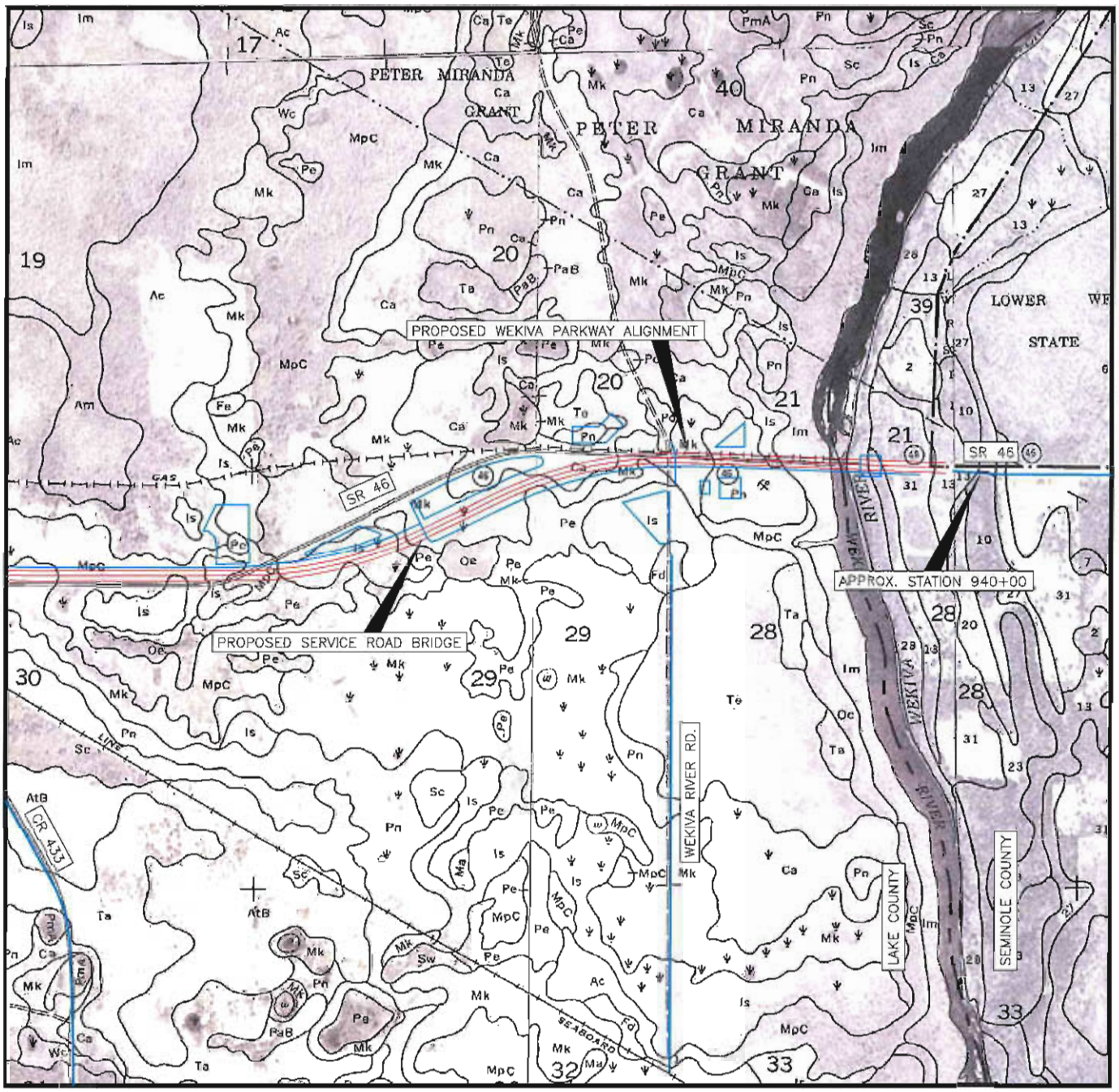
LAKE AND SEMINOLE COUNTIES, FLORIDA

EXHIBIT
A-5

Dec09, 2014–11:08am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports–Letters–Drafts to Clients)\Cad\service road\service road usgs.dwg



SCALE 1" = 2000'

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U.S.D.A. SOIL SURVEY FOR LAKE COUNTY, FLORIDA
ISSUED: 1971

N

LAKE COUNTY SOILS MAP INDEX	
Mk	MYAKKA SAND
Pe	PLACID SAND, DEPRESSIONAL

SECTION: 29
TOWNSHIP: 19 SOUTH
RANGE: 29 EAST

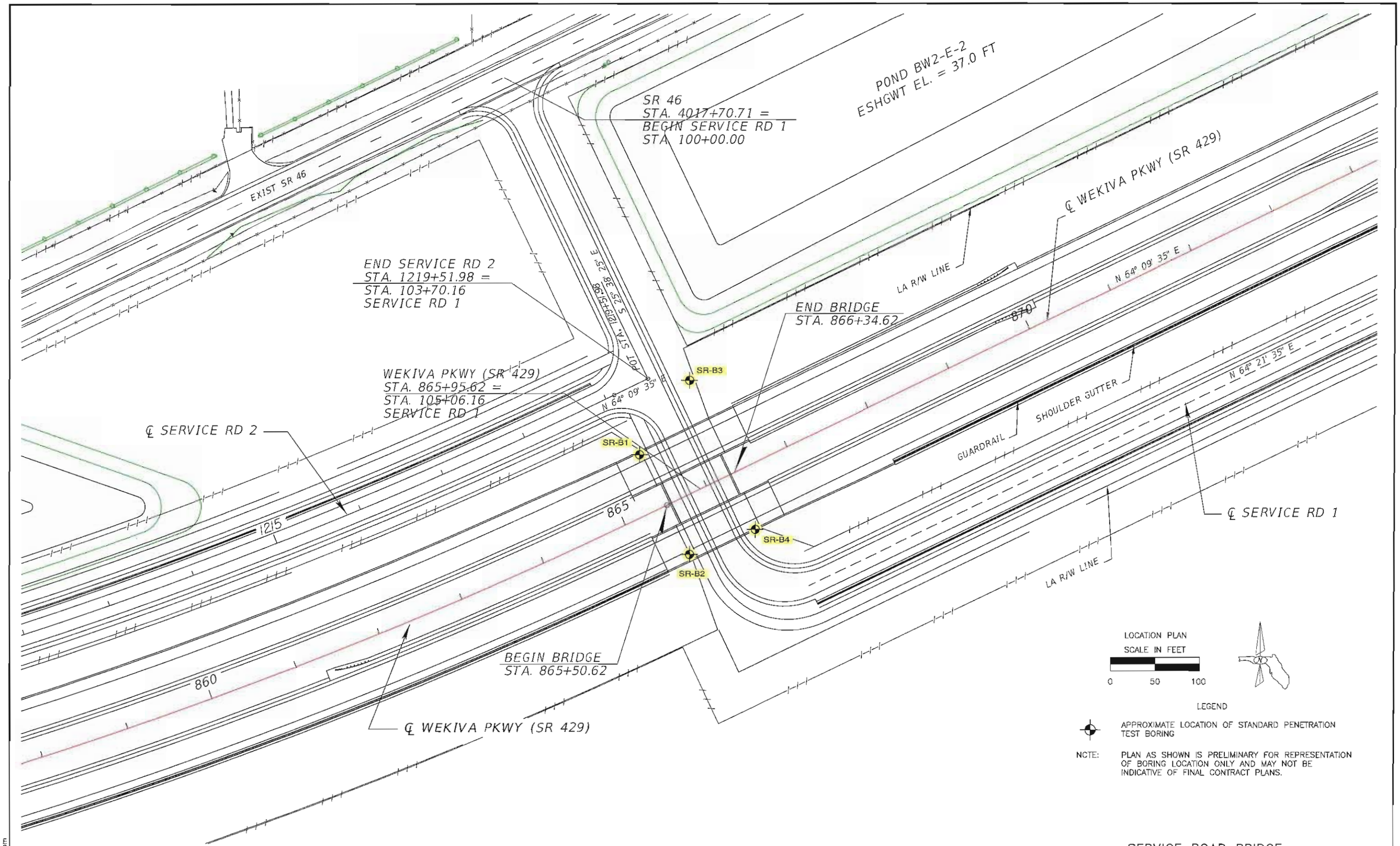
Project Mngr:	ENJ
Drawn By:	SW
Checked By:	ENJ
Approved By:	RGA

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-6
Date:	12-9-14

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-6



SERVICE ROAD BRIDGE

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 8-11-14
CHECKED BY:	ENJ 8-11-14
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 FOR STRUCTURES

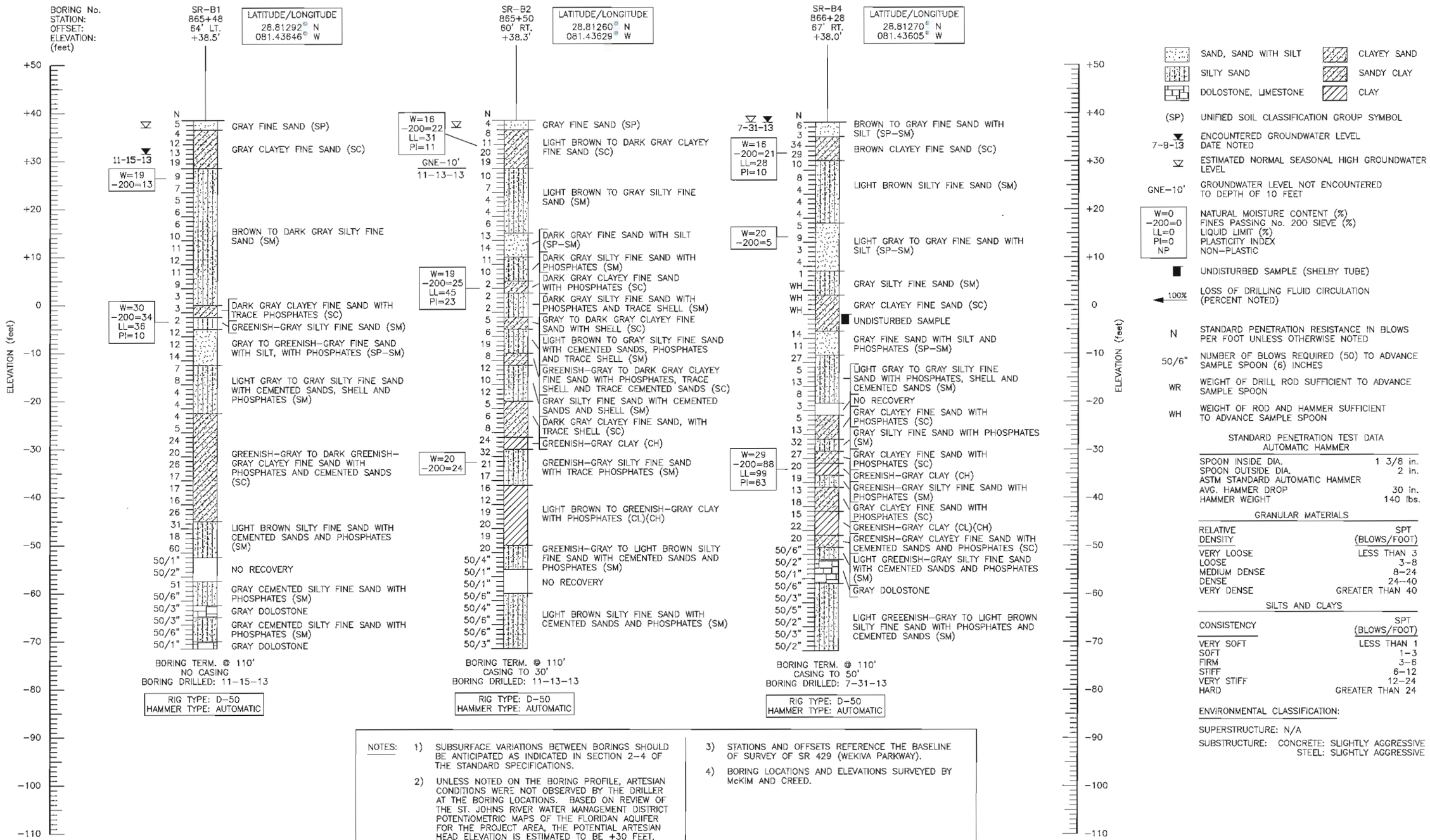
REF. DWG. NO.

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

SHEET NO. —

Dec01, 2014–12:18pm

TERRACON No. H1 13 5080 EXHIBIT: A-7



NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2−4 OF THE STANDARD SPECIFICATIONS.
2) UNLESS NOTED ON THE BORING PROFILE, 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 BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).
4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

SERVICE ROAD BRIDGE

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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

DRAWN BY:	SW 12−1−14
CHECKED BY:	ENJ 12−1−14
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 FOR STRUCTURES
REF. DWG. NO.
PROJECT NAME: WEKIVA PARKWAY (SR 429/SR 46) SECTION 6
SHEET NO. −

TERRACON No. H1 13 5D80 EXHIBIT: A−8

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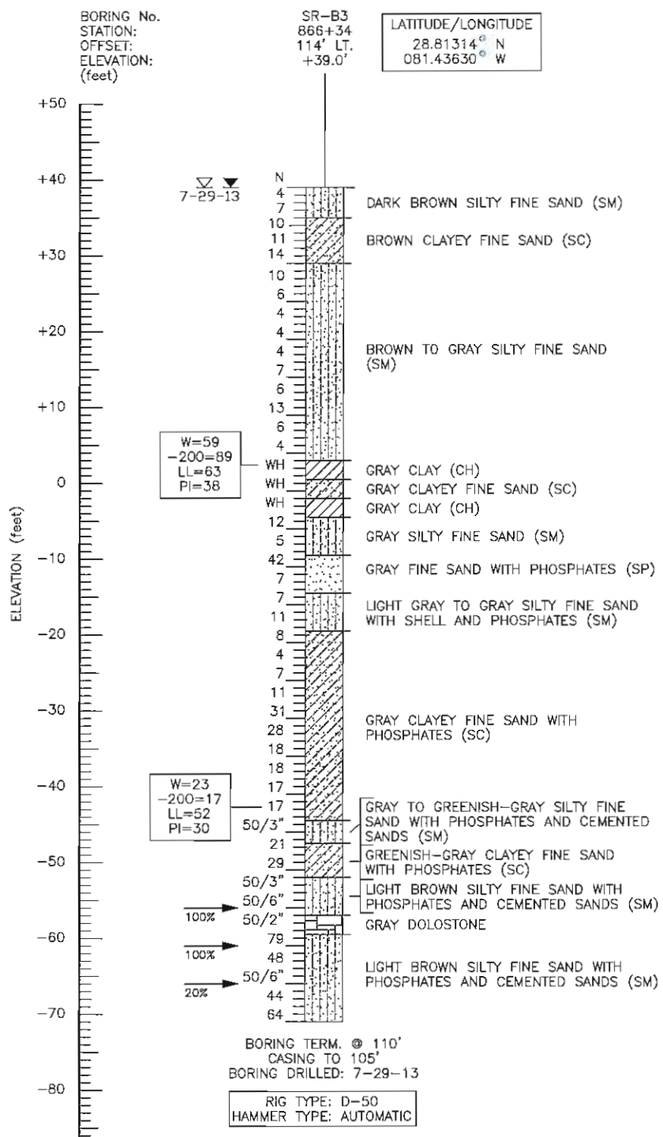
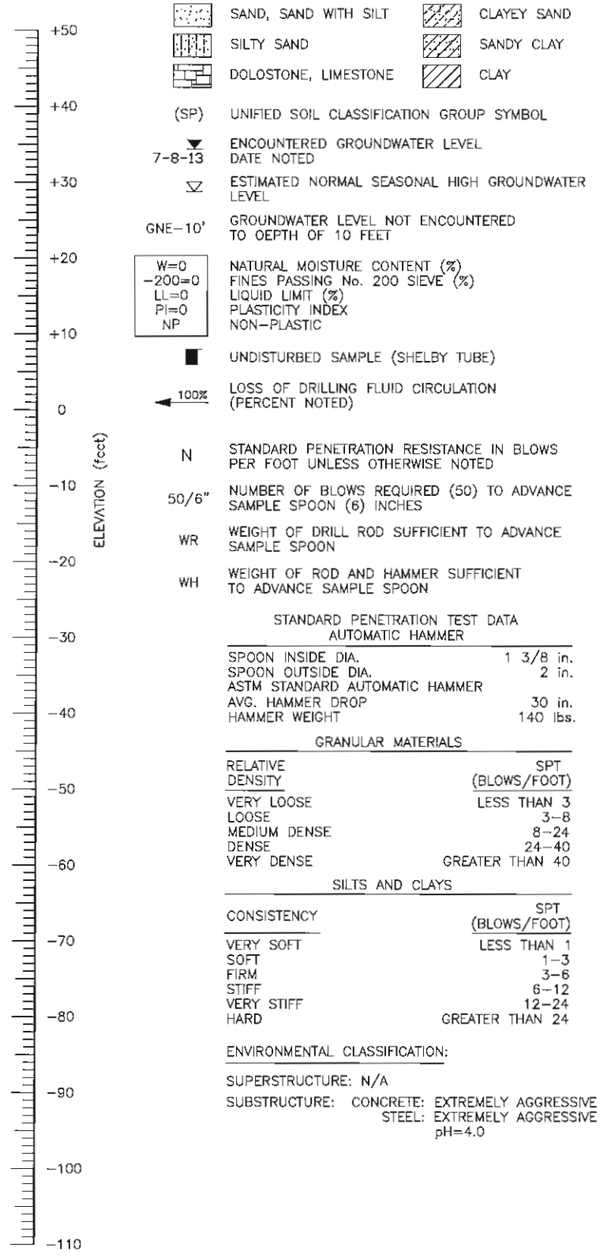




SAND, SAND WITH SILT
SILTY SAND
DOLOSTONE, LIMESTONE
CLAYEY SAND
SANDY CLAY
CLAY

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

7-8-13 ENCOUNTERED GROUNDWATER LEVEL DATE NOTED

ESTIMATED NORMAL SEASONAL HIGH GROUNDWATER LEVEL

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

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

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

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: N/A

SUBSTRUCTURE: CONCRETE: EXTREMELY AGGRESSIVE
STEEL: EXTREMELY AGGRESSIVE
pH=4.0

NOTES:

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

2) UNLESS NOTED ON THE BORING PROFILE, 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 BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).

4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

SERVICE ROAD BRIDGE

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 12-1-14
CHECKED BY: ENJ 12-1-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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

SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

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

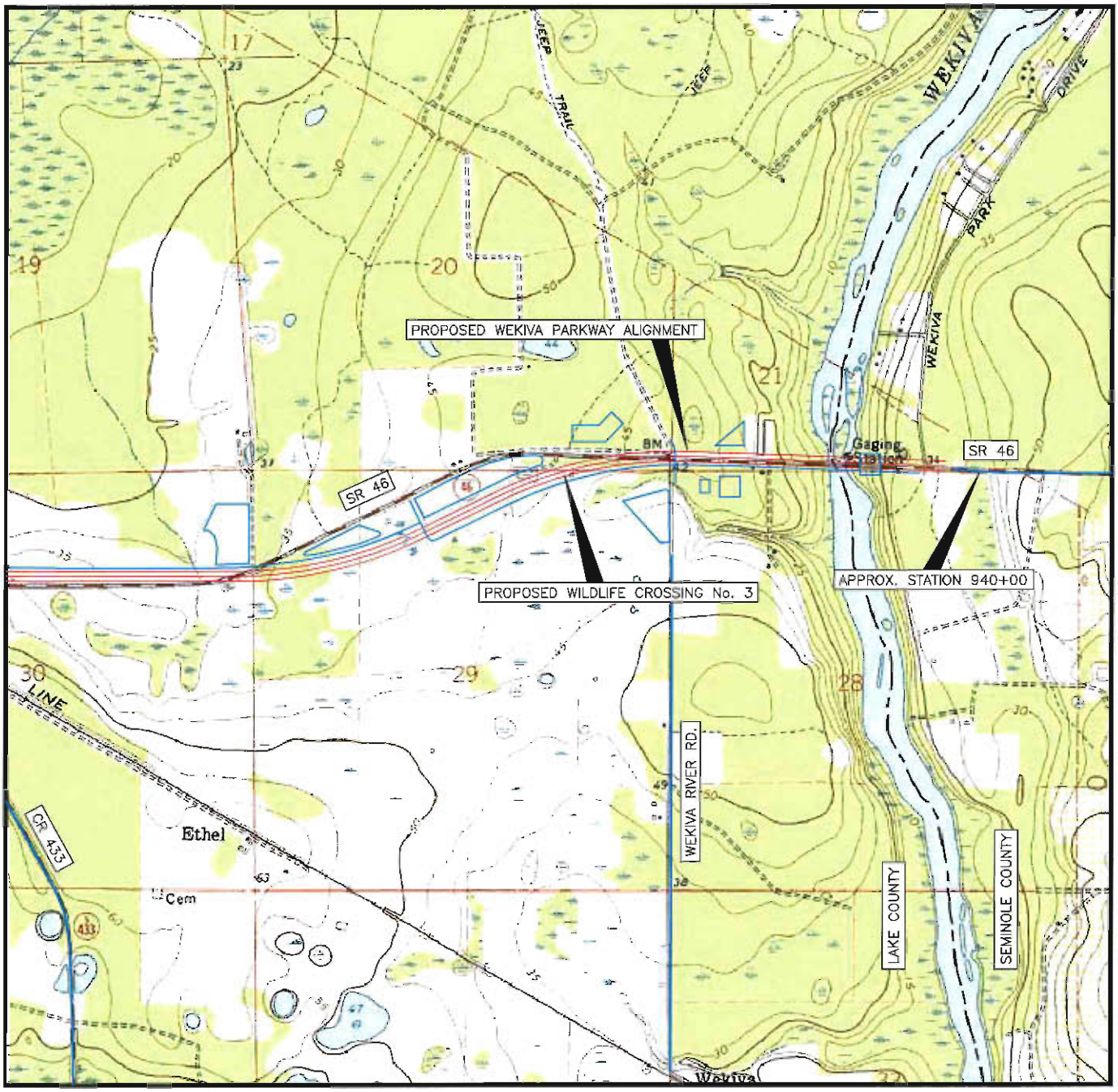
REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-9

Dec01, 2014-12:2 pm

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



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1 .5 0 MILES 1

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

SECTION: 29
TOWNSHIP: 19 SOUTH
RANGE: 29 EAST

SANFORD SW, FLORIDA
ISSUED: 1965 REVISED: 1970
7.5 MINUTE SERIES (QUADRANGLE)

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

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-10
Date:	12-9-14

Terracon
Consulting Engineers and Scientists
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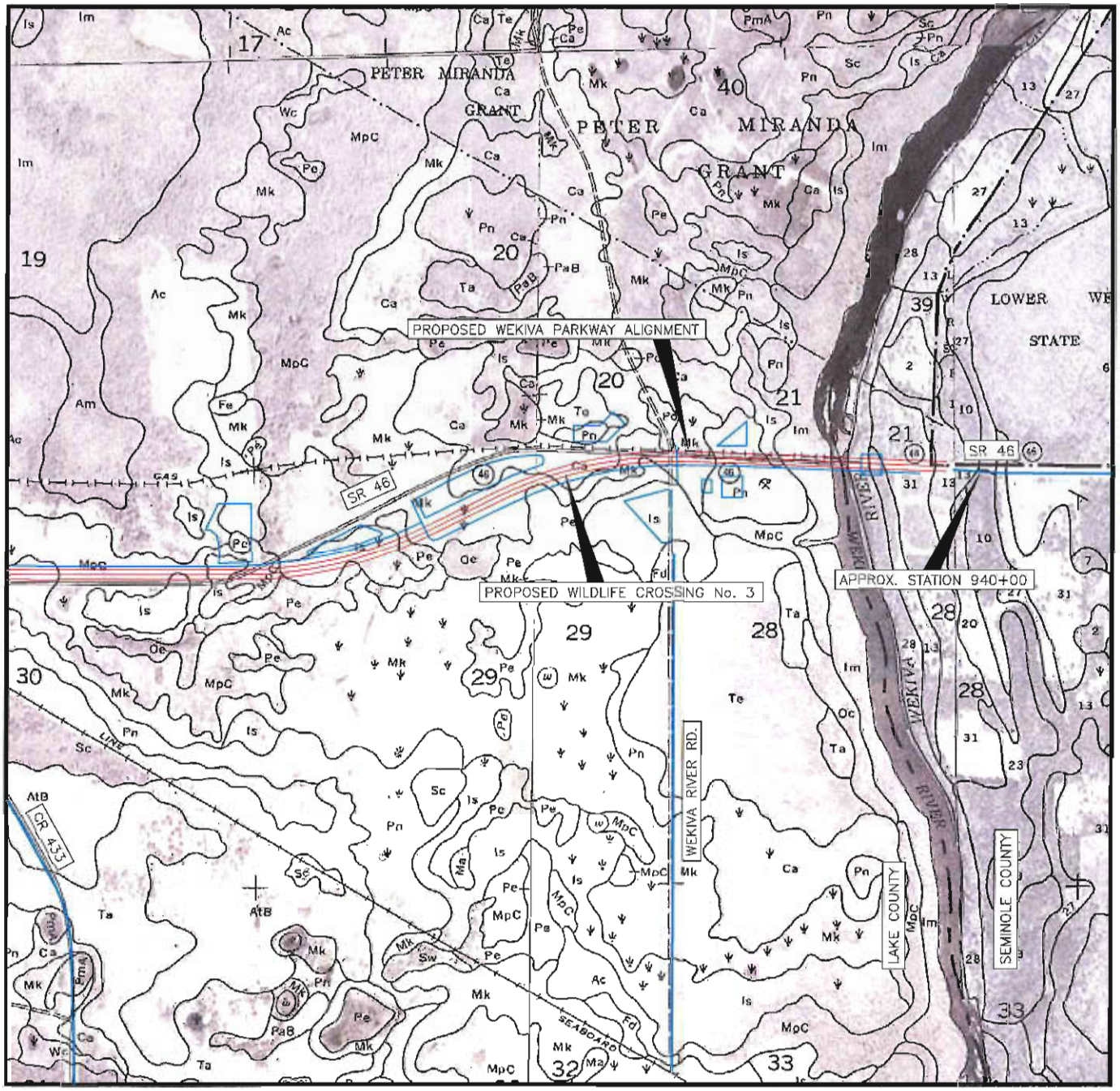
PH. (407) 740-6110 FAX. (407) 740-6112

TOPOGRAPHIC VICINITY 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-10

Dec03, 2014–10:12am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports–Letters–Drafts to Clients)\Cad\wildlife no3\wildlife 3 usgs.dwg



SCALE 1" = 2000'

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U.S.D.A. SOIL SURVEY FOR LAKE COUNTY, FLORIDA
ISSUED: 1971

N

LAKE COUNTY SOILS MAP INDEX	
Ca	CASSIA SAND
Mk	MYAKKA SAND

SECTION: 29
TOWNSHIP: 19 SOUTH
RANGE: 29 EAST

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

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-11
Date:	12-9-14

Terracon
Consulting Engineers and Scientists
1675 LEE ROAD WINTER PARK, FLORIDA 32789
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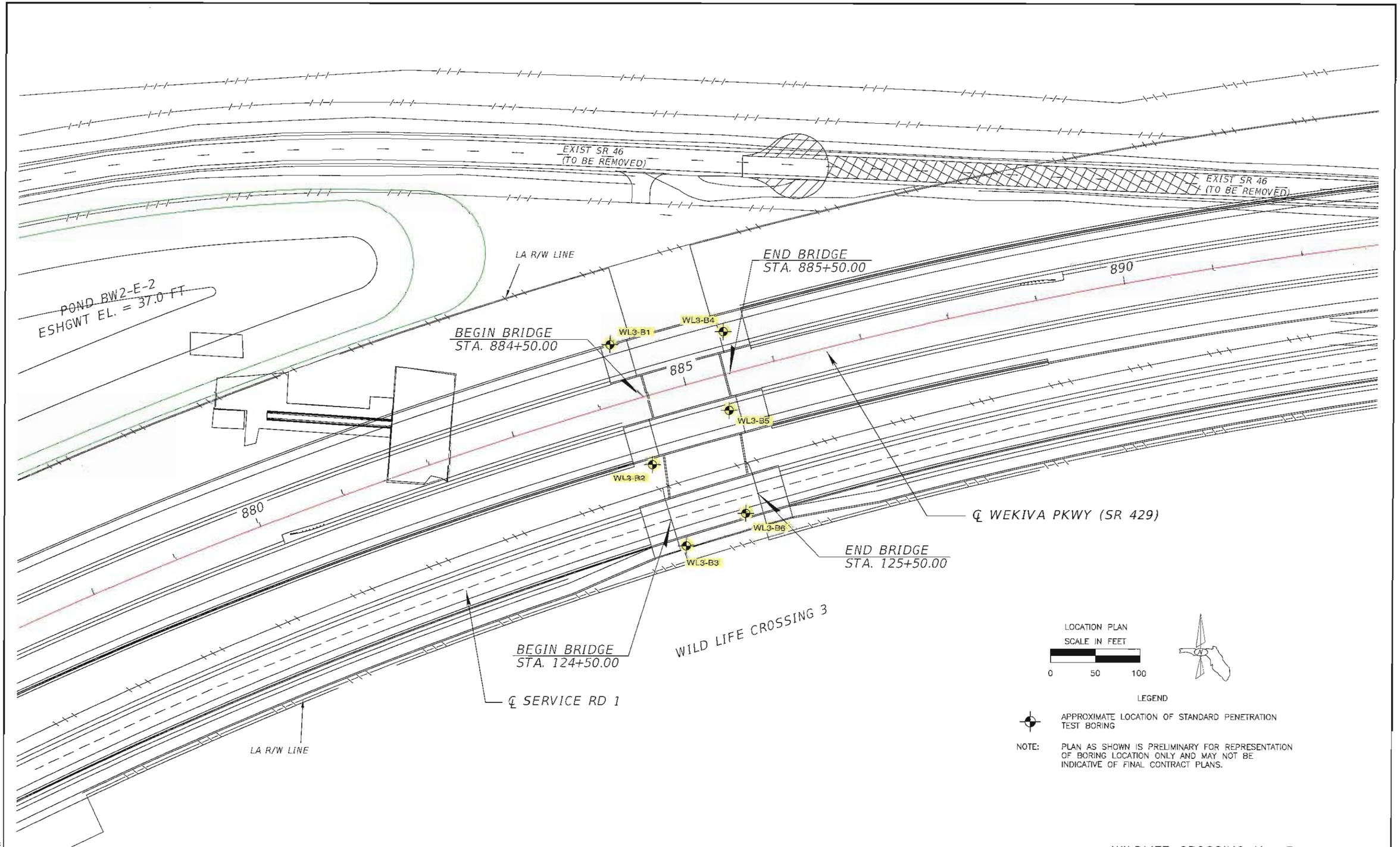
U.S.D.A. SOILS MAP
GEOTECHNICAL ENGINEERING EVALUATION
WEKIVA PARKWAY (SR 429 / SR 46)
FROM OLD McDONALD RD. TO RIVER OAKS CIRCLE
LAKE AND SEMINOLE COUNTIES, FLORIDA

EXHIBIT
A-11



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.

WILDLIFE CROSSING No. 3

Dec09, 2014—9:49am

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 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

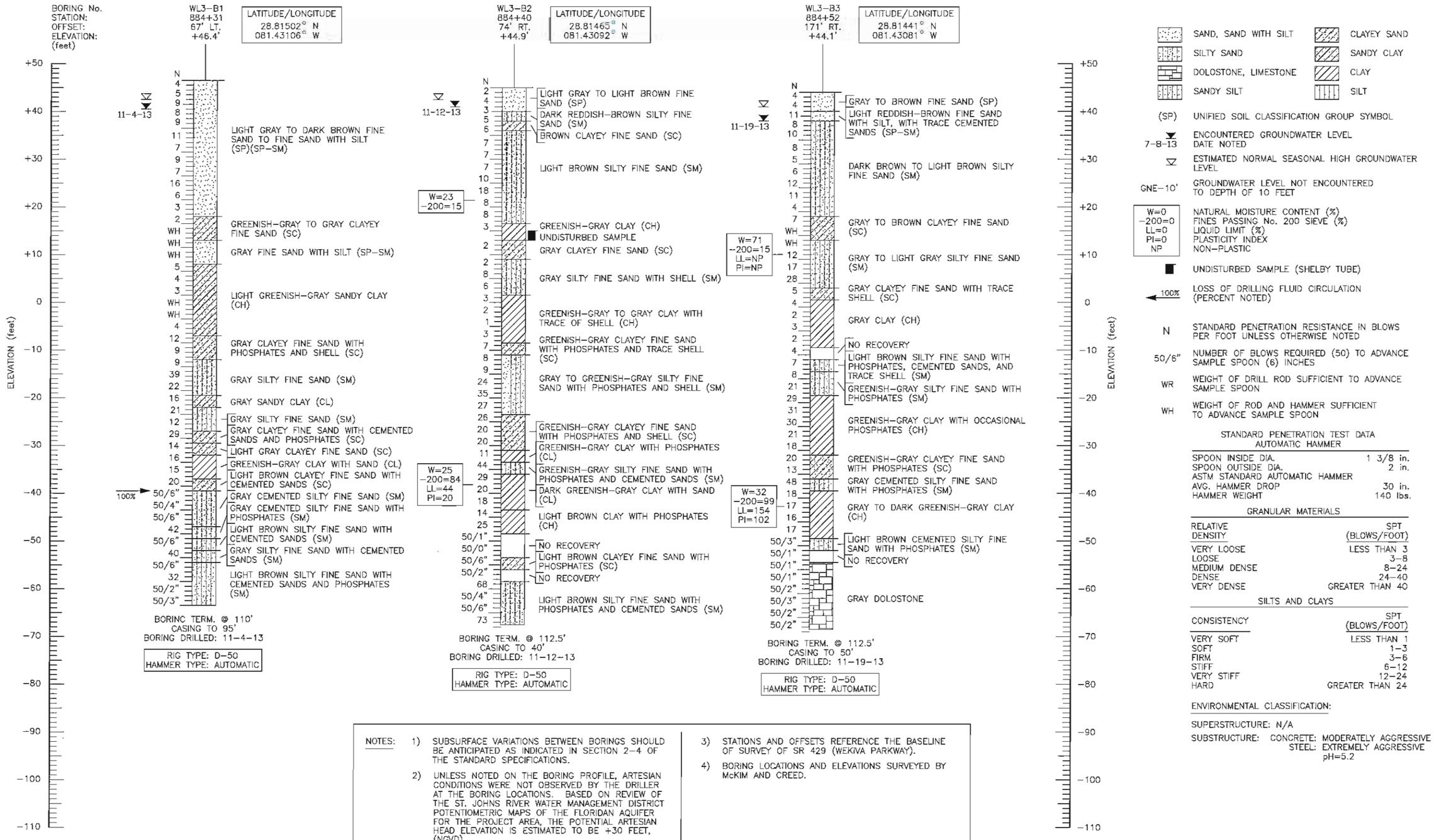
SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

REF. DWG. NO.

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

SHEET NO. —

TERRACON No. H1 13 5080 EXHIBIT: A-12



NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.
2) UNLESS NOTED ON THE BORING PROFILE, 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 BASELINE OF SURVEY OF SR 429 (WEKIVA PARKWAY).
4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

WILDLIFE CROSSING No. 3

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:

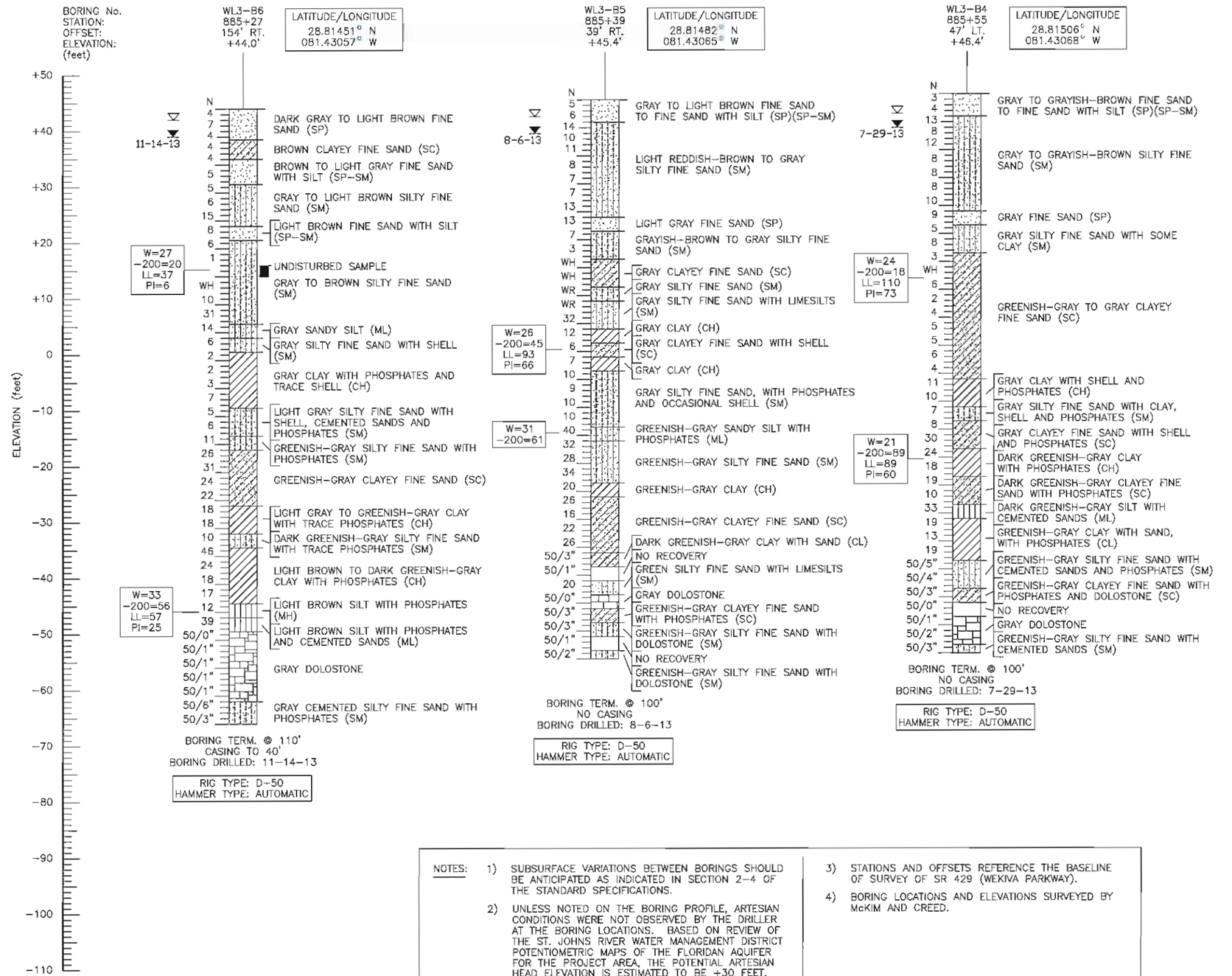
STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

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

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

TERRACON No. H1 13 5080 EXHIBIT: A-13

Dec09, 2014-9:50am



NOTES:

1) SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4 OF THE STANDARD SPECIFICATIONS.
2) UNLESS NOTED ON THE BORING PROFILE, 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).
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4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

WILDLIFE CROSSING No. 3

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 12-8-14
CHECKED BY: ENJ 12-9-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

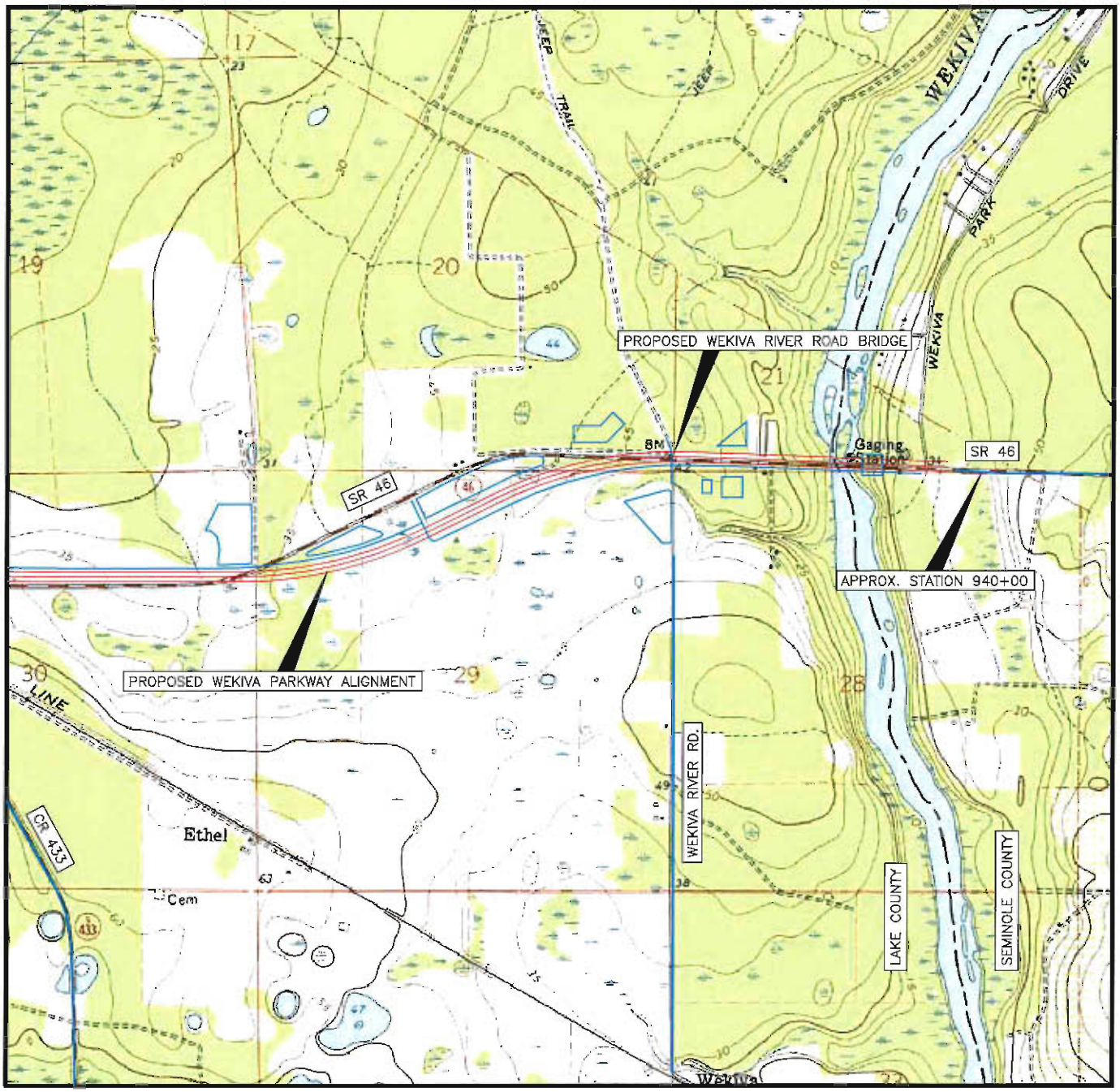
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	LAKE SEMINOLE	238275-7-32-02

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

Dec09, 2014 - 9:53am

TERRACON No. H1 13 5080 EXHIBIT: A-14

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



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MILES 1000 0 1000 2000

FEET 1 .5 0 1

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CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

N

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

SANFORD SW, FLORIDA
ISSUED: 1965 REVISED: 1970
7.5 MINUTE SERIES (QUADRANGLE)

Dec09, 2014--11:20am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\wekiva river road\river road usgs.dwg

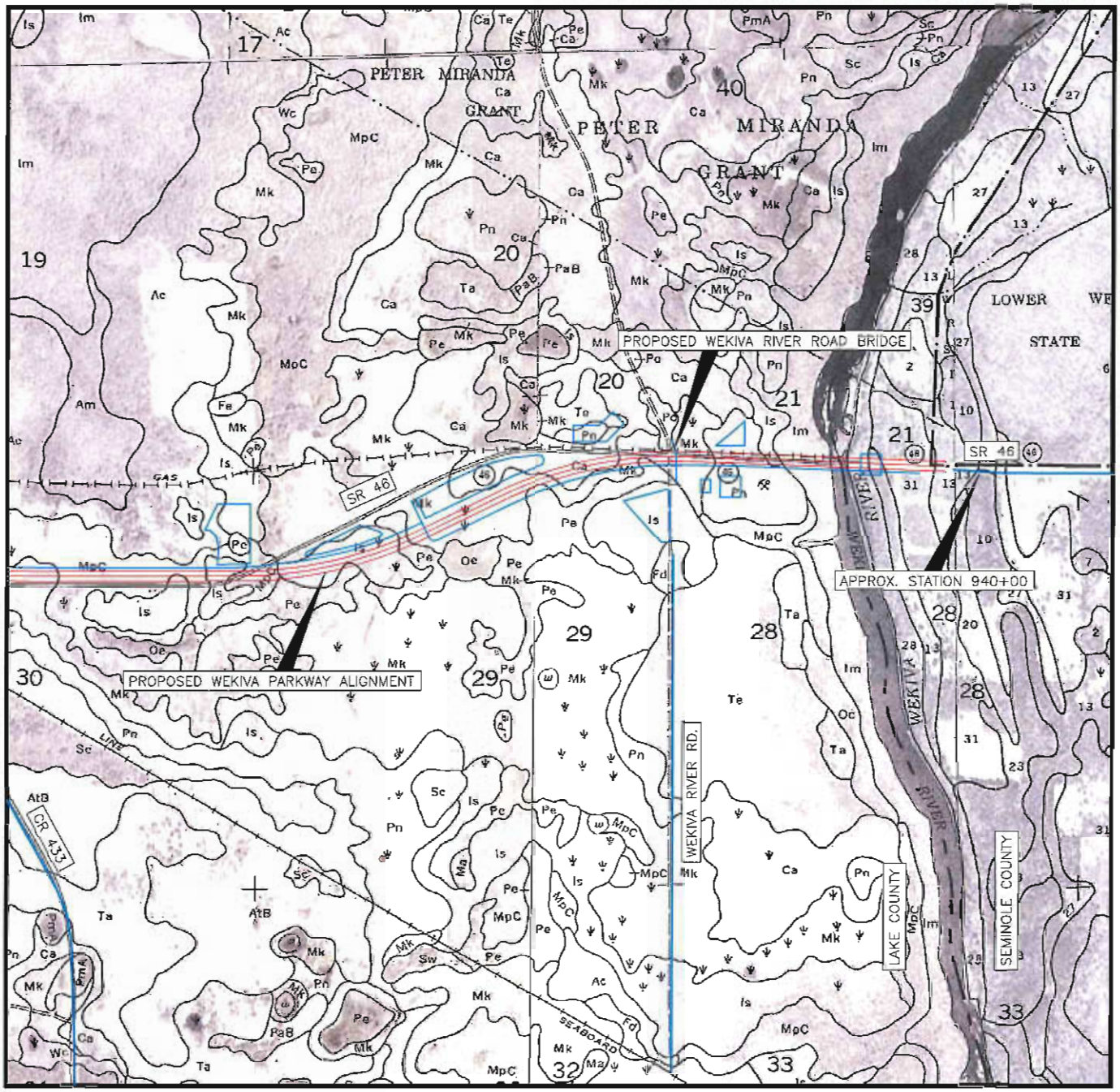
Project Mngr:	ENJ
Drawn By:	SW
Checked By:	ENJ
Approved By:	RGA

Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-15
Date:	8-11-14

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

TOPOGRAPHIC VICINITY 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-15



SCALE 1" = 2000'

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U.S.D.A. SOIL SURVEY FOR LAKE COUNTY, FLORIDA
ISSUED: 1971

N

LAKE COUNTY SOILS MAP INDEX

Mk	MYAKKA SAND
Pe	PLACID SAND, DEPRESSIONAL
Po	POMPANO SAND

SECTION: 29
TOWNSHIP: 19 SOUTH
RANGE: 29 EAST

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

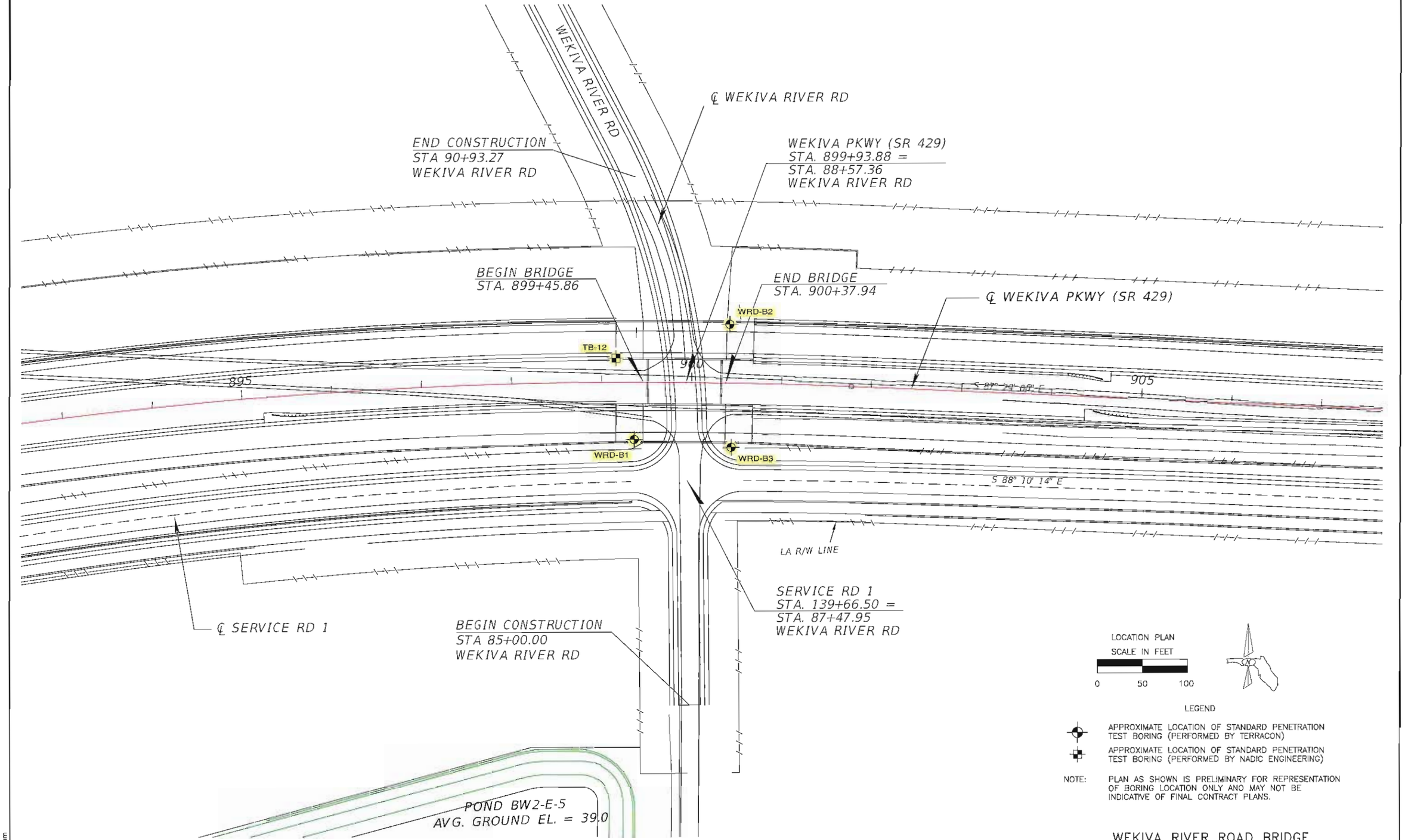
Project No.	H1135080
Scale:	AS SHOWN
File No.	H1135080-16
Date:	12-9-14

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-16

Dec09, 2014–11:19am N:\Projects\2013\H1135080\PROJECT DOCUMENTS (Reports–Letters–Drafts to Clients)\Cad\wekiva river road\river road usda.dwg



WEKIVA RIVER ROAD BRIDGE

Dec09, 2014–9:28am

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 12–1–14
CHECKED BY:	ENJ 12–1–14
DESIGNED BY:	
CHECKED BY:	

STATE OF FLORIDA
DEPARTMENT OF TRANSPORATATION

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

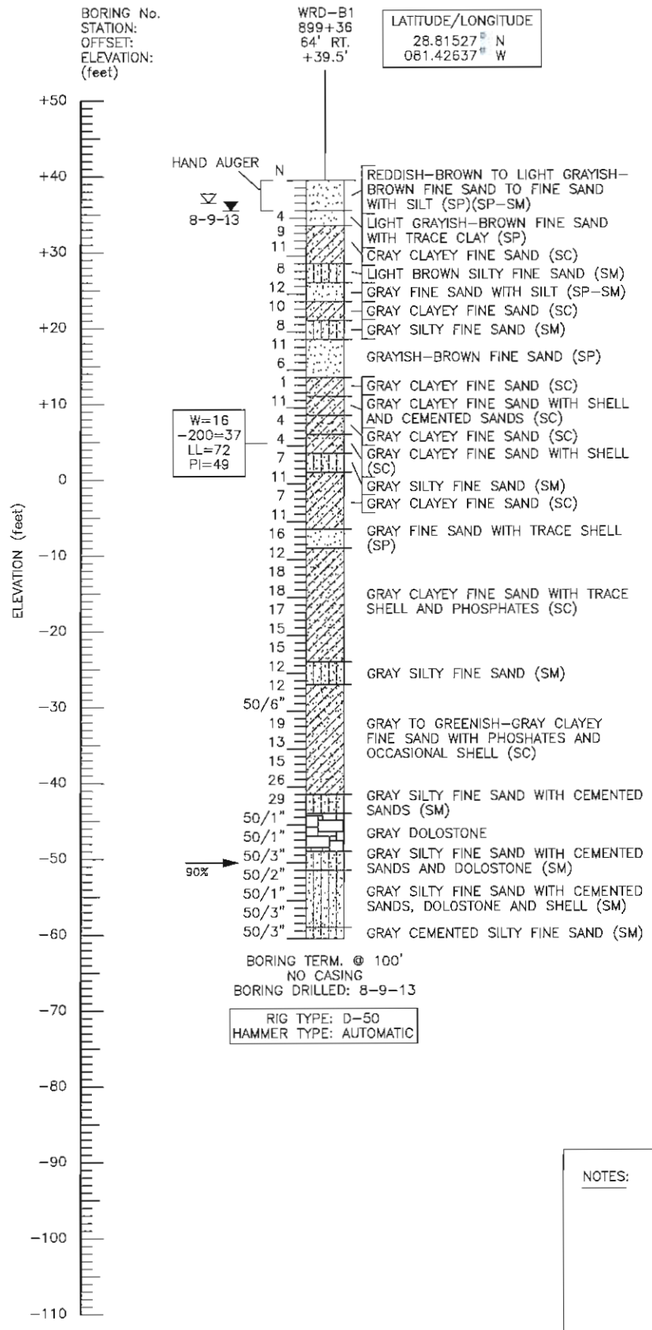
SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

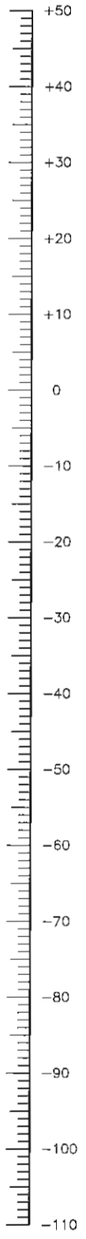
REF. DWG. NO.

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

SHEET NO. –

TERRACON No. H1 13 5080 EXHIBIT: A–17





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

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL

▼ 7-8-13 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
NP NON-PLASTIC

■ 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

ENVIRONMENTAL CLASSIFICATION:

SUPERSTRUCTURE: N/A

SUBSTRUCTURE: CONCRETE: MODERATELY AGGRESSIVE
STEEL: EXTREMELY AGGRESSIVE
pH=5.2

NOTES:

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

2) UNLESS NOTED ON THE BORING PROFILE, 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 +20 FEET, (NGVD).

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

4) BORING LOCATIONS AND ELEVATIONS SURVEYED BY McKIM AND CREED.

WEKIVA RIVER ROAD BRIDGE

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 12-1-14
CHECKED BY: ENJ 12-1-14
DESIGNED BY:
CHECKED BY:

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

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

SHEET TITLE: REPORT OF SPT BORINGS FOR STRUCTURES

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

REF. DWG. NO.

SHEET NO. -

TERRACON No. H1 13 5080 EXHIBIT: A-18

Dec01, 2014-2:07pm

Soil Survey Descriptions (Lake County)

Tree Frog Court Bridge:

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.

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).

Service Road Bridge:

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).

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.

Wildlife Crossing No. 3:

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.

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).

Wekiva River Road Bridge:

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).

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.

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.

Field Exploration Description

The boring locations were laid out at the project site by Terracon personnel. The locations indicated on the attached exhibits were surveyed by McKim & Creed. The locations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

The SPT soil borings were typically drilled with an ATV-mounted, rotary drilling rig. The ATV-mounted drill rig was equipped with a CME automatic SPT hammer.

The boreholes were advanced with a cutting head and stabilized with the use of bentonite (drillers' mud). Soil samples were obtained by the split spoon sampling procedure in general accordance with the Standard Penetration Test (SPT) procedure. In the split spoon sampling procedure, the number of blows required to advance the sampling spoon the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance value (N). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths and penetration distance, plus the standard penetration resistance values, are shown on the boring profiles.

A CME automatic SPT hammer was used to advance the split-barrel sampler in the majority of the borings performed on this site. A significantly greater efficiency is achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. This higher efficiency has an appreciable effect on the SPT-N value. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report. The automatic hammer "N" value shall be multiplied by 1.24 to convert to the equivalent safety hammer "N" value.

Portions of the samples from the borings were sealed in glass jars to reduce moisture loss, and then the jars were taken to our laboratory for further observation and classification. Upon completion, the boreholes were backfilled with the site soil.

Field logs of each boring were prepared by the drill crew. These logs included visual classifications of the materials encountered during drilling as well as the driller's interpretation of the subsurface conditions between samples. The boring profiles included with this report represent an interpretation of the field logs and include modifications based on laboratory observation of the samples.

Laboratory Testing

During the field exploration, a portion of each recovered sample was sealed in a glass jar and transported to our laboratory for further visual observation and laboratory testing. Selected samples retrieved from the borings were tested for moisture (water) content, fines content (soil passing a US standard #200 sieve), and Atterberg Limits. The test results are included on the respective boring profiles. The visual-manual classifications were modified as appropriate based upon the laboratory testing results.

The soil samples were classified in general accordance with the Unified Soil Classification System based on the material's texture and plasticity. The estimated group symbol for the Unified Soil Classification System is shown on the boring profiles in Appendix A. The results of our laboratory testing are presented on the corresponding borings profiles.

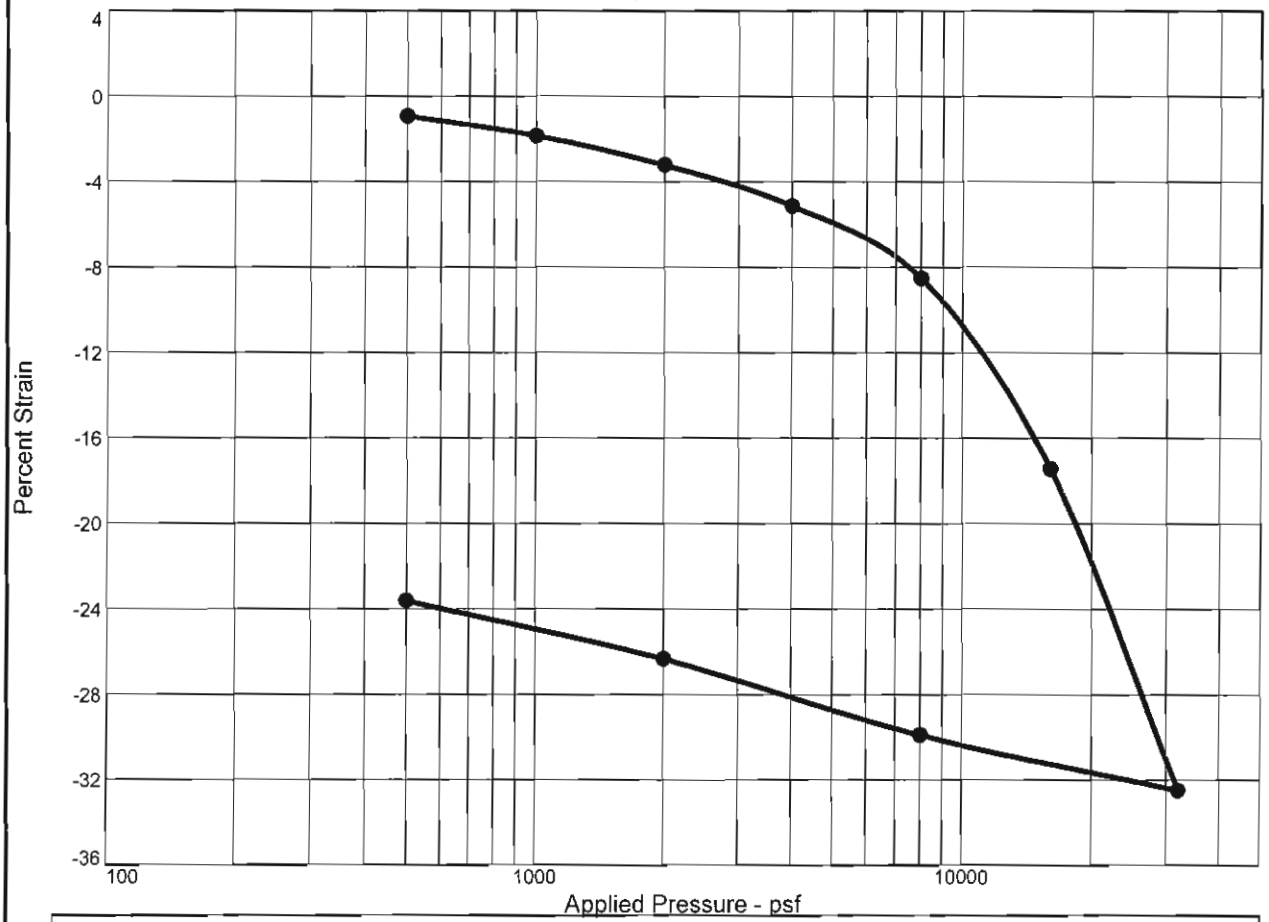
A series of eight (8) corrosion tests were performed on soil samples obtained from the soil borings performed at the proposed bridge sites. These results indicate that the subsurface environment ranges from slightly to extremely aggressive (pH = 4.0) for use in selection of an appropriate class of concrete 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 **Exhibit A-22** in the **Appendix**.

Consolidation testing was performed on selected undisturbed samples. **Consolidation Test Reports** are presented on **Figures 1 and 2** in the **Appendix,** presenting a summary of key parameters interpreted from consolidation tests plotted against depth.

EXHIBIT A-22
CORROSION SERIES TESTING RESULTS
WEKIVA PARKWAY (STATE ROAD 429/STATE ROAD 46) - SECTION 6
TREE FROG COURT, SERVICE ROAD, WILDLIFE CROSSING No. 3, AND WEKIVA RIVER ROAD BRIDGES
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
Tree Frog Court Bridge								
TFC-B1	758+29; 68' RT	2.0	6.9	61,000	60	< 5	Slightly Aggressive	Moderately Aggressive
TFC-B2	758+90; 120' LT	0.5	7.2	5,600	60	< 5	Slightly Aggressive	Slightly Aggressive
Service Road Bridge								
SR-B2	865+50; 60' RT	1.0	7.1	6,600	60	19.8	Slightly Aggressive	Slightly Aggressive
SR-B3	866+34; 114' LT	2.0	4.0	6,400	60	43.5	Extremely Aggressive	Extremely Aggressive
Wildlife Crossing No. 3 Bridge								
WL3-B2	884+40; 74' RT	2.5	5.2	12,000	60	30	Moderately Aggressive	Extremely Aggressive
WL3-B5	885+39; 39' RT	3.0	5.9	20,000	60	60	Moderately Aggressive	Extremely Aggressive
Wekiva River Road Bridge								
WRD-B1	899+36; 64' RT	3.0	7.0	15,000	60	37.5	Slightly Aggressive	Moderately Aggressive
WRD-B2	900+41; 64' LT	4.5	5.2	20,000	60	55.8	Moderately Aggressive	Extremely Aggressive

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	500.00	1.719		9	2000	0.024					
2	1000.00	2.769		10	500.00	0.008					
3	2000	1.628									
4	4000	2.372									
5	8000	0.758									
6	16000	0.220									
7	32000	0.028									
8	8000	0.023									

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
103.8 %	67.3 %	61.3	96.4	68.1	2.70		10981	1.40	0.13	1.751

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Gray Clay		

Project No. H1135080 **Client:**

Project: Wekiva-6

Location: WRD-B3 @ 32.5-34.5'

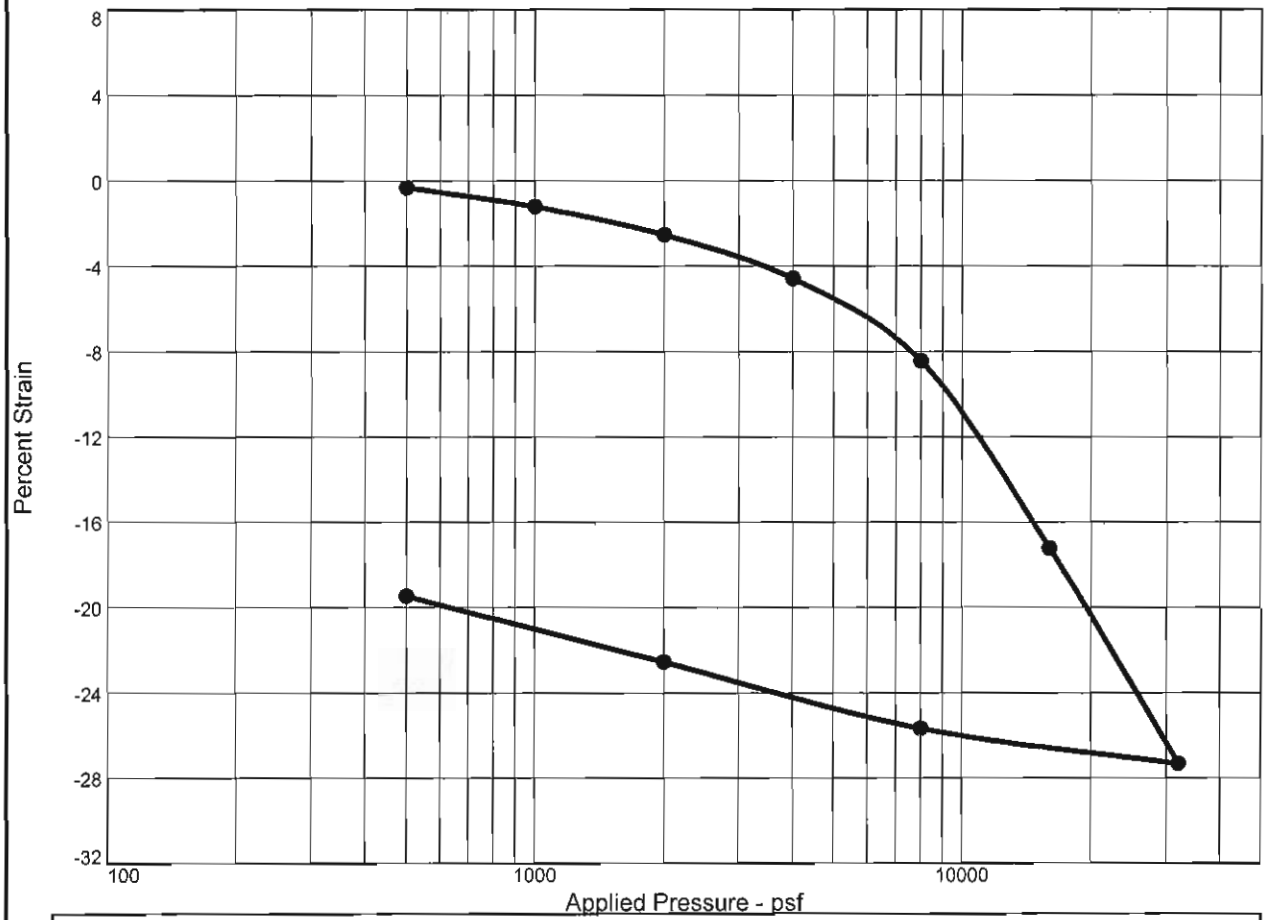
Remarks:

-200 = 62.5%

Terracon Consultants, Inc.

Figure 2

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	500.00	0.761		9	2000	0.029					
2	1000.00	0.763		10	500.00	0.013					
3	2000	1.341									
4	4000	0.740									
5	8000	0.505									
6	16000	0.141									
7	32000	0.105									
8	8000	0.162									

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c	C_r	Initial Void Ratio
Saturation	Moisture									
101.6 %	45.5 %	78.0	64.2	45.3	2.75		8056	0.75	0.10	1.232

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Gray Clay	CH	

Project No. H1135080 **Client:**

Project: Wekiva-6

Location: WL-3-B2 @ 30.5-31.0'

Remarks:

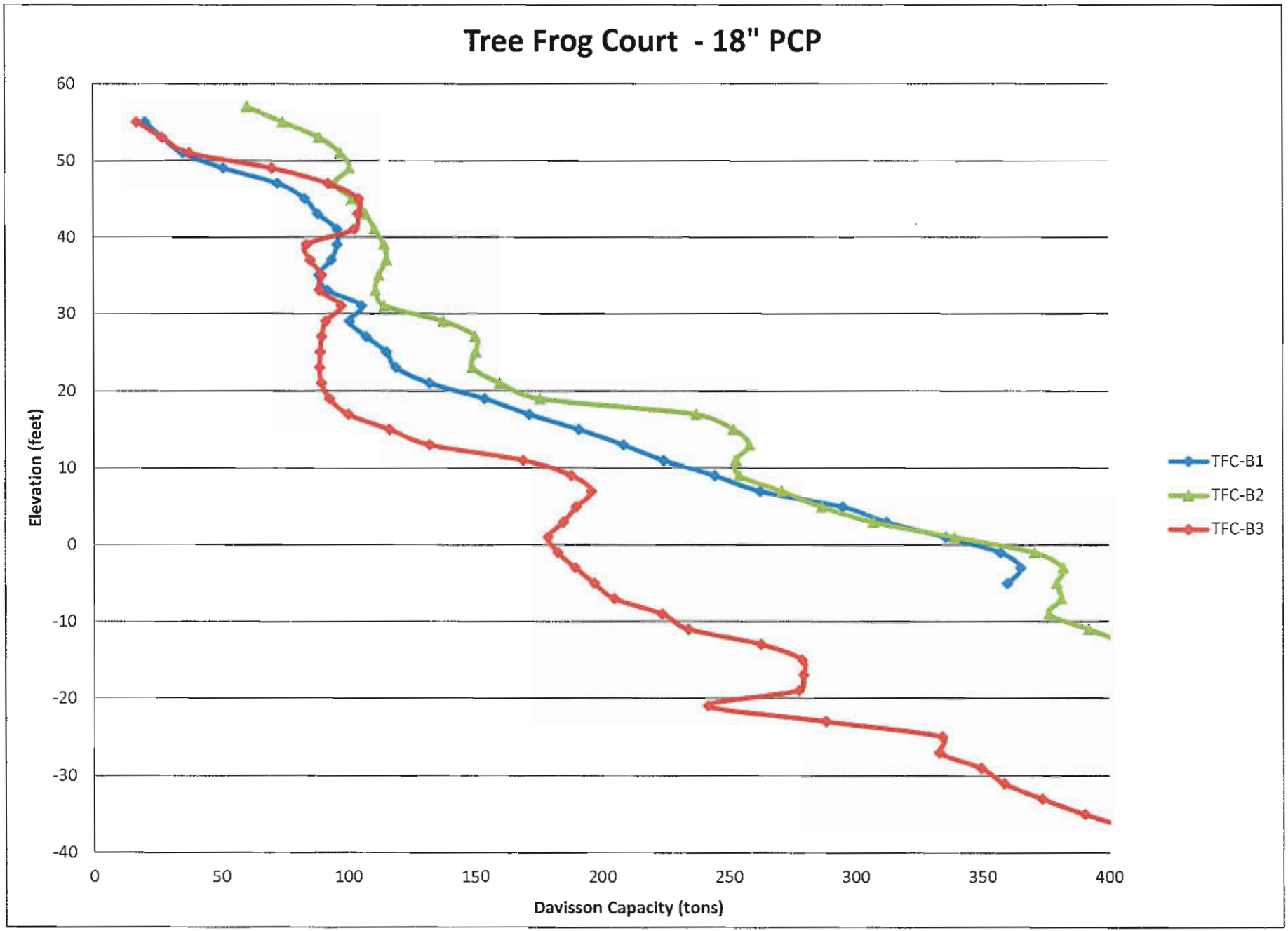
-200 = 71.2%

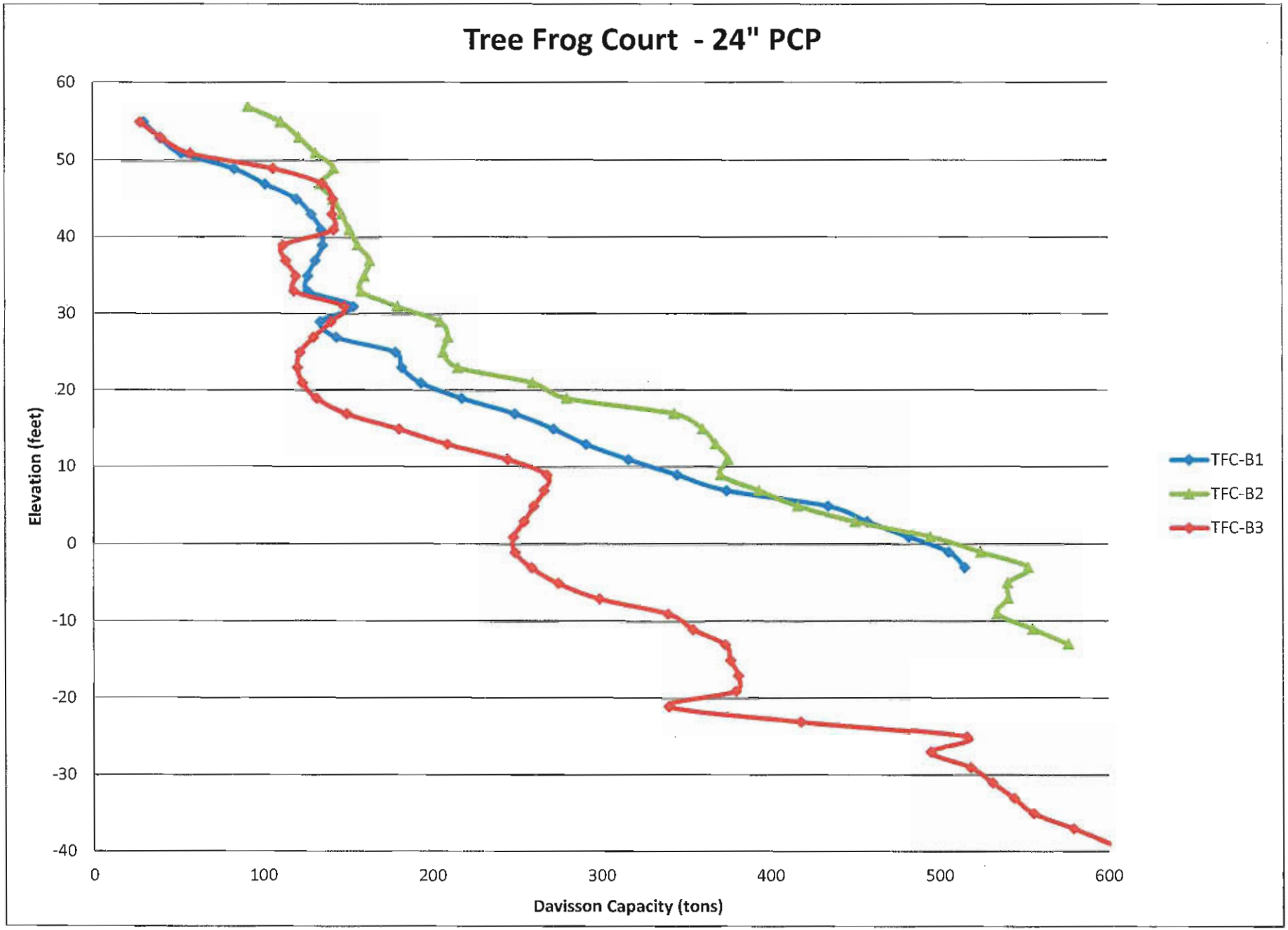
Terracon Consultants, Inc.

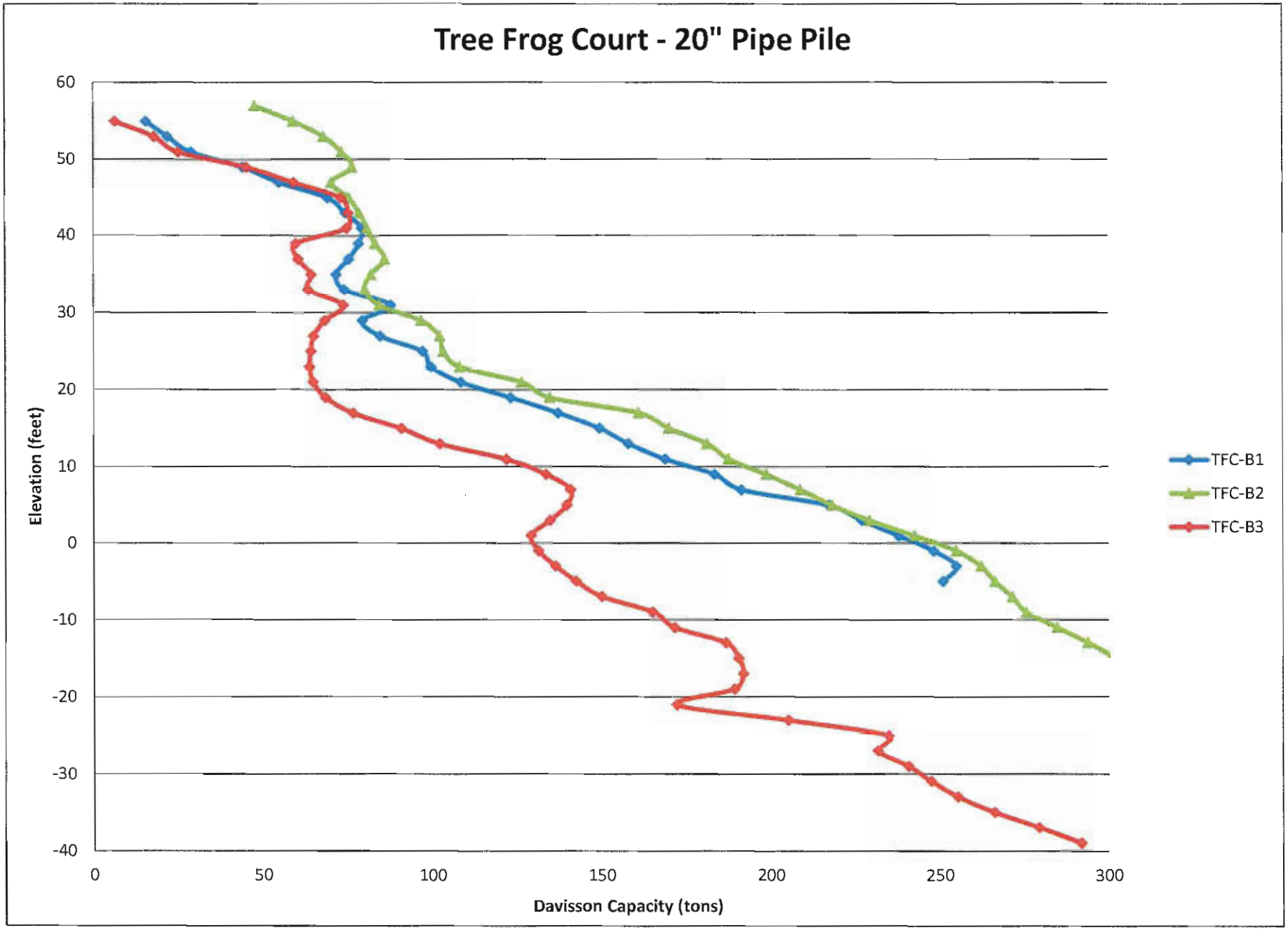
Figure 1

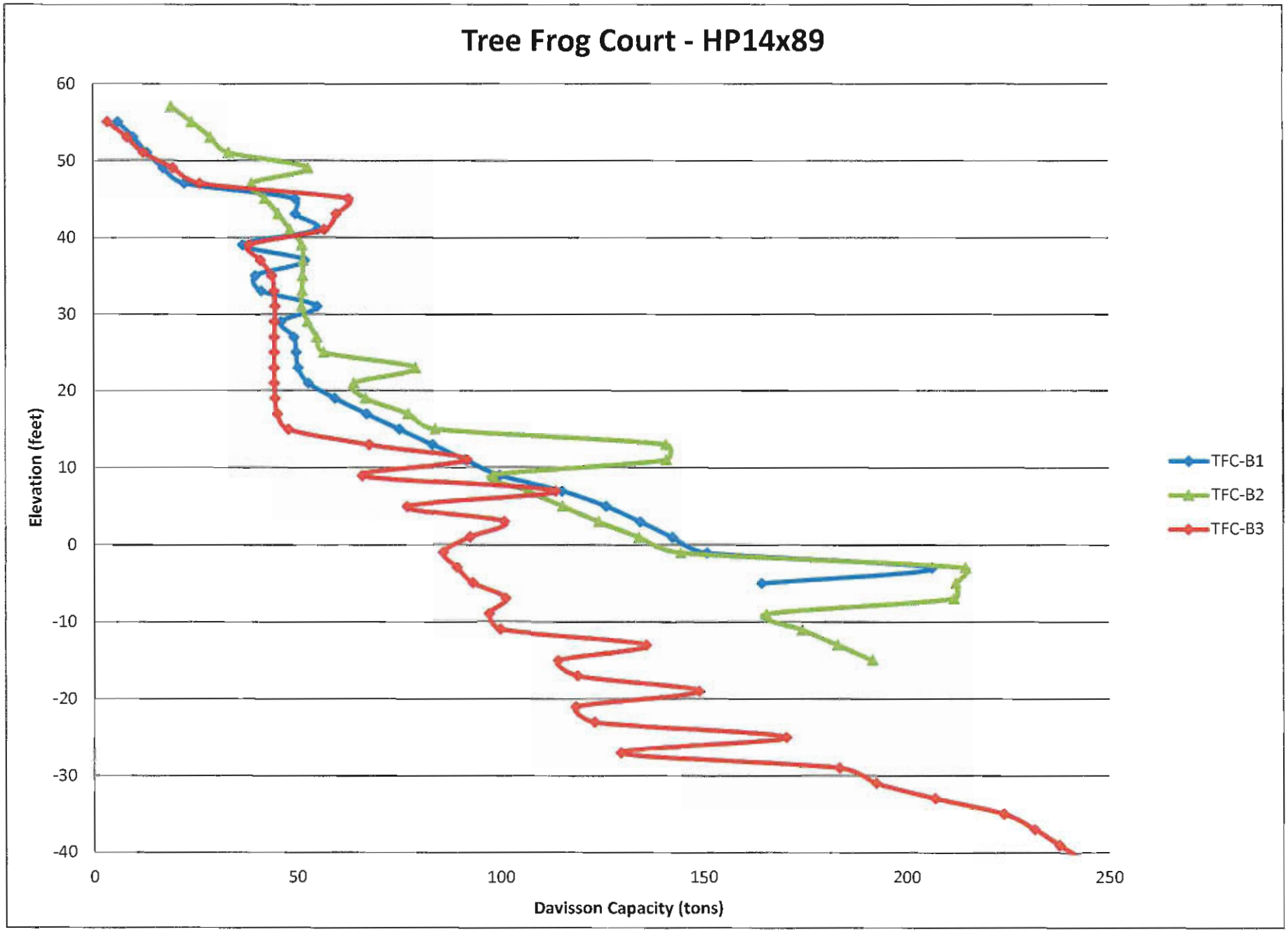
APPENDIX B
PILE CAPACITY CURVES AND COMPUTER OUTPUTS

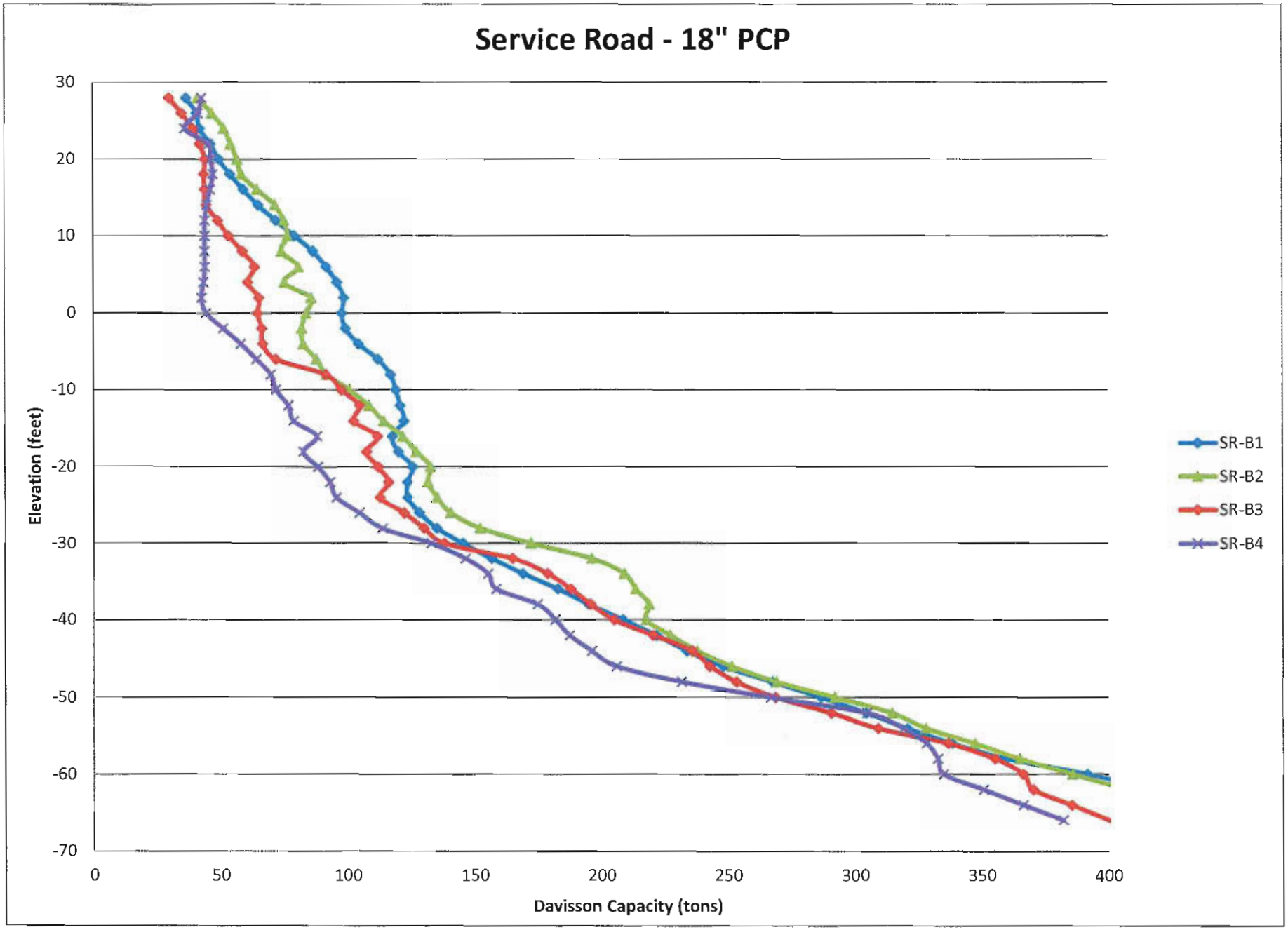
- Tree Frog Court Bridge (18" PCP, 24" PCP, 20" steel pipe pile, HP14x89)
- Service Road Bridge (18" PCP, 24" PCP, 20" steel pipe pile, HP14x89)
- Wildlife Crossing No. 3 (18" PCP, 24" PCP, 20" steel pipe pile, HP14x89)
- Wekiva River Road Bridge (18" PCP, 24" PCP, 20" steel pipe pile, HP14x89)

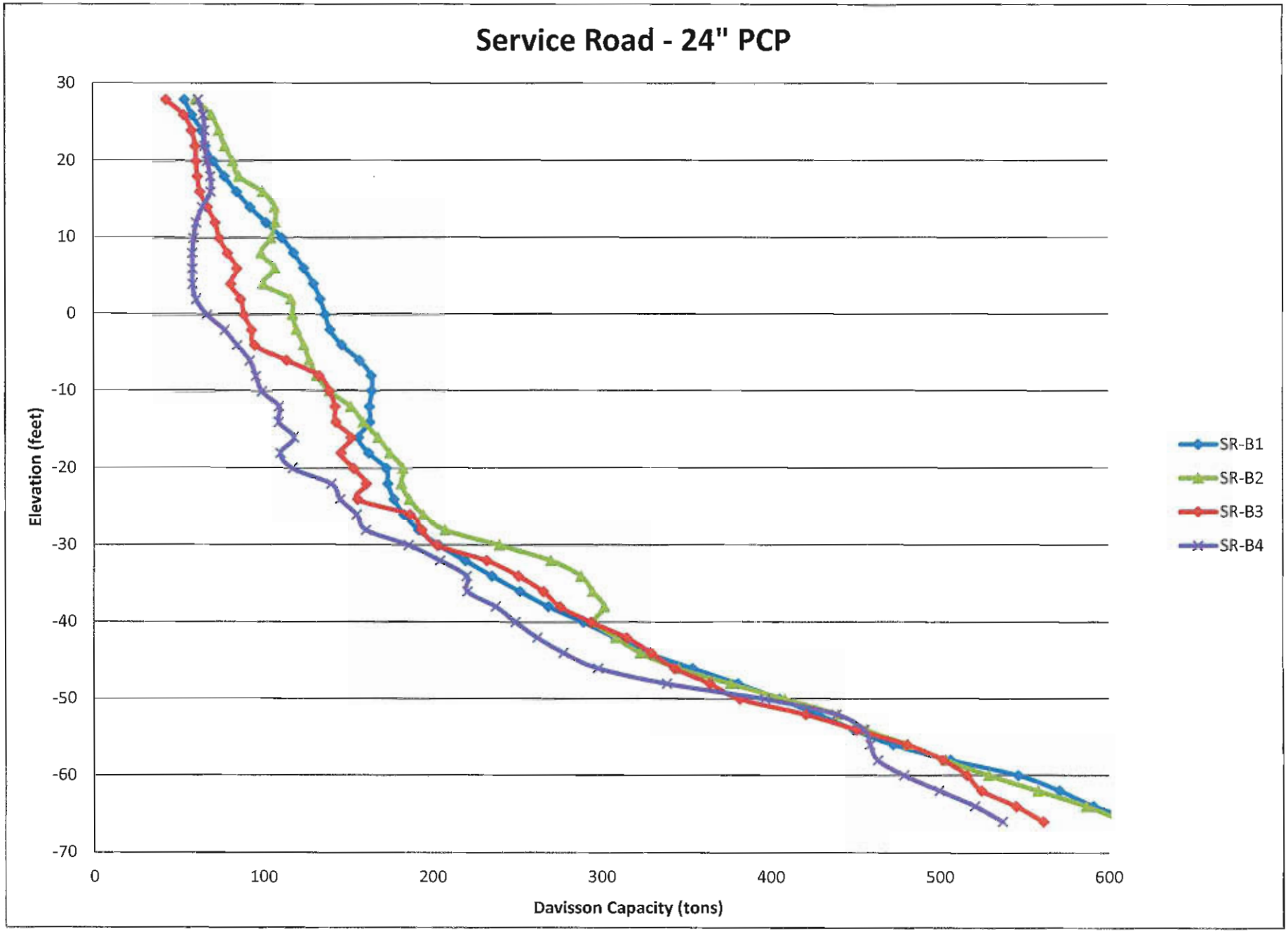

Tree Frog Court - 18" PCP
Elevation (feet)
60
50
40
30
20
10
0
-10
-20
-30
-40
0
50
100
150
200
250
300
350
400
Davisson Capacity (tons)
TFC-B1
TFC-B2
TFC-B3

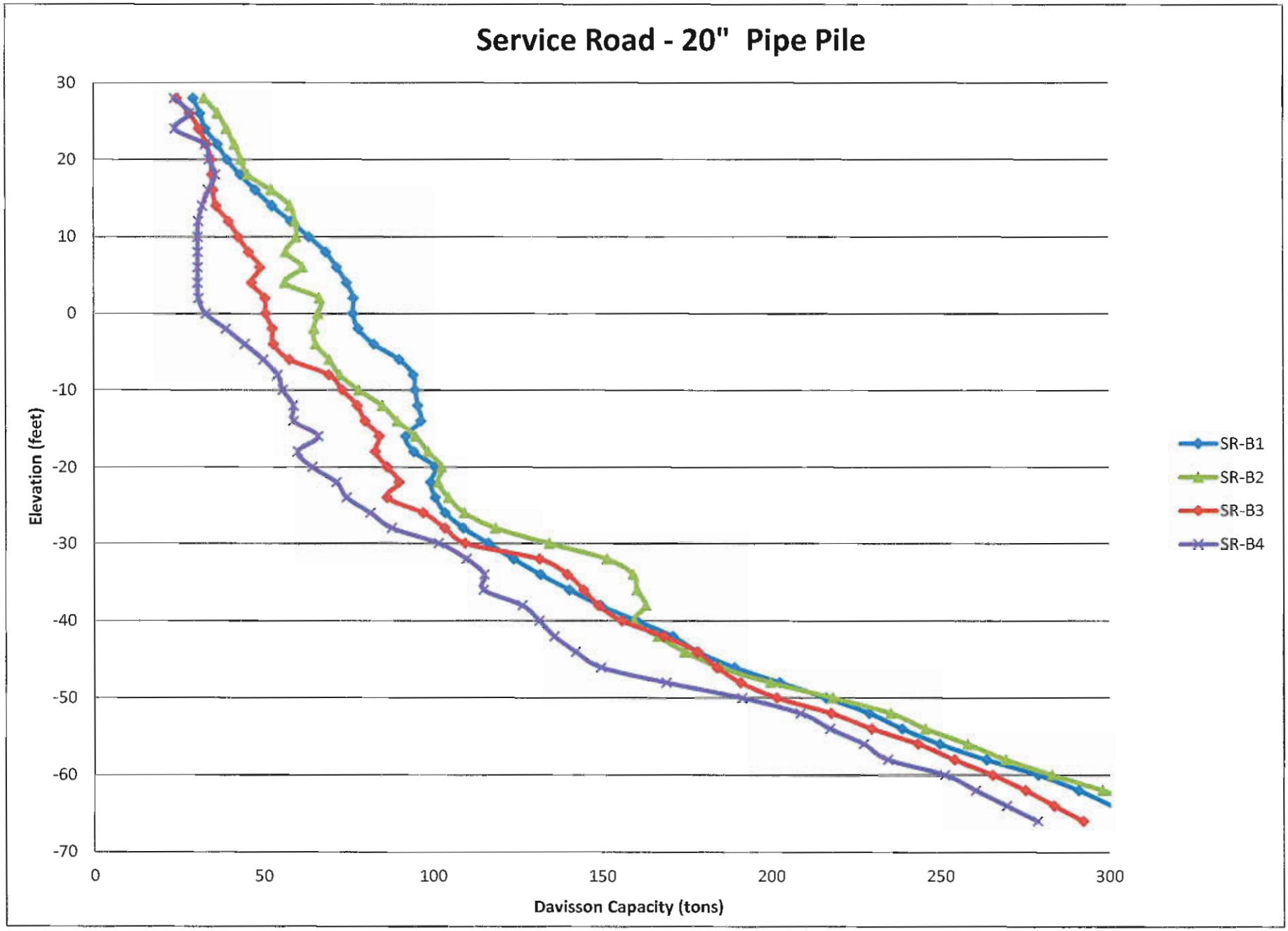

Tree Frog Court - 24" PCP
60
50
40
30
20
10
0
-10
-20
-30
-40
Elevation (feet)
0
100
200
300
400
500
600
Davisson Capacity (tons)
TFC-B1
TFC-B2
TFC-B3

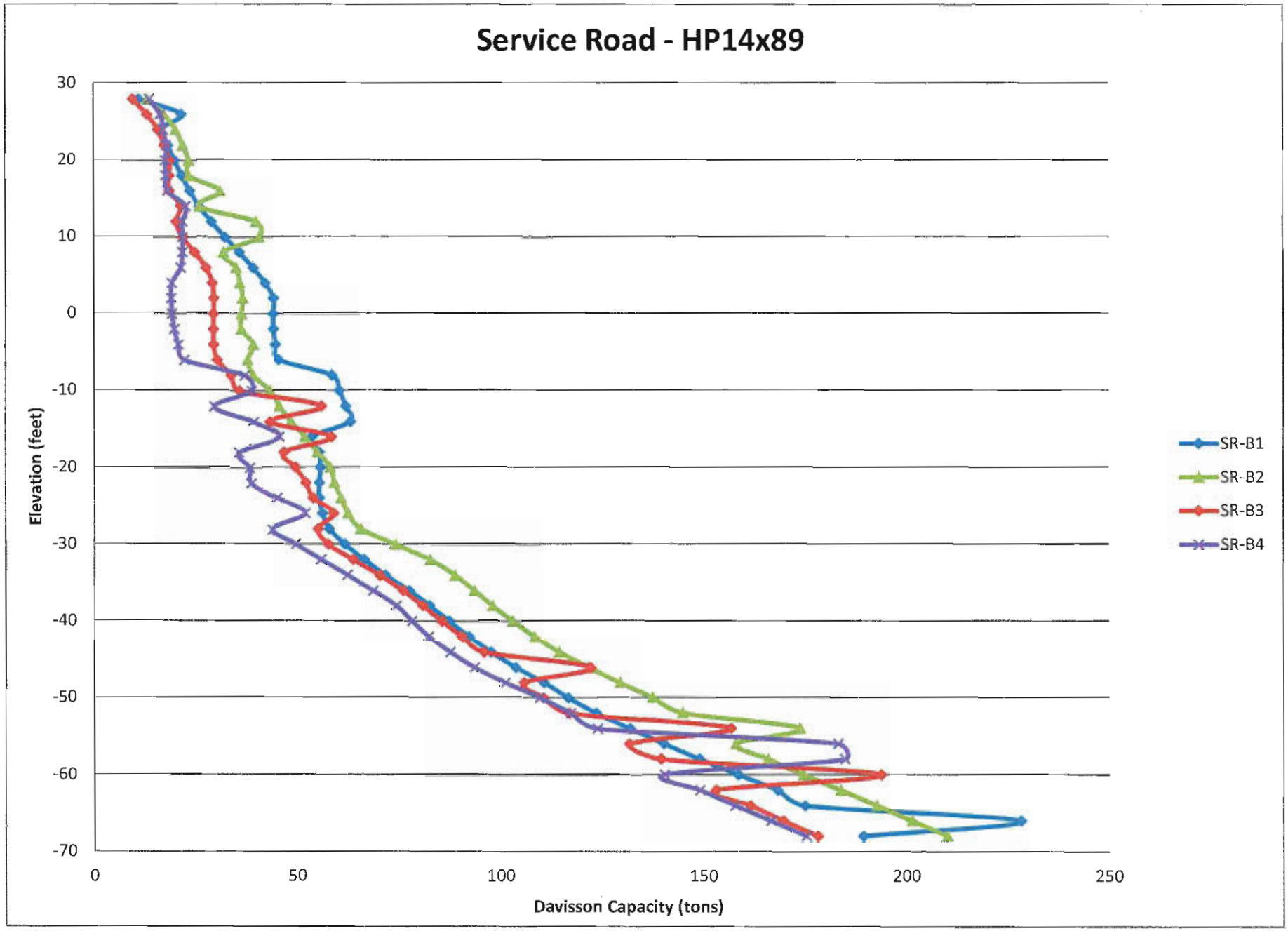

Tree Frog Court - 20" Pipe Pile
Elevation (feet)
60
50
40
30
20
10
0
-10
-20
-30
-40
0
50
100
150
200
250
300
Davisson Capacity (tons)
TFC-B1
TFC-B2
TFC-B3


Tree Frog Court - HP14x89
60
50
40
30
20
10
0
-10
-20
-30
-40
Elevation (feet)
0
50
100
150
200
250
Davisson Capacity (tons)
TFC-B1
TFC-B2
TFC-B3


Service Road - 18" PCP
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Elevation (feet)
0
50
100
150
200
250
300
350
400
Davisson Capacity (tons)
SR-B1
SR-B2
SR-B3
SR-B4


Service Road - 24" PCP
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Elevation (feet)
0
100
200
300
400
500
600
Davisson Capacity (tons)
SR-B1
SR-B2
SR-B3
SR-B4


Service Road - 20" Pipe Pile
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Elevation (feet)
0
50
100
150
200
250
300
Davisson Capacity (tons)
SR-B1
SR-B2
SR-B3
SR-B4


Service Road - HP14x89
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
Elevation (feet)
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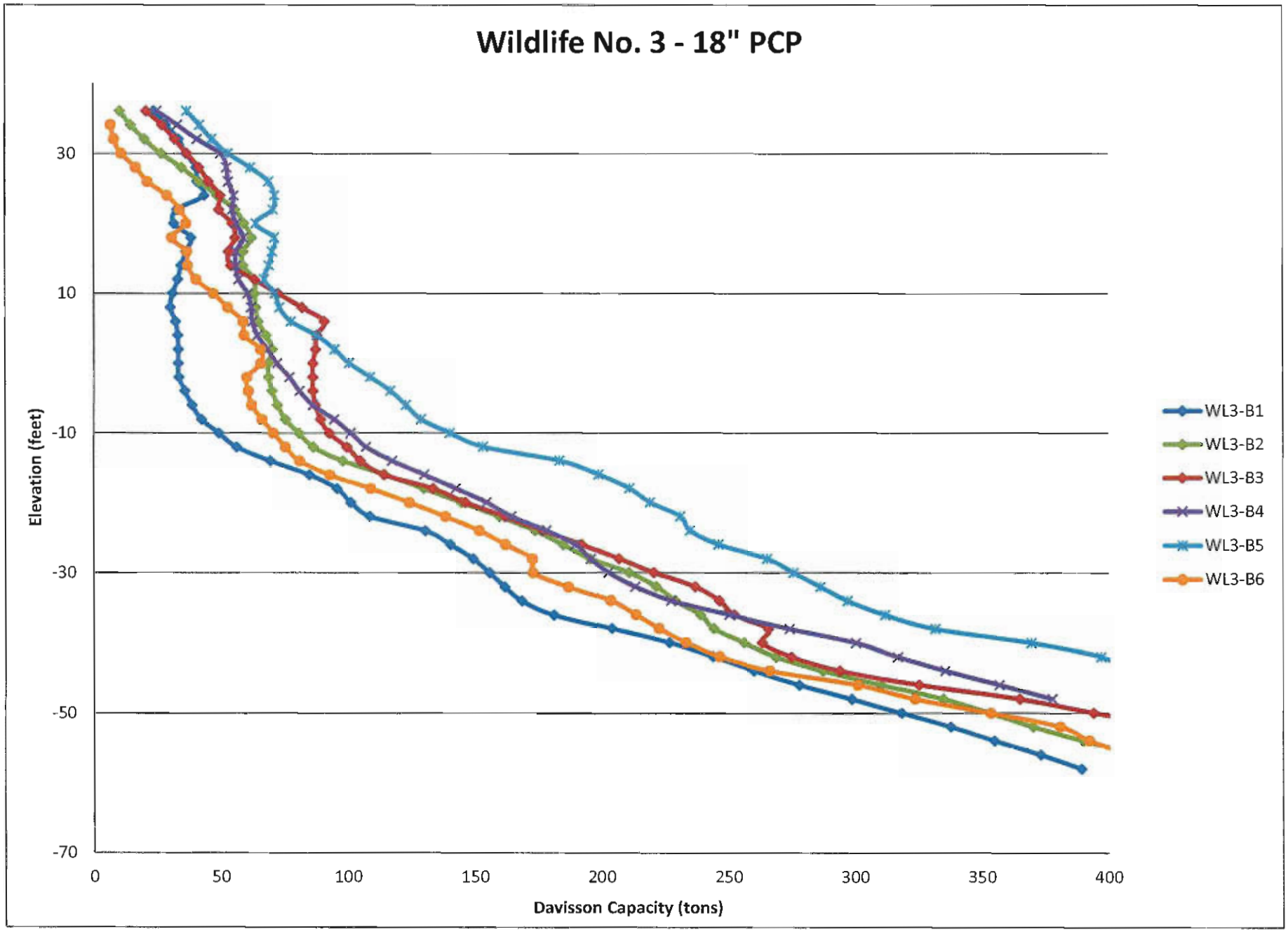
50
100
150
200
250
Davisson Capacity (tons)
SR-B1
SR-B2
SR-B3
SR-B4


Wildlife No. 3 - 18" PCP
Elevation (feet)
30
10
-10
-30
-50
-70
0
50
100
150
200
250
300
350
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Davisson Capacity (tons)
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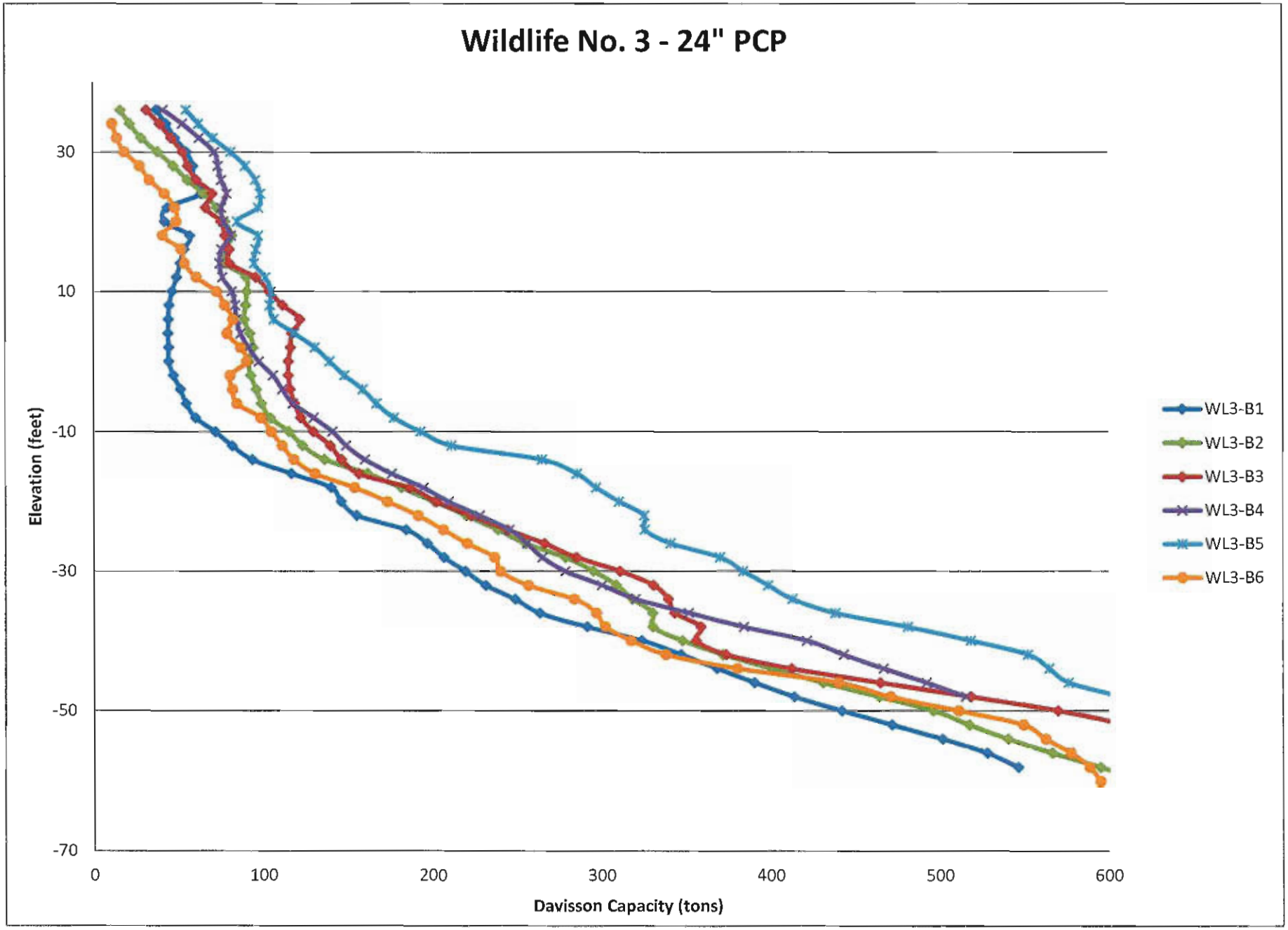
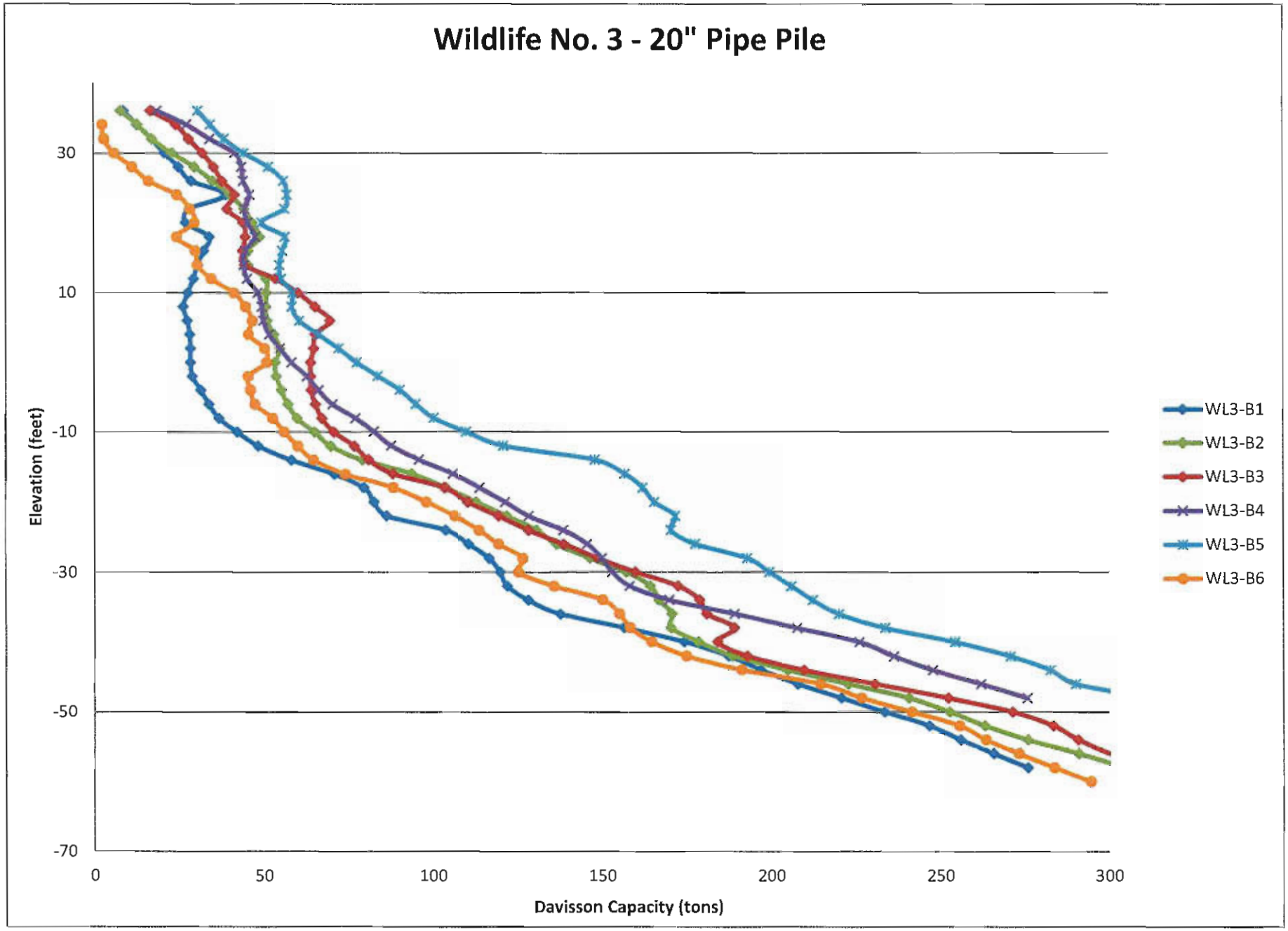
WL3-B2
WL3-B3
WL3-B4
WL3-B5
WL3-B6


Wildlife No. 3 - 24" PCP
Elevation (feet)
30
10
-10
-30
-50
-70
0
100
200
300
400
500
600
Davisson Capacity (tons)
WL3-B1
WL3-B2
WL3-B3
WL3-B4
WL3-B5
WL3-B6


Wildlife No. 3 - 20" Pipe Pile
Elevation (feet)
30
10
-10
-30
-50
-70
0
50
100
150
200
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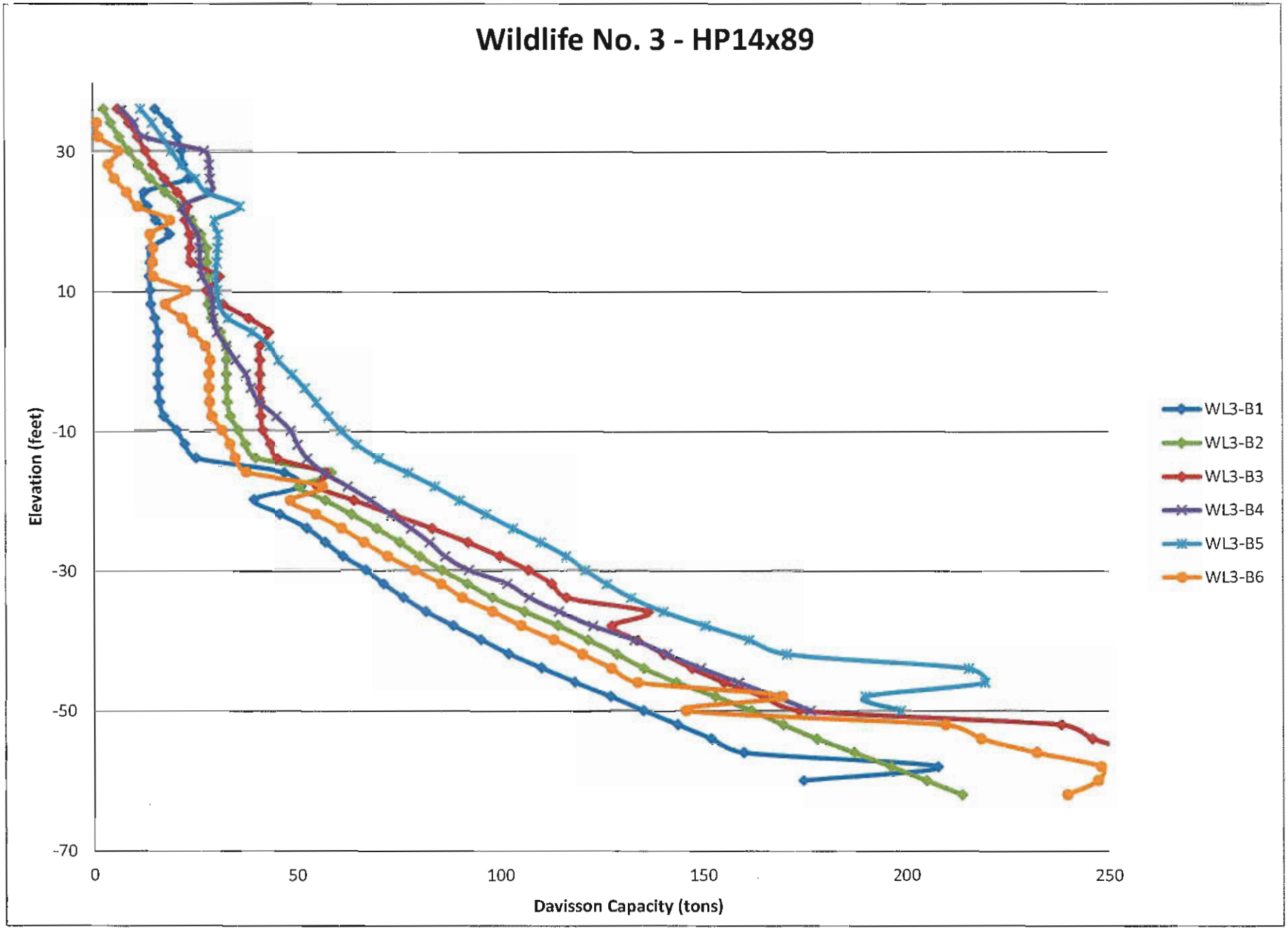
300
Davisson Capacity (tons)
WL3-B1
WL3-B2
WL3-B3
WL3-B4
WL3-B5
WL3-B6


Wildlife No. 3 - HP14x89
30
10
-10
-30
-50
-70
Elevation (feet)
0
50
100
150
200
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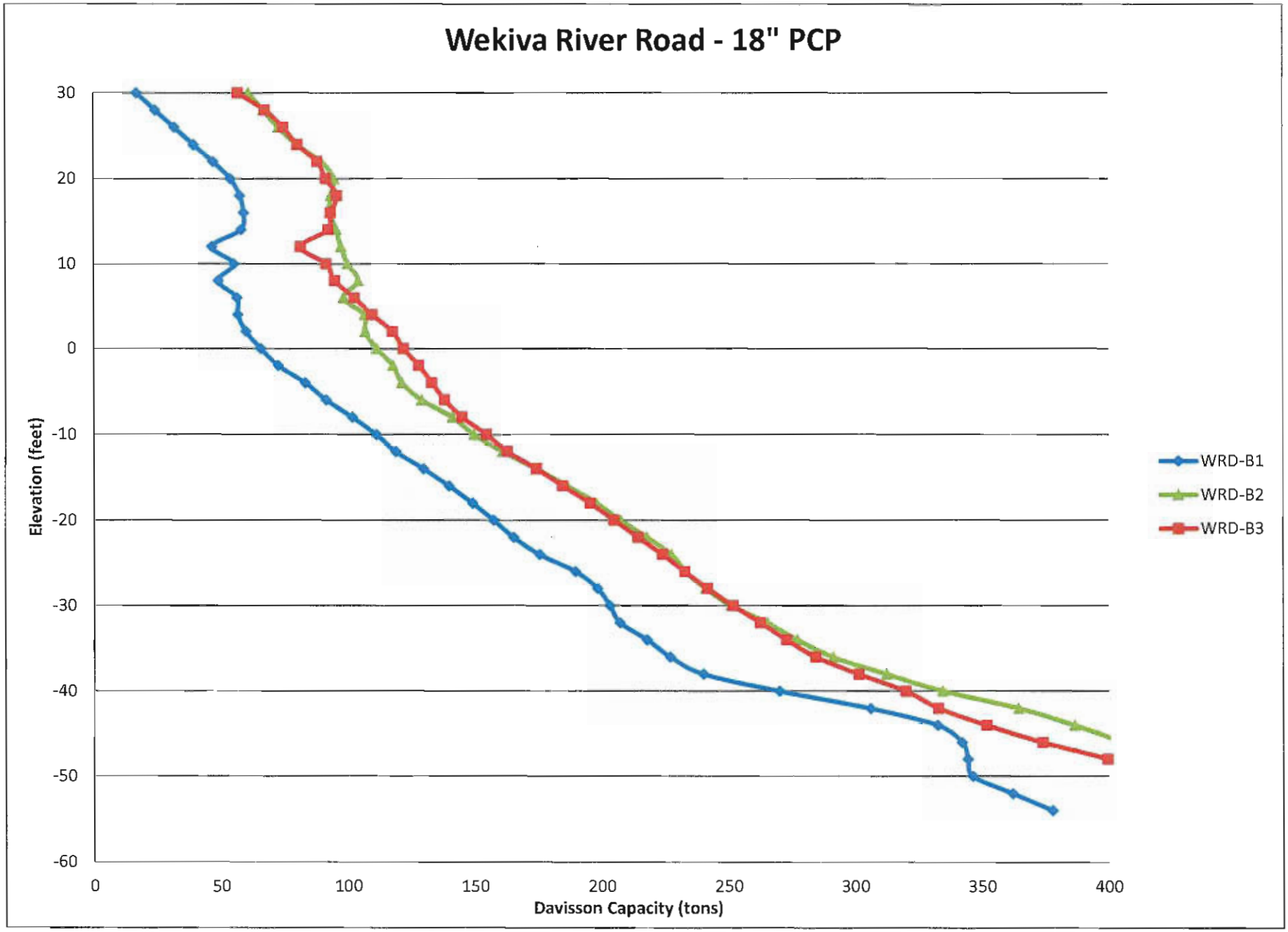
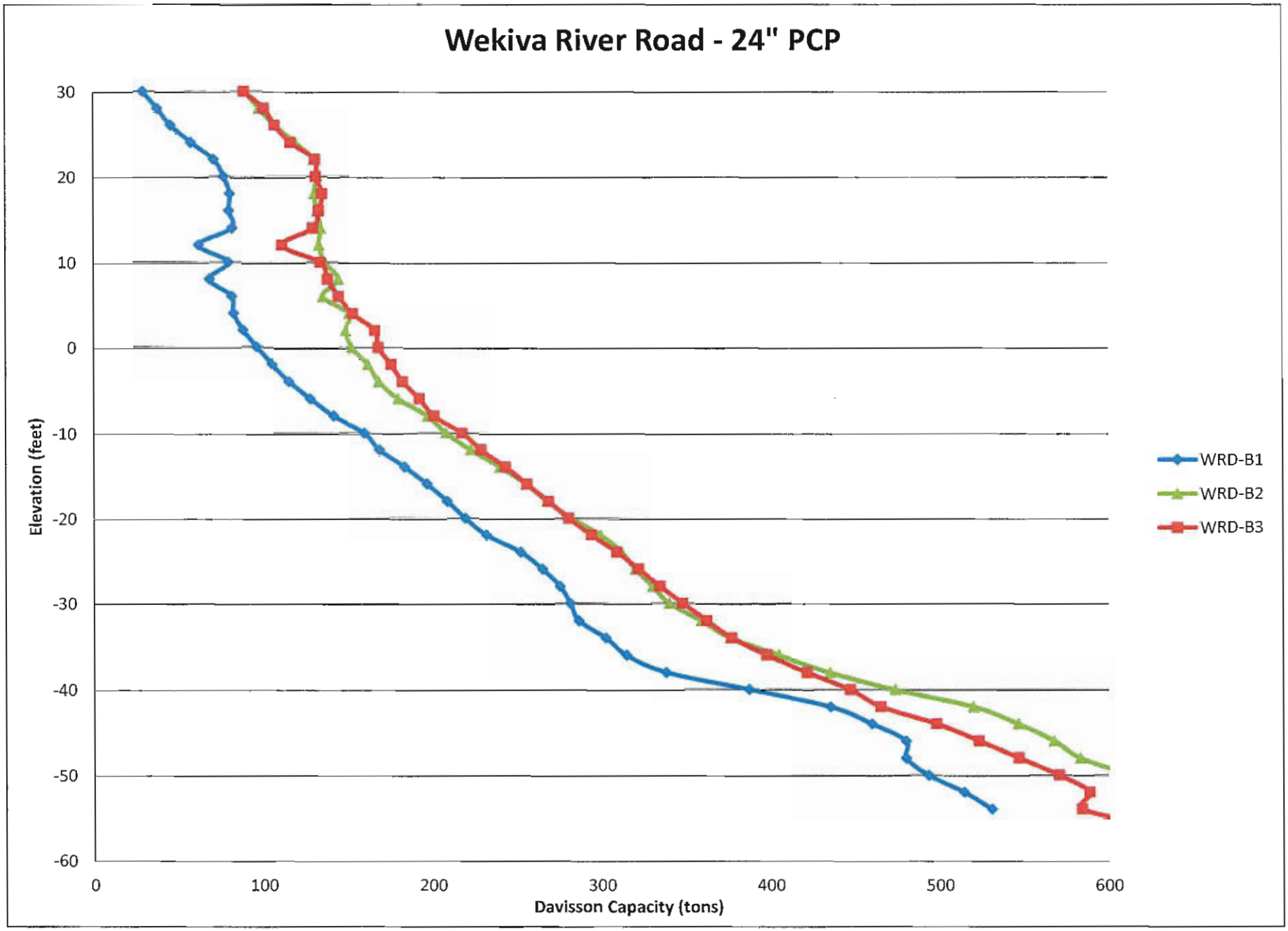
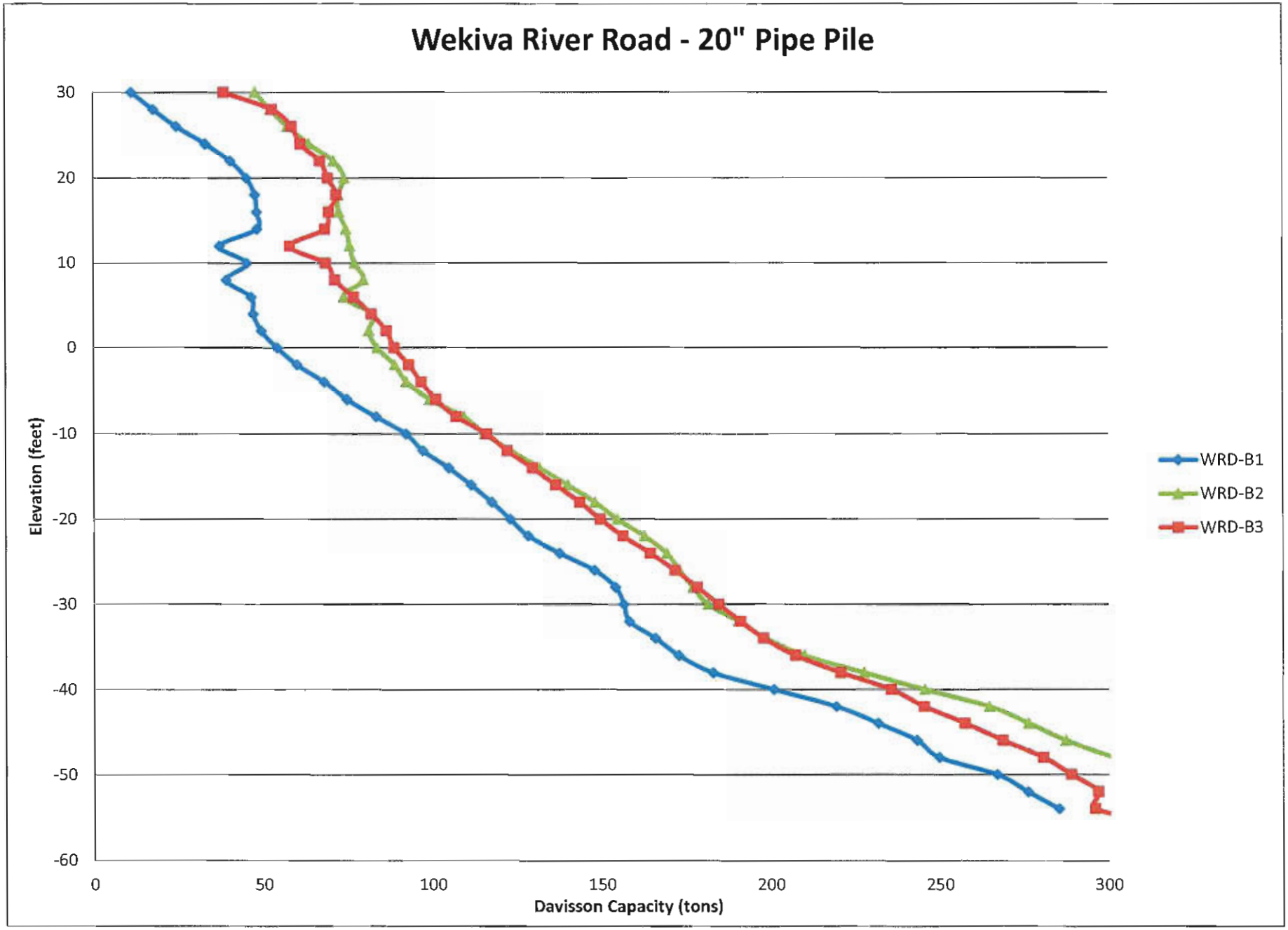
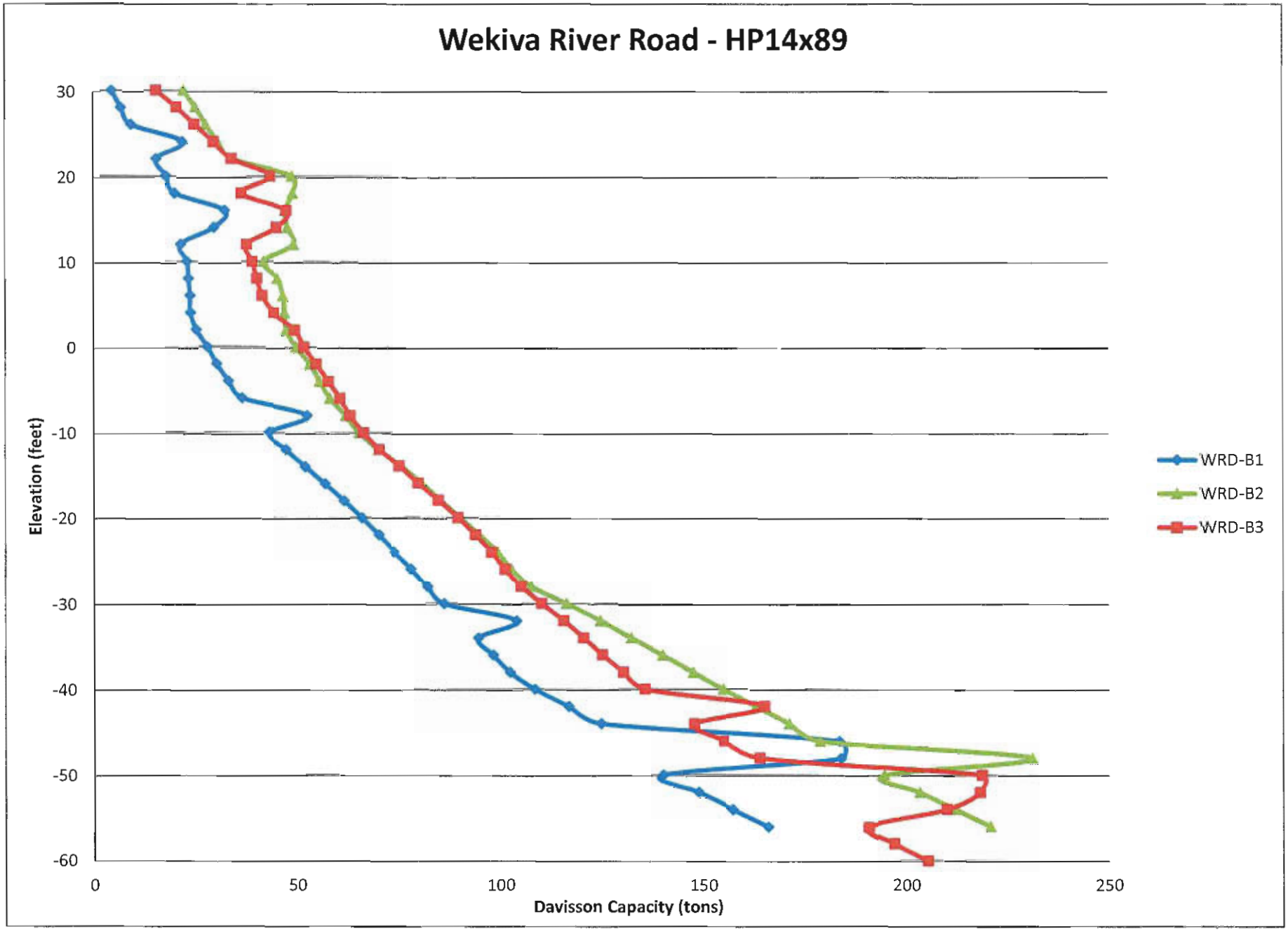
Davisson Capacity (tons)
WL3-B1
WL3-B2
WL3-B3
WL3-B4
WL3-B5
WL3-B6


Wekiva River Road - 18" PCP
Elevation (feet)
30
20
10
0
-10
-20
-30
-40
-50
-60
0
50
100
150
200
250
300
350
400
Davisson Capacity (tons)
WRD-B1
WRD-B2
WRD-B3


Wekiva River Road - 24" PCP
Elevation (feet)
30
20
10
0
-10
-20
-30
-40
-50
-60
0
100
200
300
400
500
600
Davisson Capacity (tons)
WRD-B1
WRD-B2
WRD-B3


Wekiva River Road - 20" Pipe Pile
30
20
10
0
-10
-20
-30
-40
-50
-60
Elevation (feet)
0
50
100
150
200
250
300
Davisson Capacity (tons)
WRD-B1
WRD-B2
WRD-B3


Wekiva River Road - HP14x89
30
20
10
0
-10
-20
-30
-40
-50
-60
Elevation (feet)
0
50
100
150
200
250
Davisson Capacity (tons)
WRD-B1
WRD-B2
WRD-B3

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 11:29:10

General Information:
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Project number: H1135080
Job name: Wekiva Parkway Section 6 Tree Frog Court
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
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Boring date: 9-18-13, Boring Number: TFC-B1
Station number: 758+29 Offset: 68 RT

Ground Elevation: 64.700(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	2.00	3- Clean sand
5	8.00	10.00	2- Clay and silty sand
6	10.00	15.00	2- Clay and silty sand
7	12.50	10.00	2- Clay and silty sand
8	15.00	9.00	1- Plastic Clay
9	17.50	12.00	1- Plastic Clay
10	20.00	24.00	3- Clean sand
11	22.50	22.00	3- Clean sand
12	25.00	11.00	2- Clay and silty sand
13	27.50	21.00	3- Clean sand
14	30.00	5.00	2- Clay and silty sand
15	32.50	5.00	2- Clay and silty sand
16	33.75	5.00	3- Clean sand
17	35.00	13.00	2- Clay and silty sand

18	37.50	12.00	2- Clay and silty sand
19	38.75	2.00	3- Clean sand
20	40.00	2.00	2- Clay and silty sand
21	42.50	2.00	2- Clay and silty sand
22	45.00	99.00	2- Clay and silty sand
23	47.50	99.00	2- Clay and silty sand
24	50.00	41.00	2- Clay and silty sand
25	52.50	99.00	2- Clay and silty sand
26	55.00	99.00	2- Clay and silty sand
27	57.50	99.00	1- Plastic Clay
28	60.00	99.00	2- Clay and silty sand
29	62.50	99.00	2- Clay and silty sand
30	65.00	99.00	2- Clay and silty sand
31	67.50	99.00	4- Lime Stone/Very shelly sand
32	70.00	99.00	2- Clay and silty sand
33	72.50	99.00	2- Clay and silty sand
34	73.75	22.00	3- Clean sand
35	75.00	22.00	2- Clay and silty sand
36	76.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	64.70	56.70	8.00	2.00	3-Clean Sand
2	56.70	49.70	7.00	11.79	2-Clay and Silty Sand
3	49.70	44.70	5.00	10.50	1-Plastic Clay
4	44.70	39.70	5.00	23.00	3-Clean Sand
5	39.70	37.20	2.50	11.00	2-Clay and Silty Sand
6	37.20	34.70	2.50	21.00	3-Clean Sand
7	34.70	30.95	3.75	5.00	2-Clay and Silty Sand
8	30.95	29.70	1.25	5.00	3-Clean Sand
9	29.70	25.95	3.75	12.67	2-Clay and Silty Sand
10	25.95	24.70	1.25	2.00	3-Clean Sand
11	24.70	7.20	17.50	63.00	2-Clay and Silty Sand
12	7.20	4.70	2.50	99.00	1-Plastic Clay
13	4.70	-2.80	7.50	99.00	2-Clay and Silty Sand
14	-2.80	-5.30	2.50	99.00	4-Limestone, Very Shelly Sand
15	-5.30	-9.05	3.75	99.00	2-Clay and Silty Sand
16	-9.05	-10.30	1.25	22.00	3-Clean Sand
17	-10.30	-11.30	1.00	22.00	2-Clay and Silty Sand

18	-11.30	-11.30	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	54.70
18.00	12.00	52.70
18.00	14.00	50.70
18.00	16.00	48.70
18.00	18.00	46.70
18.00	20.00	44.70
18.00	22.00	42.70
18.00	24.00	40.70
18.00	26.00	38.70
18.00	28.00	36.70
18.00	30.00	34.70
18.00	32.00	32.70
18.00	34.00	30.70
18.00	36.00	28.70
18.00	38.00	26.70
18.00	40.00	24.70
18.00	42.00	22.70
18.00	44.00	20.70
18.00	46.00	18.70
18.00	48.00	16.70
18.00	50.00	14.70
18.00	52.00	12.70
18.00	54.00	10.70
18.00	56.00	8.70
18.00	58.00	6.70
18.00	60.00	4.70
18.00	62.00	2.70
18.00	64.00	0.70
18.00	66.00	-1.30
18.00	68.00	-3.30
18.00	70.00	-5.30
18.00	72.00	-7.30
18.00	74.00	-9.30

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	10.79	9.64	20.43	10.22	39.72
12.00	18.0	18.66	8.44	27.10	13.55	43.98
14.00	18.0	23.00	12.24	35.24	17.62	59.72
16.00	18.0	31.14	20.04	51.18	25.59	91.26
18.00	18.0	37.07	35.40	72.47	36.24	143.27
20.00	18.0	47.37	35.89	83.26	41.63	155.05
22.00	18.0	53.93	34.45	88.39	44.19	157.29
24.00	18.0	60.31	35.63	95.95	47.97	167.21
26.00	18.0	67.04	28.96	95.99	48.00	153.91
28.00	18.0	72.51	21.18	93.69	46.84	136.04
30.00	18.0	77.52	11.19	88.71	44.35	111.09
32.00	18.0	80.83	11.28	92.10	46.05	114.65
34.00	18.0	83.48	22.07	105.55	52.78	149.69
36.00	18.0	89.45	11.35	100.80	50.40	123.51
38.00	18.0	97.21	10.09	107.31	53.65	127.49
40.00	18.0	98.04	17.39	115.44	57.72	150.22
42.00	18.0	98.04	21.14	119.19	59.59	161.48
44.00	18.0	100.26	32.04	132.31	66.15	196.39
46.00	18.0	110.41	43.59	154.00	77.00	241.19
48.00	18.0	123.90	47.77	171.67	85.84	267.22
50.00	18.0	138.30	52.99	191.29	95.65	297.27
52.00	18.0	153.15	55.67	208.82	104.41	320.16
54.00	18.0	168.23	56.40	224.62	112.31	337.42
56.00	18.0	183.66	61.05	244.71	122.36	366.80
58.00	18.0	211.95	50.69	262.63	131.32	364.01
60.00	18.0	228.56	66.77	295.32	147.66	428.86
62.00	18.0	242.69	69.81	312.50	156.25	452.11
64.00	18.0	254.88	81.07	335.95	167.98	498.09
66.00	18.0	269.20	88.25	357.45	178.72	533.94
68.00	18.0	284.16	81.21	365.37	182.69	527.80
70.00	18.0	296.47	63.71	360.18	180.09	487.59
72.00	18.0	********** Not enough soil data *******				
74.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA,

AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE
   ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 11:32:46

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Tree Frog Ct\TFC-B-2_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Tree Frog Court
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 6-24-14, Boring Number: TFC-B2
Station number: 758+90 Offset: 120 LT

Ground Elevation: 67.000(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	5.00	3- Clean sand
2	2.00	5.00	3- Clean sand
3	4.00	11.00	2- Clay and silty sand
4	6.00	20.00	2- Clay and silty sand
5	8.00	22.00	2- Clay and silty sand
6	10.00	23.00	2- Clay and silty sand
7	12.50	12.00	2- Clay and silty sand
8	15.00	17.00	2- Clay and silty sand
9	17.50	22.00	3- Clean sand
10	20.00	11.00	2- Clay and silty sand
11	22.50	11.00	2- Clay and silty sand
12	25.00	10.00	2- Clay and silty sand
13	27.50	12.00	2- Clay and silty sand
14	28.75	2.00	3- Clean sand
15	30.00	2.00	2- Clay and silty sand
16	32.50	4.00	2- Clay and silty sand
17	35.00	0.00	2- Clay and silty sand

18	37.50	3.00	2- Clay and silty sand
19	40.00	2.00	2- Clay and silty sand
20	42.50	99.00	4- Lime Stone/Very shelly sand
21	45.00	22.00	2- Clay and silty sand
22	47.50	9.00	2- Clay and silty sand
23	48.75	9.00	3- Clean sand
24	50.00	99.00	2- Clay and silty sand
25	52.50	99.00	4- Lime Stone/Very shelly sand
26	55.00	99.00	4- Lime Stone/Very shelly sand
27	57.50	46.00	2- Clay and silty sand
28	60.00	99.00	2- Clay and silty sand
29	62.50	99.00	2- Clay and silty sand
30	65.00	99.00	2- Clay and silty sand
31	67.50	99.00	2- Clay and silty sand
32	70.00	99.00	4- Lime Stone/Very shelly sand
33	72.50	99.00	4- Lime Stone/Very shelly sand
34	75.00	99.00	2- Clay and silty sand
35	77.50	99.00	2- Clay and silty sand
36	80.00	99.00	2- Clay and silty sand
37	82.50	55.00	2- Clay and silty sand
38	85.00	99.00	2- Clay and silty sand
39	87.50	99.00	2- Clay and silty sand
40	88.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	67.00	63.00	4.00	5.00	3-Clean Sand
2	63.00	49.50	13.50	17.48	2-Clay and Silty Sand
3	49.50	47.00	2.50	22.00	3-Clean Sand
4	47.00	38.25	8.75	10.86	2-Clay and Silty Sand
5	38.25	37.00	1.25	2.00	3-Clean Sand
6	37.00	24.50	12.50	2.20	2-Clay and Silty Sand
7	24.50	22.00	2.50	99.00	4-Limestone, Very Shelly Sand
8	22.00	18.25	3.75	17.67	2-Clay and Silty Sand
9	18.25	17.00	1.25	9.00	3-Clean Sand
10	17.00	14.50	2.50	99.00	2-Clay and Silty Sand
11	14.50	9.50	5.00	99.00	4-Limestone, Very Shelly Sand
12	9.50	-3.00	12.50	88.40	2-Clay and Silty Sand

13	-3.00	-8.00	5.00	99.00	4-Limestone, Very Shelly Sand
14	-8.00	-21.00	13.00	90.54	2-Clay and Silty Sand
15	-21.00	-21.00	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	57.00
18.00	12.00	55.00
18.00	14.00	53.00
18.00	16.00	51.00
18.00	18.00	49.00
18.00	20.00	47.00
18.00	22.00	45.00
18.00	24.00	43.00
18.00	26.00	41.00
18.00	28.00	39.00
18.00	30.00	37.00
18.00	32.00	35.00
18.00	34.00	33.00
18.00	36.00	31.00
18.00	38.00	29.00
18.00	40.00	27.00
18.00	42.00	25.00
18.00	44.00	23.00
18.00	46.00	21.00
18.00	48.00	19.00
18.00	50.00	17.00
18.00	52.00	15.00
18.00	54.00	13.00
18.00	56.00	11.00
18.00	58.00	9.00
18.00	60.00	7.00
18.00	62.00	5.00
18.00	64.00	3.00
18.00	66.00	1.00
18.00	68.00	-1.00
18.00	70.00	-3.00
18.00	72.00	-5.00
18.00	74.00	-7.00

18.00	76.00	-9.00
18.00	78.00	-11.00
18.00	80.00	-13.00
18.00	82.00	-15.00
18.00	84.00	-17.00
18.00	86.00	-19.00
18.00	88.00	-21.00
18.00	90.00	-23.00

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	36.68	23.82	60.50	30.25	108.13
12.00	18.0	46.96	27.52	74.49	37.24	129.53
14.00	18.0	55.09	33.71	88.80	44.40	156.21
16.00	18.0	64.33	32.99	97.32	48.66	163.29
18.00	18.0	72.57	28.25	100.82	50.41	157.32
20.00	18.0	79.18	15.95	95.13	47.57	127.03
22.00	18.0	85.99	16.02	102.01	51.01	134.05
24.00	18.0	92.83	14.51	107.33	53.67	136.34
26.00	18.0	99.32	11.44	110.77	55.38	133.65
28.00	18.0	106.12	8.39	114.51	57.25	131.28
30.00	18.0	106.96	8.50	115.46	57.73	132.47
32.00	18.0	106.96	5.50	112.46	56.23	123.47
34.00	18.0	106.96	4.14	111.10	55.55	119.37
36.00	18.0	106.96	7.62	114.58	57.29	129.83
38.00	18.0	106.96	31.00	137.95	68.98	199.95
40.00	18.0	106.96	43.39	150.35	75.17	237.13
42.00	18.0	109.84	40.68	150.51	75.26	231.86
44.00	18.0	117.90	31.31	149.20	74.60	211.82
46.00	18.0	127.91	32.09	160.00	80.00	224.18
48.00	18.0	131.37	44.53	175.90	87.95	264.95
50.00	18.0	142.64	94.78	237.42	118.71	426.97
52.00	18.0	153.94	98.23	252.17	126.09	448.64
54.00	18.0	162.36	95.99	258.35	129.18	450.34
56.00	18.0	170.42	82.57	253.00	126.50	418.15
58.00	18.0	184.30	70.13	254.43	127.22	394.69
60.00	18.0	200.05	71.11	271.16	135.58	413.39
62.00	18.0	215.65	71.42	287.07	143.54	429.91
64.00	18.0	230.47	76.91	307.38	153.69	461.19

66.00	18.0	246.18	93.17	339.35	169.67	525.68
68.00	18.0	261.68	109.18	370.86	185.43	589.22
70.00	18.0	273.28	108.71	381.99	191.00	599.42
72.00	18.0	280.48	99.19	379.67	189.83	578.04
74.00	18.0	289.59	91.71	381.31	190.65	564.74
76.00	18.0	304.45	72.00	376.45	188.23	520.45
78.00	18.0	320.16	72.00	392.16	196.08	536.16
80.00	18.0	335.87	72.00	407.87	203.94	551.87
82.00	18.0	351.58	72.00	423.58	211.79	567.58
84.00	18.0	********** Not enough soil data *******				
86.00	18.0	0.00	0.00	0.00	0.00	0.00
88.00	18.0	0.00	0.00	0.00	0.00	0.00
90.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 11:35:02

General Information:
==========
Input file: .....alculations-Analyses\FB-Deep\Tree Frog Ct\TFC-B-3_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 Tree Frog Court
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
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Boring date: 9-12-13, Boring Number: TFC-B3
Station number: 759+38 Offset: 67 RT

Ground Elevation: 65.800(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	6.00	4.00	3- Clean sand
3	8.00	4.00	3- Clean sand
4	10.00	16.00	2- Clay and silty sand
5	12.50	21.00	2- Clay and silty sand
6	15.00	10.00	1- Plastic Clay
7	17.50	24.00	2- Clay and silty sand
8	20.00	32.00	3- Clean sand
9	22.50	30.00	3- Clean sand
10	25.00	9.00	2- Clay and silty sand
11	27.50	7.00	1- Plastic Clay
12	30.00	5.00	1- Plastic Clay
13	31.25	4.00	2- Clay and silty sand
14	32.50	4.00	1- Plastic Clay
15	35.00	2.00	2- Clay and silty sand
16	37.50	2.00	2- Clay and silty sand
17	40.00	0.00	2- Clay and silty sand

18	42.50	0.00	2- Clay and silty sand
19	45.00	3.00	2- Clay and silty sand
20	47.50	4.00	2- Clay and silty sand
21	50.00	9.00	2- Clay and silty sand
22	51.25	9.00	3- Clean sand
23	52.50	25.00	2- Clay and silty sand
24	53.75	25.00	3- Clean sand
25	55.00	99.00	2- Clay and silty sand
26	57.50	99.00	4- Lime Stone/Very shelly sand
27	60.00	61.00	2- Clay and silty sand
28	61.25	30.00	3- Clean sand
29	62.50	30.00	2- Clay and silty sand
30	63.75	8.00	3- Clean sand
31	65.00	8.00	2- Clay and silty sand
32	67.50	12.00	2- Clay and silty sand
33	70.00	15.00	2- Clay and silty sand
34	71.25	5.00	3- Clean sand
35	72.50	5.00	2- Clay and silty sand
36	75.00	8.00	2- Clay and silty sand
37	77.50	36.00	3- Clean sand
38	80.00	30.00	2- Clay and silty sand
39	82.50	99.00	4- Lime Stone/Very shelly sand
40	85.00	0.00	2- Clay and silty sand
41	86.25	0.00	3- Clean sand
42	87.50	11.00	2- Clay and silty sand
43	90.00	6.00	4- Lime Stone/Very shelly sand
44	91.25	6.00	2- Clay and silty sand
45	92.50	35.00	4- Lime Stone/Very shelly sand
46	95.00	50.00	4- Lime Stone/Very shelly sand
47	97.50	45.00	4- Lime Stone/Very shelly sand
48	100.00	99.00	4- Lime Stone/Very shelly sand
49	102.50	49.00	4- Lime Stone/Very shelly sand
50	105.00	35.00	4- Lime Stone/Very shelly sand
51	107.50	99.00	4- Lime Stone/Very shelly sand
52	110.00	50.00	4- Lime Stone/Very shelly sand
53	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	65.80	55.80	10.00	4.00	3-Clean Sand

2	55.80	50.80	5.00	18.50	2-Clay and Silty Sand
3	50.80	48.30	2.50	10.00	1-Plastic Clay
4	48.30	45.80	2.50	24.00	2-Clay and Silty Sand
5	45.80	40.80	5.00	31.00	3-Clean Sand
6	40.80	38.30	2.50	9.00	2-Clay and Silty Sand
7	38.30	34.55	3.75	6.33	1-Plastic Clay
8	34.55	33.30	1.25	4.00	2-Clay and Silty Sand
9	33.30	30.80	2.50	4.00	1-Plastic Clay
10	30.80	14.55	16.25	2.38	2-Clay and Silty Sand
11	14.55	13.30	1.25	9.00	3-Clean Sand
12	13.30	12.05	1.25	25.00	2-Clay and Silty Sand
13	12.05	10.80	1.25	25.00	3-Clean Sand
14	10.80	8.30	2.50	99.00	2-Clay and Silty Sand
15	8.30	5.80	2.50	99.00	4-Limestone, Very Shelly Sand
16	5.80	4.55	1.25	61.00	2-Clay and Silty Sand
17	4.55	3.30	1.25	30.00	3-Clean Sand
18	3.30	2.05	1.25	30.00	2-Clay and Silty Sand
19	2.05	0.80	1.25	8.00	3-Clean Sand
20	0.80	-5.45	6.25	11.00	2-Clay and Silty Sand
21	-5.45	-6.70	1.25	5.00	3-Clean Sand
22	-6.70	-11.70	5.00	6.50	2-Clay and Silty Sand
23	-11.70	-14.20	2.50	36.00	3-Clean Sand
24	-14.20	-16.70	2.50	30.00	2-Clay and Silty Sand
25	-16.70	-19.20	2.50	99.00	4-Limestone, Very Shelly Sand
26	-19.20	-20.45	1.25	0.00	2-Clay and Silty Sand
27	-20.45	-21.70	1.25	0.00	3-Clean Sand
28	-21.70	-24.20	2.50	11.00	2-Clay and Silty Sand
29	-24.20	-25.45	1.25	6.00	4-Limestone, Very Shelly Sand
30	-25.45	-26.70	1.25	6.00	2-Clay and Silty Sand
31	-26.70	-45.20	18.50	58.38	4-Limestone, Very Shelly Sand
32	-45.20	-45.20	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	55.80
18.00	12.00	53.80

18.00	14.00	51.80
18.00	16.00	49.80
18.00	18.00	47.80
18.00	20.00	45.80
18.00	22.00	43.80
18.00	24.00	41.80
18.00	26.00	39.80
18.00	28.00	37.80
18.00	30.00	35.80
18.00	32.00	33.80
18.00	34.00	31.80
18.00	36.00	29.80
18.00	38.00	27.80
18.00	40.00	25.80
18.00	42.00	23.80
18.00	44.00	21.80
18.00	46.00	19.80
18.00	48.00	17.80
18.00	50.00	15.80
18.00	52.00	13.80
18.00	54.00	11.80
18.00	56.00	9.80
18.00	58.00	7.80
18.00	60.00	5.80
18.00	62.00	3.80
18.00	64.00	1.80
18.00	66.00	-0.20
18.00	68.00	-2.20
18.00	70.00	-4.20
18.00	72.00	-6.20
18.00	74.00	-8.20
18.00	76.00	-10.20
18.00	78.00	-12.20
18.00	80.00	-14.20
18.00	82.00	-16.20
18.00	84.00	-18.20
18.00	86.00	-20.20
18.00	88.00	-22.20
18.00	90.00	-24.20
18.00	92.00	-26.20
18.00	94.00	-28.20
18.00	96.00	-30.20
18.00	98.00	-32.20
18.00	100.00	-34.20
18.00	102.00	-36.20
18.00	104.00	-38.20
18.00	106.00	-40.20
18.00	108.00	-42.20

18.00 110.00 -44.20

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	4.68	12.43	17.11	8.56	41.97
12.00	18.0	14.28	12.75	27.02	13.51	52.52
14.00	18.0	19.76	18.07	37.83	18.91	73.97
16.00	18.0	33.53	36.77	70.30	35.15	143.85
18.00	18.0	44.62	47.82	92.44	46.22	188.07
20.00	18.0	55.19	49.34	104.54	52.27	203.22
22.00	18.0	64.02	40.11	104.13	52.06	184.35
24.00	18.0	71.90	30.93	102.83	51.42	164.69
26.00	18.0	77.35	6.56	83.90	41.95	97.01
28.00	18.0	82.92	2.39	85.31	42.65	90.10
30.00	18.0	87.67	2.15	89.81	44.91	94.11
32.00	18.0	88.87	0.00	88.87	44.44	88.87
34.00	18.0	88.87	8.65	97.52	48.76	114.81
36.00	18.0	88.87	2.62	91.49	45.74	96.72
38.00	18.0	88.87	0.94	89.81	44.91	91.70
40.00	18.0	88.87	0.40	89.27	44.63	90.07
42.00	18.0	88.87	0.08	88.96	44.48	89.12
44.00	18.0	88.87	0.78	89.65	44.83	91.21
46.00	18.0	88.87	3.99	92.86	46.43	100.83
48.00	18.0	89.01	11.21	100.23	50.11	122.65
50.00	18.0	92.48	24.08	116.56	58.28	164.71
52.00	18.0	96.78	35.54	132.32	66.16	203.40
54.00	18.0	107.07	62.19	169.26	84.63	293.65
56.00	18.0	119.95	68.10	188.05	94.02	324.25
58.00	18.0	129.55	66.39	195.94	97.97	328.71
60.00	18.0	141.85	48.12	189.98	94.99	286.23
62.00	18.0	151.92	32.99	184.90	92.45	250.87
64.00	18.0	161.91	16.90	178.81	89.40	212.61
66.00	18.0	166.79	15.84	182.63	91.31	214.31
68.00	18.0	173.74	15.76	189.50	94.75	221.01
70.00	18.0	182.04	14.98	197.03	98.51	227.00
72.00	18.0	185.95	18.99	204.94	102.47	242.92
74.00	18.0	189.30	34.48	223.78	111.89	292.74
76.00	18.0	193.49	40.74	234.23	117.11	315.70
78.00	18.0	204.24	58.56	262.80	131.40	379.92

80.00	18.0	216.95	62.26	279.21	139.61	403.73
82.00	18.0	228.34	51.36	279.70	139.85	382.42
84.00	18.0	232.88	45.04	277.92	138.96	368.00
86.00	18.0	234.81	7.04	241.86	120.93	255.94
88.00	18.0	238.41	50.09	288.50	144.25	388.69
90.00	18.0	241.82	92.63	334.45	167.23	519.70
92.00	18.0	244.86	88.32	333.18	166.59	509.82
94.00	18.0	250.38	99.32	349.70	174.85	548.33
96.00	18.0	256.77	101.94	358.71	179.36	562.59
98.00	18.0	262.09	111.62	373.72	186.86	596.96
100.00	18.0	268.03	122.53	390.56	195.28	635.62
102.00	18.0	274.62	135.03	409.65	204.82	679.71
104.00	18.0	281.38	147.51	428.88	214.44	723.90
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 11:42:51

General Information:
==========
Input file: .....Calculations-Analyses\FB-Deep\Service Road\SR-B-1_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Service Road
Engineer: EJL
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
==========
Boring date: 11-15-13, Boring Number: SR-B1
Station number: 865+48 Offset: 64 LT

Ground Elevation: 38.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	5.00	3- Clean sand
2	2.00	5.00	3- Clean sand
3	4.00	4.00	2- Clay and silty sand
4	5.00	4.00	3- Clean sand
5	6.00	12.00	2- Clay and silty sand
6	8.00	13.00	2- Clay and silty sand
7	10.00	19.00	2- Clay and silty sand
8	11.25	9.00	3- Clean sand
9	12.50	9.00	2- Clay and silty sand
10	15.00	7.00	2- Clay and silty sand
11	17.50	5.00	2- Clay and silty sand
12	20.00	6.00	2- Clay and silty sand
13	22.50	6.00	2- Clay and silty sand
14	25.00	10.00	2- Clay and silty sand
15	27.50	11.00	2- Clay and silty sand
16	30.00	12.00	2- Clay and silty sand
17	32.50	11.00	2- Clay and silty sand

18	35.00	9.00	2- Clay and silty sand
19	36.25	3.00	3- Clean sand
20	37.50	3.00	2- Clay and silty sand
21	40.00	3.00	2- Clay and silty sand
22	42.50	2.00	2- Clay and silty sand
23	45.00	12.00	3- Clean sand
24	47.50	12.00	3- Clean sand
25	50.00	14.00	3- Clean sand
26	52.50	7.00	2- Clay and silty sand
27	55.00	8.00	2- Clay and silty sand
28	56.25	4.00	3- Clean sand
29	57.50	4.00	2- Clay and silty sand
30	60.00	4.00	2- Clay and silty sand
31	62.50	4.00	2- Clay and silty sand
32	65.00	5.00	2- Clay and silty sand
33	66.25	5.00	3- Clean sand
34	67.50	24.00	2- Clay and silty sand
35	70.00	20.00	2- Clay and silty sand
36	72.50	26.00	2- Clay and silty sand
37	75.00	17.00	2- Clay and silty sand
38	77.50	17.00	2- Clay and silty sand
39	80.00	16.00	2- Clay and silty sand
40	82.50	26.00	2- Clay and silty sand
41	85.00	31.00	2- Clay and silty sand
42	87.50	18.00	2- Clay and silty sand
43	88.75	18.00	3- Clean sand
44	90.00	60.00	2- Clay and silty sand
45	92.50	99.00	2- Clay and silty sand
46	95.00	99.00	2- Clay and silty sand
47	97.50	51.00	2- Clay and silty sand
48	100.00	99.00	2- Clay and silty sand
49	102.50	99.00	4- Lime Stone/Very shelly sand
50	105.00	99.00	2- Clay and silty sand
51	107.50	99.00	2- Clay and silty sand
52	110.00	99.00	4- Lime Stone/Very shelly sand
53	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	38.50	34.50	4.00	5.00	3-Clean Sand

2	34.50	33.50	1.00	4.00	2-Clay and Silty Sand
3	33.50	32.50	1.00	4.00	3-Clean Sand
4	32.50	27.25	5.25	14.05	2-Clay and Silty Sand
5	27.25	26.00	1.25	9.00	3-Clean Sand
6	26.00	2.25	23.75	8.58	2-Clay and Silty Sand
7	2.25	1.00	1.25	3.00	3-Clean Sand
8	1.00	-6.50	7.50	2.67	2-Clay and Silty Sand
9	-6.50	-14.00	7.50	12.67	3-Clean Sand
10	-14.00	-17.75	3.75	7.33	2-Clay and Silty Sand
11	-17.75	-19.00	1.25	4.00	3-Clean Sand
12	-19.00	-27.75	8.75	4.14	2-Clay and Silty Sand
13	-27.75	-29.00	1.25	5.00	3-Clean Sand
14	-29.00	-50.25	21.25	21.88	2-Clay and Silty Sand
15	-50.25	-51.50	1.25	18.00	3-Clean Sand
16	-51.50	-64.00	12.50	81.60	2-Clay and Silty Sand
17	-64.00	-66.50	2.50	99.00	4-Limestone, Very Shelly Sand
18	-66.50	-71.50	5.00	99.00	2-Clay and Silty Sand
19	-71.50	-72.50	1.00	99.00	4-Limestone, Very Shelly Sand
20	-72.50	-72.50	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	28.50
18.00	12.00	26.50
18.00	14.00	24.50
18.00	16.00	22.50
18.00	18.00	20.50
18.00	20.00	18.50
18.00	22.00	16.50
18.00	24.00	14.50
18.00	26.00	12.50
18.00	28.00	10.50
18.00	30.00	8.50
18.00	32.00	6.50
18.00	34.00	4.50
18.00	36.00	2.50
18.00	38.00	0.50
18.00	40.00	-1.50

18.00	42.00	-3.50
18.00	44.00	-5.50
18.00	46.00	-7.50
18.00	48.00	-9.50
18.00	50.00	-11.50
18.00	52.00	-13.50
18.00	54.00	-15.50
18.00	56.00	-17.50
18.00	58.00	-19.50
18.00	60.00	-21.50
18.00	62.00	-23.50
18.00	64.00	-25.50
18.00	66.00	-27.50
18.00	68.00	-29.50
18.00	70.00	-31.50
18.00	72.00	-33.50
18.00	74.00	-35.50
18.00	76.00	-37.50
18.00	78.00	-39.50
18.00	80.00	-41.50
18.00	82.00	-43.50
18.00	84.00	-45.50
18.00	86.00	-47.50
18.00	88.00	-49.50
18.00	90.00	-51.50
18.00	92.00	-53.50
18.00	94.00	-55.50
18.00	96.00	-57.50
18.00	98.00	-59.50
18.00	100.00	-61.50
18.00	102.00	-63.50
18.00	104.00	-65.50
18.00	106.00	-67.50
18.00	108.00	-69.50
18.00	110.00	-71.50

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	20.94	15.67	36.60	18.30	67.94

12.00	18.0	26.18	14.49	40.67	20.34	69.65
14.00	18.0	31.58	10.40	41.97	20.99	62.76
16.00	18.0	36.33	9.86	46.19	23.09	65.90
18.00	18.0	39.99	9.49	49.49	24.74	68.48
20.00	18.0	43.74	10.15	53.89	26.95	74.20
22.00	18.0	47.74	11.35	59.08	29.54	81.78
24.00	18.0	52.26	12.66	64.92	32.46	90.24
26.00	18.0	58.42	13.47	71.89	35.94	98.84
28.00	18.0	65.19	14.01	79.20	39.60	107.23
30.00	18.0	72.39	14.18	86.57	43.28	114.92
32.00	18.0	79.59	12.14	91.73	45.87	116.02
34.00	18.0	86.23	9.71	95.95	47.97	115.38
36.00	18.0	90.97	7.68	98.65	49.32	114.01
38.00	18.0	91.04	6.82	97.86	48.93	111.51
40.00	18.0	91.04	8.24	99.28	49.64	115.75
42.00	18.0	91.04	13.39	104.43	52.22	131.22
44.00	18.0	91.57	20.44	112.01	56.00	152.88
46.00	18.0	94.82	22.13	116.95	58.47	161.21
48.00	18.0	98.26	20.79	119.05	59.53	160.64
50.00	18.0	101.99	18.72	120.72	60.36	158.16
52.00	18.0	106.21	16.05	122.26	61.13	154.36
54.00	18.0	110.71	6.86	117.57	58.79	131.29
56.00	18.0	115.03	5.03	120.07	60.03	130.14
58.00	18.0	115.10	10.53	125.62	62.81	146.68
60.00	18.0	115.10	8.54	123.64	61.82	140.72
62.00	18.0	115.10	8.61	123.71	61.85	140.93
64.00	18.0	115.85	12.41	128.26	64.13	153.07
66.00	18.0	118.48	16.57	135.04	67.52	168.18
68.00	18.0	126.04	19.30	145.34	72.67	183.94
70.00	18.0	136.29	20.42	156.71	78.35	197.55
72.00	18.0	146.77	22.29	169.06	84.53	213.65
74.00	18.0	158.47	24.24	182.72	91.36	231.21
76.00	18.0	168.75	26.24	194.99	97.50	247.48
78.00	18.0	178.65	29.86	208.51	104.26	268.24
80.00	18.0	188.28	33.38	221.66	110.83	288.42
82.00	18.0	199.15	34.46	233.61	116.80	302.52
84.00	18.0	212.39	35.57	247.95	123.98	319.08
86.00	18.0	226.16	41.28	267.44	133.72	349.99
88.00	18.0	237.10	49.29	286.39	143.20	384.98
90.00	18.0	249.46	54.87	304.33	152.16	414.06
92.00	18.0	264.29	56.19	320.48	160.24	432.85
94.00	18.0	278.37	59.86	338.22	169.11	457.94
96.00	18.0	292.12	67.70	359.82	179.91	495.22
98.00	18.0	307.83	83.58	391.41	195.70	558.57
100.00	18.0	323.54	92.12	415.66	207.83	599.91
102.00	18.0	336.01	89.57	425.58	212.79	604.72
104.00	18.0	349.63	87.52	437.16	218.58	612.20
106.00	18.0	********** Not enough soil data *******				

108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 11:53:42

General Information:
==========
Input file: .....\Calculations-Analyses\FB-Deep\Service Road\SR-B2_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Service Road
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
==========
Boring date: 11-13-13, Boring Number: SR-B2
Station number: 865+50 Offset: 60 RT

Ground Elevation: 38.300(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	2.00	4.00	3- Clean sand
3	4.00	8.00	2- Clay and silty sand
4	6.00	11.00	2- Clay and silty sand
5	8.00	20.00	2- Clay and silty sand
6	10.00	19.00	2- Clay and silty sand
7	12.50	10.00	2- Clay and silty sand
8	15.00	7.00	2- Clay and silty sand
9	16.25	4.00	3- Clean sand
10	17.50	4.00	2- Clay and silty sand
11	20.00	4.00	2- Clay and silty sand
12	21.25	4.00	3- Clean sand
13	22.50	6.00	2- Clay and silty sand
14	25.00	13.00	3- Clean sand
15	27.50	14.00	3- Clean sand
16	30.00	11.00	2- Clay and silty sand
17	32.50	10.00	2- Clay and silty sand

18	33.75	2.00	3- Clean sand
19	35.00	2.00	2- Clay and silty sand
20	37.50	2.00	2- Clay and silty sand
21	40.00	2.00	2- Clay and silty sand
22	41.25	2.00	3- Clean sand
23	42.50	5.00	2- Clay and silty sand
24	45.00	6.00	2- Clay and silty sand
25	46.25	6.00	3- Clean sand
26	47.50	19.00	2- Clay and silty sand
27	48.75	8.00	3- Clean sand
28	50.00	8.00	2- Clay and silty sand
29	52.50	12.00	2- Clay and silty sand
30	55.00	10.00	2- Clay and silty sand
31	57.50	12.00	2- Clay and silty sand
32	58.75	5.00	3- Clean sand
33	60.00	5.00	2- Clay and silty sand
34	62.50	6.00	2- Clay and silty sand
35	65.00	8.00	2- Clay and silty sand
36	67.50	24.00	1- Plastic Clay
37	70.00	32.00	2- Clay and silty sand
38	72.50	21.00	2- Clay and silty sand
39	75.00	17.00	2- Clay and silty sand
40	77.50	16.00	1- Plastic Clay
41	80.00	12.00	1- Plastic Clay
42	82.50	19.00	1- Plastic Clay
43	85.00	20.00	1- Plastic Clay
44	87.50	19.00	1- Plastic Clay
45	90.00	20.00	2- Clay and silty sand
46	91.25	20.00	3- Clean sand
47	92.50	99.00	2- Clay and silty sand
48	95.00	99.00	2- Clay and silty sand
49	97.50	99.00	2- Clay and silty sand
50	100.00	99.00	2- Clay and silty sand
51	102.50	99.00	2- Clay and silty sand
52	105.00	99.00	2- Clay and silty sand
53	107.50	99.00	2- Clay and silty sand
54	110.00	99.00	2- Clay and silty sand
55	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type

1	38.30	34.30	4.00	4.00	3-Clean Sand
2	34.30	22.05	12.25	13.00	2-Clay and Silty Sand
3	22.05	20.80	1.25	4.00	3-Clean Sand
4	20.80	17.05	3.75	4.00	2-Clay and Silty Sand
5	17.05	15.80	1.25	4.00	3-Clean Sand
6	15.80	13.30	2.50	6.00	2-Clay and Silty Sand
7	13.30	8.30	5.00	13.50	3-Clean Sand
8	8.30	4.55	3.75	10.67	2-Clay and Silty Sand
9	4.55	3.30	1.25	2.00	3-Clean Sand
10	3.30	-2.95	6.25	2.00	2-Clay and Silty Sand
11	-2.95	-4.20	1.25	2.00	3-Clean Sand
12	-4.20	-7.95	3.75	5.33	2-Clay and Silty Sand
13	-7.95	-9.20	1.25	6.00	3-Clean Sand
14	-9.20	-10.45	1.25	19.00	2-Clay and Silty Sand
15	-10.45	-11.70	1.25	8.00	3-Clean Sand
16	-11.70	-20.45	8.75	10.29	2-Clay and Silty Sand
17	-20.45	-21.70	1.25	5.00	3-Clean Sand
18	-21.70	-29.20	7.50	6.33	2-Clay and Silty Sand
19	-29.20	-31.70	2.50	24.00	1-Plastic Clay
20	-31.70	-39.20	7.50	23.33	2-Clay and Silty Sand
21	-39.20	-51.70	12.50	17.20	1-Plastic Clay
22	-51.70	-52.95	1.25	20.00	2-Clay and Silty Sand
23	-52.95	-54.20	1.25	20.00	3-Clean Sand
24	-54.20	-72.70	18.50	99.00	2-Clay and Silty Sand
25	-72.70	-72.70	0.00	0.00	5-

Driven Pile Data:

Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	28.30
18.00	12.00	26.30
18.00	14.00	24.30
18.00	16.00	22.30
18.00	18.00	20.30
18.00	20.00	18.30
18.00	22.00	16.30
18.00	24.00	14.30
18.00	26.00	12.30
18.00	28.00	10.30
18.00	30.00	8.30

18.00	32.00	6.30
18.00	34.00	4.30
18.00	36.00	2.30
18.00	38.00	0.30
18.00	40.00	-1.70
18.00	42.00	-3.70
18.00	44.00	-5.70
18.00	46.00	-7.70
18.00	48.00	-9.70
18.00	50.00	-11.70
18.00	52.00	-13.70
18.00	54.00	-15.70
18.00	56.00	-17.70
18.00	58.00	-19.70
18.00	60.00	-21.70
18.00	62.00	-23.70
18.00	64.00	-25.70
18.00	66.00	-27.70
18.00	68.00	-29.70
18.00	70.00	-31.70
18.00	72.00	-33.70
18.00	74.00	-35.70
18.00	76.00	-37.70
18.00	78.00	-39.70
18.00	80.00	-41.70
18.00	82.00	-43.70
18.00	84.00	-45.70
18.00	86.00	-47.70
18.00	88.00	-49.70
18.00	90.00	-51.70
18.00	92.00	-53.70
18.00	94.00	-55.70
18.00	96.00	-57.70
18.00	98.00	-59.70
18.00	100.00	-61.70
18.00	102.00	-63.70
18.00	104.00	-65.70
18.00	106.00	-67.70
18.00	108.00	-69.70
18.00	110.00	-71.70

Driven Pile Capacity:
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Test	Pile	Ultimate	Mobilized	Estimated	Allowable	Ultimate

Pile Length (ft)	Width (in)	Side Friction (tons)	End Bearing (tons)	Davisson Capacity (tons)	Pile Capacity (tons)	Pile Capacity (tons)
10.00	18.0	25.55	15.59	41.14	20.57	72.32
12.00	18.0	34.46	12.33	46.78	23.39	71.44
14.00	18.0	40.69	10.80	51.50	25.75	73.11
16.00	18.0	44.79	9.37	54.16	27.08	72.90
18.00	18.0	47.38	9.32	56.70	28.35	75.33
20.00	18.0	47.38	10.99	58.37	29.19	80.35
22.00	18.0	47.79	16.74	64.53	32.26	98.02
24.00	18.0	51.35	20.13	71.48	35.74	111.75
26.00	18.0	55.29	19.73	75.02	37.51	114.48
28.00	18.0	59.26	17.23	76.49	38.25	110.96
30.00	18.0	64.97	9.21	74.18	37.09	92.61
32.00	18.0	71.47	9.30	80.78	40.39	99.38
34.00	18.0	75.21	0.00	75.21	37.61	75.21
36.00	18.0	75.21	10.59	85.80	42.90	106.97
38.00	18.0	75.21	8.58	83.79	41.89	100.94
40.00	18.0	75.21	6.85	82.06	41.03	95.76
42.00	18.0	75.55	7.16	82.71	41.35	97.02
44.00	18.0	78.53	9.28	87.81	43.91	106.38
46.00	18.0	81.38	10.41	91.79	45.89	112.60
48.00	18.0	88.74	12.14	100.88	50.44	125.17
50.00	18.0	92.88	15.60	108.48	54.24	139.67
52.00	18.0	98.97	15.34	114.30	57.15	144.98
54.00	18.0	105.97	15.72	121.70	60.85	153.14
56.00	18.0	112.63	14.43	127.06	63.53	155.92
58.00	18.0	119.50	13.05	132.56	66.28	158.66
60.00	18.0	122.20	9.43	131.64	65.82	150.50
62.00	18.0	125.70	9.56	135.27	67.63	154.39
64.00	18.0	128.57	11.96	140.53	70.26	164.45
66.00	18.0	132.45	19.71	152.16	76.08	191.58
68.00	18.0	148.24	23.95	172.19	86.10	220.09
70.00	18.0	162.81	33.41	196.22	98.11	263.04
72.00	18.0	176.16	32.82	208.98	104.49	274.61
74.00	18.0	187.32	26.20	213.52	106.76	265.93
76.00	18.0	197.39	21.33	218.71	109.36	261.37
78.00	18.0	207.77	9.79	217.56	108.78	237.14
80.00	18.0	216.84	10.20	227.04	113.52	247.44
82.00	18.0	226.69	10.99	237.68	118.84	259.66
84.00	18.0	238.86	12.47	251.33	125.66	276.27
86.00	18.0	251.40	17.57	268.98	134.49	304.12
88.00	18.0	263.66	28.27	291.94	145.97	348.48
90.00	18.0	275.75	38.63	314.38	157.19	391.63
92.00	18.0	284.06	43.83	327.89	163.95	415.54
94.00	18.0	298.66	48.44	347.09	173.55	443.96
96.00	18.0	312.09	52.62	364.71	182.35	469.95

98.00	18.0	325.59	60.08	385.67	192.84	505.84
100.00	18.0	340.90	66.15	407.05	203.53	539.35
102.00	18.0	356.61	70.25	426.86	213.43	567.36
104.00	18.0	372.32	71.95	444.27	222.13	588.17
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 12:03:03

General Information:
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Input file: .....\Calculations-Analyses\FB-Deep\Service Road\SR-B3_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Service Road
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 7-29-13, Boring Number: SR-B3
Station number: 866+34 Offset: 114 LT

Ground Elevation: 39.000(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	2- Clay and silty sand
2	2.00	4.00	2- Clay and silty sand
3	3.00	4.00	3- Clean sand
4	4.00	7.00	2- Clay and silty sand
5	6.00	10.00	2- Clay and silty sand
6	8.00	11.00	2- Clay and silty sand
7	10.00	14.00	2- Clay and silty sand
8	12.50	10.00	2- Clay and silty sand
9	15.00	6.00	2- Clay and silty sand
10	16.25	4.00	3- Clean sand
11	17.50	4.00	2- Clay and silty sand
12	20.00	4.00	2- Clay and silty sand
13	22.50	4.00	2- Clay and silty sand
14	23.75	4.00	3- Clean sand
15	25.00	7.00	2- Clay and silty sand
16	27.50	6.00	2- Clay and silty sand
17	30.00	13.00	2- Clay and silty sand

18	32.50	6.00	2- Clay and silty sand
19	33.75	4.00	3- Clean sand
20	35.00	4.00	2- Clay and silty sand
21	37.50	0.00	1- Plastic Clay
22	40.00	0.00	2- Clay and silty sand
23	42.50	0.00	1- Plastic Clay
24	45.00	12.00	2- Clay and silty sand
25	47.50	5.00	2- Clay and silty sand
26	50.00	42.00	3- Clean sand
27	51.25	7.00	2- Clay and silty sand
28	52.50	7.00	3- Clean sand
29	55.00	7.00	2- Clay and silty sand
30	57.50	11.00	2- Clay and silty sand
31	60.00	8.00	2- Clay and silty sand
32	61.25	4.00	3- Clean sand
33	62.50	4.00	2- Clay and silty sand
34	63.75	4.00	3- Clean sand
35	65.00	7.00	2- Clay and silty sand
36	67.50	11.00	2- Clay and silty sand
37	68.75	11.00	3- Clean sand
38	70.00	31.00	2- Clay and silty sand
39	72.50	28.00	2- Clay and silty sand
40	75.00	18.00	2- Clay and silty sand
41	77.50	18.00	2- Clay and silty sand
42	80.00	17.00	2- Clay and silty sand
43	82.50	17.00	2- Clay and silty sand
44	83.75	17.00	3- Clean sand
45	85.00	99.00	2- Clay and silty sand
46	86.25	21.00	3- Clean sand
47	87.50	21.00	2- Clay and silty sand
48	90.00	29.00	2- Clay and silty sand
49	91.25	29.00	3- Clean sand
50	92.50	99.00	2- Clay and silty sand
51	95.00	99.00	2- Clay and silty sand
52	97.50	99.00	4- Lime Stone/Very shelly sand
53	100.00	79.00	2- Clay and silty sand
54	102.50	48.00	2- Clay and silty sand
55	105.00	99.00	2- Clay and silty sand
56	107.50	44.00	2- Clay and silty sand
57	110.00	64.00	2- Clay and silty sand
58	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer	Starting	Bottom	Thickness	Average	Soil Type

Num.	Elevation (ft)	Elevation (ft)	(ft)	Blowcount (Blows/ft)	
1	39.00	36.00	3.00	4.00	2-Clay and Silty Sand
2	36.00	35.00	1.00	4.00	3-Clean Sand
3	35.00	22.75	12.25	10.08	2-Clay and Silty Sand
4	22.75	21.50	1.25	4.00	3-Clean Sand
5	21.50	15.25	6.25	4.00	2-Clay and Silty Sand
6	15.25	14.00	1.25	4.00	3-Clean Sand
7	14.00	5.25	8.75	8.29	2-Clay and Silty Sand
8	5.25	4.00	1.25	4.00	3-Clean Sand
9	4.00	1.50	2.50	4.00	2-Clay and Silty Sand
10	1.50	-1.00	2.50	0.00	1-Plastic Clay
11	-1.00	-3.50	2.50	0.00	2-Clay and Silty Sand
12	-3.50	-6.00	2.50	0.00	1-Plastic Clay
13	-6.00	-11.00	5.00	8.50	2-Clay and Silty Sand
14	-11.00	-12.25	1.25	42.00	3-Clean Sand
15	-12.25	-13.50	1.25	7.00	2-Clay and Silty Sand
16	-13.50	-16.00	2.50	7.00	3-Clean Sand
17	-16.00	-22.25	6.25	8.80	2-Clay and Silty Sand
18	-22.25	-23.50	1.25	4.00	3-Clean Sand
19	-23.50	-24.75	1.25	4.00	2-Clay and Silty Sand
20	-24.75	-26.00	1.25	4.00	3-Clean Sand
21	-26.00	-29.75	3.75	8.33	2-Clay and Silty Sand
22	-29.75	-31.00	1.25	11.00	3-Clean Sand
23	-31.00	-44.75	13.75	21.91	2-Clay and Silty Sand
24	-44.75	-46.00	1.25	17.00	3-Clean Sand
25	-46.00	-47.25	1.25	99.00	2-Clay and Silty Sand
26	-47.25	-48.50	1.25	21.00	3-Clean Sand
27	-48.50	-52.25	3.75	23.67	2-Clay and Silty Sand
28	-52.25	-53.50	1.25	29.00	3-Clean Sand
29	-53.50	-58.50	5.00	99.00	2-Clay and Silty Sand
30	-58.50	-61.00	2.50	99.00	4-Limestone, Very Shelly Sand
31	-61.00	-72.00	11.00	67.18	2-Clay and Silty Sand
32	-72.00	-72.00	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)

18.00	10.00	29.00
18.00	12.00	27.00
18.00	14.00	25.00
18.00	16.00	23.00
18.00	18.00	21.00
18.00	20.00	19.00
18.00	22.00	17.00
18.00	24.00	15.00
18.00	26.00	13.00
18.00	28.00	11.00
18.00	30.00	9.00
18.00	32.00	7.00
18.00	34.00	5.00
18.00	36.00	3.00
18.00	38.00	1.00
18.00	40.00	-1.00
18.00	42.00	-3.00
18.00	44.00	-5.00
18.00	46.00	-7.00
18.00	48.00	-9.00
18.00	50.00	-11.00
18.00	52.00	-13.00
18.00	54.00	-15.00
18.00	56.00	-17.00
18.00	58.00	-19.00
18.00	60.00	-21.00
18.00	62.00	-23.00
18.00	64.00	-25.00
18.00	66.00	-27.00
18.00	68.00	-29.00
18.00	70.00	-31.00
18.00	72.00	-33.00
18.00	74.00	-35.00
18.00	76.00	-37.00
18.00	78.00	-39.00
18.00	80.00	-41.00
18.00	82.00	-43.00
18.00	84.00	-45.00
18.00	86.00	-47.00
18.00	88.00	-49.00
18.00	90.00	-51.00
18.00	92.00	-53.00
18.00	94.00	-55.00
18.00	96.00	-57.00
18.00	98.00	-59.00
18.00	100.00	-61.00
18.00	102.00	-63.00
18.00	104.00	-65.00

18.00	106.00	-67.00
18.00	108.00	-69.00
18.00	110.00	-71.00

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	17.60	12.22	29.82	14.91	54.27
12.00	18.0	25.06	9.76	34.82	17.41	54.35
14.00	18.0	31.02	8.30	39.31	19.66	55.91
16.00	18.0	34.71	7.25	41.97	20.98	56.47
18.00	18.0	37.82	6.18	44.00	22.00	56.37
20.00	18.0	37.82	5.75	43.56	21.78	55.06
22.00	18.0	37.82	6.04	43.86	21.93	55.94
24.00	18.0	37.87	6.62	44.49	22.24	57.72
26.00	18.0	41.37	7.64	49.02	24.51	64.30
28.00	18.0	45.35	7.88	53.23	26.62	68.99
30.00	18.0	52.08	6.65	58.73	29.36	72.03
32.00	18.0	58.43	5.02	63.46	31.73	73.50
34.00	18.0	60.78	0.00	60.78	30.39	60.78
36.00	18.0	60.78	4.45	65.22	32.61	74.11
38.00	18.0	60.78	3.95	64.73	32.37	72.64
40.00	18.0	60.78	5.51	66.29	33.14	77.30
42.00	18.0	60.78	5.89	66.67	33.33	78.45
44.00	18.0	61.84	10.01	71.85	35.92	91.87
46.00	18.0	68.21	23.23	91.45	45.72	137.91
48.00	18.0	71.93	25.64	97.57	48.78	148.86
50.00	18.0	81.68	23.04	104.72	52.36	150.80
52.00	18.0	88.26	14.19	102.45	51.22	130.83
54.00	18.0	90.90	20.89	111.79	55.89	153.56
56.00	18.0	95.53	11.96	107.49	53.75	131.41
58.00	18.0	101.86	10.22	112.08	56.04	132.53
60.00	18.0	107.73	8.47	116.20	58.10	133.13
62.00	18.0	109.35	3.43	112.78	56.39	119.63
64.00	18.0	109.41	12.92	122.33	61.16	148.17
66.00	18.0	112.97	17.05	130.03	65.01	164.14
68.00	18.0	117.35	20.64	137.99	69.00	179.27
70.00	18.0	126.57	38.48	165.04	82.52	242.00
72.00	18.0	140.69	38.06	178.75	89.38	254.88
74.00	18.0	153.62	34.28	187.90	93.95	256.46

76.00	18.0	164.21	31.54	195.75	97.88	258.84
78.00	18.0	174.45	30.53	204.97	102.49	266.03
80.00	18.0	184.43	35.90	220.33	110.17	292.12
82.00	18.0	194.25	41.53	235.78	117.89	318.85
84.00	18.0	202.01	40.64	242.64	121.32	323.91
86.00	18.0	213.39	39.85	253.24	126.62	332.93
88.00	18.0	222.81	45.80	268.61	134.30	360.21
90.00	18.0	235.75	54.69	290.44	145.22	399.83
92.00	18.0	246.26	62.74	309.00	154.50	434.49
94.00	18.0	260.62	76.00	336.61	168.31	488.61
96.00	18.0	273.83	81.25	355.09	177.54	517.59
98.00	18.0	286.11	80.10	366.21	183.10	526.41
100.00	18.0	298.41	71.71	370.12	185.06	513.54
102.00	18.0	314.13	71.16	385.29	192.65	527.62
104.00	18.0	329.86	70.34	400.20	200.10	540.88
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 12:11:06

General Information:
==========
Input file: .....\Calculations-Analyses\FB-Deep\Service Road\SR-B4_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 _Service Road
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
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Boring date: 7-31-13, Boring Number: SR-B4
Station number: 866+28 Offset: 67 RT

Ground Elevation: 38.000(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	6.00	3- Clean sand
2	2.00	6.00	3- Clean sand
3	4.00	3.00	2- Clay and silty sand
4	5.00	3.00	3- Clean sand
5	6.00	34.00	2- Clay and silty sand
6	8.00	29.00	2- Clay and silty sand
7	9.00	10.00	3- Clean sand
8	10.00	10.00	2- Clay and silty sand
9	12.50	8.00	2- Clay and silty sand
10	13.75	4.00	3- Clean sand
11	15.00	4.00	2- Clay and silty sand
12	17.50	4.00	2- Clay and silty sand
13	20.00	4.00	2- Clay and silty sand
14	22.50	5.00	3- Clean sand
15	25.00	9.00	3- Clean sand
16	26.25	3.00	2- Clay and silty sand
17	27.50	3.00	3- Clean sand

18	30.00	4.00	3- Clean sand
19	32.50	1.00	2- Clay and silty sand
20	35.00	0.00	2- Clay and silty sand
21	37.50	0.00	2- Clay and silty sand
22	40.00	0.00	2- Clay and silty sand
23	45.00	14.00	3- Clean sand
24	47.50	11.00	3- Clean sand
25	50.00	27.00	2- Clay and silty sand
26	51.25	5.00	3- Clean sand
27	52.50	5.00	2- Clay and silty sand
28	53.75	5.00	3- Clean sand
29	55.00	13.00	2- Clay and silty sand
30	57.50	8.00	2- Clay and silty sand
31	58.75	3.00	3- Clean sand
32	60.00	3.00	2- Clay and silty sand
33	61.25	3.00	3- Clean sand
34	62.50	5.00	2- Clay and silty sand
35	63.75	5.00	3- Clean sand
36	65.00	13.00	2- Clay and silty sand
37	66.25	13.00	3- Clean sand
38	67.50	32.00	2- Clay and silty sand
39	70.00	27.00	2- Clay and silty sand
40	72.50	20.00	1- Plastic Clay
41	75.00	19.00	2- Clay and silty sand
42	77.50	13.00	2- Clay and silty sand
43	80.00	18.00	2- Clay and silty sand
44	82.50	15.00	1- Plastic Clay
45	85.00	22.00	1- Plastic Clay
46	87.50	20.00	2- Clay and silty sand
47	88.75	20.00	3- Clean sand
48	90.00	99.00	2- Clay and silty sand
49	92.50	99.00	4- Lime Stone/Very shelly sand
50	95.00	99.00	4- Lime Stone/Very shelly sand
51	97.50	99.00	2- Clay and silty sand
52	100.00	99.00	2- Clay and silty sand
53	102.50	99.00	2- Clay and silty sand
54	105.00	99.00	2- Clay and silty sand
55	107.50	99.00	2- Clay and silty sand
56	110.00	99.00	2- Clay and silty sand
57	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation	Bottom Elevation	Thickness	Average Blowcount	Soil Type

	(ft)	(ft)	(ft)	(Blows/ft)	
1	38.00	34.00	4.00	6.00	3-Clean Sand
2	34.00	33.00	1.00	3.00	2-Clay and Silty Sand
3	33.00	32.00	1.00	3.00	3-Clean Sand
4	32.00	29.00	3.00	32.33	2-Clay and Silty Sand
5	29.00	28.00	1.00	10.00	3-Clean Sand
6	28.00	24.25	3.75	9.33	2-Clay and Silty Sand
7	24.25	23.00	1.25	4.00	3-Clean Sand
8	23.00	15.50	7.50	4.00	2-Clay and Silty Sand
9	15.50	11.75	3.75	6.33	3-Clean Sand
10	11.75	10.50	1.25	3.00	2-Clay and Silty Sand
11	10.50	5.50	5.00	3.50	3-Clean Sand
12	5.50	-7.00	12.50	0.20	2-Clay and Silty Sand
13	-7.00	-12.00	5.00	12.50	3-Clean Sand
14	-12.00	-13.25	1.25	27.00	2-Clay and Silty Sand
15	-13.25	-14.50	1.25	5.00	3-Clean Sand
16	-14.50	-15.75	1.25	5.00	2-Clay and Silty Sand
17	-15.75	-17.00	1.25	5.00	3-Clean Sand
18	-17.00	-20.75	3.75	11.33	2-Clay and Silty Sand
19	-20.75	-22.00	1.25	3.00	3-Clean Sand
20	-22.00	-23.25	1.25	3.00	2-Clay and Silty Sand
21	-23.25	-24.50	1.25	3.00	3-Clean Sand
22	-24.50	-25.75	1.25	5.00	2-Clay and Silty Sand
23	-25.75	-27.00	1.25	5.00	3-Clean Sand
24	-27.00	-28.25	1.25	13.00	2-Clay and Silty Sand
25	-28.25	-29.50	1.25	13.00	3-Clean Sand
26	-29.50	-34.50	5.00	29.50	2-Clay and Silty Sand
27	-34.50	-37.00	2.50	20.00	1-Plastic Clay
28	-37.00	-44.50	7.50	16.67	2-Clay and Silty Sand
29	-44.50	-49.50	5.00	18.50	1-Plastic Clay
30	-49.50	-50.75	1.25	20.00	2-Clay and Silty Sand
31	-50.75	-52.00	1.25	20.00	3-Clean Sand
32	-52.00	-54.50	2.50	99.00	2-Clay and Silty Sand
33	-54.50	-59.50	5.00	99.00	4-Limestone, Very Shelly Sand
34	-59.50	-73.00	13.50	99.00	2-Clay and Silty Sand
35	-73.00	-73.00	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width	Length	Tip Elev.

(in)	(ft)	(ft)
18.00	10.00	28.00
18.00	12.00	26.00
18.00	14.00	24.00
18.00	16.00	22.00
18.00	18.00	20.00
18.00	20.00	18.00
18.00	22.00	16.00
18.00	24.00	14.00
18.00	26.00	12.00
18.00	28.00	10.00
18.00	30.00	8.00
18.00	32.00	6.00
18.00	34.00	4.00
18.00	36.00	2.00
18.00	38.00	0.00
18.00	40.00	-2.00
18.00	42.00	-4.00
18.00	44.00	-6.00
18.00	46.00	-8.00
18.00	48.00	-10.00
18.00	50.00	-12.00
18.00	52.00	-14.00
18.00	54.00	-16.00
18.00	56.00	-18.00
18.00	58.00	-20.00
18.00	60.00	-22.00
18.00	62.00	-24.00
18.00	64.00	-26.00
18.00	66.00	-28.00
18.00	68.00	-30.00
18.00	70.00	-32.00
18.00	72.00	-34.00
18.00	74.00	-36.00
18.00	76.00	-38.00
18.00	78.00	-40.00
18.00	80.00	-42.00
18.00	82.00	-44.00
18.00	84.00	-46.00
18.00	86.00	-48.00
18.00	88.00	-50.00
18.00	90.00	-52.00
18.00	92.00	-54.00
18.00	94.00	-56.00
18.00	96.00	-58.00
18.00	98.00	-60.00
18.00	100.00	-62.00

18.00	102.00	-64.00
18.00	104.00	-66.00
18.00	106.00	-68.00
18.00	108.00	-70.00
18.00	110.00	-72.00

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	27.23	15.47	42.70	21.35	73.63
12.00	18.0	33.11	8.13	41.25	20.62	57.52
14.00	18.0	36.07	0.00	36.07	18.03	36.07
16.00	18.0	36.07	9.36	45.42	22.71	64.14
18.00	18.0	36.07	10.17	46.24	23.12	66.58
20.00	18.0	36.07	11.10	47.17	23.58	69.37
22.00	18.0	36.60	9.39	45.99	23.00	64.78
24.00	18.0	38.26	6.41	44.67	22.34	57.50
26.00	18.0	40.19	3.68	43.86	21.93	51.22
28.00	18.0	40.22	3.64	43.86	21.93	51.15
30.00	18.0	40.22	3.64	43.86	21.93	51.15
32.00	18.0	40.22	3.64	43.86	21.93	51.15
34.00	18.0	40.22	3.15	43.36	21.68	49.66
36.00	18.0	40.22	2.33	42.55	21.28	47.22
38.00	18.0	40.22	4.17	44.39	22.19	52.72
40.00	18.0	40.22	10.90	51.12	25.56	72.92
42.00	18.0	40.92	17.09	58.02	29.01	92.20
44.00	18.0	43.09	21.10	64.19	32.09	106.38
46.00	18.0	47.04	22.79	69.83	34.92	115.42
48.00	18.0	50.62	21.29	71.91	35.96	114.50
50.00	18.0	59.91	16.85	76.76	38.38	110.45
52.00	18.0	65.30	13.54	78.84	39.42	105.92
54.00	18.0	67.79	20.17	87.97	43.98	128.32
56.00	18.0	73.33	9.32	82.65	41.33	101.30
58.00	18.0	79.70	8.69	88.39	44.19	105.77
60.00	18.0	80.28	12.84	93.12	46.56	118.80
62.00	18.0	80.62	15.00	95.62	47.81	125.62
64.00	18.0	83.08	21.62	104.70	52.35	147.93
66.00	18.0	88.74	25.03	113.77	56.89	163.84
68.00	18.0	98.28	34.63	132.91	66.45	202.17
70.00	18.0	112.60	33.86	146.46	73.23	214.18

72.00	18.0	125.71	29.57	155.28	77.64	214.42
74.00	18.0	137.94	20.53	158.47	79.23	199.52
76.00	18.0	148.51	26.33	174.85	87.42	227.51
78.00	18.0	157.13	24.65	181.78	90.89	231.09
80.00	18.0	166.45	20.98	187.43	93.71	229.38
82.00	18.0	176.67	19.44	196.11	98.05	234.99
84.00	18.0	186.81	19.07	205.89	102.94	244.03
86.00	18.0	196.81	34.77	231.58	115.79	301.12
88.00	18.0	211.64	55.14	266.79	133.39	377.07
90.00	18.0	221.29	83.37	304.66	152.33	471.39
92.00	18.0	232.63	86.28	318.90	159.45	491.46
94.00	18.0	241.01	87.14	328.15	164.08	502.43
96.00	18.0	249.06	83.52	332.59	166.29	499.64
98.00	18.0	262.86	72.00	334.86	167.43	478.86
100.00	18.0	278.57	72.00	350.57	175.28	494.57
102.00	18.0	294.28	72.00	366.28	183.14	510.28
104.00	18.0	309.99	72.00	381.99	190.99	525.99
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B1_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
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Boring date: 11-4-13, Boring Number: WL3-B1
Station number: 884+31 Offset: 67 LT

Ground Elevation: 46.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	2.00	4.00	3- Clean sand
3	3.00	4.00	2- Clay and silty sand
4	4.00	5.00	3- Clean sand
5	6.00	9.00	3- Clean sand
6	8.00	8.00	3- Clean sand
7	10.00	9.00	3- Clean sand
8	12.50	11.00	3- Clean sand
9	15.00	7.00	3- Clean sand
10	17.50	9.00	3- Clean sand
11	20.00	7.00	3- Clean sand
12	21.25	7.00	2- Clay and silty sand
13	22.50	16.00	3- Clean sand
14	23.75	6.00	2- Clay and silty sand
15	25.00	6.00	3- Clean sand
16	26.25	3.00	2- Clay and silty sand
17	27.50	3.00	3- Clean sand

18	30.00	2.00	2- Clay and silty sand
19	32.50	0.00	2- Clay and silty sand
20	35.00	0.00	3- Clean sand
21	37.50	0.00	3- Clean sand
22	40.00	5.00	1- Plastic Clay
23	41.25	4.00	2- Clay and silty sand
24	42.50	4.00	1- Plastic Clay
25	45.00	3.00	1- Plastic Clay
26	47.50	0.00	1- Plastic Clay
27	50.00	0.00	1- Plastic Clay
28	52.50	4.00	1- Plastic Clay
29	55.00	12.00	2- Clay and silty sand
30	57.50	9.00	2- Clay and silty sand
31	60.00	9.00	2- Clay and silty sand
32	61.25	9.00	3- Clean sand
33	62.50	39.00	2- Clay and silty sand
34	63.75	22.00	3- Clean sand
35	65.00	22.00	2- Clay and silty sand
36	67.50	16.00	1- Plastic Clay
37	70.00	21.00	2- Clay and silty sand
38	72.50	12.00	2- Clay and silty sand
39	75.00	29.00	2- Clay and silty sand
40	77.50	14.00	2- Clay and silty sand
41	80.00	16.00	1- Plastic Clay
42	82.50	15.00	1- Plastic Clay
43	85.00	20.00	2- Clay and silty sand
44	86.25	20.00	3- Clean sand
45	87.50	99.00	2- Clay and silty sand
46	90.00	99.00	2- Clay and silty sand
47	92.50	99.00	2- Clay and silty sand
48	95.00	42.00	2- Clay and silty sand
49	97.50	99.00	2- Clay and silty sand
50	100.00	40.00	2- Clay and silty sand
51	102.50	99.00	2- Clay and silty sand
52	103.75	32.00	3- Clean sand
53	105.00	32.00	2- Clay and silty sand
54	106.25	32.00	3- Clean sand
55	107.50	99.00	2- Clay and silty sand
56	110.00	99.00	2- Clay and silty sand
57	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation	Bottom Elevation	Thickness	Average Blowcount	Soil Type

	(ft)	(ft)	(ft)	(Blows/ft)	
1	46.40	43.40	3.00	4.00	3-Clean Sand
2	43.40	42.40	1.00	4.00	2-Clay and Silty Sand
3	42.40	25.15	17.25	8.28	3-Clean Sand
4	25.15	23.90	1.25	7.00	2-Clay and Silty Sand
5	23.90	22.65	1.25	16.00	3-Clean Sand
6	22.65	21.40	1.25	6.00	2-Clay and Silty Sand
7	21.40	20.15	1.25	6.00	3-Clean Sand
8	20.15	18.90	1.25	3.00	2-Clay and Silty Sand
9	18.90	16.40	2.50	3.00	3-Clean Sand
10	16.40	11.40	5.00	1.00	2-Clay and Silty Sand
11	11.40	6.40	5.00	0.00	3-Clean Sand
12	6.40	5.15	1.25	5.00	1-Plastic Clay
13	5.15	3.90	1.25	4.00	2-Clay and Silty Sand
14	3.90	-8.60	12.50	2.20	1-Plastic Clay
15	-8.60	-14.85	6.25	10.20	2-Clay and Silty Sand
16	-14.85	-16.10	1.25	9.00	3-Clean Sand
17	-16.10	-17.35	1.25	39.00	2-Clay and Silty Sand
18	-17.35	-18.60	1.25	22.00	3-Clean Sand
19	-18.60	-21.10	2.50	22.00	2-Clay and Silty Sand
20	-21.10	-23.60	2.50	16.00	1-Plastic Clay
21	-23.60	-33.60	10.00	19.00	2-Clay and Silty Sand
22	-33.60	-38.60	5.00	15.50	1-Plastic Clay
23	-38.60	-39.85	1.25	20.00	2-Clay and Silty Sand
24	-39.85	-41.10	1.25	20.00	3-Clean Sand
25	-41.10	-57.35	16.25	81.15	2-Clay and Silty Sand
26	-57.35	-58.60	1.25	32.00	3-Clean Sand
27	-58.60	-59.85	1.25	32.00	2-Clay and Silty Sand
28	-59.85	-61.10	1.25	32.00	3-Clean Sand
29	-61.10	-64.60	3.50	99.00	2-Clay and Silty Sand
30	-64.60	-64.60	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	36.40
18.00	12.00	34.40
18.00	14.00	32.40
18.00	16.00	30.40

18.00	18.00	28.40
18.00	20.00	26.40
18.00	22.00	24.40
18.00	24.00	22.40
18.00	26.00	20.40
18.00	28.00	18.40
18.00	30.00	16.40
18.00	32.00	14.40
18.00	34.00	12.40
18.00	36.00	10.40
18.00	38.00	8.40
18.00	40.00	6.40
18.00	42.00	4.40
18.00	44.00	2.40
18.00	46.00	0.40
18.00	48.00	-1.60
18.00	50.00	-3.60
18.00	52.00	-5.60
18.00	54.00	-7.60
18.00	56.00	-9.60
18.00	58.00	-11.60
18.00	60.00	-13.60
18.00	62.00	-15.60
18.00	64.00	-17.60
18.00	66.00	-19.60
18.00	68.00	-21.60
18.00	70.00	-23.60
18.00	72.00	-25.60
18.00	74.00	-27.60
18.00	76.00	-29.60
18.00	78.00	-31.60
18.00	80.00	-33.60
18.00	82.00	-35.60
18.00	84.00	-37.60
18.00	86.00	-39.60
18.00	88.00	-41.60
18.00	90.00	-43.60
18.00	92.00	-45.60
18.00	94.00	-47.60
18.00	96.00	-49.60
18.00	98.00	-51.60
18.00	100.00	-53.60
18.00	102.00	-55.60
18.00	104.00	-57.60
18.00	106.00	-59.60
18.00	108.00	-61.60
18.00	110.00	-63.60

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	5.28	18.54	23.82	11.91	60.90
12.00	18.0	7.71	20.64	28.35	14.17	69.63
14.00	18.0	10.32	23.18	33.50	16.75	79.87
16.00	18.0	12.53	23.86	36.39	18.19	84.10
18.00	18.0	14.93	25.44	40.37	20.19	91.25
20.00	18.0	17.16	23.61	40.78	20.39	88.01
22.00	18.0	23.28	20.27	43.56	21.78	84.11
24.00	18.0	27.42	5.40	32.82	16.41	43.62
26.00	18.0	29.08	2.49	31.57	15.78	36.54
28.00	18.0	29.39	9.00	38.39	19.20	56.40
30.00	18.0	29.39	6.89	36.28	18.14	50.07
32.00	18.0	29.39	4.96	34.35	17.17	44.27
34.00	18.0	29.39	3.66	33.05	16.53	40.37
36.00	18.0	29.39	1.64	31.03	15.52	34.31
38.00	18.0	29.49	0.59	30.08	15.04	31.26
40.00	18.0	31.80	0.36	32.16	16.08	32.89
42.00	18.0	33.00	0.00	33.00	16.50	33.00
44.00	18.0	33.00	0.25	33.26	16.63	33.77
46.00	18.0	33.00	0.25	33.26	16.63	33.77
48.00	18.0	33.00	0.45	33.45	16.72	34.34
50.00	18.0	33.00	2.79	35.80	17.90	41.38
52.00	18.0	33.00	5.61	38.61	19.30	49.82
54.00	18.0	34.67	7.65	42.32	21.16	57.61
56.00	18.0	40.78	8.38	49.16	24.58	65.92
58.00	18.0	43.53	12.66	56.19	28.10	81.51
60.00	18.0	46.99	22.48	69.48	34.74	114.44
62.00	18.0	58.12	26.65	84.78	42.39	138.08
64.00	18.0	68.72	27.04	95.75	47.88	149.83
66.00	18.0	78.94	22.19	101.13	50.56	145.50
68.00	18.0	90.61	18.01	108.61	54.31	144.63
70.00	18.0	101.76	28.67	130.43	65.22	187.78
72.00	18.0	111.01	29.41	140.42	70.21	199.23
74.00	18.0	120.21	29.24	149.46	74.73	207.94
76.00	18.0	133.32	22.55	155.86	77.93	200.96
78.00	18.0	143.04	18.81	161.85	80.92	199.47
80.00	18.0	152.83	15.77	168.61	84.30	200.16
82.00	18.0	161.42	19.73	181.15	90.58	220.62

84.00	18.0	170.37	33.71	204.08	102.04	271.49
86.00	18.0	183.32	43.40	226.72	113.36	313.52
88.00	18.0	194.95	49.01	243.96	121.98	341.98
90.00	18.0	209.74	50.32	260.06	130.03	360.70
92.00	18.0	223.61	54.32	277.93	138.96	386.57
94.00	18.0	237.91	60.75	298.66	149.33	420.17
96.00	18.0	253.69	64.50	318.19	159.09	447.20
98.00	18.0	269.41	68.08	337.50	168.75	473.67
100.00	18.0	285.11	69.72	354.83	177.42	494.28
102.00	18.0	300.81	72.25	373.06	186.53	517.56
104.00	18.0	317.91	71.31	389.23	194.61	531.85
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: December 01, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 14:59:15

General Information:
==========
Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B2_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJL
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-12-13, Boring Number: WL3-B2
Station number: 884+40 Offset: 74 RT

Ground Elevation: 44.900(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	3- Clean sand
2	2.00	2.00	3- Clean sand
3	4.00	4.00	3- Clean sand
4	6.00	3.00	3- Clean sand
5	8.00	5.00	2- Clay and silty sand
6	10.00	6.00	2- Clay and silty sand
7	12.50	7.00	2- Clay and silty sand
8	15.00	7.00	2- Clay and silty sand
9	17.50	7.00	2- Clay and silty sand
10	20.00	10.00	2- Clay and silty sand
11	22.50	18.00	2- Clay and silty sand
12	25.00	8.00	2- Clay and silty sand
13	27.50	8.00	2- Clay and silty sand
14	30.00	3.00	1- Plastic Clay
15	34.00	2.00	2- Clay and silty sand
16	37.50	2.00	2- Clay and silty sand
17	38.75	2.00	3- Clean sand

18	40.00	8.00	2- Clay and silty sand
19	42.50	6.00	2- Clay and silty sand
20	45.00	3.00	1- Plastic Clay
21	47.50	2.00	1- Plastic Clay
22	50.00	1.00	1- Plastic Clay
23	52.50	3.00	1- Plastic Clay
24	55.00	7.00	2- Clay and silty sand
25	57.50	8.00	2- Clay and silty sand
26	60.00	9.00	2- Clay and silty sand
27	61.25	9.00	3- Clean sand
28	62.50	24.00	2- Clay and silty sand
29	65.00	35.00	2- Clay and silty sand
30	67.50	27.00	2- Clay and silty sand
31	70.00	26.00	2- Clay and silty sand
32	72.50	20.00	2- Clay and silty sand
33	75.00	20.00	2- Clay and silty sand
34	77.50	11.00	1- Plastic Clay
35	80.00	44.00	2- Clay and silty sand
36	82.50	29.00	1- Plastic Clay
37	85.00	20.00	1- Plastic Clay
38	87.50	18.00	1- Plastic Clay
39	90.00	14.00	1- Plastic Clay
40	92.50	25.00	1- Plastic Clay
41	95.00	99.00	2- Clay and silty sand
42	97.50	99.00	2- Clay and silty sand
43	100.00	99.00	2- Clay and silty sand
44	102.50	99.00	2- Clay and silty sand
45	105.00	68.00	2- Clay and silty sand
46	107.50	99.00	2- Clay and silty sand
47	110.00	99.00	2- Clay and silty sand
48	112.50	73.00	2- Clay and silty sand
49	113.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	44.90	36.90	8.00	2.75	3-Clean Sand
2	36.90	14.90	22.00	8.52	2-Clay and Silty Sand
3	14.90	10.90	4.00	3.00	1-Plastic Clay
4	10.90	6.15	4.75	2.00	2-Clay and Silty Sand
5	6.15	4.90	1.25	2.00	3-Clean Sand

6	4.90	-0.10	5.00	7.00	2-Clay and Silty Sand
7	-0.10	-10.10	10.00	2.25	1-Plastic Clay
8	-10.10	-16.35	6.25	7.80	2-Clay and Silty Sand
9	-16.35	-17.60	1.25	9.00	3-Clean Sand
10	-17.60	-32.60	15.00	25.33	2-Clay and Silty Sand
11	-32.60	-35.10	2.50	11.00	1-Plastic Clay
12	-35.10	-37.60	2.50	44.00	2-Clay and Silty Sand
13	-37.60	-50.10	12.50	21.20	1-Plastic Clay
14	-50.10	-68.10	18.00	93.97	2-Clay and Silty Sand
15	-68.10	-68.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	34.90
18.00	12.00	32.90
18.00	14.00	30.90
18.00	16.00	28.90
18.00	18.00	26.90
18.00	20.00	24.90
18.00	22.00	22.90
18.00	24.00	20.90
18.00	26.00	18.90
18.00	28.00	16.90
18.00	30.00	14.90
18.00	32.00	12.90
18.00	34.00	10.90
18.00	36.00	8.90
18.00	38.00	6.90
18.00	40.00	4.90
18.00	42.00	2.90
18.00	44.00	0.90
18.00	46.00	-1.10
18.00	48.00	-3.10
18.00	50.00	-5.10
18.00	52.00	-7.10
18.00	54.00	-9.10
18.00	56.00	-11.10
18.00	58.00	-13.10
18.00	60.00	-15.10
18.00	62.00	-17.10

18.00	64.00	-19.10
18.00	66.00	-21.10
18.00	68.00	-23.10
18.00	70.00	-25.10
18.00	72.00	-27.10
18.00	74.00	-29.10
18.00	76.00	-31.10
18.00	78.00	-33.10
18.00	80.00	-35.10
18.00	82.00	-37.10
18.00	84.00	-39.10
18.00	86.00	-41.10
18.00	88.00	-43.10
18.00	90.00	-45.10
18.00	92.00	-47.10
18.00	94.00	-49.10
18.00	96.00	-51.10
18.00	98.00	-53.10
18.00	100.00	-55.10
18.00	102.00	-57.10
18.00	104.00	-59.10
18.00	106.00	-61.10
18.00	108.00	-63.10
18.00	110.00	-65.10
18.00	112.00	-67.10
18.00	114.00	-69.10

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	4.80	5.45	10.25	5.13	21.16
12.00	18.0	8.16	6.35	14.51	7.25	27.20
14.00	18.0	11.85	8.12	19.97	9.98	36.21
16.00	18.0	16.39	10.14	26.54	13.27	46.82
18.00	18.0	21.00	13.60	34.60	17.30	61.81
20.00	18.0	26.52	15.03	41.55	20.77	71.60
22.00	18.0	34.16	14.51	48.66	24.33	77.68
24.00	18.0	42.89	12.81	55.70	27.85	81.31
26.00	18.0	48.58	10.64	59.22	29.61	80.49
28.00	18.0	53.68	8.52	62.20	31.10	79.25

30.00	18.0	58.86	0.00	58.86	29.43	58.86
32.00	18.0	58.86	0.00	58.86	29.43	58.86
34.00	18.0	58.86	4.52	63.38	31.69	72.43
36.00	18.0	58.86	4.52	63.38	31.69	72.41
38.00	18.0	58.86	4.90	63.77	31.88	73.57
40.00	18.0	60.49	4.25	64.74	32.37	73.24
42.00	18.0	65.20	2.70	67.91	33.95	73.32
44.00	18.0	68.33	1.96	70.29	35.14	74.20
46.00	18.0	68.73	0.00	68.73	34.37	68.73
48.00	18.0	68.73	0.11	68.84	34.42	69.07
50.00	18.0	68.73	1.49	70.22	35.11	73.20
52.00	18.0	68.73	3.62	72.35	36.17	79.58
54.00	18.0	69.59	5.78	75.38	37.69	86.94
56.00	18.0	73.64	7.07	80.71	40.35	94.84
58.00	18.0	76.36	10.05	86.41	43.20	106.50
60.00	18.0	79.52	18.49	98.00	49.00	134.97
62.00	18.0	89.13	25.28	114.40	57.20	164.96
64.00	18.0	101.18	28.68	129.87	64.93	187.23
66.00	18.0	114.37	30.44	144.81	72.41	205.69
68.00	18.0	127.44	32.29	159.73	79.87	224.32
70.00	18.0	140.64	33.14	173.78	86.89	240.06
72.00	18.0	153.01	31.83	184.83	92.42	248.49
74.00	18.0	164.21	31.44	195.65	97.83	258.53
76.00	18.0	175.03	35.71	210.74	105.37	282.15
78.00	18.0	186.56	35.06	221.62	110.81	291.73
80.00	18.0	199.21	29.79	229.01	114.50	288.59
82.00	18.0	215.10	23.86	238.95	119.48	286.67
84.00	18.0	229.94	14.35	244.29	122.15	272.99
86.00	18.0	243.19	13.03	256.22	128.11	282.27
88.00	18.0	255.07	13.67	268.75	134.37	296.09
90.00	18.0	265.54	21.70	287.24	143.62	330.65
92.00	18.0	277.19	33.04	310.23	155.11	376.30
94.00	18.0	291.97	42.68	334.65	167.32	420.01
96.00	18.0	307.23	45.96	353.19	176.59	445.10
98.00	18.0	320.88	49.17	370.04	185.02	468.38
100.00	18.0	334.16	55.73	389.89	194.95	501.36
102.00	18.0	348.94	62.92	411.86	205.93	537.70
104.00	18.0	364.65	67.92	432.57	216.29	568.42
106.00	18.0	380.36	71.54	451.90	225.95	594.97
108.00	18.0	********** Not enough soil data *******				
110.00	18.0	0.00	0.00	0.00	0.00	0.00
112.00	18.0	0.00	0.00	0.00	0.00	0.00
114.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: December 01, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 15:09:18

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B3_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJL
Units: English

Analysis Information:
==========
Analysis Type: SPT

Soil Information:
==========
Boring date: 11-19-13, Boring Number: WL3-B3
Station number: 884+52 Offset: 171 RT

Ground Elevation: 44.100(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	2.00	4.00	3- Clean sand
3	4.00	4.00	3- Clean sand
4	5.00	4.00	2- Clay and silty sand
5	6.00	11.00	3- Clean sand
6	8.00	8.00	2- Clay and silty sand
7	10.00	10.00	2- Clay and silty sand
8	12.50	8.00	2- Clay and silty sand
9	15.00	5.00	2- Clay and silty sand
10	17.50	6.00	2- Clay and silty sand
11	20.00	12.00	2- Clay and silty sand
12	22.50	11.00	2- Clay and silty sand
13	23.75	4.00	3- Clean sand
14	25.00	4.00	2- Clay and silty sand
15	26.25	4.00	3- Clean sand
16	27.50	7.00	2- Clay and silty sand
17	28.75	7.00	3- Clean sand

18	30.00	0.00	2-	Clay and silty sand
19	32.50	0.00	2-	Clay and silty sand
20	33.75	0.00	3-	Clean sand
21	35.00	12.00	2-	Clay and silty sand
22	37.50	17.00	2-	Clay and silty sand
23	40.00	28.00	2-	Clay and silty sand
24	41.25	5.00	3-	Clean sand
25	42.50	5.00	2-	Clay and silty sand
26	45.00	4.00	1-	Plastic Clay
27	47.50	2.00	1-	Plastic Clay
28	50.00	3.00	1-	Plastic Clay
29	52.50	2.00	1-	Plastic Clay
30	55.00	4.00	1-	Plastic Clay
31	57.50	7.00	2-	Clay and silty sand
32	60.00	8.00	2-	Clay and silty sand
33	61.25	8.00	3-	Clean sand
34	62.50	21.00	2-	Clay and silty sand
35	65.00	29.00	1-	Plastic Clay
36	67.50	31.00	1-	Plastic Clay
37	70.00	30.00	1-	Plastic Clay
38	72.50	21.00	1-	Plastic Clay
39	75.00	18.00	1-	Plastic Clay
40	77.50	20.00	2-	Clay and silty sand
41	80.00	13.00	2-	Clay and silty sand
42	81.25	13.00	3-	Clean sand
43	82.50	48.00	2-	Clay and silty sand
44	85.00	18.00	1-	Plastic Clay
45	87.50	17.00	1-	Plastic Clay
46	90.00	16.00	1-	Plastic Clay
47	92.50	17.00	1-	Plastic Clay
48	95.00	99.00	2-	Clay and silty sand
49	97.50	99.00	4-	Lime Stone/Very shelly sand
50	100.00	99.00	4-	Lime Stone/Very shelly sand
51	102.50	99.00	4-	Lime Stone/Very shelly sand
52	105.00	99.00	4-	Lime Stone/Very shelly sand
53	107.50	99.00	4-	Lime Stone/Very shelly sand
54	110.00	99.00	4-	Lime Stone/Very shelly sand
55	112.50	99.00	4-	Lime Stone/Very shelly sand
56	113.00	0.00	5-	Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type

1	44.10	39.10	5.00	4.00	3-Clean Sand
2	39.10	38.10	1.00	4.00	2-Clay and Silty Sand
3	38.10	36.10	2.00	11.00	3-Clean Sand
4	36.10	20.35	15.75	8.40	2-Clay and Silty Sand
5	20.35	19.10	1.25	4.00	3-Clean Sand
6	19.10	17.85	1.25	4.00	2-Clay and Silty Sand
7	17.85	16.60	1.25	4.00	3-Clean Sand
8	16.60	15.35	1.25	7.00	2-Clay and Silty Sand
9	15.35	14.10	1.25	7.00	3-Clean Sand
10	14.10	10.35	3.75	0.00	2-Clay and Silty Sand
11	10.35	9.10	1.25	0.00	3-Clean Sand
12	9.10	2.85	6.25	17.20	2-Clay and Silty Sand
13	2.85	1.60	1.25	5.00	3-Clean Sand
14	1.60	-0.90	2.50	5.00	2-Clay and Silty Sand
15	-0.90	-13.40	12.50	3.00	1-Plastic Clay
16	-13.40	-17.15	3.75	7.33	2-Clay and Silty Sand
17	-17.15	-18.40	1.25	8.00	3-Clean Sand
18	-18.40	-20.90	2.50	21.00	2-Clay and Silty Sand
19	-20.90	-33.40	12.50	25.80	1-Plastic Clay
20	-33.40	-37.15	3.75	17.67	2-Clay and Silty Sand
21	-37.15	-38.40	1.25	13.00	3-Clean Sand
22	-38.40	-40.90	2.50	48.00	2-Clay and Silty Sand
23	-40.90	-50.90	10.00	17.00	1-Plastic Clay
24	-50.90	-53.40	2.50	99.00	2-Clay and Silty Sand
25	-53.40	-68.90	15.50	99.00	4-Limestone, Very Shelly Sand
26	-68.90	-68.90	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	34.10
18.00	12.00	32.10
18.00	14.00	30.10
18.00	16.00	28.10
18.00	18.00	26.10
18.00	20.00	24.10
18.00	22.00	22.10
18.00	24.00	20.10

18.00	26.00	18.10
18.00	28.00	16.10
18.00	30.00	14.10
18.00	32.00	12.10
18.00	34.00	10.10
18.00	36.00	8.10
18.00	38.00	6.10
18.00	40.00	4.10
18.00	42.00	2.10
18.00	44.00	0.10
18.00	46.00	-1.90
18.00	48.00	-3.90
18.00	50.00	-5.90
18.00	52.00	-7.90
18.00	54.00	-9.90
18.00	56.00	-11.90
18.00	58.00	-13.90
18.00	60.00	-15.90
18.00	62.00	-17.90
18.00	64.00	-19.90
18.00	66.00	-21.90
18.00	68.00	-23.90
18.00	70.00	-25.90
18.00	72.00	-27.90
18.00	74.00	-29.90
18.00	76.00	-31.90
18.00	78.00	-33.90
18.00	80.00	-35.90
18.00	82.00	-37.90
18.00	84.00	-39.90
18.00	86.00	-41.90
18.00	88.00	-43.90
18.00	90.00	-45.90
18.00	92.00	-47.90
18.00	94.00	-49.90
18.00	96.00	-51.90
18.00	98.00	-53.90
18.00	100.00	-55.90
18.00	102.00	-57.90
18.00	104.00	-59.90
18.00	106.00	-61.90
18.00	108.00	-63.90
18.00	110.00	-65.90

Driven Pile Capacity:

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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	10.70	10.06	20.76	10.38	40.88
12.00	18.0	15.87	11.05	26.92	13.46	49.01
14.00	18.0	20.85	11.09	31.94	15.97	54.13
16.00	18.0	24.51	12.24	36.75	18.38	61.24
18.00	18.0	28.47	13.10	41.58	20.79	67.79
20.00	18.0	34.50	10.81	45.31	22.66	66.94
22.00	18.0	41.67	8.25	49.91	24.96	66.40
24.00	18.0	46.08	3.27	49.36	24.68	55.90
26.00	18.0	46.08	8.52	54.61	27.30	71.65
28.00	18.0	48.54	7.17	55.71	27.86	70.05
30.00	18.0	50.20	2.99	53.19	26.60	59.18
32.00	18.0	50.20	3.86	54.06	27.03	61.79
34.00	18.0	50.29	13.11	63.39	31.70	89.60
36.00	18.0	56.20	16.49	72.69	36.35	105.67
38.00	18.0	65.56	16.51	82.07	41.04	115.09
40.00	18.0	77.97	12.88	90.85	45.42	116.60
42.00	18.0	83.14	4.70	87.83	43.92	97.22
44.00	18.0	85.40	2.02	87.42	43.71	91.45
46.00	18.0	86.29	0.00	86.29	43.14	86.29
48.00	18.0	86.29	0.00	86.29	43.14	86.29
50.00	18.0	86.29	0.01	86.30	43.15	86.33
52.00	18.0	86.29	1.00	87.29	43.65	89.30
54.00	18.0	86.29	3.06	89.35	44.68	95.48
56.00	18.0	86.75	5.92	92.67	46.33	104.51
58.00	18.0	90.22	9.42	99.64	49.82	118.48
60.00	18.0	93.79	11.08	104.87	52.43	127.03
62.00	18.0	99.46	14.65	114.12	57.06	143.42
64.00	18.0	110.95	22.59	133.54	66.77	178.72
66.00	18.0	127.06	19.28	146.34	73.17	184.89
68.00	18.0	143.41	18.49	161.90	80.95	198.89
70.00	18.0	159.74	17.12	176.86	88.43	211.10
72.00	18.0	174.71	17.44	192.15	96.07	227.03
74.00	18.0	187.57	19.31	206.88	103.44	245.50
76.00	18.0	199.37	21.28	220.65	110.32	263.21
78.00	18.0	210.35	26.54	236.89	118.45	289.97
80.00	18.0	218.67	27.74	246.40	123.20	301.88
82.00	18.0	226.04	26.23	252.27	126.14	304.74
84.00	18.0	238.06	27.69	265.75	132.87	321.13
86.00	18.0	252.27	11.10	263.36	131.68	285.56
88.00	18.0	263.19	11.70	274.89	137.44	298.28
90.00	18.0	274.12	19.80	293.92	146.96	333.52

92.00	18.0	285.04	40.00	325.04	162.52	405.03
94.00	18.0	297.25	67.57	364.82	182.41	499.95
96.00	18.0	311.53	82.44	393.97	196.98	558.85
98.00	18.0	321.21	100.87	422.08	211.04	623.82
100.00	18.0	327.41	105.06	432.47	216.24	642.59
102.00	18.0	332.99	114.85	447.85	223.92	677.55
104.00	18.0	338.54	130.25	468.79	234.40	729.29
106.00	18.0	344.54	150.15	494.68	247.34	794.97
108.00	18.0	********** Not enough soil data *******				
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: December 01, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 15:35:46

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B4_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 7-29-13, Boring Number: WL3-B4
Station number: 885+55 Offset: 47 LT

Ground Elevation: 46.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	3.00	2- Clay and silty sand
2	2.00	3.00	2- Clay and silty sand
3	4.00	4.00	2- Clay and silty sand
4	6.00	13.00	2- Clay and silty sand
5	8.00	8.00	2- Clay and silty sand
6	10.00	12.00	2- Clay and silty sand
7	12.50	8.00	2- Clay and silty sand
8	15.00	8.00	3- Clean sand
9	17.50	8.00	3- Clean sand
10	20.00	10.00	3- Clean sand
11	22.50	9.00	2- Clay and silty sand
12	25.00	5.00	2- Clay and silty sand
13	27.50	8.00	2- Clay and silty sand
14	30.00	3.00	1- Plastic Clay
15	32.50	0.00	1- Plastic Clay
16	35.00	6.00	1- Plastic Clay
17	37.50	2.00	1- Plastic Clay

18	40.00	4.00	1- Plastic Clay
19	42.50	5.00	1- Plastic Clay
20	45.00	5.00	1- Plastic Clay
21	47.50	6.00	1- Plastic Clay
22	50.00	4.00	1- Plastic Clay
23	52.50	11.00	1- Plastic Clay
24	55.00	10.00	2- Clay and silty sand
25	57.50	7.00	2- Clay and silty sand
26	60.00	8.00	2- Clay and silty sand
27	62.50	30.00	2- Clay and silty sand
28	65.00	24.00	2- Clay and silty sand
29	67.50	18.00	2- Clay and silty sand
30	70.00	19.00	2- Clay and silty sand
31	72.50	10.00	2- Clay and silty sand
32	75.00	33.00	2- Clay and silty sand
33	77.50	19.00	1- Plastic Clay
34	80.00	13.00	1- Plastic Clay
35	82.50	19.00	1- Plastic Clay
36	85.00	99.00	2- Clay and silty sand
37	87.50	99.00	2- Clay and silty sand
38	90.00	99.00	2- Clay and silty sand
39	92.50	99.00	2- Clay and silty sand
40	95.00	99.00	2- Clay and silty sand
41	97.50	99.00	2- Clay and silty sand
42	100.00	99.00	2- Clay and silty sand
43	101.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	46.40	31.40	15.00	7.47	2-Clay and Silty Sand
2	31.40	23.90	7.50	8.67	3-Clean Sand
3	23.90	16.40	7.50	7.33	2-Clay and Silty Sand
4	16.40	-8.60	25.00	4.60	1-Plastic Clay
5	-8.60	-31.10	22.50	17.67	2-Clay and Silty Sand
6	-31.10	-38.60	7.50	17.00	1-Plastic Clay
7	-38.60	-54.60	16.00	99.00	2-Clay and Silty Sand
8	-54.60	-54.60	0.00	0.00	5-

Driven Pile Data:

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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	36.40
18.00	12.00	34.40
18.00	14.00	32.40
18.00	16.00	30.40
18.00	18.00	28.40
18.00	20.00	26.40
18.00	22.00	24.40
18.00	24.00	22.40
18.00	26.00	20.40
18.00	28.00	18.40
18.00	30.00	16.40
18.00	32.00	14.40
18.00	34.00	12.40
18.00	36.00	10.40
18.00	38.00	8.40
18.00	40.00	6.40
18.00	42.00	4.40
18.00	44.00	2.40
18.00	46.00	0.40
18.00	48.00	-1.60
18.00	50.00	-3.60
18.00	52.00	-5.60
18.00	54.00	-7.60
18.00	56.00	-9.60
18.00	58.00	-11.60
18.00	60.00	-13.60
18.00	62.00	-15.60
18.00	64.00	-17.60
18.00	66.00	-19.60
18.00	68.00	-21.60
18.00	70.00	-23.60
18.00	72.00	-25.60
18.00	74.00	-27.60
18.00	76.00	-29.60
18.00	78.00	-31.60
18.00	80.00	-33.60
18.00	82.00	-35.60
18.00	84.00	-37.60
18.00	86.00	-39.60
18.00	88.00	-41.60

18.00	90.00	-43.60
18.00	92.00	-45.60
18.00	94.00	-47.60
18.00	96.00	-49.60
18.00	98.00	-51.60
18.00	100.00	-53.60

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	12.56	12.38	24.93	12.47	49.69
12.00	18.0	18.41	14.59	33.00	16.50	62.17
14.00	18.0	22.88	17.89	40.77	20.38	76.55
16.00	18.0	30.45	19.61	50.06	25.03	89.29
18.00	18.0	32.68	19.72	52.41	26.20	91.85
20.00	18.0	35.38	17.72	53.10	26.55	88.54
22.00	18.0	39.39	15.83	55.22	27.61	86.89
24.00	18.0	44.51	10.13	54.64	27.32	74.91
26.00	18.0	48.34	7.84	56.18	28.09	71.85
28.00	18.0	53.00	6.00	59.00	29.50	71.00
30.00	18.0	55.08	1.11	56.19	28.09	58.40
32.00	18.0	55.08	0.93	56.00	28.00	57.85
34.00	18.0	56.11	0.98	57.09	28.54	59.05
36.00	18.0	59.76	0.93	60.70	30.35	62.56
38.00	18.0	60.79	1.23	62.02	31.01	64.48
40.00	18.0	60.79	1.73	62.52	31.26	65.98
42.00	18.0	62.33	2.19	64.52	32.26	68.90
44.00	18.0	66.09	2.37	68.46	34.23	73.19
46.00	18.0	70.02	2.19	72.21	36.11	76.59
48.00	18.0	74.31	2.77	77.09	38.54	82.63
50.00	18.0	76.14	4.91	81.05	40.53	90.87
52.00	18.0	79.29	7.01	86.30	43.15	100.33
54.00	18.0	86.62	8.05	94.67	47.33	110.76
56.00	18.0	92.60	8.56	101.16	50.58	118.27
58.00	18.0	95.19	11.92	107.11	53.55	130.94
60.00	18.0	98.32	19.12	117.44	58.72	155.67
62.00	18.0	105.72	24.41	130.13	65.07	178.95
64.00	18.0	117.72	24.89	142.62	71.31	192.40
66.00	18.0	129.37	25.31	154.68	77.34	205.30
68.00	18.0	139.82	24.68	164.51	82.25	213.87

70.00	18.0	150.13	28.07	178.21	89.10	234.36
72.00	18.0	159.10	30.53	189.63	94.81	250.69
74.00	18.0	167.53	28.17	195.69	97.85	252.02
76.00	18.0	180.80	21.95	202.75	101.38	246.65
78.00	18.0	202.39	10.86	213.25	106.63	234.97
80.00	18.0	209.49	17.98	227.47	113.73	263.43
82.00	18.0	219.20	31.16	250.36	125.18	312.69
84.00	18.0	231.82	42.36	274.18	137.09	358.90
86.00	18.0	251.33	49.02	300.34	150.17	398.38
88.00	18.0	265.86	50.87	316.73	158.36	418.47
90.00	18.0	279.57	55.88	335.45	167.72	447.21
92.00	18.0	294.32	62.48	356.80	178.40	481.76
94.00	18.0	310.03	67.64	377.68	188.84	512.96
96.00	18.0	********** Not enough soil data *******				
98.00	18.0	0.00	0.00	0.00	0.00	0.00
100.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: December 01, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 15:42:07

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B5_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJL
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 8-6-13, Boring Number: WL3-B5
Station number: 885+39 Offset: 39 RT

Ground Elevation: 45.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	5.00	3- Clean sand
2	2.00	5.00	3- Clean sand
3	4.00	6.00	3- Clean sand
4	6.00	14.00	2- Clay and silty sand
5	8.00	10.00	2- Clay and silty sand
6	10.00	11.00	2- Clay and silty sand
7	12.50	8.00	2- Clay and silty sand
8	15.00	7.00	2- Clay and silty sand
9	17.50	7.00	2- Clay and silty sand
10	20.00	13.00	2- Clay and silty sand
11	22.50	13.00	3- Clean sand
12	25.00	7.00	2- Clay and silty sand
13	26.25	3.00	3- Clean sand
14	27.50	3.00	2- Clay and silty sand
15	30.00	0.00	2- Clay and silty sand
16	32.50	0.00	2- Clay and silty sand
17	35.00	0.00	2- Clay and silty sand

18	37.50	0.00	2- Clay and silty sand
19	38.75	0.00	3- Clean sand
20	40.00	32.00	2- Clay and silty sand
21	42.50	12.00	1- Plastic Clay
22	45.00	6.00	2- Clay and silty sand
23	47.50	7.00	1- Plastic Clay
24	50.00	10.00	2- Clay and silty sand
25	52.50	9.00	2- Clay and silty sand
26	55.00	10.00	2- Clay and silty sand
27	57.50	10.00	2- Clay and silty sand
28	58.75	10.00	3- Clean sand
29	60.00	40.00	2- Clay and silty sand
30	62.50	32.00	2- Clay and silty sand
31	65.00	28.00	2- Clay and silty sand
32	67.50	34.00	2- Clay and silty sand
33	70.00	20.00	1- Plastic Clay
34	72.50	26.00	2- Clay and silty sand
35	75.00	16.00	2- Clay and silty sand
36	77.50	22.00	2- Clay and silty sand
37	80.00	26.00	2- Clay and silty sand
38	82.50	99.00	1- Plastic Clay
39	85.00	99.00	1- Plastic Clay
40	87.50	20.00	2- Clay and silty sand
41	90.00	99.00	4- Lime Stone/Very shelly sand
42	92.50	99.00	2- Clay and silty sand
43	95.00	99.00	2- Clay and silty sand
44	97.50	99.00	2- Clay and silty sand
45	100.00	99.00	2- Clay and silty sand
46	101.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	45.40	39.40	6.00	5.33	3-Clean Sand
2	39.40	22.90	16.50	9.88	2-Clay and Silty Sand
3	22.90	20.40	2.50	13.00	3-Clean Sand
4	20.40	19.15	1.25	7.00	2-Clay and Silty Sand
5	19.15	17.90	1.25	3.00	3-Clean Sand
6	17.90	6.65	11.25	0.67	2-Clay and Silty Sand
7	6.65	5.40	1.25	0.00	3-Clean Sand
8	5.40	2.90	2.50	32.00	2-Clay and Silty Sand

9	2.90	0.40	2.50	12.00	1-Plastic Clay
10	0.40	-2.10	2.50	6.00	2-Clay and Silty Sand
11	-2.10	-4.60	2.50	7.00	1-Plastic Clay
12	-4.60	-13.35	8.75	9.71	2-Clay and Silty Sand
13	-13.35	-14.60	1.25	10.00	3-Clean Sand
14	-14.60	-24.60	10.00	33.50	2-Clay and Silty Sand
15	-24.60	-27.10	2.50	20.00	1-Plastic Clay
16	-27.10	-37.10	10.00	22.50	2-Clay and Silty Sand
17	-37.10	-42.10	5.00	99.00	1-Plastic Clay
18	-42.10	-44.60	2.50	20.00	2-Clay and Silty Sand
19	-44.60	-47.10	2.50	99.00	4-Limestone, Very Shelly Sand
20	-47.10	-55.60	8.50	99.00	2-Clay and Silty Sand
21	-55.60	-55.60	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	35.40
18.00	12.00	33.40
18.00	14.00	31.40
18.00	16.00	29.40
18.00	18.00	27.40
18.00	20.00	25.40
18.00	22.00	23.40
18.00	24.00	21.40
18.00	26.00	19.40
18.00	28.00	17.40
18.00	30.00	15.40
18.00	32.00	13.40
18.00	34.00	11.40
18.00	36.00	9.40
18.00	38.00	7.40
18.00	40.00	5.40
18.00	42.00	3.40
18.00	44.00	1.40
18.00	46.00	-0.60
18.00	48.00	-2.60
18.00	50.00	-4.60
18.00	52.00	-6.60
18.00	54.00	-8.60

18.00	56.00	-10.60
18.00	58.00	-12.60
18.00	60.00	-14.60
18.00	62.00	-16.60
18.00	64.00	-18.60
18.00	66.00	-20.60
18.00	68.00	-22.60
18.00	70.00	-24.60
18.00	72.00	-26.60
18.00	74.00	-28.60
18.00	76.00	-30.60
18.00	78.00	-32.60
18.00	80.00	-34.60
18.00	82.00	-36.60
18.00	84.00	-38.60
18.00	86.00	-40.60
18.00	88.00	-42.60
18.00	90.00	-44.60
18.00	92.00	-46.60
18.00	94.00	-48.60
18.00	96.00	-50.60
18.00	98.00	-52.60
18.00	100.00	-54.60

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	22.02	14.68	36.69	18.35	66.05
12.00	18.0	28.23	13.49	41.71	20.86	68.69
14.00	18.0	33.33	13.23	46.56	23.28	73.01
16.00	18.0	38.00	14.94	52.94	26.47	82.82
18.00	18.0	42.69	19.12	61.80	30.90	100.04
20.00	18.0	49.28	19.55	68.83	34.42	107.93
22.00	18.0	55.51	15.74	71.25	35.62	102.74
24.00	18.0	59.50	11.12	70.61	35.31	92.85
26.00	18.0	62.32	1.56	63.88	31.94	67.00
28.00	18.0	63.15	8.05	71.20	35.60	87.30
30.00	18.0	63.15	7.17	70.31	35.16	84.64
32.00	18.0	63.15	5.85	69.00	34.50	80.70
34.00	18.0	63.15	4.05	67.19	33.60	75.29

36.00	18.0	63.15	8.26	71.41	35.70	87.92
38.00	18.0	63.15	10.01	73.16	36.58	93.19
40.00	18.0	67.71	10.04	77.75	38.88	97.83
42.00	18.0	79.87	7.93	87.80	43.90	103.65
44.00	18.0	87.27	7.65	94.93	47.46	110.23
46.00	18.0	91.99	8.60	100.59	50.29	117.80
48.00	18.0	97.02	11.79	108.81	54.40	132.38
50.00	18.0	102.98	13.80	116.78	58.39	144.38
52.00	18.0	109.07	13.82	122.89	61.45	150.53
54.00	18.0	114.65	14.24	128.89	64.44	157.36
56.00	18.0	117.76	22.47	140.23	70.12	185.17
58.00	18.0	123.91	29.46	153.37	76.69	212.29
60.00	18.0	134.70	48.77	183.47	91.73	281.01
62.00	18.0	149.61	49.22	198.83	99.42	297.27
64.00	18.0	164.38	46.64	211.02	105.51	304.30
66.00	18.0	178.29	40.81	219.10	109.55	300.73
68.00	18.0	192.92	38.12	231.04	115.52	307.27
70.00	18.0	206.50	28.35	234.85	117.43	291.54
72.00	18.0	219.35	26.77	246.12	123.06	299.65
74.00	18.0	231.62	33.70	265.32	132.66	332.73
76.00	18.0	241.61	34.11	275.71	137.86	343.93
78.00	18.0	252.90	33.42	286.32	143.16	353.15
80.00	18.0	265.51	31.55	297.06	148.53	360.17
82.00	18.0	280.57	31.21	311.79	155.89	374.21
84.00	18.0	296.49	35.02	331.51	165.75	401.54
86.00	18.0	310.03	59.46	369.49	184.75	488.42
88.00	18.0	328.16	68.82	396.98	198.49	534.63
90.00	18.0	336.97	69.85	406.82	203.41	546.53
92.00	18.0	347.57	67.04	414.62	207.31	548.70
94.00	18.0	363.07	72.00	435.07	217.53	579.07
96.00	18.0	********** Not enough soil data *******				
98.00	18.0	0.00	0.00	0.00	0.00	0.00
100.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: December 01, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 15:55:01

General Information:
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Input file: .....alculations-Analyses\FB-Deep\Wildlife No 3\WL3-B6_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wildlife No. 3
Engineer: EJL
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-14-13, Boring Number: WL3-B6
Station number: 885+27 Offset: 154 RT

Ground Elevation: 44.000(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	2.00	4.00	3- Clean sand
3	3.00	4.00	2- Clay and silty sand
4	4.00	7.00	3- Clean sand
5	6.00	4.00	2- Clay and silty sand
6	8.00	4.00	2- Clay and silty sand
7	10.00	4.00	2- Clay and silty sand
8	12.50	5.00	3- Clean sand
9	15.00	5.00	2- Clay and silty sand
10	17.50	6.00	2- Clay and silty sand
11	20.00	15.00	2- Clay and silty sand
12	22.50	8.00	3- Clean sand
13	25.00	6.00	2- Clay and silty sand
14	26.25	1.00	3- Clean sand
15	27.50	1.00	2- Clay and silty sand
16	32.50	0.00	2- Clay and silty sand
17	33.75	0.00	3- Clean sand

18	35.00	10.00	2- Clay and silty sand
19	36.25	10.00	3- Clean sand
20	37.50	31.00	2- Clay and silty sand
21	38.75	14.00	3- Clean sand
22	40.00	14.00	2- Clay and silty sand
23	42.50	6.00	2- Clay and silty sand
24	45.00	2.00	1- Plastic Clay
25	47.50	2.00	1- Plastic Clay
26	50.00	3.00	1- Plastic Clay
27	51.25	3.00	2- Clay and silty sand
28	52.50	7.00	1- Plastic Clay
29	55.00	5.00	2- Clay and silty sand
30	57.50	6.00	2- Clay and silty sand
31	60.00	11.00	2- Clay and silty sand
32	61.25	11.00	3- Clean sand
33	62.50	26.00	2- Clay and silty sand
34	65.00	31.00	2- Clay and silty sand
35	70.00	22.00	2- Clay and silty sand
36	72.50	18.00	1- Plastic Clay
37	75.00	18.00	1- Plastic Clay
38	77.50	10.00	2- Clay and silty sand
39	80.00	46.00	1- Plastic Clay
40	81.25	24.00	2- Clay and silty sand
41	82.50	24.00	1- Plastic Clay
42	85.00	18.00	1- Plastic Clay
43	87.50	17.00	1- Plastic Clay
44	90.00	12.00	2- Clay and silty sand
45	91.25	12.00	3- Clean sand
46	92.50	39.00	2- Clay and silty sand
47	95.00	99.00	4- Lime Stone/Very shelly sand
48	97.50	99.00	4- Lime Stone/Very shelly sand
49	100.00	99.00	4- Lime Stone/Very shelly sand
50	102.50	99.00	4- Lime Stone/Very shelly sand
51	105.00	99.00	4- Lime Stone/Very shelly sand
52	107.50	99.00	2- Clay and silty sand
53	110.00	99.00	2- Clay and silty sand
54	111.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type

1	44.00	41.00	3.00	4.00	3-Clean Sand
2	41.00	40.00	1.00	4.00	2-Clay and Silty Sand
3	40.00	38.00	2.00	7.00	3-Clean Sand
4	38.00	31.50	6.50	4.00	2-Clay and Silty Sand
5	31.50	29.00	2.50	5.00	3-Clean Sand
6	29.00	21.50	7.50	8.67	2-Clay and Silty Sand
7	21.50	19.00	2.50	8.00	3-Clean Sand
8	19.00	17.75	1.25	6.00	2-Clay and Silty Sand
9	17.75	16.50	1.25	1.00	3-Clean Sand
10	16.50	10.25	6.25	0.80	2-Clay and Silty Sand
11	10.25	9.00	1.25	0.00	3-Clean Sand
12	9.00	7.75	1.25	10.00	2-Clay and Silty Sand
13	7.75	6.50	1.25	10.00	3-Clean Sand
14	6.50	5.25	1.25	31.00	2-Clay and Silty Sand
15	5.25	4.00	1.25	14.00	3-Clean Sand
16	4.00	-1.00	5.00	10.00	2-Clay and Silty Sand
17	-1.00	-7.25	6.25	2.20	1-Plastic Clay
18	-7.25	-8.50	1.25	3.00	2-Clay and Silty Sand
19	-8.50	-11.00	2.50	7.00	1-Plastic Clay
20	-11.00	-17.25	6.25	6.60	2-Clay and Silty Sand
21	-17.25	-18.50	1.25	11.00	3-Clean Sand
22	-18.50	-28.50	10.00	27.50	2-Clay and Silty Sand
23	-28.50	-33.50	5.00	18.00	1-Plastic Clay
24	-33.50	-36.00	2.50	10.00	2-Clay and Silty Sand
25	-36.00	-37.25	1.25	46.00	1-Plastic Clay
26	-37.25	-38.50	1.25	24.00	2-Clay and Silty Sand
27	-38.50	-46.00	7.50	19.67	1-Plastic Clay
28	-46.00	-47.25	1.25	12.00	2-Clay and Silty Sand
29	-47.25	-48.50	1.25	12.00	3-Clean Sand
30	-48.50	-51.00	2.50	39.00	2-Clay and Silty Sand
31	-51.00	-63.50	12.50	99.00	4-Limestone, Very Shelly Sand
32	-63.50	-67.00	3.50	99.00	2-Clay and Silty Sand
33	-67.00	-67.00	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	34.00
18.00	12.00	32.00
18.00	14.00	30.00

18.00	16.00	28.00
18.00	18.00	26.00
18.00	20.00	24.00
18.00	22.00	22.00
18.00	24.00	20.00
18.00	26.00	18.00
18.00	28.00	16.00
18.00	30.00	14.00
18.00	32.00	12.00
18.00	34.00	10.00
18.00	36.00	8.00
18.00	38.00	6.00
18.00	40.00	4.00
18.00	42.00	2.00
18.00	44.00	0.00
18.00	46.00	-2.00
18.00	48.00	-4.00
18.00	50.00	-6.00
18.00	52.00	-8.00
18.00	54.00	-10.00
18.00	56.00	-12.00
18.00	58.00	-14.00
18.00	60.00	-16.00
18.00	62.00	-18.00
18.00	64.00	-20.00
18.00	66.00	-22.00
18.00	68.00	-24.00
18.00	70.00	-26.00
18.00	72.00	-28.00
18.00	74.00	-30.00
18.00	76.00	-32.00
18.00	78.00	-34.00
18.00	80.00	-36.00
18.00	82.00	-38.00
18.00	84.00	-40.00
18.00	86.00	-42.00
18.00	88.00	-44.00
18.00	90.00	-46.00
18.00	92.00	-48.00
18.00	94.00	-50.00
18.00	96.00	-52.00
18.00	98.00	-54.00
18.00	100.00	-56.00
18.00	102.00	-58.00
18.00	104.00	-60.00
18.00	106.00	-62.00
18.00	108.00	-64.00
18.00	110.00	-66.00

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	1.48	5.13	6.61	3.31	16.87
12.00	18.0	1.91	6.02	7.93	3.97	19.98
14.00	18.0	3.69	7.08	10.77	5.39	24.94
16.00	18.0	6.91	9.66	16.57	8.28	35.89
18.00	18.0	9.84	11.35	21.20	10.60	43.91
20.00	18.0	15.62	13.24	28.86	14.43	55.33
22.00	18.0	21.99	11.88	33.88	16.94	57.64
24.00	18.0	27.09	9.20	36.28	18.14	54.68
26.00	18.0	29.44	1.34	30.78	15.39	33.45
28.00	18.0	30.16	6.50	36.66	18.33	49.65
30.00	18.0	30.16	6.81	36.97	18.49	50.60
32.00	18.0	30.16	10.17	40.33	20.16	60.67
34.00	18.0	30.24	16.92	47.15	23.58	80.99
36.00	18.0	34.61	18.25	52.85	26.43	89.34
38.00	18.0	43.47	15.35	58.82	29.41	89.53
40.00	18.0	49.99	9.21	59.21	29.60	77.63
42.00	18.0	56.43	9.33	65.77	32.88	84.44
44.00	18.0	59.85	5.99	65.84	32.92	77.83
46.00	18.0	60.25	0.00	60.25	30.13	60.25
48.00	18.0	60.25	0.63	60.88	30.44	62.14
50.00	18.0	60.25	1.88	62.13	31.07	65.89
52.00	18.0	60.85	5.40	66.24	33.12	77.04
54.00	18.0	65.27	5.49	70.76	35.38	81.74
56.00	18.0	68.69	6.74	75.43	37.71	88.90
58.00	18.0	70.62	10.40	81.02	40.51	101.81
60.00	18.0	74.06	18.80	92.86	46.43	130.46
62.00	18.0	83.98	24.93	108.91	54.46	158.77
64.00	18.0	96.45	27.75	124.19	62.10	179.68
66.00	18.0	109.79	28.66	138.45	69.23	195.78
68.00	18.0	124.34	27.52	151.86	75.93	206.90
70.00	18.0	136.88	25.25	162.13	81.07	212.64
72.00	18.0	148.66	24.06	172.72	86.36	220.85
74.00	18.0	159.97	13.08	173.05	86.53	199.21
76.00	18.0	169.75	17.18	186.93	93.47	221.30
78.00	18.0	179.41	24.21	203.62	101.81	252.03
80.00	18.0	192.80	20.70	213.51	106.75	254.92

82.00	18.0	206.07	16.61	222.68	111.34	255.90
84.00	18.0	220.38	12.92	233.31	116.65	259.15
86.00	18.0	231.84	14.78	246.62	123.31	276.17
88.00	18.0	243.12	23.14	266.26	133.13	312.55
90.00	18.0	253.00	47.98	300.98	150.49	396.94
92.00	18.0	258.71	64.72	323.42	161.71	452.86
94.00	18.0	270.84	82.47	353.31	176.66	518.25
96.00	18.0	279.98	100.78	380.76	190.38	582.32
98.00	18.0	285.96	106.32	392.28	196.14	604.91
100.00	18.0	291.49	117.38	408.87	204.43	643.62
102.00	18.0	297.80	127.14	424.94	212.47	679.23
104.00	18.0	305.38	128.61	433.99	217.00	691.22
106.00	18.0	********** Not enough soil data *******				
108.00	18.0	0.00	0.00	0.00	0.00	0.00
110.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 12:52:46

General Information:
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Input file: .....culations-Analyses\FB-Deep\Wekiva River Rd\WRD-B1_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wekiva River Road
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 8-9-13, Boring Number: WRD-B1
Station number: 899+36 Offset: 64 RT

Ground Elevation: 39.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	4.00	3- Clean sand
2	6.00	4.00	3- Clean sand
3	8.00	9.00	2- Clay and silty sand
4	10.00	11.00	2- Clay and silty sand
5	12.50	8.00	2- Clay and silty sand
6	15.00	12.00	3- Clean sand
7	17.50	10.00	2- Clay and silty sand
8	20.00	8.00	2- Clay and silty sand
9	22.50	11.00	3- Clean sand
10	25.00	6.00	3- Clean sand
11	27.50	1.00	2- Clay and silty sand
12	28.75	1.00	3- Clean sand
13	30.00	11.00	2- Clay and silty sand
14	31.25	4.00	3- Clean sand
15	32.50	4.00	2- Clay and silty sand
16	35.00	4.00	2- Clay and silty sand
17	36.25	4.00	3- Clean sand

18	37.50	7.00	2- Clay and silty sand
19	40.00	11.00	2- Clay and silty sand
20	42.50	7.00	2- Clay and silty sand
21	45.00	11.00	2- Clay and silty sand
22	47.50	16.00	3- Clean sand
23	50.00	12.00	2- Clay and silty sand
24	52.50	18.00	2- Clay and silty sand
25	55.00	18.00	2- Clay and silty sand
26	57.50	17.00	2- Clay and silty sand
27	60.00	15.00	2- Clay and silty sand
28	62.50	15.00	2- Clay and silty sand
29	65.00	12.00	2- Clay and silty sand
30	67.50	12.00	2- Clay and silty sand
31	68.75	12.00	3- Clean sand
32	70.00	99.00	2- Clay and silty sand
33	71.25	12.00	3- Clean sand
34	72.50	19.00	2- Clay and silty sand
35	75.00	13.00	2- Clay and silty sand
36	77.50	15.00	2- Clay and silty sand
37	80.00	26.00	2- Clay and silty sand
38	82.50	29.00	2- Clay and silty sand
39	85.00	99.00	4- Lime Stone/Very shelly sand
40	87.50	99.00	4- Lime Stone/Very shelly sand
41	90.00	99.00	2- Clay and silty sand
42	92.50	99.00	2- Clay and silty sand
43	95.00	99.00	2- Clay and silty sand
44	97.50	99.00	2- Clay and silty sand
45	100.00	99.00	2- Clay and silty sand
46	101.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	39.50	31.50	8.00	4.00	3-Clean Sand
2	31.50	24.50	7.00	9.36	2-Clay and Silty Sand
3	24.50	22.00	2.50	12.00	3-Clean Sand
4	22.00	17.00	5.00	9.00	2-Clay and Silty Sand
5	17.00	12.00	5.00	8.50	3-Clean Sand
6	12.00	10.75	1.25	1.00	2-Clay and Silty Sand
7	10.75	9.50	1.25	1.00	3-Clean Sand
8	9.50	8.25	1.25	11.00	2-Clay and Silty Sand

9	8.25	7.00	1.25	4.00	3-Clean Sand
10	7.00	3.25	3.75	4.00	2-Clay and Silty Sand
11	3.25	2.00	1.25	4.00	3-Clean Sand
12	2.00	-8.00	10.00	9.00	2-Clay and Silty Sand
13	-8.00	-10.50	2.50	16.00	3-Clean Sand
14	-10.50	-29.25	18.75	15.07	2-Clay and Silty Sand
15	-29.25	-30.50	1.25	12.00	3-Clean Sand
16	-30.50	-31.75	1.25	99.00	2-Clay and Silty Sand
17	-31.75	-33.00	1.25	12.00	3-Clean Sand
18	-33.00	-45.50	12.50	20.40	2-Clay and Silty Sand
19	-45.50	-50.50	5.00	99.00	4-Limestone, Very Shelly Sand
20	-50.50	-61.50	11.00	99.00	2-Clay and Silty Sand
21	-61.50	-61.50	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	29.50
18.00	12.00	27.50
18.00	14.00	25.50
18.00	16.00	23.50
18.00	18.00	21.50
18.00	20.00	19.50
18.00	22.00	17.50
18.00	24.00	15.50
18.00	26.00	13.50
18.00	28.00	11.50
18.00	30.00	9.50
18.00	32.00	7.50
18.00	34.00	5.50
18.00	36.00	3.50
18.00	38.00	1.50
18.00	40.00	-0.50
18.00	42.00	-2.50
18.00	44.00	-4.50
18.00	46.00	-6.50
18.00	48.00	-8.50
18.00	50.00	-10.50
18.00	52.00	-12.50
18.00	54.00	-14.50

18.00	56.00	-16.50
18.00	58.00	-18.50
18.00	60.00	-20.50
18.00	62.00	-22.50
18.00	64.00	-24.50
18.00	66.00	-26.50
18.00	68.00	-28.50
18.00	70.00	-30.50
18.00	72.00	-32.50
18.00	74.00	-34.50
18.00	76.00	-36.50
18.00	78.00	-38.50
18.00	80.00	-40.50
18.00	82.00	-42.50
18.00	84.00	-44.50
18.00	86.00	-46.50
18.00	88.00	-48.50
18.00	90.00	-50.50
18.00	92.00	-52.50
18.00	94.00	-54.50
18.00	96.00	-56.50
18.00	98.00	-58.50
18.00	100.00	-60.50

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	7.52	9.43	16.95	8.48	35.82
12.00	18.0	11.63	12.66	24.29	12.14	49.60
14.00	18.0	16.07	15.74	31.81	15.90	63.28
16.00	18.0	24.12	15.27	39.40	19.70	69.94
18.00	18.0	29.77	17.28	47.05	23.53	81.61
20.00	18.0	35.43	18.44	53.87	26.93	90.74
22.00	18.0	39.79	17.80	57.60	28.80	93.20
24.00	18.0	42.42	16.65	59.07	29.54	92.37
26.00	18.0	44.30	13.79	58.09	29.05	85.67
28.00	18.0	44.69	1.95	46.63	23.32	50.53
30.00	18.0	46.84	8.38	55.22	27.61	71.98
32.00	18.0	48.99	0.08	49.07	24.53	49.22
34.00	18.0	48.99	7.43	56.42	28.21	71.29

36.00	18.0	48.99	7.85	56.84	28.42	72.55
38.00	18.0	51.63	8.35	59.98	29.99	76.68
40.00	18.0	57.01	8.76	65.77	32.88	83.28
42.00	18.0	60.45	12.21	72.65	36.33	97.07
44.00	18.0	64.21	19.09	83.30	41.65	121.47
46.00	18.0	70.48	21.05	91.53	45.77	133.63
48.00	18.0	80.29	21.54	101.83	50.92	144.91
50.00	18.0	86.55	24.65	111.21	55.60	160.52
52.00	18.0	95.10	23.92	119.02	59.51	166.86
54.00	18.0	105.21	24.75	129.95	64.98	179.44
56.00	18.0	115.48	24.44	139.92	69.96	188.80
58.00	18.0	125.37	23.86	149.23	74.62	196.96
60.00	18.0	134.64	22.89	157.53	78.76	203.31
62.00	18.0	143.54	21.84	165.38	82.69	209.06
64.00	18.0	152.11	23.43	175.54	87.77	222.40
66.00	18.0	159.67	30.03	189.70	94.85	249.76
68.00	18.0	166.88	31.54	198.41	99.21	261.49
70.00	18.0	174.57	28.79	203.36	101.68	260.94
72.00	18.0	182.38	24.93	207.31	103.66	257.17
74.00	18.0	192.15	25.83	217.98	108.99	269.64
76.00	18.0	199.11	28.01	227.12	113.56	283.14
78.00	18.0	205.82	34.37	240.19	120.09	308.92
80.00	18.0	216.08	54.08	270.16	135.08	378.31
82.00	18.0	229.13	76.84	305.97	152.98	459.65
84.00	18.0	241.36	91.12	332.48	166.24	514.72
86.00	18.0	254.57	87.50	342.07	171.03	517.06
88.00	18.0	261.98	82.38	344.37	172.18	509.13
90.00	18.0	274.29	72.00	346.29	173.14	490.29
92.00	18.0	290.00	72.00	362.00	181.00	506.00
94.00	18.0	305.71	72.00	377.71	188.85	521.71
96.00	18.0	********** Not enough soil data *******				
98.00	18.0	0.00	0.00	0.00	0.00	0.00
100.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS 2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 13:00:05

General Information:
==========
Input file: .....culations-Analyses\FB-Deep\Wekiva River Rd\WRD-B2_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wekiva River Road
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 8-1-13, Boring Number: WRD-B2
Station number: 900+41 Offset: 64 LT

Ground Elevation: 40.500(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	15.00	2- Clay and silty sand
2	6.00	15.00	2- Clay and silty sand
3	8.00	15.00	2- Clay and silty sand
4	10.00	11.00	2- Clay and silty sand
5	12.50	8.00	2- Clay and silty sand
6	15.00	9.00	2- Clay and silty sand
7	17.50	12.00	2- Clay and silty sand
8	20.00	8.00	3- Clean sand
9	22.50	12.00	3- Clean sand
10	25.00	7.00	3- Clean sand
11	26.25	0.00	2- Clay and silty sand
12	27.50	0.00	3- Clean sand
13	30.00	14.00	2- Clay and silty sand
14	32.50	12.00	2- Clay and silty sand
15	33.75	3.00	3- Clean sand
16	35.00	3.00	2- Clay and silty sand
17	37.50	3.00	1- Plastic Clay

18	40.00	15.00	2- Clay and silty sand
19	42.50	6.00	1- Plastic Clay
20	45.00	5.00	1- Plastic Clay
21	47.50	10.00	2- Clay and silty sand
22	50.00	16.00	2- Clay and silty sand
23	52.50	26.00	2- Clay and silty sand
24	55.00	18.00	2- Clay and silty sand
25	57.50	15.00	2- Clay and silty sand
26	60.00	19.00	2- Clay and silty sand
27	62.50	18.00	2- Clay and silty sand
28	65.00	9.00	2- Clay and silty sand
29	67.50	23.00	2- Clay and silty sand
30	70.00	26.00	1- Plastic Clay
31	72.50	20.00	1- Plastic Clay
32	75.00	22.00	1- Plastic Clay
33	77.50	17.00	1- Plastic Clay
34	80.00	15.00	1- Plastic Clay
35	82.50	99.00	2- Clay and silty sand
36	85.00	99.00	2- Clay and silty sand
37	87.50	99.00	4- Lime Stone/Very shelly sand
38	90.00	99.00	2- Clay and silty sand
39	92.50	99.00	2- Clay and silty sand
40	95.00	99.00	2- Clay and silty sand
41	97.50	99.00	2- Clay and silty sand
42	100.00	99.00	2- Clay and silty sand
43	101.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	40.50	20.50	20.00	12.50	2-Clay and Silty Sand
2	20.50	14.25	6.25	9.40	3-Clean Sand
3	14.25	13.00	1.25	0.00	2-Clay and Silty Sand
4	13.00	10.50	2.50	0.00	3-Clean Sand
5	10.50	6.75	3.75	13.33	2-Clay and Silty Sand
6	6.75	5.50	1.25	3.00	3-Clean Sand
7	5.50	3.00	2.50	3.00	2-Clay and Silty Sand
8	3.00	0.50	2.50	3.00	1-Plastic Clay
9	0.50	-2.00	2.50	15.00	2-Clay and Silty Sand
10	-2.00	-7.00	5.00	5.50	1-Plastic Clay
11	-7.00	-29.50	22.50	17.11	2-Clay and Silty Sand

12	-29.50	-42.00	12.50	20.00	1-Plastic Clay
13	-42.00	-47.00	5.00	99.00	2-Clay and Silty Sand
14	-47.00	-49.50	2.50	99.00	4-Limestone, Very Shelly Sand
15	-49.50	-60.50	11.00	99.00	2-Clay and Silty Sand
16	-60.50	-60.50	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	30.50
18.00	12.00	28.50
18.00	14.00	26.50
18.00	16.00	24.50
18.00	18.00	22.50
18.00	20.00	20.50
18.00	22.00	18.50
18.00	24.00	16.50
18.00	26.00	14.50
18.00	28.00	12.50
18.00	30.00	10.50
18.00	32.00	8.50
18.00	34.00	6.50
18.00	36.00	4.50
18.00	38.00	2.50
18.00	40.00	0.50
18.00	42.00	-1.50
18.00	44.00	-3.50
18.00	46.00	-5.50
18.00	48.00	-7.50
18.00	50.00	-9.50
18.00	52.00	-11.50
18.00	54.00	-13.50
18.00	56.00	-15.50
18.00	58.00	-17.50
18.00	60.00	-19.50
18.00	62.00	-21.50
18.00	64.00	-23.50
18.00	66.00	-25.50
18.00	68.00	-27.50
18.00	70.00	-29.50

18.00	72.00	-31.50
18.00	74.00	-33.50
18.00	76.00	-35.50
18.00	78.00	-37.50
18.00	80.00	-39.50
18.00	82.00	-41.50
18.00	84.00	-43.50
18.00	86.00	-45.50
18.00	88.00	-47.50
18.00	90.00	-49.50
18.00	92.00	-51.50
18.00	94.00	-53.50
18.00	96.00	-55.50
18.00	98.00	-57.50
18.00	100.00	-59.50

Driven Pile Capacity:
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Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	43.50	17.56	61.06	30.53	96.19
12.00	18.0	49.71	17.17	66.88	33.44	101.21
14.00	18.0	55.08	17.73	72.81	36.40	108.26
16.00	18.0	60.96	19.23	80.19	40.09	118.64
18.00	18.0	67.88	21.83	89.71	44.85	133.37
20.00	18.0	72.20	22.46	94.66	47.33	139.59
22.00	18.0	74.91	18.58	93.50	46.75	130.66
24.00	18.0	77.96	15.15	93.11	46.55	123.40
26.00	18.0	79.68	15.83	95.51	47.76	127.17
28.00	18.0	79.92	17.57	97.49	48.75	132.64
30.00	18.0	84.97	15.13	100.10	50.05	130.35
32.00	18.0	92.99	11.24	104.23	52.11	126.70
34.00	18.0	97.18	1.30	98.49	49.24	101.09
36.00	18.0	97.18	9.57	106.75	53.37	125.88
38.00	18.0	97.41	9.58	106.98	53.49	126.14
40.00	18.0	102.75	8.75	111.50	55.75	129.00
42.00	18.0	109.92	7.83	117.75	58.88	133.42
44.00	18.0	114.24	7.05	121.28	60.64	135.37
46.00	18.0	117.52	11.59	129.10	64.55	152.28
48.00	18.0	124.35	16.91	141.26	70.63	175.07
50.00	18.0	130.87	18.83	149.70	74.85	187.37

52.00	18.0	140.41	20.74	161.15	80.57	202.63
54.00	18.0	152.58	21.59	174.17	87.08	217.35
56.00	18.0	162.96	23.57	186.53	93.26	233.66
58.00	18.0	172.27	25.68	197.95	98.98	249.32
60.00	18.0	182.23	25.22	207.46	103.73	257.91
62.00	18.0	192.71	25.11	217.82	108.91	268.03
64.00	18.0	201.99	25.56	227.56	113.78	278.68
66.00	18.0	208.97	24.08	233.05	116.52	281.22
68.00	18.0	219.73	21.28	241.01	120.51	283.58
70.00	18.0	236.78	14.31	251.09	125.55	279.72
72.00	18.0	250.84	14.33	265.16	132.58	293.81
74.00	18.0	263.76	13.32	277.08	138.54	303.73
76.00	18.0	276.96	14.32	291.28	145.64	319.93
78.00	18.0	288.68	23.64	312.31	156.16	359.59
80.00	18.0	299.28	35.17	334.45	167.22	404.78
82.00	18.0	311.67	52.66	364.33	182.17	469.66
84.00	18.0	325.57	60.87	386.44	193.22	508.19
86.00	18.0	337.99	67.48	405.48	202.74	540.44
88.00	18.0	351.43	71.83	423.26	211.63	566.91
90.00	18.0	363.73	72.00	435.73	217.87	579.73
92.00	18.0	379.44	72.00	451.44	225.72	595.44
94.00	18.0	395.15	72.00	467.15	233.58	611.15
96.00	18.0	********** Not enough soil data *******				
98.00	18.0	0.00	0.00	0.00	0.00	0.00
100.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES
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1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA,
   AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE
   ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   2 x THE MOBILIZED END BEARING.

Florida Bridge Software Institute — Date: November 30, 2014
Shaft and Pile Analysis (FB-Deep v.2.01f) — Time: 13:08:28

General Information:
==========
Input file: .....culations-Analyses\FB-Deep\Wekiva River Rd\WRD-B3_18&24PCP.spc
Project number: H1135080
Job name: Wekiva Parkway Section 6 - Wekiva River Road
Engineer: EJ
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 8-6-13, Boring Number: WRD-B3
Station number: 900+45 Offset: 72 RT

Ground Elevation: 39.400(ft)

Hammer type: Automatic Hammer, Correction factor = 1.24

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	10.00	3- Clean sand
2	6.00	10.00	3- Clean sand
3	8.00	23.00	2- Clay and silty sand
4	10.00	22.00	2- Clay and silty sand
5	12.50	15.00	2- Clay and silty sand
6	15.00	20.00	2- Clay and silty sand
7	17.50	18.00	2- Clay and silty sand
8	20.00	4.00	3- Clean sand
9	21.25	4.00	2- Clay and silty sand
10	22.50	7.00	3- Clean sand
11	25.00	13.00	3- Clean sand
12	27.50	3.00	2- Clay and silty sand
13	28.75	3.00	3- Clean sand
14	30.00	7.00	2- Clay and silty sand
15	32.50	2.00	1- Plastic Clay
16	37.50	24.00	2- Clay and silty sand
17	38.75	10.00	3- Clean sand

18	40.00	10.00	2- Clay and silty sand
19	42.50	10.00	2- Clay and silty sand
20	45.00	10.00	2- Clay and silty sand
21	47.50	7.00	2- Clay and silty sand
22	50.00	8.00	1- Plastic Clay
23	52.50	18.00	2- Clay and silty sand
24	55.00	18.00	2- Clay and silty sand
25	57.50	19.00	2- Clay and silty sand
26	60.00	16.00	2- Clay and silty sand
27	62.50	15.00	2- Clay and silty sand
28	65.00	9.00	2- Clay and silty sand
29	67.50	14.00	2- Clay and silty sand
30	70.00	23.00	2- Clay and silty sand
31	72.50	19.00	2- Clay and silty sand
32	75.00	16.00	2- Clay and silty sand
33	77.50	17.00	2- Clay and silty sand
34	80.00	17.00	2- Clay and silty sand
35	81.25	17.00	3- Clean sand
36	82.50	41.00	2- Clay and silty sand
37	85.00	99.00	2- Clay and silty sand
38	87.50	99.00	2- Clay and silty sand
39	90.00	99.00	3- Clean sand
40	92.50	99.00	2- Clay and silty sand
41	93.75	15.00	3- Clean sand
42	95.00	15.00	2- Clay and silty sand
43	96.25	15.00	3- Clean sand
44	97.50	99.00	2- Clay and silty sand
45	100.00	99.00	2- Clay and silty sand
46	102.50	99.00	2- Clay and silty sand
47	105.00	99.00	2- Clay and silty sand
48	106.00	0.00	5- Cavity layer

Blowcount Average Per Soil Layer

Layer Num.	Starting Elevation (ft)	Bottom Elevation (ft)	Thickness (ft)	Average Blowcount (Blows/ft)	Soil Type
1	39.40	31.40	8.00	10.00	3-Clean Sand
2	31.40	19.40	12.00	19.46	2-Clay and Silty Sand
3	19.40	18.15	1.25	4.00	3-Clean Sand
4	18.15	16.90	1.25	4.00	2-Clay and Silty Sand
5	16.90	11.90	5.00	10.00	3-Clean Sand
6	11.90	10.65	1.25	3.00	2-Clay and Silty Sand

7	10.65	9.40	1.25	3.00	3-Clean Sand
8	9.40	6.90	2.50	7.00	2-Clay and Silty Sand
9	6.90	1.90	5.00	2.00	1-Plastic Clay
10	1.90	0.65	1.25	24.00	2-Clay and Silty Sand
11	0.65	-0.60	1.25	10.00	3-Clean Sand
12	-0.60	-10.60	10.00	9.25	2-Clay and Silty Sand
13	-10.60	-13.10	2.50	8.00	1-Plastic Clay
14	-13.10	-41.85	28.75	16.74	2-Clay and Silty Sand
15	-41.85	-43.10	1.25	17.00	3-Clean Sand
16	-43.10	-50.60	7.50	79.67	2-Clay and Silty Sand
17	-50.60	-53.10	2.50	99.00	3-Clean Sand
18	-53.10	-54.35	1.25	99.00	2-Clay and Silty Sand
19	-54.35	-55.60	1.25	15.00	3-Clean Sand
20	-55.60	-56.85	1.25	15.00	2-Clay and Silty Sand
21	-56.85	-58.10	1.25	15.00	3-Clean Sand
22	-58.10	-66.60	8.50	99.00	2-Clay and Silty Sand
23	-66.60	-66.60	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 150.00(pcf), Section Type: Square

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)
18.00	10.00	29.40
18.00	12.00	27.40
18.00	14.00	25.40
18.00	16.00	23.40
18.00	18.00	21.40
18.00	20.00	19.40
18.00	22.00	17.40
18.00	24.00	15.40
18.00	26.00	13.40
18.00	28.00	11.40
18.00	30.00	9.40
18.00	32.00	7.40
18.00	34.00	5.40
18.00	36.00	3.40
18.00	38.00	1.40
18.00	40.00	-0.60
18.00	42.00	-2.60
18.00	44.00	-4.60
18.00	46.00	-6.60
18.00	48.00	-8.60

18.00	50.00	-10.60
18.00	52.00	-12.60
18.00	54.00	-14.60
18.00	56.00	-16.60
18.00	58.00	-18.60
18.00	60.00	-20.60
18.00	62.00	-22.60
18.00	64.00	-24.60
18.00	66.00	-26.60
18.00	68.00	-28.60
18.00	70.00	-30.60
18.00	72.00	-32.60
18.00	74.00	-34.60
18.00	76.00	-36.60
18.00	78.00	-38.60
18.00	80.00	-40.60
18.00	82.00	-42.60
18.00	84.00	-44.60
18.00	86.00	-46.60
18.00	88.00	-48.60
18.00	90.00	-50.60
18.00	92.00	-52.60
18.00	94.00	-54.60
18.00	96.00	-56.60
18.00	98.00	-58.60
18.00	100.00	-60.60
18.00	102.00	-62.60
18.00	104.00	-64.60

Driven Pile Capacity:
==========

Test Pile Length (ft)	Pile Width (in)	Ultimate Side Friction (tons)	Mobilized End Bearing (tons)	Estimated Davisson Capacity (tons)	Allowable Pile Capacity (tons)	Ultimate Pile Capacity (tons)
10.00	18.0	27.97	28.93	56.91	28.45	114.78
12.00	18.0	38.62	28.92	67.54	33.77	125.37
14.00	18.0	48.08	26.71	74.79	37.40	128.21
16.00	18.0	58.85	21.52	80.37	40.19	123.41
18.00	18.0	69.03	19.14	88.17	44.08	126.45
20.00	18.0	73.12	18.40	91.53	45.76	128.33
22.00	18.0	73.35	22.55	95.90	47.95	141.01
24.00	18.0	75.61	17.77	93.38	46.69	128.91

26.00	18.0	78.75	13.66	92.41	46.20	119.72
28.00	18.0	79.57	2.05	81.63	40.81	85.73
30.00	18.0	81.01	10.63	91.65	45.82	112.91
32.00	18.0	83.20	11.81	95.02	47.51	118.64
34.00	18.0	85.10	17.67	102.76	51.38	138.09
36.00	18.0	90.96	18.78	109.73	54.87	147.29
38.00	18.0	102.16	15.49	117.66	58.83	148.65
40.00	18.0	107.18	14.87	122.05	61.02	151.79
42.00	18.0	113.51	14.45	127.96	63.98	156.86
44.00	18.0	119.85	13.30	133.15	66.58	159.75
46.00	18.0	126.02	12.17	138.18	69.09	162.52
48.00	18.0	131.04	14.05	145.09	72.55	173.18
50.00	18.0	136.45	18.20	154.66	77.33	191.07
52.00	18.0	143.71	19.28	162.99	81.49	201.54
54.00	18.0	154.04	20.36	174.40	87.20	215.12
56.00	18.0	163.89	20.84	184.72	92.36	226.40
58.00	18.0	174.27	21.22	195.49	97.75	237.94
60.00	18.0	184.22	20.71	204.94	102.47	246.37
62.00	18.0	193.42	20.88	214.30	107.15	256.06
64.00	18.0	201.65	22.29	223.94	111.97	268.51
66.00	18.0	208.04	24.69	232.73	116.37	282.11
68.00	18.0	215.98	25.87	241.84	120.92	293.58
70.00	18.0	226.63	25.25	251.89	125.94	302.39
72.00	18.0	238.18	24.39	262.57	131.28	311.34
74.00	18.0	248.58	24.33	272.91	136.46	321.58
76.00	18.0	258.13	26.34	284.47	142.23	337.16
78.00	18.0	267.84	33.54	301.37	150.69	368.45
80.00	18.0	277.65	42.27	319.93	159.96	404.48
82.00	18.0	285.84	46.99	332.83	166.41	426.80
84.00	18.0	299.84	51.94	351.78	175.89	455.66
86.00	18.0	310.94	62.90	373.84	186.92	499.64
88.00	18.0	324.29	75.09	399.38	199.69	549.56
90.00	18.0	347.02	69.90	416.91	208.46	556.70
92.00	18.0	361.51	64.14	425.65	212.82	553.93
94.00	18.0	372.21	47.11	419.31	209.66	513.53
96.00	18.0	379.13	70.61	449.75	224.87	590.97
98.00	18.0	389.99	74.06	464.06	232.03	612.18
100.00	18.0	405.70	73.70	479.40	239.70	626.80
102.00	18.0	********** Not enough soil data *******				
104.00	18.0	0.00	0.00	0.00	0.00	0.00

NOTES

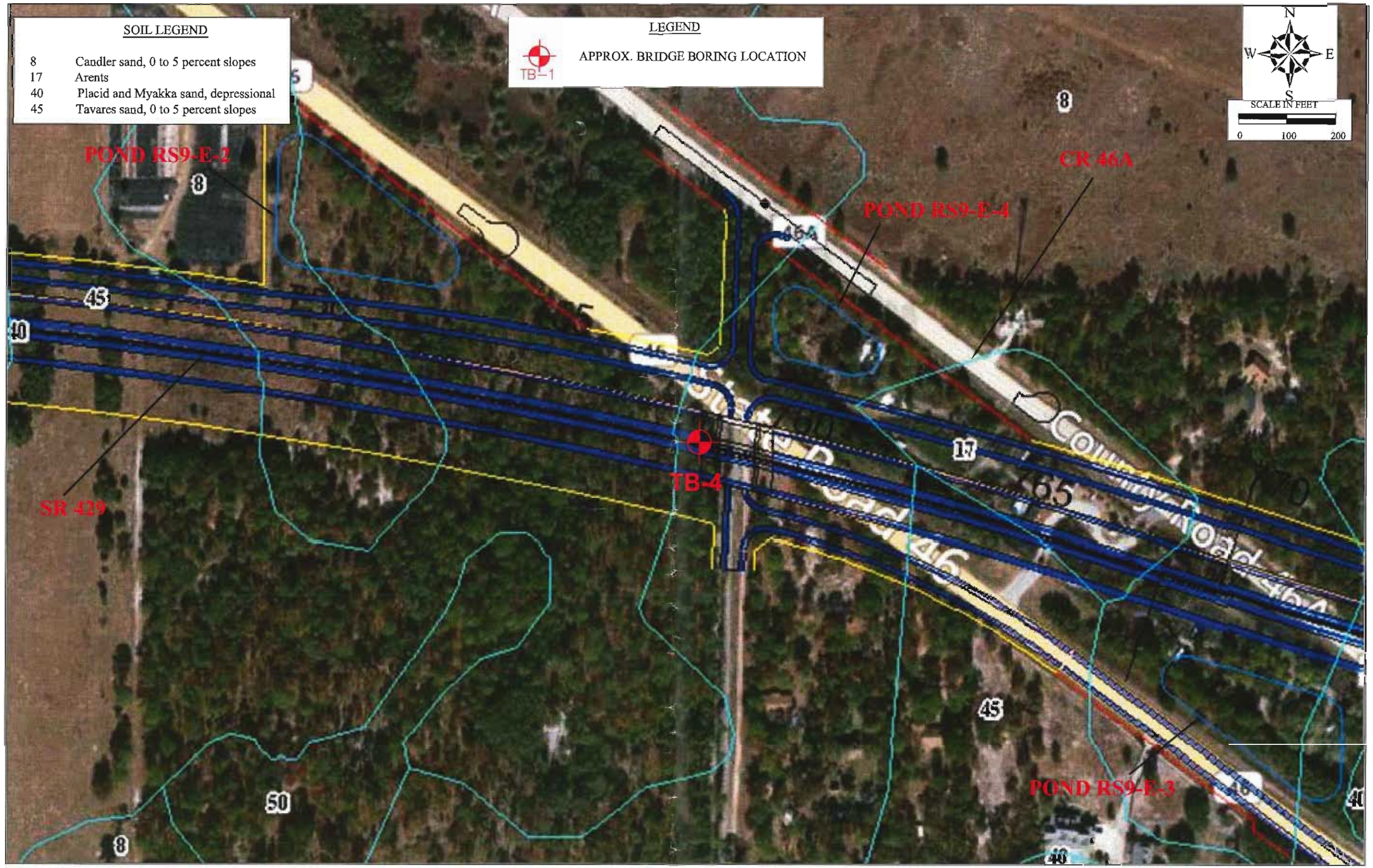
1. MOBILIZED END BEARING IS 1/3 OF THE ORIGINAL RB-121 VALUES.

2. DAVISSON PILE CAPACITY IS AN ESTIMATE BASED ON FAILURE CRITERIA, AND EQUALS ULTIMATE SIDE FRICTION PLUS MOBILIZED END BEARING.

3. ALLOWABLE PILE CAPACITY IS 1/2 THE DAVISSON PILE CAPACITY.

4. ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   3 x THE MOBILIZED END BEARING.
   EXCEPTION: FOR H-PILES TIPPED IN SAND OR LIMESTONE, THE
   ULTIMATE PILE CAPACITY IS ULTIMATE SIDE FRICTION PLUS
   2 x THE MOBILIZED END BEARING.

APPENDIX C
SOIL BORING PROFILES
(Reported by NES for Line and Grade Study)



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
SR 429 over CR 46A

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

SHEET NO.

FIGURE 5B

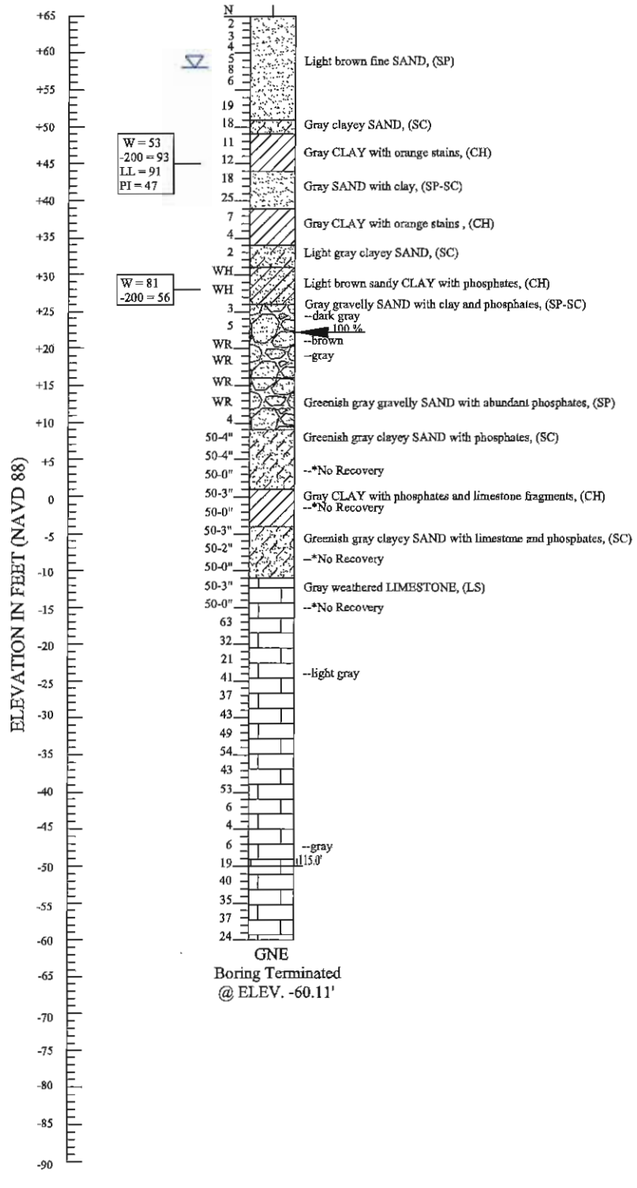
Z:\Roadways\GNnad\Wekiva Parkway\ATKINS_Lake County\Bridges\Acad

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

SR 429 over CR 46A

Boring No: TB-4
Approximate Station: 758+01
Offset: 0.67' RT
Elevation: 64.89'
Date Drilled: 03/01/2012

LATITUDE: N28°48'50.50"
LONGITUDE: W81°28'9.60"



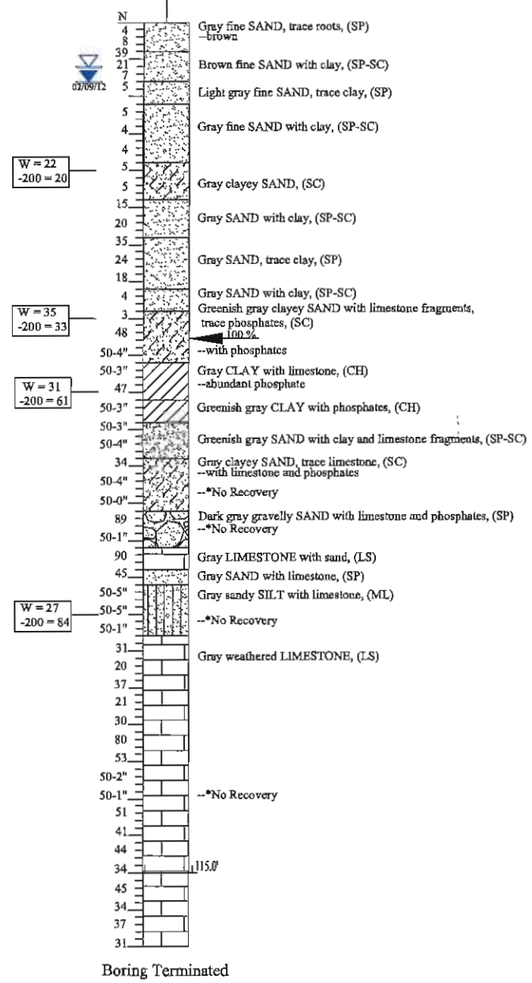
GNE
Boring Terminated
@ ELEV. -60.11'

SR 429 over Wildlife Crossing No. 2

TB-5

796+40
0.002' LT
41.13'
02/09/2012

LATITUDE: N28°48'41.74"
LONGITUDE: W81°27'27.66"

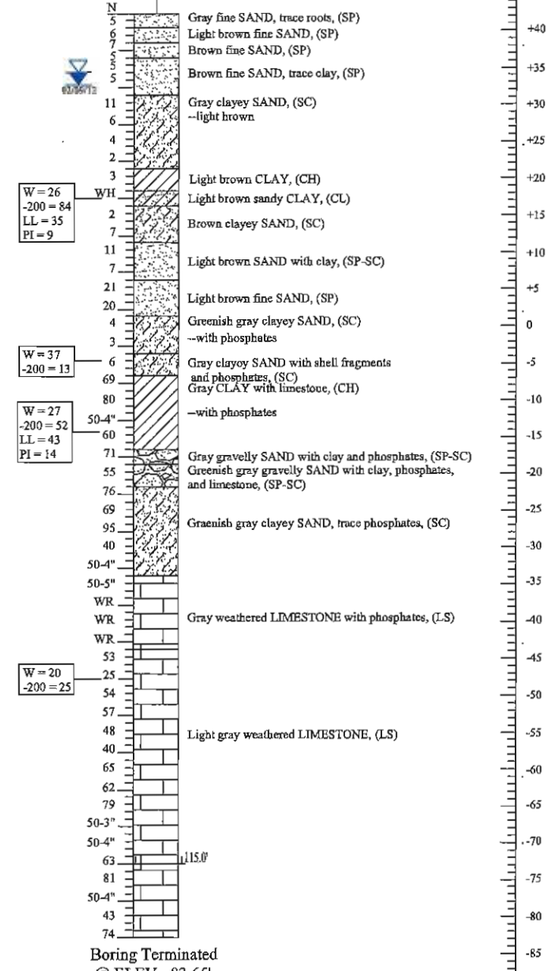


Boring Terminated
@ ELEV. -83.87'

TB-6

802+00
0.039' LT
42.35'
02/09/2012

LATITUDE: N28°48'41.15"
LONGITUDE: W81°27'21.40"



Boring Terminated
@ ELEV. -82.65'

LEGEND

SAND | SANDY CLAY | LIMESTONE
CLAYEY SAND | CLAY | GRAVELLY SAND
SANDY SILT

(SP) Unified soil classification group symbol
Estimated seasonal high groundwater level
02/09/12 Groundwater level on date shown
GNE Groundwater not encountered in top 10 feet
115.0' Depth to which NW casing was driven in feet
100 % Percent Loss of Circulation of Drilling Fluid

W = Natural moisture content (%) (FM 1-T 265)
-200 = Percent passing no. 200 U.S. standard sieve (%)(FM1-T 088)
LL = Liquid Limit (%) (FM 1-T 089)
PI = Plasticity Index (%) (FM 1-T 090)

N Standard penetration resistance in blows per foot

Standard Penetration Test Data

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.

NOTES

1. Plan view is preliminary for showing boring locations only and may not be indicative of final plans.
2. Subsurface 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	

ENVIRONMENTAL CLASSIFICATION

TB-5

	SUBSTRUCTURE	SUPERSTRUCTURE
Concrete:	Slightly Aggressive	Slightly Aggressive
Steel:	Slightly Aggressive	Slightly Aggressive

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	431081-3-32-01

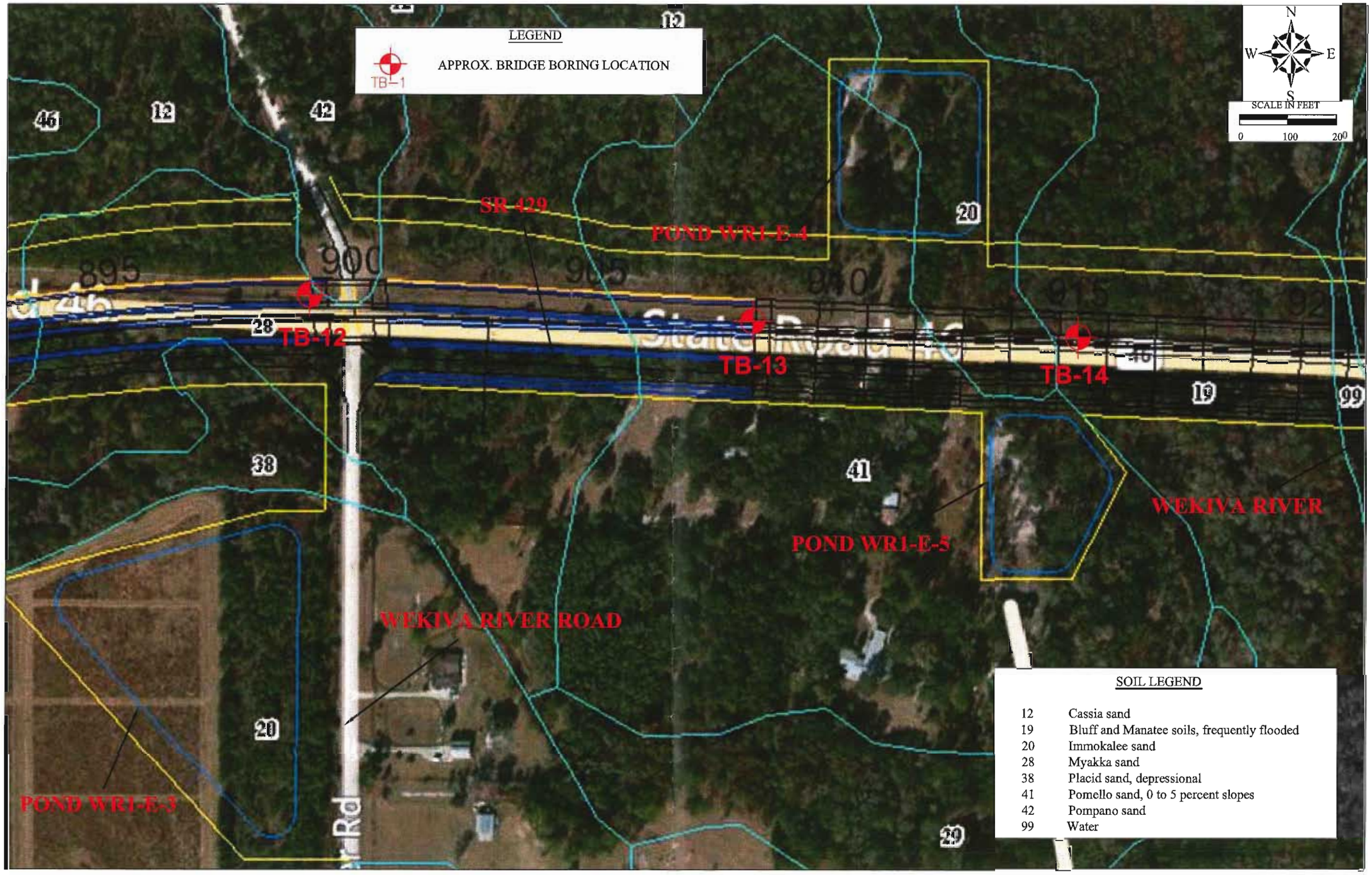
SHEET TITLE:
REPORT OF SPT BORINGS FOR STRUCTURES

PROJECT NAME:
WEKIVA PARKWAY LINE & GRADE
- LAKE COUNTY

SHEET NO.

Z:\Roadways\GNnadi\Wekiva Parkway\ATKINS Lake County\Bridges\Acad

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
SR 429 over Wekiva River Rd/ SR 429 over Wekiva River

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

SHEET NO.

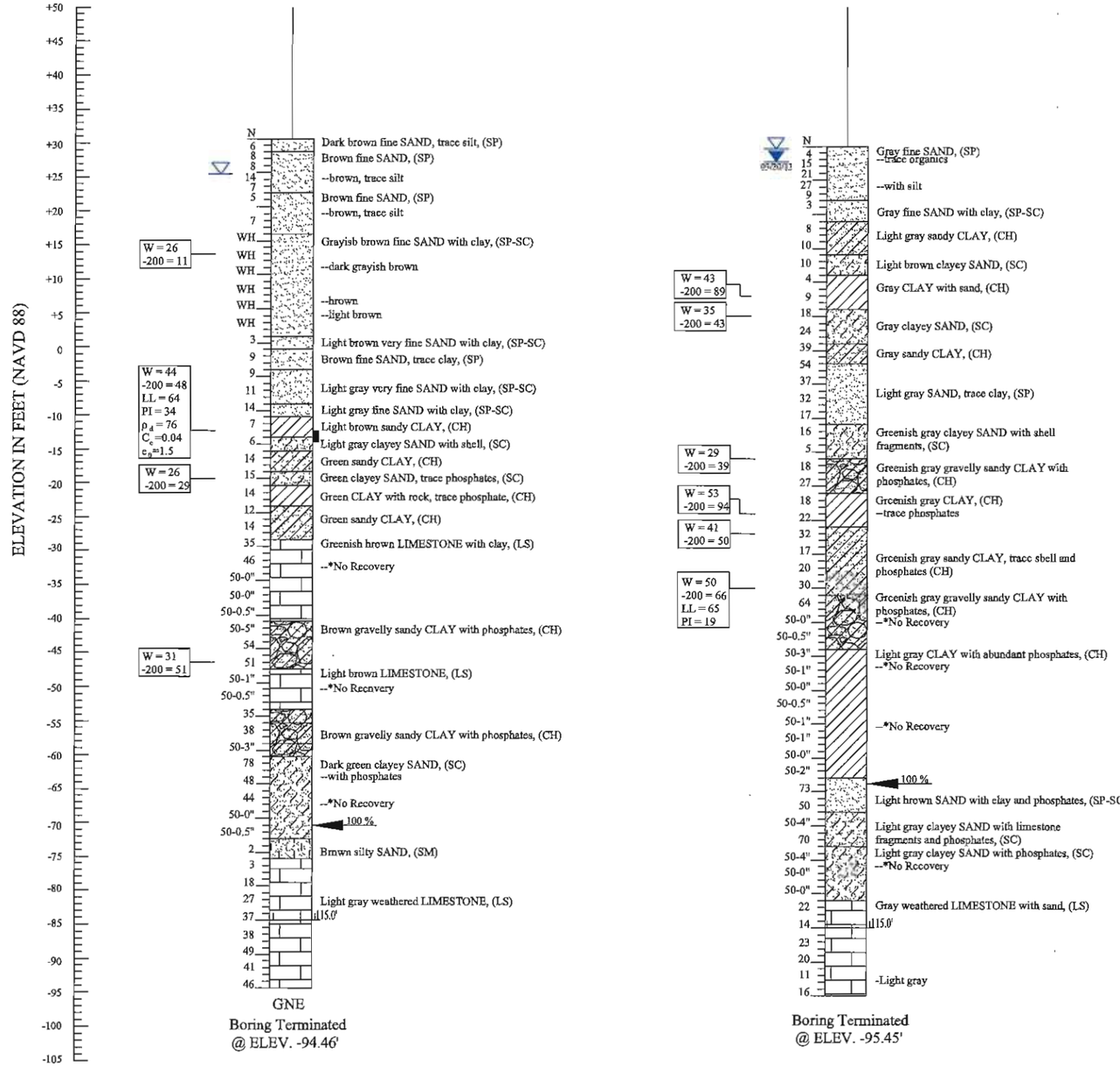
FIGURE 5E

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

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

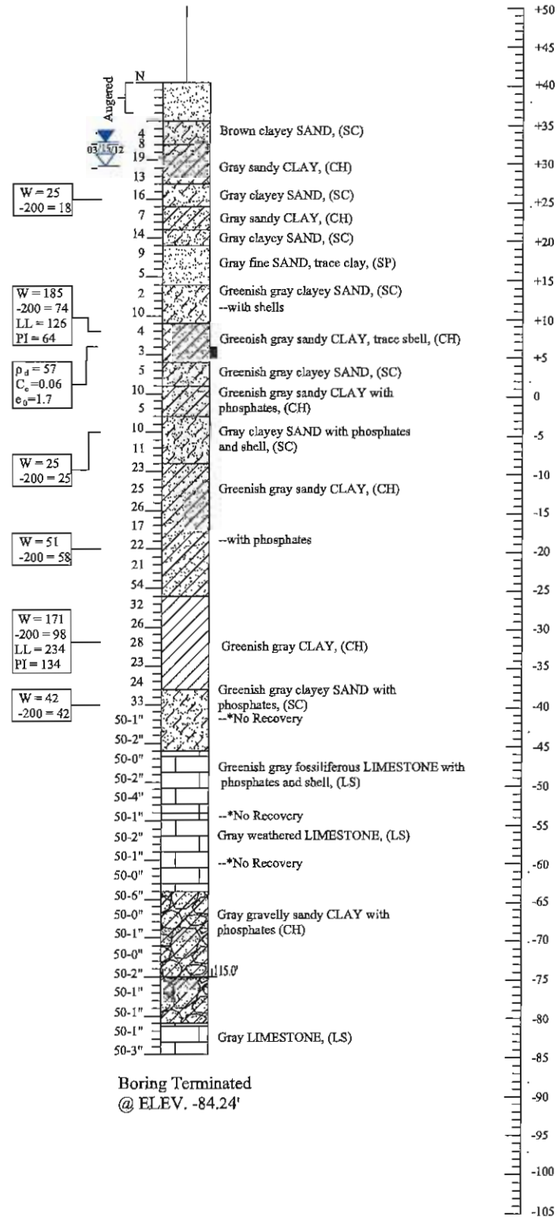
SR 429 over Wildlife Crossing No. 2

	TB-10		TB-11	
Boring No:				
Approximate Station:	830+00	LATITUDE: N28°48'40.56"	837+00	LATITUDE: N28°48'40.56"
Offset:	0.14' RT	LONGITUDE: W81°26'49.95"	0.11' LT	LONGITUDE: W81°26'42.08"
Elevation:	30.54'		29.55'	
Date Drilled:	03/15/2012		03/20/2012	



SR 429 over Wekiva River Road

	TB-12	
	899+16	LATITUDE: N28°48'55.79"
	26.44' LT	LONGITUDE: W81°25'35.18"
	40.76	
	03/19/2012	



LEGEND

SAND | SANDY CLAY | LIMESTONE
CLAYEY SAND | CLAY | SILTY SAND
GRAVELLY SANDY CLAY

(SP) Unified soil classification group symbol

Estimated seasonal high groundwater level

Groundwater level on date shown

GNE Groundwater not encountered in top 10 feet

15.0' Depth to which NW easing was driven in feet

100 % Percent Loss of Circulation of Drilling Fluid

Undisturbed Sample (Shelby Tube)

W =	Natural moisture content (%) (FM 1-T 265)
-200 =	Percent passing no. 200 U.S. standard sieve (%)(FM1-T 088)
LL =	Liquid Limit (%) (FM 1-T 089)
PI =	Plasticity Index (%) (FM 1-T 090)
ρd =	Dry Density (pcf)
Cc =	Compression Index
e0=	Initial Void Ratio

N Standard penetration resistance in blows per foot

Standard Penetration Test Data

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.

NOTES

1. Plan view is preliminary for showing boring locations only and may not be indicative of final plans.
2. Subsurface 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	

ENVIRONMENTAL CLASSIFICATION

	SUBSTRUCTURE	SUPERSTRUCTURE
	TB-12	
Concrete:	Slightly Aggressive	Slightly Aggressive
Steel:	Slightly Aggressive	Slightly Aggressive

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:
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