Report of Geotechnical Engineering Evaluation

FLORIDA'S TURNPIKE FROM SR 408 TO SR 50

PD&E STUDY

Orange County, Florida

FIN ID No. 444007-1-22-01 / Contract No. CA562

ETDM No. 14378

RS&H Project No. 107-0105-000

GEC Project No. 4471GE

Report Date: November 28, 2022

November 28, 2022

RS&H, Inc.
301 East Pine Street, Suite 350
Orlando, FL 32801

Attention: Mr. Nathan Silva, P.E.

Subject: Report of Geotechnical Engineering Evaluation
FLORIDA'S TURNPIKE FROM SR 408 TO SR 50 PD&E STUDY
MP 263 – 273
Orange County, Florida
FIN ID No. 444007-1-22-01 / Contract No. CA562
ETDM No. 14378
RS&H Project No. 107-0105-000
GEC Project No. 4471GE

Dear Mr. Silva:

Geotechnical and Environmental Consultants, Inc. (GEC) is pleased to present this geotechnical report for the above-referenced project. The purpose of our investigation was to explore subsurface conditions at the seven relic sinkhole features along the alignment and perform a PD&E Study phase evaluation of highway widening alternatives within these features.

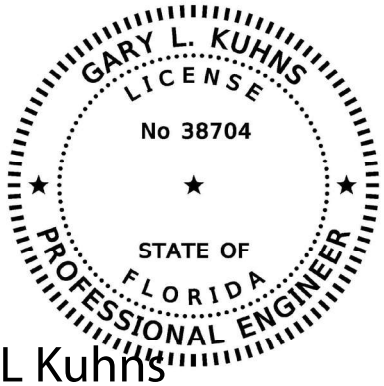
This report presents the results of our field and laboratory investigations for the seven relic sinkholes and includes our widening alternatives analyses. A preliminary geotechnical investigation of the preferred stormwater pond sites will be conducted when their locations become available.

The analyses and recommendations in this report are based on preliminary design information provided by RS&H and data collected by GEC to date and are subject to change as project plans develop.

GEC appreciates the opportunity to be of service to RS&H and Florida's Turnpike Enterprise (FTE) on this project. If you should have any questions concerning the contents of this report, please contact us.

Sincerely,

GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
919 Lake Baldwin Lane
Orlando, Florida 32814



Gary L Kuhns
2022.11.28 15:49:45 -05'00'

Ryan J. Petersen, E.I.
Engineer Intern

Gary L. Kuhns, P.E.
Chief Engineer
Florida License No. 38704

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

cc: Ms. Gisele Passalacqua, P.E. (General Consultant Construction and Materials Engineer to Florida's Turnpike)

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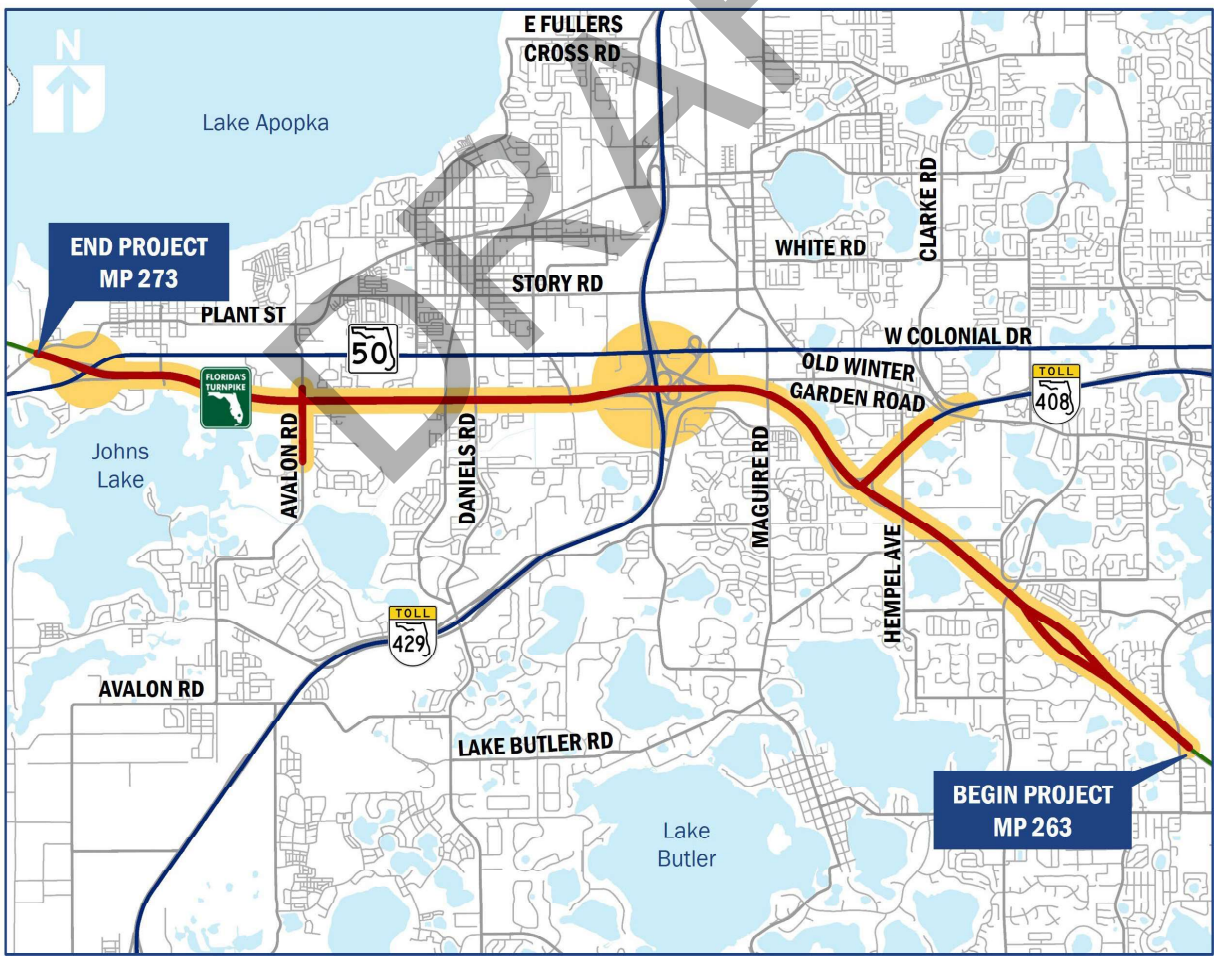
1.0 SITE AND PROJECT DESCRIPTION

1.1 *Project Description*

Geotechnical and Environmental Consultants, Inc. (GEC) has been retained by RS&H, on behalf of the Florida's Turnpike Enterprise, to provide a Geotechnical Report to support the Project Development and Environment (PD&E) Study for this project. The Florida Turnpike Enterprise (FTE), part of the Florida Department of Transportation (FDOT) is evaluating alternatives to widen Florida's Turnpike (SR 91) from south of SR 408 to SR 50 (milepost 263 to 273), a distance of approximately 10 miles, and along SR 408 from the Florida's Turnpike interchange to east of the Old Winter Garden Road overpass. As part of the study, the interchanges within the project limits and the need for a new interchange will be evaluated. The project is in Orange County, Florida within the municipalities of Oakland, Winter Garden, and Ocoee. The project location map, Figure 1.1.1, shows the PD&E study area. This report was performed as part of Financial Project ID No. 444007-1-22-01.

Figure 1.1.1: Project Location Map



Florida's Turnpike currently has eight to twelve lanes (four travel lanes and up to two auxiliary lanes in each direction) within the study limits. The roadway is functionally classified as an Urban Principal Arterial – Freeway and Expressway and has a posted speed limit of 70 miles per hour (mph). The access management classification from south of milepost 263 to milepost 273 is Class 1 and the corridor does not have a context classification.

Early planning efforts conducted by FTE concluded that major operational, safety, and capacity improvements are needed along Florida's Turnpike to improve current and future peak period traffic operations along the mainline at the major interchanges with SR 408, SR 429, and SR 50 to reduce the potential for traffic incidents and accommodate travel at acceptable levels of service. This PD&E Study will evaluate the widening of the Florida's Turnpike while also including milling and resurfacing, bridge construction, and interchange improvements. Interchanges with proposed improvements or modifications on Florida's Turnpike include SR 408, SR 429, SR 50 (Ocoee / Winter Garden), SR 50 (Clermont / Oakland), and a proposed interchange at Avalon Road.

1.2 *Purpose and Need*

The purpose of the project is to reduce congestion and improve mobility on Florida's Turnpike mainline from south of SR 408 to SR 50 to accommodate current and future traffic volumes generated by growth in Orange County and adjacent counties. A goal of the project is to enhance safety and improve emergency evacuation times.

The need for this project is to enhance safety due to the weaving and merging concerns between SR 408 and SR 429, a segment that currently has a very high weaving movement with 45% of traffic from SR 408 exiting at SR 429 and 32% of overall Florida's Turnpike traffic exiting at SR 429. The proximity (1.3 miles) of these system-to-system interchanges causes merging and weaving conflicts. The proposed improvements will improve the travel time reliability and enhance emergency response and evacuation times.

1.3 *Alternative Analysis Summary*

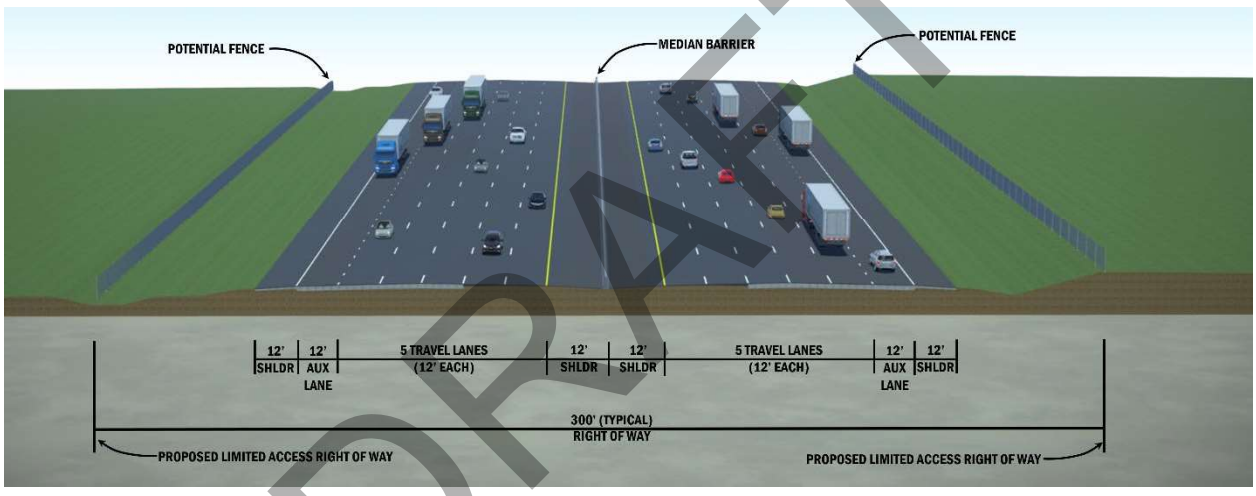
The project is subdivided into three mainline segments and five interchanges:

- Mainline:
    - Turkey Lake Service Plaza to SR 408;
    - SR 408 to SR 429; and
    - SR 429 to SR 50.

- Interchanges:
    - SR 50 (Ocoee / Winter Garden) Connector;
    - SR 408;
    - SR 429;
    - Avalon Road; and
    - SR 50 (Clermont / Oakland).

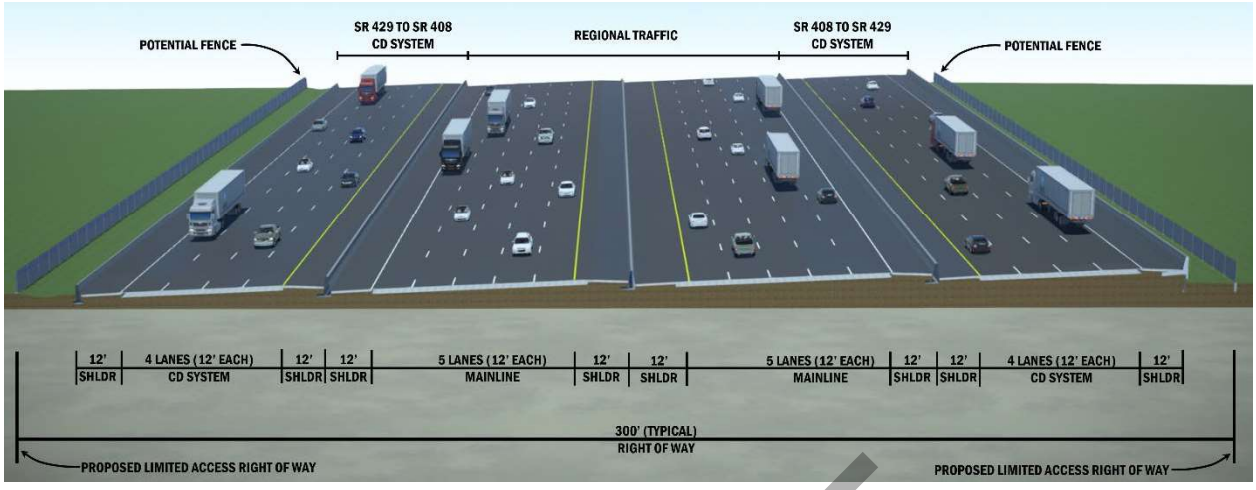
The Build Alternatives for Florida's Turnpike mainline are subdivided into three segments which will be described further below. The segment of Florida's Turnpike from Turkey Lake Service Plaza to SR 408 involves adding a total of two lanes in each direction for a total of five travel lanes and one auxiliary lane in each direction. Figure 1.3.1 shows the proposed typical section for this portion of the mainline.

Figure 1.3.1: Proposed Typical Section – Segment 1



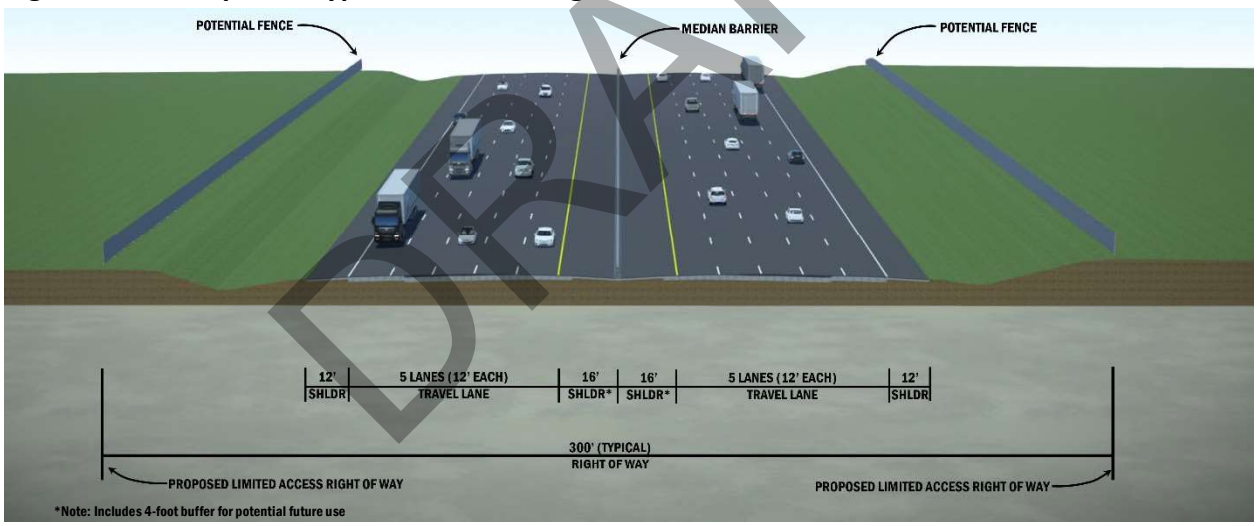
The second segment, from SR 408 to SR 429, includes a collector-distributor (CD) system which consists of a separate roadway facility that will parallel Florida's Turnpike mainline. The purpose of the separate system is to move the weaving movements associated with the interchanges from the high-speed mainline, which will improve traffic operations and safety. Traffic going to either SR 408 or SR 429 will use the CD system comprised of four additional lanes in each direction. These lanes will be barrier-separated from the regular mainline travel lanes. In addition, the mainline will be widened to five lanes in each direction to serve the regional traffic passing through this segment. Figure 1.3.2 shows the proposed typical section for the second segment.

Figure 1.3.2: Proposed Typical Section – Segment 2



The final segment of the study, from SR 429 to SR 50, consists of adding one through lane in each direction, for a total of five travel lanes in each direction. Figure 1.3.3 shows the proposed typical section for the third segment.

Figure 1.3.3: Proposed Typical Section – Segment 3



The Build Alternatives for each interchange are described below.

<u>SR 50 (Ocoee / Winter Garden) Connector</u>

Two Build Alternatives were considered for this portion of the project:

- **Option 1: Bridge Widening** – This option widens the existing bridge to meet current design standards. This option includes a new eastbound right turn lane on SR 50 to meet with the exit ramp from Florida's Turnpike along SR 50 just before the Marshall Farms Road

intersection. Motorists wishing to turn right onto Marshall Farms Road will need to make the decision before the overpass. The merge will be signal controlled.

- **Option 2: New Signalized Intersection** – This option provides a new single lane loop / bridge from SR 50 westbound to Florida's Turnpike. The loop ramp will merge with the SR 50 eastbound ramp exiting to Florida's Turnpike, similar to the existing condition. The ramp from Florida's Turnpike to SR 50 widens to five lanes at a new signalized intersection, with three lanes for SR 50 westbound and two lanes for SR 50 eastbound.

SR 408 to SR 429

The proposed Build Alternative for SR 408 to SR 429 includes a CD system that would increase capacity while improving safety characteristics. The Florida's Turnpike mainline would have an extra lane for capacity while also adding four lanes in each direction for the CD system. The CD system allows for all traffic exiting at SR 408 or SR 429 to avoid the mainline lanes, thereby allowing for better free flow and less conflict points.

The SR 408 interchange is reconstructed to provide direct connections to both the Florida's Turnpike mainline and the proposed CD roads. The Florida's Turnpike southbound exit ramp to SR 408 will be replaced with a new three-lane ramp that meets 55 mile per hour design criteria.

The majority of the SR 429 interchange ramps will remain in their current configuration except for the northbound Florida's Turnpike to southbound SR 429 ramp. This ramp will be replaced with a new two-lane ramp bridge designed to meet the 45 and 50 mph criteria. Other minor modifications will be made to accommodate the connections to the new CD system between SR 429 and SR 408.

Avalon Road Alternatives

Three Build Alternatives were evaluated at Avalon Road. Each of the Build Alternatives tie into the Avalon Road widening project being completed by Orange County, which extends from the Florida's Turnpike north to SR 50. The location of the tie-in points varies depending on the interchange. The three Build Alternatives are:

- The **Tight Urban Diamond Interchange** which includes diamond ramps in all four quadrants of the interchange with left and right turn lanes added to Avalon Road;
- The **Turbo Roundabout Interchange** introduces two turbo roundabouts, one north of the mainline and one south, that allows for more capacity than a standard roundabout and provides additional safety features by not requiring weaving in the roundabout; and
- The **Diverging Diamond Interchange Alternative** allows for free-flowing turns when entering and exiting the mainline by eliminating the left turn against oncoming traffic and

limiting the number of traffic signal phases. The design reduces congestion and conflict points creating a safer condition than a regular diamond interchange.

SR 50 (Clermont / Oakland) Alternatives

The three Build Alternatives evaluated for the SR 50 (Clermont / Oakland) interchange include:

- The **Flyover Alternative,** which proposes an overpass from northbound Florida's Turnpike to westbound SR 50 to bypass local traffic;
- The **Parallel Flow Alternative,** which splits the ramp in the northeast quadrant of the interchange to allow eastbound traffic on SR 50 to make a right turn while the westbound traffic moves under the Florida's Turnpike mainline to bypass the northern junction; and
- The **Single Point Alternative,** which allows for one signal to be placed at the intersection as opposed to two, allowing for only three traffic phases at the interchange.

2.0 REVIEW OF AVAILABLE DATA

To obtain general information on soil and groundwater conditions in the project area, GEC reviewed available data including the USGS Quadrangle Map and the Natural Resources Conservation Service (NRCS) Soil Survey of Orange County and other published sources. A summary of this information is presented in the following report sections.

2.1 NRCS Soil Survey

The Natural Resources Conservation Service (NRCS) Soil Survey for Orange County was reviewed for near-surface soil and groundwater information. The NRCS Soil Survey map of the relic features is attached (**Figure 2**) and the soils depicted in the vicinity of the project alignment are summarized in the following table.

Table 1: Orange County NRCS Soil Survey Soil Units

Unit No.	Soil Name	Depth (inches)	Soil Description	Unified Soil Classification Symbol	AASHTO Soil Classification Symbol	Depth to Seasonal High Ground-water (feet)	Hydro-logic Group
3	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	0 - 5	Fine sand	SP-SM, SM	A-2-4, A-3	0.0	A/D
		5 - 36	Fine sand	SP-SM, SM	A-3, A-2-4		
		36 - 80	Fine sand, sand	SP-SM, SM	A-3, A-2-4		

Table 1: Orange County NRCS Soil Survey Soil Units

Unit No.	Soil Name		Depth (inches)	Soil Description	Unified Soil Classification Symbol	AASHTO Soil Classification Symbol	Depth to Seasonal High Ground-water (feet)	Hydro-logic Group
40	Samsula muck, frequently ponded, 0 to 1 percent slopes		0 - 32	Muck	PT	A-8	0.0	A/D
			32 - 35	Sand, fine sand	SM, SP- SM	A-3, A-2-4		
			35 - 44	Sand, fine sand	SP-SM, SM	A-2-4, A-3		
			44 - 80	Sand, fine sand	SM, SP- SM	A-2-4, A-3		
42	Sanibel muck		0 - 11	Muck	PT	A-8	0.0	A/D
			11 - 15	Sand, fine sand, mucky fine sand	SP, SP- SM	A-3		
			15 - 80	Sand, fine sand	SP, SP- SM	A-3		
44	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes		0 - 4	Fine sand	SP, SM, SP-SM	A-2-4	0.0 - 0.5	A/D
			4 - 17	Fine sand	SP, SP- SM	A-3, A-2-4		
			17 - 27	Loamy fine sand, fine sand	SP-SM, SM	A-2-4		
			27 - 80	Fine sand	SP, SP- SM	A-3, A-2-4		
47	Tavares-Millhopper complex, 0 to 5 percent slopes	Tavares	0 - 6	Fine sand	SP-SM, SM	A-2-4, A-3	3.5 - 5.0	A
			6 - 80	Fine sand, sand	SP-SM, SM	A-2-4, A-3		
		Mill-hopper	0 - 6	Fine sand	SM, SP- SM, SC-SM	A-2-4		
			6 - 64	Fine sand, sand	SM, SP- SM	A-2-4		
			64 - 76	Loamy sand, sandy loam, loamy fine sand	SC-SM, SC	A-4		
			76 - 80	Sandy loam, fine sandy loam, sandy clay loam	SC-SM, SC, CL	A-4, A-6		

Note:

1. '---' indicates no information shown in the NRCS database

The NRCS soil survey map depicts several lakes and wetlands, including relic sinkholes. These conditions can impact the design and construction of the roadway improvements: shallow groundwater can impact roadway grades and stormwater pond site selection, design and construction, and near-surface clay can perch groundwater, potentially causing impacts to the pavement base. Muck is associated with lakes, wetlands and relic sinkholes and can have severe limitations for roadway embankment construction. Removal of muck, or treatment by means of soil surcharge, is typically required to provide adequate support for the roadway embankment.

The potential impact of shallow groundwater levels and deep organic soil deposits will be significant factors to consider in the planning and design of the proposed improvements. The

primary geotechnical considerations for roadway and pond design and construction will be the shallow groundwater conditions and areas of muck within the roadway widening limits. Continuation of the roadway cross slope in roadway widening locations will lower the exterior pavement grades and shallow groundwater may impact the pavement section design and result in the need for asphalt base or roadway underdrains.

Information contained in the NRCS Soil Survey is very general and may be outdated. It may not therefore be reflective of actual soil and groundwater conditions, particularly if recent development in the site vicinity has modified soil conditions or surface/subsurface drainage. The soils and groundwater data collected as part of this study should be considered a more accurate representation of soil conditions along the project alignment.

2.2 USGS Quadrangle Maps

Based on our review of the USGS Clermont East and Winter Garden, Florida Quadrangle maps the estimated ground surface elevations at the sinkhole locations are summarized in the following table:

Table 2: Summary of Ground Surface Elevations

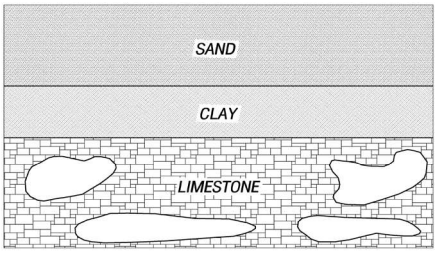
Relic Sinkhole No.	Approximate Surrounding Ground Surface Elevation (ft. NGVD)
1 (Lake Pearl)	+120
2 (Lake Bonnet)	+130
3	+130
4	+120
5	+120
6 (Lake Olivia)	+100
7	+115

The sinkhole sites and project alignment are depicted on an excerpt of the U.S. Geological Survey (USGS) Clermont East and Winter Garden, Florida Quadrangle maps (**Figure 2**) in the **Appendix**.

2.3 FDEP Potentiometric Map Data

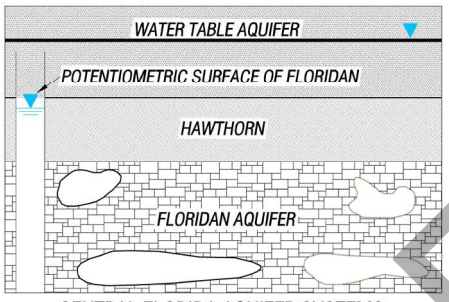
According to the Florida Department of Environmental Protection (FDEP) September 2017 Upper Floridan Aquifer Potentiometric Surface map, the potentiometric surface of the Floridan Aquifer decreases from approximately +78 feet NGVD at the western terminus (on the north side of Johns Lake) to +68 feet NGVD west of Turkey Lake. Since natural ground surface elevations in the study area are consistently higher than the potentiometric surface, artesian flow conditions are not anticipated.

2.4 Regional Geology



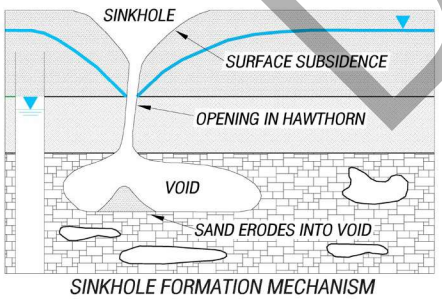
KARST GEOLOGY OF CENTRAL FLORIDA

Due to its prevalent geology, referred to as karst, Central Florida is prone to the formation of sinkholes, or large, circular depressions created by local subsidence of the ground surface. The nature and relationship of the three sedimentary layers typical of Central Florida geology cause sinkholes. The deepest, or basement, layer is a massive, cavernous limestone formation known as the Floridan aquifer. The Floridan aquifer limestone is overlain by a silty or clayey sand, clay, phosphate, and limestone aquitard (or flow-retarding layer) ranging in thickness from nearly absent to greater than 100 feet and locally referred to as the Hawthorn Group (Hawthorn). The Hawthorn is in turn overlain by a 40- to 70-foot thick surficial layer of sand, bearing the water table aquifer. The likelihood of sinkhole occurrence at a given site within the region is determined by the relationship among these three layers, specifically by the water (and soil)-transmitting capacity of the Hawthorn at that location.



CENTRAL FLORIDA AQUIFER SYSTEMS

The water table aquifer is comprised of Recent and Pleistocene sands and is separated from the Eocene limestone of the Floridan aquifer by the Miocene sands, clays and limestone of the Hawthorn. Since the thickness and consistency of the Hawthorn is variable across Central Florida, the likelihood of groundwater flow from the upper to the lower aquifer (known as aquifer recharge) will also vary by geographical location.



SINKHOLE FORMATION MECHANISM

In areas where the Hawthorn is absent, water table groundwater (and associated sands) can flow downward to cavities within the limestone aquifer, like sand through an hourglass, recharging the Floridan aquifer, and sometimes causing the formation of surface sinkholes. This process of subsurface erosion associated with recharging the Floridan aquifer is known as raveling. Thus, in Central Florida, areas of effective groundwater recharge to the Floridan aquifer have a higher potential for the formation of surface sinkholes.

No method of geological, geotechnical, or geophysical exploration is known that can accurately predict the occurrence of sinkholes. It is common geotechnical practice in Central Florida to make a qualitative prediction of sinkhole risk based on local geological conditions in the vicinity of a particular site.

Based on our review of the U.S. Geological Survey Map entitled "Recharge and Discharge Areas of the Floridan Aquifer in the St. Johns River Water Management District and Vicinity, Florida," 1984, the western two thirds of the study area (from the western terminus to Maguire Road) is predominantly located in a low to moderate recharge zone, while the eastern third lies in an area of high recharge. Therefore, the relative risk of sinkhole formation in the eastern segment of the alignment is high compared to the overall risk across Central Florida. There are numerous relic sinkholes in the immediate vicinity of the alignment, including Lake Lily, Lake Pearl, Lake Bonnet, and several other unnamed ponds within the eastern portion of the alignment. In addition, there is a small (also unnamed) relic sinkhole on the north side of the Turnpike, located approximately 1200 feet east of the SR 50 interchange in Clermont. Review of historical photographs dating back to 1947 indicates this feature was partially filled to accommodate the construction of the highway.

3.0 SUBSURFACE EXPLORATION

In addition to consulting published sources, GEC conducted an exploration of the project site to evaluate subsurface conditions. Our field exploration is summarized in **Table 2**. Please refer to section 3.1 to 3.4 for a description of the field exploration methods used for this investigation.

Table 3: Site Exploration Summary

Project Element	[1]Exploration Method	Quantity	Test ID No.	Depth Explored (feet)	Figure No.
Relic Feature 1 (Lake Pearl) Pond	GPR Linescans	3	---	---	---
	Manual Muck Probes	30	---	---	4A
	SPT Borings	3	SPT-1 to SPT-3	250	6 – 7
Relic Feature 2 (Lake Bonnet)	GPR Linescans	3	---	---	---
	Manual Muck Probes	39	---	---	4B
	SPT Borings	3	SPT-4 to SPT-6	250	8 – 9
Relic Feature 3	GPR Linescans	3	---	---	---
	Manual Muck Probes	34	---	---	4C
	SPT Borings	2	SPT-7 & SPT-8	250	10
Relic Feature 4	GPR Linescans	3	---	---	---
	Manual Muck Probes	25	---	---	4D
	SPT Borings	2	SPT-9 & SPT-10	250	11
Relic Feature 5	GPR Linescans	3	---	---	---
	Manual Muck Probes	12	---	---	4D
	SPT Borings	2	SPT-11 & SPT-12	250	12
Relic Feature 6	GPR Linescans	---	---	---	---
	Manual Muck Probes	22	---	---	4E
	SPT Borings	3	SPT-15 – SPT-17	250	14 - 15
Relic Feature 7	GPR Linescans	1	---	---	---
	Manual Muck Probes	10	---	---	4F
	SPT Borings	2	SPT-13 & SPT-14	250	13

1. SPT = Standard Penetration Test; GPR = Ground Penetrating Radar

The locations of the field activities listed in **Table 3** are shown on the site plan in **Figure 3** and **4**. These locations were not surveyed; they were estimated by using Global Positioning System (GPS) and a handheld GPS unit. The approximate method used to locate them is sufficient to meet the intent of our study. If greater accuracy is desired, a registered Professional Land Surveyor should survey the locations.

3.1 Ground Penetrating Radar

The GPR system provides a real-time graphic record of subsurface features without disturbing the materials being explored. The radar system is composed of a transmitting/receiving antenna and a microprocessor control unit with a hard disk drive for storage of data. As the radar antenna is pulled along the pond surface in a fiberglass boat, radar pulses are transmitted downward into the underlying water and soil. These pulses are reflected to the antenna from interfaces between materials with significantly different electrical properties (dielectric contrasts), such as clay and sand. A continuous stream of these reflective waveforms is processed by the control unit and instantaneously sent to the control unit monitor. A subsurface profile, referred to as a "linescan," is developed as the reflected waveforms are displayed on the monitor. Field data (linescan records) are viewed in 2-D on the control unit monitor.

The effectiveness of a GPR study is generally limited by the penetration depth of the radar signal. The maximum penetration depth of the radar pulse is determined by the limitations of the radar equipment and by propagation losses in the medium being probed. Generally, highly conductive materials, such as clay, allow signal penetration to a depth of only a few inches, and low conductive materials, such as dry sands, allow much greater penetration depths (more than 50 feet below ground surface). Actual signal penetration depths are typically between these two extremes (equipment limitations and radar pulse propagation) and are dependent on the underlying soil and groundwater conditions within the study area.

For this investigation, GEC utilized a Geophysical Survey System, Inc. (GSSI) SIR 3000 control unit equipped with a 100 & 200 megahertz (MHz) antenna. Equipment calibration activities were performed in accordance with manufacturer recommendations prior to initiating the GPR study.

GPR is a geophysical method that, as with all geophysical methods, is an indirect means of identifying buried objects and can have limitations with regard to interpretation of the GPR results. Factors that can limit accurate interpretation of GPR data include, but are not limited to, diameter and composition of underground utilities, soil conditions within the study area, and depth to the groundwater table.

3.2 Manual Muck Probes

Manual muck probes were performed by pushing a slender metal rod into the surficial soil and evaluating the relative resistance of the soil to manual penetration. Highly organic soils, such as muck and/or peat, are characteristically very soft and will easily yield to the manual probe. Manual probes, however, cannot detect peat or muck layers which are present beneath layers of sand or dense soils which cannot be penetrated by the probe. The probes can also penetrate to some extent in very loose sands which may be present beneath peat or muck layers. No soil samples are obtained for visual examination or laboratory testing when using this exploratory technique. The soil type being penetrated is inferred solely by evaluating the relative resistance of the soil to penetration. These limitations can lead to some under-estimation or over-estimation of peat or muck layer thicknesses. The probe data presented in this report should be evaluated with these limitations in mind.

3.3 SPT Borings

SPT borings were drilled in general accordance with ASTM Procedure D-1586. The boreholes were advanced by the rotary wash method with bentonite-based mud used as the circulating fluid to stabilize the borehole. Casing was utilized as necessary to stabilize the borehole and prevent loose surficial sands from raveling into the lower more stable portions of the borehole. GEC's field crew obtained SPT samples continuously in the borings to a depth of 10 feet and at 2.5-foot depth intervals thereafter. A GEC engineering technician monitored the drilling operation, and collected, examined and visually classified each sample. He then packaged representative portions of each sample for transport to our laboratory for further examination and laboratory testing.

3.4 Groundwater Measurement

A GEC engineering technician measured the depth to groundwater in the boreholes at the time of drilling. The SPT borings were grout-sealed upon completion.

4.0 LABORATORY TESTING

Selected soil samples retrieved from the borings were tested in accordance with Florida Standard Testing Methods (FM), American Association of State Highway and Transportation Officials (AASHTO) Testing Methods and American Standard Testing Methods (ASTM). The GEC laboratory is reviewed annually by the Construction Materials Engineering Council, Inc. (CMEC) to verify compliance with FM, AASHTO, and ASTM. Our laboratory testing program is summarized in the following table:

Table 4: Summary of Laboratory Testing Program

Type of Test
Percent Fines (AASHTO-T88)
Atterberg Limits (AASHTO-T89/90)
Organic Content (AASHTO-T267)
Natural Moisture Content (AASHTO-T265)
Corrosion Series (FM 5-550/551/552/553)

The results of our laboratory tests are shown adjacent to the soil profiles on the Report of SPT Boring Results sheets in the **Appendix**.

5.0 SUBSURFACE CONDITIONS

GEC's field exploration was conducted from September through December 2020 and July 2021. The soil and groundwater conditions encountered are summarized in this section. Please refer to **Figures 6 through 12** for a detailed description of the subsurface profile at each boring location shown on **Figure 2**. The results of selected laboratory tests are shown adjacent to the subsurface profiles at the depth the samples were obtained.

5.1 Ground Penetrating Radar Results

5.1.1 GPR Methodology

GEC utilized GPR initially to locate the approximate throat or throats of each relic sinkhole. Once identified, we conducted a linescans near the identified throat. If the throat was beyond the widening limits, the linescans were conducted within the potential widening limits.

5.1.2 GPR Results

The GPR evaluation provided high quality data of subsurface conditions to a depth of about 15 to 20 feet beneath the feature bottom. The GPR evaluation of the four relic sinkholes identified the original sinkhole throat locations, which were then used to establish locations for the SPT borings. Based on the data collected during the GPR investigation, the approximate throat locations were identified and mapped as shown in the **Appendix** along with example GPR linescans from each of the features. GPR linescans could not be performed within relic sinkhole 6 due to extremely dense vegetation.

5.2 SPT Borings

Subsurface conditions within relic sinkholes can be highly variable. The SPT borings encountered layers of very soft, raveled sand and muck to depths of 250 feet in Lake Pearl, 220 feet in Lake Bonnet, 210 feet in the relic sinkhole located in the northeast quadrant of the SR 408 Interchange and 210 feet in the relic sinkhole located in the SR 408 Interchange's southeast quadrant. These soft compressible soils would pose a significant challenge to embankments and walls used to support the widened roadway.

The depth to a hard bearing layer was highly variable as summarized in **Table 5.**

Table 5: Depth to Hard Bearing Layer

Relic Feature No.	Boring No.	Depth to Hard Bearing Layer (ft from Mudline)
1	SPT-1	240+
	SPT-2	220
	SPT-3	130
2	SPT-4	108
	SPT-5	190
	SPT-6	148
3	SPT-7	233
	SPT-8	130
4	SPT-9	92
	SPT-10	211
5	SPT-11	250+
	SPT-12	245
6	SPT-15	233+
	SPT-16	227
	SPT-17	227
7	SPT-13	179
	SPT-14	204

Organic soil (muck) was encountered at several boring locations as summarized in **Table 6.**

Table 6: Muck Locations and Thicknesses

Relic Feature No.	Boring No.	Muck Depths (ft from Mudline)	Organic Content (%)
1	SPT-1	13 – 23	26
		232 – 238	31
	SPT-2	0 – 53	12 - 89
		77 – 82	20
		103 – 118	---
2	SPT-5	0 – 164	16 - 87
		177 – 190	18
		232 – 240	11
	SPT-6	0 – 136	34 - 77
		155 – 161	54
		181 – 191	---
		195 – 211	38
3	SPT-7	0 – 4	6
		30 – 81	18 – 92
		95 – 101	12
		225 – 231	16
	SPT-8	0 – 2	---
		32 – 128	17 – 87
		147 – 153	---
		182 – 188	7 – 61
		197 – 203	14
4	SPT-9	0 – 2	---
		19 – 82	19 – 74
		129 – 132	---
		144 – 147	12
		174 – 180	---
		184 – 195	72
		214 – 220	6
	SPT-10	0 – 19	78
		48 – 54	---
		63 – 119	25
		153 – 159	44
		173 – 178	---
		183 – 199	---
		199 – 204	7
		218 - 224	12

Relic Feature No.	Boring No.	Muck Depths (ft from Mudline)	Organic Content (%)
5	SPT-11	0 – 2	---
		23 - 89	6 – 83
	SPT-12	2 – 8	9
		38 – 47	9
		54 – 59	8
		183 – 194	8
6	SPT-15	0 – 8	---
	SPT-16	2 – 4	---
		8 – 10	---
	SPT-17	0 – 8	7
7	SPT-13	9 – 13	27
	SPT-14	16 – 26	6

The manual muck probes revealed surficial muck thicknesses and water depths as summarized in **Table 7**. Some probe locations were not able to be completed due to site access restrictions from grass mats, dense vegetation and excessive water depths.

Table 7: Manual Muck Probe Summary

Relic Feature No.	Water Depth (ft)	Surficial Muck Thickness (ft)
1	0 – 10	0 – 10
2	0 – 13.5	0 – 12
3	0 – 9	0 – 1
4	0 – 20+	0 – 5
5	0 – 4	0 – 0.2
6	0 – 2.3	0 – 3.4
7	0 – 5	0 – 0.6

Preferred locations for the stormwater ponds have not been selected. Soil borings for the preferred stormwater and flood plain compensation ponds will be included in a future submittal once selected.

5.3 Groundwater Levels

The features that have been explored to date all hold water year-round. The measured water depths at the SPT boreholes are summarized below:

Table 8: Summary of Measured Water Depths

Relic Feature No.	Boring No.	Water Depth (ft)
1	SPT-1	7
	SPT-2	7
	SPT-3	4
2	SPT-4	9
	SPT-5	7
	SPT-6	10
3	SPT-7	9
	SPT-8	7
4	SPT-9	15
	SPT-10	21
5	SPT-11	0.5
	SPT-12	0
6	SPT-15	9
	SPT-16	10
	SPT-17	10
7	SPT-13	8
	SPT-14	8

Water levels can vary seasonally and alterations in surface and/or subsurface drainage brought about by site development can also affect water levels. *Therefore, water depths measured at different times can be expected to vary from those measured by GEC during this investigation.*

The encountered water depths are depicted adjacent to the boring profiles on the Report of SPT Boring Results sheets in the **Appendix**.

6.0 WIDENING ALTERNATIVES ANALYSIS

GEC performed an evaluation of widening alternatives for the relic sinkhole features that included soil embankment, retaining wall and driven piles based on the current plans and soil conditions. The analysis of each relic feature and the planned widening alternatives and preferred widening alternatives are described below:

Relic Feature 1 (Lake Pearl): Preliminary project plans currently depict a bridge over this feature. Soil borings encountered highly variable soil conditions, indicative of relic sinkhole features, with bearing layers encountered at elevations ranging from +10 to -110 to > -120 ft (boring SPT-2 performed at the center of the feature did not encounter a bearing layer to a depth of 250'). Within the central portion of the feature borings typically encountered surficial very soft muck/peat to depths of 20 to 50 feet underlain by very loose, raveled sands with intermixed mucky sands to depths of up to/greater than 250 feet. Based on the soil variability and deep bearing layer at the site, pipe piles will likely be the preferred bridge foundation alternative and lateral stability of the foundation will be a critical design element.

Relic Feature 2 (Lake Bonnet): Preliminary project plans depict a bridge over this feature and modification to the adjacent mainline embankment configuration. Soil borings encountered very soft, compressible, muck/peat to a depth of approximately 160 feet in two of the three borings in this feature. Like Relic Feature 1 (Lake Pearl), pipe piles will likely be the preferred bridge foundation alternative due to the depth of the bearing layer and potential for pile variability. In addition, special construction requirements will need to be developed for protection of the existing retaining walls adjacent to this feature during pile installation. Vibrations caused by pile installation could potentially destabilize the retaining walls in this area. Evaluation of lateral stability of the adjacent improvements to the mainline will also need to be performed for design of retaining walls for the Turnpike mainline.

Relic Feature 3 (NW Quadrant of SR 91 and SR 408): Preliminary project plans depict two at grade ramps with retaining walls, a single-span bridge and a second level multi-span bridge as well as associated high fill roadway embankment. The two borings performed within this relic sinkhole feature encountered approximately 25 to 30 feet of medium dense sand underlain by very soft to soft muck/peat to depths of approximately 85 to 135 feet. Based on the variability of the subsurface profile at this feature location, pipe piles will likely be the preferred bridge foundation alternative. The highly compressible, deep muck/peat encountered within this feature will cause significant settlement if left untreated and, even if treated with a surcharge program, long-term settlement of the organic soils will still result in some long-term settlement of the roadway embankments. Because of this long-term settlement, bridging this feature would be the preferred alternative for the two at-grade ramps. Surcharging of the muck in this feature is possible, but the roadway and surcharge embankment would need to be sloped no steeper than 4:1 to ensure stability over the weak soil; therefore, embankment and surcharge fill would cover a large portion of the water feature. Placement of the embankment fill over soft soils will require special materials and handling, including geosynthetic reinforcement and staged, slow subaqueous placement of fill to avoid shearing (mudwaving) the underlying weak soils. Surcharging an organic soil feature of this thickness and depth will require more time than a standard surcharge program

to achieve the desired soil improvements and monitoring instrumentation including settlement plates, slope inclinometers and pore pressure transducers will be needed.

Relic Feature 4 (SE Quadrant of SR 91 and SR 408): Preliminary project plans depict a retaining wall and embankment along the edge of this feature. The two borings performed within this feature encountered very soft to soft muck/peat to depths ranging from 80 to 120 feet. The organic soils will cause significant settlement and global stability concerns for the planned retaining wall-supported ramp embankment. Construction of a surcharge would be difficult without impacting a large portion of the relic sinkhole feature due to the low shear strength of the organic soils. And once again, the depth and thickness of these organic soils will lead to some long-term settlement, even with a surcharge treatment program. We would recommend bridging this feature. However, if the ramp alignment could be shifted, it may be possible to avoid the soils of concern and construct a retaining wall-supported embankment. Additional soil borings would need to be performed to confirm the viability of this option.

Relic Feature 5 (NW Quadrant along SR 408 Exit Ramp): Preliminary project plans depict a retaining wall-supported ramp embankment through this feature. The two borings performed within this feature encountered very soft to soft muck to depths of 60 to 90 feet. In addition, one boring encountered very loose sand with drilling fluid circulation losses from elevation +30 to -80 feet. A surcharge program at this feature is recommended to treat the organic soils. Based on the proposed wall supported embankment, a two-phase MSE wall may be feasible to facilitate construction. However, the very loose, raveled soils are indicative of high sinkhole risk. A deep subsoil pressure grouting program is also recommended to mitigate potential sinkhole development and treat the very loose, raveled, soil conditions. A pipe pile-supported structure could be considered at this location.

Relic Feature 6 (Lake Olivia): Preliminary project plans depict an approximate 15-foot widening of SR 91 into this feature with a retaining wall-supported embankment. Surficial organic soils were encountered to a depth of approximately 10 feet, which will require removal. Otherwise, soils are suitable for support of the proposed embankment and retaining wall.

Relic Feature 7 (W SR 50): Preliminary project plans depict a retaining wall-supported ramp embankment. The two borings performed in this feature encountered organic soils in the upper 15 to 30 feet underlain by layers of very loose sand with drilling fluid circulation losses from elevation +75 to -30 feet. A surcharge program at this feature is recommended to treat the organic soils. Based on the proposed wall-supported embankment, a two-phase MSE wall may be feasible to facilitate construction. However, the very loose, raveled soils are indicative of high sinkhole risk. A deep subsoil pressure grouting program is also recommended to mitigate potential sinkhole

development and treat the existing very loose, soil conditions. A pipe pile-supported bridge structure could be considered at this location.

6.1 Preliminary Pile Capacity Analysis

For use in preliminary construction cost estimates, GEC analyzed axial capacity for 24-inch steel pipe piles with closed end for each SPT boring using the FDOT computer program FB-Deep Version 3.0.0. Graphs of Davisson Pile Capacity vs. Pile Tip Elevation for the 24-inch steel pipe piles are included in the **Appendix.** Based upon the Davisson Pile Capacity vs. Pile Tip Elevation curves and the soil boring results, GEC's recommended preliminary pile design parameters for 24-inch closed-end steel pipe piles are summarized in the Preliminary Pile Capacity Recommendations Table below:

Table 9: Preliminary Pile Capacity Recommendation

Relic Feature No.	Nominal Bearing Ratio (tons)	Estimated Pile Tip Elevations (ft NAVD88)
1	250	-10 to -120
2	250	-5 to -115
3	250	-40 to -50
4	250	-60 to -120
5	250	-125 to -130
6	250	-90 to -155
7	250	-100 to -120

Due to the highly variable subsurface conditions within the relic sinkholes, using typical bridge foundation costs would lead to a significant underestimation of bridge costs. There are likely to be greater variations in pile depths than those indicated in Table 9, with some piles extending several hundred feet to reach a suitable bearing layer. We would recommend assuming all the piles for the bridges will extend to the deepest tip elevations in the ranges shown in Table 9 to develop preliminary foundation costs.

These recommendations are preliminary and are not intended for design. A detailed geotechnical investigation of the relic sinkholes will be required to develop design-level geotechnical recommendations for design and construction.

7.0 USE OF THIS REPORT

GEC has prepared this report for the exclusive use of our client, RS&H, Inc. and FTE, and for specific application to our client's project. GEC will not be held responsible for any other party's

interpretation or use of this report's subsurface data or engineering analysis without our written authorization.

The sole purpose of the borings performed by GEC at this site was to obtain indications of subsurface conditions as part of a geotechnical exploration program. GEC has not subjected any soil samples to analysis for contaminants.

GEC has performed the services described in this report in a manner consistent with that level of care and skill ordinarily exercised by members of our profession currently practicing in Central Florida. No other representation is made or implied in this document.

The preliminary conclusions or recommendations of this report should be disregarded if the nature, design, or location of the facilities is changed. If such changes are contemplated, GEC should be retained to review the new plans to assess the applicability of this report considering the proposed changes.

APPENDIX

USGS QUADRANGLE AND
NRCS SOIL SURVEY MAP MAPS

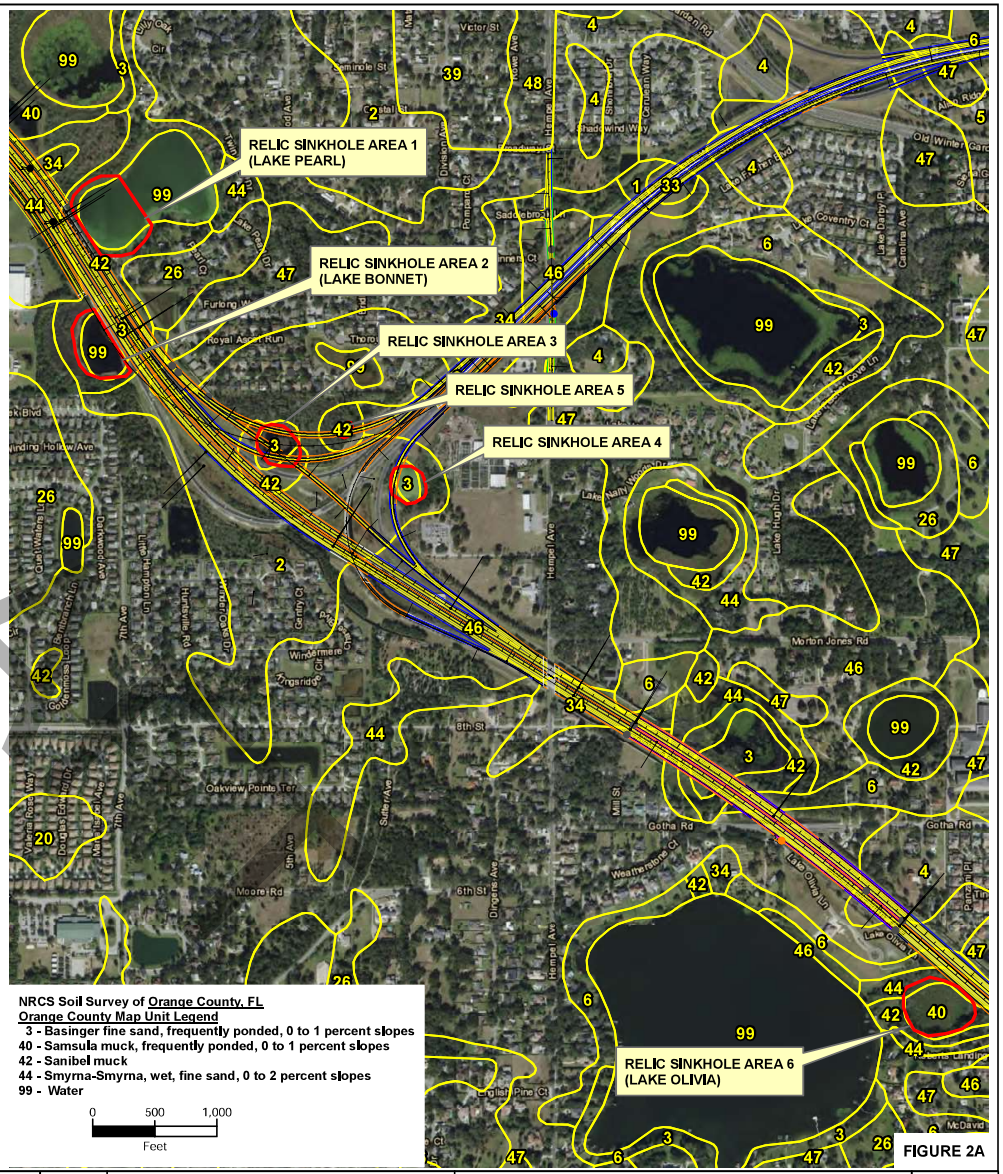


FIGURE 2A

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DRAWN BY:	STATE OF FLORIDA DEPARTMENT OF TRANSPORATATION			SHEET TITLE:	REF. DWG. NO.
SKR				USGS QUADRANGLE AND NRCS SOIL SURVEY MAPS	
CHECKED BY: RJP	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	PROJECT NAME:	SHEET NO.
DESIGNED BY: RFA	SR 91	ORANGE	444007-1-22-01	FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50	
CHECKED BY: GLK					

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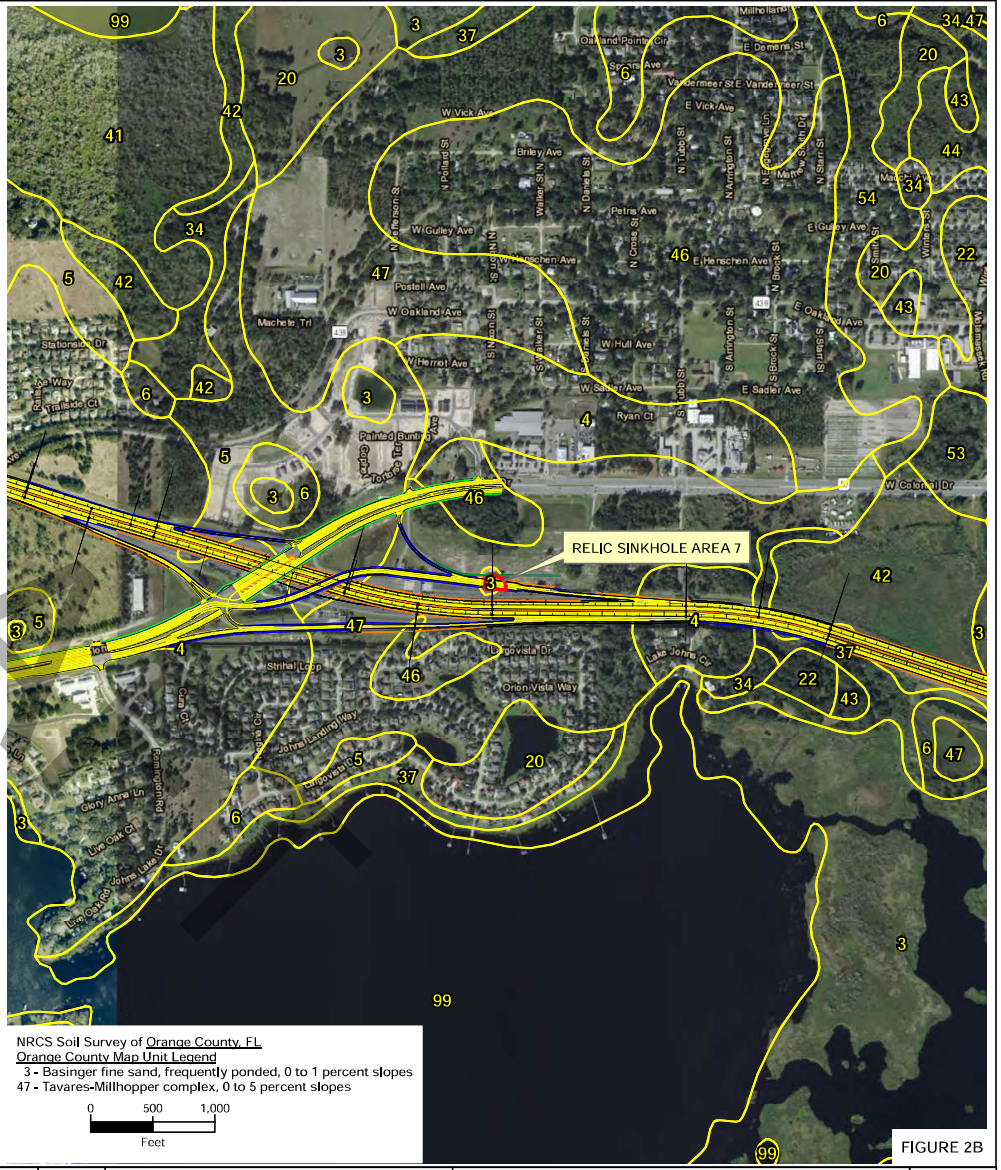
USGS Winter Garden, FL Quadrangle Map
Dated: 1984

USGS Clermont East, FL Quadrangle Map
Dated: 1980

0 1,000 2,000
Feet



NRCS Soil Survey of Orange County, FL
Orange County Map Unit Legend
3 - Basinger fine sand, frequently ponded, 0 to 1 percent slopes
47 - Tavares-Millhopper complex, 0 to 5 percent slopes

0 500 1,000
Feet

FIGURE 2B

N

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BORING LOCATION PLAN

FIGURE 3A

APPROXIMATE SPT BORING LOCATION

N

0 150 300
Feet

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SHEET NO.:

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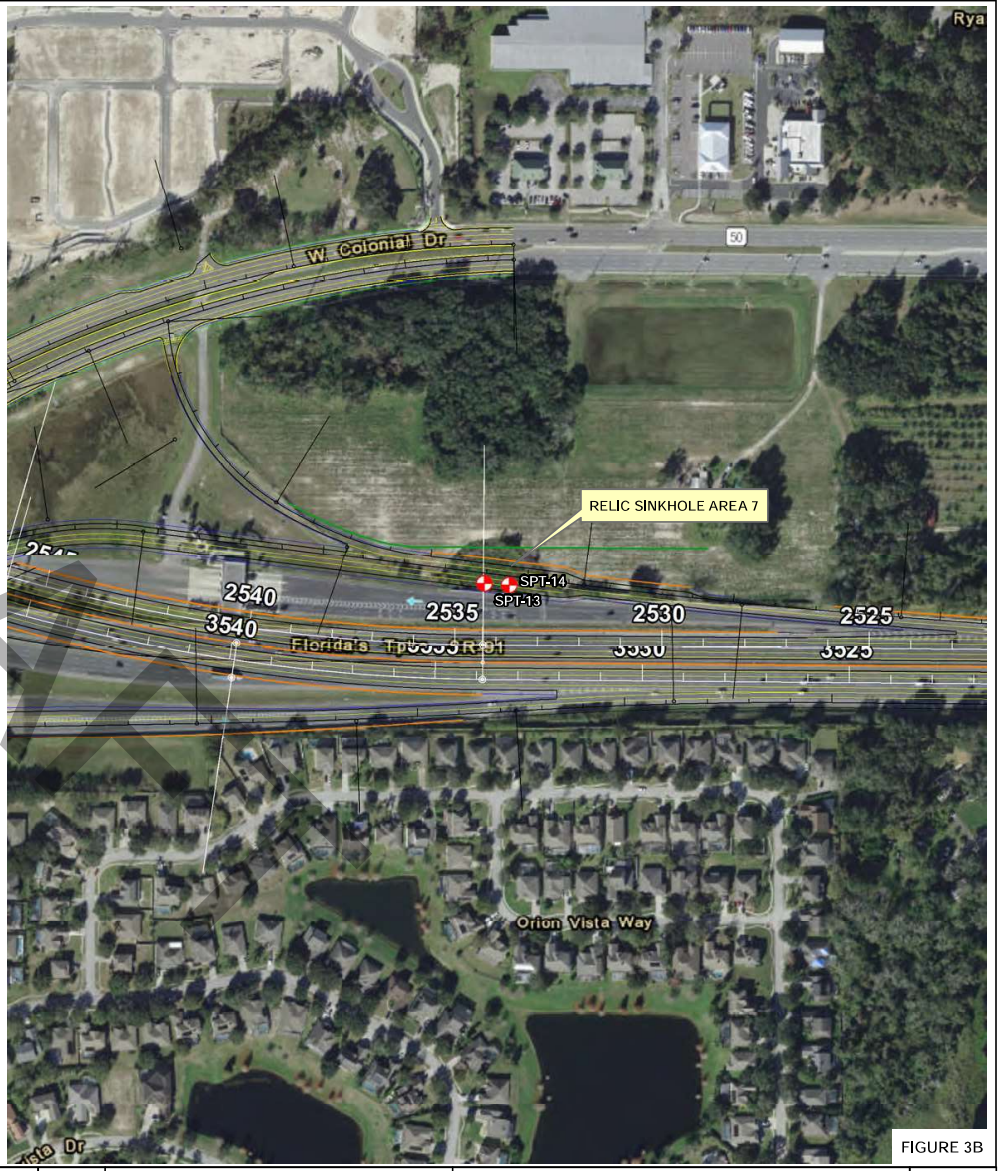

FIGURE 3B

APPROXIMATE SPT BORING LOCATION

N

0 150 300
Feet

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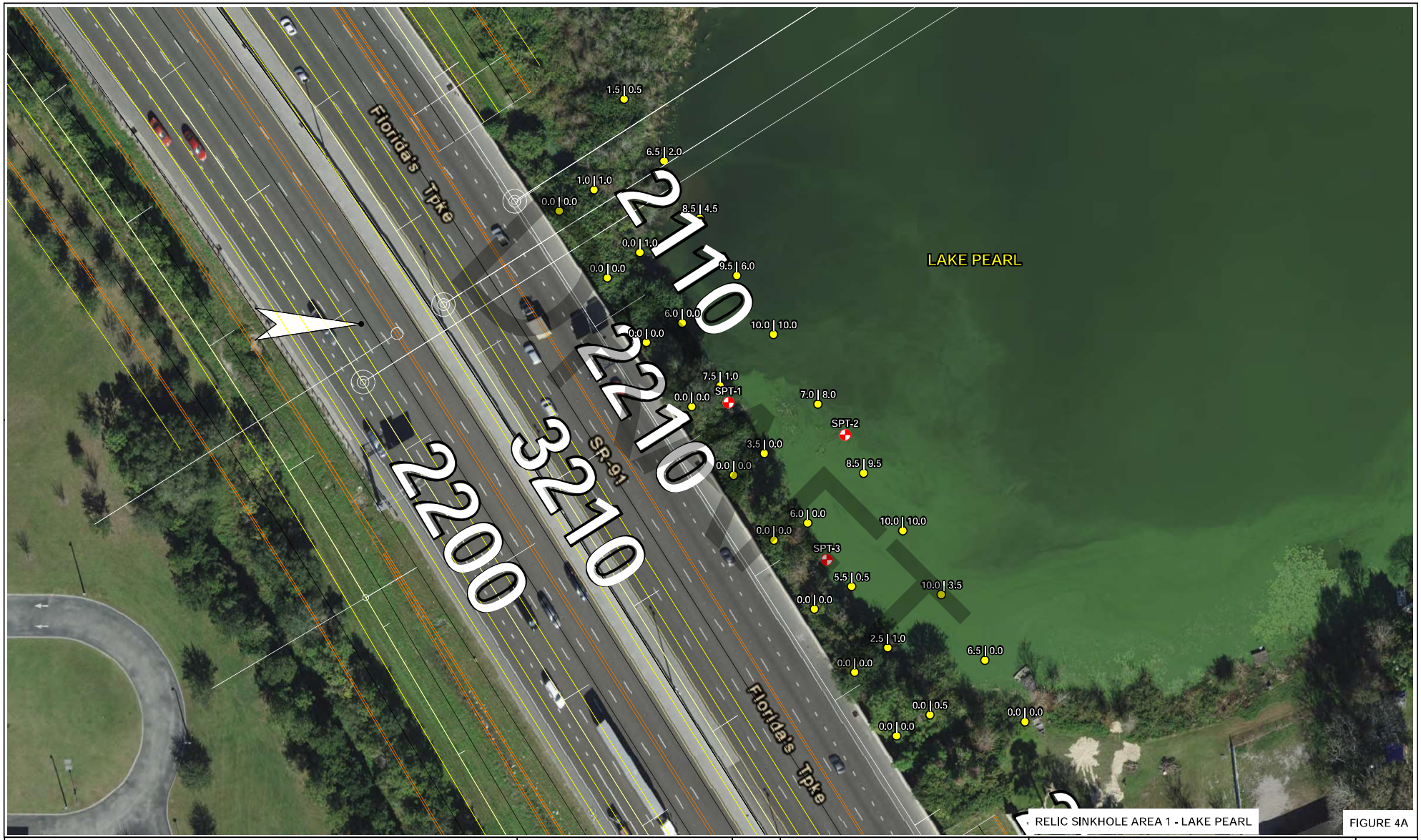
BORING AND MUCK PROBE
LOCATION PLAN WITH RESULTS



RELIC SINKHOLE AREA 1 - LAKE PEARL

FIGURE 4A

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
APPROXIMATE SPT BORING LOCATION
8.5 | 9.5 APPROXIMATE MUCK PROBE LOCATION (9-8-20)

N

0 30 60
Feet

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PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

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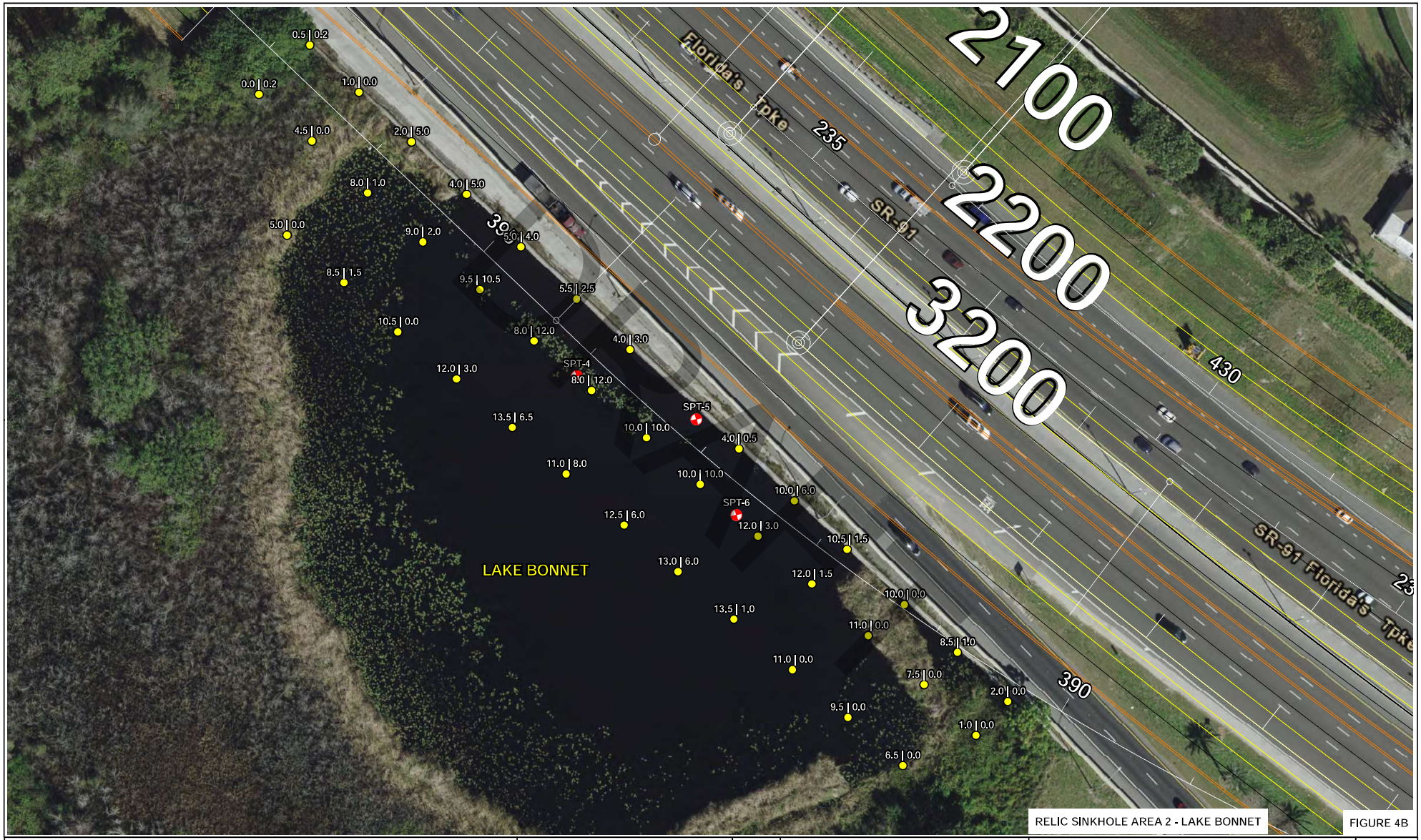

RELIC SINKHOLE AREA 2 - LAKE BONNET

FIGURE 4B

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
APPROXIMATE SPT BORING LOCATION
8.5 | 9.5 APPROXIMATE MUCK PROBE LOCATION (9-8-20)

N

0 30 60
Feet

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SR 91	ORANGE	444007-1-22-01

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PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

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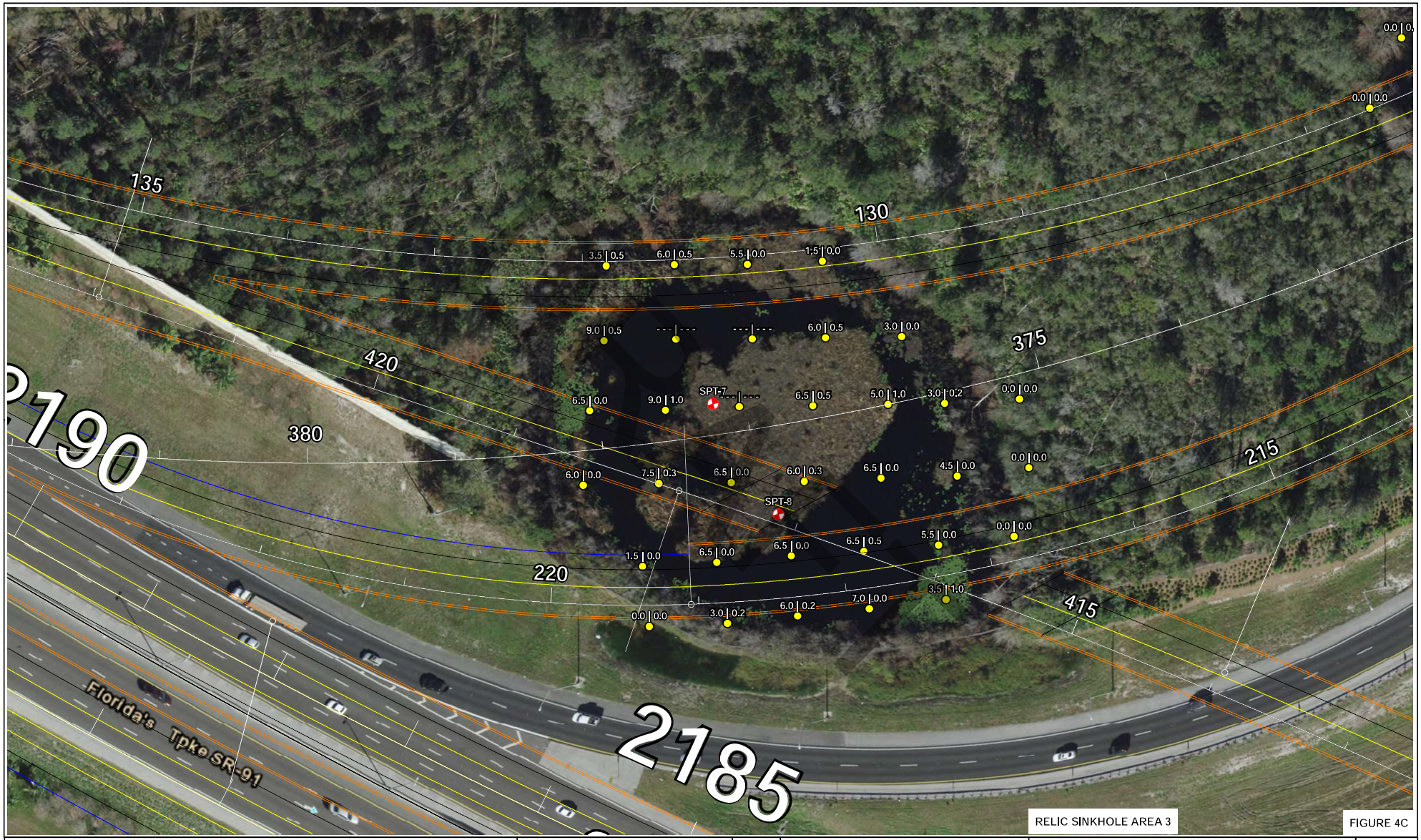

RELIC SINKHOLE AREA 3

FIGURE 4C

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
8.5 | 9.5
APPROXIMATE SPT BORING LOCATION
--- NO MEASUREMENT RECORDED
APPROXIMATE MUCK PROBE LOCATION (9-1-20)

N
0 30 60
Feet

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SHEET NO.

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RELIC SINKHOLE AREAS 4 AND 5

FIGURE 4D

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
APPROXIMATE SPT BORING LOCATION
8.5 | 9.5 APPROXIMATE MUCK PROBE LOCATION (9-1-20)
--- NO MEASUREMENT RECORDED

N

0 30 60
Feet

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SR 91	ORANGE	444007-1-22-01

SHEET TITLE: BORING AND MUCK PROBE LOCATION PLAN WITH RESULTS

REF. DWG. NO.

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

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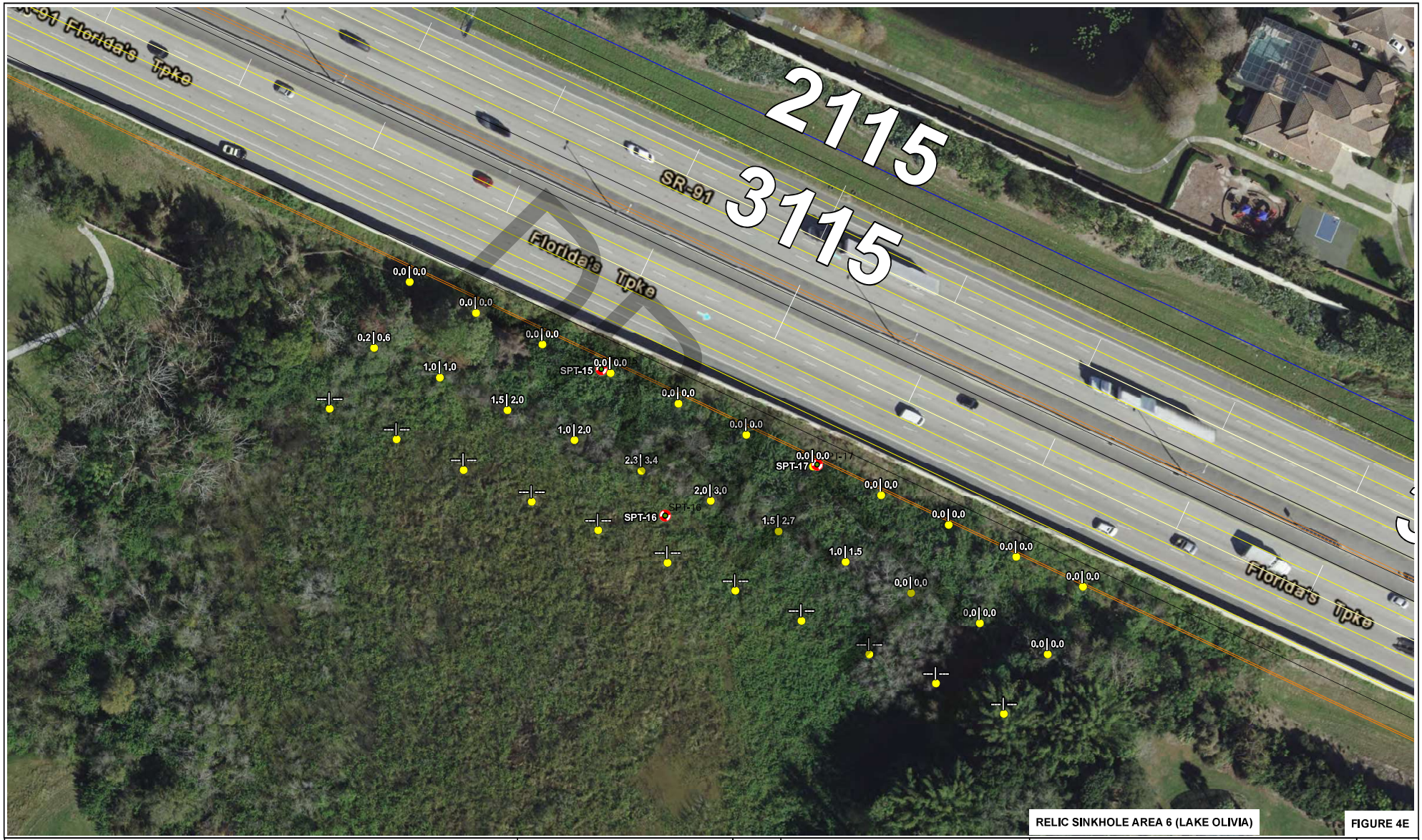

FIGURE 4E

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
APPROXIMATE SPT BORING LOCATION
8.5 | 9.5 APPROXIMATE MUCK PROBE LOCATION (7-30-21)
--- NO MEASUREMENT RECORDED

N

0 30 60
Feet

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: BORING AND MUCK PROBE LOCATION PLAN WITH RESULTS
REF. DWG. NO.
PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50
SHEET NO.

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RELIC SINKHOLE AREA 7-W SR 50

FIGURE 4F

STANDING WATER DEPTH (FT.)
SURFICIAL MUCK THICKNESS (FT.)
APPROXIMATE SPT BORING LOCATION
8.5 | 9.5 APPROXIMATE MUCK PROBE LOCATION (7-29-21)
--- NO MEASUREMENT RECORDED

N

0 30 60
Feet

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: BORING AND MUCK PROBE LOCATION PLAN WITH RESULTS

REF. DWG. NO.

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

W:\Projects\J4471GE FTE PD&E from SR 408 to SR 50 RS&H\8-31-20\4471Gprobe06.mxd 5/27/2022

GENERAL NOTES AND SOIL BORING LEGEND SHEET

LEGEND

GSE	GROUND SURFACE ELEVATION (FT. NAVD88)
N	STANDARD PENETRATION RESISTANCE, BLOWS PER FOOT
HA	HAND AUGERED FOR UTILITY CLEARANCE
W/H	WEIGHT OF HAMMER
50/4"	NUMBER OF BLOWS FOR 4 INCHES OF PENETRATION
▽ AGS	ESTIMATED SEASONAL HIGH GROUNDWATER LEVEL ABOVE GROUND SURFACE
▽ +5.0	ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATION (FT. NAVD88)
▼ +3.1	ENCOUNTERED GROUNDWATER ELEVATION (FT. NAVD88) 24 HRS. AFTER DATE DRILLED
◀	PERCENT LOSS OF DRILLING FLUID CIRCULATION
◁	PERCENT RETURN OF DRILLING FLUID CIRCULATION
■	UNDISTURBED SAMPLE (SHELBY TUBE) PERCENT RECOVERED
ARTESIAN (11.5' HEAD) →	ARTESIAN GROUNDWATER ENCOUNTERED AT DEPTH (FT.) INDICATED. ARTESIAN HEAD MEASURED IN FEET ABOVE EXISTING GROUND IN 3" CASING
BT	BORING TERMINATED AT DEPTH INDICATED
-200=	PERCENT PASSING NO. 200 U.S. STANDARD SIEVE
MC=	PERCENT NATURAL MOISTURE CONTENT
LL=	LIQUID LIMIT
PI=	PLASTICITY INDEX
OC=	PERCENT ORGANIC CONTENT
NP=	NON-PLASTIC
γd=	DRY UNIT WEIGHT (pcf)
Cc=	COMPRESSION INDEX (tsf)
qc=	UNCONFINED COMPRESSION STRENGTH (LAB) (tsf)
tv=	TORVANE SHEAR STRENGTH (LAB) (psf)
tvr=	REMOLDED TORVANE SHEAR STRENGTH (LAB) (psf)
	SAND
	SAND AND SILT
	SAND AND CLAY
	SAND AND MUCK
	SAND AND SHELL
	SHELL, SILT AND SAND
	SILT
	CLAY
	MUCK
	LIMESTONE
	ORGANIC SAND AND SILT
	ORGANIC CLAY
	ORGANIC SAND AND CLAY

GENERAL NOTES

SUBSURFACE CONDITIONS SHOWN ON THE BORINGS REPRESENT THE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS. ACTUAL CONDITIONS BETWEEN THE BORINGS MAY VARY FROM THOSE SHOWN. UNIFIED SOIL CLASSIFICATIONS SHOWN ON THE BORINGS ARE BASED ON VISUAL EXAMINATION AND THE LABORATORY TESTING SHOWN.

STANDARD PENETRATION TEST BORINGS WERE PERFORMED IN ACCORDANCE WITH ASTM D-1586. STANDARD PENETRATION RESISTANCES ARE SHOWN ON THE BORINGS AT THE TEST DEPTHS IN IN BLOWS PER FOOT UNLESS OTHERWISE NOTED.

BASED ON REVIEW OF THE U.S. GEOLOGICAL SURVEY MAP ENTITILED "UPPER FLORIDAN AQUIFER IN POTENTIOMETRIC SURFACE, SEPTEMBER 2017" FOR THE PROJECT AREA, THE ELEVATION OF THE ARTESIAN HEAD IS ESTIMATED TO BE APPROXIMATELY +70 FT. NGVD. THE CONTRACTOR SHALL BE PREPARED TO HANDLE ARTESIAN HEAD LEVELS UP TO +70 FT. NGVD.

THE BORING LOCATIONS WERE STAKED IN THE FIELD UTILIZING A SUB-METER TRIMBLE UNIT. LAKE LEVELS WERE ESTIMATED FROM THE USGS QUADRANGLE MAP AND THE ORANGE COUNTY WATER ATLAS.

SPLIT SPOON SAMPLER:
INSIDE DIAMETER: 1.375 IN.
OUTSIDE DIAMETER: 2.0 IN.
AVERAGE HAMMER DROP: 30 IN.
HAMMER WEIGHT: 140 LBS.
HAMMER TYPE: (SEE BORING LOG)

CORRELATION OF STANDARD PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY OF SOIL

GRANULAR SOILS	MANUAL HAMMER (SAFETY) N VALUE (blows per foot)	AUTOMATIC HAMMER N VALUE (blows per foot)	RELATIVE DENSITY
SANDS	0-4	0-3	VERY LOOSE
	4-10	3-8	LOOSE
	10-30	8-24	MEDIUM DENSE
	30-50	24-40	DENSE
	OVER 50	OVER 40	VERY DENSE

NON-GRANULAR SOILS	MANUAL HAMMER (SAFETY) N VALUE (blows per foot)	AUTOMATIC HAMMER N VALUE (blows per foot)	CONSISTENCY
SILTS, CLAYS, MUCK, PEAT	0-2	0-1	VERY SOFT
	2-4	1-3	SOFT
	4-8	3-6	FIRM
	8-15	6-12	STIFF
	15-30	12-24	VERY STIFF
	OVER 30	OVER 24	HARD

SECTIONS: 16, 21
TOWNSHIP: 19 SOUTH

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
919 LAKE BALDWIN LANE
ORLANDO, FL 32814

DRAWN BY: SKR
CHECKED BY: RFA
DESIGNED BY: RJP
CHECKED BY: GLK

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: GENERAL NOTES AND SOIL BORING LEGEND SHEET
REF. DWG. NO.
PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50
SHEET NO.

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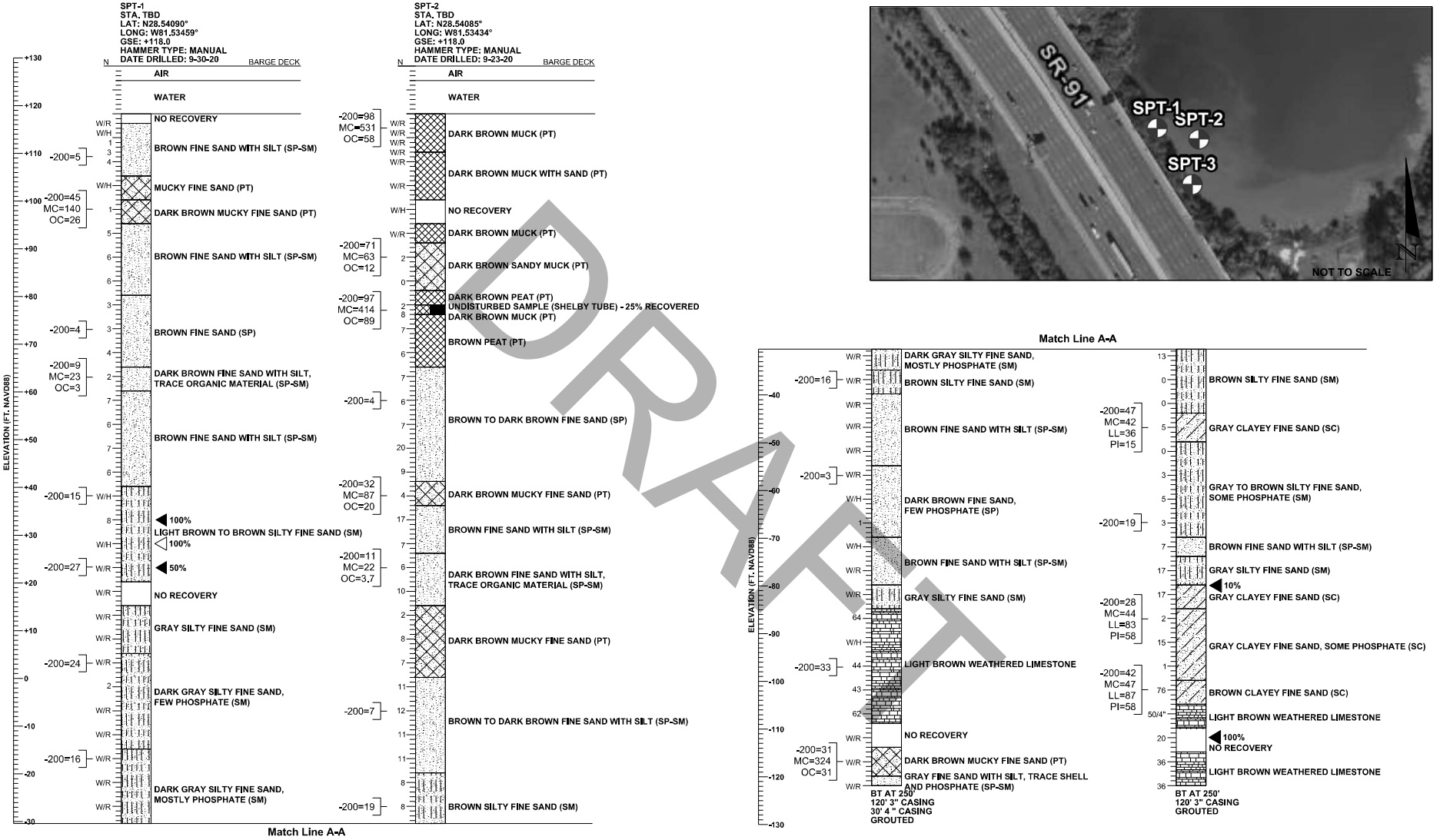
REPORT OF SPT BORINGS



DRAFT

RELIC SINKHOLE AREA 1 (LAKE PEARL)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
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STATE OF FLORIDA
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SR 91	ORANGE	444007-1-22-01

SHEET TITLE: REPORT OF SPT BORINGS

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

REF. DWG. NO.

SHEET NO.

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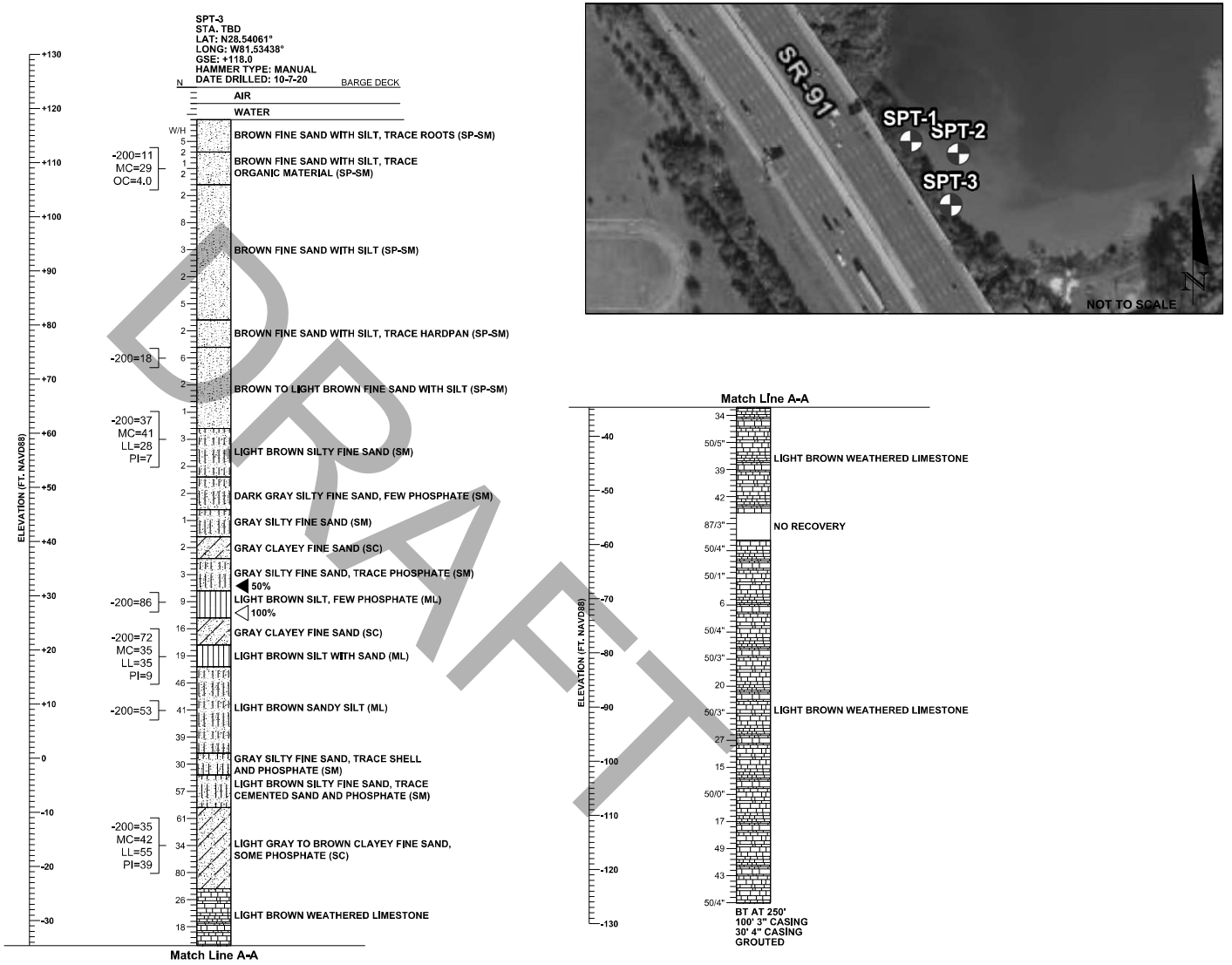

RELIC SINKHOLE AREA 1 (LAKE PEARL)

REVISIONS

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SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.:

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.:

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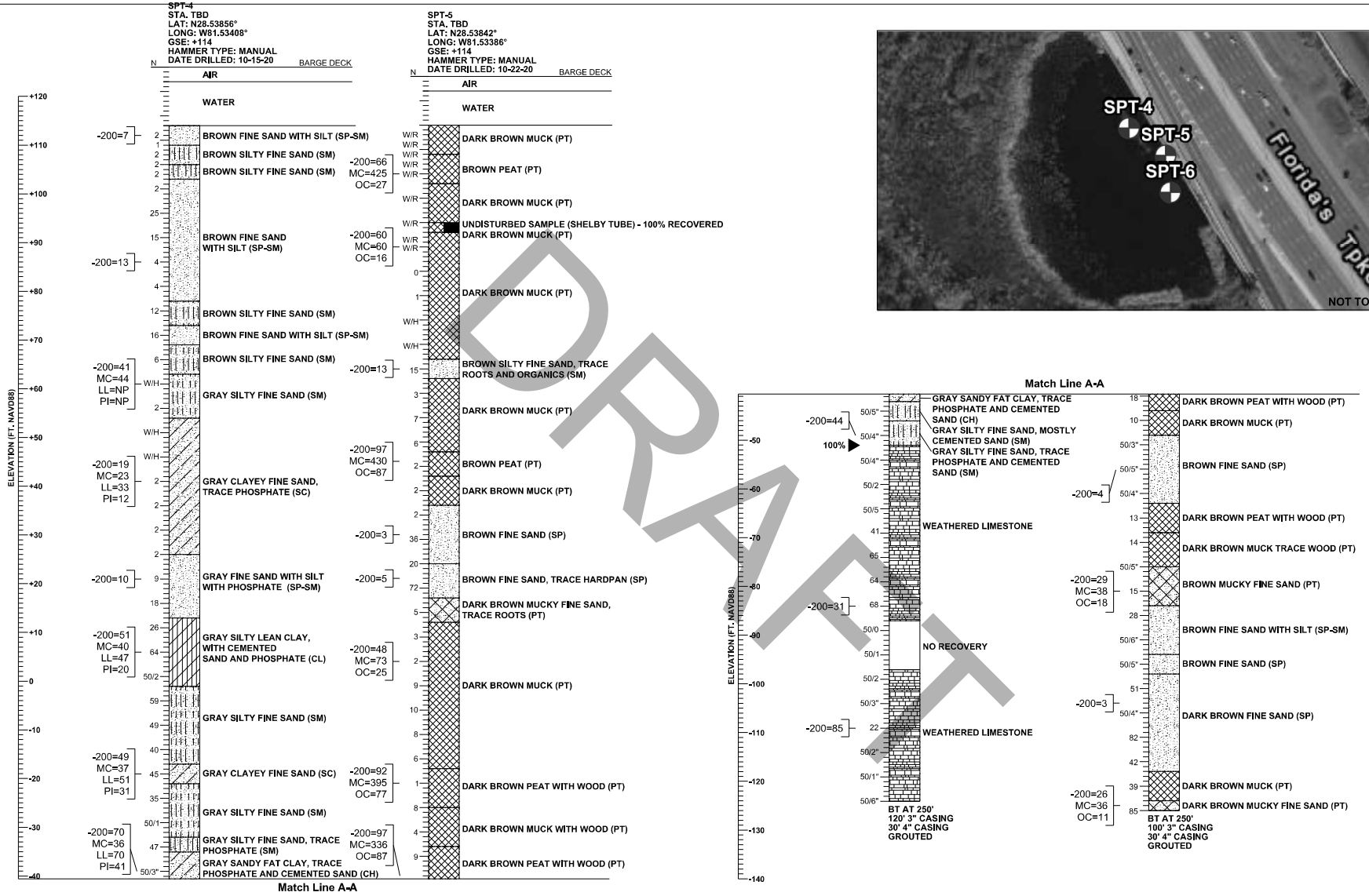

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SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

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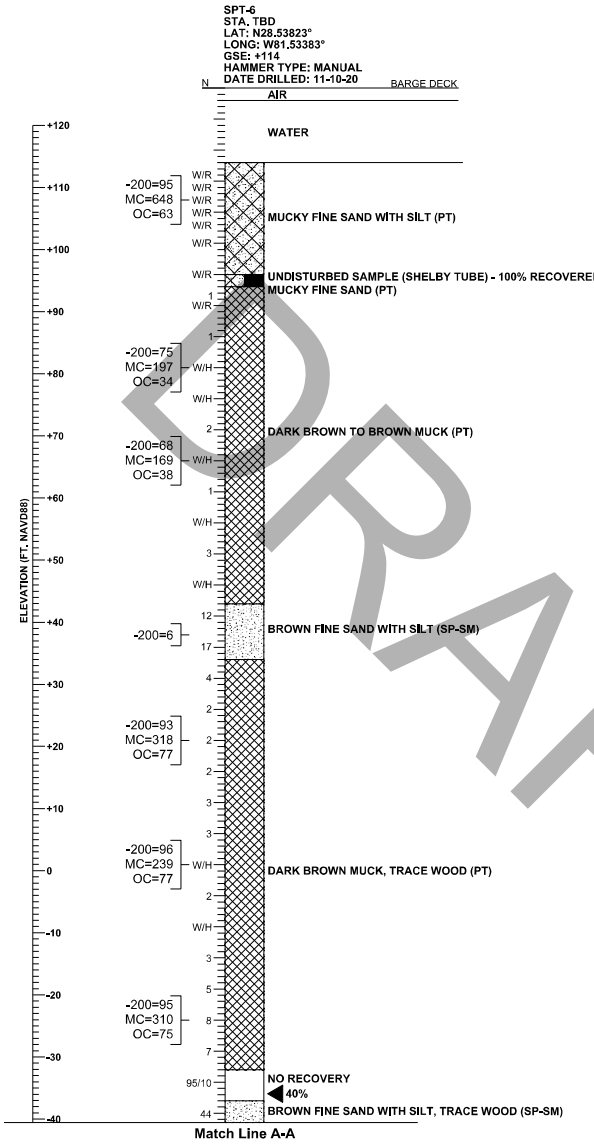

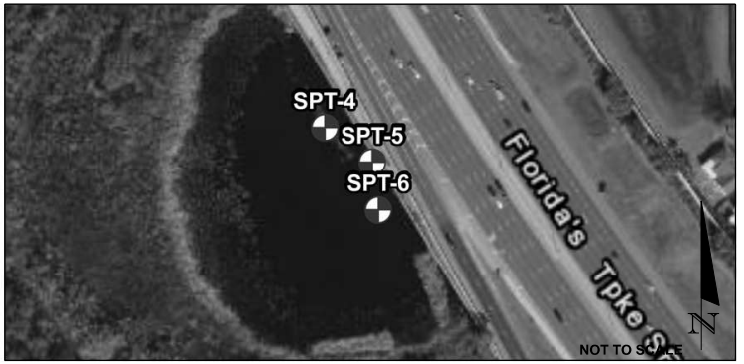

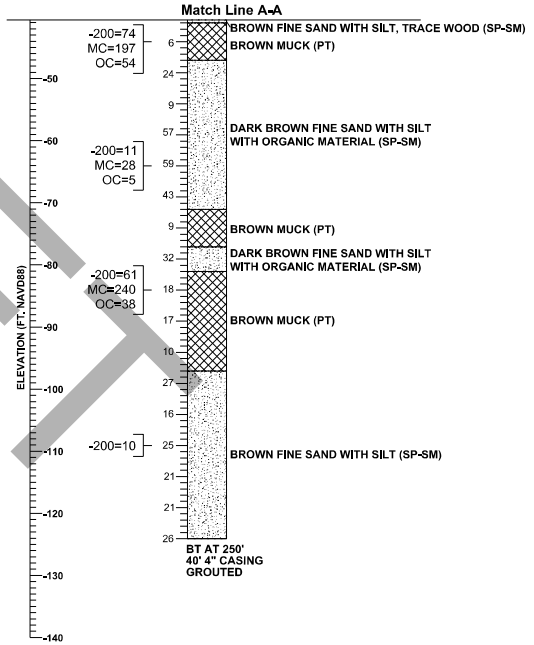

RELIC SINKHOLE AREA 2 (LAKE BONNET)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL
CONSULTANTS, INC.
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ORLANDO, FL 32814

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CHECKED BY: RFA
DESIGNED BY: RJP
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

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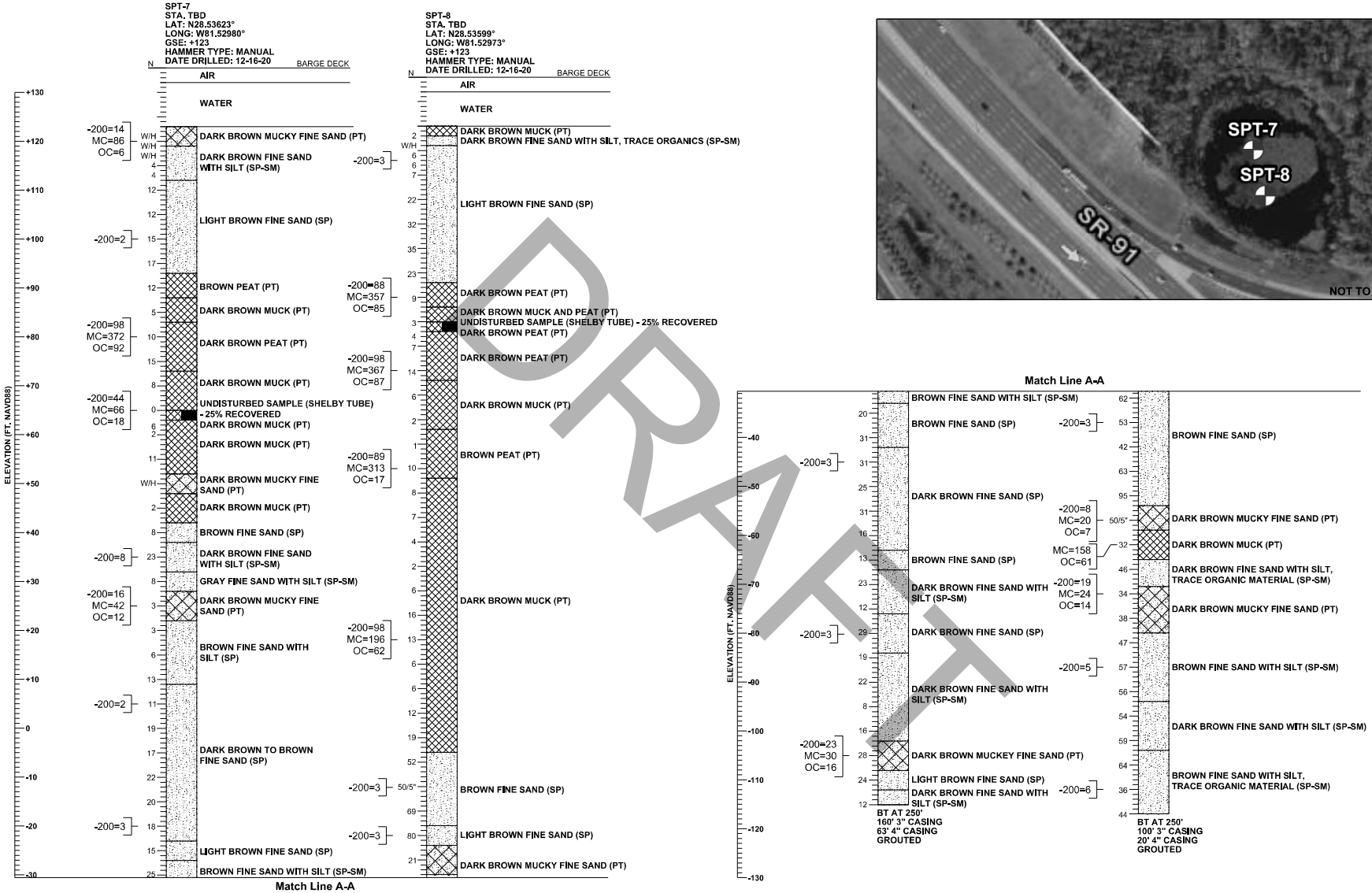

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P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
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ORLANDO, FL 32814

DRAWN BY:	CHECKED BY:	DESIGNED BY:	CHECKED BY:
SKR	RFA	RJP	GLK

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

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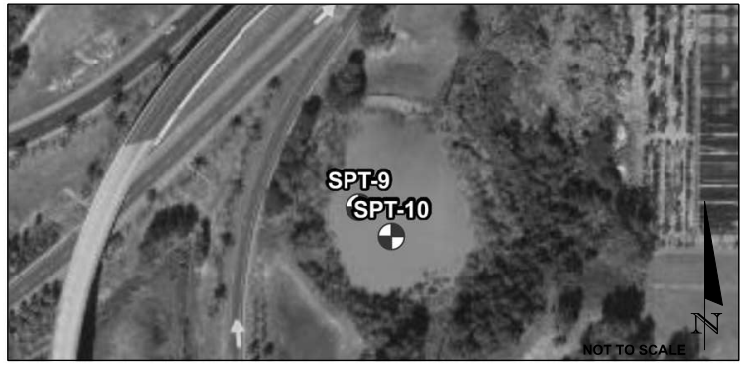

RELIC SINKHOLE AREA 4

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
919 LAKE BALDWIN LANE
ORLANDO, FL 32814

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CHECKED BY:	RFA
DESIGNED BY:	RJP
CHECKED BY:	GLK

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 91	ORANGE	444007-1-22-01

SHEET TITLE: REPORT OF SPT BORINGS

REF. DWG. NO.:

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.:

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GSE: +120
HAMMER TYPE: MANUAL
DATE DRILLED: 12-8-21

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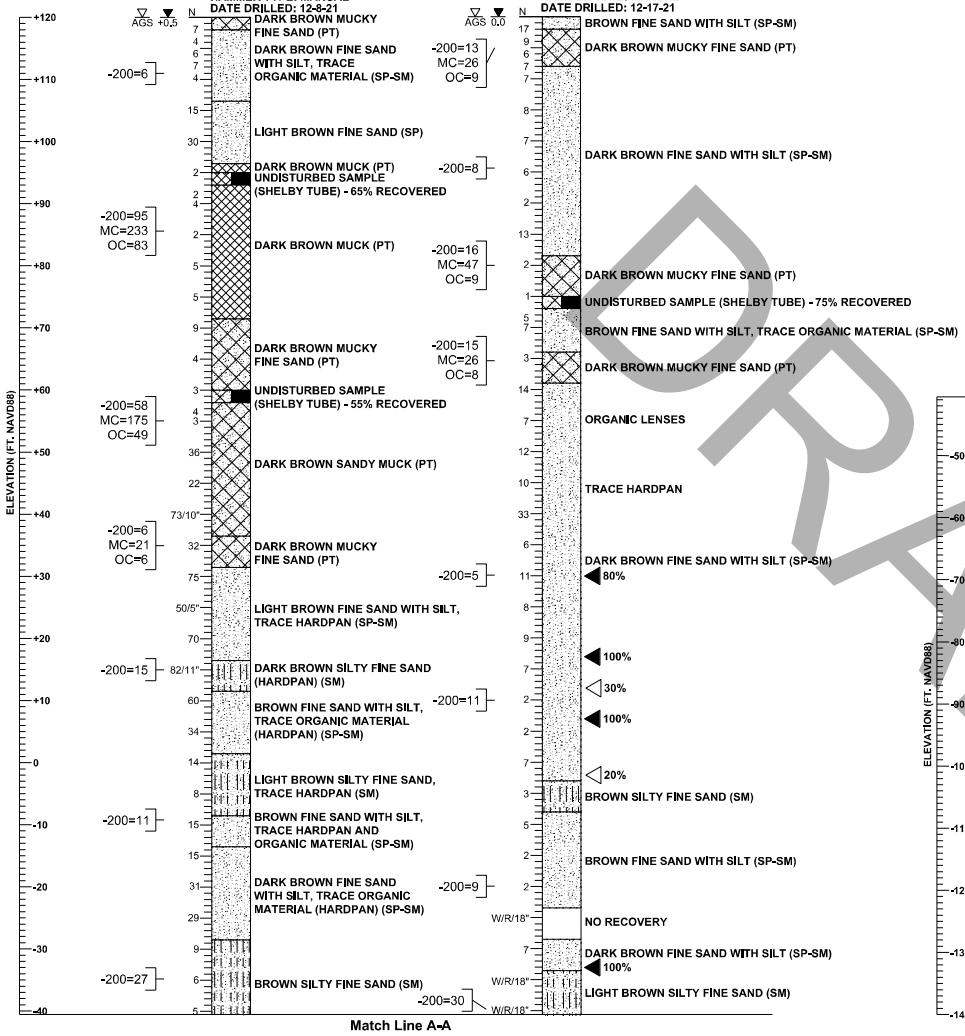
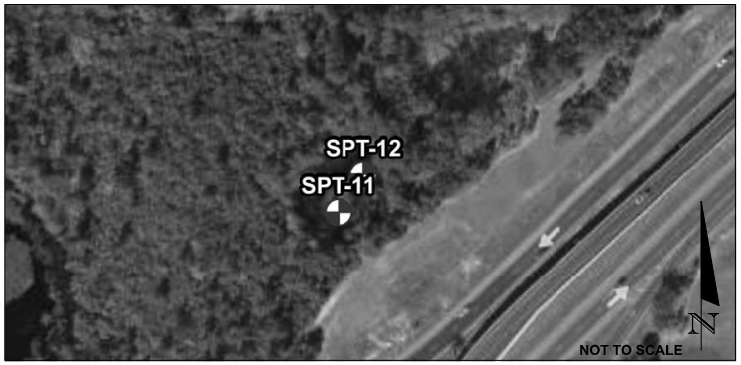
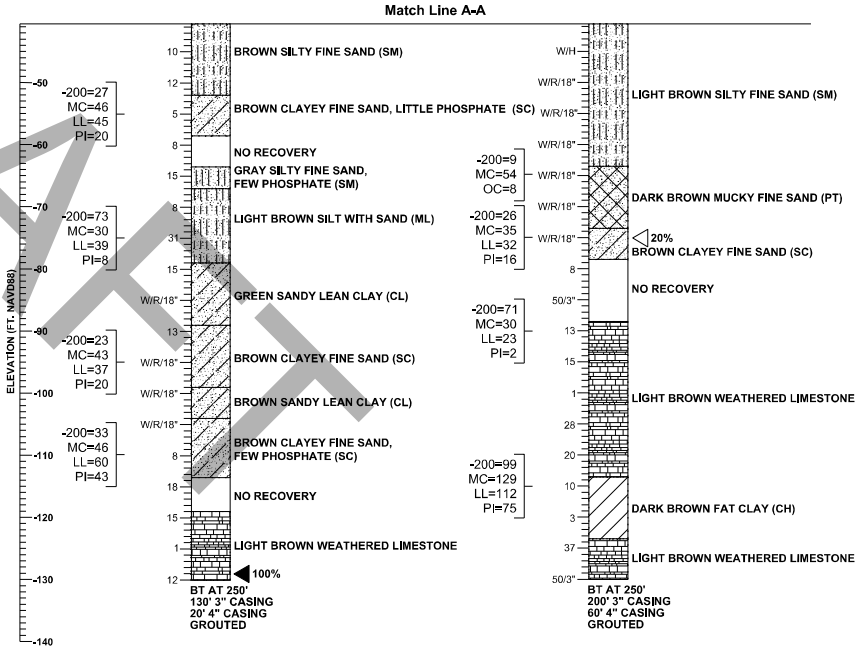
STA. TBD
LAT: 28.53655N°
LONG: 81.52792W°
GSE: +120
HAMMER TYPE: MANUAL
DATE DRILLED: 12-17-21







RELIC SINKHOLE AREA 5

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
919 LAKE BALDWIN LANE
ORLANDO, FL 32814

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DEPARTMENT OF TRANSPORTATION

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SR 91	ORANGE	444007-1-22-01

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SHEET NO.

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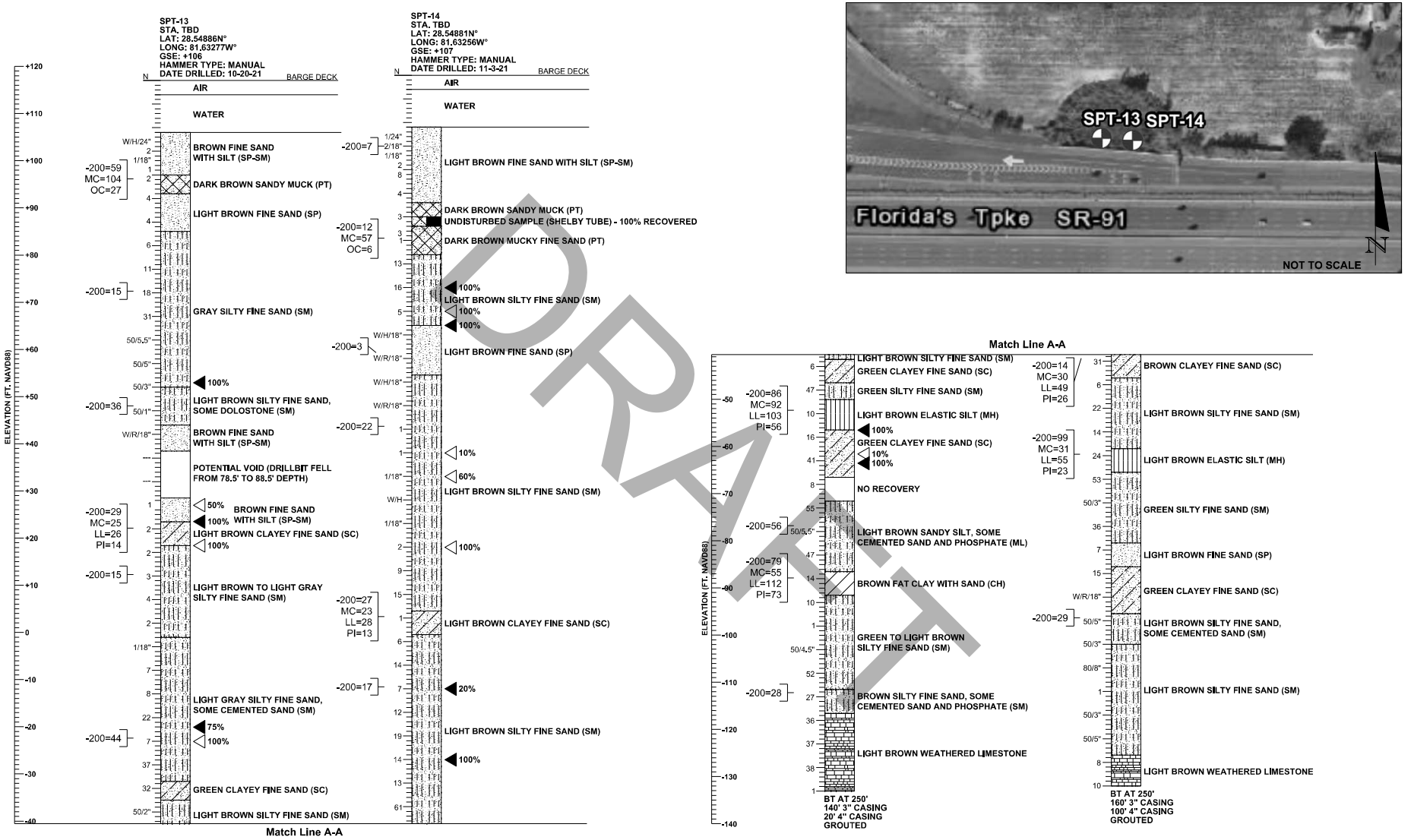

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SHEET TITLE: REPORT OF SPT BORINGS

PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

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SHEET NO.

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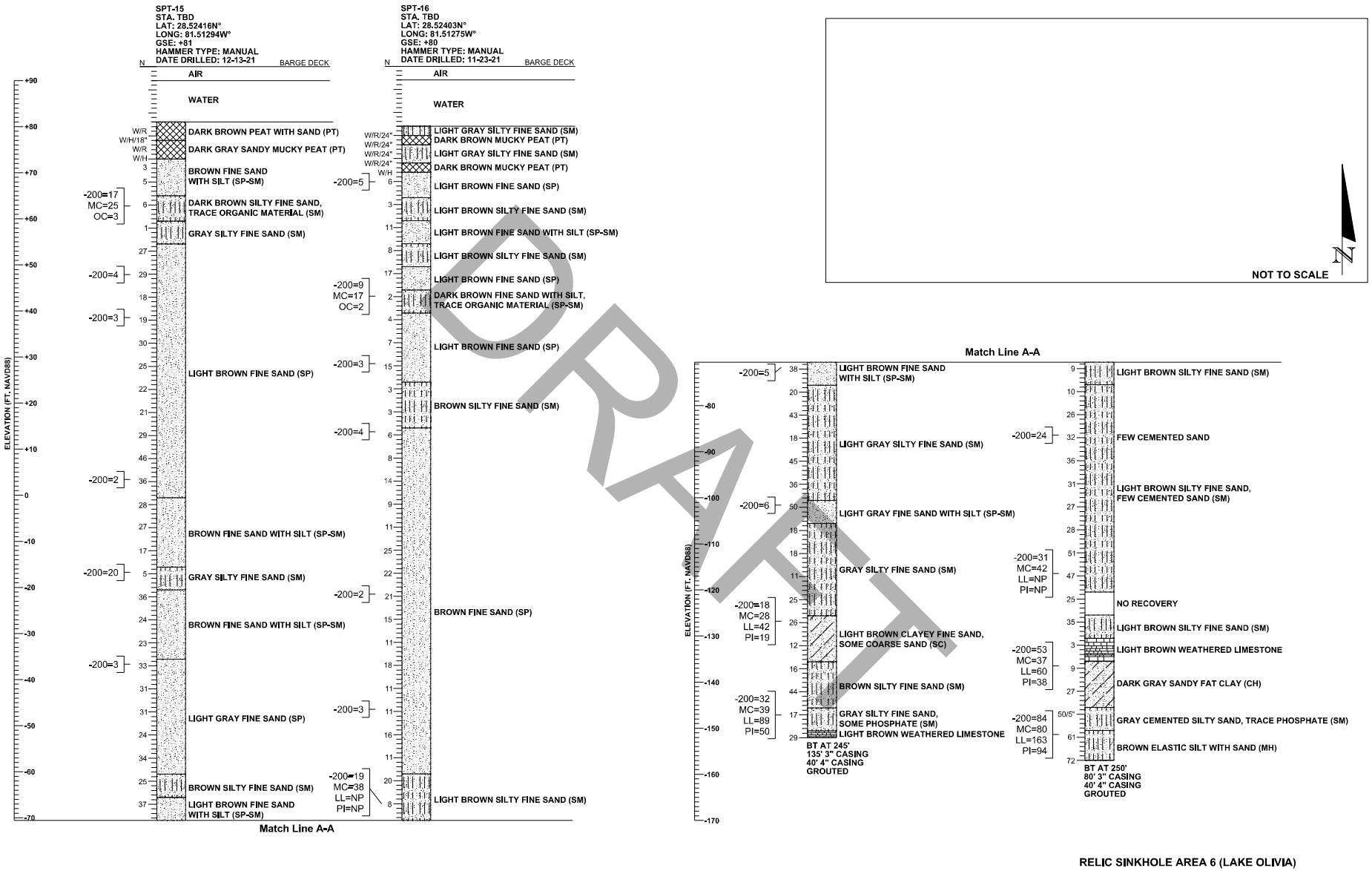

RELIC SINKHOLE AREA 6 (LAKE OLIVIA)

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

GARY L. KUHNS, P.E.
P.E. LICENSE NUMBER 38704
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS, INC.
919 LAKE BALDWIN LANE
ORLANDO, FL 32814

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PROJECT NAME: FLORIDA TURNPIKE WIDENING PD&E FROM SR 408 TO SR 50

SHEET NO.

ebhemmy 5/27/2022 STIMES W:\Projects\J447IGE FTE PD&E from SR 408 to SR 50 RS&H\7 CADD Files\sIboring01.dgn

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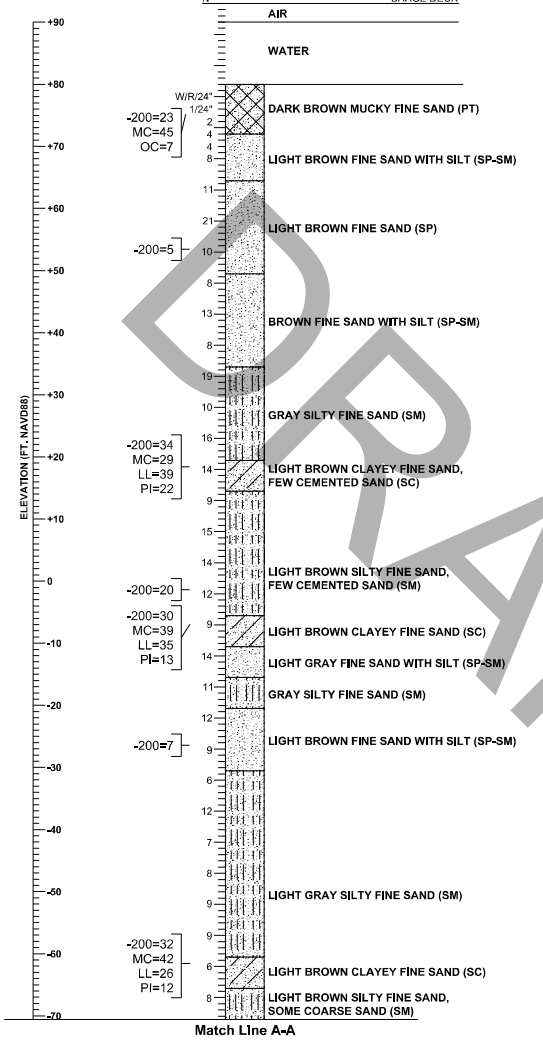
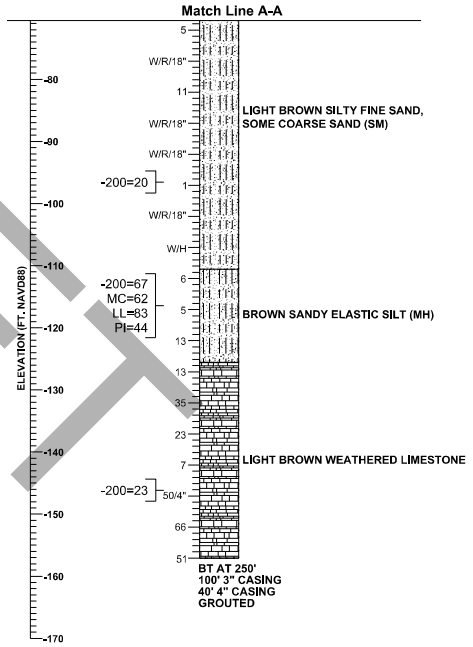
LONG: 81.51256W°
GSE: +80
HAMMER TYPE: MANUAL
DATE DRILLED: 12-2-21





RELIC SINKHOLE AREA 6 (LAKE OLIVIA)

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AERIAL PHOTOGRAPHS WITH GPR LINESCAN LOCATIONS AND 2D EXAMPLE LINESCANS

Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

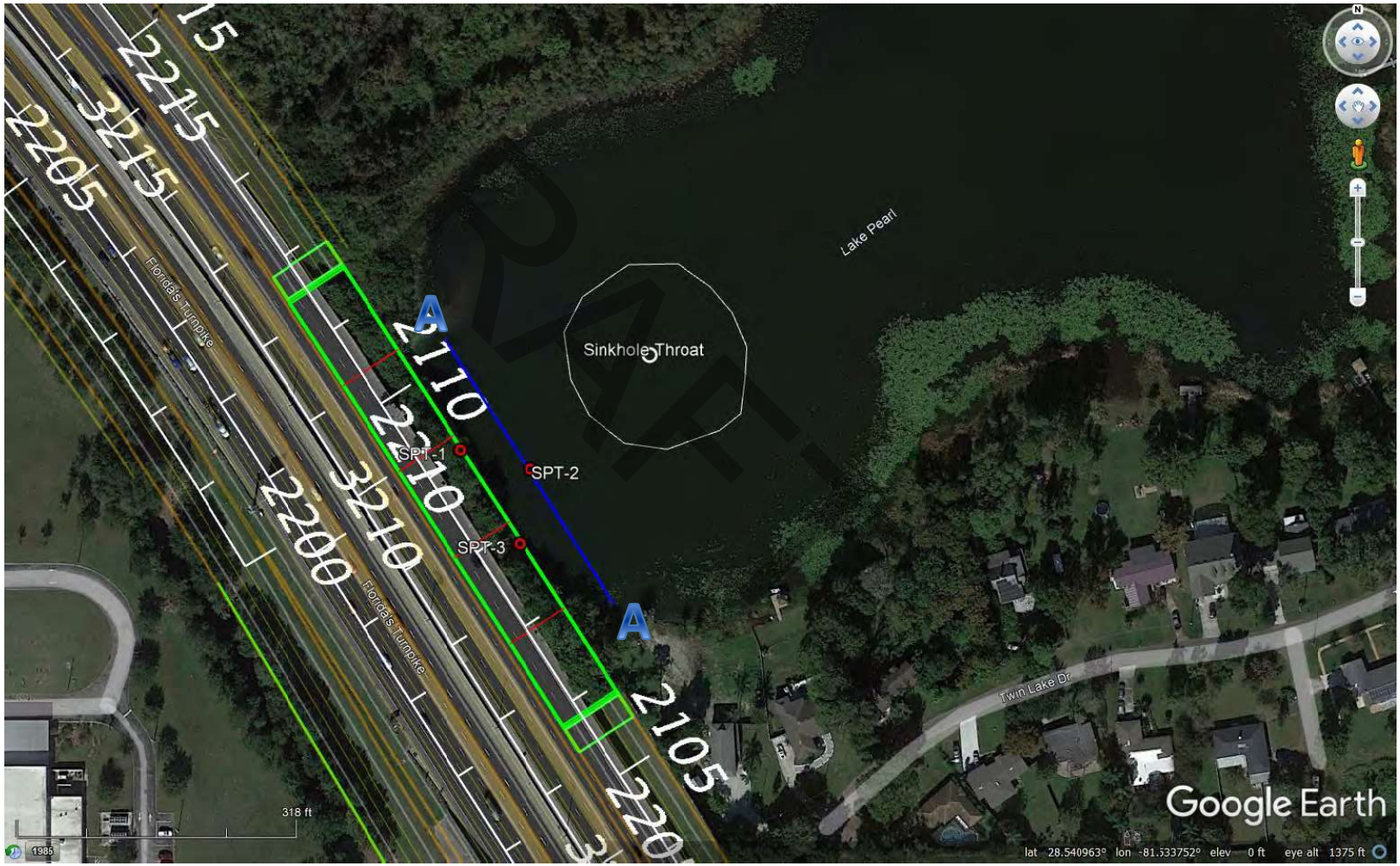
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
1

Aerial Date:
2021

Description:

Relic Sinkhole 1, Lake Pearl, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

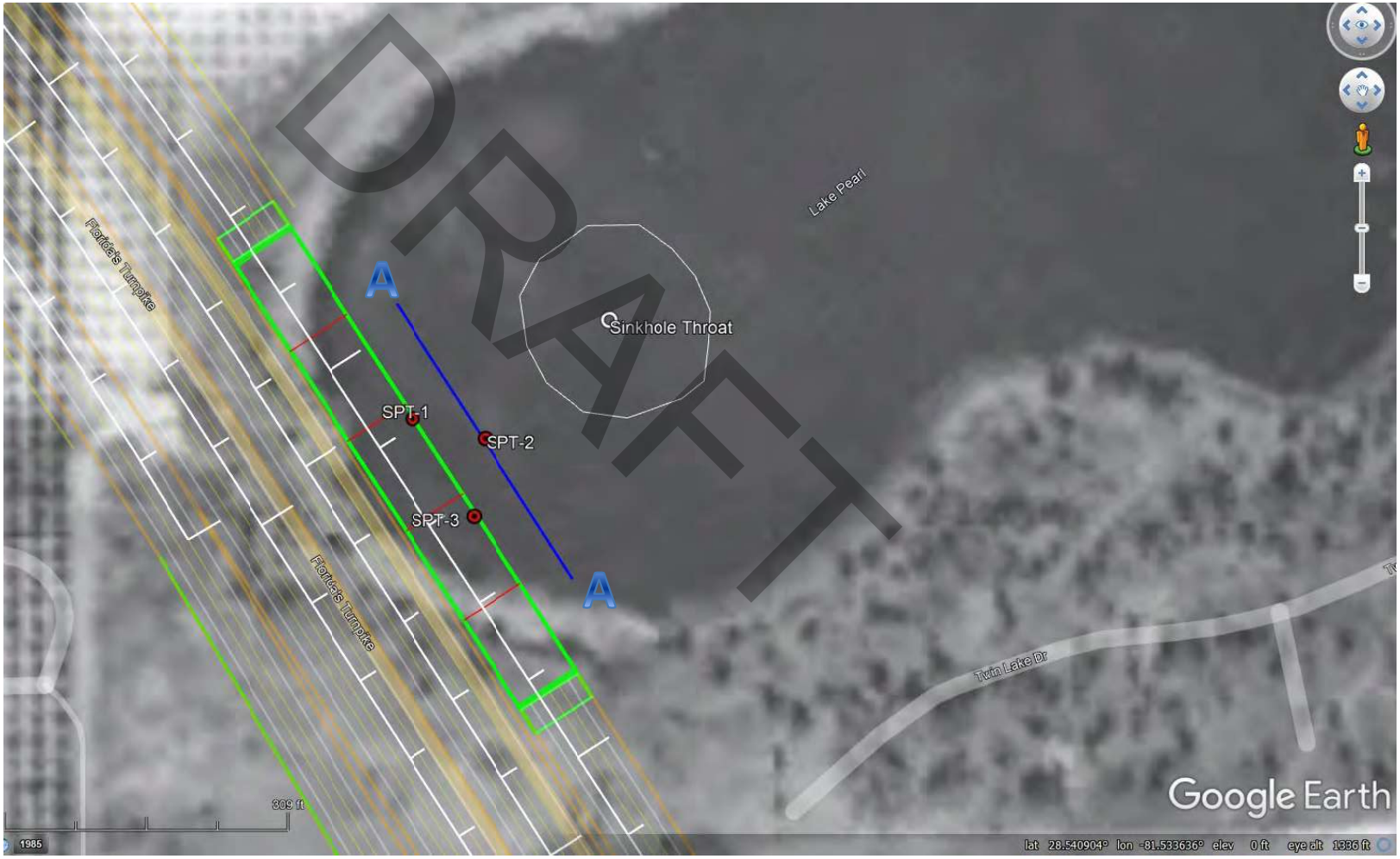
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
1

Aerial Date:
1947

Description:

Relic Sinkhole 1, Lake Pearl, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

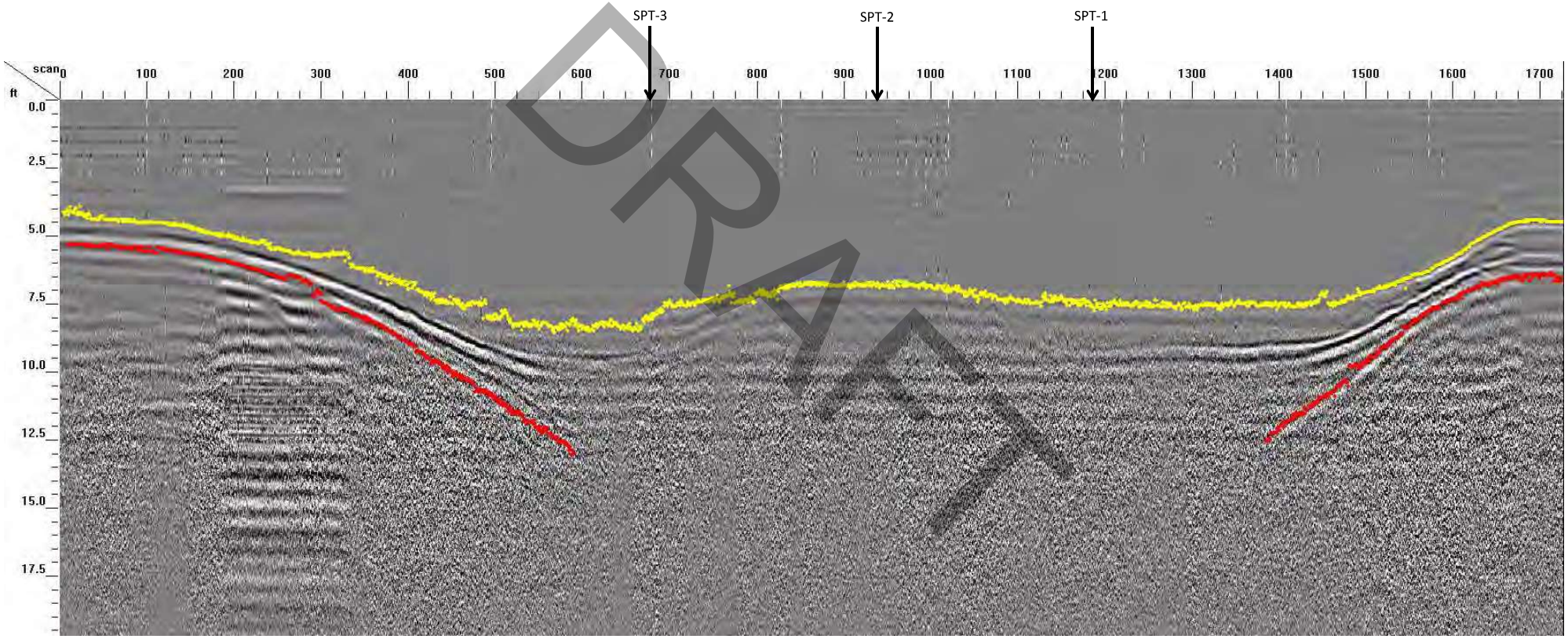


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar 2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date:	Relic Sinkhole No.:	GPR Cross Section ID:	Scan Direction:	Horizontal Scale:	Vertical Scale:	Legend:
8/5/2020	1	A-A	SE to NW	25 Scans	0.5 ft	=Sediment Surface =Pond Bottom



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

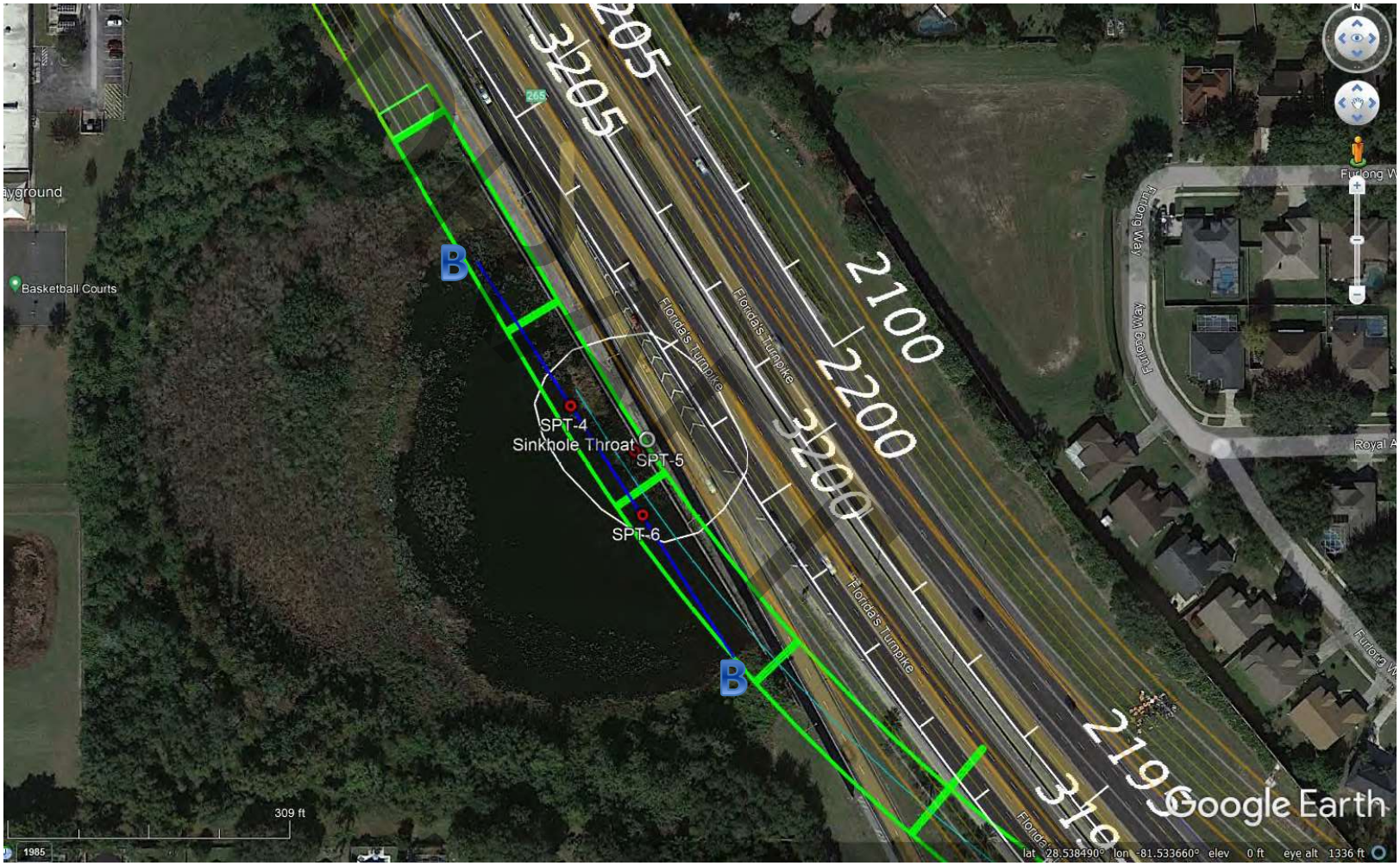
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
2

Aerial Date:
2021

Description:

Relic Sinkhole 2, Lake Bonnet, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

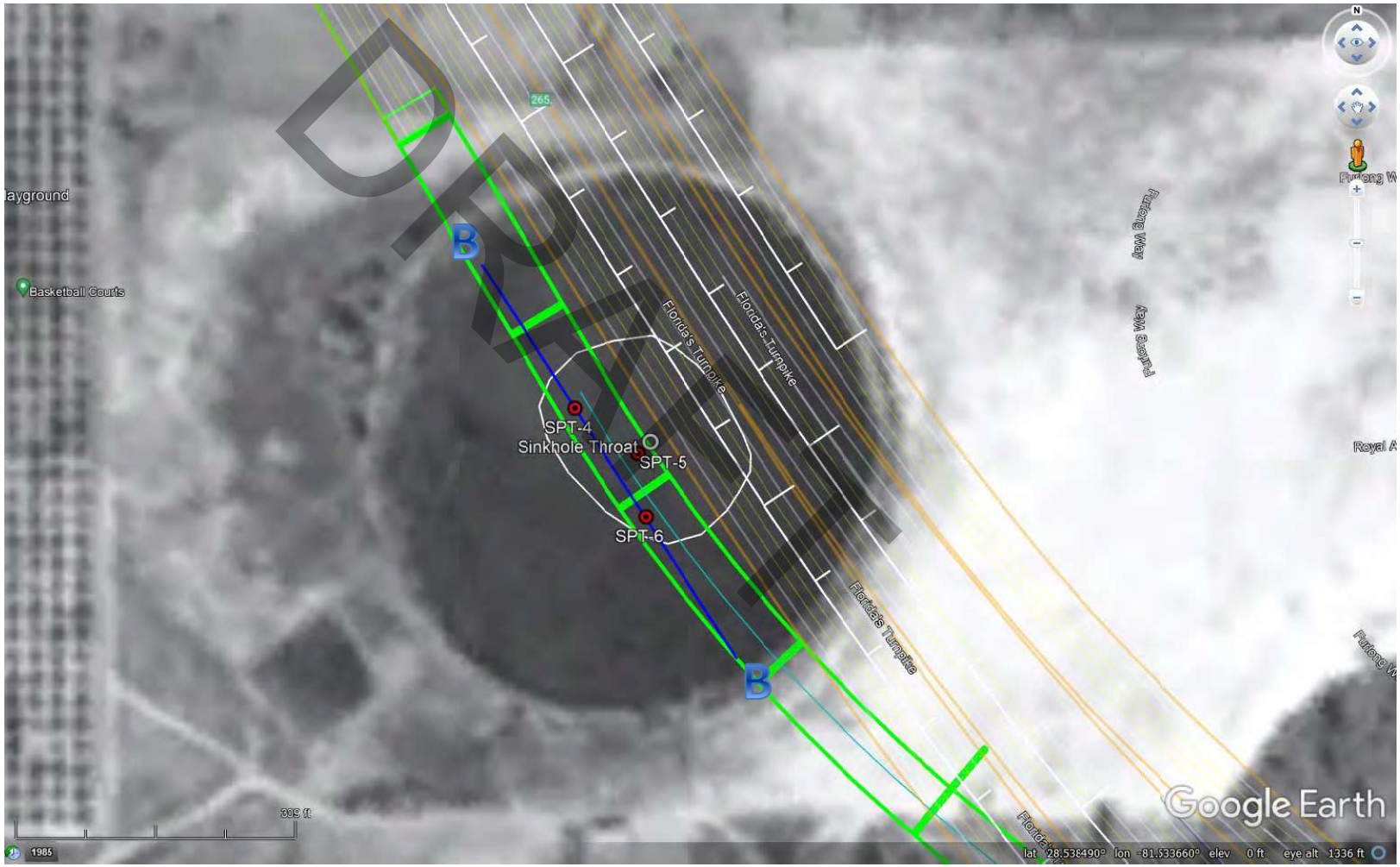
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
2

Aerial Date:
1947

Description:

Relic Sinkhole 2, Lake Bonnet, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

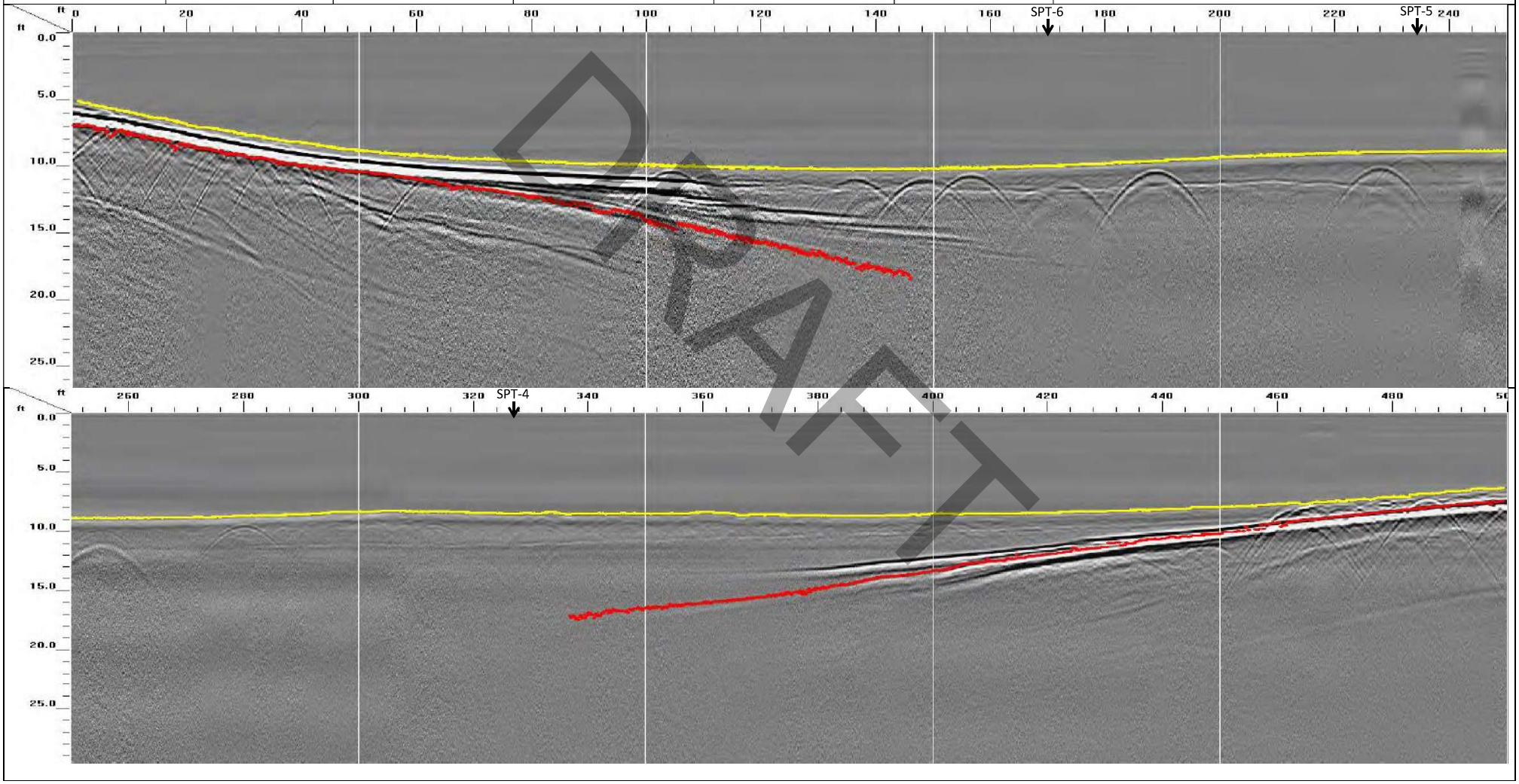


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar
2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date:	Relic Sinkhole No.:	GPR Cross Section ID:	Scan Direction:	Horizontal Scale:	Vertical Scale:	Legend:
8/5/2020	2	B-B	SE to NW	4 ft	1 ft	=Sediment Surface =Pond Bottom



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

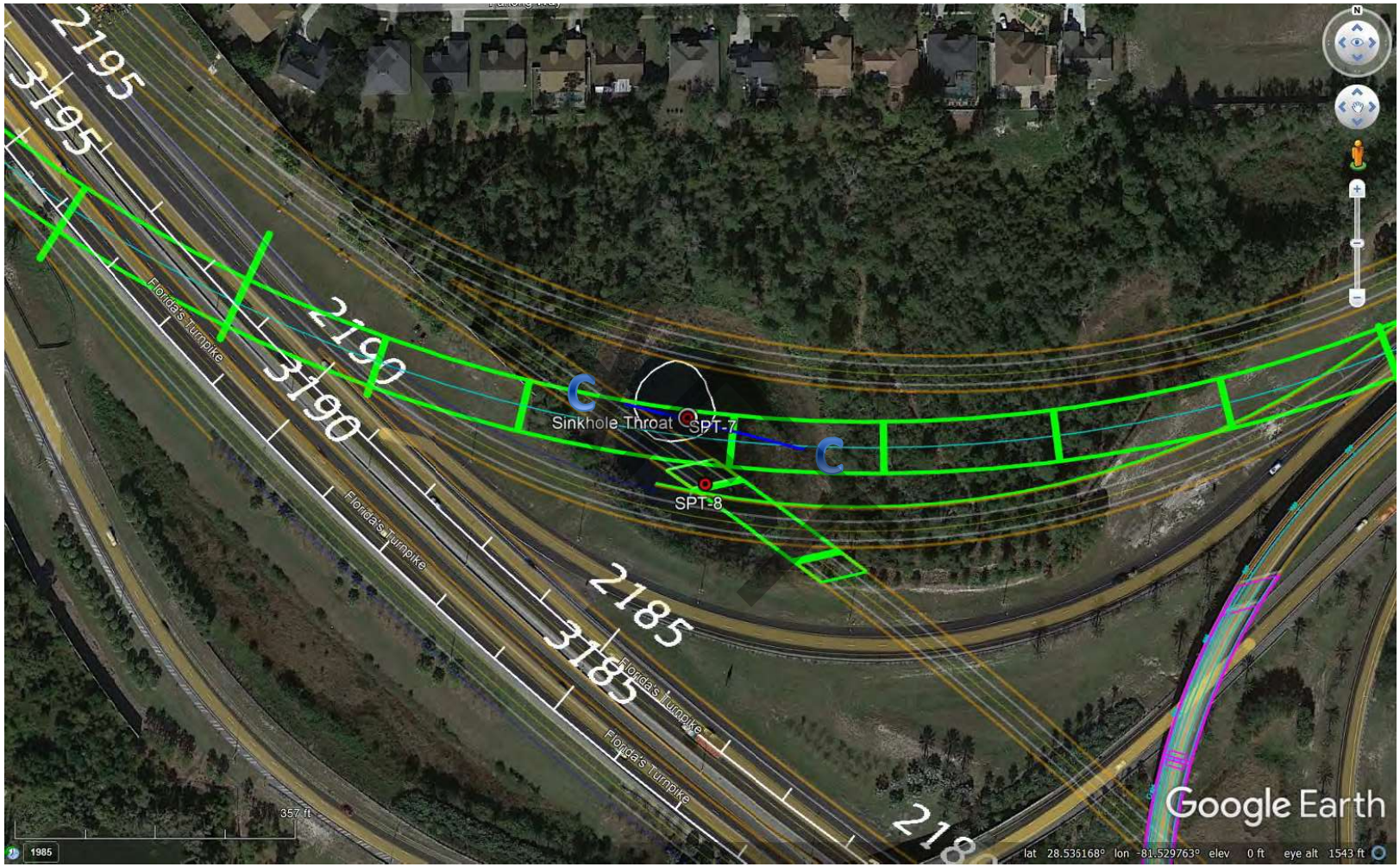
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
3

Aerial Date:
2021

Description:

Relic Sinkhole 3 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

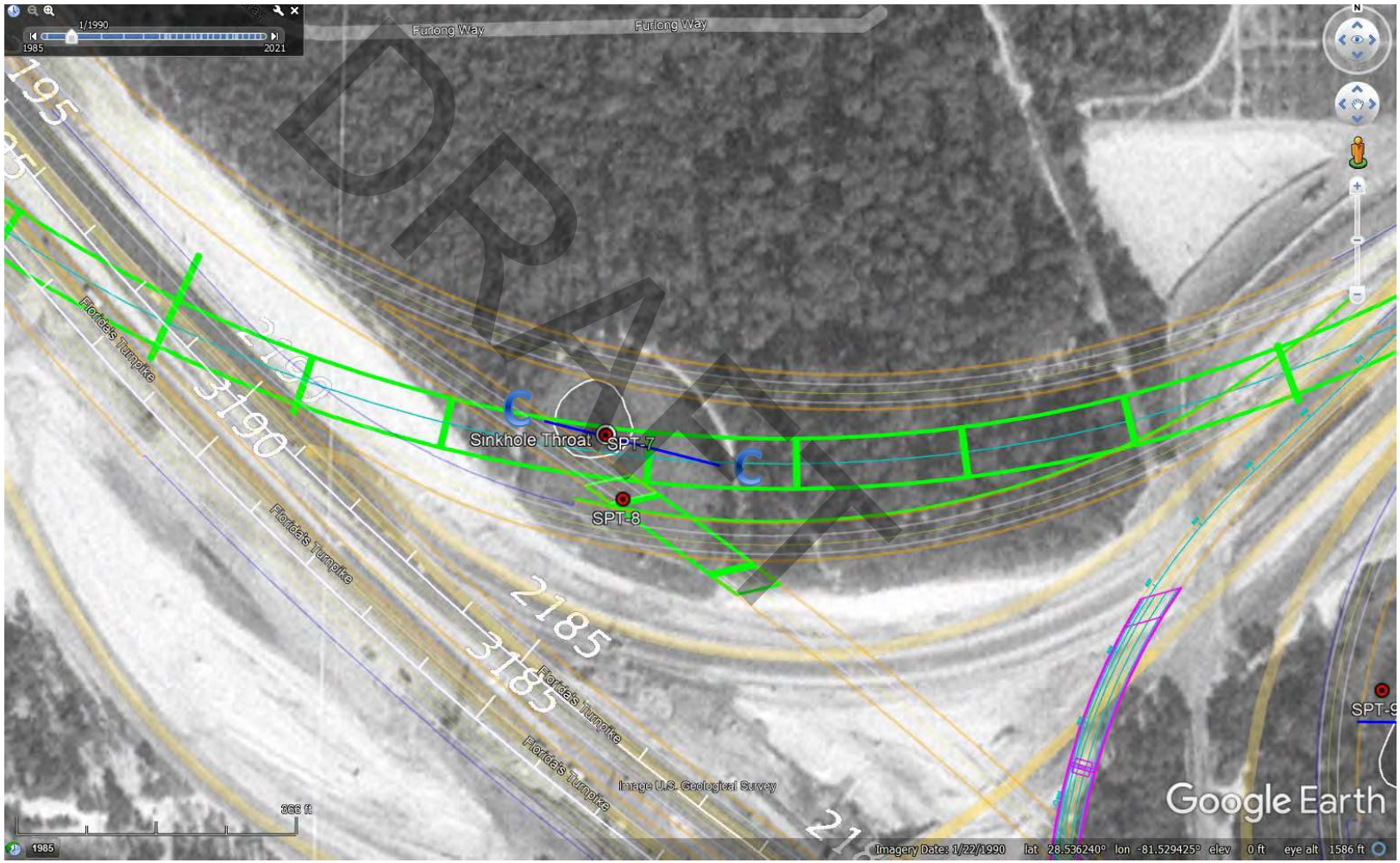
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
3

Aerial Date:
1990

Description:

Relic Sinkhole 3 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

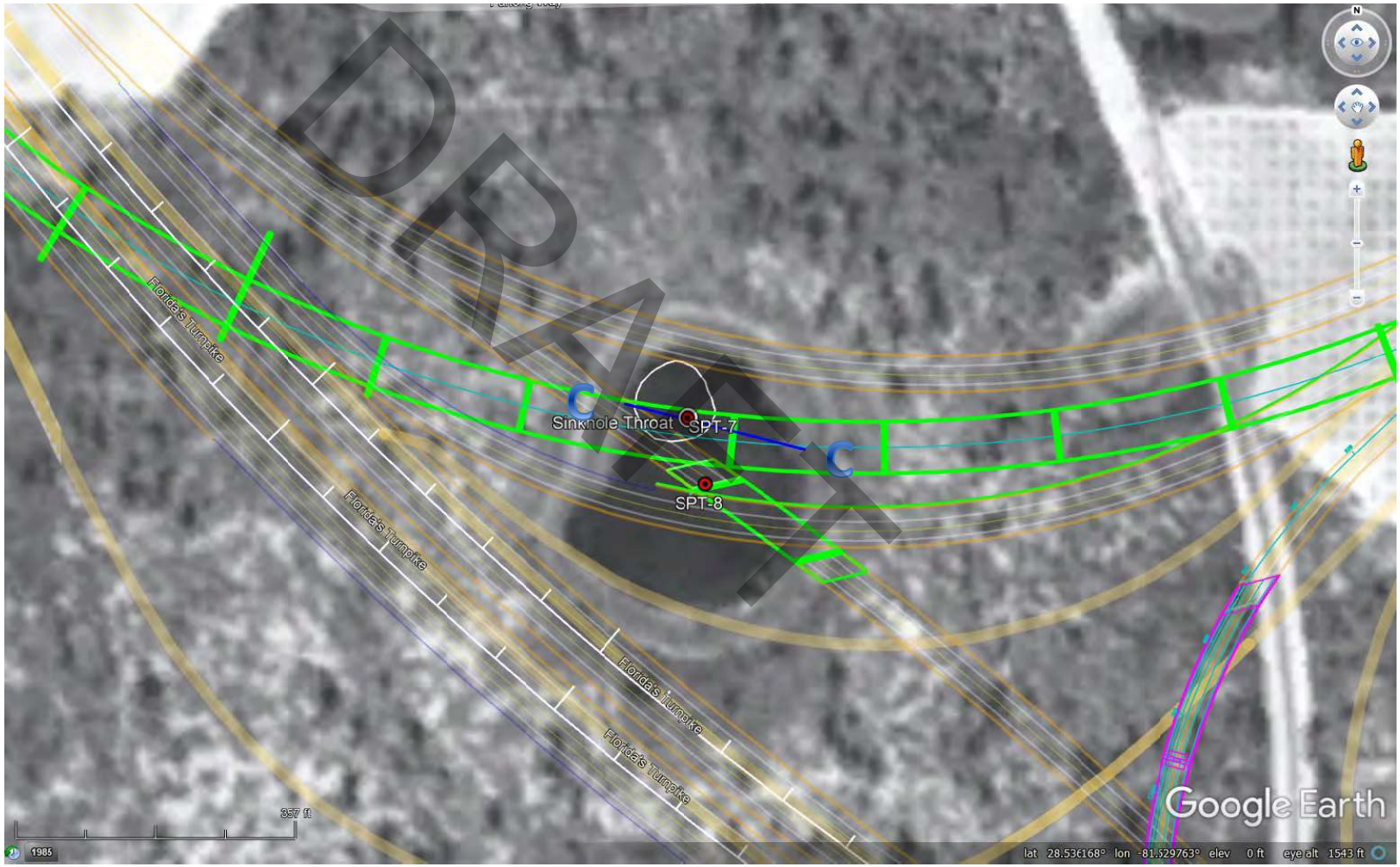
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
3

Aerial Date:
1947

Description:

Relic Sinkhole 3 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

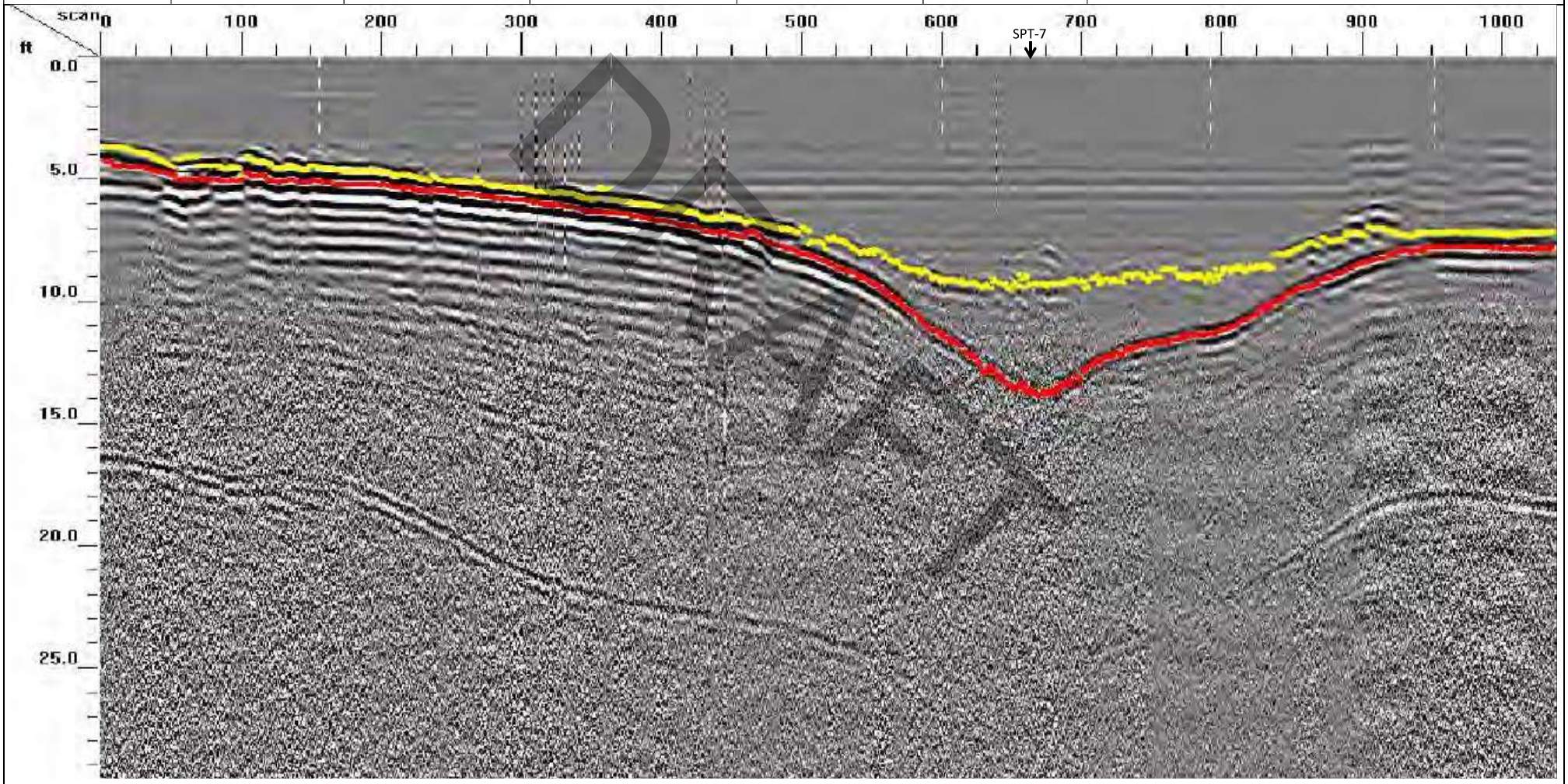


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar 2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date:	Relic Sinkhole No.:	GPR Cross Section ID:	Scan Direction:	Horizontal Scale:	Vertical Scale:	Legend:
8/5/2020	3	C-C	E to W	25 Scans	1 ft	=Sediment Surface =Pond Bottom



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

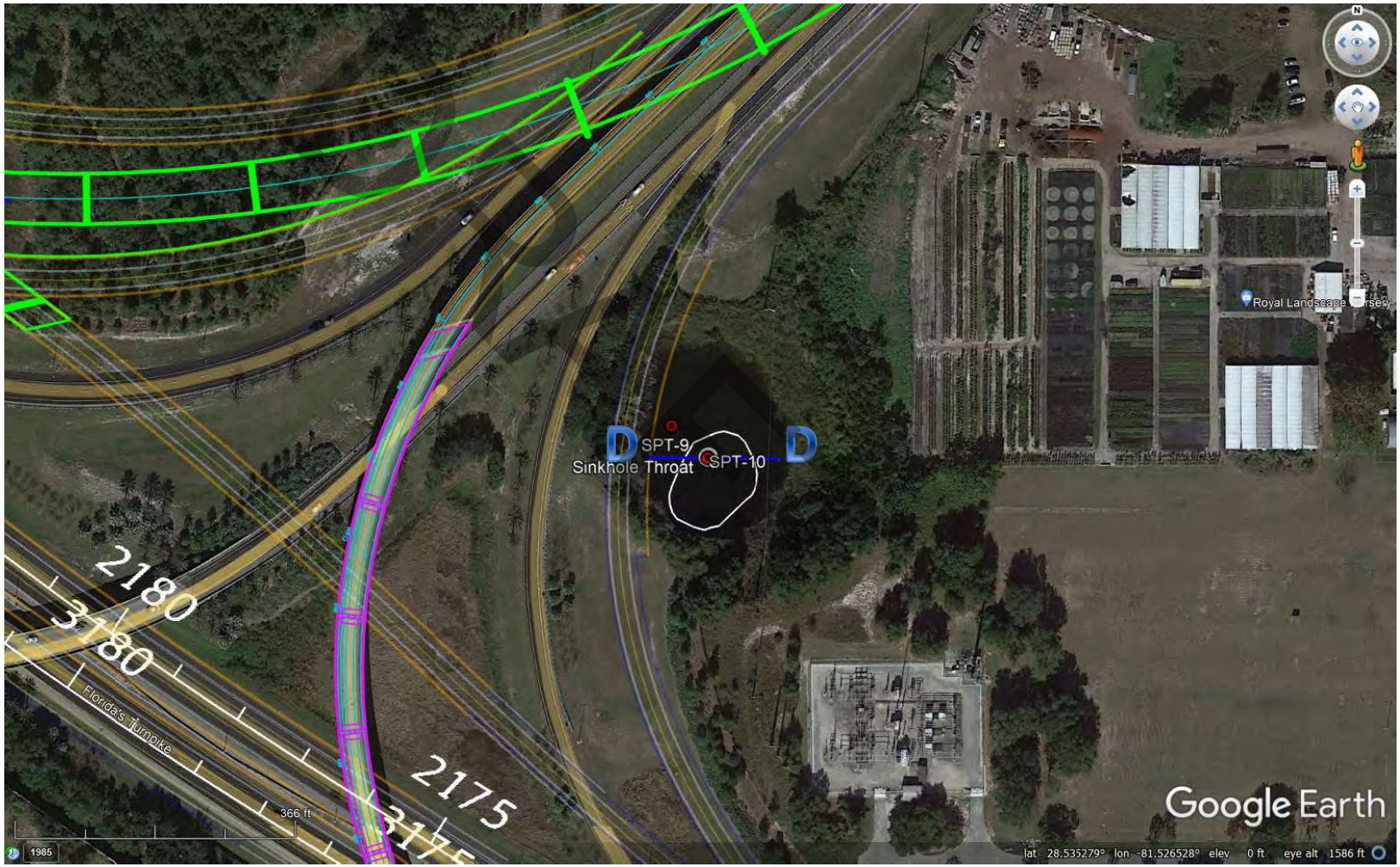
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
4

Aerial Date:
2021

Description:

Relic Sinkhole 4 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

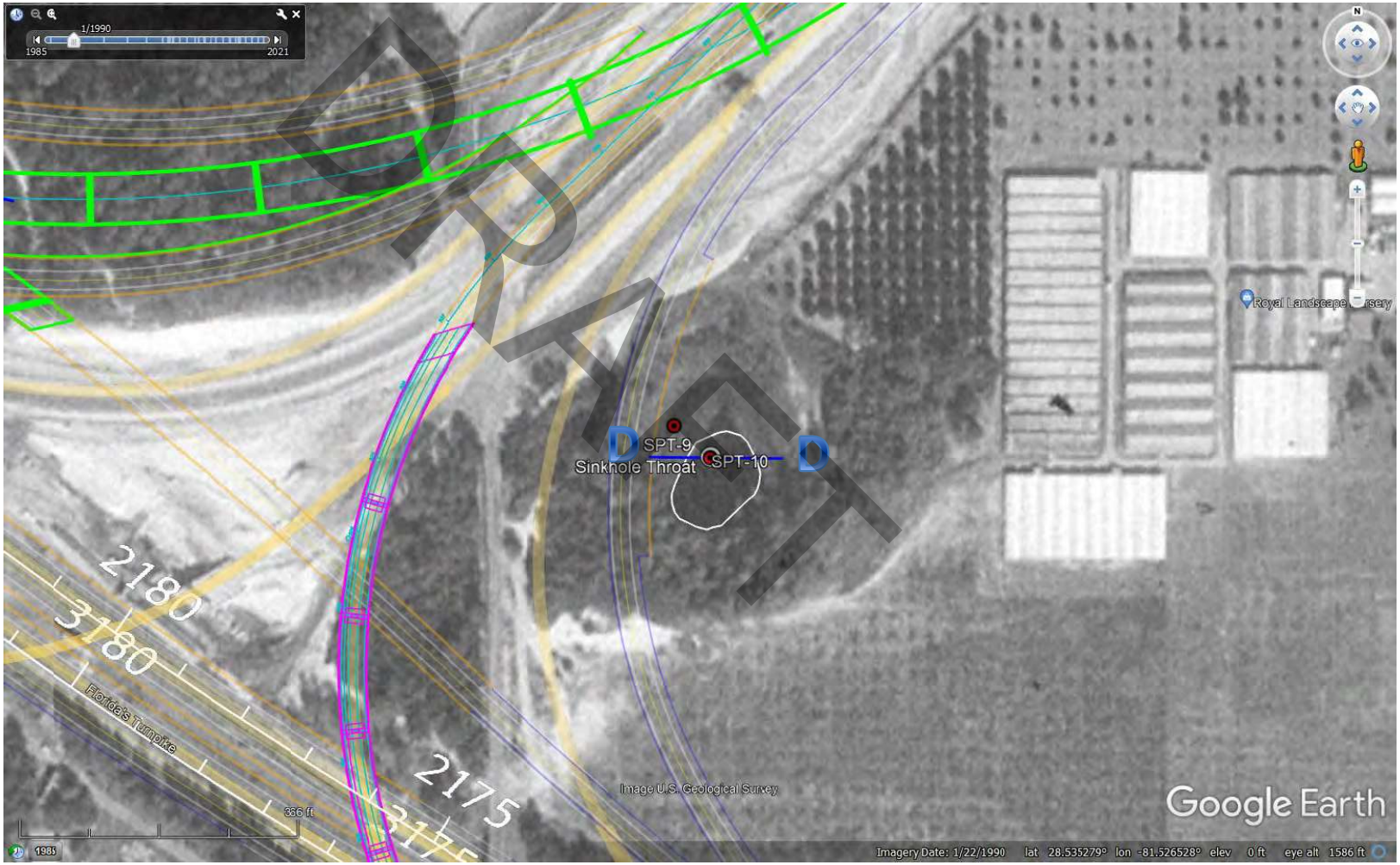
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
4

Aerial Date:
1990

Description:

Relic Sinkhole 4 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

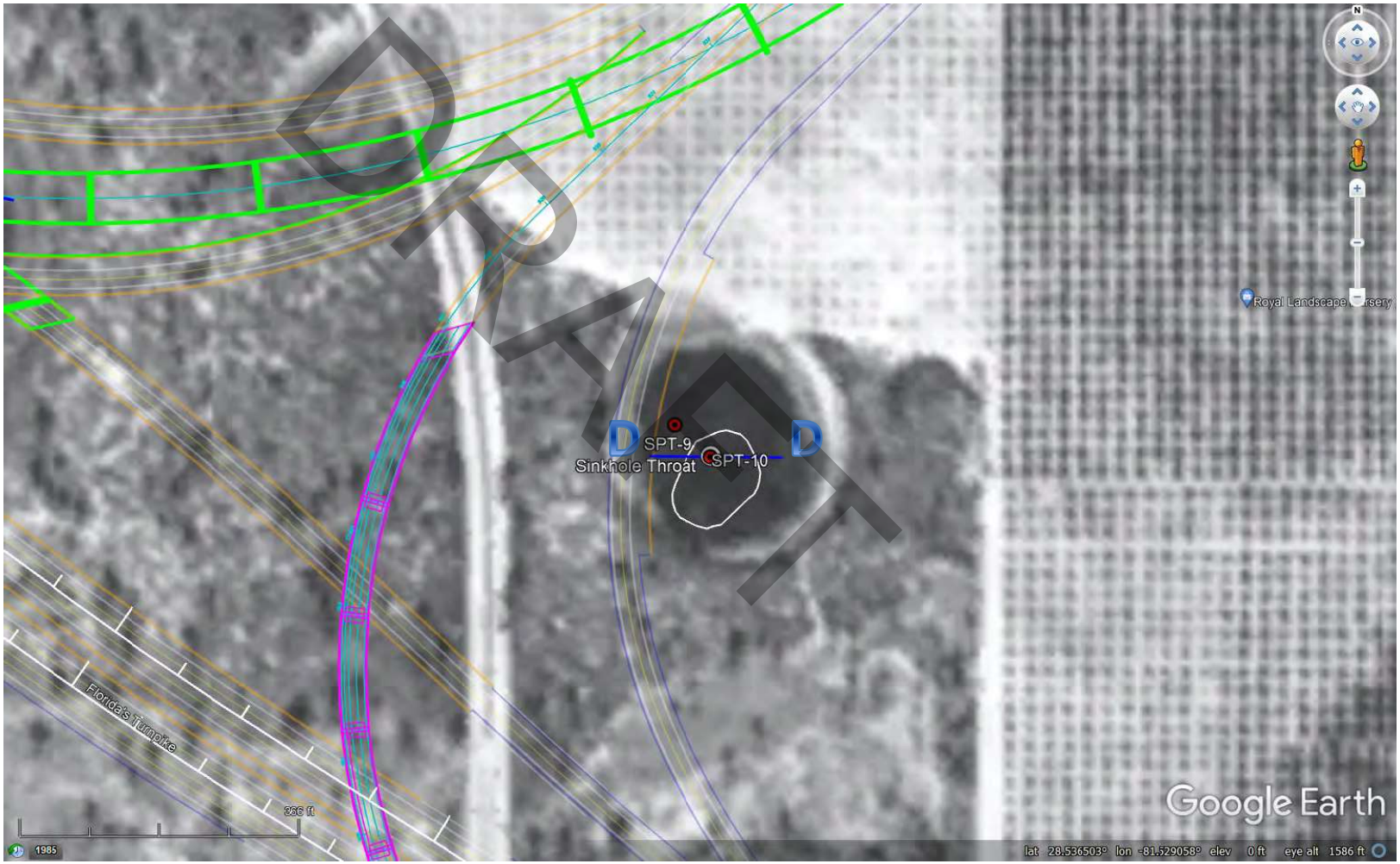
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
4

Aerial Date:
1947

Description:

Relic Sinkhole 4 showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

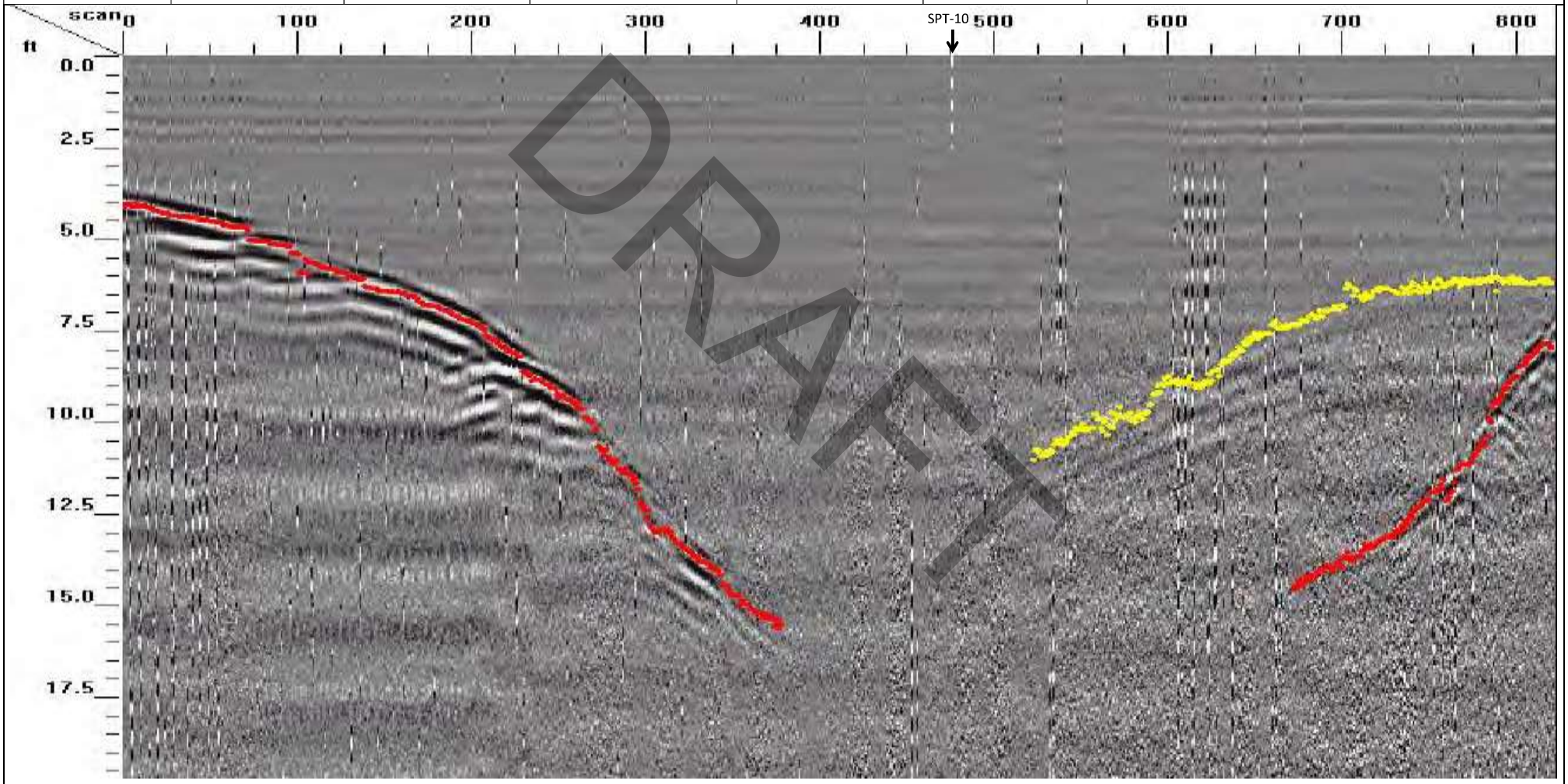


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar 2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date:	Relic Sinkhole No.:	GPR Cross Section ID:	Scan Direction:	Horizontal Scale:	Vertical Scale:	Legend:
8/5/2020	4	D-D	W to E	25 Scans	ft	=Sediment Surface =Pond Bottom



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

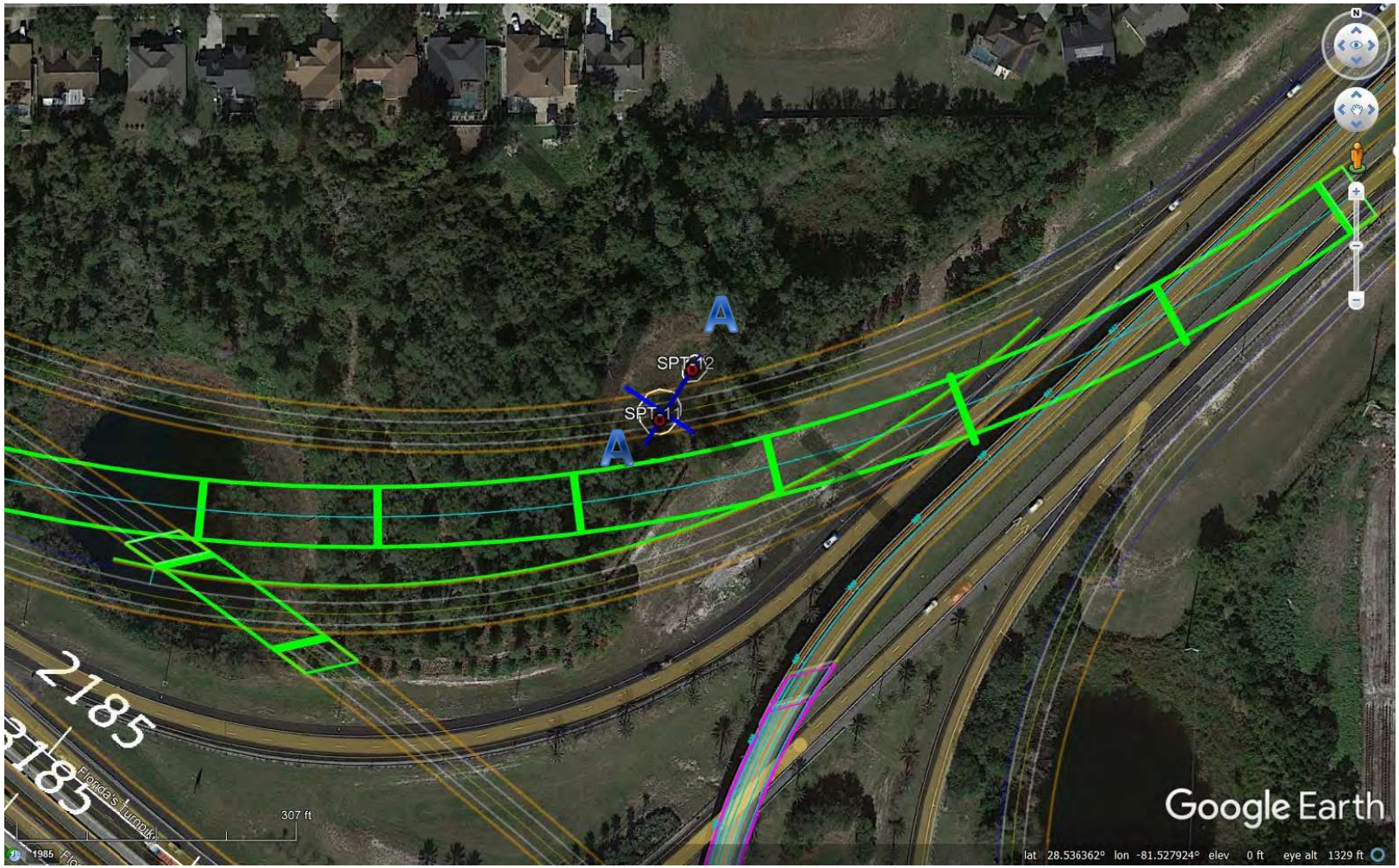
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
5

Aerial Date:
2021

Description:

Relic Sinkhole 5, showing the approximate location of the sinkhole throats, GPR cross section location and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

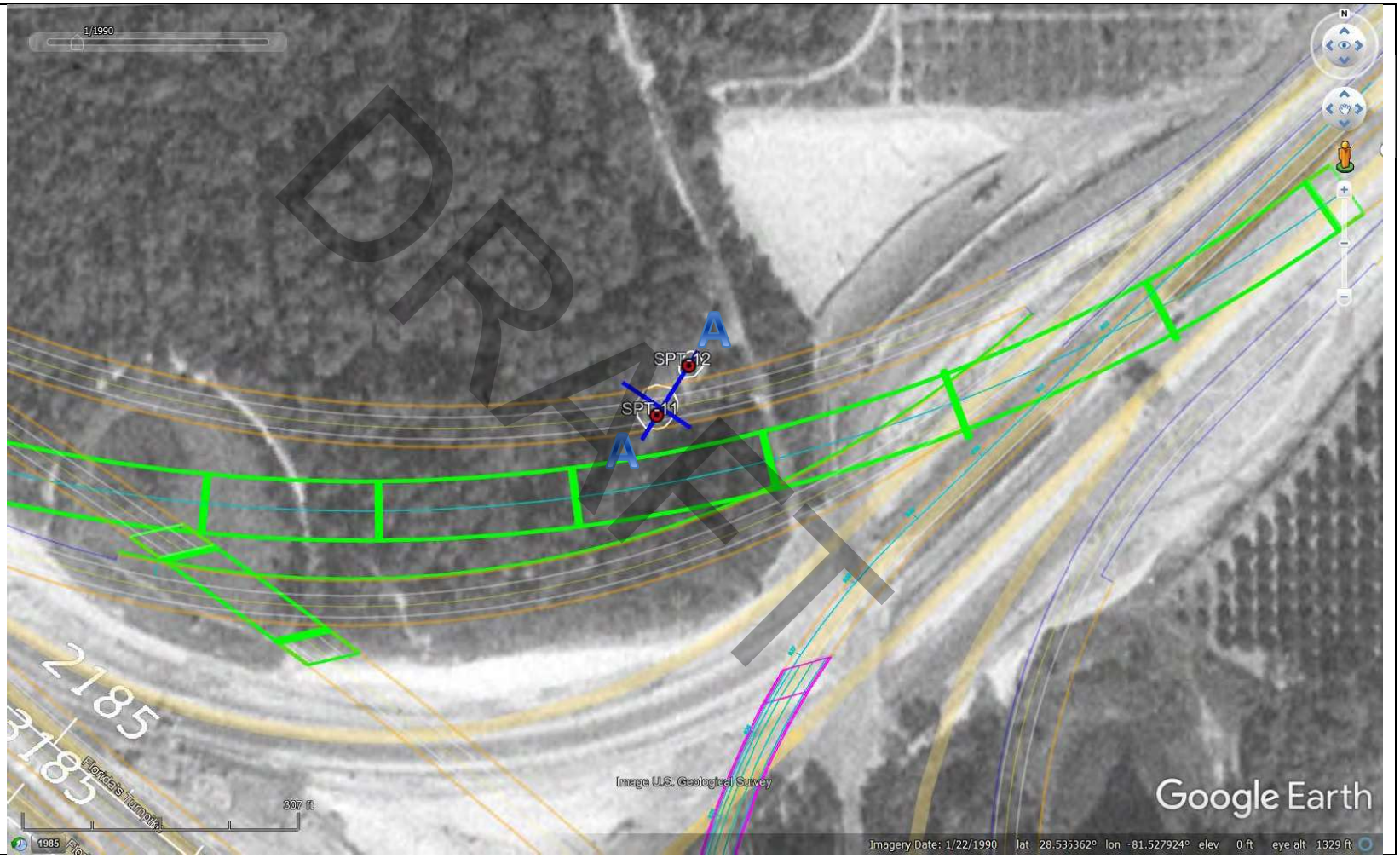
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
5

Aerial Date:
1990

Description:

Relic Sinkhole 5, showing the approximate location of the sinkhole throats, GPR cross section location and proposed boring locations.

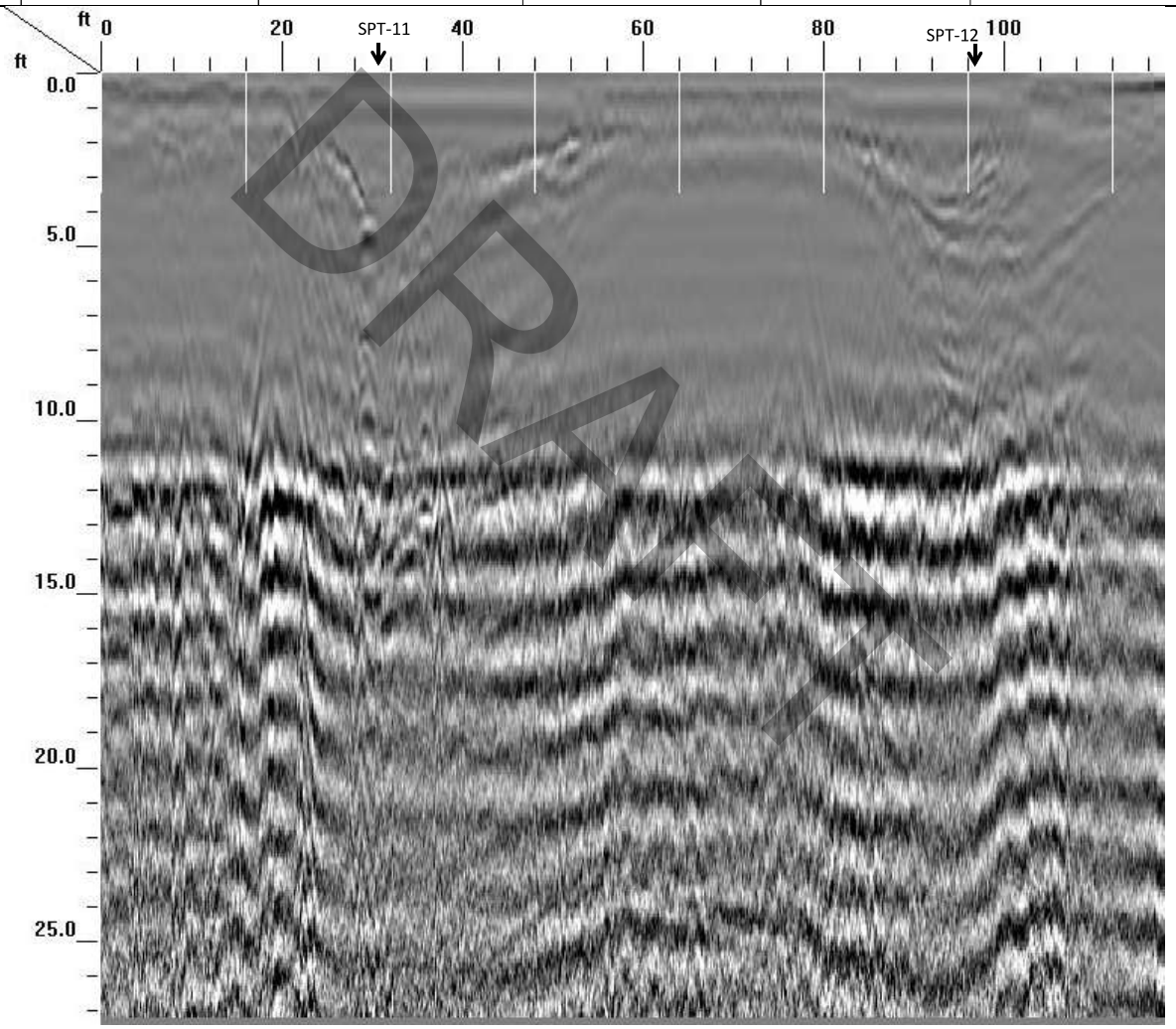


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar
2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date: 8/18/2021	Relic Sinkhole No.: 5	GPR Cross Section ID: A-A	Scan Direction: SE to NW	Horizontal Scale: 25 Scans	Vertical Scale: 0.5 ft	Legend:



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

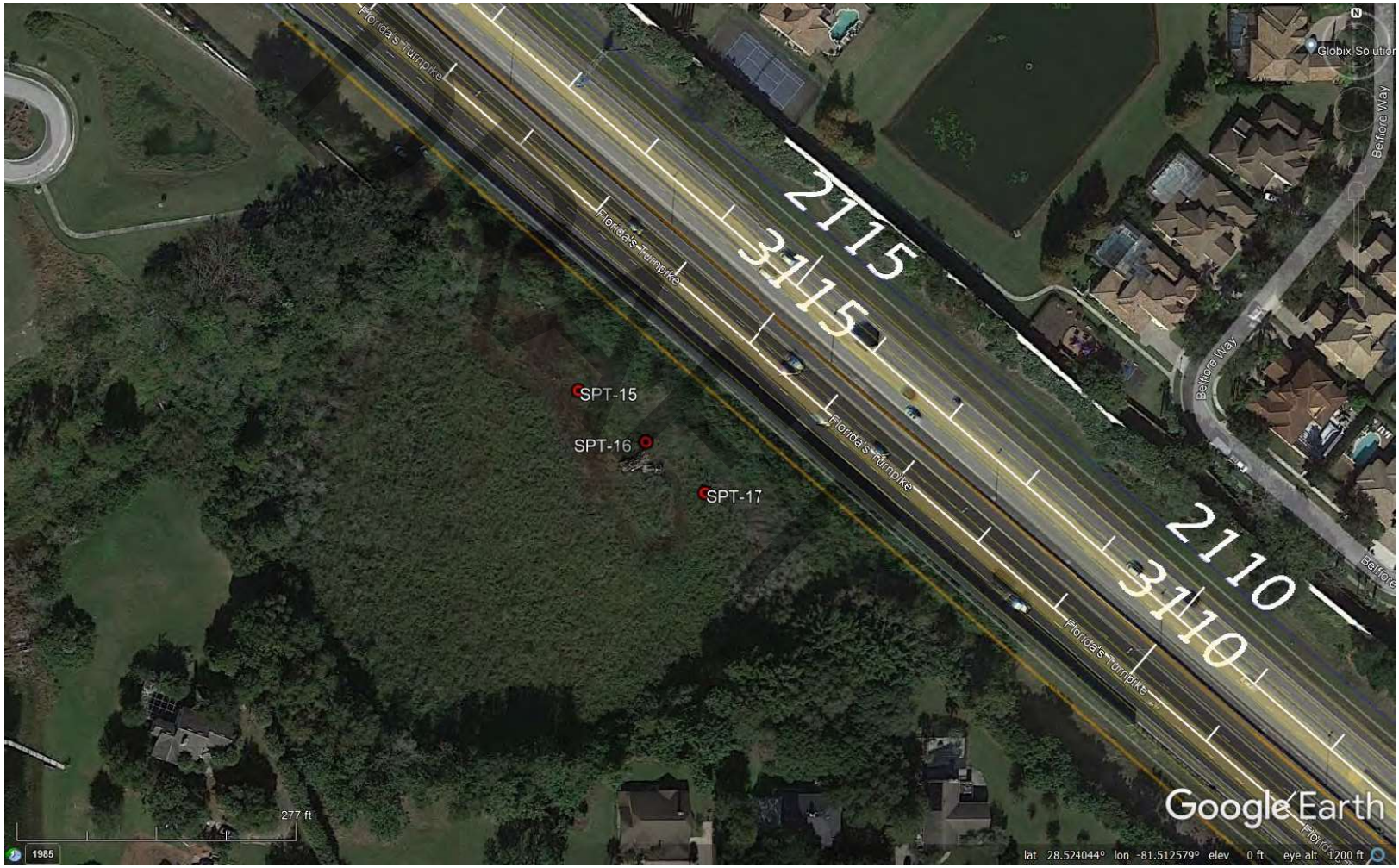
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
6

Aerial Date:
2021

Description:

Relic Sinkhole 6, showing the approximate location of the sinkhole and proposed boring locations.



Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
6

Aerial Date:
1990

Description:

Relic Sinkhole 6, showing the approximate location of the sinkhole and proposed boring locations.

Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
7

Aerial Date:
2021

Description:

Relic Sinkhole 7, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

Geotechnical and Environmental Consultants, Inc.

SPT Boring Location Plan Aerials

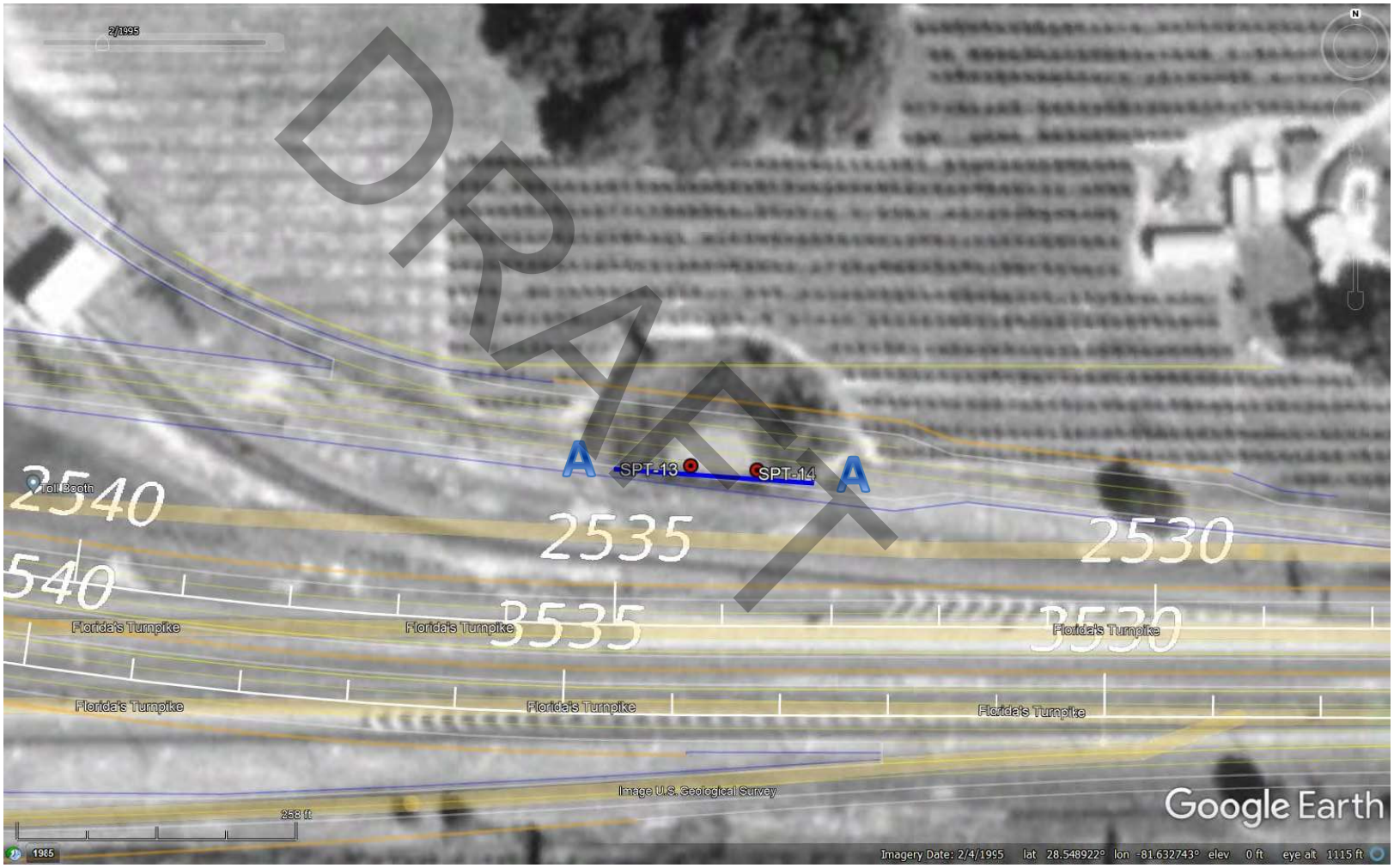
Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Relic Sinkhole No.:
7

Aerial Date:
1995

Description:

Relic Sinkhole 7, showing the approximate location of the sinkhole throat, GPR cross section location and proposed boring locations.

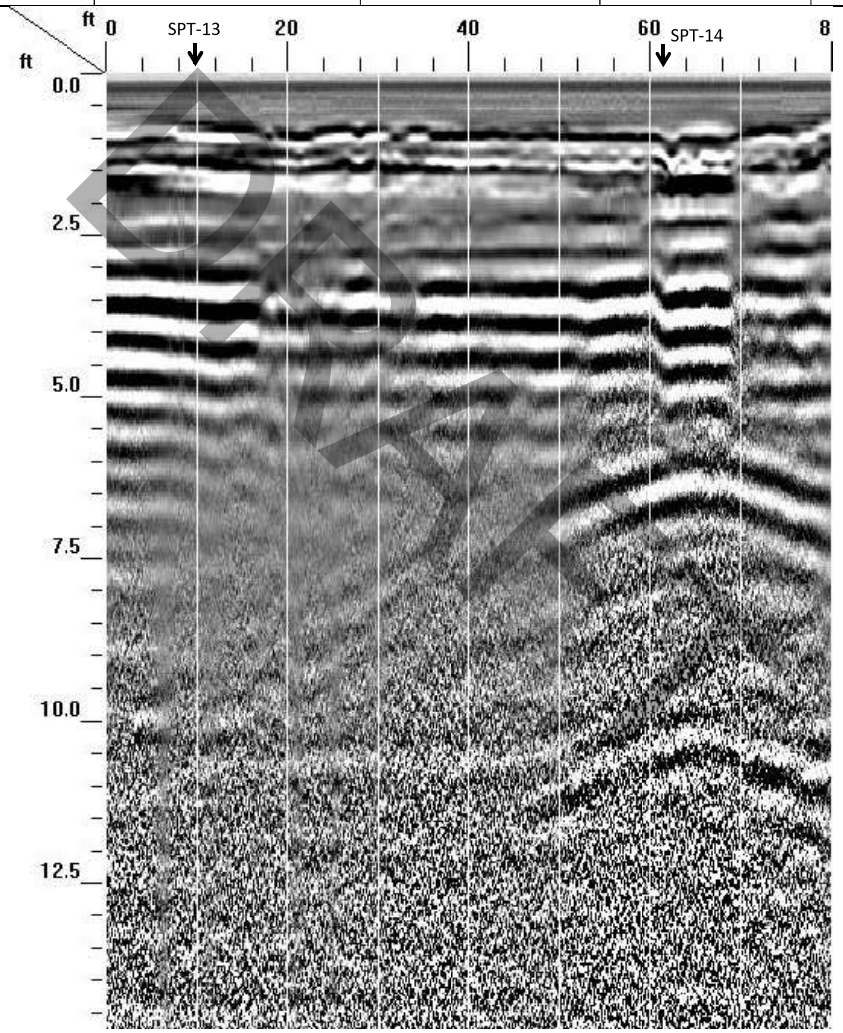


Geotechnical and Environmental Consultants, Inc.

Ground Penetrating Radar
2-D Linescans

Client Name:	Project Name:	Project Location:	GEC Project No.:
RS&H	FTE PD&E From SR 408 to SR 50	Orange County, Florida	J4471G

Date:	Relic Sinkhole No.:	GPR Cross Section ID:	Scan Direction:	Horizontal Scale:	Vertical Scale:	Legend:
8/18/2021	7	A-A	W to E	25 Scans	0.5 ft	



CONSOLIDATION TEST REPORTS

Project Name:	FTE PD&E			**Date:**	11-17-20	
Project No.:	4471G			**Tech:**	TJR	
Boring: (Station, Offset)						
Reference:	SPT-2					
Depth:	50'-52'					
Description:(D2488)	DRK BRN MUCK					
Classification:(D2487)	(PT)					
Moisture Content (%):(T265)	413.8					
Organic Content (%):(T267)	89.1					
Plasticity						
Liquid Limit (%):(T88)						
Plasticity Index (%):(T90)						
Graduation:(T88)	**Cumulative % Passing By Weight**					
1"						
3/8"						
#4						
#10						
#20						
#40						
#60						
#100						
(T88 Wash Only) #200	96.5					
Corrosion						
pH:(FM5-550)						
Sulfates(ppm):(FM5-553)						
Chlorides(ppm):(FM5-552)						
Resistivity(ohm-cm):(FM5-551)						

UNIT WEIGHT

Project Name:	FTE PD&E
Project Number:	4471G
Date:	11-17-20

Boring Number:	SPT-2
Depth:	50'-52'

Section Depth:	6"-12"			
	1	2	3	Avg.
Length (in.)	5.64	5.60	5.45	5.56
Diameter (in.)	2.87	2.83	2.83	2.84
Area of Sample (sq. inches)				6.34
Volume of Sample (cu. Inches)				35.26
Volume of Sample (cu. feet)				0.02
Wet Weight of Sample (lbs)				1.36
Wet Density (pcf)				66.73
Moisture Content (%)				413.8
Dry Density (pcf)				12.99

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

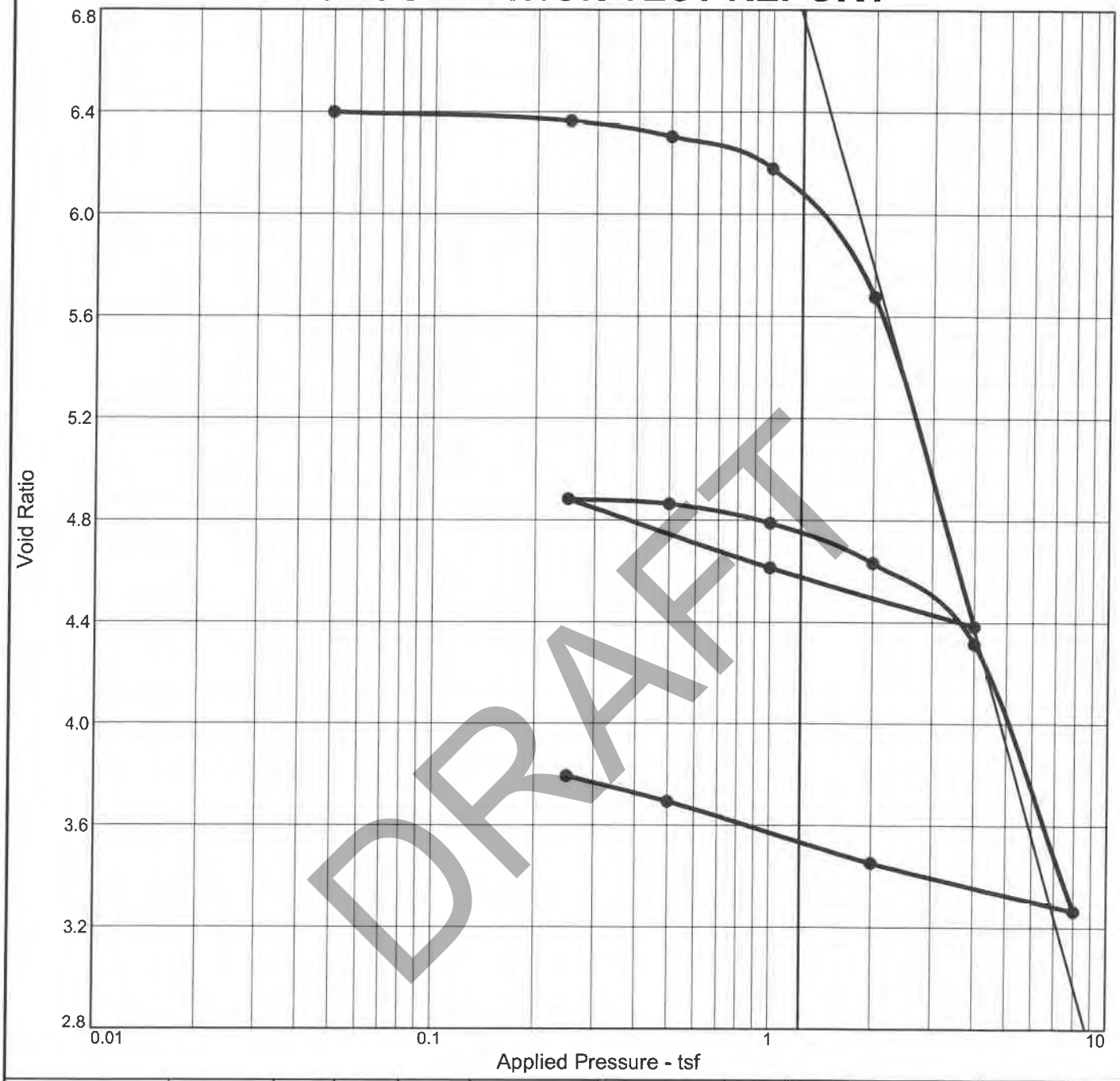
Unit Weight ASTM D7263 Method B, Intact Specimen

Moisture Content ASTM D2216

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

GEC Geotechnical and Environmental Consultants, Inc.

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
99.7 %	413.8 %	13.0			1.54	0.25	1.8	4.66	0.47			6.395

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Brown Muck	PT	

Project No. 4471G **Client:**

Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 **Depth:** 50'-52'

Remarks:

Fines Content= 96.5%
Organic Content= 89.1%

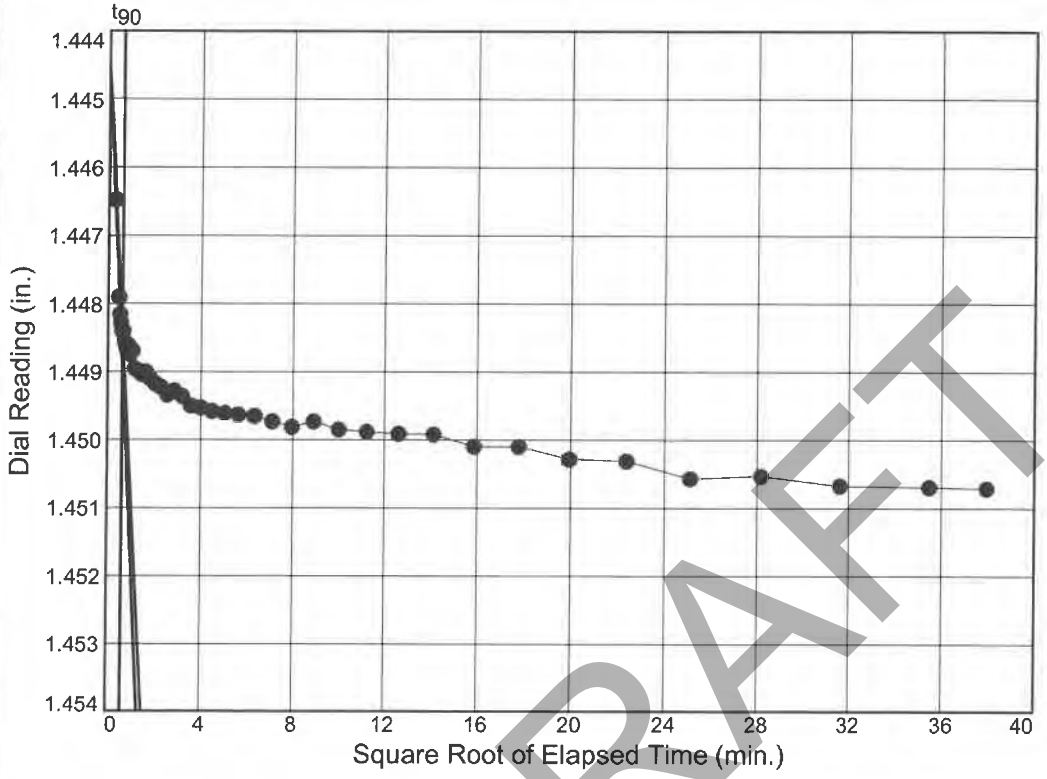
Geotechnical and Environmental Consultants, Inc.

Figure

Dial Reading vs. Time

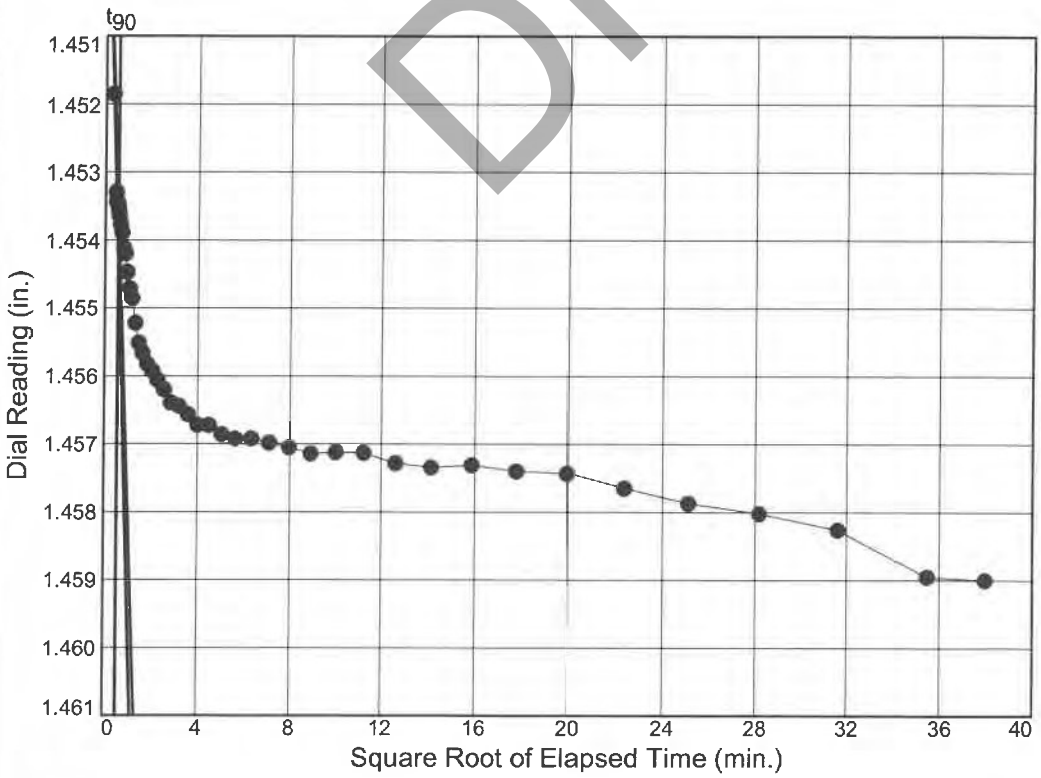
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 2
Load= 0.25 tsf
D_0 = 1.4446
D_{90} = 1.4484
D_{100} = 1.4488
T_{90} = 0.38 min.

C_v @ T_{90}
5.544 ft.^{2}/day



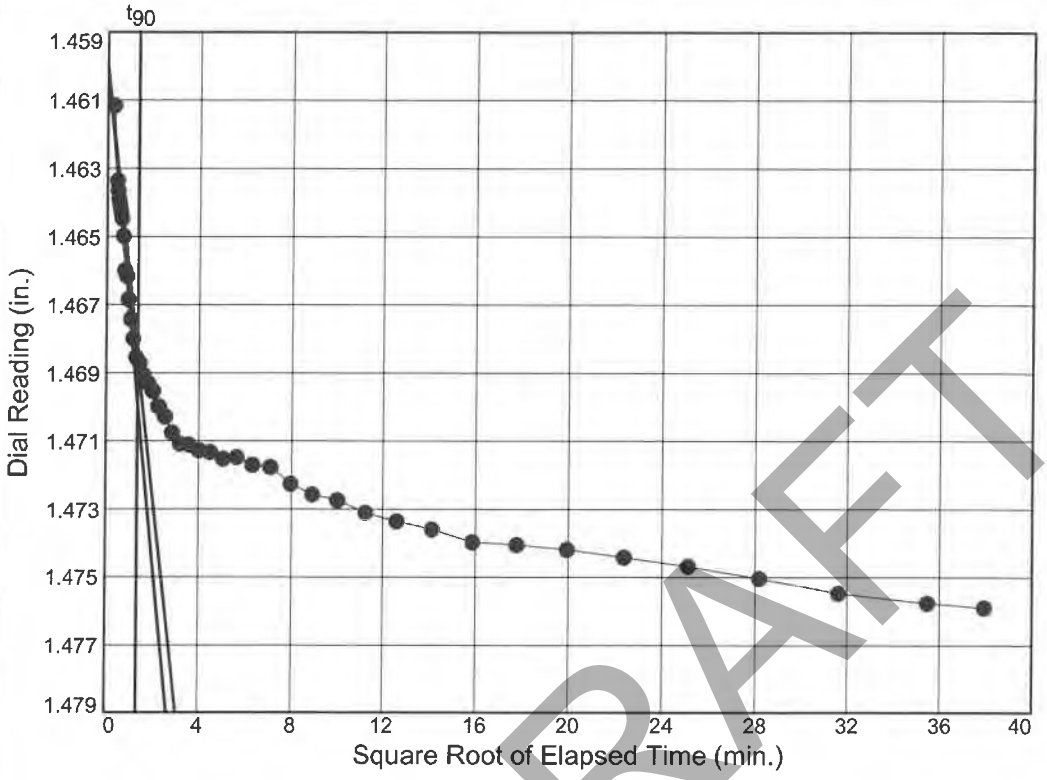
Load No.= 3
Load= 0.50 tsf
D_0 = 1.4485
D_{90} = 1.4535
D_{100} = 1.4541
T_{90} = 0.29 min.

C_v @ T_{90}
7.094 ft.^{2}/day

Dial Reading vs. Time

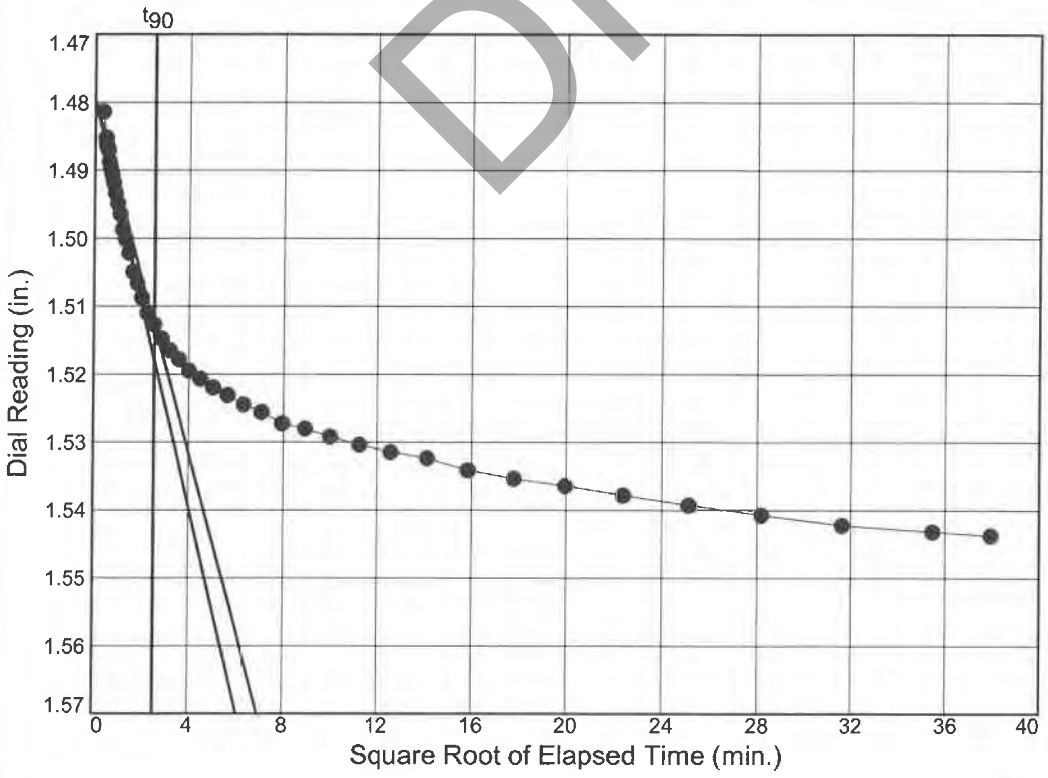
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 4
Load= 1.00 tsf
D_0 = 1.4600
D_{90} = 1.4686
D_{100} = 1.4696
T_{90} = 1.93 min.

C_v @ T_{90}
1.058 ft.^{2}/day



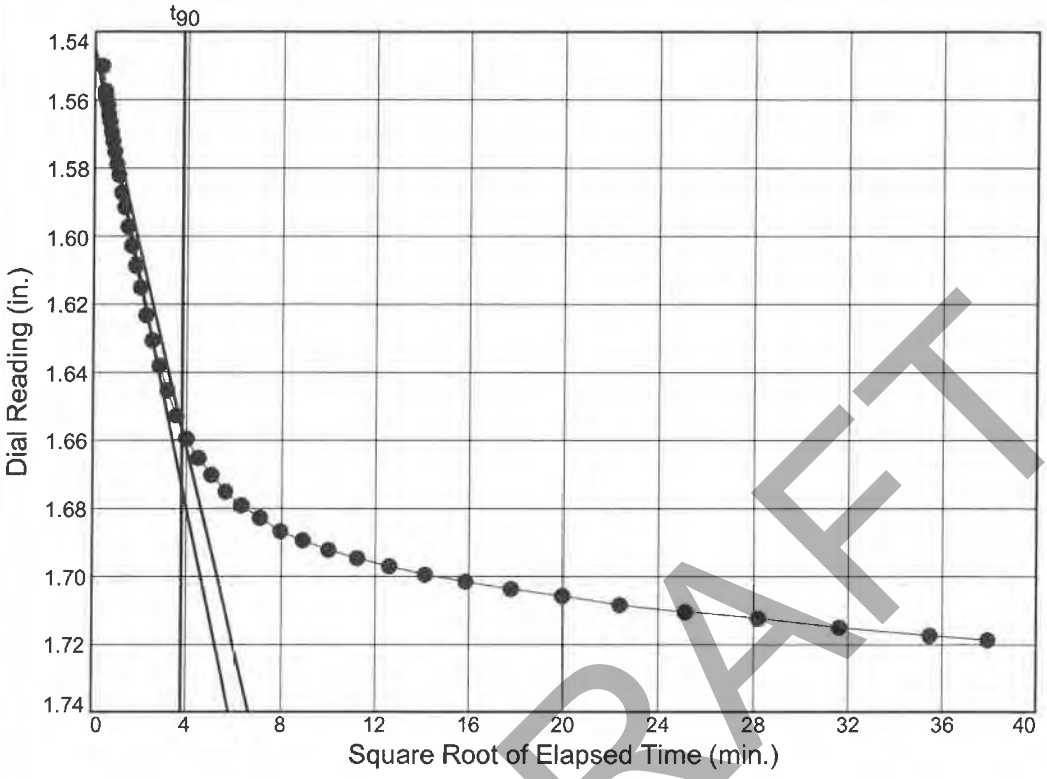
Load No.= 5
Load= 2.00 tsf
D_0 = 1.4796
D_{90} = 1.5128
D_{100} = 1.5165
T_{90} = 6.52 min.

C_v @ T_{90}
0.287 ft.^{2}/day

Dial Reading vs. Time

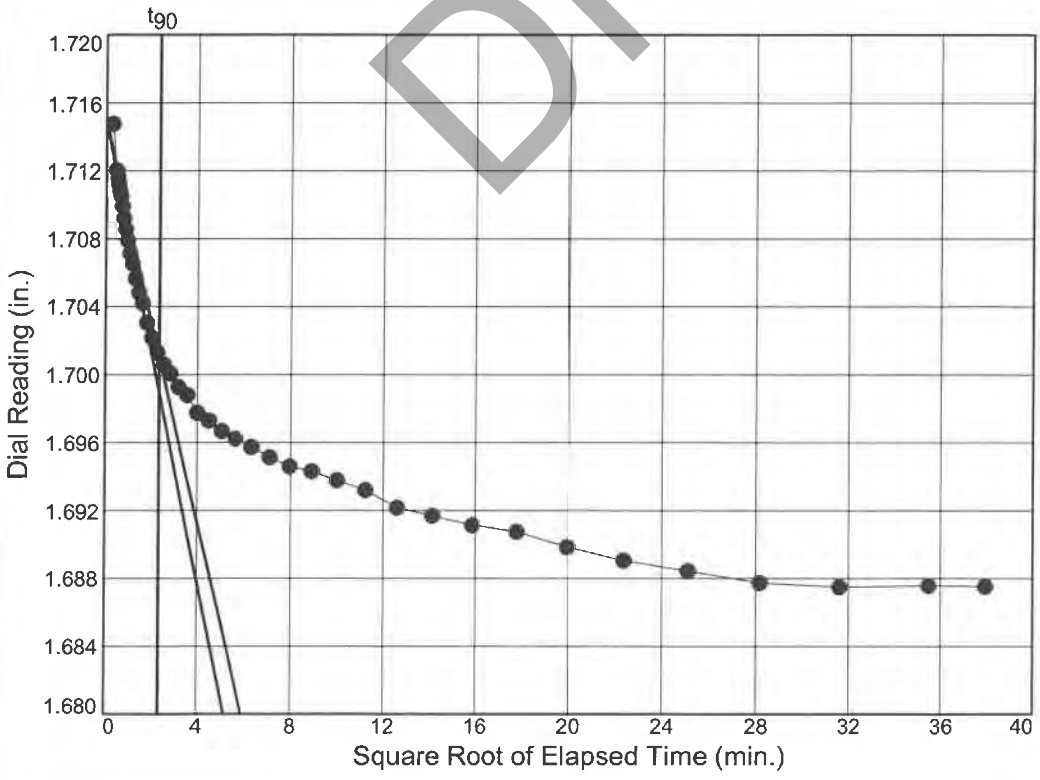
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 6
Load= 4.00 tsf
D_0 = 1.5451
D_{90} = 1.6567
D_{100} = 1.6691
T_{90} = 14.53 min.

C_v @ T_{90}
0.098 ft.2/day



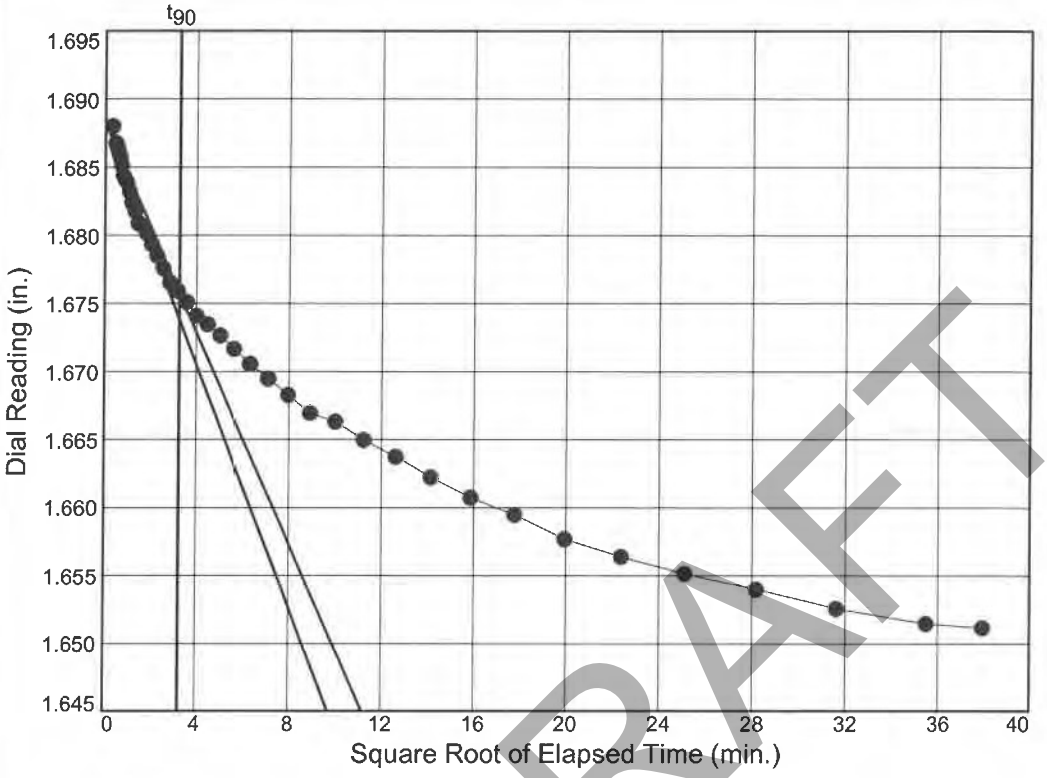
Load No.= 7
Load= 1.00 tsf
D_0 = 1.7149
D_{90} = 1.7011
D_{100} = 1.6996
T_{90} = 5.48 min.

C_v @ T_{90}
0.212 ft.2/day

Dial Reading vs. Time

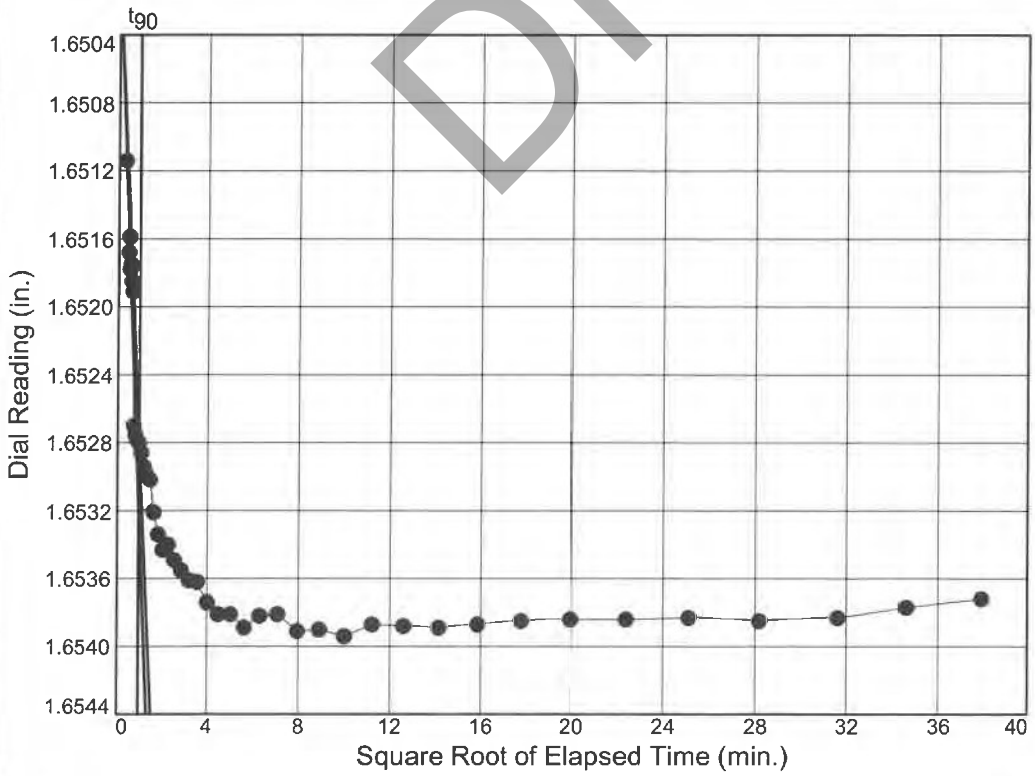
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 8
Load= 0.25 tsf
D_0 = 1.6884
D_{90} = 1.6758
D_{100} = 1.6744
T_{90} = 10.56 min.

C_v @ T_{90}
0.121 ft.^{2}/day



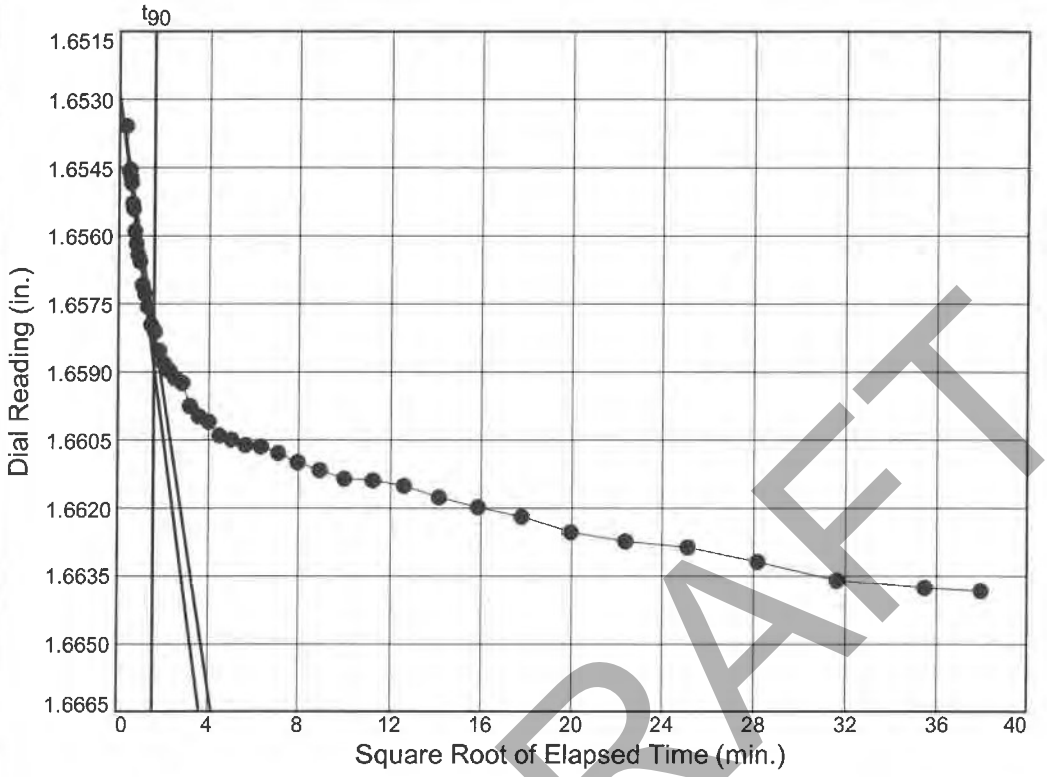
Load No.= 9
Load= 0.50 tsf
D_0 = 1.6501
D_{90} = 1.6528
D_{100} = 1.6531
T_{90} = 0.93 min.

C_v @ T_{90}
1.435 ft.^{2}/day

Dial Reading vs. Time

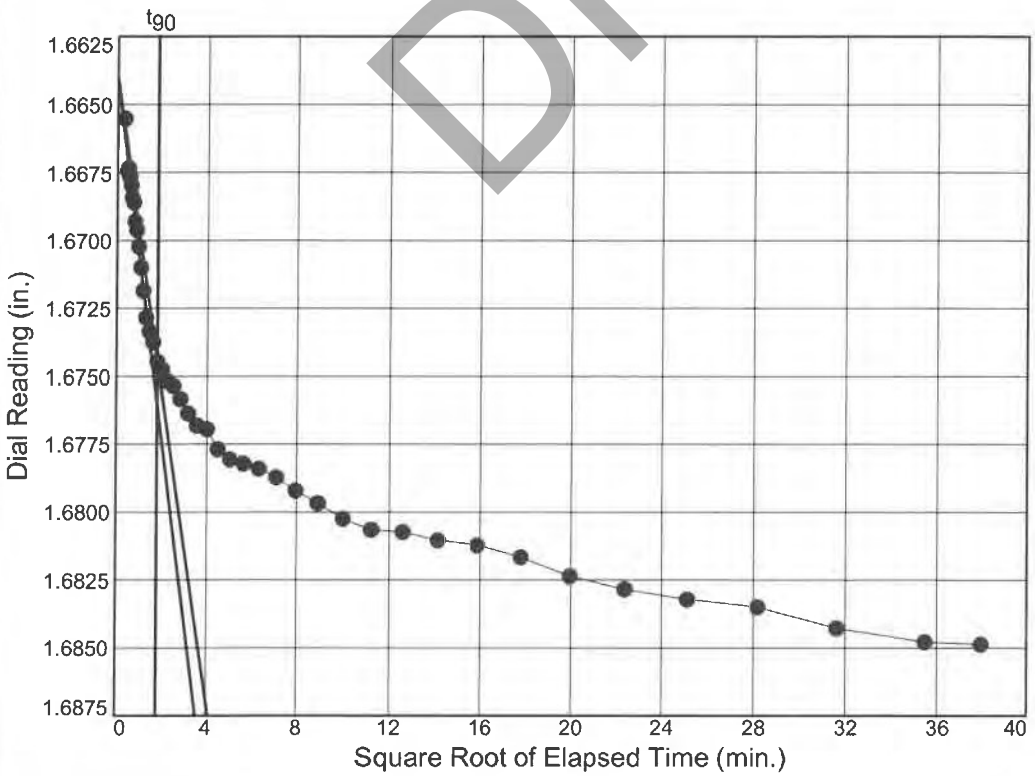
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 10
Load= 1.00 tsf
D_0 = 1.6529
D_{90} = 1.6581
D_{100} = 1.6587
T_{90} = 2.53 min.

C_v @ T_{90}
0.523 ft.^{2}/day



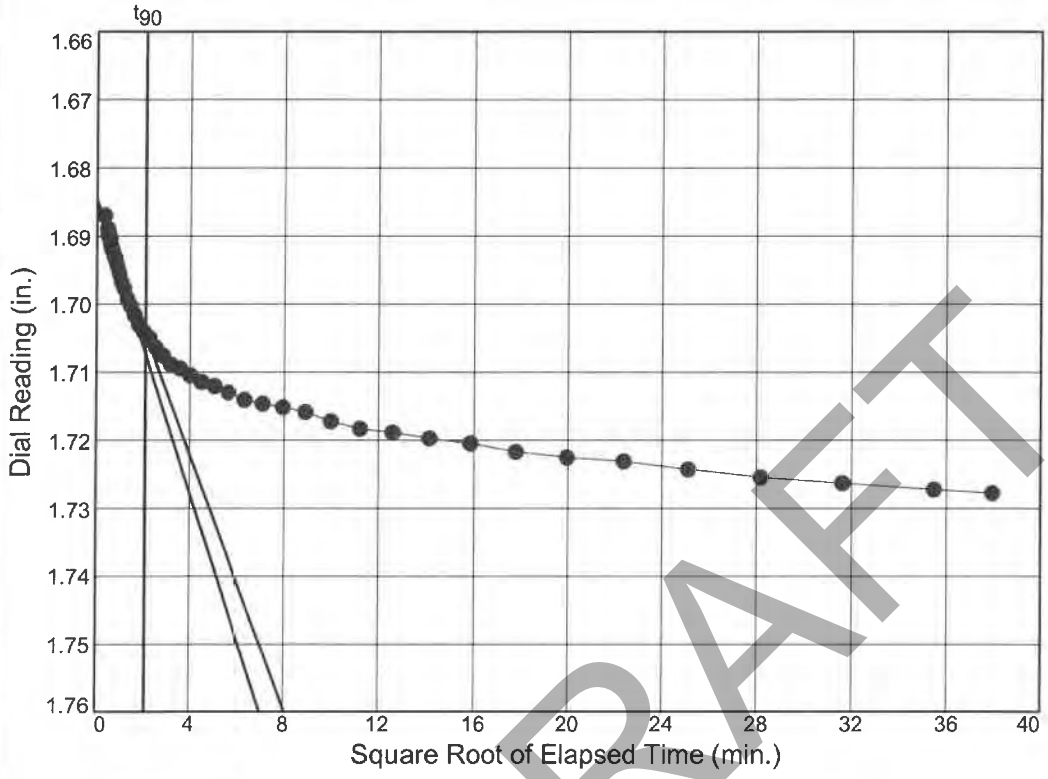
Load No.= 11
Load= 2.00 tsf
D_0 = 1.6640
D_{90} = 1.6745
D_{100} = 1.6756
T_{90} = 3.32 min.

C_v @ T_{90}
0.382 ft.^{2}/day

Dial Reading vs. Time

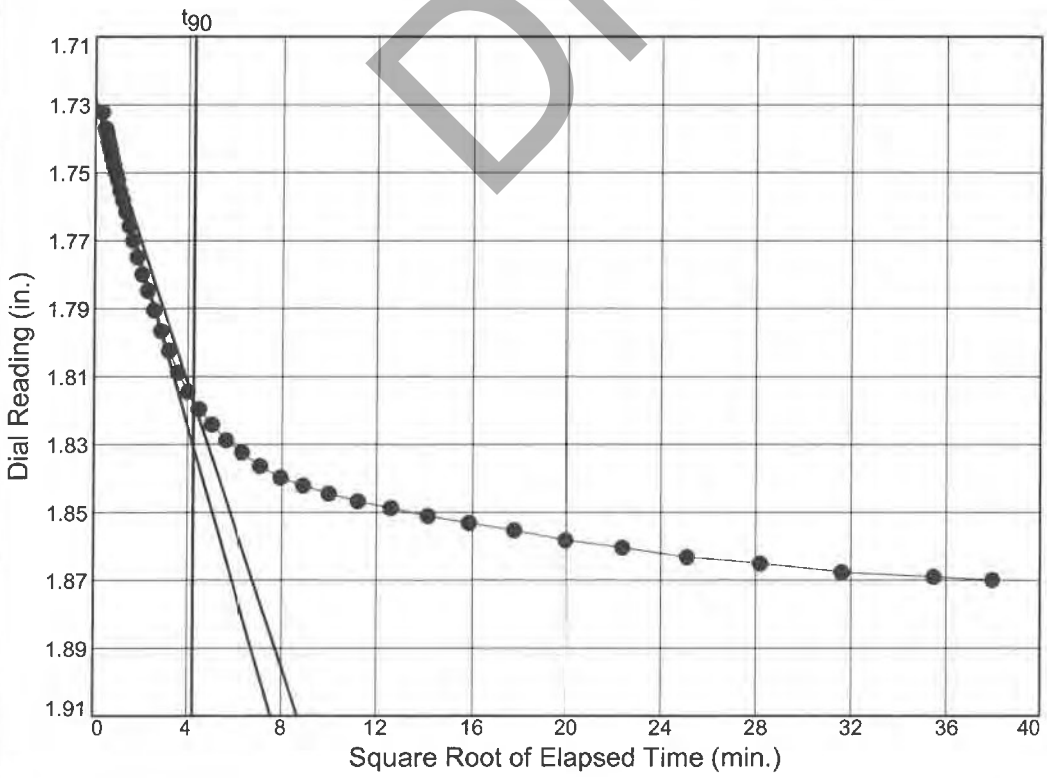
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 12
Load= 4.00 tsf
D_0 = 1.6847
D_{90} = 1.7043
D_{100} = 1.7065
T_{90} = 4.41 min.

C_v @ T_{90}
0.265 ft.^{2}/day



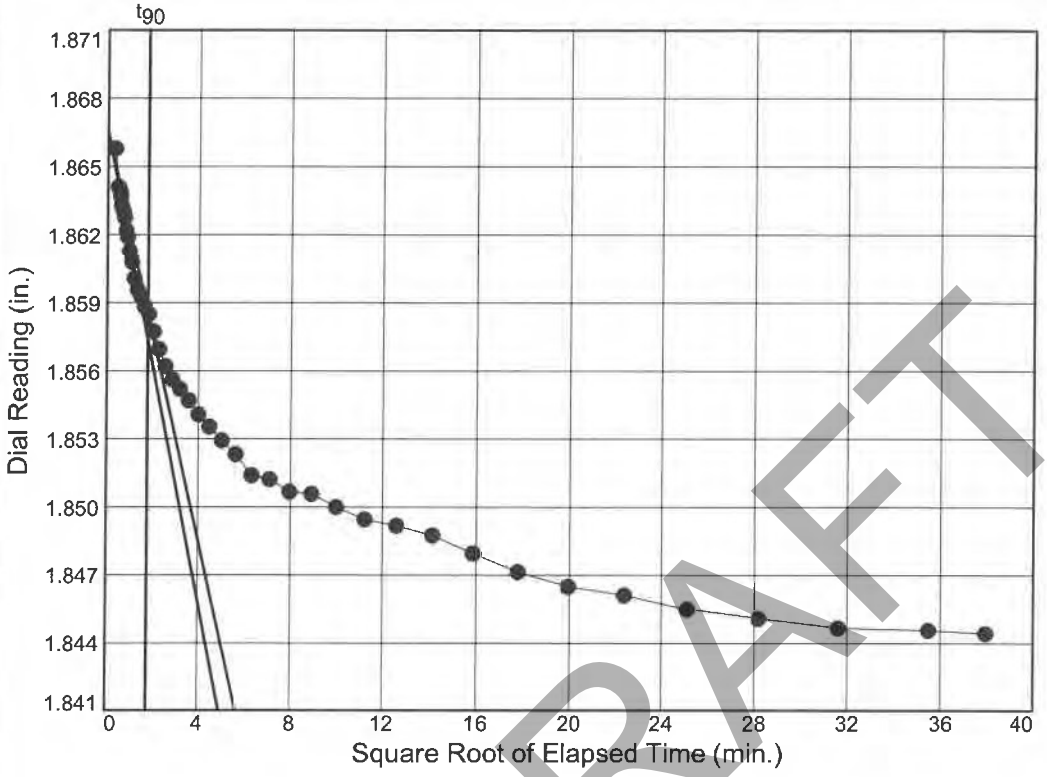
Load No.= 13
Load= 8.00 tsf
D_0 = 1.7288
D_{90} = 1.8172
D_{100} = 1.8270
T_{90} = 18.07 min.

C_v @ T_{90}
0.050 ft.^{2}/day

Dial Reading vs. Time

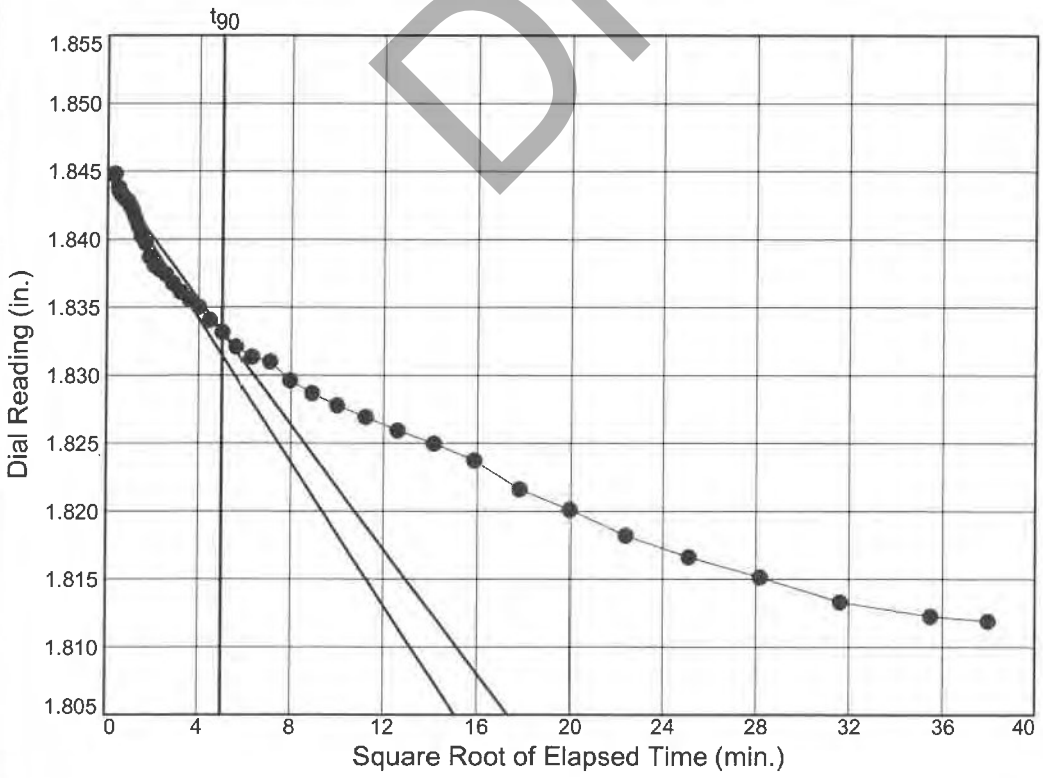
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 14
Load= 2.00 tsf
D_0 = 1.8665
D_{90} = 1.8586
D_{100} = 1.8577
T_{90} = 3.13 min.

C_v @ T_{90}
0.231 ft.^{2}/day



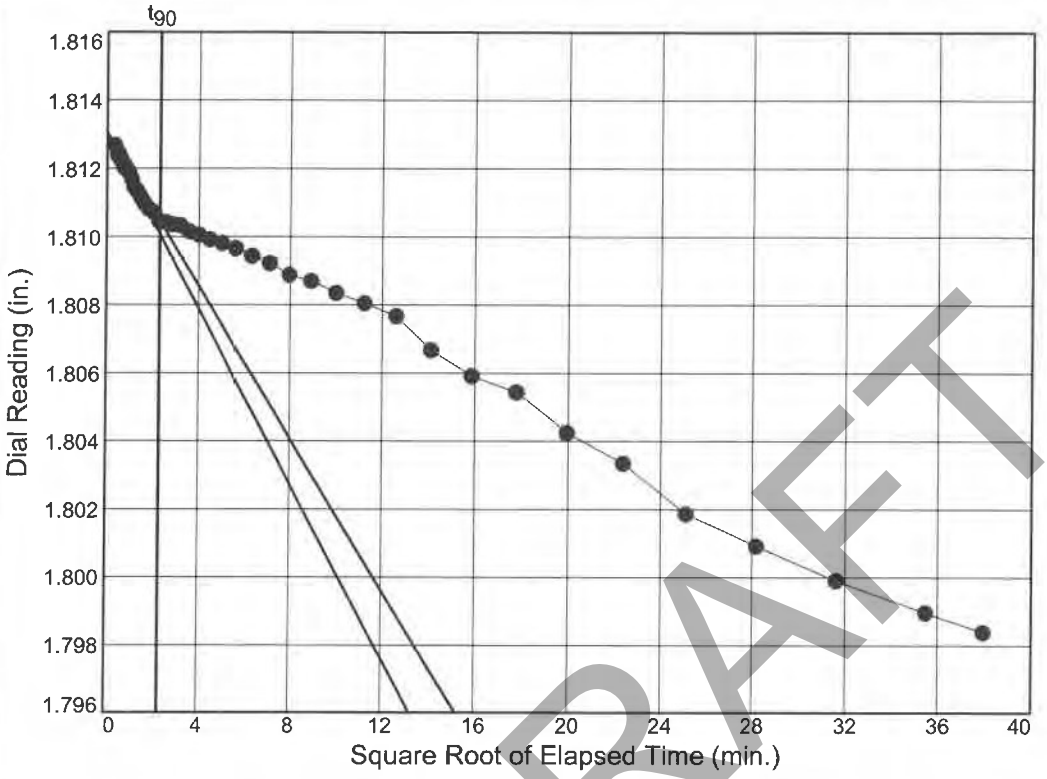
Load No.= 15
Load= 0.50 tsf
D_0 = 1.8447
D_{90} = 1.8332
D_{100} = 1.8319
T_{90} = 25.11 min.

C_v @ T_{90}
0.032 ft.^{2}/day

Dial Reading vs. Time

Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-2 Depth: 50'-52'



Load No.= 16
Load= 0.25 tsf
D_0 = 1.8130
D_{90} = 1.8105
D_{100} = 1.8102
T_{90} = 5.31 min.

C_v @ T_{90}
0.164 ft.^{2}/day

Project Name:	FTE PD&E			**Date:**	1-31-22	
Project No.:	4471G			**Tech:**	TJR	
Boring: (Station, Offset)						
Reference:	SPT-6					
Depth:	31.5'-32'					
Description:(D2488)	DRK BRN MKY FS					
Classification:(D2487)	(PT)					
Moisture Content (%):(T265)	96.3					
Organic Content (%):(T267)	24.0					
Plasticity						
Liquid Limit (%):(T89)						
Plasticity Index (%):(T90)						
Gradation:(T88)	**Cumulative % Passing By Weight**					
1"						
3/8"						
#4						
#10						
#20						
#40						
#60						
#100						
(T88 Wash Only) #200	89.7					
Corrosion						
pH:(FM5-550)						
Sulfates(ppm):(FM5-553)						
Chlorides(ppm):(FM5-552)						
Resistivity(ohm-cm):(FM5-551)						

UNIT WEIGHT

Project Name:	FTE PD&E
Project Number:	4471G
Date:	1-31-22

Boring Number:	SPT-6
Depth:	31.5'-32'

Section Depth:				
	1	2	3	Avg.
Length (in.)	2.24	2.26	2.25	2.25
Diameter (in.)	2.75	2.59	2.78	2.71
Area of Sample (sq. inches)				5.76
Volume of Sample (cu. Inches)				12.96
Volume of Sample (cu. feet)				0.01
Wet Weight of Sample (lbs)				0.70
Wet Density (pcf)				93.14
Moisture Content (%)				96.3
Dry Density (pcf)				47.45

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

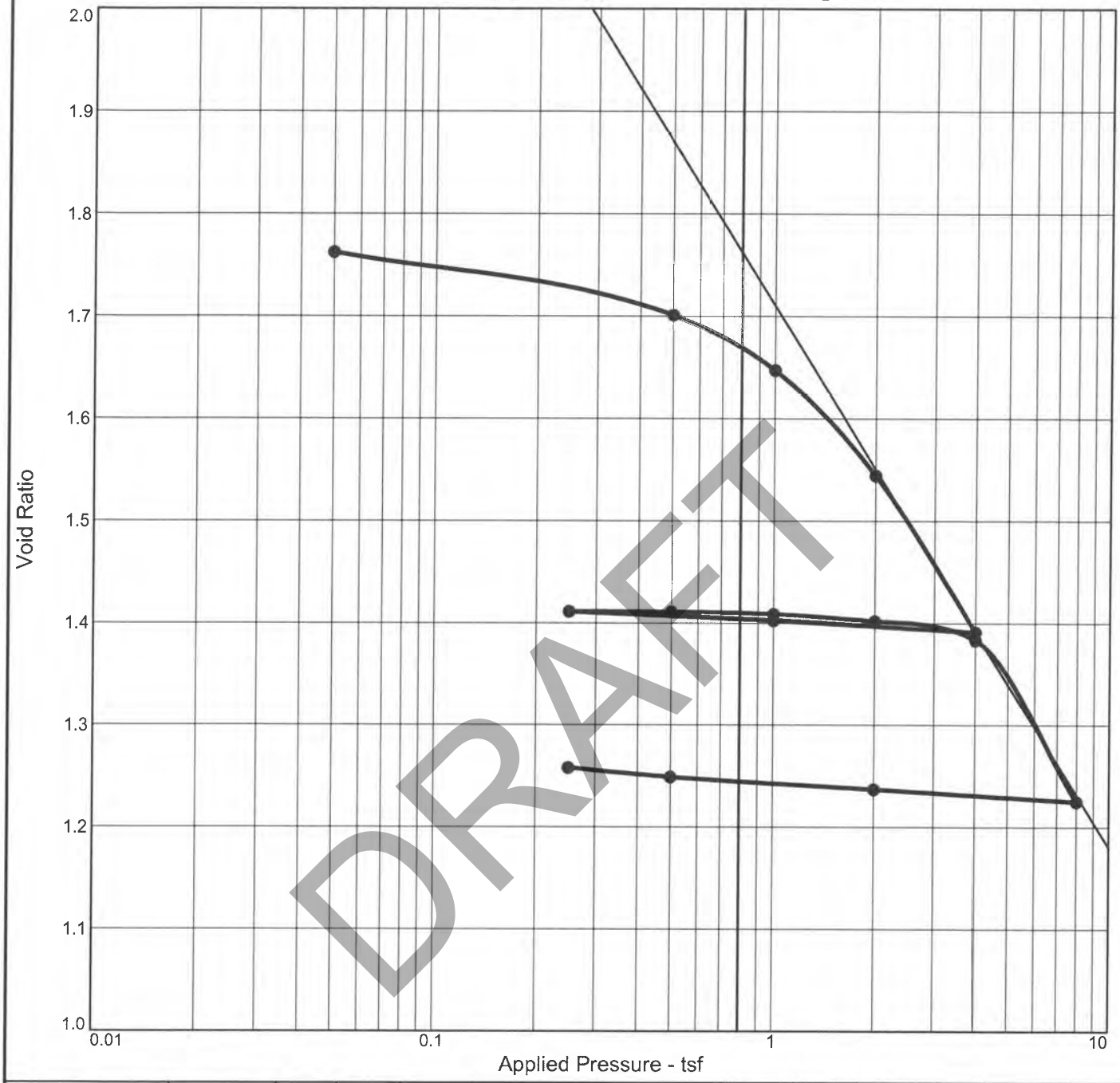
Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

Unit Weight ASTM D7263 Method B, Intact Specimen

Moisture Content ASTM D2216

Geotechnical and Environmental Consultants, Inc.

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
114.4 %	96.3 %	47.4			2.10	0.09	1.3	0.53	0.02			1.767

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Brown Mucky Fine Sand	PT	

Project No. 4471G **Client:**

Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 **Depth:** 31.5'-32'

Remarks:

Fines Content= 89.7%

Organic Content= 24.0%

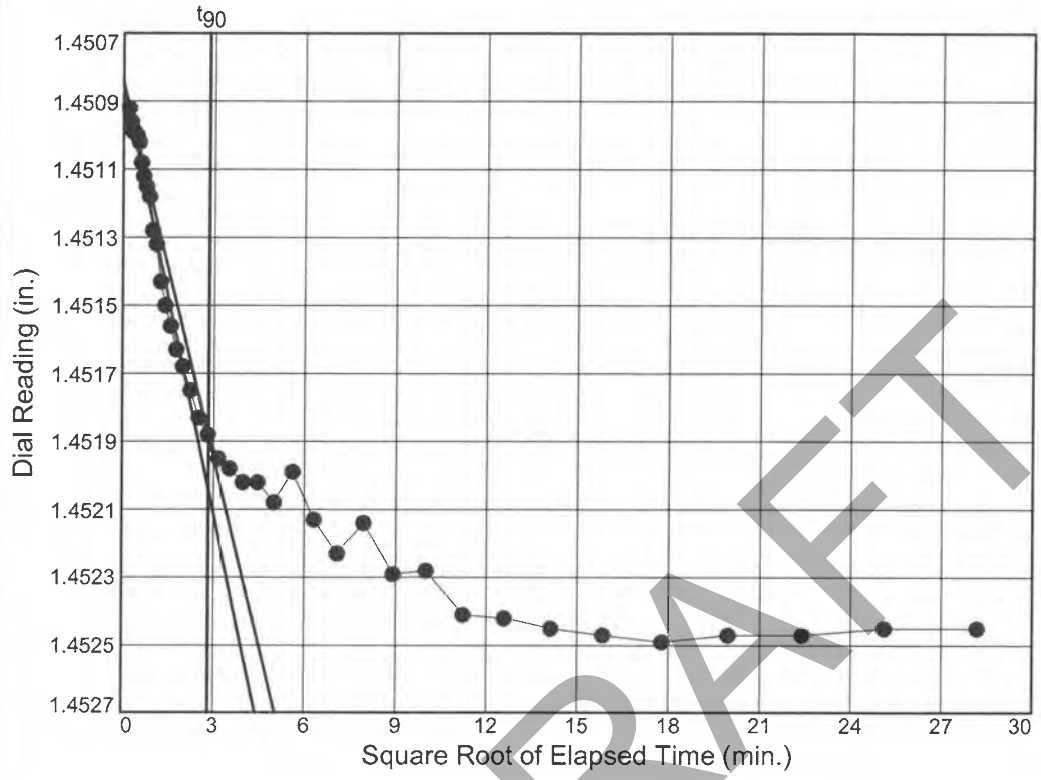
Geotechnical and Environmental Consultants, Inc.

Figure

Dial Reading vs. Time

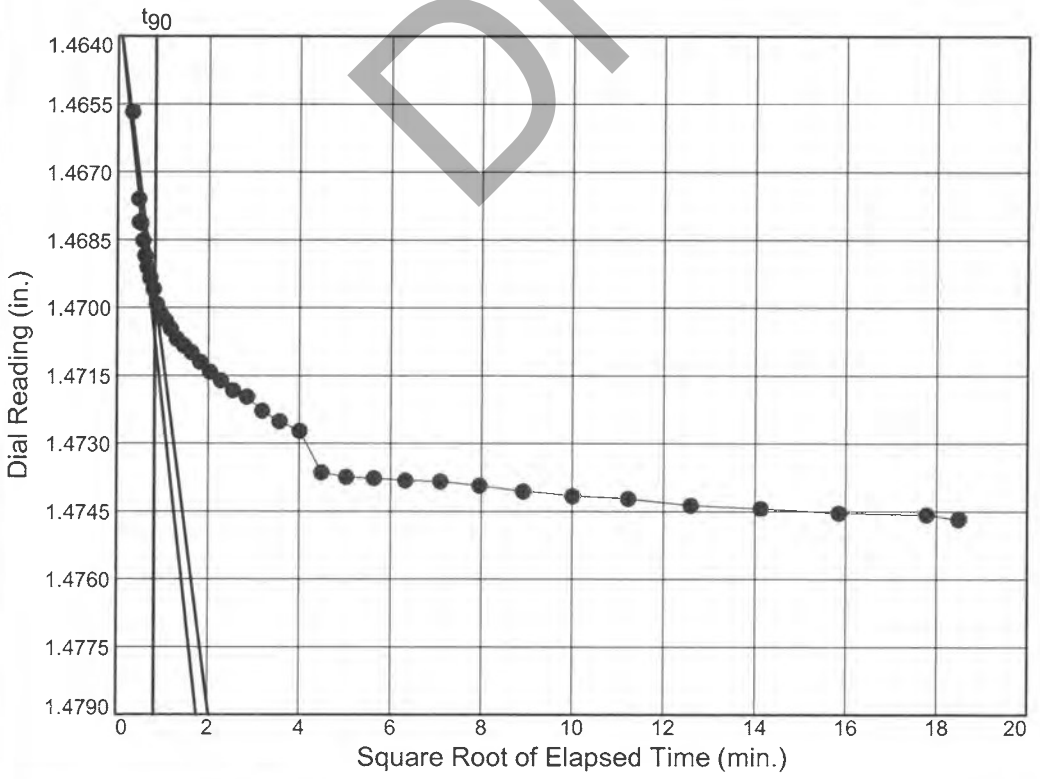
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 1
Load= 0.05 tsf
D_0 = 1.4508
D_{90} = 1.4519
D_{100} = 1.4520
T_{90} = 8.04 min.

C_v @ T_{90}
0.263 ft.^{2}/day



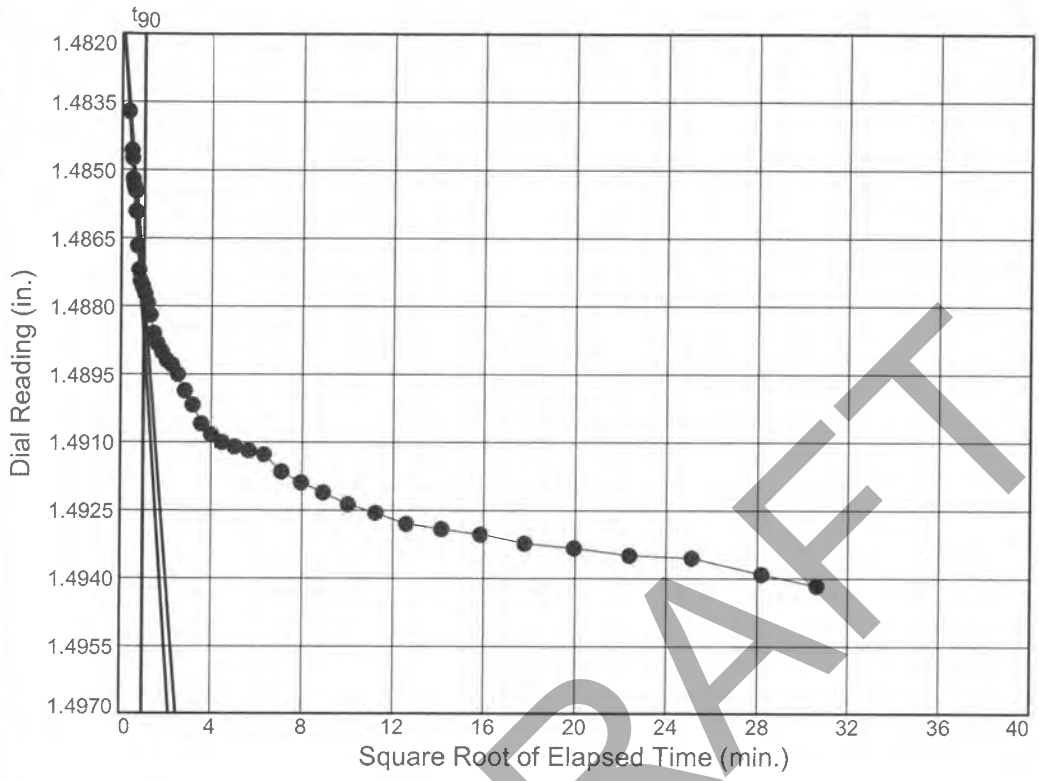
Load No.= 2
Load= 0.50 tsf
D_0 = 1.4634
D_{90} = 1.4697
D_{100} = 1.4704
T_{90} = 0.68 min.

C_v @ T_{90}
3.026 ft.^{2}/day

Dial Reading vs. Time

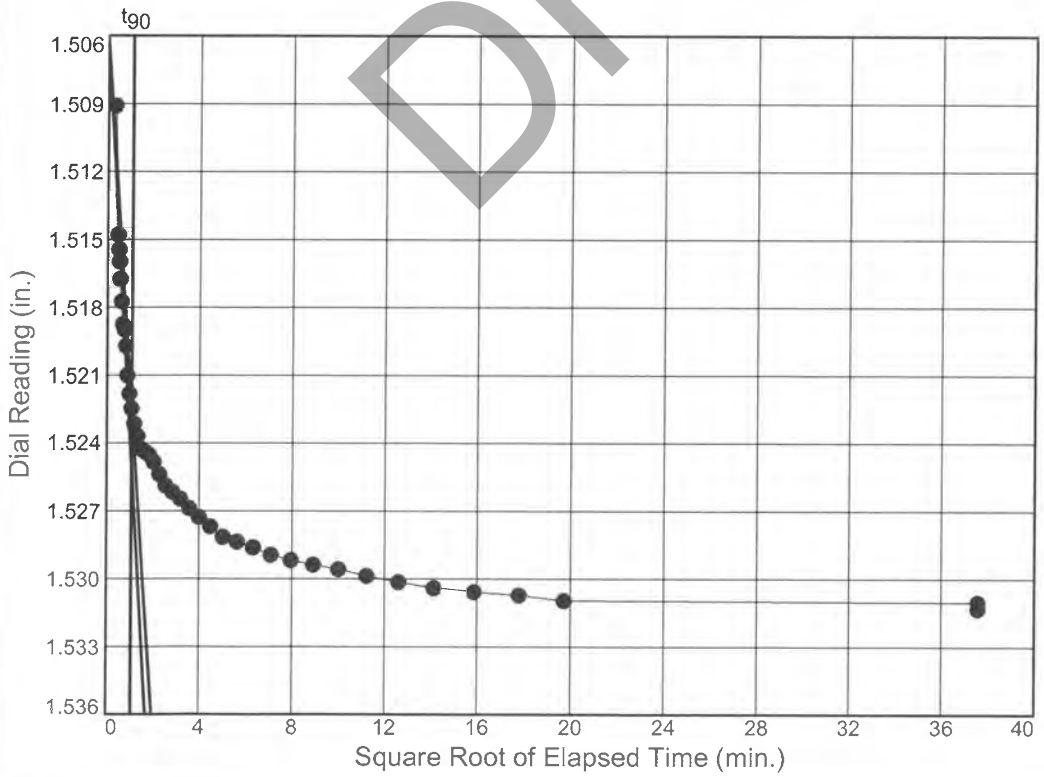
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 3
Load= 1.00 tsf
D_0 = 1.4814
D_{90} = 1.4876
D_{100} = 1.4883
T_{90} = 1.00 min.

C_v @ T_{90}
1.989 ft.^{2}/day



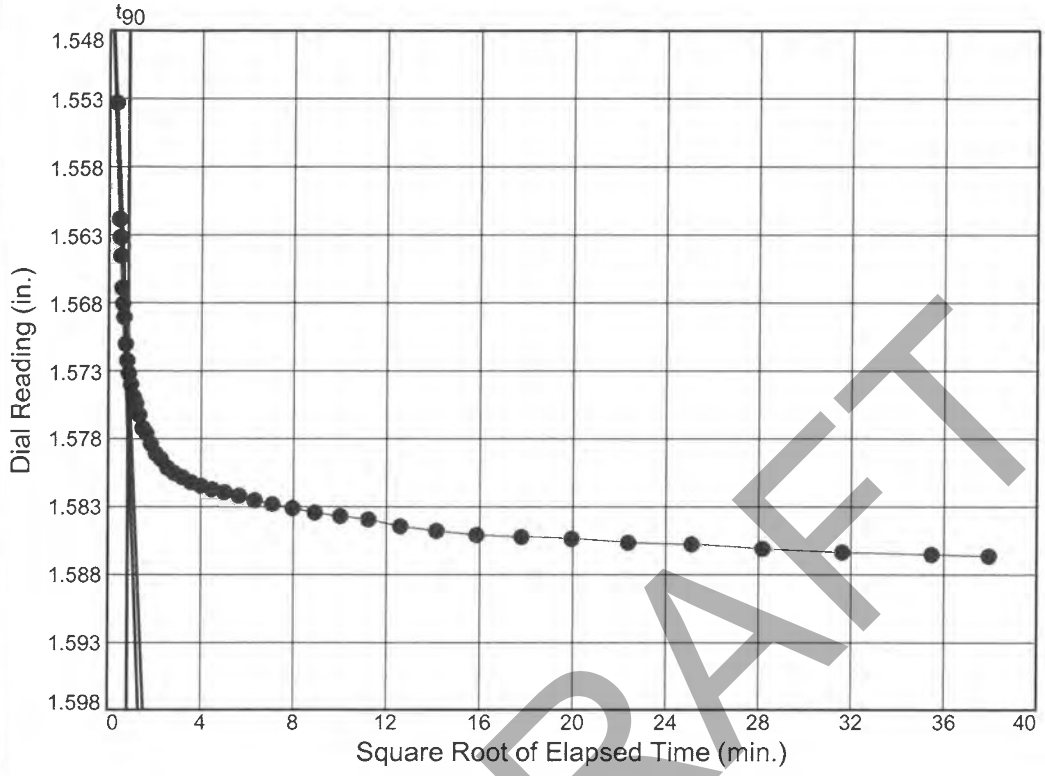
Load No.= 4
Load= 2.00 tsf
D_0 = 1.5064
D_{90} = 1.5225
D_{100} = 1.5243
T_{90} = 1.15 min.

C_v @ T_{90}
1.633 ft.^{2}/day

Dial Reading vs. Time

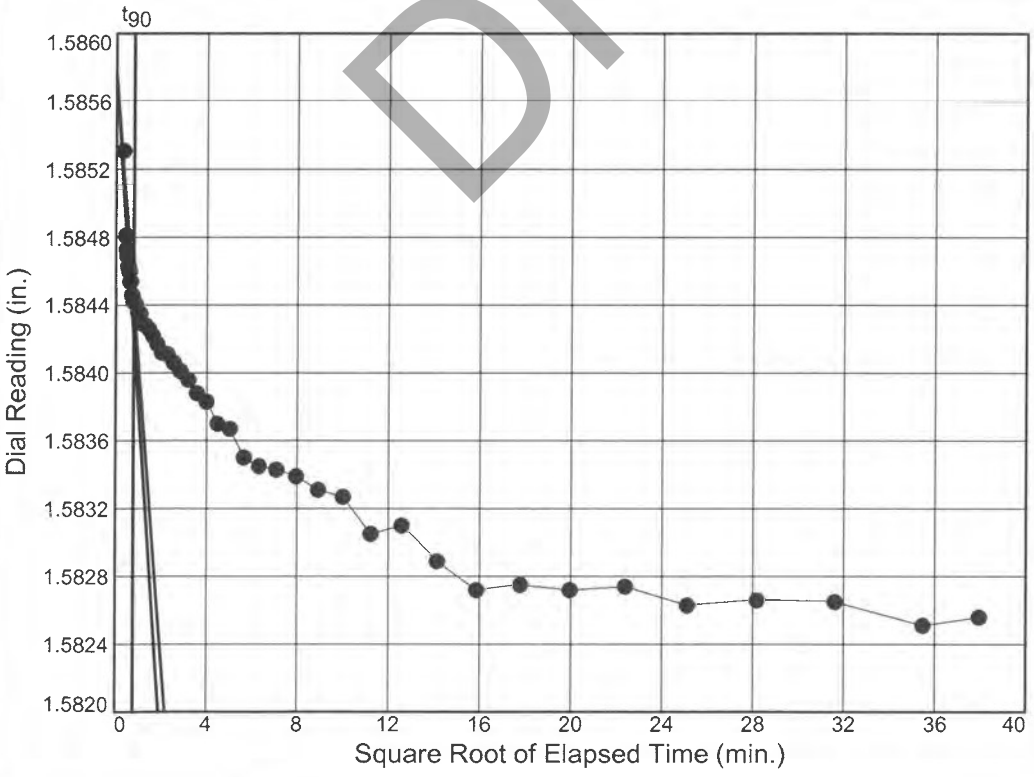
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 5
Load=4.00 tsf
D_0 = 1.5418
D_{90} = 1.5729
D_{100} = 1.5763
T_{90} = 0.70 min.

C_v @ T_{90}
2.405 ft.^{2}/day



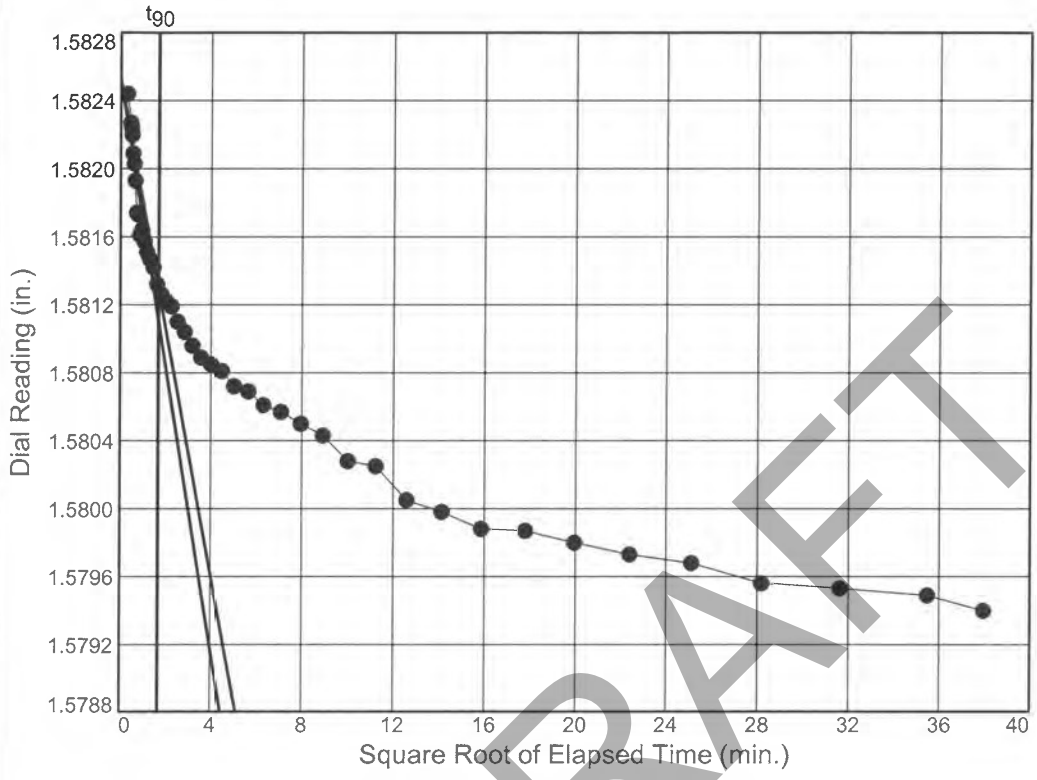
Load No.= 6
Load=1.00 tsf
D_0 = 1.5858
D_{90} = 1.5844
D_{100} = 1.5843
T_{90} = 0.61 min.

C_v @ T_{90}
2.591 ft.^{2}/day

Dial Reading vs. Time

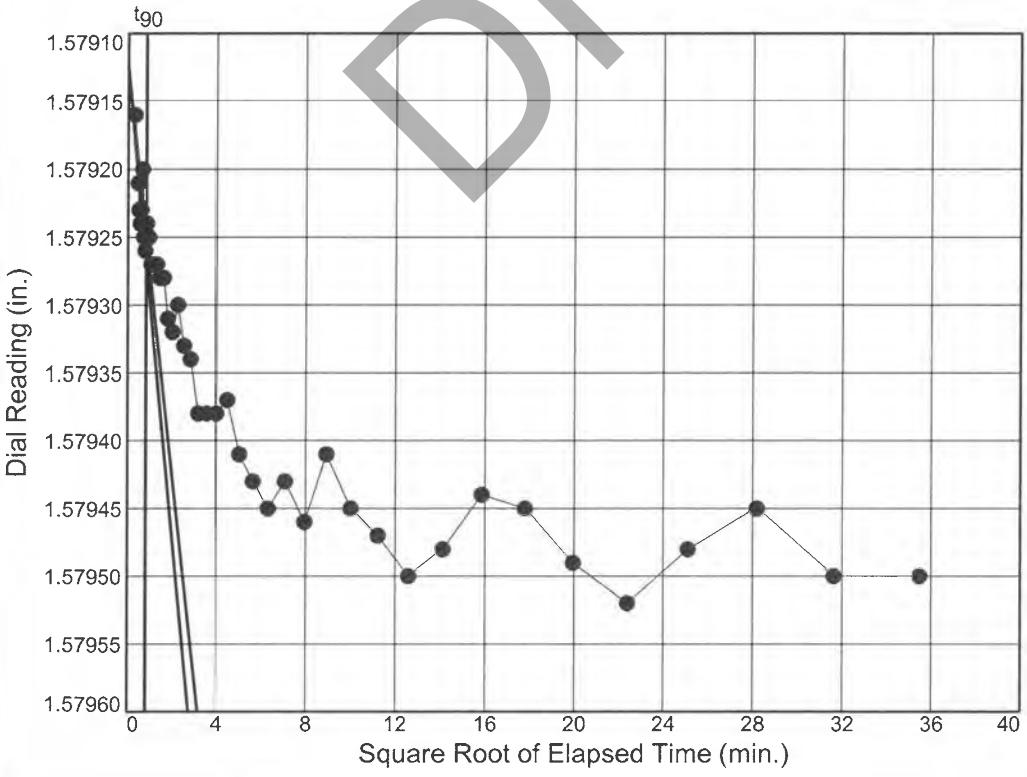
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 7
Load= 0.25 tsf
D_0 = 1.5825
D_{90} = 1.5813
D_{100} = 1.5812
T_{90} = 2.84 min.

C_v @ T_{90}
0.564 ft.^{2}/day



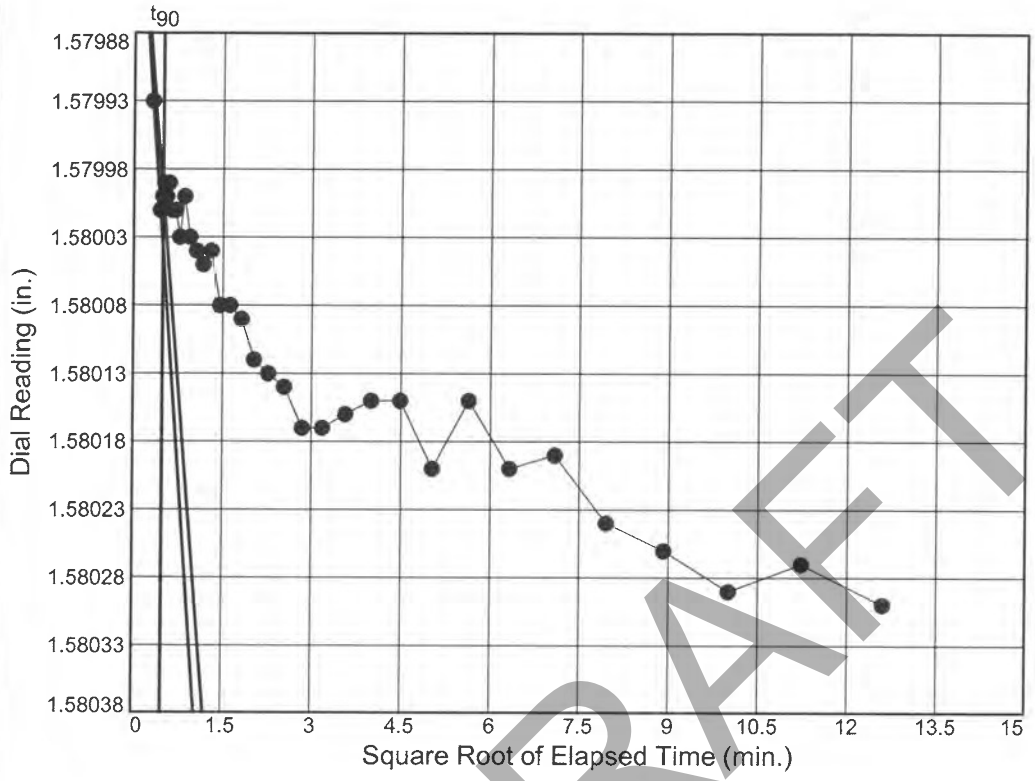
Load No.= 8
Load= 0.50 tsf
D_0 = 1.5791
D_{90} = 1.5792
D_{100} = 1.5793
T_{90} = 0.68 min.

C_v @ T_{90}
2.377 ft.^{2}/day

Dial Reading vs. Time

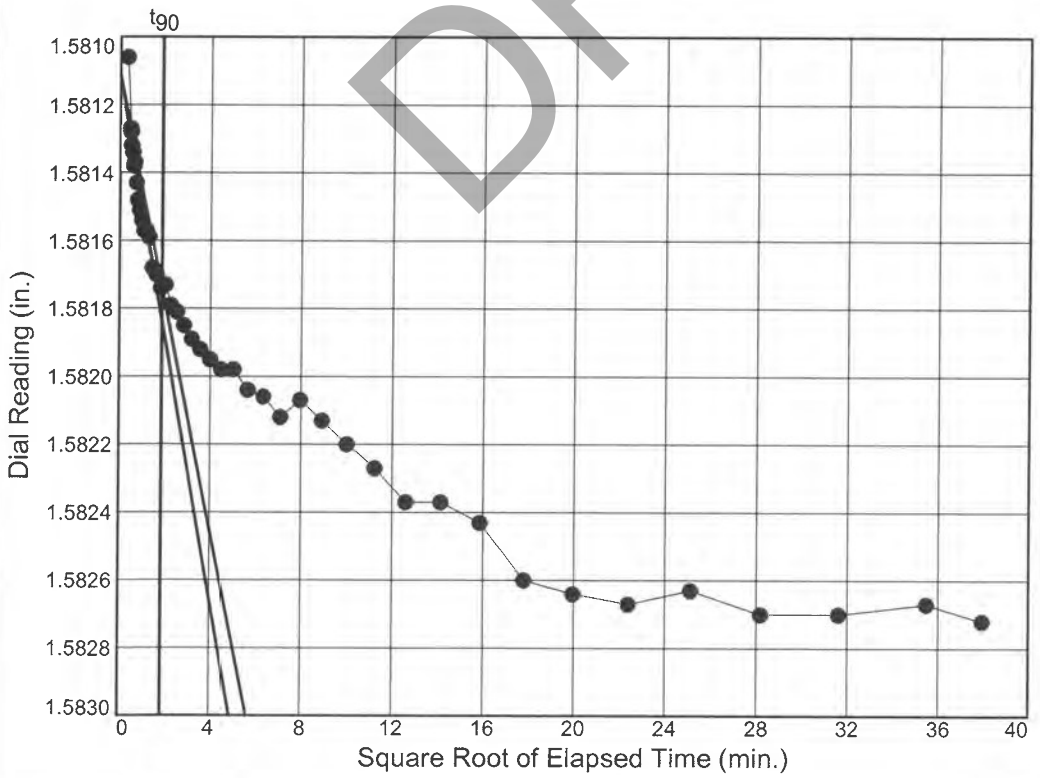
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 9
Load= 1.00 tsf
D_0 = 1.5797
D_{90} = 1.5800
D_{100} = 1.5800
T_{90} = 0.24 min.

C_v @ T_{90}
6.697 ft.^{2}/day



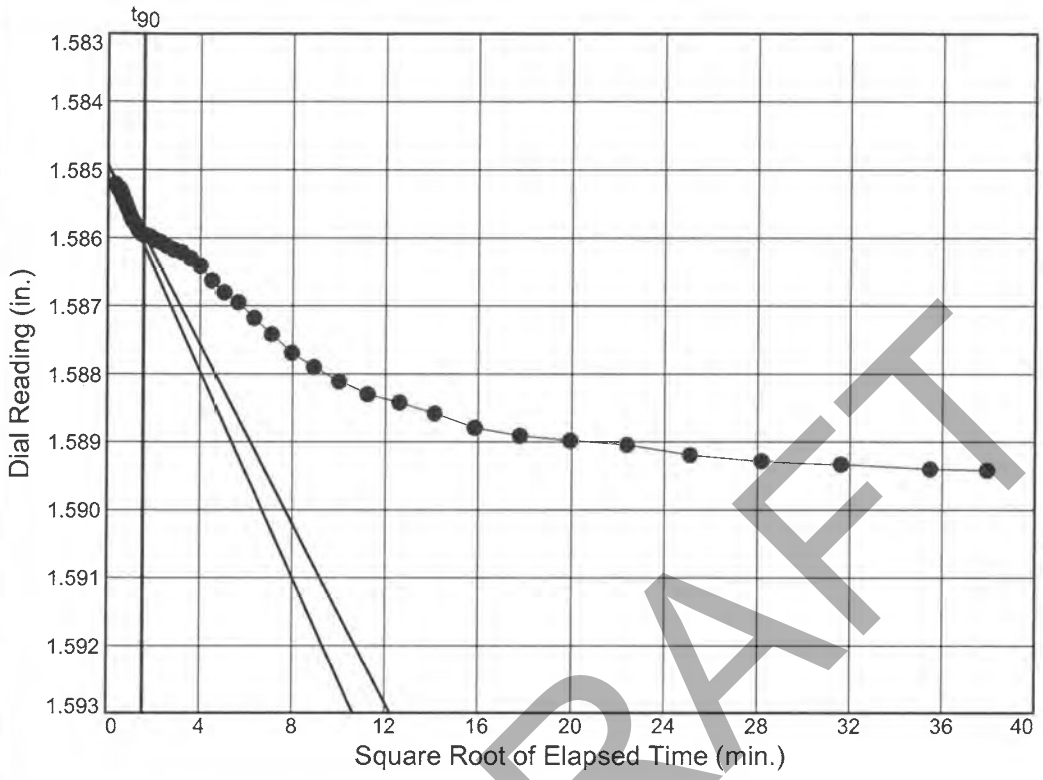
Load No.= 10
Load= 2.00 tsf
D_0 = 1.5811
D_{90} = 1.5817
D_{100} = 1.5818
T_{90} = 3.48 min.

C_v @ T_{90}
0.460 ft.^{2}/day

Dial Reading vs. Time

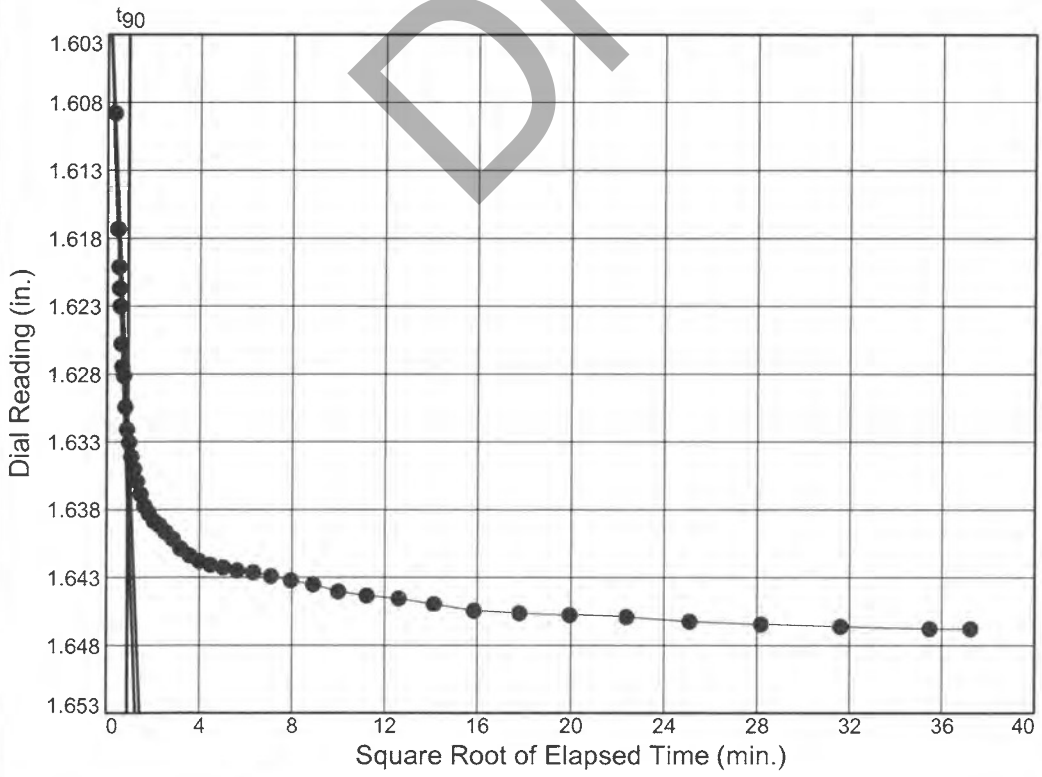
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 11
Load= 4.00 tsf
D_0 = 1.5849
D_{90} = 1.5860
D_{100} = 1.5861
T_{90} = 2.39 min.

C_v @ T_{90}
0.664 ft.^{2}/day



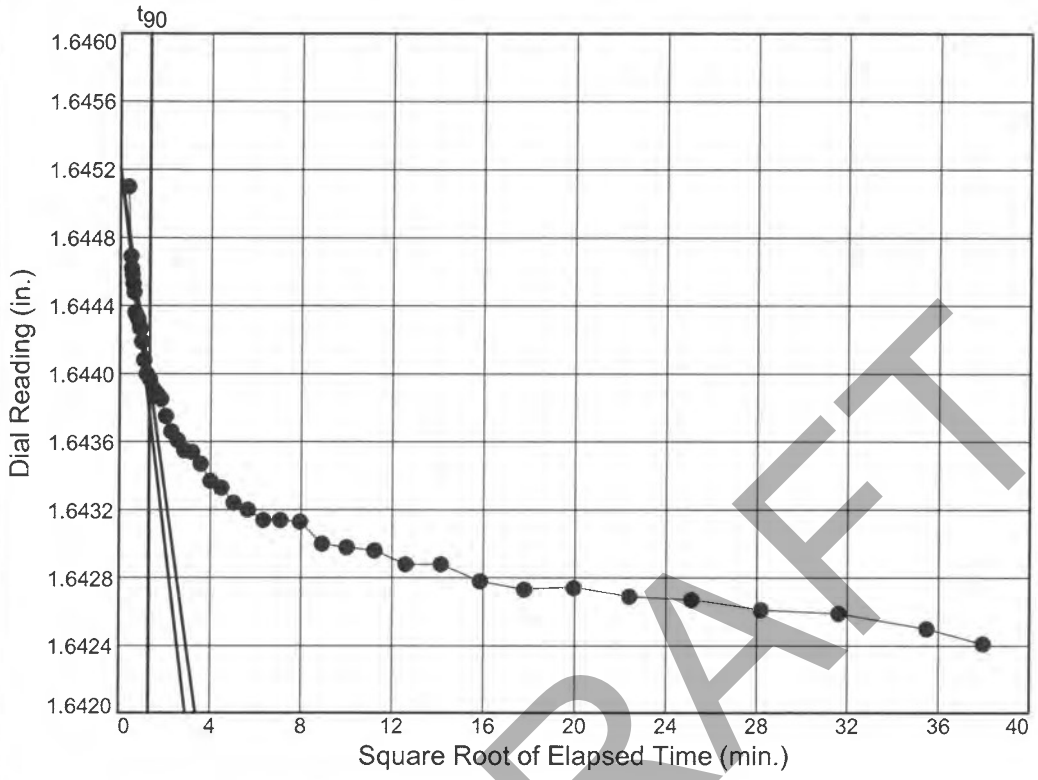
Load No.= 12
Load= 8.00 tsf
D_0 = 1.5974
D_{90} = 1.6325
D_{100} = 1.6364
T_{90} = 0.82 min.

C_v @ T_{90}
1.815 ft.^{2}/day

Dial Reading vs. Time

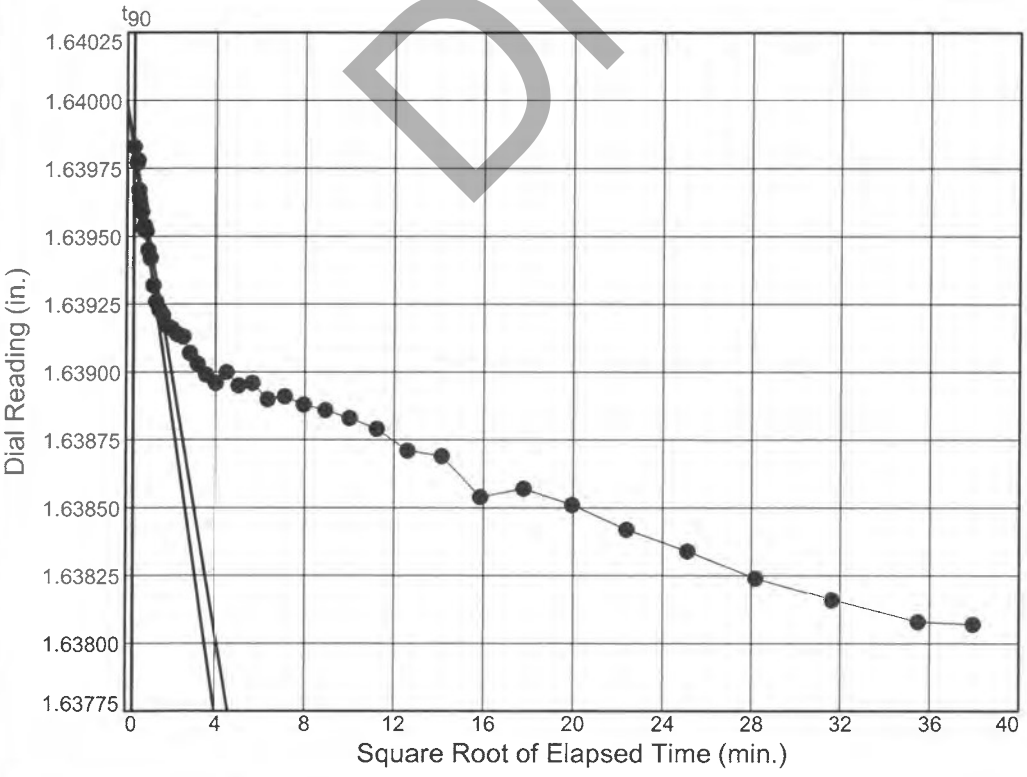
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 13
Load= 2.00 tsf
D_0 = 1.6452
D_{90} = 1.6440
D_{100} = 1.6438
T_{90} = 1.68 min.

C_v @ T_{90}
0.813 ft.^{2}/day



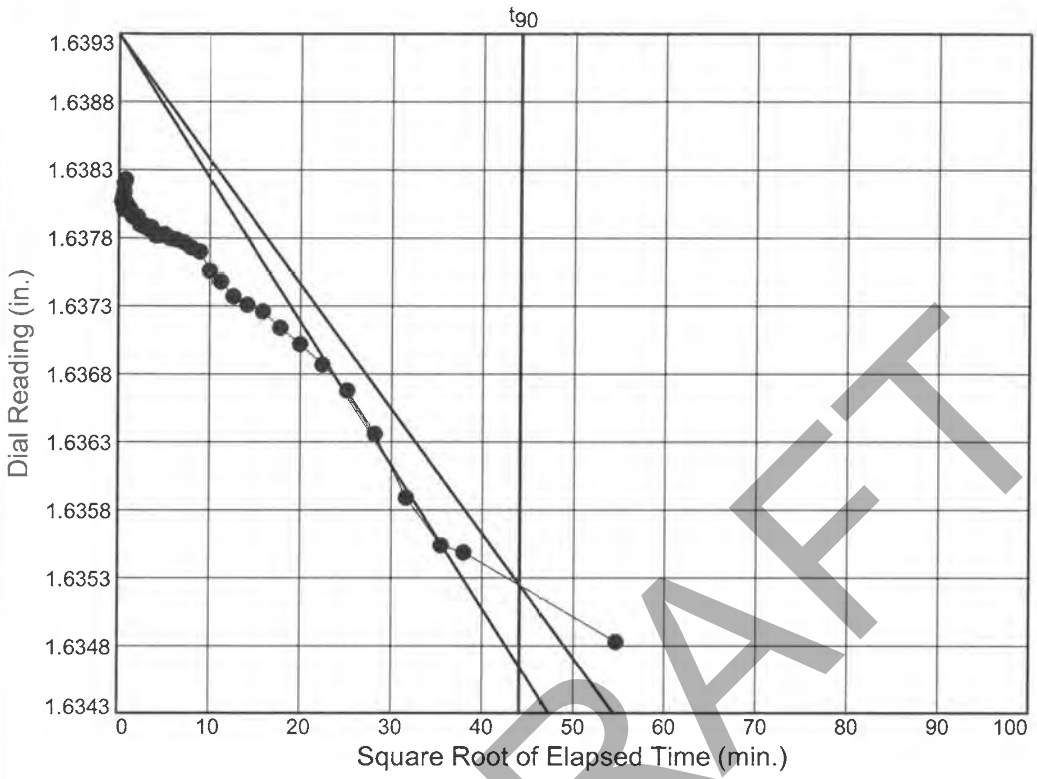
Load No.= 14
Load= 0.50 tsf
D_0 = 1.6400
D_{90} = 1.6398
D_{100} = 1.6398
T_{90} = 0.10 min.

C_v @ T_{90}
13.870 ft.^{2}/day

Dial Reading vs. Time

Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-6 Depth: 31.5'-32'



Load No.= 15
Load= 0.25 tsf
D_0 = 1.6393
D_{90} = 1.6352
D_{100} = 1.6348
T_{90} = 1942.55 min.

C_v @ T_{90}
0.001 ft.^{2}/day

Project Name:	FTE PD&E			**Date:**	1-31-22	
Project No.:	4471G			**Tech:**	TJR	
Boring: (Station, Offset)						
Reference:	SPT-14					
Depth:	30'-32'					
Description:(D2488)	DRK BRN MKY FS					
Classification:(D2487)	(PT)					
Moisture Content (%):(T265)	73.8					
Organic Content (%):(T267)	16.9					
Plasticity						
Liquid Limit (%):(T89)						
Plasticity Index (%):(T90)						
Gradation:(T88)	**Cumulative % Passing By Weight**					
1"						
3/8"						
#4						
#10						
#20						
#40						
#60						
#100						
(T88 Wash Only) #200	35.1					
Corrosion						
pH:(FM5-550)						
Sulfates(ppm):(FM5-553)						
Chlorides(ppm):(FM5-552)						
Resistivity(ohm-cm):(FM5-551)						

UNIT WEIGHT

Project Name:	FTE PD&E
Project Number:	4471G
Date:	1-31-22

Boring Number:	SPT-14
Depth:	30'-32'

Section Depth:	9"-15"			
	1	2	3	Avg.
Length (in.)	6.00	6.04	6.00	6.01
Diameter (in.)	2.85	2.86	2.82	2.84
Area of Sample (sq. inches)				6.34
Volume of Sample (cu. Inches)				38.13
Volume of Sample (cu. feet)				0.02
Wet Weight of Sample (lbs)				2.05
Wet Density (pcf)				92.76
Moisture Content (%)				73.8
Dry Density (pcf)				53.37

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

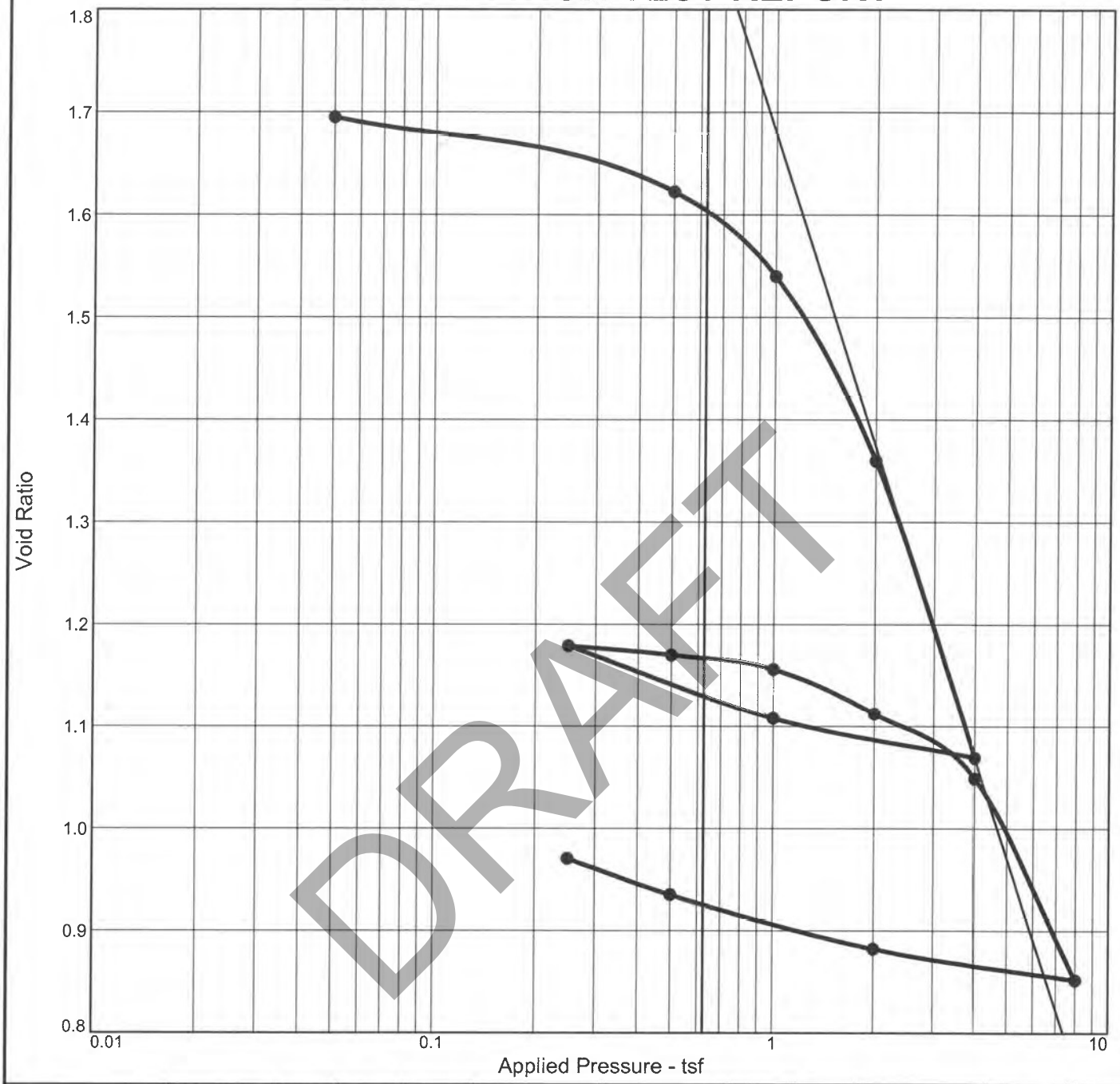
Section Depth:				
	1	2	3	Avg.
Length (in.)				
Diameter (in.)				
Area of Sample (sq. inches)				
Volume of Sample (cu. Inches)				
Volume of Sample (cu. feet)				
Wet Weight of Sample (lbs)				
Wet Density (pcf)				
Moisture Content (%)				
Dry Density (pcf)				

Unit Weight ASTM D7263 Method B, Intact Specimen

Moisture Content ASTM D2216

Geotechnical and Environmental Consultants, Inc.

CONSOLIDATION TEST REPORT



Natural Sat.	Natural Moist.	Dry Dens. (pcf)	LL	PI	Sp. Gr.	Overburden (tsf)	P_c (tsf)	C_c	C_r	Swell Press. (tsf)	Swell %	e_o
100.4 %	73.8 %	53.5			2.31	0.32	1.3	1.01	0.05			1.698

MATERIAL DESCRIPTION	USCS	AASHTO
Dark Brown Mucky Fine Sand	PT	

Project No. 4471G **Client:**

Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 **Depth:** 30'-32'

Remarks:

Fines Content= 35.1%

Organic Content= 16.9%

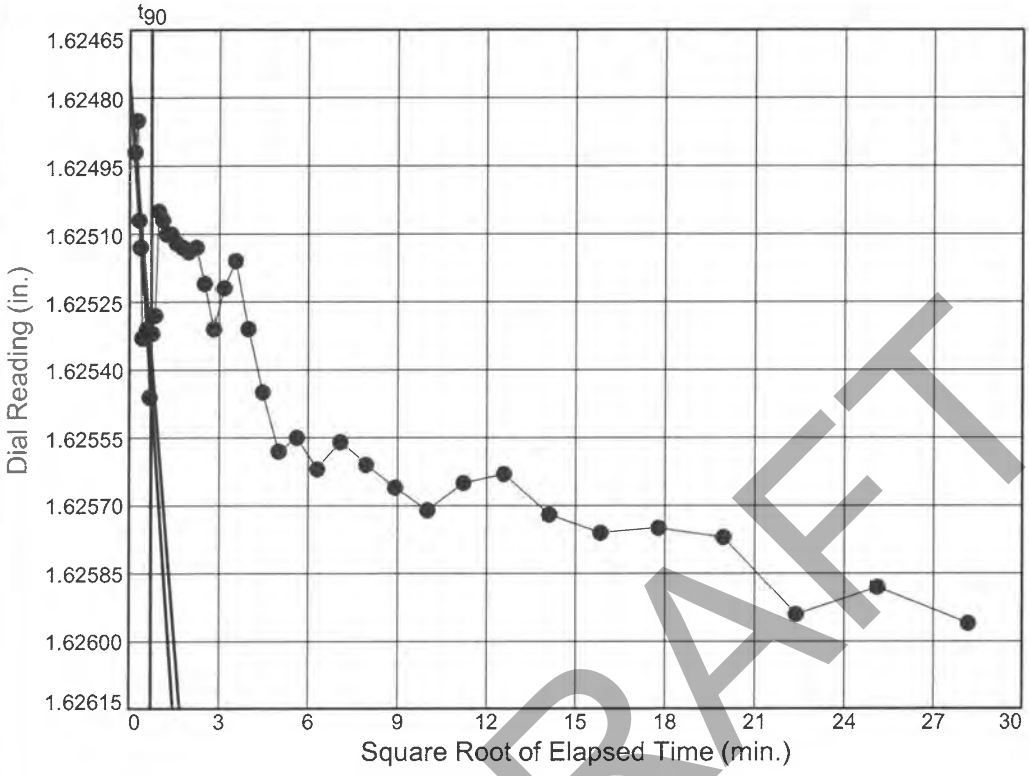
Geotechnical and Environmental Consultants, Inc.

Figure

Dial Reading vs. Time

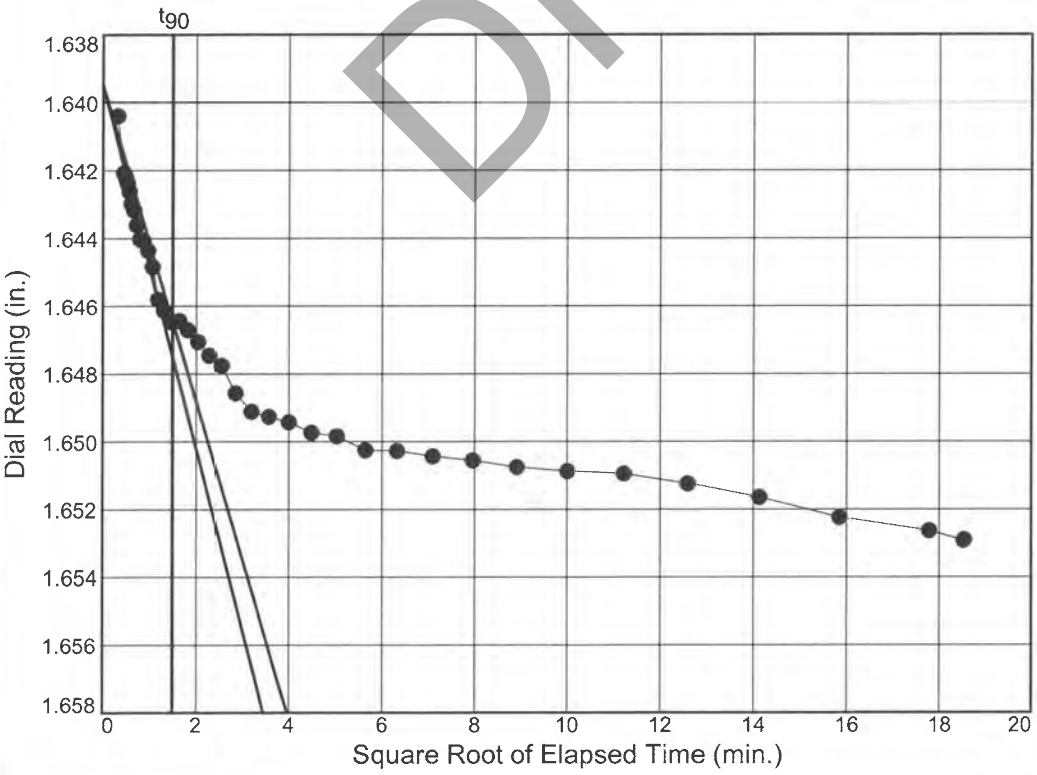
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 1
Load= 0.05 tsf
D_0 = 1.6248
D_{90} = 1.6254
D_{100} = 1.6254
T_{90} = 0.53 min.

C_v @ T_{90}
4.000 ft.^{2}/day



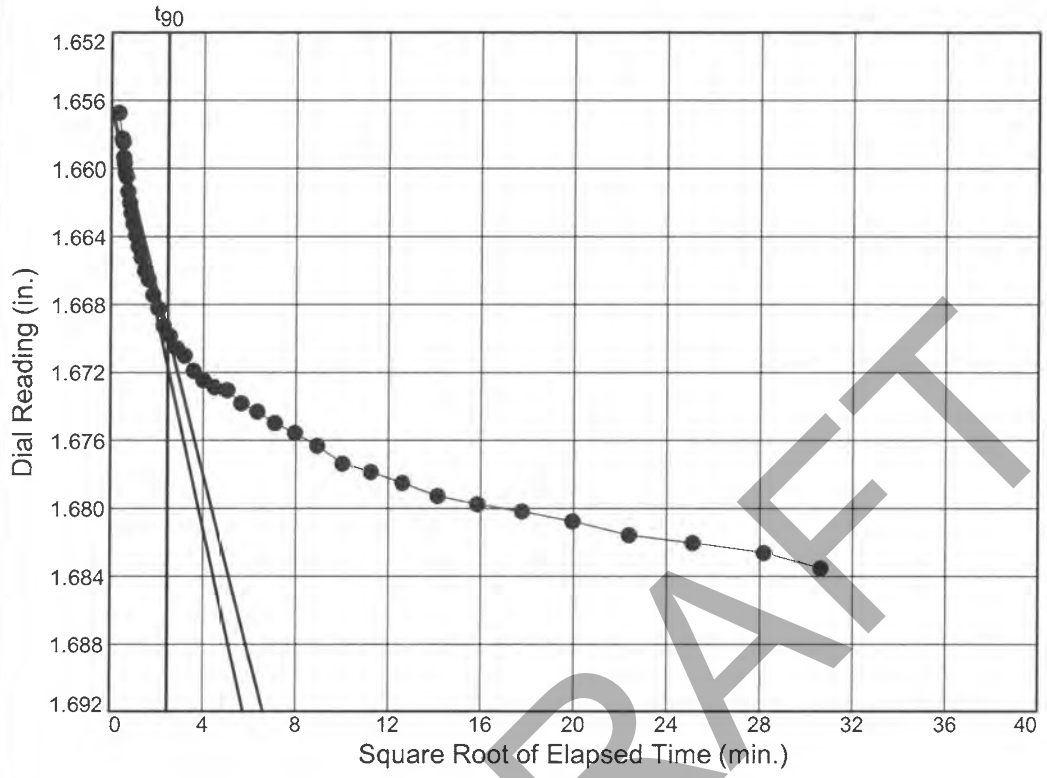
Load No.= 2
Load= 0.50 tsf
D_0 = 1.6395
D_{90} = 1.6465
D_{100} = 1.6472
T_{90} = 2.22 min.

C_v @ T_{90}
0.918 ft.^{2}/day

Dial Reading vs. Time

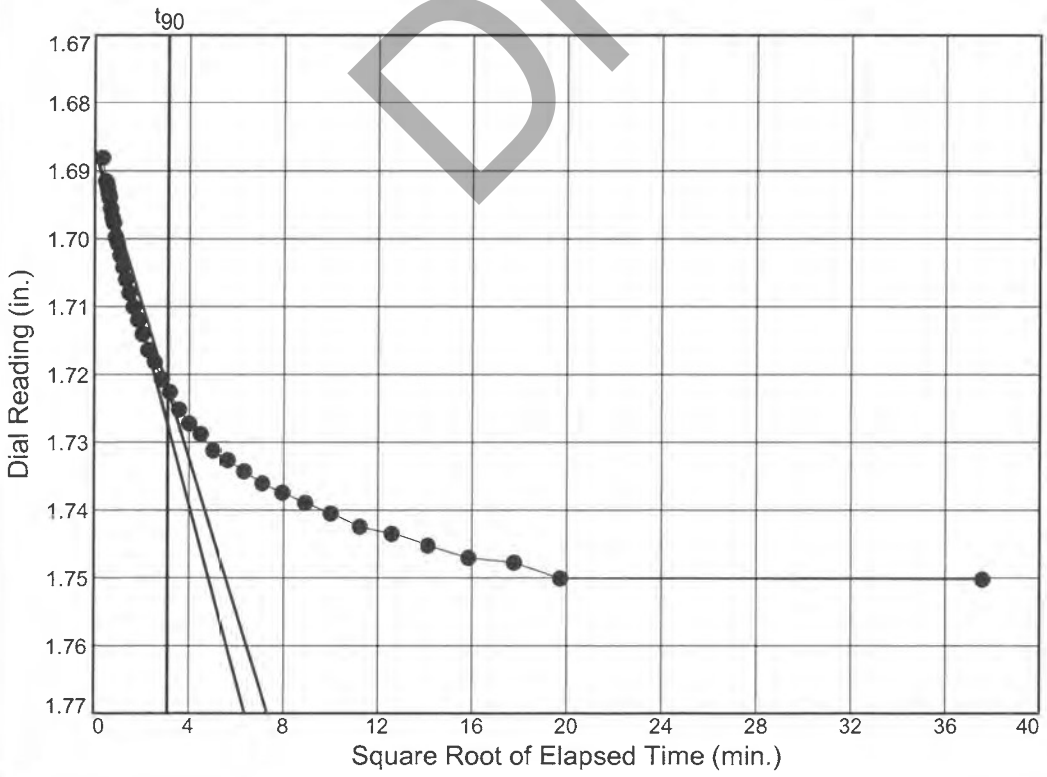
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 3
Load= 1.00 tsf
D_0 = 1.6564
D_{90} = 1.6696
D_{100} = 1.6711
T_{90} = 6.00 min.

C_v @ T_{90}
0.324 ft.^{2}/day



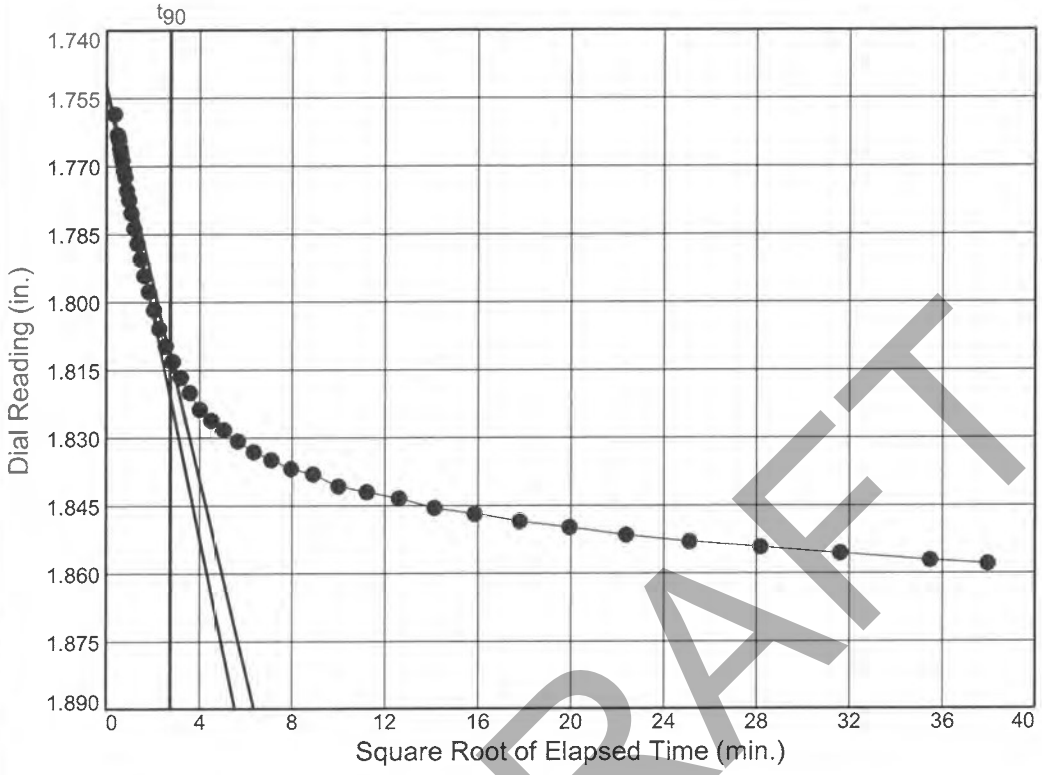
Load No.= 4
Load= 2.00 tsf
D_0 = 1.6870
D_{90} = 1.7221
D_{100} = 1.7260
T_{90} = 9.58 min.

C_v @ T_{90}
0.183 ft.^{2}/day

Dial Reading vs. Time

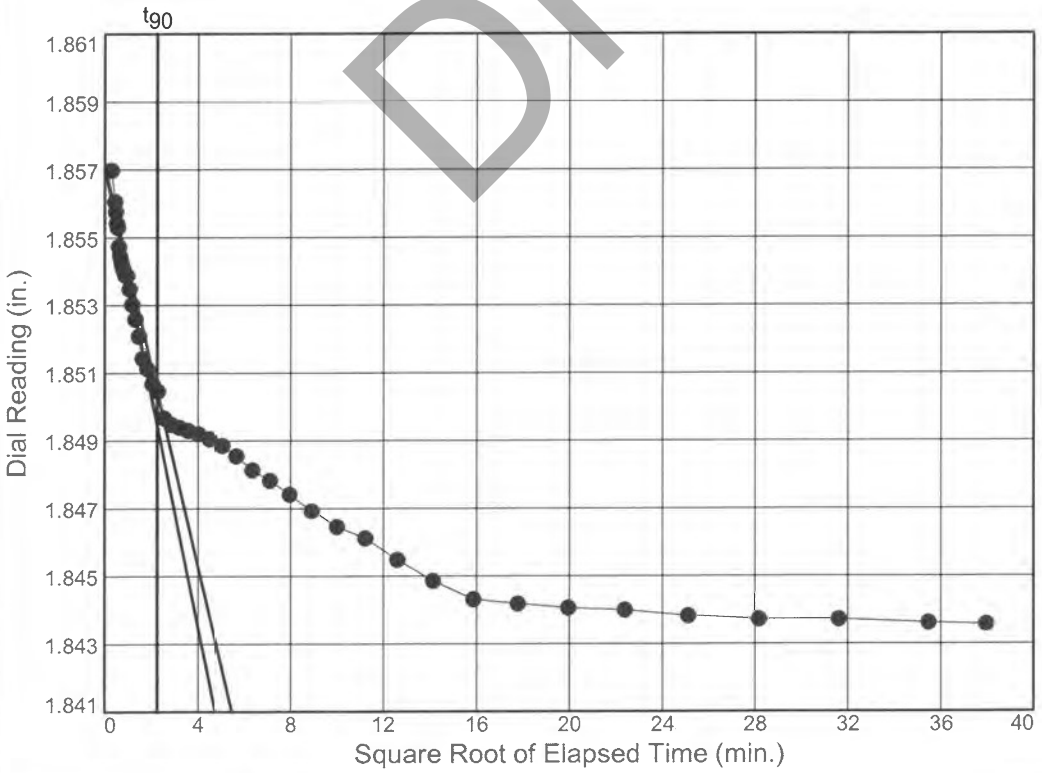
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 5
Load= 4.00 tsf
D_0 = 1.7524
D_{90} = 1.8121
D_{100} = 1.8187
T_{90} = 7.54 min.

C_v @ T_{90}
0.189 ft.^{2}/day



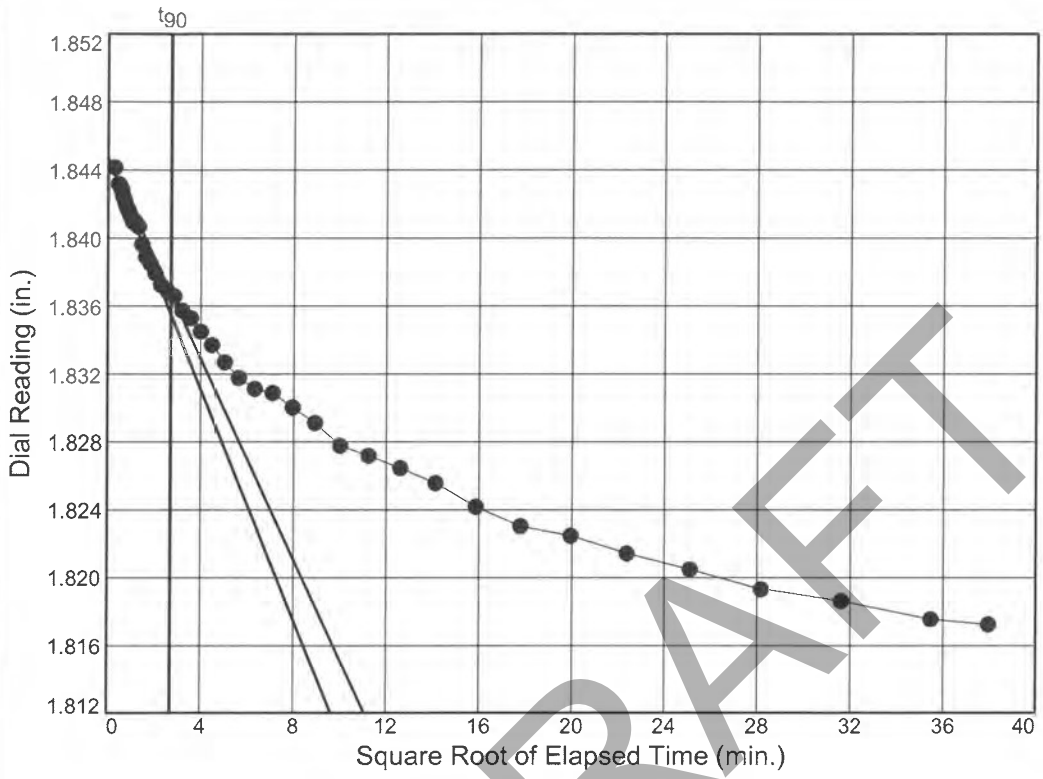
Load No.= 6
Load= 1.00 tsf
D_0 = 1.8571
D_{90} = 1.8505
D_{100} = 1.8498
T_{90} = 4.97 min.

C_v @ T_{90}
0.253 ft.^{2}/day

Dial Reading vs. Time

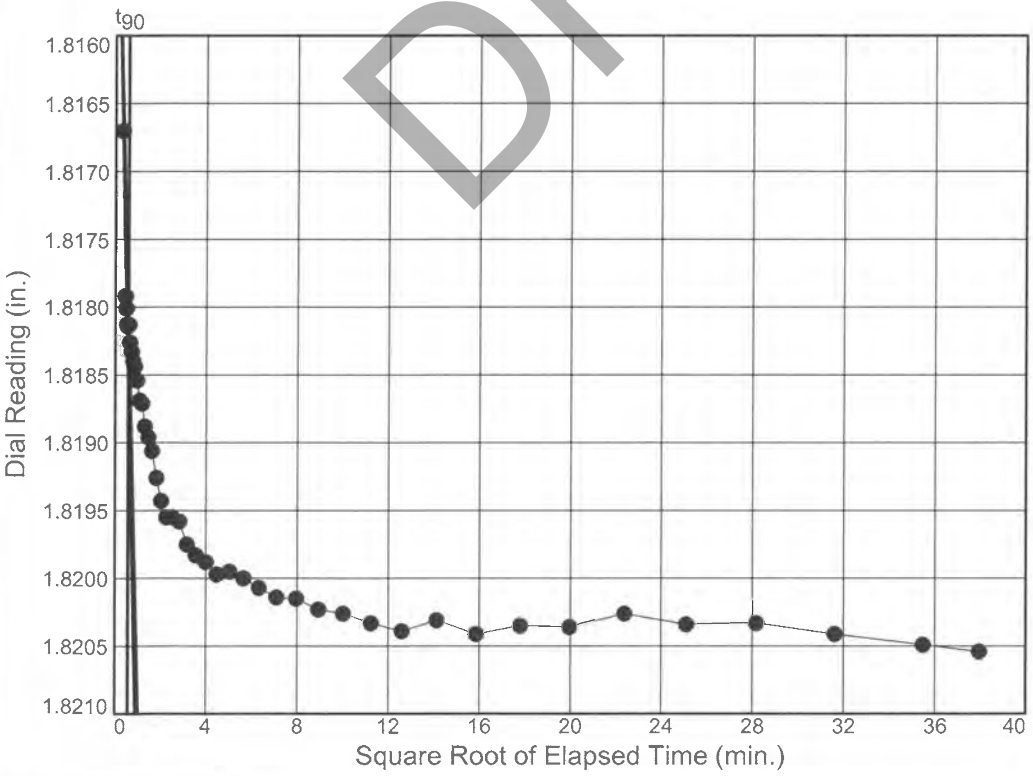
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 7
Load= 0.25 tsf
D_0 = 1.8447
D_{90} = 1.8367
D_{100} = 1.8358
T_{90} = 7.29 min.

C_v @ T_{90}
0.183 ft.^{2}/day



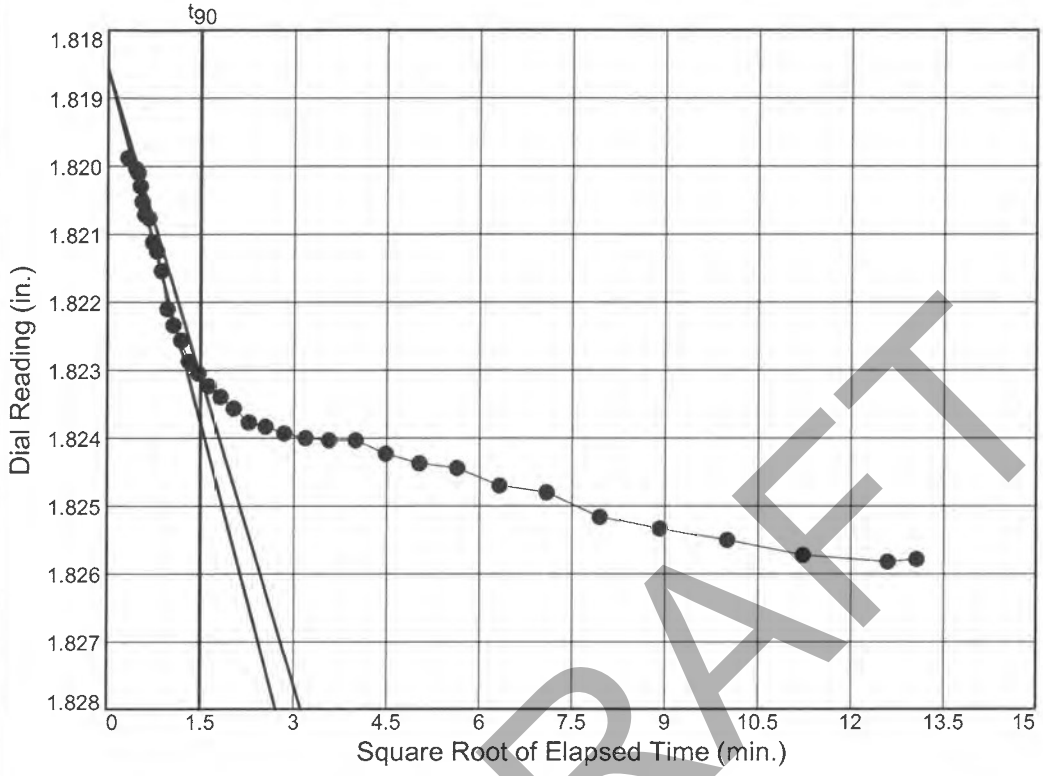
Load No.= 8
Load= 0.50 tsf
D_0 = 1.8144
D_{90} = 1.8181
D_{100} = 1.8185
T_{90} = 0.33 min.

C_v @ T_{90}
4.162 ft.^{2}/day

Dial Reading vs. Time

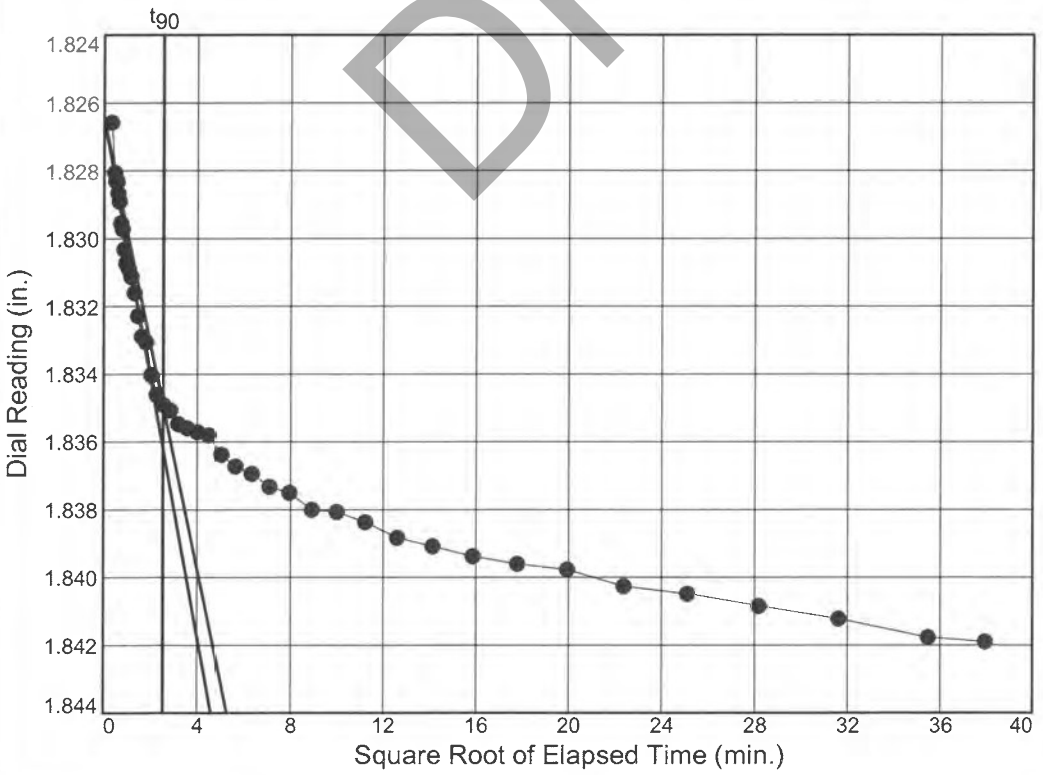
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 9
Load= 1.00 tsf
D_0 = 1.8186
D_{90} = 1.8231
D_{100} = 1.8236
T_{90} = 2.23 min.

C_v @ T_{90}
0.614 ft.^{2}/day



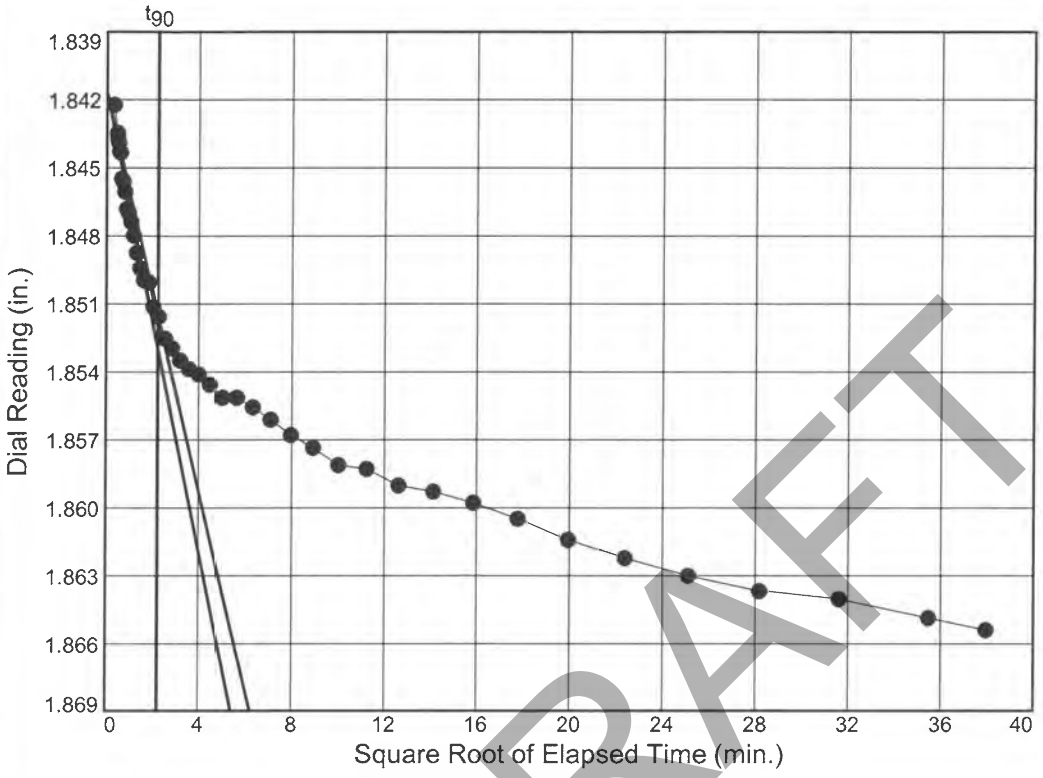
Load No.= 10
Load= 2.00 tsf
D_0 = 1.8265
D_{90} = 1.8349
D_{100} = 1.8358
T_{90} = 6.42 min.

C_v @ T_{90}
0.207 ft.^{2}/day

Dial Reading vs. Time

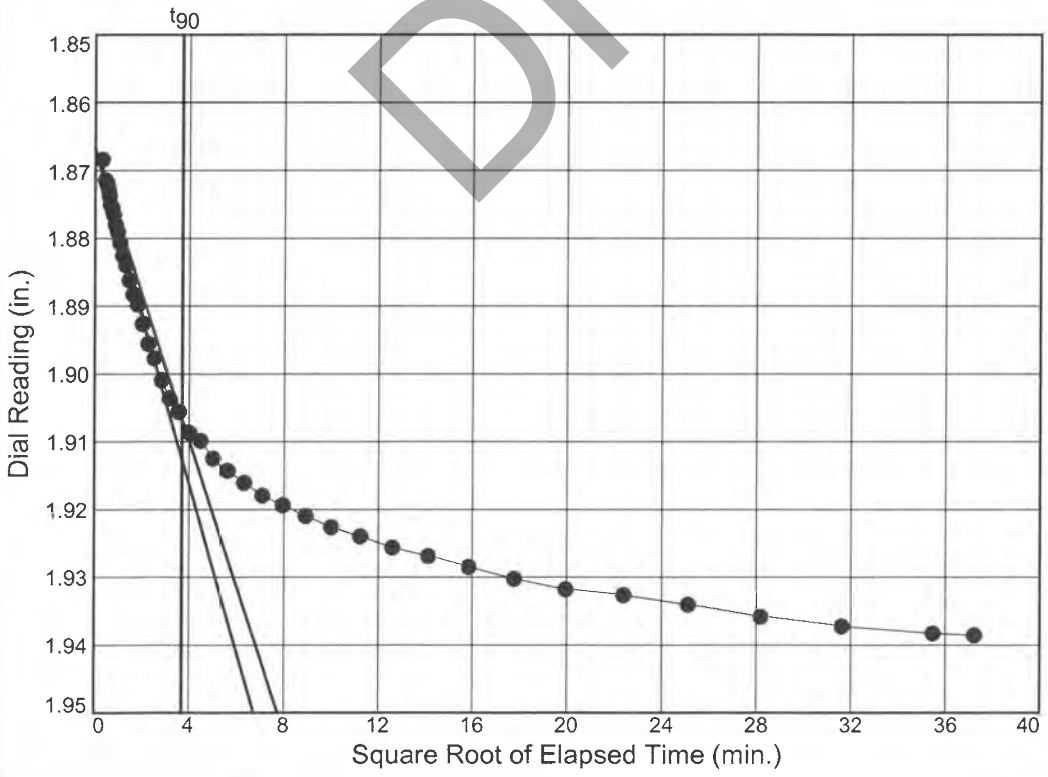
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 11
Load= 4.00 tsf
D_0 = 1.8417
D_{90} = 1.8515
D_{100} = 1.8526
T_{90} = 5.00 min.

C_v @ T_{90}
0.254 ft.^{2}/day



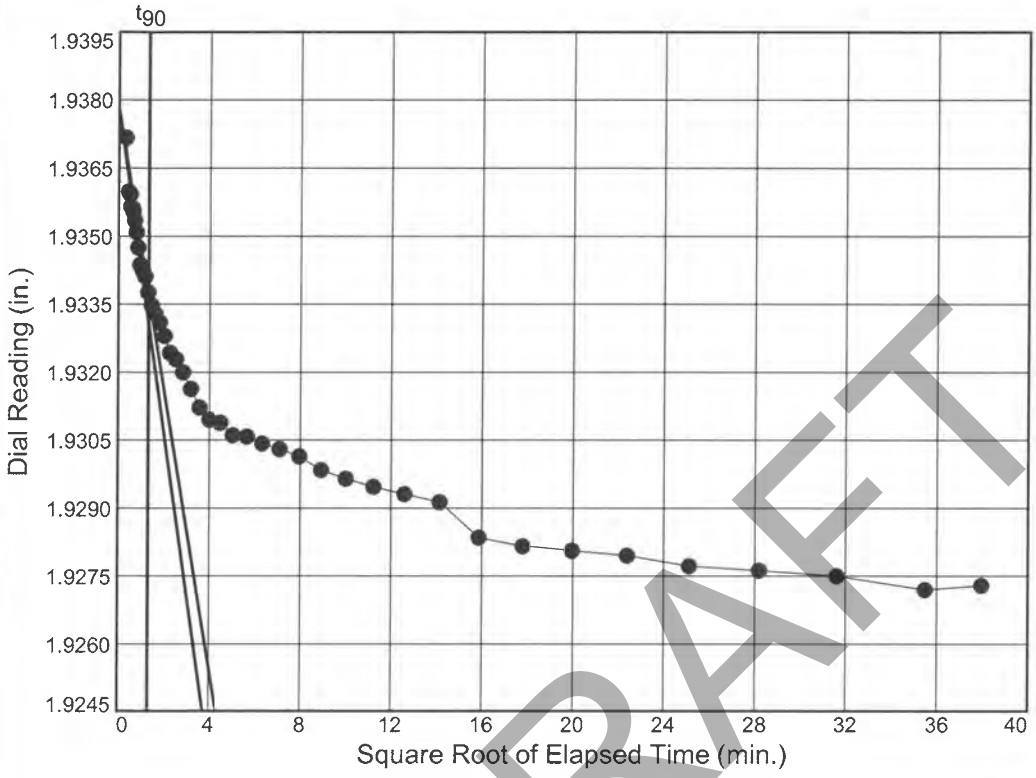
Load No.= 12
Load= 8.00 tsf
D_0 = 1.8669
D_{90} = 1.9065
D_{100} = 1.9109
T_{90} = 13.68 min.

C_v @ T_{90}
0.082 ft.^{2}/day

Dial Reading vs. Time

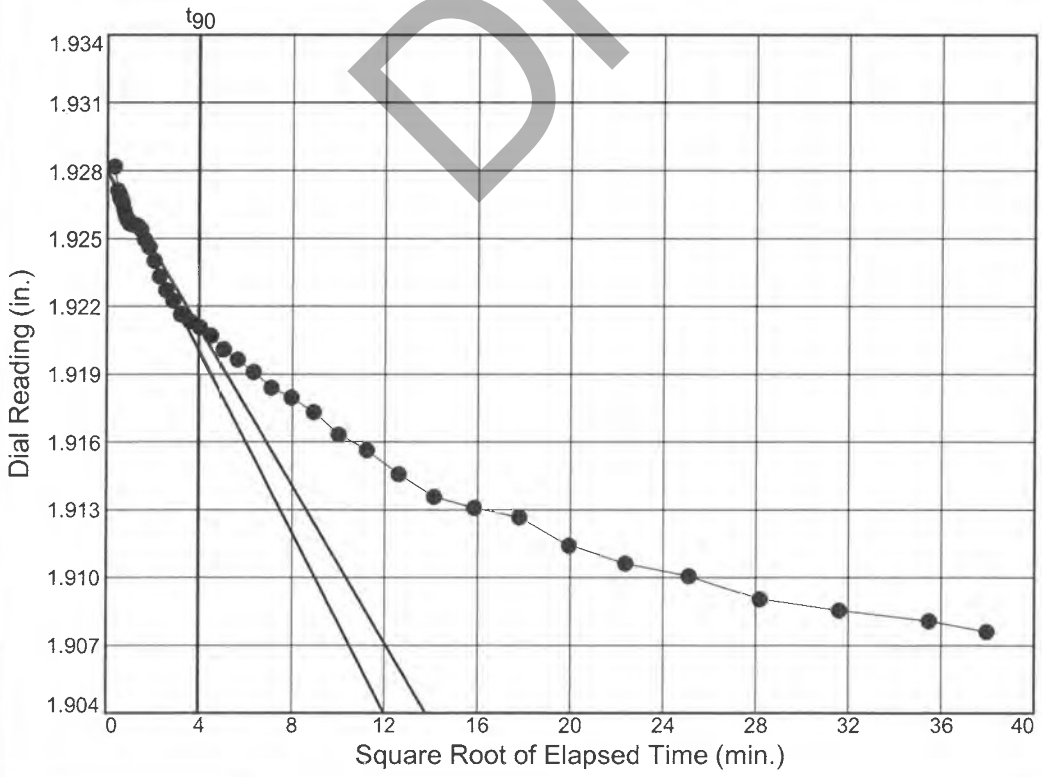
Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'



Load No.= 13
Load=2.00 tsf
D_0 = 1.9378
D_{90} = 1.9337
D_{100} = 1.9333
T_{90} = 1.77 min.

C_v @ T_{90}
0.566 ft.^{2}/day



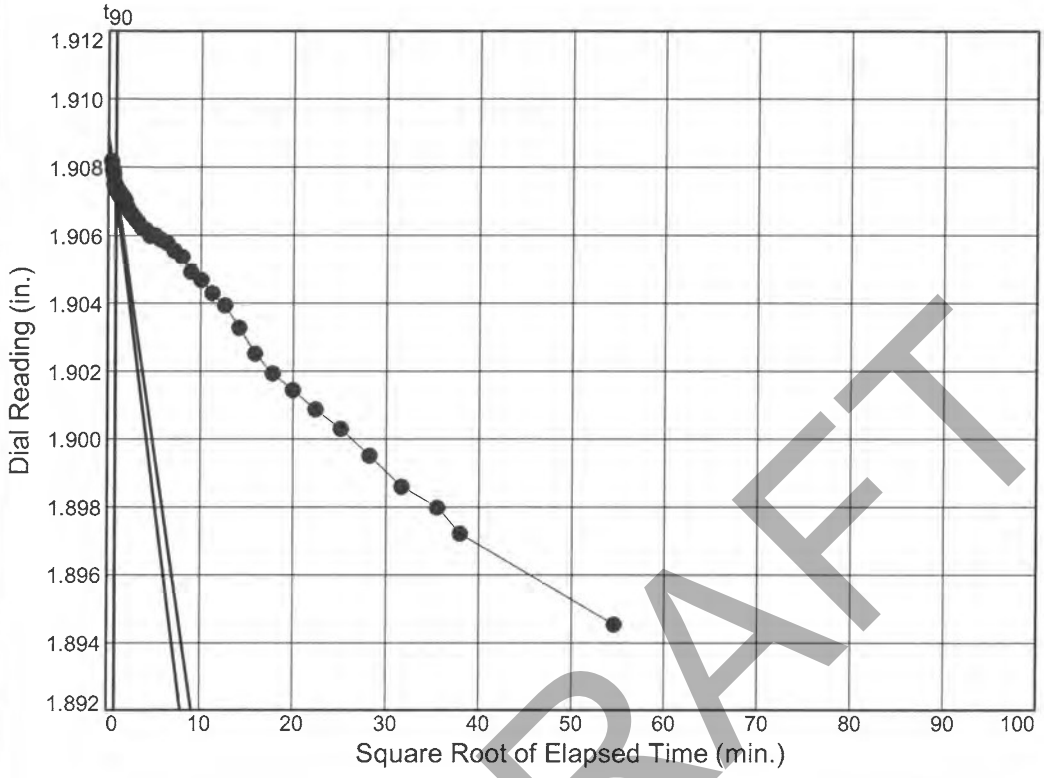
Load No.= 14
Load=0.50 tsf
D_0 = 1.9280
D_{90} = 1.9211
D_{100} = 1.9203
T_{90} = 15.58 min.

C_v @ T_{90}
0.068 ft.^{2}/day

Dial Reading vs. Time

Project No.: 4471G
Project: FTE PD&E SR 408 to SR 50

Location: SPT-14 Depth: 30'-32'

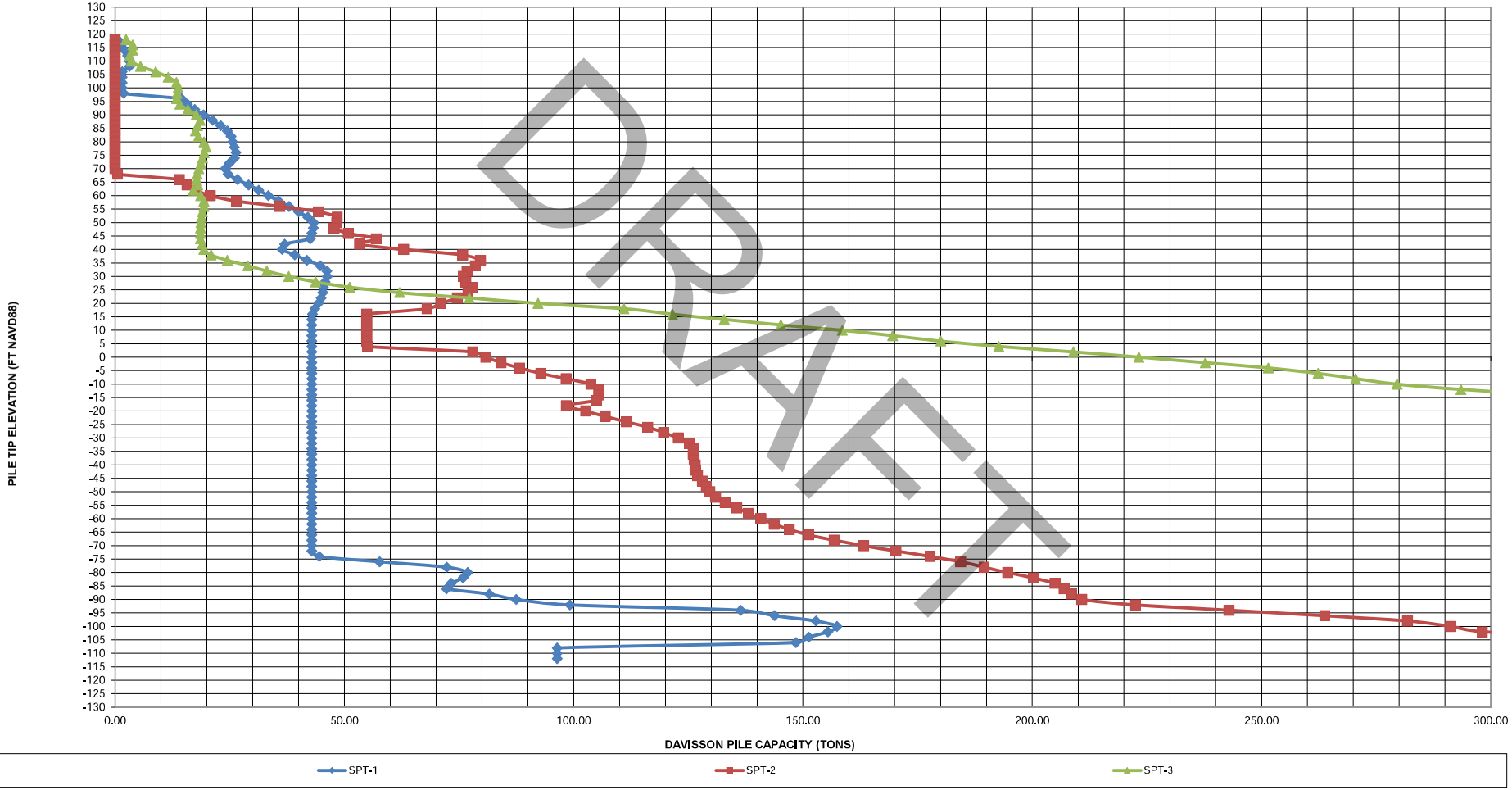


Load No.= 15
Load= 0.25 tsf
D_0 = 1.9089
D_{90} = 1.9074
D_{100} = 1.9072
T_{90} = 0.68 min.

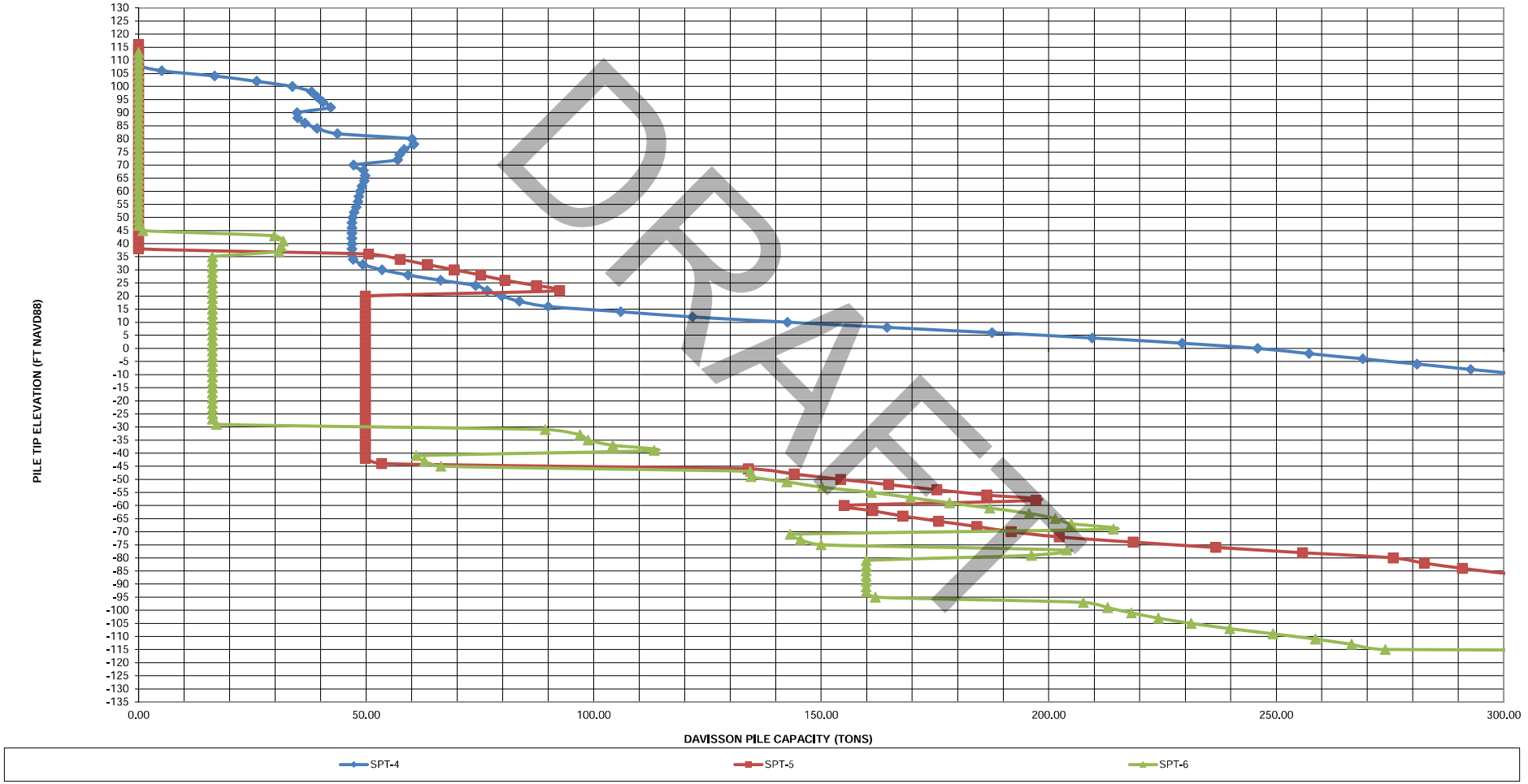
C_V @ T_{90}
1.642 ft.^{2}/day

FB-DEEP BEARING CAPACITY VS EMBEDMENT DEPTH CURVES

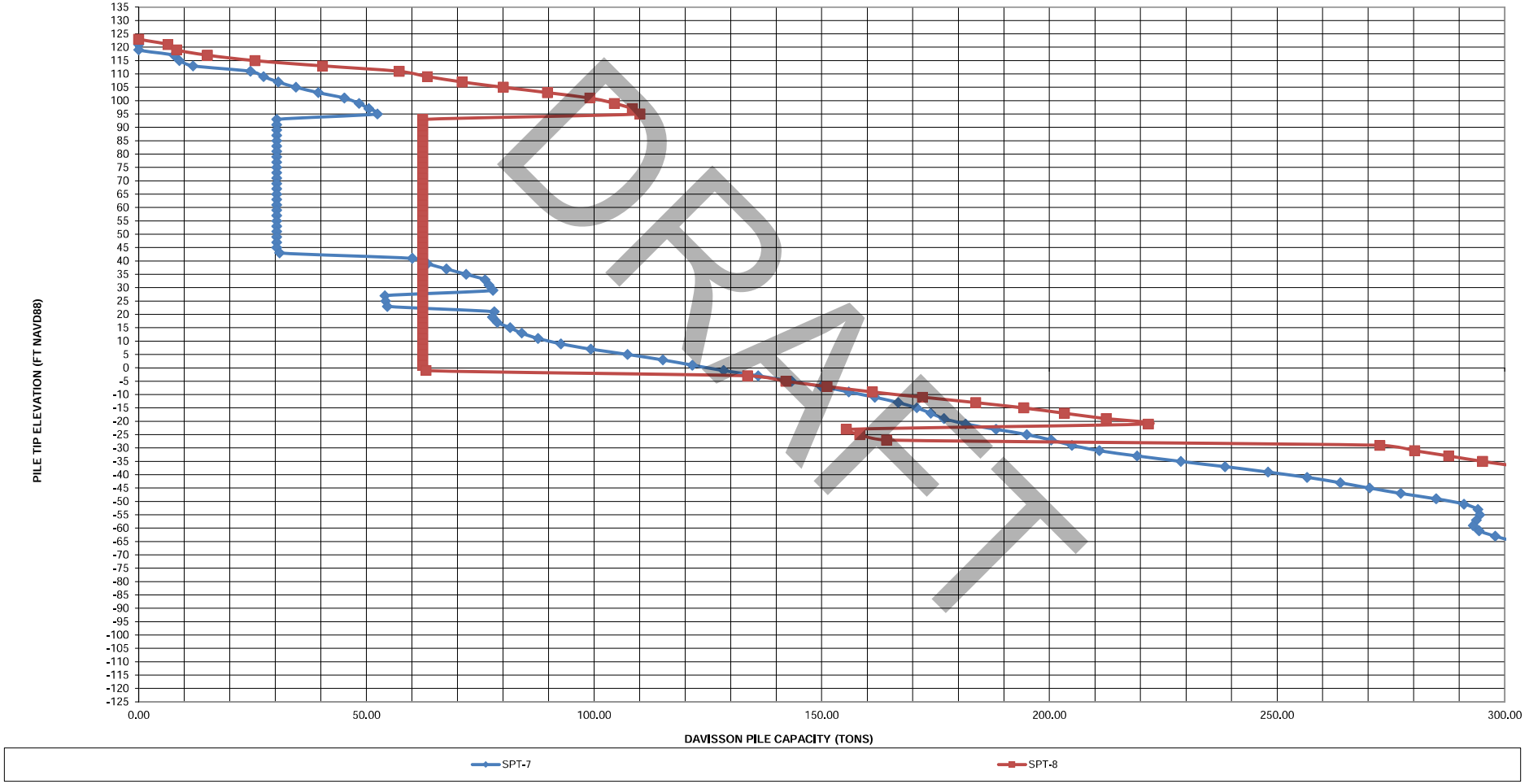
24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 1 (Lake Pearl)
Financial Project No. 444007-1
GEC Project No. 4471G



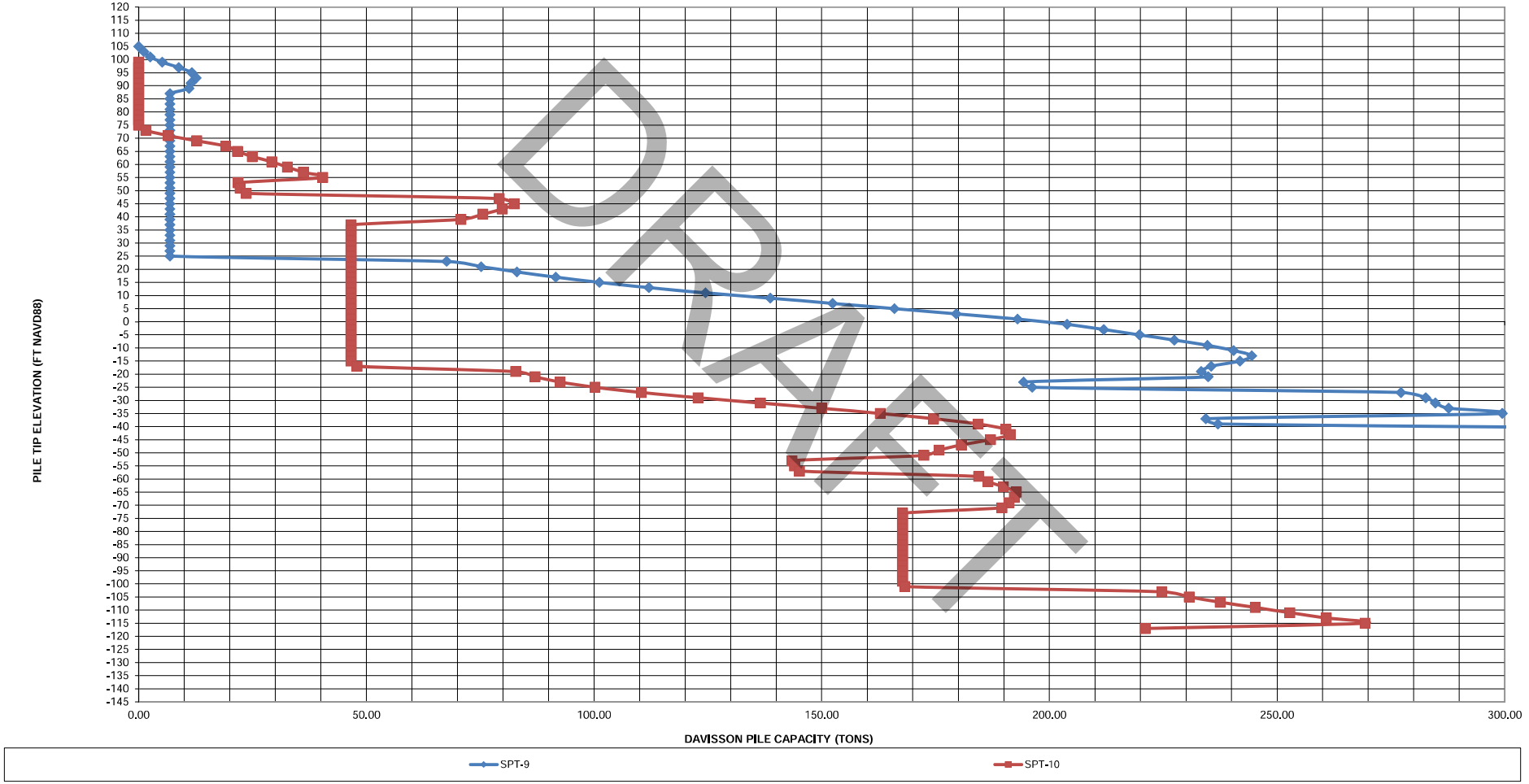
24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 2 (Lake Bonnet)
Financial Project No. 444007-1
GEC Project No. 4471G



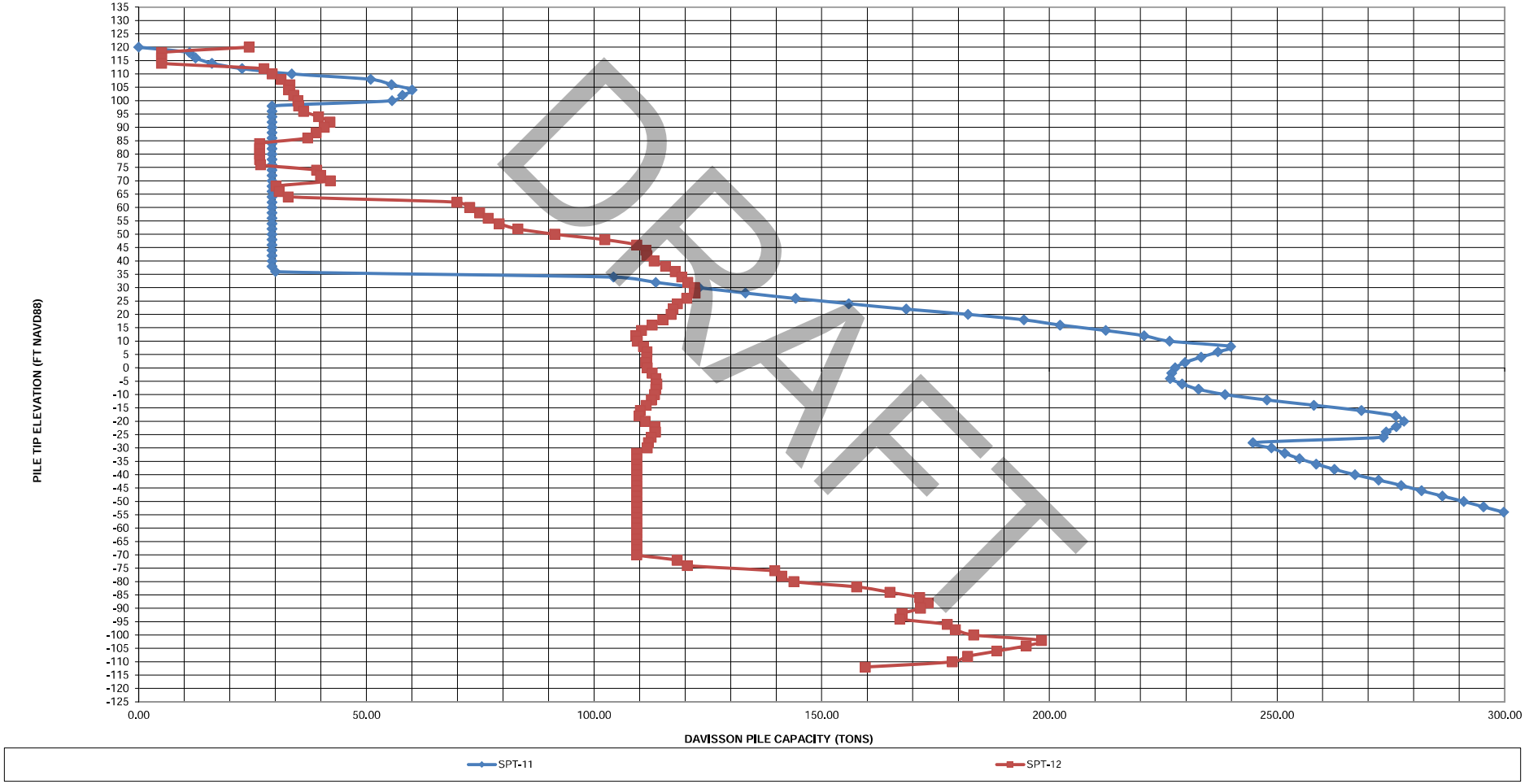
24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 3
Financial Project No. 444007-1
GEC Project No. 4471G



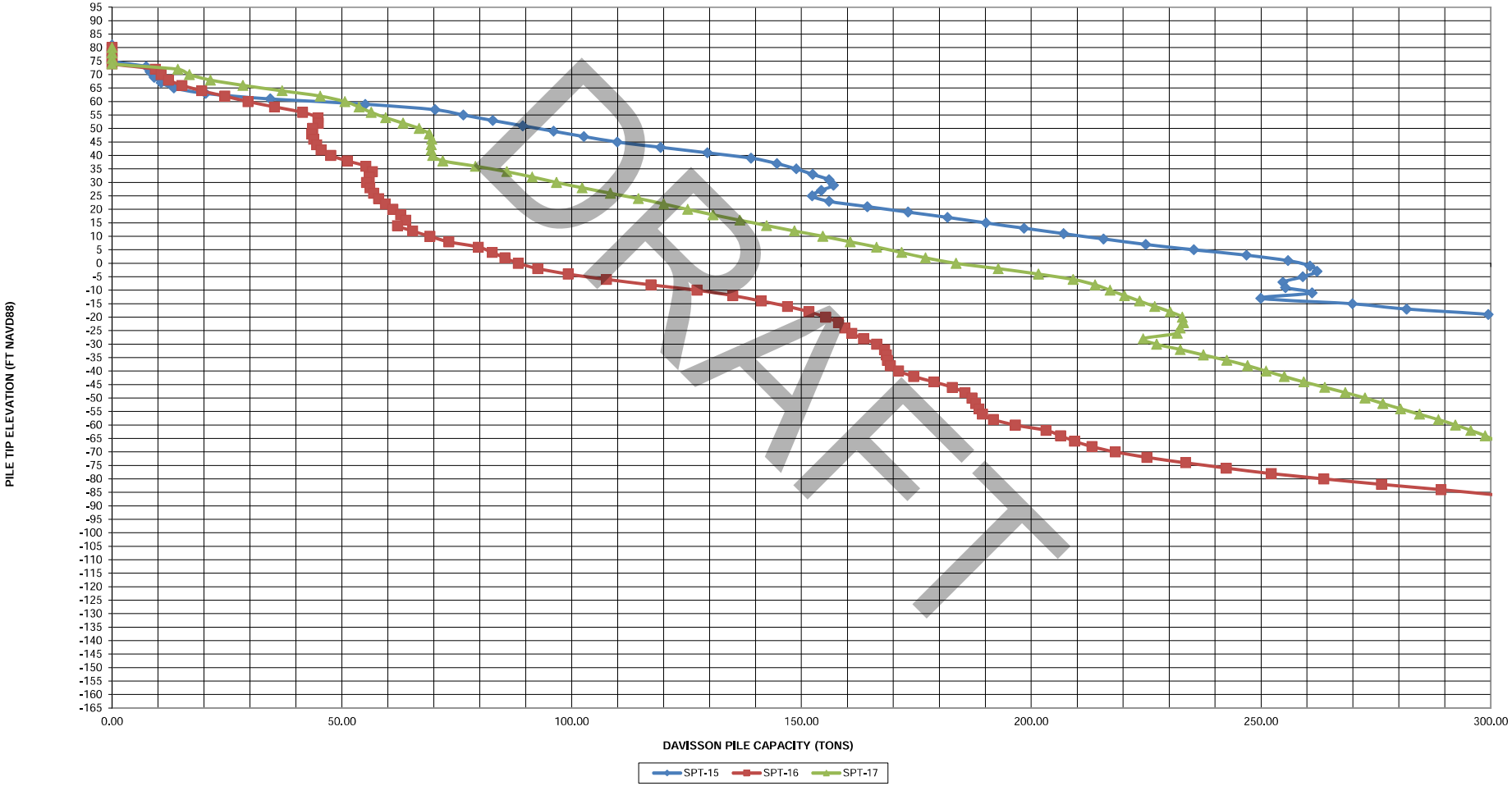
24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 4
Financial Project No. 444007-1
GEC Project No. 4471G



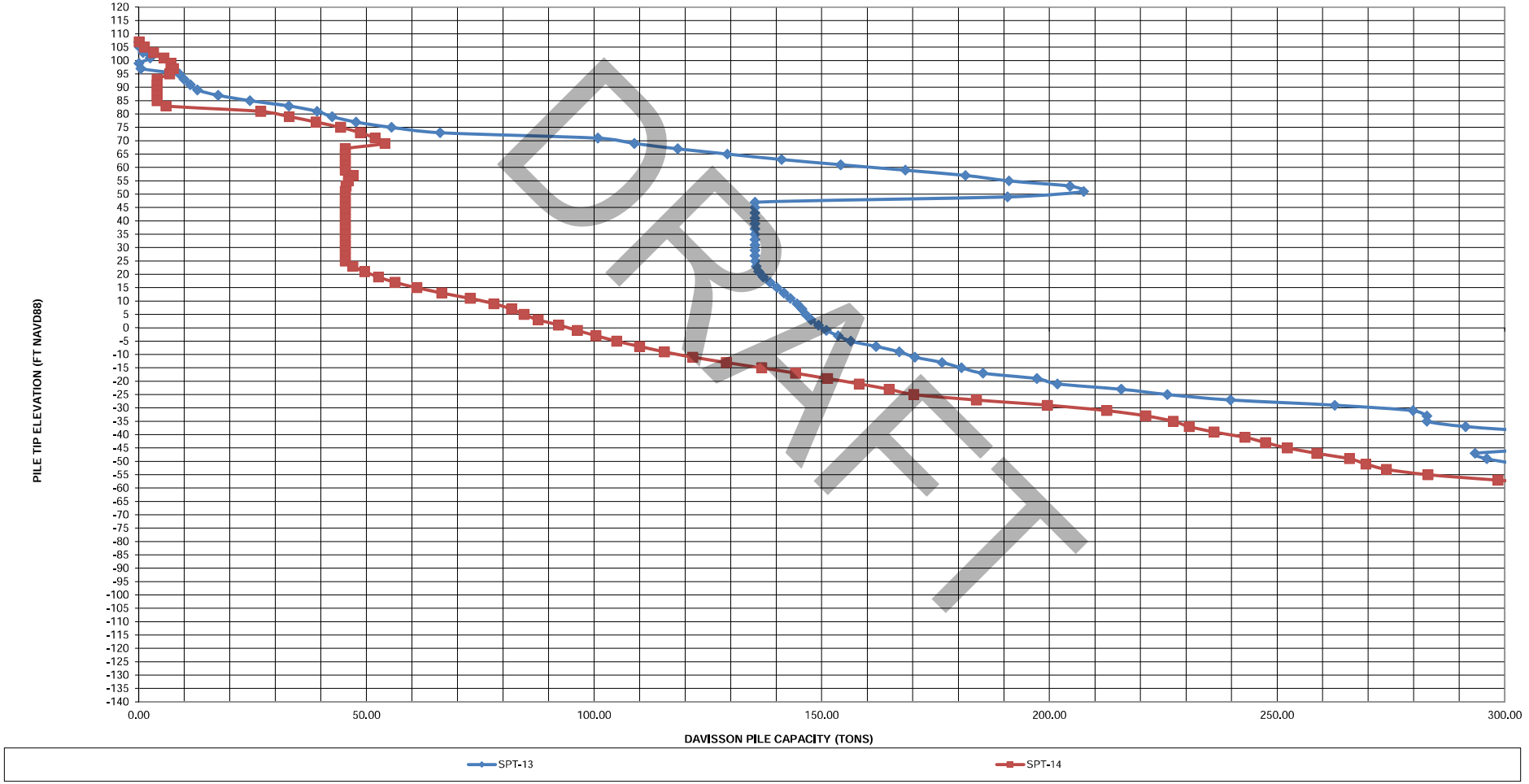
24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 5
Financial Project No. 444007-1
GEC Project No. 4471G



24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 6
Financial Project No. 444007-1
GEC Project No. 4471G



24-IN STEEL PIPE PILES
FTE PD&E SR 408 TO SR 50
Relic Sinkhole Area 7
Financial Project No. 444007-1
GEC Project No. 4471G



General Information:
====================
Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-1 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 9-30-20, Boring Number: SPT-1
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	3- Clean sand
2	2.00	0.00	3- Clean sand
3	4.00	0.00	3- Clean sand
4	6.00	1.00	3- Clean sand
5	8.00	3.00	3- Clean sand
6	10.00	4.00	3- Clean sand
7	13.00	0.00	5- Cavity layer
8	20.00	1.00	5- Cavity layer
9	23.00	5.00	3- Clean sand
10	30.00	6.00	3- Clean sand
11	35.00	6.00	3- Clean sand
12	40.00	3.00	3- Clean sand
13	45.00	3.00	3- Clean sand
14	50.00	4.00	3- Clean sand
15	55.00	2.00	3- Clean sand
16	60.00	7.00	3- Clean sand
17	65.00	6.00	3- Clean sand

18	70.00	7.00	3- Clean sand
19	75.00	6.00	3- Clean sand
20	78.00	0.00	2- Clay and silty sand
21	85.00	8.00	2- Clay and silty sand
22	90.00	0.00	2- Clay and silty sand
23	95.00	0.00	2- Clay and silty sand
24	100.00	0.00	2- Clay and silty sand
25	105.00	0.00	2- Clay and silty sand
26	110.00	0.00	2- Clay and silty sand
27	115.00	0.00	2- Clay and silty sand
28	120.00	2.00	2- Clay and silty sand
29	125.00	0.00	2- Clay and silty sand
30	130.00	0.00	2- Clay and silty sand
31	135.00	0.00	2- Clay and silty sand
32	140.00	0.00	2- Clay and silty sand
33	145.00	0.00	2- Clay and silty sand
34	150.00	0.00	2- Clay and silty sand
35	155.00	0.00	2- Clay and silty sand
36	158.00	0.00	3- Clean sand
37	165.00	0.00	3- Clean sand
38	170.00	0.00	3- Clean sand
39	175.00	0.00	3- Clean sand
40	180.00	0.00	3- Clean sand
41	185.00	1.00	3- Clean sand
42	190.00	0.00	3- Clean sand
43	195.00	0.00	3- Clean sand
44	200.00	0.00	3- Clean sand
45	203.00	64.00	4- Lime Stone/Very shelly sand
46	206.90	0.00	3- Clean sand
47	207.00	0.00	4- Lime Stone/Very shelly sand
48	212.90	0.00	3- Clean sand
49	213.00	44.00	4- Lime Stone/Very shelly sand
50	220.00	43.00	4- Lime Stone/Very shelly sand
51	225.00	62.00	4- Lime Stone/Very shelly sand
52	227.00	0.00	5- Cavity layer
53	235.00	0.00	5- Cavity layer
54	238.00	0.00	3- Clean sand
55	240.00	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	0.00	-13.00	13.00	1.54	3-Clean Sand
2	-13.00	-23.00	10.00	0.30	5-Void
3	-23.00	-78.00	55.00	4.96	3-Clean Sand
4	-78.00	-158.00	80.00	0.63	2-Clay and Silty Sand
5	-158.00	-203.00	45.00	0.11	3-Clean Sand
6	-203.00	-206.90	3.90	64.00	4-Limestone, Very Shelly Sand
7	-206.90	-207.00	0.10	0.00	3-Clean Sand
8	-207.00	-212.90	5.90	0.00	4-Limestone, Very Shelly Sand
9	-212.90	-213.00	0.10	0.00	3-Clean Sand
10	-213.00	-227.00	14.00	46.21	4-Limestone, Very Shelly Sand
11	-227.00	-238.00	11.00	0.00	5-Void
12	-238.00	-240.00	2.00	0.00	3-Clean Sand
13	-240.00	-240.00	0.00	0.00	5-

Driven Pile Data:
==========
Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED

24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED

24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.55	0.55	0.27	1.65
4.00	24.0	0.00	1.30	1.30	0.65	3.91
6.00	24.0	0.00	2.09	2.09	1.05	6.28
8.00	24.0	0.10	2.61	2.72	1.36	7.94

10.00	24.0	0.45	2.65	3.10	1.55	8.41
12.00	24.0	0.84	2.30	3.14	1.57	7.74
14.00	24.0	1.52	0.00	1.52	0.76	1.52
16.00	24.0	1.52	0.00	1.52	0.76	1.52
18.00	24.0	1.52	0.00	1.52	0.76	1.52
20.00	24.0	1.52	0.00	1.52	0.76	1.52
22.00	24.0	1.88	0.00	1.88	0.94	1.88
24.00	24.0	2.85	11.64	14.49	7.25	37.77
26.00	24.0	3.88	11.91	15.79	7.89	39.60
28.00	24.0	4.90	12.45	17.35	8.68	42.25
30.00	24.0	5.94	13.34	19.28	9.64	45.96
32.00	24.0	7.11	14.13	21.24	10.62	49.51
34.00	24.0	8.41	14.60	23.01	11.50	52.20
36.00	24.0	9.72	14.73	24.45	12.22	53.91
38.00	24.0	10.75	14.53	25.28	12.64	54.33
40.00	24.0	11.48	14.12	25.60	12.80	53.84
42.00	24.0	12.05	13.93	25.98	12.99	53.84
44.00	24.0	12.61	13.75	26.36	13.18	53.86
46.00	24.0	13.17	12.85	26.02	13.01	51.73
48.00	24.0	13.83	11.06	24.89	12.44	47.01
50.00	24.0	14.58	9.45	24.03	12.02	42.94
52.00	24.0	15.24	9.38	24.61	12.31	43.36
54.00	24.0	15.58	11.10	26.68	13.34	48.88
56.00	24.0	15.73	13.36	29.09	14.54	55.80
58.00	24.0	16.38	14.94	31.32	15.66	61.21
60.00	24.0	17.65	15.77	33.42	16.71	64.97
62.00	24.0	19.18	16.46	35.64	17.82	68.57
64.00	24.0	20.61	17.33	37.94	18.97	72.60
66.00	24.0	21.96	18.05	40.02	20.01	76.12
68.00	24.0	23.39	18.63	42.02	21.01	79.27
70.00	24.0	24.93	18.38	43.31	21.65	80.06
72.00	24.0	26.47	16.74	43.21	21.60	76.68
74.00	24.0	27.90	14.97	42.88	21.44	72.83
76.00	24.0	29.14	13.40	42.54	21.27	69.34
78.00	24.0	30.26	6.70	36.96	18.48	50.36
80.00	24.0	30.86	5.57	36.43	18.21	47.56
82.00	24.0	32.66	6.47	39.13	19.57	52.07
84.00	24.0	35.67	6.15	41.82	20.91	54.13
86.00	24.0	39.51	5.22	44.73	22.37	55.17
88.00	24.0	42.04	4.14	46.17	23.09	54.45
90.00	24.0	42.88	3.35	46.23	23.12	52.93
92.00	24.0	42.88	2.87	45.75	22.88	51.50
94.00	24.0	42.88	2.51	45.39	22.70	50.42
96.00	24.0	42.88	2.39	45.27	22.64	50.06
98.00	24.0	42.88	2.03	44.91	22.46	48.98
100.00	24.0	42.88	1.44	44.32	22.16	47.19
102.00	24.0	42.88	0.67	43.55	21.77	44.89
104.00	24.0	42.88	0.17	43.05	21.52	43.38

106.00	24.0	42.88	0.00	42.88	21.44	42.88
108.00	24.0	42.88	0.00	42.88	21.44	42.88
110.00	24.0	42.88	0.00	42.88	21.44	42.88
112.00	24.0	42.88	0.00	42.88	21.44	42.88
114.00	24.0	42.88	0.00	42.88	21.44	42.88
116.00	24.0	42.88	0.00	42.88	21.44	42.88
118.00	24.0	42.88	0.00	42.88	21.44	42.88
120.00	24.0	42.88	0.00	42.88	21.44	42.88
122.00	24.0	42.88	0.00	42.88	21.44	42.88
124.00	24.0	42.88	0.00	42.88	21.44	42.88
126.00	24.0	42.88	0.00	42.88	21.44	42.88
128.00	24.0	42.88	0.00	42.88	21.44	42.88
130.00	24.0	42.88	0.00	42.88	21.44	42.88
132.00	24.0	42.88	0.00	42.88	21.44	42.88
134.00	24.0	42.88	0.00	42.88	21.44	42.88
136.00	24.0	42.88	0.00	42.88	21.44	42.88
138.00	24.0	42.88	0.00	42.88	21.44	42.88
140.00	24.0	42.88	0.00	42.88	21.44	42.88
142.00	24.0	42.88	0.00	42.88	21.44	42.88
144.00	24.0	42.88	0.00	42.88	21.44	42.88
146.00	24.0	42.88	0.00	42.88	21.44	42.88
148.00	24.0	42.88	0.00	42.88	21.44	42.88
150.00	24.0	42.88	0.00	42.88	21.44	42.88
152.00	24.0	42.88	0.00	42.88	21.44	42.88
154.00	24.0	42.88	0.00	42.88	21.44	42.88
156.00	24.0	42.88	0.00	42.88	21.44	42.88
158.00	24.0	42.88	0.00	42.88	21.44	42.88
160.00	24.0	42.88	0.00	42.88	21.44	42.88
162.00	24.0	42.88	0.00	42.88	21.44	42.88
164.00	24.0	42.88	0.00	42.88	21.44	42.88
166.00	24.0	42.88	0.00	42.88	21.44	42.88
168.00	24.0	42.88	0.00	42.88	21.44	42.88
170.00	24.0	42.88	0.00	42.88	21.44	42.88
172.00	24.0	42.88	0.00	42.88	21.44	42.88
174.00	24.0	42.88	0.00	42.88	21.44	42.88
176.00	24.0	42.88	0.00	42.88	21.44	42.88
178.00	24.0	42.88	0.00	42.88	21.44	42.88
180.00	24.0	42.88	0.00	42.88	21.44	42.88
182.00	24.0	42.88	0.00	42.88	21.44	42.88
184.00	24.0	42.88	0.00	42.88	21.44	42.88
186.00	24.0	42.88	0.00	42.88	21.44	42.88
188.00	24.0	42.88	0.00	42.88	21.44	42.88
190.00	24.0	42.88	0.00	42.88	21.44	42.88
192.00	24.0	42.88	0.00	42.88	21.44	42.88
194.00	24.0	42.88	1.64	44.52	22.26	47.81
196.00	24.0	42.88	14.79	57.67	28.83	87.24
198.00	24.0	42.88	29.45	72.33	36.16	131.23
200.00	24.0	42.88	34.01	76.89	38.45	144.92

24.00	240.00	-240.00	0.50	CLOSED	-N/A-

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)
200.00	24.0	42.88	34.01	76.89	38.45	144.92
202.00	24.0	45.56	30.32	75.88	37.94	136.51
204.00	24.0	52.42	20.86	73.28	36.64	115.00
206.00	24.0	56.34	15.90	72.23	36.12	104.03
208.00	24.0	56.75	24.86	81.61	40.81	131.34
210.00	24.0	56.75	30.72	87.48	43.74	148.92
212.00	24.0	56.75	42.43	99.18	49.59	184.05
214.00	24.0	59.52	76.90	136.42	68.21	290.21
216.00	24.0	64.14	79.65	143.79	71.90	303.09
218.00	24.0	68.47	84.35	152.83	76.41	321.53
220.00	24.0	74.29	83.11	157.40	78.70	323.63
222.00	24.0	81.90	73.50	155.41	77.70	302.42
224.00	24.0	88.74	62.53	151.27	75.64	276.33
226.00	24.0	95.44	52.99	148.42	74.21	254.39
228.00	24.0	96.41	0.00	96.41	48.21	96.41
230.00	24.0	96.41	0.00	96.41	48.21	96.41
232.00	24.0	96.41	0.00	96.41	48.21	96.41
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 18:36:50

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-15 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-13-21, Boring Number: SPT-15
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	4.00	5- Cavity layer
6	9.00	3.00	3- Clean sand
7	13.00	5.00	3- Clean sand
8	16.00	6.00	2- Clay and silty sand
9	23.00	1.00	2- Clay and silty sand
10	26.00	27.00	3- Clean sand
11	33.00	29.00	3- Clean sand
12	38.00	18.00	3- Clean sand
13	43.00	19.00	3- Clean sand
14	48.00	30.00	3- Clean sand
15	53.00	25.00	3- Clean sand
16	58.00	22.00	3- Clean sand
17	63.00	2.00	3- Clean sand

18	68.00	29.00	3- Clean sand
19	73.00	46.00	3- Clean sand
20	78.00	36.00	3- Clean sand
21	83.00	28.00	3- Clean sand
22	88.00	27.00	3- Clean sand
23	93.00	17.00	3- Clean sand
24	95.00	5.00	2- Clay and silty sand
25	101.00	36.00	3- Clean sand
26	108.00	24.00	3- Clean sand
27	113.00	23.00	3- Clean sand
28	118.00	33.00	3- Clean sand
29	123.00	31.00	3- Clean sand
30	128.00	31.00	3- Clean sand
31	133.00	24.00	3- Clean sand
32	138.00	34.00	3- Clean sand
33	143.00	25.00	3- Clean sand
34	148.00	37.00	3- Clean sand
35	153.00	38.00	3- Clean sand
36	155.00	20.00	2- Clay and silty sand
37	163.00	43.00	2- Clay and silty sand
38	168.00	18.00	2- Clay and silty sand
39	173.00	45.00	2- Clay and silty sand
40	178.00	36.00	2- Clay and silty sand
41	181.00	50.00	3- Clean sand
42	186.00	18.00	2- Clay and silty sand
43	193.00	18.00	2- Clay and silty sand
44	198.00	11.00	2- Clay and silty sand
45	203.00	25.00	2- Clay and silty sand
46	208.00	26.00	2- Clay and silty sand
47	213.00	12.00	2- Clay and silty sand
48	218.00	16.00	2- Clay and silty sand
49	223.00	44.00	2- Clay and silty sand
50	225.00	17.00	2- Clay and silty sand
51	231.00	29.00	4- Lime Stone/Very shelly sand
52	233.10	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	0.00	-9.00	9.00	0.44	5-Void
2	-9.00	-16.00	7.00	3.86	3-Clean Sand

SPT-15 24 in.out

3	-16.00	-26.00	10.00	4.50	2-Clay and Silty Sand
4	-26.00	-95.00	69.00	25.77	3-Clean Sand
5	-95.00	-101.00	6.00	5.00	2-Clay and Silty Sand
6	-101.00	-155.00	54.00	30.33	3-Clean Sand
7	-155.00	-181.00	26.00	30.69	2-Clay and Silty Sand
8	-181.00	-186.00	5.00	50.00	3-Clean Sand
9	-186.00	-231.00	45.00	19.02	2-Clay and Silty Sand
10	-231.00	-233.10	2.10	29.00	4-Limestone, Very Shelly Sand
11	-233.10	-233.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED

24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED

24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.41	7.02	7.43	3.71	21.46
12.00	24.0	1.16	7.11	8.27	4.13	22.48
14.00	24.0	2.45	6.72	9.17	4.59	22.60
16.00	24.0	5.06	5.60	10.66	5.33	21.87
18.00	24.0	6.95	6.51	13.46	6.73	26.47
20.00	24.0	7.24	13.12	20.36	10.18	46.60
22.00	24.0	7.82	26.61	34.43	17.22	87.64

24.00	24.0	8.64	46.45	55.09	27.54	147.98
26.00	24.0	15.45	54.85	70.30	35.15	179.99
28.00	24.0	21.06	55.36	76.42	38.21	187.15
30.00	24.0	26.44	56.38	82.82	41.41	195.57
32.00	24.0	32.07	57.30	89.37	44.69	203.97
34.00	24.0	37.67	58.40	96.07	48.04	212.87
36.00	24.0	42.25	60.41	102.66	51.33	223.47
38.00	24.0	45.41	64.54	109.95	54.97	239.02
40.00	24.0	47.85	71.49	119.34	59.67	262.32
42.00	24.0	51.04	78.49	129.53	64.77	286.51
44.00	24.0	55.17	83.88	139.05	69.53	306.82
46.00	24.0	60.45	84.19	144.65	72.32	313.03
48.00	24.0	66.44	82.43	148.87	74.44	313.74
50.00	24.0	72.65	79.79	152.43	76.22	312.01
52.00	24.0	78.57	77.44	156.01	78.01	310.90
54.00	24.0	84.21	72.77	156.98	78.49	302.53
56.00	24.0	89.64	64.66	154.30	77.15	283.61
58.00	24.0	94.86	57.45	152.31	76.16	267.21
60.00	24.0	99.05	56.96	156.01	78.00	269.92
62.00	24.0	101.37	62.95	164.32	82.16	290.21
64.00	24.0	102.32	70.90	173.22	86.61	315.01
66.00	24.0	105.05	76.73	181.78	90.89	335.24
68.00	24.0	110.10	80.03	190.13	95.07	350.19
70.00	24.0	116.66	81.76	198.42	99.21	361.95
72.00	24.0	123.89	83.17	207.06	103.53	373.40
74.00	24.0	131.68	84.07	215.75	107.88	383.89
76.00	24.0	139.32	85.57	224.89	112.45	396.02
78.00	24.0	146.70	88.68	235.38	117.69	412.75
80.00	24.0	153.72	93.14	246.85	123.43	433.12
82.00	24.0	160.30	95.58	255.88	127.94	447.04
84.00	24.0	166.48	94.17	260.65	130.32	448.98
86.00	24.0	172.55	89.63	262.18	131.09	441.45
88.00	24.0	178.56	80.52	259.09	129.54	420.14
90.00	24.0	184.16	70.59	254.75	127.38	395.92
92.00	24.0	189.01	66.29	255.31	127.65	387.89
94.00	24.0	193.07	68.04	261.11	130.56	397.20
96.00	24.0	204.84	45.11	249.95	124.97	340.16
98.00	24.0	209.24	60.63	269.87	134.93	391.12
100.00	24.0	214.14	67.54	281.68	140.84	416.75
102.00	24.0	222.23	77.22	299.44	149.72	453.88
104.00	24.0	229.04	75.06	304.10	152.05	454.21
106.00	24.0	235.31	73.69	309.00	154.50	456.37
108.00	24.0	241.04	74.28	315.32	157.66	463.89
110.00	24.0	246.46	77.72	324.18	162.09	479.61
112.00	24.0	250.12	82.22	332.35	166.17	496.79
114.00	24.0	253.93	87.02	340.95	170.48	514.99
116.00	24.0	258.98	90.83	349.81	174.90	531.46
118.00	24.0	265.31	92.95	358.26	179.13	544.15

120.00	24.0	272.11	94.02	366.13	183.06	554.17
122.00	24.0	278.83	94.52	373.36	186.68	562.40
124.00	24.0	285.47	94.43	379.90	189.95	568.76
126.00	24.0	292.10	93.41	385.51	192.75	572.32
128.00	24.0	298.74	92.50	391.24	195.62	576.25
130.00	24.0	305.15	93.17	398.32	199.16	584.67
132.00	24.0	311.10	94.93	406.03	203.02	595.89
134.00	24.0	316.73	95.79	412.52	206.26	604.11
136.00	24.0	322.85	94.77	417.62	208.81	607.17
138.00	24.0	329.59	93.11	422.70	211.35	608.92
140.00	24.0	336.37	92.54	428.91	214.45	613.98
142.00	24.0	342.60	93.55	436.14	218.07	623.24
144.00	24.0	348.42	95.16	443.58	221.79	633.89
146.00	24.0	354.80	96.57	451.36	225.68	644.50
148.00	24.0	361.89	92.84	454.73	227.36	640.42
150.00	24.0	369.36	84.84	454.20	227.10	623.87
152.00	24.0	376.88	77.79	454.66	227.33	610.23
154.00	24.0	384.46	72.26	456.72	228.36	601.24
156.00	24.0	397.07	45.55	442.62	221.31	533.73
158.00	24.0	405.36	50.57	455.93	227.96	557.06
160.00	24.0	413.87	51.68	465.55	232.78	568.91
162.00	24.0	423.88	50.82	474.70	237.35	576.35
164.00	24.0	434.03	50.00	484.03	242.01	584.03
166.00	24.0	443.08	51.66	494.74	247.37	598.05
168.00	24.0	451.00	55.26	506.26	253.13	616.77
170.00	24.0	458.94	58.27	517.21	258.61	633.76
172.00	24.0	468.05	60.27	528.32	264.16	648.87
174.00	24.0	478.16	65.01	543.17	271.58	673.18
176.00	24.0	488.26	69.44	557.70	278.85	696.58
178.00	24.0	498.18	69.26	567.44	283.72	705.96
180.00	24.0	507.50	63.68	571.19	285.59	698.56
182.00	24.0	515.87	56.43	572.30	286.15	685.15
184.00	24.0	523.79	52.11	575.89	287.95	680.11
186.00	24.0	531.33	30.16	561.49	280.74	621.80
188.00	24.0	538.68	29.82	568.50	284.25	628.15
190.00	24.0	546.03	28.82	574.85	287.43	632.49
192.00	24.0	553.39	27.39	580.78	290.39	635.57
194.00	24.0	560.64	27.07	587.71	293.86	641.85
196.00	24.0	567.18	28.29	595.47	297.74	652.06
198.00	24.0	572.91	30.66	603.58	301.79	664.90
200.00	24.0	578.91	33.16	612.07	306.04	678.39

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.

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)
200.00	24.0	578.91	33.16	612.07	306.04	678.39
202.00	24.0	586.26	34.90	621.16	310.58	690.96
204.00	24.0	594.80	34.62	629.42	314.71	698.66
206.00	24.0	603.56	32.86	636.42	318.21	702.13
208.00	24.0	612.38	30.56	642.94	321.47	704.06
210.00	24.0	620.59	29.04	649.62	324.81	707.69
212.00	24.0	627.52	29.19	656.71	328.36	715.10
214.00	24.0	633.41	32.67	666.07	333.04	731.40
216.00	24.0	639.54	38.58	678.13	339.06	755.29
218.00	24.0	646.16	41.80	687.96	343.98	771.57
220.00	24.0	653.69	42.34	696.03	348.01	780.70
222.00	24.0	662.57	45.11	707.67	353.84	797.89
224.00	24.0	672.24	50.82	723.06	361.53	824.69
226.00	24.0	679.60	53.55	733.15	366.58	840.26
228.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
230.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 18:55:42

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-16 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-23-21, Boring Number: SPT-16
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	4.00	5- Cavity layer
6	9.00	6.00	3- Clean sand
7	17.00	3.00	3- Clean sand
8	22.00	11.00	3- Clean sand
9	27.00	8.00	3- Clean sand
10	32.00	17.00	3- Clean sand
11	37.00	2.00	3- Clean sand
12	42.00	4.00	3- Clean sand
13	47.00	7.00	3- Clean sand
14	52.00	15.00	3- Clean sand
15	57.00	3.00	3- Clean sand
16	62.00	3.00	3- Clean sand
17	67.00	6.00	3- Clean sand

18	72.00	8.00	3- Clean sand
19	75.00	0.00	2- Clay and silty sand
20	75.10	14.00	3- Clean sand
21	82.00	9.00	3- Clean sand
22	87.00	11.00	3- Clean sand
23	92.00	25.00	3- Clean sand
24	97.00	22.00	3- Clean sand
25	102.00	21.00	3- Clean sand
26	107.00	15.00	3- Clean sand
27	112.00	11.00	3- Clean sand
28	117.00	18.00	3- Clean sand
29	122.00	11.00	3- Clean sand
30	127.00	11.00	3- Clean sand
31	132.00	16.00	3- Clean sand
32	137.00	11.00	3- Clean sand
33	141.00	20.00	2- Clay and silty sand
34	147.00	8.00	2- Clay and silty sand
35	152.00	9.00	2- Clay and silty sand
36	157.00	10.00	2- Clay and silty sand
37	162.00	26.00	2- Clay and silty sand
38	167.00	31.00	2- Clay and silty sand
39	172.00	36.00	2- Clay and silty sand
40	177.00	31.00	2- Clay and silty sand
41	182.00	27.00	2- Clay and silty sand
42	187.00	28.00	2- Clay and silty sand
43	192.00	51.00	2- Clay and silty sand
44	197.00	47.00	2- Clay and silty sand
45	202.00	25.00	2- Clay and silty sand
46	207.00	35.00	2- Clay and silty sand
47	211.00	3.00	4- Lime Stone/Very shelly sand
48	219.00	9.00	1- Plastic Clay
49	222.00	27.00	1- Plastic Clay
50	225.00	100.00	2- Clay and silty sand
51	230.00	61.00	1- Plastic Clay
52	237.00	72.00	1- Plastic Clay
53	237.10	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	0.00	-9.00	9.00	0.44	5-Void

SPT-16 24 in.out

2	-9.00	-75.00	66.00	7.08	3-Clean Sand
3	-75.00	-75.10	0.10	0.00	2-Clay and Silty Sand
4	-75.10	-141.00	65.90	15.03	3-Clean Sand
5	-141.00	-211.00	70.00	27.21	2-Clay and Silty Sand
6	-211.00	-219.00	8.00	3.00	4-Limestone, Very Shelly Sand
7	-219.00	-225.00	6.00	18.00	1-Plastic Clay
8	-225.00	-230.00	5.00	100.00	2-Clay and Silty Sand
9	-230.00	-237.10	7.10	61.15	1-Plastic Clay
10	-237.10	-237.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED

24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED

24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.96	8.44	9.40	4.70	26.27
12.00	24.0	1.92	8.71	10.63	5.32	28.06
14.00	24.0	2.42	9.86	12.28	6.14	32.00
16.00	24.0	2.67	12.52	15.19	7.59	40.22
18.00	24.0	2.99	16.51	19.50	9.75	52.51
20.00	24.0	3.99	20.55	24.53	12.27	65.63
22.00	24.0	5.78	23.81	29.59	14.79	77.21

24.00	24.0	7.92	27.42	35.35	17.67	90.20
26.00	24.0	9.91	31.54	41.45	20.73	104.53
28.00	24.0	11.81	33.01	44.82	22.41	110.84
30.00	24.0	14.32	30.57	44.89	22.45	106.03
32.00	24.0	17.59	26.07	43.67	21.83	95.81
34.00	24.0	20.60	22.83	43.43	21.71	89.08
36.00	24.0	22.25	21.59	43.84	21.92	87.02
38.00	24.0	22.70	21.83	44.53	22.27	88.19
40.00	24.0	23.20	22.28	45.48	22.74	90.05
42.00	24.0	23.96	23.61	47.57	23.79	94.79
44.00	24.0	24.99	26.22	51.21	25.61	103.65
46.00	24.0	26.30	28.93	55.24	27.62	113.10
48.00	24.0	27.96	28.68	56.64	28.32	113.99
50.00	24.0	30.28	25.67	55.94	27.97	107.28
52.00	24.0	33.32	22.07	55.39	27.70	99.54
54.00	24.0	36.18	19.90	56.07	28.04	95.86
56.00	24.0	37.92	18.97	56.89	28.44	94.82
58.00	24.0	38.68	19.34	58.02	29.01	96.70
60.00	24.0	39.29	20.15	59.44	29.72	99.75
62.00	24.0	39.89	21.19	61.09	30.54	103.48
64.00	24.0	40.64	22.15	62.80	31.40	107.10
66.00	24.0	41.69	22.19	63.88	31.94	108.25
68.00	24.0	43.04	19.05	62.09	31.05	100.20
70.00	24.0	44.59	20.81	65.39	32.70	107.00
72.00	24.0	46.33	22.82	69.16	34.58	114.80
74.00	24.0	47.60	25.63	73.23	36.62	124.50
76.00	24.0	52.21	27.47	79.68	39.84	134.63
78.00	24.0	55.12	27.59	82.70	41.35	137.87
80.00	24.0	57.45	28.02	85.47	42.74	141.52
82.00	24.0	59.00	29.39	88.39	44.19	147.17
84.00	24.0	59.97	32.67	92.64	46.32	157.98
86.00	24.0	60.95	38.31	99.26	49.63	175.89
88.00	24.0	62.47	45.09	107.56	53.78	197.74
90.00	24.0	65.10	52.15	117.25	58.63	221.55
92.00	24.0	69.02	58.24	127.26	63.63	243.74
94.00	24.0	73.82	61.27	135.10	67.55	257.64
96.00	24.0	78.65	62.62	141.27	70.64	266.51
98.00	24.0	83.40	63.54	146.93	73.47	274.01
100.00	24.0	88.12	63.51	151.63	75.81	278.64
102.00	24.0	92.82	62.46	155.28	77.64	280.19
104.00	24.0	97.30	60.73	158.03	79.01	279.49
106.00	24.0	101.36	58.10	159.46	79.73	275.65
108.00	24.0	105.00	55.99	160.98	80.49	272.96
110.00	24.0	108.29	55.21	163.50	81.75	273.93
112.00	24.0	111.24	55.12	166.36	83.18	276.61
114.00	24.0	114.29	53.76	168.06	84.03	275.58
116.00	24.0	117.91	50.58	168.49	84.24	269.65
118.00	24.0	121.95	46.75	168.70	84.35	262.19

120.00	24.0	125.56	43.77	169.33	84.67	256.88
122.00	24.0	128.59	42.53	171.13	85.56	256.20
124.00	24.0	131.33	43.11	174.44	87.22	260.66
126.00	24.0	134.05	44.76	178.81	89.41	268.34
128.00	24.0	136.82	45.96	182.78	91.39	274.71
130.00	24.0	139.96	45.61	185.57	92.79	276.79
132.00	24.0	143.53	43.54	187.06	93.53	274.13
134.00	24.0	147.09	40.78	187.87	93.94	269.43
136.00	24.0	150.23	38.40	188.63	94.32	265.44
138.00	24.0	153.28	36.15	189.42	94.71	261.71
140.00	24.0	158.36	33.41	191.77	95.88	258.58
142.00	24.0	174.04	22.50	196.54	98.27	241.53
144.00	24.0	181.08	22.11	203.18	101.59	247.40
146.00	24.0	186.54	19.82	206.36	103.18	246.00
148.00	24.0	190.92	18.48	209.40	104.70	246.36
150.00	24.0	195.28	17.93	213.21	106.61	249.07
152.00	24.0	199.80	18.48	218.28	109.14	255.24
154.00	24.0	204.48	20.67	225.15	112.57	266.49
156.00	24.0	209.30	24.29	233.59	116.80	282.18
158.00	24.0	214.44	27.98	242.42	121.21	298.38
160.00	24.0	220.97	31.28	252.24	126.12	314.80
162.00	24.0	229.04	34.61	263.65	131.82	332.87
164.00	24.0	238.00	38.22	276.22	138.11	352.65
166.00	24.0	247.20	41.93	289.13	144.57	372.99
168.00	24.0	256.63	44.97	301.60	150.80	391.55
170.00	24.0	266.22	47.23	313.45	156.72	407.90
172.00	24.0	275.97	48.74	324.71	162.35	422.18
174.00	24.0	285.73	49.74	335.47	167.74	434.96
176.00	24.0	295.32	50.11	345.43	172.71	445.64
178.00	24.0	304.75	50.10	354.85	177.42	455.04
180.00	24.0	314.01	49.97	363.97	181.99	463.90
182.00	24.0	323.08	50.99	374.07	187.03	476.04
184.00	24.0	332.09	54.09	386.17	193.09	494.34
186.00	24.0	341.14	58.80	399.94	199.97	517.54
188.00	24.0	350.32	63.04	413.36	206.68	539.43
190.00	24.0	360.00	65.81	425.81	212.91	557.42
192.00	24.0	370.27	66.30	436.57	218.28	569.17
194.00	24.0	380.78	64.38	445.16	222.58	573.92
196.00	24.0	391.23	61.13	452.35	226.18	574.60
198.00	24.0	401.52	58.95	460.47	230.24	578.37
200.00	24.0	411.23	58.86	470.08	235.04	587.79

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.

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)
200.00	24.0	411.23	58.86	470.08	235.04	587.79
202.00	24.0	420.26	58.69	478.95	239.48	596.34
204.00	24.0	429.17	55.32	484.49	242.25	595.13
206.00	24.0	438.51	48.78	487.29	243.65	584.85
208.00	24.0	447.64	40.88	488.51	244.26	570.27
210.00	24.0	452.71	34.00	486.71	243.36	554.72
212.00	24.0	453.80	9.30	463.09	231.55	481.69
214.00	24.0	455.25	9.35	464.61	232.30	483.31
216.00	24.0	457.04	10.61	467.65	233.82	488.87
218.00	24.0	457.82	20.20	478.02	239.01	518.41
220.00	24.0	466.63	48.97	515.61	257.80	613.55
222.00	24.0	473.89	59.42	533.32	266.66	652.16
224.00	24.0	484.77	61.86	546.63	273.32	670.36
226.00	24.0	499.95	54.41	554.36	277.18	663.19
228.00	24.0	513.66	51.06	564.72	282.36	666.84
230.00	24.0	528.29	48.75	577.03	288.52	674.53
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 19:04:41

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-17 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-2-21, Boring Number: SPT-17
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	1.00	5- Cavity layer
4	6.00	2.00	5- Cavity layer
5	8.00	4.00	5- Cavity layer
6	9.00	4.00	3- Clean sand
7	12.00	8.00	3- Clean sand
8	17.00	11.00	3- Clean sand
9	22.00	21.00	3- Clean sand
10	27.00	10.00	3- Clean sand
11	32.00	8.00	3- Clean sand
12	37.00	13.00	3- Clean sand
13	42.00	8.00	3- Clean sand
14	45.00	19.00	2- Clay and silty sand
15	52.00	10.00	2- Clay and silty sand
16	57.00	16.00	2- Clay and silty sand
17	62.00	14.00	2- Clay and silty sand

18	67.00	9.00	2- Clay and silty sand
19	72.00	15.00	2- Clay and silty sand
20	77.00	14.00	2- Clay and silty sand
21	82.00	12.00	2- Clay and silty sand
22	87.00	9.00	2- Clay and silty sand
23	90.00	14.00	3- Clean sand
24	97.00	11.00	3- Clean sand
25	102.00	12.00	3- Clean sand
26	107.00	9.00	3- Clean sand
27	110.00	6.00	2- Clay and silty sand
28	117.00	12.00	2- Clay and silty sand
29	122.00	7.00	2- Clay and silty sand
30	127.00	8.00	2- Clay and silty sand
31	132.00	9.00	2- Clay and silty sand
32	137.00	9.00	2- Clay and silty sand
33	142.00	6.00	2- Clay and silty sand
34	147.00	8.00	2- Clay and silty sand
35	152.00	5.00	2- Clay and silty sand
36	154.50	0.00	3- Clean sand
37	154.60	0.00	2- Clay and silty sand
38	162.00	11.00	2- Clay and silty sand
39	167.00	0.00	2- Clay and silty sand
40	172.00	0.00	2- Clay and silty sand
41	177.00	1.00	2- Clay and silty sand
42	182.00	0.00	2- Clay and silty sand
43	187.00	0.00	2- Clay and silty sand
44	190.00	6.00	1- Plastic Clay
45	197.00	5.00	1- Plastic Clay
46	202.00	13.00	1- Plastic Clay
47	205.00	13.00	4- Lime Stone/Very shelly sand
48	212.00	35.00	4- Lime Stone/Very shelly sand
49	217.00	23.00	4- Lime Stone/Very shelly sand
50	222.00	7.00	4- Lime Stone/Very shelly sand
51	225.00	0.00	2- Clay and silty sand
52	225.10	100.00	4- Lime Stone/Very shelly sand
53	232.00	66.00	4- Lime Stone/Very shelly sand
54	237.00	51.00	4- Lime Stone/Very shelly sand
55	237.10	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	0.00	-9.00	9.00	1.11	5-Void
2	-9.00	-45.00	36.00	10.86	3-Clean Sand
3	-45.00	-90.00	45.00	13.56	2-Clay and Silty Sand
4	-90.00	-110.00	20.00	12.00	3-Clean Sand
5	-110.00	-154.50	44.50	7.85	2-Clay and Silty Sand
6	-154.50	-154.60	0.10	0.00	3-Clean Sand
7	-154.60	-190.00	35.40	1.69	2-Clay and Silty Sand
8	-190.00	-205.00	15.00	7.07	1-Plastic Clay
9	-205.00	-225.00	20.00	20.10	4-Limestone, Very Shelly Sand
10	-225.00	-225.10	0.10	0.00	2-Clay and Silty Sand
11	-225.10	-237.10	12.00	85.42	4-Limestone, Very Shelly Sand
12	-237.10	-237.10	0.00	0.00	5-

Driven Pile Data:

Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED

24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED

24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.62	13.67	14.30	7.15	41.64
12.00	24.0	1.61	15.21	16.82	8.41	47.25

14.00	24.0	2.68	18.73	21.41	10.71	58.87
16.00	24.0	3.92	24.53	28.45	14.22	77.51
18.00	24.0	5.63	31.36	36.99	18.49	99.70
20.00	24.0	8.30	36.98	45.28	22.64	119.23
22.00	24.0	12.05	38.59	50.64	25.32	127.83
24.00	24.0	15.96	37.74	53.71	26.85	129.19
26.00	24.0	19.21	37.16	56.38	28.19	130.71
28.00	24.0	21.78	37.74	59.52	29.76	135.00
30.00	24.0	24.08	39.21	63.29	31.64	141.70
32.00	24.0	26.19	40.64	66.83	33.41	148.10
34.00	24.0	28.40	40.62	69.02	34.51	150.27
36.00	24.0	31.02	38.53	69.55	34.77	146.61
38.00	24.0	33.96	35.49	69.45	34.73	140.44
40.00	24.0	36.58	32.83	69.42	34.71	135.08
42.00	24.0	38.77	31.02	69.78	34.89	131.82
44.00	24.0	42.41	29.55	71.96	35.98	131.06
46.00	24.0	54.46	24.58	79.04	39.52	128.21
48.00	24.0	61.51	24.39	85.90	42.95	134.69
50.00	24.0	67.69	23.71	91.39	45.70	138.80
52.00	24.0	73.03	23.66	96.69	48.35	144.01
54.00	24.0	78.38	23.91	102.29	51.14	150.10
56.00	24.0	84.48	23.94	108.42	54.21	156.31
58.00	24.0	91.21	23.32	114.53	57.26	161.17
60.00	24.0	97.83	22.21	120.04	60.02	164.46
62.00	24.0	104.24	21.01	125.24	62.62	167.26
64.00	24.0	110.19	20.55	130.74	65.37	171.84
66.00	24.0	115.46	21.13	136.59	68.29	178.84
68.00	24.0	120.24	22.15	142.40	71.20	186.70
70.00	24.0	125.63	22.84	148.48	74.24	194.17
72.00	24.0	131.81	22.82	154.63	77.32	200.27
74.00	24.0	138.34	22.26	160.59	80.30	205.10
76.00	24.0	144.74	21.59	166.32	83.16	209.49
78.00	24.0	151.01	20.78	171.80	85.90	213.36
80.00	24.0	157.05	19.94	176.99	88.50	216.88
82.00	24.0	162.84	20.79	183.63	91.82	225.22
84.00	24.0	168.29	24.53	192.82	96.41	241.88
86.00	24.0	173.31	28.25	201.57	100.78	258.07
88.00	24.0	177.86	31.24	209.11	104.55	271.59
90.00	24.0	181.62	32.25	213.87	106.94	278.37
92.00	24.0	184.85	32.28	217.13	108.56	281.69
94.00	24.0	187.76	32.54	220.30	110.15	285.38
96.00	24.0	190.34	33.22	223.56	111.78	290.00
98.00	24.0	192.76	34.12	226.88	113.44	295.12
100.00	24.0	195.36	34.87	230.23	115.11	299.96
102.00	24.0	198.37	34.49	232.86	116.43	301.85
104.00	24.0	201.09	32.03	233.12	116.56	297.17
106.00	24.0	203.52	28.86	232.38	116.19	290.10
108.00	24.0	205.80	25.94	231.74	115.87	283.63

110.00	24.0	209.29	15.08	224.37	112.18	254.52
112.00	24.0	212.98	14.28	227.26	113.63	255.81
114.00	24.0	217.33	15.09	232.42	116.21	262.59
116.00	24.0	222.33	15.10	237.43	118.71	267.62
118.00	24.0	227.83	14.73	242.56	121.28	272.02
120.00	24.0	232.75	14.32	247.07	123.53	275.71
122.00	24.0	236.92	14.17	251.08	125.54	279.41
124.00	24.0	240.80	14.26	255.06	127.53	283.58
126.00	24.0	244.84	14.44	259.29	129.64	288.17
128.00	24.0	249.05	14.80	263.85	131.93	293.46
130.00	24.0	253.41	14.93	268.34	134.17	298.20
132.00	24.0	257.93	14.68	272.61	136.30	301.96
134.00	24.0	262.53	13.98	276.51	138.25	304.47
136.00	24.0	267.13	13.22	280.35	140.17	306.78
138.00	24.0	271.66	12.82	284.48	142.24	310.11
140.00	24.0	275.77	12.83	288.60	144.30	314.27
142.00	24.0	279.38	12.92	292.30	146.15	318.14
144.00	24.0	282.92	12.70	295.62	147.81	321.03
146.00	24.0	286.79	11.97	298.76	149.38	322.69
148.00	24.0	290.89	10.29	301.18	150.59	321.75
150.00	24.0	294.58	8.93	303.51	151.76	321.36
152.00	24.0	297.76	8.44	306.20	153.10	323.08
154.00	24.0	299.51	9.03	308.54	154.27	326.60
156.00	24.0	299.91	9.65	309.56	154.78	328.86
158.00	24.0	301.45	10.09	311.53	155.77	331.71
160.00	24.0	304.68	9.76	314.44	157.22	333.95
162.00	24.0	309.44	7.86	317.30	158.65	333.02
164.00	24.0	313.70	5.86	319.56	159.78	331.29
166.00	24.0	315.83	4.56	320.39	160.19	329.51
168.00	24.0	316.10	3.90	320.00	160.00	327.79
170.00	24.0	316.10	3.58	319.68	159.84	326.85
172.00	24.0	316.10	3.49	319.59	159.80	326.58
174.00	24.0	316.10	3.12	319.22	159.61	325.46
176.00	24.0	316.10	2.44	318.53	159.27	323.41
178.00	24.0	316.10	1.44	317.54	158.77	320.42
180.00	24.0	316.10	0.52	316.62	158.31	317.65
182.00	24.0	316.10	0.27	316.36	158.18	316.90
184.00	24.0	316.10	0.78	316.88	158.44	318.44
186.00	24.0	316.10	1.38	317.48	158.74	320.24
188.00	24.0	316.33	1.92	318.24	159.12	322.08
190.00	24.0	318.16	2.22	320.38	160.19	324.82
192.00	24.0	320.50	2.40	322.90	161.45	327.69
194.00	24.0	322.31	3.27	325.57	162.79	332.11
196.00	24.0	324.40	4.74	329.15	164.57	338.64
198.00	24.0	326.49	9.55	336.04	168.02	355.13
200.00	24.0	330.20	17.45	347.65	173.82	382.54

NOTES

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)
200.00	24.0	330.20	17.45	347.65	173.82	382.54
202.00	24.0	335.87	27.92	363.80	181.90	419.65
204.00	24.0	340.90	39.99	380.90	190.45	460.88
206.00	24.0	344.06	46.70	390.76	195.38	484.17
208.00	24.0	345.87	49.98	395.84	197.92	495.79
210.00	24.0	348.18	54.96	403.14	201.57	513.06
212.00	24.0	351.33	59.52	410.85	205.42	529.88
214.00	24.0	355.05	61.87	416.92	208.46	540.66
216.00	24.0	358.81	61.29	420.10	210.05	542.69
218.00	24.0	362.06	56.55	418.61	209.31	531.72
220.00	24.0	364.25	72.54	436.79	218.39	581.87
222.00	24.0	365.67	88.43	454.11	227.05	630.97
224.00	24.0	366.42	103.71	470.13	235.06	677.54
226.00	24.0	374.11	111.45	485.56	242.78	708.45
228.00	24.0	385.47	111.50	496.97	248.49	719.97
230.00	24.0	395.67	111.42	507.09	253.54	729.93
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 18:07:43

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-13 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 10-20-21, Boring Number: SPT-13
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	3- Clean sand
2	2.00	0.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	1.00	3- Clean sand
5	8.00	1.00	3- Clean sand
6	9.00	2.00	5- Cavity layer
7	13.00	4.00	3- Clean sand
8	20.00	4.00	3- Clean sand
9	24.00	6.00	3- Clean sand
10	26.50	0.00	2- Clay and silty sand
11	26.60	11.00	3- Clean sand
12	34.00	18.00	3- Clean sand
13	36.50	0.00	2- Clay and silty sand
14	36.60	31.00	3- Clean sand
15	44.00	100.00	3- Clean sand
16	49.00	100.00	3- Clean sand
17	54.00	100.00	3- Clean sand

18	55.00	100.00	2- Clay and silty sand
19	62.00	0.00	3- Clean sand
20	67.00	33.00	5- Cavity layer
21	77.00	1.00	3- Clean sand
22	83.00	2.00	2- Clay and silty sand
23	89.00	2.00	2- Clay and silty sand
24	94.00	3.00	2- Clay and silty sand
25	99.00	4.00	2- Clay and silty sand
26	104.00	2.00	2- Clay and silty sand
27	109.00	1.00	2- Clay and silty sand
28	114.00	7.00	2- Clay and silty sand
29	119.00	8.00	2- Clay and silty sand
30	121.50	0.00	3- Clean sand
31	121.60	22.00	2- Clay and silty sand
32	126.50	0.00	3- Clean sand
33	126.60	7.00	2- Clay and silty sand
34	131.50	0.00	3- Clean sand
35	131.60	37.00	2- Clay and silty sand
36	139.00	32.00	2- Clay and silty sand
37	144.00	100.00	2- Clay and silty sand
38	147.00	0.00	3- Clean sand
39	147.10	6.00	2- Clay and silty sand
40	151.00	0.00	3- Clean sand
41	151.10	47.00	2- Clay and silty sand
42	156.00	10.00	1- Plastic Clay
43	162.00	16.00	2- Clay and silty sand
44	166.50	0.00	3- Clean sand
45	166.60	41.00	2- Clay and silty sand
46	172.00	8.00	1- Plastic Clay
47	177.50	0.00	2- Clay and silty sand
48	177.60	55.00	1- Plastic Clay
49	184.00	100.00	1- Plastic Clay
50	189.00	47.00	1- Plastic Clay
51	191.90	0.00	2- Clay and silty sand
52	192.00	14.00	1- Plastic Clay
53	197.00	10.00	3- Clean sand
54	204.00	1.00	3- Clean sand
55	205.50	0.00	2- Clay and silty sand
56	205.60	100.00	3- Clean sand
57	214.00	52.00	3- Clean sand
58	219.00	27.00	3- Clean sand
59	222.00	36.00	4- Lime Stone/Very shelly sand
60	229.00	37.00	4- Lime Stone/Very shelly sand
61	234.00	38.00	4- Lime Stone/Very shelly sand
62	239.00	1.00	4- Lime Stone/Very shelly sand
63	239.10	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	0.00	-9.00	9.00	0.78	3-Clean Sand
2	-9.00	-13.00	4.00	2.00	5-Void
3	-13.00	-26.50	13.50	4.37	3-Clean Sand
4	-26.50	-26.60	0.10	0.00	2-Clay and Silty Sand
5	-26.60	-36.50	9.90	12.77	3-Clean Sand
6	-36.50	-36.60	0.10	0.00	2-Clay and Silty Sand
7	-36.60	-55.00	18.40	72.25	3-Clean Sand
8	-55.00	-62.00	7.00	100.00	2-Clay and Silty Sand
9	-62.00	-67.00	5.00	0.00	3-Clean Sand
10	-67.00	-77.00	10.00	33.00	5-Void
11	-77.00	-83.00	6.00	1.00	3-Clean Sand
12	-83.00	-121.50	38.50	3.30	2-Clay and Silty Sand
13	-121.50	-121.60	0.10	0.00	3-Clean Sand
14	-121.60	-126.50	4.90	22.00	2-Clay and Silty Sand
15	-126.50	-126.60	0.10	0.00	3-Clean Sand
16	-126.60	-131.50	4.90	7.00	2-Clay and Silty Sand
17	-131.50	-131.60	0.10	0.00	3-Clean Sand
18	-131.60	-147.00	15.40	47.65	2-Clay and Silty Sand
19	-147.00	-147.10	0.10	0.00	3-Clean Sand
20	-147.10	-151.00	3.90	6.00	2-Clay and Silty Sand
21	-151.00	-151.10	0.10	0.00	3-Clean Sand
22	-151.10	-156.00	4.90	47.00	2-Clay and Silty Sand
23	-156.00	-162.00	6.00	10.00	1-Plastic Clay
24	-162.00	-166.50	4.50	16.00	2-Clay and Silty Sand
25	-166.50	-166.60	0.10	0.00	3-Clean Sand
26	-166.60	-172.00	5.40	41.00	2-Clay and Silty Sand
27	-172.00	-177.50	5.50	8.00	1-Plastic Clay
28	-177.50	-177.60	0.10	0.00	2-Clay and Silty Sand
29	-177.60	-191.90	14.30	69.11	1-Plastic Clay
30	-191.90	-192.00	0.10	0.00	2-Clay and Silty Sand
31	-192.00	-197.00	5.00	14.00	1-Plastic Clay
32	-197.00	-205.50	8.50	8.41	3-Clean Sand
33	-205.50	-205.60	0.10	0.00	2-Clay and Silty Sand
34	-205.60	-222.00	16.40	72.01	3-Clean Sand
35	-222.00	-239.10	17.10	36.67	4-Limestone, Very Shelly Sand
36	-239.10	-239.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED

24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED

24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.16	0.16	0.08	0.48
6.00	24.0	0.00	0.96	0.96	0.48	2.87
8.00	24.0	0.00	2.55	2.55	1.28	7.66
10.00	24.0	0.05	0.00	0.05	0.03	0.05
12.00	24.0	0.45	0.00	0.45	0.23	0.45
14.00	24.0	1.18	7.77	8.95	4.48	24.49
16.00	24.0	1.82	8.13	9.95	4.98	26.22
18.00	24.0	2.35	9.00	11.36	5.68	29.36
20.00	24.0	2.94	9.96	12.91	6.45	32.83
22.00	24.0	3.31	14.12	17.43	8.71	45.66
24.00	24.0	4.02	20.42	24.44	12.22	65.27
26.00	24.0	4.72	28.26	32.98	16.49	89.50
28.00	24.0	8.44	30.75	39.20	19.60	100.71
30.00	24.0	11.27	31.21	42.47	21.24	104.88
32.00	24.0	13.03	34.68	47.71	23.85	117.06
34.00	24.0	14.84	40.68	55.52	27.76	136.88
36.00	24.0	15.62	50.56	66.19	33.09	167.32
38.00	24.0	26.70	74.11	100.82	50.41	249.04
40.00	24.0	33.01	75.86	108.87	54.43	260.59
42.00	24.0	39.37	78.98	118.35	59.17	276.30
44.00	24.0	46.31	82.96	129.27	64.63	295.19
46.00	24.0	53.64	87.54	141.19	70.59	316.28

48.00	24.0	60.71	93.47	154.18	77.09	341.12
50.00	24.0	67.79	100.56	168.35	84.18	369.48
52.00	24.0	76.35	105.20	181.55	90.78	391.95
54.00	24.0	87.88	103.21	191.09	95.54	397.50
56.00	24.0	117.64	86.87	204.51	102.26	378.26
58.00	24.0	128.04	79.50	207.54	103.77	366.55
60.00	24.0	133.52	57.28	190.79	95.40	305.34
62.00	24.0	135.34	0.00	135.34	67.67	135.34
64.00	24.0	135.34	0.00	135.34	67.67	135.34
66.00	24.0	135.34	0.00	135.34	67.67	135.34
68.00	24.0	135.34	0.00	135.34	67.67	135.34
70.00	24.0	135.34	0.00	135.34	67.67	135.34
72.00	24.0	135.34	0.00	135.34	67.67	135.34
74.00	24.0	135.34	0.00	135.34	67.67	135.34
76.00	24.0	135.34	0.00	135.34	67.67	135.34
78.00	24.0	135.34	0.00	135.34	67.67	135.34
80.00	24.0	135.34	0.00	135.34	67.67	135.34
82.00	24.0	135.34	0.00	135.34	67.67	135.34
84.00	24.0	135.34	0.05	135.39	67.70	135.49
86.00	24.0	135.34	0.24	135.58	67.79	136.06
88.00	24.0	135.34	0.81	136.15	68.08	137.76
90.00	24.0	135.39	1.81	137.20	68.60	140.81
92.00	24.0	135.84	2.81	138.65	69.33	144.27
94.00	24.0	136.92	3.25	140.17	70.09	146.68
96.00	24.0	138.49	3.21	141.69	70.85	148.10
98.00	24.0	140.33	2.77	143.10	71.55	148.64
100.00	24.0	142.31	2.26	144.58	72.29	149.10
102.00	24.0	143.70	1.94	145.64	72.82	149.52
104.00	24.0	144.30	2.17	146.47	73.24	150.81
106.00	24.0	144.48	3.16	147.64	73.82	153.96
108.00	24.0	144.64	4.64	149.27	74.64	158.54
110.00	24.0	144.93	6.11	151.04	75.52	163.25
112.00	24.0	146.35	7.26	153.62	76.81	168.14
114.00	24.0	149.12	7.28	156.40	78.20	170.96
116.00	24.0	152.65	9.26	161.91	80.96	180.43
118.00	24.0	156.38	10.67	167.05	83.52	188.39
120.00	24.0	159.88	10.59	170.48	85.24	191.66
122.00	24.0	165.53	10.90	176.44	88.22	198.24
124.00	24.0	171.39	9.30	180.69	90.34	199.29
126.00	24.0	172.22	13.18	185.39	92.70	211.74
128.00	24.0	176.38	20.88	197.26	98.63	239.03
130.00	24.0	177.69	24.08	201.77	100.89	249.93
132.00	24.0	180.95	34.82	215.77	107.88	285.40
134.00	24.0	189.39	36.49	225.89	112.94	298.87
136.00	24.0	195.27	44.51	239.78	119.89	328.80
138.00	24.0	200.97	61.68	262.65	131.32	386.02
140.00	24.0	209.93	69.95	279.88	139.94	419.78
142.00	24.0	220.54	62.34	282.88	141.44	407.57

144.00	24.0	232.31	50.59	282.90	141.45	384.08
146.00	24.0	241.08	50.33	291.41	145.71	392.07
148.00	24.0	253.81	52.56	306.37	153.19	411.50
150.00	24.0	255.55	50.62	306.17	153.09	407.41
152.00	24.0	260.49	46.14	306.63	153.31	398.91
154.00	24.0	268.96	41.44	310.41	155.20	393.30
156.00	24.0	275.43	18.04	293.46	146.73	329.53
158.00	24.0	281.13	14.92	296.05	148.02	325.89
160.00	24.0	287.28	16.73	304.01	152.01	337.47
162.00	24.0	293.90	27.87	321.78	160.89	377.52
164.00	24.0	299.23	25.55	324.78	162.39	375.87
166.00	24.0	301.52	22.51	324.02	162.01	369.03
168.00	24.0	308.40	21.64	330.05	165.02	373.33
170.00	24.0	315.92	15.40	331.32	165.66	362.12
172.00	24.0	321.27	11.38	332.65	166.32	355.40
174.00	24.0	324.15	13.15	337.30	168.65	363.61
176.00	24.0	325.34	23.01	348.35	174.18	394.38
178.00	24.0	330.38	38.28	368.66	184.33	445.23
180.00	24.0	344.46	40.62	385.09	192.54	466.33
182.00	24.0	360.14	43.07	403.21	201.60	489.35
184.00	24.0	377.31	38.04	415.34	207.67	491.42
186.00	24.0	394.20	31.50	425.71	212.85	488.71
188.00	24.0	409.54	29.19	438.72	219.36	497.10
190.00	24.0	422.32	30.32	452.65	226.32	513.29
192.00	24.0	428.54	33.38	461.92	230.96	528.68
194.00	24.0	434.70	33.84	468.53	234.27	536.21
196.00	24.0	439.15	30.75	469.90	234.95	531.40
198.00	24.0	441.44	17.17	458.61	229.31	492.95
200.00	24.0	442.34	19.86	462.20	231.10	501.92

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.

202.00	24.0	442.57	27.47	470.04	235.02	524.97
204.00	24.0	442.67	39.90	482.57	241.28	562.37
206.00	24.0	447.09	69.04	516.13	258.06	654.20
208.00	24.0	456.47	69.58	526.05	263.03	665.22
210.00	24.0	464.64	70.76	535.40	267.70	676.91
212.00	24.0	472.21	72.23	544.44	272.22	688.91
214.00	24.0	478.91	74.37	553.28	276.64	702.03
216.00	24.0	483.81	78.45	562.26	281.13	719.15
218.00	24.0	487.50	84.41	571.91	285.95	740.72
220.00	24.0	490.43	92.30	582.73	291.37	767.33
222.00	24.0	510.74	117.86	628.61	314.30	864.33
224.00	24.0	515.29	117.84	633.13	316.56	868.81
226.00	24.0	519.85	117.91	637.77	318.88	873.60
228.00	24.0	524.48	117.35	641.83	320.91	876.52
230.00	24.0	529.13	110.71	639.84	319.92	861.25
232.00	24.0	533.83	97.24	631.06	315.53	825.54
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
242.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
244.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
246.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
248.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
250.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) — Time: 18:21:00

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-14 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-3-21, Boring Number: SPT-14
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	1.00	3- Clean sand
2	2.00	1.00	3- Clean sand
3	4.00	2.00	3- Clean sand
4	6.00	1.00	3- Clean sand
5	8.00	2.00	3- Clean sand
6	10.00	8.00	3- Clean sand
7	14.00	4.00	3- Clean sand
8	16.00	3.00	5- Cavity layer
9	24.00	1.00	5- Cavity layer
10	27.00	13.00	2- Clay and silty sand
11	34.00	16.00	2- Clay and silty sand
12	39.00	5.00	2- Clay and silty sand
13	42.00	0.00	3- Clean sand
14	49.00	0.00	3- Clean sand
15	52.00	0.00	2- Clay and silty sand
16	59.00	0.00	2- Clay and silty sand
17	64.00	1.00	2- Clay and silty sand

18	69.00	1.00	2- Clay and silty sand
19	74.00	1.00	2- Clay and silty sand
20	79.00	0.00	2- Clay and silty sand
21	84.00	1.00	2- Clay and silty sand
22	89.00	2.00	2- Clay and silty sand
23	91.50	0.00	3- Clean sand
24	91.60	9.00	2- Clay and silty sand
25	99.00	15.00	2- Clay and silty sand
26	104.00	1.00	2- Clay and silty sand
27	109.00	6.00	2- Clay and silty sand
28	114.00	14.00	2- Clay and silty sand
29	119.00	7.00	2- Clay and silty sand
30	124.00	12.00	2- Clay and silty sand
31	129.00	19.00	2- Clay and silty sand
32	134.00	14.00	2- Clay and silty sand
33	139.00	13.00	2- Clay and silty sand
34	141.50	0.00	3- Clean sand
35	141.60	61.00	2- Clay and silty sand
36	149.00	31.00	2- Clay and silty sand
37	151.50	0.00	3- Clean sand
38	151.60	6.00	2- Clay and silty sand
39	159.00	22.00	2- Clay and silty sand
40	164.00	14.00	2- Clay and silty sand
41	167.00	24.00	1- Plastic Clay
42	172.00	53.00	2- Clay and silty sand
43	179.00	100.00	2- Clay and silty sand
44	184.00	36.00	2- Clay and silty sand
45	187.00	7.00	3- Clean sand
46	192.00	7.00	2- Clay and silty sand
47	196.50	0.00	3- Clean sand
48	196.60	0.00	2- Clay and silty sand
49	201.50	0.00	3- Clean sand
50	201.60	100.00	2- Clay and silty sand
51	209.00	100.00	2- Clay and silty sand
52	214.00	80.00	2- Clay and silty sand
53	216.50	0.00	3- Clean sand
54	216.60	1.00	2- Clay and silty sand
55	221.50	0.00	3- Clean sand
56	221.60	100.00	2- Clay and silty sand
57	229.00	100.00	2- Clay and silty sand
58	232.00	8.00	4- Lime Stone/Very shelly sand
59	239.00	10.00	4- Lime Stone/Very shelly sand
60	239.10	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	0.00	-16.00	16.00	3.38	3-Clean Sand
2	-16.00	-27.00	11.00	2.45	5-Void
3	-27.00	-42.00	15.00	12.40	2-Clay and Silty Sand
4	-42.00	-52.00	10.00	0.00	3-Clean Sand
5	-52.00	-91.50	39.50	0.63	2-Clay and Silty Sand
6	-91.50	-91.60	0.10	0.00	3-Clean Sand
7	-91.60	-141.50	49.90	10.80	2-Clay and Silty Sand
8	-141.50	-141.60	0.10	0.00	3-Clean Sand
9	-141.60	-151.50	9.90	53.42	2-Clay and Silty Sand
10	-151.50	-151.60	0.10	0.00	3-Clean Sand
11	-151.60	-167.00	15.40	12.75	2-Clay and Silty Sand
12	-167.00	-172.00	5.00	24.00	1-Plastic Clay
13	-172.00	-187.00	15.00	65.27	2-Clay and Silty Sand
14	-187.00	-192.00	5.00	7.00	3-Clean Sand
15	-192.00	-196.50	4.50	7.00	2-Clay and Silty Sand
16	-196.50	-196.60	0.10	0.00	3-Clean Sand
17	-196.60	-201.50	4.90	0.00	2-Clay and Silty Sand
18	-201.50	-201.60	0.10	0.00	3-Clean Sand
19	-201.60	-216.50	14.90	96.64	2-Clay and Silty Sand
20	-216.50	-216.60	0.10	0.00	3-Clean Sand
21	-216.60	-221.50	4.90	1.00	2-Clay and Silty Sand
22	-221.50	-221.60	0.10	0.00	3-Clean Sand
23	-221.60	-232.00	10.40	100.00	2-Clay and Silty Sand
24	-232.00	-239.10	7.10	8.03	4-Limestone, Very Shelly Sand
25	-239.10	-239.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED

24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED

24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.08	0.08	0.04	0.24
4.00	24.0	0.00	1.24	1.24	0.62	3.71
6.00	24.0	0.00	3.29	3.29	1.65	9.87
8.00	24.0	0.00	5.59	5.59	2.79	16.76
10.00	24.0	0.39	6.70	7.09	3.55	20.49
12.00	24.0	1.27	6.42	7.69	3.84	20.53
14.00	24.0	2.06	4.79	6.84	3.42	16.42
16.00	24.0	4.00	0.00	4.00	2.00	4.00
18.00	24.0	4.00	0.00	4.00	2.00	4.00
20.00	24.0	4.00	0.00	4.00	2.00	4.00
22.00	24.0	4.00	0.00	4.00	2.00	4.00
24.00	24.0	4.00	0.00	4.00	2.00	4.00
26.00	24.0	5.99	0.00	5.99	3.00	5.99
28.00	24.0	11.47	15.34	26.81	13.41	57.50
30.00	24.0	17.71	15.34	33.05	16.52	63.74
32.00	24.0	24.22	14.72	38.94	19.47	68.37
34.00	24.0	30.95	13.42	44.37	22.18	71.20
36.00	24.0	37.01	11.66	48.67	24.34	71.99
38.00	24.0	41.51	10.39	51.90	25.95	72.69
40.00	24.0	44.38	9.70	54.08	27.04	73.49
42.00	24.0	45.35	0.00	45.35	22.68	45.35
44.00	24.0	45.35	0.00	45.35	22.68	45.35
46.00	24.0	45.35	0.00	45.35	22.68	45.35
48.00	24.0	45.35	0.00	45.35	22.68	45.35
50.00	24.0	45.35	0.00	45.35	22.68	45.35
52.00	24.0	45.35	1.70	47.05	23.53	50.44
54.00	24.0	45.35	0.71	46.07	23.03	47.49
56.00	24.0	45.35	0.17	45.53	22.76	45.88
58.00	24.0	45.35	0.00	45.35	22.68	45.35
60.00	24.0	45.35	0.00	45.35	22.68	45.35
62.00	24.0	45.35	0.00	45.35	22.68	45.35
64.00	24.0	45.35	0.00	45.35	22.68	45.35
66.00	24.0	45.35	0.00	45.35	22.68	45.35
68.00	24.0	45.35	0.00	45.35	22.68	45.35
70.00	24.0	45.35	0.00	45.35	22.68	45.35
72.00	24.0	45.35	0.00	45.35	22.68	45.35
74.00	24.0	45.35	0.00	45.35	22.68	45.35

76.00	24.0	45.35	0.00	45.35	22.68	45.35
78.00	24.0	45.35	0.00	45.35	22.68	45.35
80.00	24.0	45.35	0.00	45.35	22.68	45.35
82.00	24.0	45.35	0.00	45.35	22.68	45.35
84.00	24.0	45.35	0.00	45.35	22.68	45.35
86.00	24.0	45.35	1.66	47.01	23.51	50.32
88.00	24.0	45.35	4.28	49.63	24.82	58.18
90.00	24.0	45.35	7.29	52.64	26.32	67.21
92.00	24.0	46.36	9.96	56.32	28.16	76.25
94.00	24.0	50.54	10.53	61.07	30.54	82.14
96.00	24.0	55.60	10.94	66.54	33.27	88.43
98.00	24.0	62.64	10.16	72.80	36.40	93.12
100.00	24.0	69.10	8.90	78.00	39.00	95.80
102.00	24.0	73.05	8.84	81.89	40.94	99.56
104.00	24.0	74.37	10.25	84.62	42.31	105.12
106.00	24.0	75.04	12.67	87.71	43.86	113.06
108.00	24.0	77.06	15.15	92.21	46.10	122.50
110.00	24.0	80.41	15.94	96.35	48.18	128.24
112.00	24.0	84.94	15.48	100.43	50.21	131.40
114.00	24.0	90.65	14.33	104.98	52.49	133.64
116.00	24.0	96.44	13.56	110.00	55.00	137.11
118.00	24.0	101.23	14.19	115.42	57.71	143.80
120.00	24.0	105.25	16.39	121.64	60.82	154.43
122.00	24.0	109.79	19.27	129.06	64.53	167.60
124.00	24.0	115.08	21.72	136.80	68.40	180.24
126.00	24.0	121.13	23.11	144.24	72.12	190.45
128.00	24.0	127.95	23.36	151.31	75.65	198.03
130.00	24.0	135.37	22.84	158.21	79.11	203.89
132.00	24.0	142.44	22.39	164.83	82.41	209.61
134.00	24.0	148.98	21.21	170.20	85.10	212.62
136.00	24.0	155.21	28.75	183.96	91.98	241.45
138.00	24.0	161.32	38.27	199.59	99.80	276.14
140.00	24.0	166.72	45.87	212.59	106.30	304.33
142.00	24.0	170.54	50.64	221.17	110.59	322.45
144.00	24.0	181.25	45.94	227.19	113.59	319.08
146.00	24.0	191.53	39.14	230.67	115.34	308.95
148.00	24.0	201.39	34.77	236.16	118.08	305.71
150.00	24.0	209.94	33.02	242.96	121.48	309.00
152.00	24.0	212.83	34.65	247.48	123.74	316.78
154.00	24.0	216.80	35.47	252.27	126.14	323.22
156.00	24.0	221.93	36.78	258.71	129.35	332.27
158.00	24.0	228.72	37.18	265.89	132.95	340.25
160.00	24.0	237.54	31.98	269.52	134.76	333.48
162.00	24.0	244.97	29.05	274.03	137.01	332.13
164.00	24.0	251.64	31.47	283.12	141.56	346.06
166.00	24.0	259.21	39.30	298.51	149.25	377.10
168.00	24.0	268.44	47.23	315.67	157.84	410.14
170.00	24.0	276.27	61.65	337.92	168.96	461.21

172.00	24.0	289.92	81.98	371.90	185.95	535.87
174.00	24.0	299.73	84.73	384.46	192.23	553.92
176.00	24.0	310.01	88.82	398.83	199.42	576.47
178.00	24.0	322.46	88.73	411.18	205.59	588.64
180.00	24.0	337.16	81.64	418.80	209.40	582.08
182.00	24.0	348.76	73.30	422.05	211.03	568.65
184.00	24.0	359.18	67.72	426.90	213.45	562.34
186.00	24.0	366.27	62.65	428.92	214.46	554.21
188.00	24.0	368.55	15.37	383.92	191.96	414.66
190.00	24.0	371.15	13.86	385.02	192.51	412.75
192.00	24.0	374.51	3.77	378.28	189.14	385.82
194.00	24.0	376.78	4.11	380.89	190.44	389.11
196.00	24.0	376.14	12.20	388.35	194.17	412.75
198.00	24.0	378.78	44.34	423.13	211.56	511.82
200.00	24.0	378.78	55.24	434.02	217.01	544.51

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.

24.00	210.00	-210.00	0.50	CLOSED	PLUGGED
24.00	212.00	-212.00	0.50	CLOSED	PLUGGED
24.00	214.00	-214.00	0.50	CLOSED	PLUGGED
24.00	216.00	-216.00	0.50	CLOSED	PLUGGED
24.00	218.00	-218.00	0.50	CLOSED	PLUGGED
24.00	220.00	-220.00	0.50	CLOSED	PLUGGED
24.00	222.00	-222.00	0.50	CLOSED	PLUGGED
24.00	224.00	-224.00	0.50	CLOSED	PLUGGED
24.00	226.00	-226.00	0.50	CLOSED	PLUGGED
24.00	228.00	-228.00	0.50	CLOSED	PLUGGED
24.00	230.00	-230.00	0.50	CLOSED	PLUGGED
24.00	232.00	-232.00	0.50	CLOSED	PLUGGED
24.00	234.00	-234.00	0.50	CLOSED	-N/A-
24.00	236.00	-236.00	0.50	CLOSED	UNPLUGGED
24.00	238.00	-238.00	0.50	CLOSED	UNPLUGGED
24.00	240.00	-240.00	0.50	CLOSED	UNPLUGGED
24.00	242.00	-242.00	0.50	CLOSED	-N/A-
24.00	244.00	-244.00	0.50	CLOSED	-N/A-
24.00	246.00	-246.00	0.50	CLOSED	-N/A-
24.00	248.00	-248.00	0.50	CLOSED	UNPLUGGED
24.00	250.00	-250.00	0.50	CLOSED	-N/A-

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)
200.00	24.0	378.78	55.24	434.02	217.01	544.51
202.00	24.0	381.61	89.09	470.71	235.35	648.90
204.00	24.0	393.18	91.87	485.05	242.52	668.78
206.00	24.0	404.13	97.78	501.91	250.95	697.46
208.00	24.0	415.68	104.27	519.94	259.97	728.48
210.00	24.0	429.67	98.49	528.16	264.08	725.14
212.00	24.0	442.10	85.86	527.96	263.98	699.68
214.00	24.0	454.18	74.54	528.72	264.36	677.80
216.00	24.0	461.49	85.43	546.92	273.46	717.78
218.00	24.0	464.63	94.86	559.49	279.75	749.21
220.00	24.0	464.63	104.18	568.82	284.41	777.18
222.00	24.0	467.51	130.64	598.15	299.07	859.42
224.00	24.0	480.29	124.10	604.39	302.19	852.58
226.00	24.0	493.07	106.25	599.32	299.66	811.81
228.00	24.0	505.85	87.76	593.62	296.81	769.15

230.00	24.0	517.66	71.35	589.00	294.50	731.70
232.00	24.0	522.59	33.93	556.52	278.26	624.37
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
242.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
244.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
246.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
248.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
250.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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

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   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: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-11 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-8-21, Boring Number: SPT-11
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	7.00	5- Cavity layer
2	2.00	7.00	5- Cavity layer
3	3.00	4.00	3- Clean sand
4	6.00	6.00	3- Clean sand
5	8.00	7.00	3- Clean sand
6	10.00	4.00	3- Clean sand
7	12.90	0.00	2- Clay and silty sand
8	13.00	15.00	3- Clean sand
9	20.00	30.00	3- Clean sand
10	24.00	2.00	5- Cavity layer
11	30.00	4.00	5- Cavity layer
12	35.00	2.00	5- Cavity layer
13	40.00	5.00	5- Cavity layer
14	45.00	5.00	5- Cavity layer
15	50.00	9.00	5- Cavity layer
16	55.00	4.00	5- Cavity layer
17	60.00	3.00	5- Cavity layer

18	65.00	3.00	5- Cavity layer
19	67.50	0.00	2- Clay and silty sand
20	67.60	36.00	5- Cavity layer
21	75.00	22.00	5- Cavity layer
22	80.00	73.00	5- Cavity layer
23	85.00	32.00	5- Cavity layer
24	88.00	75.00	3- Clean sand
25	95.00	100.00	3- Clean sand
26	100.00	70.00	3- Clean sand
27	105.00	82.00	3- Clean sand
28	110.00	60.00	3- Clean sand
29	112.50	0.00	2- Clay and silty sand
30	112.60	34.00	3- Clean sand
31	120.00	14.00	3- Clean sand
32	125.00	8.00	3- Clean sand
33	130.00	15.00	3- Clean sand
34	135.00	15.00	3- Clean sand
35	140.00	31.00	3- Clean sand
36	145.00	29.00	3- Clean sand
37	149.00	9.00	2- Clay and silty sand
38	155.00	6.00	2- Clay and silty sand
39	160.00	5.00	2- Clay and silty sand
40	165.00	10.00	2- Clay and silty sand
41	170.00	12.00	2- Clay and silty sand
42	175.00	5.00	2- Clay and silty sand
43	180.00	8.00	2- Clay and silty sand
44	185.00	15.00	2- Clay and silty sand
45	190.00	8.00	2- Clay and silty sand
46	192.90	0.00	3- Clean sand
47	193.00	31.00	2- Clay and silty sand
48	199.00	15.00	1- Plastic Clay
49	205.00	0.00	1- Plastic Clay
50	209.00	13.00	2- Clay and silty sand
51	215.00	0.00	2- Clay and silty sand
52	219.00	0.00	1- Plastic Clay
53	224.00	0.00	2- Clay and silty sand
54	230.00	8.00	2- Clay and silty sand
55	232.00	18.00	4- Lime Stone/Very shelly sand
56	240.00	15.00	4- Lime Stone/Very shelly sand
57	245.00	1.00	4- Lime Stone/Very shelly sand
58	250.00	12.00	4- Lime Stone/Very shelly sand
59	250.10	37.00	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	0.00	-3.00	3.00	7.00	5-Void
2	-3.00	-12.90	9.90	5.01	3-Clean Sand
3	-12.90	-13.00	0.10	0.00	2-Clay and Silty Sand
4	-13.00	-24.00	11.00	20.45	3-Clean Sand
5	-24.00	-67.50	43.50	4.13	5-Void
6	-67.50	-67.60	0.10	0.00	2-Clay and Silty Sand
7	-67.60	-88.00	20.40	41.05	5-Void
8	-88.00	-112.50	24.50	78.98	3-Clean Sand
9	-112.50	-112.60	0.10	0.00	2-Clay and Silty Sand
10	-112.60	-149.00	36.40	21.50	3-Clean Sand
11	-149.00	-192.90	43.90	8.71	2-Clay and Silty Sand
12	-192.90	-193.00	0.10	0.00	3-Clean Sand
13	-193.00	-199.00	6.00	31.00	2-Clay and Silty Sand
14	-199.00	-209.00	10.00	9.00	1-Plastic Clay
15	-209.00	-219.00	10.00	7.80	2-Clay and Silty Sand
16	-219.00	-224.00	5.00	0.00	1-Plastic Clay
17	-224.00	-232.00	8.00	2.00	2-Clay and Silty Sand
18	-232.00	-250.10	18.10	12.44	4-Limestone, Very Shelly Sand
19	-250.10	-250.10	0.00	37.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED

24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED

24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.60	10.56	11.16	5.58	32.28
6.00	24.0	1.62	10.85	12.47	6.24	34.18
8.00	24.0	2.20	13.88	16.09	8.04	43.86
10.00	24.0	2.63	20.05	22.67	11.34	62.77
12.00	24.0	2.84	30.77	33.61	16.80	95.15
14.00	24.0	6.89	44.05	50.94	25.47	139.03
16.00	24.0	10.87	44.65	55.52	27.76	144.83
18.00	24.0	16.70	43.34	60.04	30.02	146.71
20.00	24.0	22.78	35.17	57.95	28.98	128.30
22.00	24.0	27.66	28.00	55.65	27.83	111.64
24.00	24.0	29.28	0.00	29.28	14.64	29.28
26.00	24.0	29.28	0.00	29.28	14.64	29.28
28.00	24.0	29.28	0.00	29.28	14.64	29.28
30.00	24.0	29.28	0.00	29.28	14.64	29.28
32.00	24.0	29.28	0.00	29.28	14.64	29.28
34.00	24.0	29.28	0.00	29.28	14.64	29.28
36.00	24.0	29.28	0.00	29.28	14.64	29.28
38.00	24.0	29.28	0.00	29.28	14.64	29.28
40.00	24.0	29.28	0.00	29.28	14.64	29.28
42.00	24.0	29.28	0.00	29.28	14.64	29.28
44.00	24.0	29.28	0.00	29.28	14.64	29.28
46.00	24.0	29.28	0.00	29.28	14.64	29.28
48.00	24.0	29.28	0.00	29.28	14.64	29.28
50.00	24.0	29.28	0.00	29.28	14.64	29.28
52.00	24.0	29.28	0.00	29.28	14.64	29.28
54.00	24.0	29.28	0.00	29.28	14.64	29.28
56.00	24.0	29.28	0.00	29.28	14.64	29.28
58.00	24.0	29.28	0.00	29.28	14.64	29.28
60.00	24.0	29.28	0.00	29.28	14.64	29.28
62.00	24.0	29.28	0.00	29.28	14.64	29.28
64.00	24.0	29.28	0.00	29.28	14.64	29.28
66.00	24.0	29.28	0.00	29.28	14.64	29.28
68.00	24.0	29.28	0.00	29.28	14.64	29.28
70.00	24.0	29.28	0.00	29.28	14.64	29.28
72.00	24.0	29.28	0.00	29.28	14.64	29.28
74.00	24.0	29.28	0.00	29.28	14.64	29.28
76.00	24.0	29.28	0.00	29.28	14.64	29.28
78.00	24.0	29.28	0.00	29.28	14.64	29.28
80.00	24.0	29.28	0.00	29.28	14.64	29.28
82.00	24.0	29.28	0.00	29.28	14.64	29.28
84.00	24.0	29.28	0.00	29.28	14.64	29.28
86.00	24.0	30.07	0.00	30.07	15.03	30.07
88.00	24.0	36.37	67.90	104.27	52.14	240.08

90.00	24.0	44.96	68.61	113.57	56.78	250.79
92.00	24.0	52.50	70.57	123.07	61.54	264.22
94.00	24.0	59.66	73.58	133.24	66.62	280.39
96.00	24.0	66.54	77.70	144.24	72.12	299.63
98.00	24.0	72.76	83.18	155.94	77.97	322.31
100.00	24.0	78.52	90.03	168.55	84.27	348.61
102.00	24.0	84.58	97.54	182.13	91.06	377.21
104.00	24.0	92.65	101.76	194.40	97.20	397.92
106.00	24.0	104.21	98.15	202.36	101.18	398.66
108.00	24.0	114.34	98.04	212.38	106.19	408.45
110.00	24.0	125.41	95.37	220.79	110.39	411.54
112.00	24.0	133.17	93.20	226.37	113.19	412.78
114.00	24.0	153.48	86.34	239.82	119.91	412.50
116.00	24.0	159.36	77.63	236.99	118.50	392.26
118.00	24.0	164.22	69.07	233.30	116.65	371.44
120.00	24.0	168.07	61.68	229.76	114.88	353.12
122.00	24.0	171.12	56.48	227.60	113.80	340.55
124.00	24.0	173.58	53.27	226.85	113.43	333.40
126.00	24.0	175.61	50.94	226.55	113.27	328.43
128.00	24.0	178.15	50.97	229.13	114.56	331.08
130.00	24.0	181.39	51.36	232.75	116.37	335.47
132.00	24.0	184.96	53.58	238.54	119.27	345.70
134.00	24.0	188.54	59.24	247.78	123.89	366.26
136.00	24.0	192.27	65.80	258.07	129.04	389.68
138.00	24.0	197.08	71.45	268.52	134.26	411.41
140.00	24.0	203.12	72.92	276.04	138.02	421.88
142.00	24.0	209.71	68.14	277.85	138.93	414.14
144.00	24.0	216.17	59.99	276.16	138.08	396.13
146.00	24.0	222.42	51.52	273.94	136.97	376.98
148.00	24.0	227.89	45.43	273.31	136.66	364.16
150.00	24.0	232.40	12.29	244.69	122.35	269.28
152.00	24.0	236.73	12.02	248.75	124.37	272.78
154.00	24.0	240.51	11.19	251.70	125.85	274.08
156.00	24.0	243.91	11.01	254.92	127.46	276.94
158.00	24.0	247.10	11.51	258.61	129.30	281.63
160.00	24.0	250.10	12.50	262.60	131.30	287.60
162.00	24.0	253.43	13.67	267.10	133.55	294.44
164.00	24.0	257.58	14.68	272.27	136.13	301.64
166.00	24.0	262.49	14.75	277.24	138.62	306.74
168.00	24.0	267.74	13.99	281.73	140.86	309.71
170.00	24.0	273.26	13.04	286.30	143.15	312.37
172.00	24.0	278.38	12.60	290.98	145.49	316.18
174.00	24.0	282.39	12.93	295.32	147.66	321.18
176.00	24.0	285.51	14.23	299.74	149.87	328.20
178.00	24.0	288.95	16.02	304.97	152.48	337.01
180.00	24.0	292.90	17.44	310.34	155.17	345.22
182.00	24.0	297.58	17.73	315.31	157.65	350.77
184.00	24.0	303.21	16.79	320.00	160.00	353.58

186.00	24.0	309.55	14.43	323.98	161.99	352.84
188.00	24.0	315.18	18.12	333.30	166.65	369.55
190.00	24.0	319.86	20.54	340.40	170.20	381.47
192.00	24.0	322.62	21.80	344.42	172.21	388.02
194.00	24.0	327.79	20.33	348.12	174.06	388.78
196.00	24.0	336.62	17.26	353.88	176.94	388.41
198.00	24.0	344.85	14.56	359.41	179.71	388.53
200.00	24.0	351.27	5.69	356.96	178.48	368.33

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.

24.00	224.00	-224.00	0.50	CLOSED	PLUGGED
24.00	226.00	-226.00	0.50	CLOSED	PLUGGED
24.00	228.00	-228.00	0.50	CLOSED	PLUGGED
24.00	230.00	-230.00	0.50	CLOSED	PLUGGED
24.00	232.00	-232.00	0.50	CLOSED	PLUGGED
24.00	234.00	-234.00	0.50	CLOSED	PLUGGED
24.00	236.00	-236.00	0.50	CLOSED	PLUGGED
24.00	238.00	-238.00	0.50	CLOSED	PLUGGED
24.00	240.00	-240.00	0.50	CLOSED	PLUGGED
24.00	242.00	-242.00	0.50	CLOSED	PLUGGED
24.00	244.00	-244.00	0.50	CLOSED	-N/A-
24.00	246.00	-246.00	0.50	CLOSED	-N/A-
24.00	248.00	-248.00	0.50	CLOSED	UNPLUGGED
24.00	250.00	-250.00	0.50	CLOSED	-N/A-

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)
200.00	24.0	351.27	5.69	356.96	178.48	368.33
202.00	24.0	355.45	7.14	362.59	181.30	376.88
204.00	24.0	358.09	8.98	367.07	183.53	385.02
206.00	24.0	359.21	9.62	368.82	184.41	388.06
208.00	24.0	362.23	9.22	371.46	185.73	389.90
210.00	24.0	368.14	9.82	377.97	188.98	397.61
212.00	24.0	372.89	9.34	382.23	191.11	400.90
214.00	24.0	374.89	6.48	381.37	190.68	394.33
216.00	24.0	375.13	4.67	379.80	189.90	389.14
218.00	24.0	375.13	3.71	378.84	189.42	386.27
220.00	24.0	375.13	0.66	375.79	187.90	377.11
222.00	24.0	375.13	1.66	376.79	188.40	380.10
224.00	24.0	375.13	7.44	382.57	191.29	397.45
226.00	24.0	375.53	9.26	384.79	192.40	403.31
228.00	24.0	376.53	15.00	391.53	195.76	421.52
230.00	24.0	378.48	24.43	402.90	201.45	451.76
232.00	24.0	384.68	35.25	419.93	209.97	490.43
234.00	24.0	386.77	35.65	422.42	211.21	493.71
236.00	24.0	388.81	35.96	424.77	212.38	496.69
238.00	24.0	391.04	34.10	425.14	212.57	493.35
240.00	24.0	392.97	30.74	423.71	211.86	485.19
242.00	24.0	394.48	30.84	425.32	212.66	487.00

Florida Bridge Software Institute — Date: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) — Time: 17:34:09

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-12 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-17-21, Boring Number: SPT-12
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	17.00	3- Clean sand
2	2.00	17.00	3- Clean sand
3	3.00	9.00	5- Cavity layer
4	6.00	6.00	5- Cavity layer
5	8.00	7.00	5- Cavity layer
6	9.00	7.00	3- Clean sand
7	15.00	8.00	3- Clean sand
8	20.00	7.00	3- Clean sand
9	25.00	6.00	3- Clean sand
10	30.00	2.00	3- Clean sand
11	35.00	13.00	3- Clean sand
12	38.00	2.00	5- Cavity layer
13	45.00	1.00	5- Cavity layer
14	47.00	7.00	3- Clean sand
15	54.00	3.00	5- Cavity layer
16	59.00	14.00	3- Clean sand
17	65.00	7.00	3- Clean sand

18	70.00	12.00	3- Clean sand
19	75.00	10.00	3- Clean sand
20	80.00	33.00	3- Clean sand
21	85.00	6.00	3- Clean sand
22	90.00	11.00	3- Clean sand
23	95.00	8.00	3- Clean sand
24	100.00	9.00	3- Clean sand
25	105.00	7.00	3- Clean sand
26	110.00	2.00	3- Clean sand
27	115.00	2.00	3- Clean sand
28	120.00	7.00	3- Clean sand
29	125.00	3.00	3- Clean sand
30	130.00	5.00	3- Clean sand
31	135.00	2.00	3- Clean sand
32	140.00	2.00	3- Clean sand
33	145.00	0.00	3- Clean sand
34	150.00	7.00	3- Clean sand
35	153.00	0.00	2- Clay and silty sand
36	160.00	0.00	2- Clay and silty sand
37	165.00	0.00	2- Clay and silty sand
38	170.00	0.00	2- Clay and silty sand
39	175.00	0.00	2- Clay and silty sand
40	180.00	0.00	2- Clay and silty sand
41	183.00	0.00	5- Cavity layer
42	190.00	0.00	5- Cavity layer
43	193.00	0.00	2- Clay and silty sand
44	198.00	8.00	4- Lime Stone/Very shelly sand
45	202.50	0.00	2- Clay and silty sand
46	202.60	100.00	4- Lime Stone/Very shelly sand
47	207.50	0.00	2- Clay and silty sand
48	207.60	13.00	4- Lime Stone/Very shelly sand
49	215.00	15.00	4- Lime Stone/Very shelly sand
50	217.50	0.00	2- Clay and silty sand
51	217.60	1.00	4- Lime Stone/Very shelly sand
52	222.50	0.00	2- Clay and silty sand
53	222.60	28.00	4- Lime Stone/Very shelly sand
54	230.00	20.00	4- Lime Stone/Very shelly sand
55	233.00	10.00	1- Plastic Clay
56	240.00	3.00	1- Plastic Clay
57	243.00	37.00	4- Lime Stone/Very shelly sand
58	250.00	100.00	4- Lime Stone/Very shelly sand
59	250.10	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	0.00	-3.00	3.00	17.00	3-Clean Sand
2	-3.00	-9.00	6.00	7.67	5-Void
3	-9.00	-38.00	29.00	6.76	3-Clean Sand
4	-38.00	-47.00	9.00	1.78	5-Void
5	-47.00	-54.00	7.00	7.00	3-Clean Sand
6	-54.00	-59.00	5.00	3.00	5-Void
7	-59.00	-153.00	94.00	7.82	3-Clean Sand
8	-153.00	-183.00	30.00	0.00	2-Clay and Silty Sand
9	-183.00	-193.00	10.00	0.00	5-Void
10	-193.00	-198.00	5.00	0.00	2-Clay and Silty Sand
11	-198.00	-202.50	4.50	8.00	4-Limestone, Very Shelly Sand
12	-202.50	-202.60	0.10	0.00	2-Clay and Silty Sand
13	-202.60	-207.50	4.90	100.00	4-Limestone, Very Shelly Sand
14	-207.50	-207.60	0.10	0.00	2-Clay and Silty Sand
15	-207.60	-217.50	9.90	13.51	4-Limestone, Very Shelly Sand
16	-217.50	-217.60	0.10	0.00	2-Clay and Silty Sand
17	-217.60	-222.50	4.90	1.00	4-Limestone, Very Shelly Sand
18	-222.50	-222.60	0.10	0.00	2-Clay and Silty Sand
19	-222.60	-233.00	10.40	25.69	4-Limestone, Very Shelly Sand
20	-233.00	-243.00	10.00	7.90	1-Plastic Clay
21	-243.00	-250.10	7.10	37.89	4-Limestone, Very Shelly Sand
22	-250.10	-250.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED

24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED

24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	2.69	21.57	24.26	12.13	67.40
4.00	24.0	5.03	0.00	5.03	2.52	5.03
6.00	24.0	5.03	0.00	5.03	2.52	5.03
8.00	24.0	5.03	0.00	5.03	2.52	5.03
10.00	24.0	6.23	21.27	27.50	13.75	70.03
12.00	24.0	7.83	21.49	29.33	14.66	72.32
14.00	24.0	9.53	21.74	31.27	15.64	74.76
16.00	24.0	11.36	21.83	33.18	16.59	76.83
18.00	24.0	13.32	19.61	32.94	16.47	72.16
20.00	24.0	14.98	19.08	34.06	17.03	72.23
22.00	24.0	16.53	18.40	34.93	17.47	71.73
24.00	24.0	17.98	17.13	35.11	17.55	69.37
26.00	24.0	19.26	16.96	36.23	18.11	70.16
28.00	24.0	20.07	19.44	39.51	19.75	78.38
30.00	24.0	20.34	21.66	42.00	21.00	85.31
32.00	24.0	20.96	19.82	40.78	20.39	80.42
34.00	24.0	22.82	16.13	38.95	19.48	71.21
36.00	24.0	25.52	11.59	37.10	18.55	60.28
38.00	24.0	26.55	0.00	26.55	13.28	26.55
40.00	24.0	26.55	0.00	26.55	13.28	26.55
42.00	24.0	26.55	0.00	26.55	13.28	26.55
44.00	24.0	26.55	0.00	26.55	13.28	26.55
46.00	24.0	26.75	0.00	26.75	13.38	26.75
48.00	24.0	28.10	10.96	39.06	19.53	60.98
50.00	24.0	29.25	10.66	39.91	19.95	61.22
52.00	24.0	29.79	12.30	42.09	21.04	66.69
54.00	24.0	30.16	0.00	30.16	15.08	30.16
56.00	24.0	30.83	0.00	30.83	15.42	30.83
58.00	24.0	32.84	0.00	32.84	16.42	32.84
60.00	24.0	35.77	34.12	69.88	34.94	138.12
62.00	24.0	38.53	34.17	72.70	36.35	141.03
64.00	24.0	40.77	34.10	74.86	37.43	143.05
66.00	24.0	42.48	34.27	76.75	38.37	145.28
68.00	24.0	44.53	34.62	79.15	39.57	148.38
70.00	24.0	46.79	36.49	83.27	41.64	156.24
72.00	24.0	49.15	42.22	91.37	45.69	175.81

74.00	24.0	51.71	50.64	102.35	51.18	203.62
76.00	24.0	54.33	55.03	109.36	54.68	219.41
78.00	24.0	58.47	52.90	111.37	55.68	217.17
80.00	24.0	64.37	47.22	111.59	55.79	206.02
82.00	24.0	70.10	43.08	113.18	56.59	199.34
84.00	24.0	73.68	42.03	115.70	57.85	199.76
86.00	24.0	75.41	42.40	117.81	58.91	202.62
88.00	24.0	77.30	41.94	119.24	59.62	203.11
90.00	24.0	79.68	40.91	120.59	60.30	202.40
92.00	24.0	82.17	39.89	122.06	61.03	201.85
94.00	24.0	84.36	37.85	122.21	61.10	197.91
96.00	24.0	86.29	34.06	120.36	60.18	188.48
98.00	24.0	88.28	30.00	118.28	59.14	178.29
100.00	24.0	90.37	27.01	117.38	58.69	171.41
102.00	24.0	92.40	24.47	116.88	58.44	165.83
104.00	24.0	94.23	20.87	115.10	57.55	156.83
106.00	24.0	95.80	16.95	112.76	56.38	146.66
108.00	24.0	96.79	13.65	110.44	55.22	137.73
110.00	24.0	97.15	12.01	109.16	54.58	133.18
112.00	24.0	97.19	12.30	109.49	54.75	134.10
114.00	24.0	97.22	13.63	110.86	55.43	138.12
116.00	24.0	97.33	14.28	111.62	55.81	140.18
118.00	24.0	98.00	13.54	111.54	55.77	138.63
120.00	24.0	99.29	12.03	111.33	55.66	135.39
122.00	24.0	100.69	10.96	111.65	55.83	133.57
124.00	24.0	101.66	11.07	112.73	56.37	134.86
126.00	24.0	102.29	11.32	113.61	56.80	136.25
128.00	24.0	103.05	10.78	113.82	56.91	135.37
130.00	24.0	104.02	9.54	113.56	56.78	132.63
132.00	24.0	104.89	8.39	113.28	56.64	130.05
134.00	24.0	105.34	7.26	112.60	56.30	127.12
136.00	24.0	105.41	6.02	111.43	55.72	123.47
138.00	24.0	105.43	4.72	110.15	55.08	119.60
140.00	24.0	105.45	4.43	109.88	54.94	118.74
142.00	24.0	105.46	5.75	111.21	55.61	122.71
144.00	24.0	105.48	7.86	113.34	56.67	129.05
146.00	24.0	105.58	7.92	113.49	56.75	129.33
148.00	24.0	106.23	6.33	112.55	56.28	125.20
150.00	24.0	107.51	4.40	111.91	55.96	120.71
152.00	24.0	108.59	3.09	111.68	55.84	117.86
154.00	24.0	109.37	0.00	109.37	54.69	109.37
156.00	24.0	109.37	0.00	109.37	54.69	109.37
158.00	24.0	109.37	0.00	109.37	54.69	109.37
160.00	24.0	109.37	0.00	109.37	54.69	109.37
162.00	24.0	109.37	0.00	109.37	54.69	109.37
164.00	24.0	109.37	0.00	109.37	54.69	109.37
166.00	24.0	109.37	0.00	109.37	54.69	109.37
168.00	24.0	109.37	0.00	109.37	54.69	109.37

170.00	24.0	109.37	0.00	109.37	54.69	109.37
172.00	24.0	109.37	0.00	109.37	54.69	109.37
174.00	24.0	109.37	0.00	109.37	54.69	109.37
176.00	24.0	109.37	0.00	109.37	54.69	109.37
178.00	24.0	109.37	0.00	109.37	54.69	109.37
180.00	24.0	109.37	0.00	109.37	54.69	109.37
182.00	24.0	109.37	0.00	109.37	54.69	109.37
184.00	24.0	109.37	0.00	109.37	54.69	109.37
186.00	24.0	109.37	0.00	109.37	54.69	109.37
188.00	24.0	109.37	0.00	109.37	54.69	109.37
190.00	24.0	109.37	0.00	109.37	54.69	109.37
192.00	24.0	109.37	0.00	109.37	54.69	109.37
194.00	24.0	109.42	8.84	118.26	59.13	135.94
196.00	24.0	109.68	10.80	120.48	60.24	142.08
198.00	24.0	110.63	29.07	139.70	69.85	197.85
200.00	24.0	111.30	29.96	141.26	70.63	201.17

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.

24.00	208.00	-208.00	0.50	CLOSED	PLUGGED
24.00	210.00	-210.00	0.50	CLOSED	PLUGGED
24.00	212.00	-212.00	0.50	CLOSED	PLUGGED
24.00	214.00	-214.00	0.50	CLOSED	PLUGGED
24.00	216.00	-216.00	0.50	CLOSED	PLUGGED
24.00	218.00	-218.00	0.50	CLOSED	PLUGGED
24.00	220.00	-220.00	0.50	CLOSED	PLUGGED
24.00	222.00	-222.00	0.50	CLOSED	PLUGGED
24.00	224.00	-224.00	0.50	CLOSED	PLUGGED
24.00	226.00	-226.00	0.50	CLOSED	PLUGGED
24.00	228.00	-228.00	0.50	CLOSED	PLUGGED
24.00	230.00	-230.00	0.50	CLOSED	PLUGGED
24.00	232.00	-232.00	0.50	CLOSED	PLUGGED
24.00	234.00	-234.00	0.50	CLOSED	PLUGGED
24.00	236.00	-236.00	0.50	CLOSED	PLUGGED
24.00	238.00	-238.00	0.50	CLOSED	PLUGGED
24.00	240.00	-240.00	0.50	CLOSED	PLUGGED
24.00	242.00	-242.00	0.50	CLOSED	PLUGGED
24.00	244.00	-244.00	0.50	CLOSED	PLUGGED
24.00	246.00	-246.00	0.50	CLOSED	-N/A-
24.00	248.00	-248.00	0.50	CLOSED	UNPLUGGED
24.00	250.00	-250.00	0.50	CLOSED	-N/A-

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)
200.00	24.0	111.30	29.96	141.26	70.63	201.17
202.00	24.0	111.51	32.39	143.90	71.95	208.67
204.00	24.0	119.61	38.08	157.69	78.85	233.84
206.00	24.0	126.03	38.98	165.00	82.50	242.96
208.00	24.0	127.83	43.71	171.54	85.77	258.97
210.00	24.0	129.46	43.99	173.45	86.72	261.42
212.00	24.0	131.27	40.44	171.70	85.85	252.57
214.00	24.0	133.08	34.55	167.63	83.82	236.73
216.00	24.0	134.77	32.38	167.15	83.58	231.92
218.00	24.0	135.20	42.38	177.58	88.79	262.35
220.00	24.0	135.20	44.17	179.36	89.68	267.69
222.00	24.0	135.20	48.18	183.37	91.69	279.73
224.00	24.0	137.68	60.59	198.27	99.13	319.44
226.00	24.0	140.87	54.03	194.90	97.45	302.95

228.00	24.0	143.79	44.65	188.44	94.22	277.74
230.00	24.0	146.44	35.59	182.03	91.02	253.21
232.00	24.0	149.94	28.71	178.65	89.33	236.07
234.00	24.0	154.28	5.30	159.58	79.79	170.18
236.00	24.0	155.97	13.99	169.96	84.98	197.94
238.00	24.0	158.36	33.90	192.27	96.13	260.07
240.00	24.0	159.78	52.83	212.61	106.31	318.28
242.00	24.0	161.54	72.61	234.15	117.07	379.37
244.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
246.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
248.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
250.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 16:31:30

General Information:
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Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-9 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-17-20, Boring Number: SPT-9
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	2.10	0.00	3- Clean sand
4	4.00	0.00	3- Clean sand
5	6.00	1.00	3- Clean sand
6	10.00	3.00	3- Clean sand
7	12.00	8.00	3- Clean sand
8	17.00	7.00	3- Clean sand
9	19.00	1.00	5- Cavity layer
10	27.00	1.00	5- Cavity layer
11	32.00	2.00	5- Cavity layer
12	37.00	2.00	5- Cavity layer
13	42.00	11.00	5- Cavity layer
14	47.00	11.00	5- Cavity layer
15	52.00	4.00	5- Cavity layer
16	57.00	4.00	5- Cavity layer
17	62.00	5.00	5- Cavity layer

18	67.00	10.00	5- Cavity layer
19	72.00	15.00	5- Cavity layer
20	77.00	9.00	5- Cavity layer
21	82.00	6.00	5- Cavity layer
22	83.00	42.00	3- Clean sand
23	92.00	48.00	3- Clean sand
24	97.00	56.00	3- Clean sand
25	102.00	67.00	3- Clean sand
26	107.00	90.00	3- Clean sand
27	112.00	50.00	3- Clean sand
28	117.00	42.00	3- Clean sand
29	122.00	40.00	3- Clean sand
30	127.00	23.00	3- Clean sand
31	129.00	25.00	5- Cavity layer
32	133.00	16.00	3- Clean sand
33	142.00	90.00	3- Clean sand
34	144.00	16.00	5- Cavity layer
35	148.00	100.00	3- Clean sand
36	157.00	65.00	3- Clean sand
37	162.00	85.00	3- Clean sand
38	167.00	16.00	3- Clean sand
39	172.00	48.00	3- Clean sand
40	174.00	13.00	1- Plastic Clay
41	182.00	14.00	1- Plastic Clay
42	187.00	68.00	1- Plastic Clay
43	192.00	16.00	1- Plastic Clay
44	195.00	33.00	3- Clean sand
45	202.00	24.00	3- Clean sand
46	207.00	100.00	3- Clean sand
47	212.00	51.00	3- Clean sand
48	214.00	37.00	2- Clay and silty sand
49	220.00	48.00	3- Clean sand
50	227.00	77.00	3- Clean sand
51	232.00	73.00	3- Clean sand
52	232.10	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	0.00	-2.10	2.10	0.00	5-Void
2	-2.10	-19.00	16.90	3.79	3-Clean Sand

3	-19.00	-83.00	64.00	6.00	5-Void
4	-83.00	-129.00	46.00	51.93	3-Clean Sand
5	-129.00	-133.00	4.00	25.00	5-Void
6	-133.00	-144.00	11.00	29.45	3-Clean Sand
7	-144.00	-148.00	4.00	16.00	5-Void
8	-148.00	-174.00	26.00	70.23	3-Clean Sand
9	-174.00	-195.00	21.00	26.76	1-Plastic Clay
10	-195.00	-214.00	19.00	50.16	3-Clean Sand
11	-214.00	-220.00	6.00	37.00	2-Clay and Silty Sand
12	-220.00	-232.10	12.10	60.19	3-Clean Sand
13	-232.10	-232.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED

24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED

24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	1.11	1.11	0.56	3.34
6.00	24.0	0.00	2.52	2.52	1.26	7.56
8.00	24.0	0.04	5.14	5.18	2.59	15.45
10.00	24.0	0.20	8.60	8.80	4.40	25.99
12.00	24.0	0.78	10.90	11.67	5.84	33.47
14.00	24.0	1.89	10.74	12.63	6.31	34.10
16.00	24.0	3.16	8.34	11.50	5.75	28.18
18.00	24.0	4.35	6.68	11.03	5.51	24.38
20.00	24.0	6.86	0.00	6.86	3.43	6.86

22.00	24.0	6.86	0.00	6.86	3.43	6.86
24.00	24.0	6.86	0.00	6.86	3.43	6.86
26.00	24.0	6.86	0.00	6.86	3.43	6.86
28.00	24.0	6.86	0.00	6.86	3.43	6.86
30.00	24.0	6.86	0.00	6.86	3.43	6.86
32.00	24.0	6.86	0.00	6.86	3.43	6.86
34.00	24.0	6.86	0.00	6.86	3.43	6.86
36.00	24.0	6.86	0.00	6.86	3.43	6.86
38.00	24.0	6.86	0.00	6.86	3.43	6.86
40.00	24.0	6.86	0.00	6.86	3.43	6.86
42.00	24.0	6.86	0.00	6.86	3.43	6.86
44.00	24.0	6.86	0.00	6.86	3.43	6.86
46.00	24.0	6.86	0.00	6.86	3.43	6.86
48.00	24.0	6.86	0.00	6.86	3.43	6.86
50.00	24.0	6.86	0.00	6.86	3.43	6.86
52.00	24.0	6.86	0.00	6.86	3.43	6.86
54.00	24.0	6.86	0.00	6.86	3.43	6.86
56.00	24.0	6.86	0.00	6.86	3.43	6.86
58.00	24.0	6.86	0.00	6.86	3.43	6.86
60.00	24.0	6.86	0.00	6.86	3.43	6.86
62.00	24.0	6.86	0.00	6.86	3.43	6.86
64.00	24.0	6.86	0.00	6.86	3.43	6.86
66.00	24.0	6.86	0.00	6.86	3.43	6.86
68.00	24.0	6.86	0.00	6.86	3.43	6.86
70.00	24.0	6.86	0.00	6.86	3.43	6.86
72.00	24.0	6.86	0.00	6.86	3.43	6.86
74.00	24.0	6.86	0.00	6.86	3.43	6.86
76.00	24.0	6.86	0.00	6.86	3.43	6.86
78.00	24.0	6.86	0.00	6.86	3.43	6.86
80.00	24.0	6.86	0.00	6.86	3.43	6.86
82.00	24.0	6.86	0.00	6.86	3.43	6.86
84.00	24.0	12.58	55.06	67.64	33.82	177.76
86.00	24.0	19.01	56.21	75.22	37.61	187.64
88.00	24.0	24.51	58.55	83.06	41.53	200.15
90.00	24.0	29.50	62.10	91.60	45.80	215.80
92.00	24.0	34.24	66.92	101.17	50.58	235.01
94.00	24.0	38.98	73.06	112.05	56.02	258.17
96.00	24.0	43.90	80.57	124.47	62.24	285.61
98.00	24.0	49.09	89.62	138.71	69.36	317.95
100.00	24.0	55.58	96.81	152.40	76.20	346.03
102.00	24.0	62.95	103.00	165.95	82.98	371.96
104.00	24.0	71.15	108.39	179.54	89.77	396.32
106.00	24.0	80.32	112.68	193.00	96.50	418.36
108.00	24.0	90.05	113.83	203.88	101.94	431.54
110.00	24.0	99.28	112.65	211.93	105.96	437.22
112.00	24.0	107.95	111.80	219.75	109.88	443.36
114.00	24.0	116.26	111.15	227.41	113.70	449.70
116.00	24.0	124.45	110.24	234.69	117.35	455.18

118.00	24.0	132.50	107.94	240.44	120.22	456.32
120.00	24.0	140.50	103.91	244.42	122.21	452.24
122.00	24.0	148.46	93.37	241.84	120.92	428.59
124.00	24.0	155.96	79.55	235.51	117.75	394.60
126.00	24.0	162.57	70.77	233.34	116.67	374.89
128.00	24.0	167.81	67.03	234.84	117.42	368.90
130.00	24.0	194.32	0.00	194.32	97.16	194.32
132.00	24.0	196.22	0.00	196.22	98.11	196.22
134.00	24.0	199.90	77.31	277.21	138.61	431.84
136.00	24.0	204.70	77.93	282.63	141.31	438.48
138.00	24.0	211.80	72.93	284.73	142.36	430.59
140.00	24.0	219.82	67.84	287.66	143.83	423.34
142.00	24.0	229.26	70.21	299.47	149.74	439.89
144.00	24.0	234.33	0.00	234.33	117.17	234.33
146.00	24.0	236.98	0.00	236.98	118.49	236.98
148.00	24.0	244.94	100.80	345.73	172.87	547.33
150.00	24.0	255.06	101.06	356.12	178.06	558.23
152.00	24.0	264.47	101.70	366.17	183.08	569.57
154.00	24.0	273.31	102.66	375.97	187.99	581.30
156.00	24.0	281.86	103.69	385.55	192.78	592.93
158.00	24.0	291.50	103.16	394.66	197.33	600.97
160.00	24.0	302.11	101.73	403.84	201.92	607.30
162.00	24.0	312.63	100.06	412.69	206.34	612.80
164.00	24.0	321.32	97.49	418.81	209.40	613.79
166.00	24.0	327.56	96.21	423.77	211.89	616.19
168.00	24.0	331.89	86.71	418.61	209.30	592.04
170.00	24.0	337.45	74.44	411.89	205.94	560.76
172.00	24.0	344.77	60.64	405.41	202.70	526.68
174.00	24.0	352.30	9.85	362.15	181.07	381.85
176.00	24.0	359.08	9.98	369.06	184.53	389.01
178.00	24.0	364.75	12.48	377.23	188.62	402.19
180.00	24.0	371.85	17.09	388.94	194.47	423.12
182.00	24.0	379.05	21.71	400.76	200.38	444.19
184.00	24.0	387.91	23.80	411.71	205.85	459.31
186.00	24.0	400.04	23.83	423.87	211.94	471.54
188.00	24.0	414.71	29.71	444.42	222.21	503.83
190.00	24.0	427.21	39.80	467.01	233.51	546.62
192.00	24.0	436.72	50.88	487.60	243.80	589.36
194.00	24.0	444.39	59.27	503.66	251.83	622.21
196.00	24.0	453.26	61.40	514.67	257.33	637.47
198.00	24.0	458.84	62.30	521.13	260.57	645.73
200.00	24.0	462.93	64.78	527.70	263.85	657.26

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,

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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)
200.00	24.0	462.93	64.78	527.70	263.85	657.26
202.00	24.0	466.18	68.82	535.00	267.50	672.64
204.00	24.0	470.23	73.46	543.68	271.84	690.60
206.00	24.0	476.16	77.95	554.11	277.05	710.00
208.00	24.0	484.50	80.21	564.72	282.36	725.15
210.00	24.0	492.84	82.29	575.13	287.56	739.70
212.00	24.0	500.96	83.87	584.83	292.41	752.56
214.00	24.0	524.52	88.45	612.97	306.48	789.86
216.00	24.0	534.13	85.04	619.17	309.59	789.26
218.00	24.0	542.47	90.81	633.27	316.64	814.89
220.00	24.0	551.65	107.84	659.49	329.75	875.17
222.00	24.0	559.94	107.96	667.89	333.95	883.81
224.00	24.0	568.60	108.08	676.68	338.34	892.85
226.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
228.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
230.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 16:50:36

General Information:
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Input file: .....R 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-10 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-1-20, Boring Number: SPT-10
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	0.00	5- Cavity layer
6	10.00	0.00	5- Cavity layer
7	16.00	0.00	5- Cavity layer
8	19.00	1.00	3- Clean sand
9	26.00	2.00	3- Clean sand
10	31.00	1.00	3- Clean sand
11	34.00	2.00	2- Clay and silty sand
12	34.10	9.00	3- Clean sand
13	41.00	14.00	3- Clean sand
14	46.00	20.00	3- Clean sand
15	48.00	3.00	5- Cavity layer
16	54.00	11.00	3- Clean sand
17	61.00	35.00	3- Clean sand

18	63.00	6.00	5- Cavity layer
19	71.00	10.00	5- Cavity layer
20	76.00	25.00	5- Cavity layer
21	81.00	21.00	5- Cavity layer
22	86.00	11.00	5- Cavity layer
23	91.00	10.00	5- Cavity layer
24	96.00	9.00	5- Cavity layer
25	101.00	7.00	5- Cavity layer
26	106.00	5.00	5- Cavity layer
27	111.00	3.00	5- Cavity layer
28	116.00	6.00	5- Cavity layer
29	119.00	17.00	3- Clean sand
30	126.00	17.00	3- Clean sand
31	131.00	36.00	3- Clean sand
32	136.00	40.00	3- Clean sand
33	141.00	24.00	3- Clean sand
34	146.00	42.00	3- Clean sand
35	151.00	8.00	3- Clean sand
36	153.00	16.00	5- Cavity layer
37	159.00	7.00	3- Clean sand
38	166.00	12.00	3- Clean sand
39	171.00	27.00	3- Clean sand
40	173.00	20.00	5- Cavity layer
41	181.00	10.00	5- Cavity layer
42	186.00	11.00	5- Cavity layer
43	191.00	6.00	5- Cavity layer
44	196.00	16.00	5- Cavity layer
45	201.00	0.00	5- Cavity layer
46	204.00	26.00	3- Clean sand
47	211.00	45.00	3- Clean sand
48	216.00	51.00	3- Clean sand
49	218.00	20.00	5- Cavity layer
50	224.00	42.00	3- Clean sand
51	226.00	42.00	3- Clean sand
52	226.10	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	0.00	-19.00	19.00	0.00	5-Void
2	-19.00	-34.00	15.00	1.33	3-Clean Sand

3	-34.00	-34.10	0.10	2.00	2-Clay and Silty Sand
4	-34.10	-48.00	13.90	12.38	3-Clean Sand
5	-48.00	-54.00	6.00	3.00	5-Void
6	-54.00	-63.00	9.00	16.33	3-Clean Sand
7	-63.00	-119.00	56.00	10.20	5-Void
8	-119.00	-153.00	34.00	27.35	3-Clean Sand
9	-153.00	-159.00	6.00	16.00	5-Void
10	-159.00	-173.00	14.00	11.64	3-Clean Sand
11	-173.00	-204.00	31.00	12.10	5-Void
12	-204.00	-218.00	14.00	36.36	3-Clean Sand
13	-218.00	-224.00	6.00	20.00	5-Void
14	-224.00	-226.10	2.10	42.00	3-Clean Sand
15	-226.10	-226.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED

24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED

24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.00	0.00	0.00	0.00	0.00
12.00	24.0	0.00	0.00	0.00	0.00	0.00
14.00	24.0	0.00	0.00	0.00	0.00	0.00
16.00	24.0	0.00	0.00	0.00	0.00	0.00

18.00	24.0	0.00	0.00	0.00	0.00	0.00
20.00	24.0	0.00	0.00	0.00	0.00	0.00
22.00	24.0	0.00	0.00	0.00	0.00	0.00
24.00	24.0	0.00	0.00	0.00	0.00	0.00
26.00	24.0	0.00	0.00	0.00	0.00	0.00
28.00	24.0	0.00	1.59	1.59	0.79	4.76
30.00	24.0	0.00	6.49	6.49	3.25	19.48
32.00	24.0	0.00	12.75	12.75	6.37	38.24
34.00	24.0	0.00	19.10	19.10	9.55	57.30
36.00	24.0	1.84	19.85	21.69	10.85	61.39
38.00	24.0	3.41	21.52	24.94	12.47	67.98
40.00	24.0	5.04	24.21	29.25	14.62	77.67
42.00	24.0	7.82	24.80	32.63	16.31	82.24
44.00	24.0	11.45	24.71	36.17	18.08	85.60
46.00	24.0	15.64	24.77	40.41	20.20	89.94
48.00	24.0	21.83	0.00	21.83	10.91	21.83
50.00	24.0	22.27	0.00	22.27	11.13	22.27
52.00	24.0	23.58	0.00	23.58	11.79	23.58
54.00	24.0	25.76	53.38	79.14	39.57	185.90
56.00	24.0	28.99	53.49	82.48	41.24	189.46
58.00	24.0	33.64	46.18	79.82	39.91	172.18
60.00	24.0	39.56	36.01	75.56	37.78	147.58
62.00	24.0	45.72	25.04	70.76	35.38	120.85
64.00	24.0	46.62	0.00	46.62	23.31	46.62
66.00	24.0	46.62	0.00	46.62	23.31	46.62
68.00	24.0	46.62	0.00	46.62	23.31	46.62
70.00	24.0	46.62	0.00	46.62	23.31	46.62
72.00	24.0	46.62	0.00	46.62	23.31	46.62
74.00	24.0	46.62	0.00	46.62	23.31	46.62
76.00	24.0	46.62	0.00	46.62	23.31	46.62
78.00	24.0	46.62	0.00	46.62	23.31	46.62
80.00	24.0	46.62	0.00	46.62	23.31	46.62
82.00	24.0	46.62	0.00	46.62	23.31	46.62
84.00	24.0	46.62	0.00	46.62	23.31	46.62
86.00	24.0	46.62	0.00	46.62	23.31	46.62
88.00	24.0	46.62	0.00	46.62	23.31	46.62
90.00	24.0	46.62	0.00	46.62	23.31	46.62
92.00	24.0	46.62	0.00	46.62	23.31	46.62
94.00	24.0	46.62	0.00	46.62	23.31	46.62
96.00	24.0	46.62	0.00	46.62	23.31	46.62
98.00	24.0	46.62	0.00	46.62	23.31	46.62
100.00	24.0	46.62	0.00	46.62	23.31	46.62
102.00	24.0	46.62	0.00	46.62	23.31	46.62
104.00	24.0	46.62	0.00	46.62	23.31	46.62
106.00	24.0	46.62	0.00	46.62	23.31	46.62
108.00	24.0	46.62	0.00	46.62	23.31	46.62
110.00	24.0	46.62	0.00	46.62	23.31	46.62
112.00	24.0	46.62	0.00	46.62	23.31	46.62

114.00	24.0	46.62	0.00	46.62	23.31	46.62
116.00	24.0	46.62	0.00	46.62	23.31	46.62
118.00	24.0	47.96	0.00	47.96	23.98	47.96
120.00	24.0	51.53	31.27	82.80	41.40	145.34
122.00	24.0	54.51	32.54	87.05	43.52	152.13
124.00	24.0	56.63	35.91	92.54	46.27	164.36
126.00	24.0	58.42	41.78	100.20	50.10	183.76
128.00	24.0	60.78	49.59	110.37	55.19	209.55
130.00	24.0	64.28	58.56	122.84	61.42	239.95
132.00	24.0	69.02	67.49	136.51	68.26	271.49
134.00	24.0	74.67	75.30	149.97	74.98	300.57
136.00	24.0	81.16	81.71	162.87	81.43	326.28
138.00	24.0	87.84	86.74	174.58	87.29	348.06
140.00	24.0	94.07	90.27	184.34	92.17	364.89
142.00	24.0	99.79	90.63	190.43	95.21	371.69
144.00	24.0	106.09	85.31	191.40	95.70	362.01
146.00	24.0	113.18	73.85	187.04	93.52	334.74
148.00	24.0	119.74	60.89	180.64	90.32	302.43
150.00	24.0	124.35	51.40	175.75	87.88	278.56
152.00	24.0	126.97	45.47	172.44	86.22	263.38
154.00	24.0	143.48	0.00	143.48	71.74	143.48
156.00	24.0	144.02	0.00	144.02	72.01	144.02
158.00	24.0	145.09	0.00	145.09	72.54	145.09
160.00	24.0	146.67	37.82	184.49	92.25	260.13
162.00	24.0	148.64	37.88	186.52	93.26	262.29
164.00	24.0	150.68	39.21	189.90	94.95	268.32
166.00	24.0	153.28	39.42	192.70	96.35	271.54
168.00	24.0	157.15	35.13	192.28	96.14	262.55
170.00	24.0	161.90	29.21	191.10	95.55	249.52
172.00	24.0	166.99	22.56	189.55	94.77	234.67
174.00	24.0	167.74	0.00	167.74	83.87	167.74
176.00	24.0	167.74	0.00	167.74	83.87	167.74
178.00	24.0	167.74	0.00	167.74	83.87	167.74
180.00	24.0	167.74	0.00	167.74	83.87	167.74
182.00	24.0	167.74	0.00	167.74	83.87	167.74
184.00	24.0	167.74	0.00	167.74	83.87	167.74
186.00	24.0	167.74	0.00	167.74	83.87	167.74
188.00	24.0	167.74	0.00	167.74	83.87	167.74
190.00	24.0	167.74	0.00	167.74	83.87	167.74
192.00	24.0	167.74	0.00	167.74	83.87	167.74
194.00	24.0	167.74	0.00	167.74	83.87	167.74
196.00	24.0	167.74	0.00	167.74	83.87	167.74
198.00	24.0	167.74	0.00	167.74	83.87	167.74
200.00	24.0	167.74	0.00	167.74	83.87	167.74

NOTES

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

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)
200.00	24.0	167.74	0.00	167.74	83.87	167.74
202.00	24.0	168.22	0.00	168.22	84.11	168.22
204.00	24.0	172.11	52.57	224.68	112.34	329.82
206.00	24.0	177.47	53.24	230.71	115.36	337.20
208.00	24.0	182.28	55.22	237.50	118.75	347.94
210.00	24.0	187.30	57.92	245.22	122.61	361.07
212.00	24.0	195.08	57.72	252.80	126.40	368.24
214.00	24.0	203.30	57.50	260.80	130.40	375.79
216.00	24.0	210.18	59.13	269.31	134.65	387.58
218.00	24.0	221.05	0.00	221.05	110.53	221.05
220.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
222.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
224.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
226.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
228.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
230.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 15:26:42

General Information:
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Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-7 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-16-20, Boring Number: SPT-7
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	3- Clean sand
5	8.00	4.00	3- Clean sand
6	10.00	4.00	3- Clean sand
7	11.50	0.00	2- Clay and silty sand
8	11.60	12.00	3- Clean sand
9	18.00	12.00	3- Clean sand
10	23.00	15.00	3- Clean sand
11	28.00	17.00	3- Clean sand
12	30.00	12.00	5- Cavity layer
13	38.00	5.00	5- Cavity layer
14	43.00	10.00	5- Cavity layer
15	48.00	15.00	5- Cavity layer
16	53.00	8.00	5- Cavity layer
17	58.00	0.00	5- Cavity layer

18	63.00	2.00	5- Cavity layer
19	68.00	11.00	5- Cavity layer
20	73.00	0.00	5- Cavity layer
21	78.00	2.00	5- Cavity layer
22	81.00	8.00	3- Clean sand
23	88.00	23.00	3- Clean sand
24	93.00	8.00	3- Clean sand
25	95.00	3.00	5- Cavity layer
26	101.00	3.00	3- Clean sand
27	108.00	6.00	3- Clean sand
28	113.00	13.00	3- Clean sand
29	118.00	11.00	3- Clean sand
30	123.00	19.00	3- Clean sand
31	128.00	17.00	3- Clean sand
32	133.00	22.00	3- Clean sand
33	138.00	20.00	3- Clean sand
34	143.00	18.00	3- Clean sand
35	148.00	15.00	3- Clean sand
36	153.00	25.00	3- Clean sand
37	158.00	20.00	3- Clean sand
38	163.00	31.00	3- Clean sand
39	168.00	31.00	3- Clean sand
40	173.00	25.00	3- Clean sand
41	178.00	31.00	3- Clean sand
42	183.00	16.00	3- Clean sand
43	188.00	13.00	3- Clean sand
44	193.00	23.00	3- Clean sand
45	198.00	12.00	3- Clean sand
46	203.00	29.00	3- Clean sand
47	208.00	19.00	3- Clean sand
48	213.00	22.00	3- Clean sand
49	218.00	8.00	3- Clean sand
50	223.00	16.00	3- Clean sand
51	225.00	28.00	5- Cavity layer
52	231.00	24.00	3- Clean sand
53	238.00	12.00	3- Clean sand
54	238.10	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	0.00	-6.00	6.00	0.00	5-Void
2	-6.00	-11.50	5.50	2.55	3-Clean Sand
3	-11.50	-11.60	0.10	0.00	2-Clay and Silty Sand
4	-11.60	-30.00	18.40	13.36	3-Clean Sand
5	-30.00	-81.00	51.00	7.00	5-Void
6	-81.00	-95.00	14.00	13.36	3-Clean Sand
7	-95.00	-101.00	6.00	3.00	5-Void
8	-101.00	-225.00	124.00	18.41	3-Clean Sand
9	-225.00	-231.00	6.00	28.00	5-Void
10	-231.00	-238.10	7.10	23.83	3-Clean Sand
11	-238.10	-238.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED

24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED

24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	7.76	7.76	3.88	23.27
8.00	24.0	0.25	8.69	8.94	4.47	26.32
10.00	24.0	0.62	11.30	11.92	5.96	34.52
12.00	24.0	2.13	22.40	24.53	12.26	69.33
14.00	24.0	4.56	22.88	27.44	13.72	73.19
16.00	24.0	6.61	24.02	30.63	15.31	78.66
18.00	24.0	8.29	26.23	34.52	17.26	86.99
20.00	24.0	9.98	29.47	39.45	19.73	98.39

22.00	24.0	12.06	33.10	45.16	22.58	111.35
24.00	24.0	15.58	32.80	48.38	24.19	113.97
26.00	24.0	20.14	30.40	50.54	25.27	111.34
28.00	24.0	25.79	26.64	52.43	26.22	105.71
30.00	24.0	30.32	0.00	30.32	15.16	30.32
32.00	24.0	30.32	0.00	30.32	15.16	30.32
34.00	24.0	30.32	0.00	30.32	15.16	30.32
36.00	24.0	30.32	0.00	30.32	15.16	30.32
38.00	24.0	30.32	0.00	30.32	15.16	30.32
40.00	24.0	30.32	0.00	30.32	15.16	30.32
42.00	24.0	30.32	0.00	30.32	15.16	30.32
44.00	24.0	30.32	0.00	30.32	15.16	30.32
46.00	24.0	30.32	0.00	30.32	15.16	30.32
48.00	24.0	30.32	0.00	30.32	15.16	30.32
50.00	24.0	30.32	0.00	30.32	15.16	30.32
52.00	24.0	30.32	0.00	30.32	15.16	30.32
54.00	24.0	30.32	0.00	30.32	15.16	30.32
56.00	24.0	30.32	0.00	30.32	15.16	30.32
58.00	24.0	30.32	0.00	30.32	15.16	30.32
60.00	24.0	30.32	0.00	30.32	15.16	30.32
62.00	24.0	30.32	0.00	30.32	15.16	30.32
64.00	24.0	30.32	0.00	30.32	15.16	30.32
66.00	24.0	30.32	0.00	30.32	15.16	30.32
68.00	24.0	30.32	0.00	30.32	15.16	30.32
70.00	24.0	30.32	0.00	30.32	15.16	30.32
72.00	24.0	30.32	0.00	30.32	15.16	30.32
74.00	24.0	30.32	0.00	30.32	15.16	30.32
76.00	24.0	30.32	0.00	30.32	15.16	30.32
78.00	24.0	30.32	0.00	30.32	15.16	30.32
80.00	24.0	30.94	0.00	30.94	15.47	30.94
82.00	24.0	32.64	27.45	60.09	30.04	114.98
84.00	24.0	34.74	28.69	63.43	31.71	120.80
86.00	24.0	37.69	29.88	67.58	33.79	127.34
88.00	24.0	42.42	29.50	71.92	35.96	130.93
90.00	24.0	48.46	27.58	76.04	38.02	131.21
92.00	24.0	52.01	24.89	76.90	38.45	126.67
94.00	24.0	53.81	24.00	77.81	38.90	125.80
96.00	24.0	54.07	0.00	54.07	27.03	54.07
98.00	24.0	54.24	0.00	54.24	27.12	54.24
100.00	24.0	54.59	0.00	54.59	27.30	54.59
102.00	24.0	55.12	22.98	78.10	39.05	124.05
104.00	24.0	55.88	21.78	77.66	38.83	121.22
106.00	24.0	56.87	21.88	78.75	39.37	122.50
108.00	24.0	58.10	23.48	81.57	40.79	128.52
110.00	24.0	59.52	24.58	84.10	42.05	133.26
112.00	24.0	61.39	26.33	87.72	43.86	140.38
114.00	24.0	63.58	29.13	92.71	46.36	150.98
116.00	24.0	65.47	33.83	99.30	49.65	166.96

118.00	24.0	67.24	40.11	107.35	53.67	187.56
120.00	24.0	69.72	45.40	115.12	57.56	205.91
122.00	24.0	73.11	48.46	121.57	60.78	218.49
124.00	24.0	77.06	51.41	128.47	64.23	231.28
126.00	24.0	81.03	55.01	136.04	68.02	246.06
128.00	24.0	84.90	58.53	143.43	71.71	260.48
130.00	24.0	88.91	61.01	149.92	74.96	271.93
132.00	24.0	93.31	62.64	155.95	77.97	281.24
134.00	24.0	98.04	63.62	161.66	80.83	288.89
136.00	24.0	102.72	64.08	166.80	83.40	294.96
138.00	24.0	107.29	63.61	170.89	85.45	298.11
140.00	24.0	111.72	62.21	173.93	86.97	298.35
142.00	24.0	116.02	60.83	176.85	88.42	298.50
144.00	24.0	120.17	61.44	181.61	90.81	304.50
146.00	24.0	124.09	64.16	188.25	94.12	316.57
148.00	24.0	127.77	67.26	195.03	97.51	329.55
150.00	24.0	131.71	68.68	200.39	100.19	337.75
152.00	24.0	136.41	68.52	204.93	102.47	341.98
154.00	24.0	141.75	69.23	210.98	105.49	349.44
156.00	24.0	146.87	72.39	219.26	109.63	364.03
158.00	24.0	151.65	77.21	228.86	114.43	383.29
160.00	24.0	156.61	81.95	238.56	119.28	402.45
162.00	24.0	162.33	85.70	248.03	124.02	419.44
164.00	24.0	168.71	87.90	256.61	128.30	432.41
166.00	24.0	175.19	88.69	263.87	131.94	441.25
168.00	24.0	181.68	88.64	270.31	135.16	447.58
170.00	24.0	187.99	89.16	277.15	138.57	455.47
172.00	24.0	193.92	91.02	284.94	142.47	466.98
174.00	24.0	199.58	91.47	291.05	145.52	473.98
176.00	24.0	205.53	88.58	294.11	147.05	471.28
178.00	24.0	211.86	82.66	294.52	147.26	459.84
180.00	24.0	217.85	75.90	293.76	146.88	445.56
182.00	24.0	222.77	70.30	293.07	146.53	433.66
184.00	24.0	226.70	67.67	294.37	147.18	429.71
186.00	24.0	230.27	67.64	297.91	148.95	433.19
188.00	24.0	233.56	68.27	301.84	150.92	438.38
190.00	24.0	237.14	66.74	303.88	151.94	437.36
192.00	24.0	241.54	62.37	303.91	151.96	428.66
194.00	24.0	246.54	59.37	305.91	152.96	424.65
196.00	24.0	250.85	60.90	311.75	155.87	433.54
198.00	24.0	254.24	65.46	319.70	159.85	450.63
200.00	24.0	257.83	68.86	326.69	163.35	464.41

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,

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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)
200.00	24.0	257.83	68.86	326.69	163.35	464.41
202.00	24.0	262.76	69.19	331.94	165.97	470.32
204.00	24.0	268.76	68.56	337.32	168.66	474.45
206.00	24.0	274.29	68.94	343.23	171.61	481.10
208.00	24.0	279.11	68.49	347.60	173.80	484.59
210.00	24.0	283.68	65.13	348.81	174.40	479.07
212.00	24.0	288.49	59.99	348.48	174.24	468.45
214.00	24.0	293.35	56.68	350.03	175.02	463.39
216.00	24.0	297.16	55.93	353.09	176.55	464.96
218.00	24.0	299.73	52.20	351.94	175.97	456.35
220.00	24.0	302.06	45.74	347.80	173.90	439.29
222.00	24.0	305.13	42.81	347.94	173.97	433.55
224.00	24.0	308.40	44.32	352.71	176.36	441.35
226.00	24.0	317.83	0.00	317.83	158.92	317.83
228.00	24.0	319.65	0.00	319.65	159.83	319.65
230.00	24.0	323.29	0.00	323.29	161.65	323.29
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: May 23, 2022
Shaft and Pile Analysis (FB-Deep v.3.0.0) Time: 15:58:08

General Information:
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Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-8 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 12-16-20, Boring Number: SPT-8
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	2.00	5- Cavity layer
2	2.00	2.00	5- Cavity layer
3	2.10	0.00	3- Clean sand
4	4.00	0.00	3- Clean sand
5	6.00	6.00	3- Clean sand
6	8.00	6.00	3- Clean sand
7	10.00	7.00	3- Clean sand
8	12.50	0.00	2- Clay and silty sand
9	12.60	22.00	3- Clean sand
10	20.00	32.00	3- Clean sand
11	25.00	35.00	3- Clean sand
12	30.00	23.00	3- Clean sand
13	32.00	9.00	5- Cavity layer
14	40.00	3.00	5- Cavity layer
15	45.00	7.00	5- Cavity layer
16	50.00	14.00	5- Cavity layer
17	55.00	6.00	5- Cavity layer

18	60.00	2.00	5- Cavity layer
19	65.00	1.00	5- Cavity layer
20	70.00	10.00	5- Cavity layer
21	75.00	8.00	5- Cavity layer
22	80.00	7.00	5- Cavity layer
23	85.00	4.00	5- Cavity layer
24	90.00	2.00	5- Cavity layer
25	95.00	6.00	5- Cavity layer
26	100.00	16.00	5- Cavity layer
27	105.00	13.00	5- Cavity layer
28	110.00	6.00	5- Cavity layer
29	115.00	6.00	5- Cavity layer
30	120.00	12.00	5- Cavity layer
31	125.00	19.00	5- Cavity layer
32	128.00	52.00	3- Clean sand
33	135.00	100.00	3- Clean sand
34	140.00	69.00	3- Clean sand
35	145.00	80.00	3- Clean sand
36	147.00	21.00	5- Cavity layer
37	153.00	62.00	3- Clean sand
38	160.00	53.00	3- Clean sand
39	165.00	42.00	3- Clean sand
40	170.00	63.00	3- Clean sand
41	175.00	95.00	3- Clean sand
42	176.90	0.00	2- Clay and silty sand
43	177.00	100.00	3- Clean sand
44	185.00	32.00	3- Clean sand
45	190.00	46.00	3- Clean sand
46	195.00	34.00	3- Clean sand
47	200.00	38.00	3- Clean sand
48	202.50	0.00	2- Clay and silty sand
49	202.60	47.00	3- Clean sand
50	210.00	57.00	3- Clean sand
51	215.00	56.00	3- Clean sand
52	220.00	54.00	3- Clean sand
53	225.00	59.00	3- Clean sand
54	230.00	64.00	3- Clean sand
55	235.00	36.00	3- Clean sand
56	240.00	44.00	3- Clean sand
57	241.00	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	0.00	-2.10	2.10	2.00	5-Void
2	-2.10	-12.50	10.40	3.99	3-Clean Sand
3	-12.50	-12.60	0.10	0.00	2-Clay and Silty Sand
4	-12.60	-32.00	19.40	28.03	3-Clean Sand
5	-32.00	-128.00	96.00	7.75	5-Void
6	-128.00	-147.00	19.00	72.05	3-Clean Sand
7	-147.00	-153.00	6.00	21.00	5-Void
8	-153.00	-176.90	23.90	58.77	3-Clean Sand
9	-176.90	-177.00	0.10	0.00	2-Clay and Silty Sand
10	-177.00	-202.50	25.50	57.06	3-Clean Sand
11	-202.50	-202.60	0.10	0.00	2-Clay and Silty Sand
12	-202.60	-241.00	38.40	52.65	3-Clean Sand
13	-241.00	-241.00	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED

24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED

24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	6.40	6.40	3.20	19.21
6.00	24.0	0.38	7.97	8.36	4.18	24.30
8.00	24.0	0.89	14.16	15.06	7.53	43.39
10.00	24.0	1.57	23.96	25.53	12.76	73.45

12.00	24.0	2.18	38.18	40.36	20.18	116.72
14.00	24.0	7.91	49.28	57.19	28.59	155.75
16.00	24.0	12.19	51.21	63.40	31.70	165.81
18.00	24.0	16.22	54.82	71.04	35.52	180.68
20.00	24.0	20.52	59.54	80.06	40.03	199.14
22.00	24.0	25.41	64.36	89.76	44.88	218.48
24.00	24.0	31.18	67.88	99.06	49.53	234.83
26.00	24.0	39.27	65.18	104.45	52.22	234.80
28.00	24.0	47.91	60.51	108.42	54.21	229.44
30.00	24.0	57.82	52.27	110.09	55.04	214.62
32.00	24.0	62.39	0.00	62.39	31.19	62.39
34.00	24.0	62.39	0.00	62.39	31.19	62.39
36.00	24.0	62.39	0.00	62.39	31.19	62.39
38.00	24.0	62.39	0.00	62.39	31.19	62.39
40.00	24.0	62.39	0.00	62.39	31.19	62.39
42.00	24.0	62.39	0.00	62.39	31.19	62.39
44.00	24.0	62.39	0.00	62.39	31.19	62.39
46.00	24.0	62.39	0.00	62.39	31.19	62.39
48.00	24.0	62.39	0.00	62.39	31.19	62.39
50.00	24.0	62.39	0.00	62.39	31.19	62.39
52.00	24.0	62.39	0.00	62.39	31.19	62.39
54.00	24.0	62.39	0.00	62.39	31.19	62.39
56.00	24.0	62.39	0.00	62.39	31.19	62.39
58.00	24.0	62.39	0.00	62.39	31.19	62.39
60.00	24.0	62.39	0.00	62.39	31.19	62.39
62.00	24.0	62.39	0.00	62.39	31.19	62.39
64.00	24.0	62.39	0.00	62.39	31.19	62.39
66.00	24.0	62.39	0.00	62.39	31.19	62.39
68.00	24.0	62.39	0.00	62.39	31.19	62.39
70.00	24.0	62.39	0.00	62.39	31.19	62.39
72.00	24.0	62.39	0.00	62.39	31.19	62.39
74.00	24.0	62.39	0.00	62.39	31.19	62.39
76.00	24.0	62.39	0.00	62.39	31.19	62.39
78.00	24.0	62.39	0.00	62.39	31.19	62.39
80.00	24.0	62.39	0.00	62.39	31.19	62.39
82.00	24.0	62.39	0.00	62.39	31.19	62.39
84.00	24.0	62.39	0.00	62.39	31.19	62.39
86.00	24.0	62.39	0.00	62.39	31.19	62.39
88.00	24.0	62.39	0.00	62.39	31.19	62.39
90.00	24.0	62.39	0.00	62.39	31.19	62.39
92.00	24.0	62.39	0.00	62.39	31.19	62.39
94.00	24.0	62.39	0.00	62.39	31.19	62.39
96.00	24.0	62.39	0.00	62.39	31.19	62.39
98.00	24.0	62.39	0.00	62.39	31.19	62.39
100.00	24.0	62.39	0.00	62.39	31.19	62.39
102.00	24.0	62.39	0.00	62.39	31.19	62.39
104.00	24.0	62.39	0.00	62.39	31.19	62.39
106.00	24.0	62.39	0.00	62.39	31.19	62.39

108.00	24.0	62.39	0.00	62.39	31.19	62.39
110.00	24.0	62.39	0.00	62.39	31.19	62.39
112.00	24.0	62.39	0.00	62.39	31.19	62.39
114.00	24.0	62.39	0.00	62.39	31.19	62.39
116.00	24.0	62.39	0.00	62.39	31.19	62.39
118.00	24.0	62.39	0.00	62.39	31.19	62.39
120.00	24.0	62.39	0.00	62.39	31.19	62.39
122.00	24.0	62.39	0.00	62.39	31.19	62.39
124.00	24.0	62.39	0.00	62.39	31.19	62.39
126.00	24.0	63.09	0.00	63.09	31.54	63.09
128.00	24.0	68.67	65.04	133.72	66.86	263.81
130.00	24.0	76.34	65.81	142.15	71.07	273.76
132.00	24.0	83.27	67.89	151.16	75.58	286.93
134.00	24.0	90.09	71.02	161.11	80.56	303.15
136.00	24.0	96.89	75.22	172.11	86.06	322.56
138.00	24.0	103.06	80.77	183.84	91.92	345.38
140.00	24.0	110.91	83.45	194.36	97.18	361.27
142.00	24.0	121.03	82.25	203.28	101.64	367.78
144.00	24.0	131.81	80.68	212.49	106.25	373.84
146.00	24.0	140.61	81.13	221.74	110.87	384.00
148.00	24.0	155.38	0.00	155.38	77.69	155.38
150.00	24.0	158.33	0.00	158.33	79.17	158.33
152.00	24.0	164.23	0.00	164.23	82.11	164.23
154.00	24.0	172.69	99.86	272.55	136.27	472.26
156.00	24.0	181.41	98.80	280.21	140.10	477.81
158.00	24.0	190.02	97.67	287.68	143.84	483.01
160.00	24.0	198.50	96.62	295.13	147.56	488.37
162.00	24.0	206.83	97.05	303.88	151.94	497.98
164.00	24.0	213.87	101.86	315.74	157.87	519.47
166.00	24.0	219.57	105.48	325.04	162.52	536.00
168.00	24.0	226.07	108.97	335.04	167.52	552.99
170.00	24.0	236.96	105.34	342.30	171.15	552.99
172.00	24.0	245.32	107.17	352.49	176.25	566.84
174.00	24.0	254.85	108.06	362.90	181.45	579.02
176.00	24.0	263.61	109.00	372.61	186.31	590.62
178.00	24.0	274.40	111.03	385.43	192.72	607.50
180.00	24.0	284.06	109.11	393.16	196.58	611.38
182.00	24.0	292.76	108.16	400.92	200.46	617.25
184.00	24.0	300.52	107.87	408.39	204.19	624.13
186.00	24.0	307.51	107.62	415.13	207.57	630.38
188.00	24.0	314.83	106.72	421.55	210.78	634.99
190.00	24.0	322.68	105.19	427.87	213.94	638.26
192.00	24.0	330.58	104.51	435.09	217.54	644.11
194.00	24.0	338.07	104.42	442.50	221.25	651.35
196.00	24.0	345.24	95.32	440.56	220.28	631.19
198.00	24.0	352.54	95.32	447.86	223.93	638.49
200.00	24.0	360.04	95.87	455.91	227.95	647.65

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)
200.00	24.0	360.04	95.87	455.91	227.95	647.65
202.00	24.0	364.60	100.27	464.87	232.43	665.40
204.00	24.0	370.70	102.72	473.42	236.71	678.86
206.00	24.0	378.89	102.85	481.74	240.87	687.43
208.00	24.0	387.16	103.04	490.19	245.10	696.27
210.00	24.0	395.51	103.30	498.81	249.40	705.41
212.00	24.0	403.87	103.65	507.51	253.76	714.80
214.00	24.0	412.19	104.05	516.24	258.12	724.34
216.00	24.0	420.46	104.56	525.02	262.51	734.15
218.00	24.0	427.61	106.91	534.52	267.26	748.34
220.00	24.0	435.07	109.05	544.12	272.06	762.22
222.00	24.0	443.21	110.22	553.44	276.72	773.88
224.00	24.0	451.54	111.38	562.92	281.46	785.67
226.00	24.0	460.30	111.91	572.22	286.11	796.05
228.00	24.0	469.19	111.10	580.29	290.14	802.49
230.00	24.0	478.07	109.75	587.82	293.91	807.32
232.00	24.0	486.69	108.76	595.45	297.72	812.97
234.00	24.0	494.69	104.54	599.23	299.62	808.31
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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
Shaft and Pile Analysis (FB-Deep v.3.0.0)

Date: May 23, 2022
Time: 13:46:24

General Information:
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Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-4 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 10-15-20, Boring Number: SPT-4
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

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	1.00	3- Clean sand
4	6.00	2.00	3- Clean sand
5	8.00	2.00	3- Clean sand
6	10.00	2.00	3- Clean sand
7	13.00	2.00	3- Clean sand
8	15.90	0.00	2- Clay and silty sand
9	16.00	25.00	3- Clean sand
10	23.00	15.00	3- Clean sand
11	25.90	6.00	2- Clay and silty sand
12	26.00	4.00	3- Clean sand
13	33.00	4.00	3- Clean sand
14	35.90	0.00	2- Clay and silty sand
15	36.00	12.00	3- Clean sand
16	43.00	16.00	3- Clean sand
17	45.00	6.00	2- Clay and silty sand

18	53.00	0.00	2- Clay and silty sand
19	58.00	2.00	2- Clay and silty sand
20	63.00	0.00	2- Clay and silty sand
21	68.00	0.00	2- Clay and silty sand
22	73.00	2.00	2- Clay and silty sand
23	78.00	2.00	2- Clay and silty sand
24	83.00	2.00	2- Clay and silty sand
25	88.00	2.00	2- Clay and silty sand
26	92.00	9.00	3- Clean sand
27	98.00	18.00	3- Clean sand
28	101.00	26.00	1- Plastic Clay
29	108.00	64.00	1- Plastic Clay
30	113.00	100.00	1- Plastic Clay
31	115.00	59.00	2- Clay and silty sand
32	123.00	49.00	2- Clay and silty sand
33	128.00	40.00	2- Clay and silty sand
34	133.00	45.00	2- Clay and silty sand
35	138.00	35.00	2- Clay and silty sand
36	143.00	100.00	2- Clay and silty sand
37	148.00	47.00	2- Clay and silty sand
38	149.00	100.00	1- Plastic Clay
39	156.00	100.00	2- Clay and silty sand
40	163.00	100.00	2- Clay and silty sand
41	165.00	100.00	4- Lime Stone/Very shelly sand
42	173.00	100.00	4- Lime Stone/Very shelly sand
43	178.00	100.00	4- Lime Stone/Very shelly sand
44	183.00	41.00	4- Lime Stone/Very shelly sand
45	188.00	65.00	4- Lime Stone/Very shelly sand
46	193.00	64.00	4- Lime Stone/Very shelly sand
47	198.00	68.00	4- Lime Stone/Very shelly sand
48	203.00	100.00	4- Lime Stone/Very shelly sand
49	208.00	100.00	4- Lime Stone/Very shelly sand
50	213.00	100.00	4- Lime Stone/Very shelly sand
51	218.00	100.00	4- Lime Stone/Very shelly sand
52	223.00	22.00	4- Lime Stone/Very shelly sand
53	228.00	100.00	4- Lime Stone/Very shelly sand
54	233.00	100.00	4- Lime Stone/Very shelly sand
55	238.00	100.00	4- Lime Stone/Very shelly sand
56	238.10	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	0.00	-15.90	15.90	1.87	3-Clean Sand
2	-15.90	-16.00	0.10	0.00	2-Clay and Silty Sand
3	-16.00	-25.90	9.90	22.07	3-Clean Sand
4	-25.90	-26.00	0.10	6.00	2-Clay and Silty Sand
5	-26.00	-35.90	9.90	4.00	3-Clean Sand
6	-35.90	-36.00	0.10	0.00	2-Clay and Silty Sand
7	-36.00	-45.00	9.00	12.89	3-Clean Sand
8	-45.00	-92.00	47.00	2.04	2-Clay and Silty Sand
9	-92.00	-101.00	9.00	12.00	3-Clean Sand
10	-101.00	-115.00	14.00	50.14	1-Plastic Clay
11	-115.00	-149.00	34.00	54.82	2-Clay and Silty Sand
12	-149.00	-156.00	7.00	100.00	1-Plastic Clay
13	-156.00	-165.00	9.00	100.00	2-Clay and Silty Sand
14	-165.00	-238.10	73.10	83.58	4-Limestone, Very Shelly Sand
15	-238.10	-238.10	0.00	0.00	5-

Driven Pile Data:

Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED

24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED

24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00

8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.00	5.09	5.09	2.55	15.28
12.00	24.0	0.00	16.71	16.71	8.36	50.14
14.00	24.0	0.00	25.94	25.94	12.97	77.83
16.00	24.0	0.14	33.64	33.78	16.89	101.06
18.00	24.0	5.49	32.49	37.98	18.99	102.97
20.00	24.0	10.25	29.00	39.25	19.63	97.26
22.00	24.0	14.41	26.11	40.52	20.26	92.75
24.00	24.0	18.04	24.17	42.21	21.11	90.55
26.00	24.0	21.41	13.40	34.82	17.41	61.63
28.00	24.0	22.21	12.74	34.96	17.48	60.44
30.00	24.0	22.95	13.62	36.57	18.29	63.81
32.00	24.0	23.32	15.91	39.24	19.62	71.06
34.00	24.0	23.65	20.05	43.70	21.85	83.79
36.00	24.0	24.86	35.22	60.08	30.04	130.51
38.00	24.0	27.87	32.64	60.50	30.25	125.78
40.00	24.0	31.13	27.20	58.34	29.17	112.74
42.00	24.0	34.67	22.68	57.35	28.68	102.72
44.00	24.0	38.38	18.55	56.94	28.47	94.04
46.00	24.0	41.43	5.81	47.24	23.62	58.87
48.00	24.0	44.23	5.21	49.43	24.72	59.85
50.00	24.0	45.91	3.86	49.77	24.89	57.49
52.00	24.0	46.75	2.87	49.63	24.81	55.37
54.00	24.0	46.86	2.23	49.09	24.55	53.56
56.00	24.0	46.86	1.83	48.69	24.34	52.34
58.00	24.0	46.86	1.55	48.41	24.20	51.50
60.00	24.0	46.86	1.34	48.20	24.10	50.88
62.00	24.0	46.86	0.96	47.82	23.91	49.75
64.00	24.0	46.86	0.49	47.35	23.68	48.33
66.00	24.0	46.86	0.18	47.04	23.52	47.39
68.00	24.0	46.86	0.02	46.88	23.44	46.92
70.00	24.0	46.86	0.00	46.86	23.43	46.86
72.00	24.0	46.86	0.00	46.86	23.43	46.86
74.00	24.0	46.86	0.00	46.86	23.43	46.86
76.00	24.0	46.86	0.00	46.86	23.43	46.86
78.00	24.0	46.86	0.00	46.86	23.43	46.86
80.00	24.0	46.86	0.00	46.86	23.43	46.86
82.00	24.0	46.86	0.27	47.13	23.56	47.67
84.00	24.0	46.86	2.42	49.28	24.64	54.13
86.00	24.0	46.86	6.64	53.50	26.75	66.79
88.00	24.0	46.86	12.39	59.25	29.62	84.02
90.00	24.0	47.39	18.96	66.35	33.18	104.28
92.00	24.0	48.98	25.09	74.07	37.04	124.25
94.00	24.0	51.30	25.30	76.59	38.30	127.19
96.00	24.0	54.35	25.43	79.78	39.89	130.64
98.00	24.0	58.08	25.59	83.67	41.84	134.85
100.00	24.0	63.43	26.57	90.00	45.00	143.13
102.00	24.0	74.69	31.25	105.94	52.97	168.45

104.00	24.0	84.59	37.13	121.72	60.86	195.98
106.00	24.0	96.84	45.75	142.59	71.30	234.09
108.00	24.0	111.31	53.18	164.50	82.25	270.86
110.00	24.0	126.96	60.61	187.57	93.78	308.80
112.00	24.0	143.57	65.97	209.53	104.77	341.47
114.00	24.0	160.21	69.10	229.30	114.65	367.50
116.00	24.0	176.00	69.90	245.90	122.95	385.69
118.00	24.0	186.32	70.92	257.24	128.62	399.08
120.00	24.0	196.43	72.59	269.03	134.51	414.22
122.00	24.0	206.69	74.26	280.94	140.47	429.45
124.00	24.0	217.04	75.68	292.72	146.36	444.09
126.00	24.0	227.35	76.84	304.18	152.09	457.86
128.00	24.0	237.49	77.58	315.07	157.54	470.24
130.00	24.0	247.60	76.70	324.29	162.15	477.69
132.00	24.0	257.79	74.24	332.03	166.01	480.50
134.00	24.0	268.04	76.96	345.00	172.50	498.93
136.00	24.0	278.11	86.61	364.73	182.36	537.96
138.00	24.0	287.99	97.64	385.63	192.81	580.90
140.00	24.0	298.36	102.38	400.74	200.37	605.50
142.00	24.0	309.92	99.35	409.27	204.64	607.98
144.00	24.0	322.41	94.70	417.11	208.56	606.52
146.00	24.0	334.21	96.04	430.26	215.13	622.34
148.00	24.0	345.07	103.87	448.94	224.47	656.69
150.00	24.0	361.90	111.59	473.48	236.74	696.66
152.00	24.0	376.43	123.50	499.93	249.96	746.94
154.00	24.0	390.75	137.86	528.60	264.30	804.32
156.00	24.0	407.01	144.38	551.40	275.70	840.16
158.00	24.0	419.61	145.01	564.61	282.31	854.63
160.00	24.0	432.23	145.72	577.95	288.97	869.38
162.00	24.0	444.65	147.71	592.36	296.18	887.78
164.00	24.0	456.70	152.84	609.54	304.77	915.23
166.00	24.0	470.71	164.41	635.12	317.56	963.94
168.00	24.0	483.27	164.41	647.69	323.84	976.51
170.00	24.0	495.84	164.41	660.25	330.13	989.07
172.00	24.0	508.41	164.10	672.51	336.25	1000.71
174.00	24.0	520.97	161.63	682.60	341.30	1005.86
176.00	24.0	533.54	156.69	690.23	345.11	1003.60
178.00	24.0	546.11	151.01	697.12	348.56	999.14
180.00	24.0	557.19	147.00	704.19	352.10	998.19
182.00	24.0	565.31	145.33	710.63	355.32	1001.28
184.00	24.0	570.98	144.85	715.83	357.92	1005.53
186.00	24.0	577.34	144.01	721.35	360.68	1009.37
188.00	24.0	584.91	142.67	727.57	363.79	1012.91
190.00	24.0	593.05	141.22	734.27	367.14	1016.72
192.00	24.0	601.14	140.12	741.26	370.63	1021.49
194.00	24.0	609.22	140.21	749.43	374.71	1029.85
196.00	24.0	617.46	142.11	759.57	379.78	1043.78
198.00	24.0	625.90	145.66	771.56	385.78	1062.89

24.00	238.00	-238.00	0.50	CLOSED	UNPLUGGED
24.00	240.00	-240.00	0.50	CLOSED	UNPLUGGED

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)
200.00	24.0	635.25	149.68	784.94	392.47	1084.30
202.00	24.0	646.21	152.70	798.91	399.46	1104.31
204.00	24.0	658.58	154.62	813.19	406.60	1122.43
206.00	24.0	671.14	156.23	827.37	413.69	1139.83
208.00	24.0	683.71	157.86	841.57	420.78	1157.29
210.00	24.0	696.28	159.50	855.77	427.89	1174.77
212.00	24.0	708.84	160.49	869.33	434.67	1190.32
214.00	24.0	721.41	157.34	878.75	439.37	1193.43
216.00	24.0	733.97	149.20	883.18	441.59	1181.58
218.00	24.0	746.54	140.48	887.02	443.51	1167.97
220.00	24.0	757.15	137.20	894.35	447.18	1168.76
222.00	24.0	763.83	140.55	904.38	452.19	1185.48
224.00	24.0	767.58	146.44	914.02	457.01	1206.91
226.00	24.0	774.26	150.37	924.63	462.32	1225.38
228.00	24.0	784.87	151.68	936.55	468.27	1239.91
230.00	24.0	797.43	151.68	949.12	474.56	1252.48
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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

Florida Bridge Software Institute
Shaft and Pile Analysis (FB-Deep v.3.0.0)

Date: May 23, 2022
Time: 14:04:50

General Information:
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Input file: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-1 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 10-22-20, Boring Number: SPT-5
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	0.00	5- Cavity layer
6	10.00	0.00	5- Cavity layer
7	15.00	0.00	5- Cavity layer
8	20.00	0.00	5- Cavity layer
9	25.00	0.00	5- Cavity layer
10	30.00	0.00	5- Cavity layer
11	35.00	1.00	5- Cavity layer
12	40.00	0.00	5- Cavity layer
13	45.00	0.00	5- Cavity layer
14	47.90	0.00	2- Clay and silty sand
15	48.00	15.00	5- Cavity layer
16	55.00	3.00	5- Cavity layer
17	60.00	7.00	5- Cavity layer

18	65.00	6.00	5- Cavity layer
19	70.00	2.00	5- Cavity layer
20	75.00	2.00	5- Cavity layer
21	80.00	2.00	5- Cavity layer
22	82.00	36.00	3- Clean sand
23	90.00	20.00	3- Clean sand
24	95.00	72.00	3- Clean sand
25	97.00	5.00	5- Cavity layer
26	105.00	3.00	5- Cavity layer
27	110.00	2.00	5- Cavity layer
28	115.00	9.00	5- Cavity layer
29	120.00	10.00	5- Cavity layer
30	125.00	8.00	5- Cavity layer
31	130.00	6.00	5- Cavity layer
32	135.00	1.00	5- Cavity layer
33	140.00	8.00	5- Cavity layer
34	145.00	4.00	5- Cavity layer
35	150.00	9.00	5- Cavity layer
36	155.00	18.00	5- Cavity layer
37	160.00	10.00	5- Cavity layer
38	163.00	100.00	3- Clean sand
39	170.00	100.00	3- Clean sand
40	175.00	100.00	3- Clean sand
41	177.00	13.00	2- Clay and silty sand
42	185.00	14.00	2- Clay and silty sand
43	190.00	25.00	2- Clay and silty sand
44	195.00	15.00	2- Clay and silty sand
45	198.00	28.00	3- Clean sand
46	205.00	100.00	3- Clean sand
47	210.00	100.00	3- Clean sand
48	215.00	51.00	3- Clean sand
49	220.00	100.00	3- Clean sand
50	225.00	82.00	3- Clean sand
51	230.00	42.00	3- Clean sand
52	232.00	39.00	2- Clay and silty sand
53	240.00	85.00	2- Clay and silty sand
54	241.00	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	0.00	-47.90	47.90	0.10	5-Void
2	-47.90	-48.00	0.10	0.00	2-Clay and Silty Sand
3	-48.00	-82.00	34.00	6.15	5-Void
4	-82.00	-97.00	15.00	35.47	3-Clean Sand
5	-97.00	-163.00	66.00	6.97	5-Void
6	-163.00	-177.00	14.00	100.00	3-Clean Sand
7	-177.00	-198.00	21.00	16.38	2-Clay and Silty Sand
8	-198.00	-232.00	34.00	71.91	3-Clean Sand
9	-232.00	-241.00	9.00	44.11	2-Clay and Silty Sand
10	-241.00	-241.00	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED
24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED

24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED
24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED

24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.00	0.00	0.00	0.00	0.00
12.00	24.0	0.00	0.00	0.00	0.00	0.00
14.00	24.0	0.00	0.00	0.00	0.00	0.00
16.00	24.0	0.00	0.00	0.00	0.00	0.00
18.00	24.0	0.00	0.00	0.00	0.00	0.00
20.00	24.0	0.00	0.00	0.00	0.00	0.00
22.00	24.0	0.00	0.00	0.00	0.00	0.00

24.00	24.0	0.00	0.00	0.00	0.00	0.00
26.00	24.0	0.00	0.00	0.00	0.00	0.00
28.00	24.0	0.00	0.00	0.00	0.00	0.00
30.00	24.0	0.00	0.00	0.00	0.00	0.00
32.00	24.0	0.00	0.00	0.00	0.00	0.00
34.00	24.0	0.00	0.00	0.00	0.00	0.00
36.00	24.0	0.00	0.00	0.00	0.00	0.00
38.00	24.0	0.00	0.00	0.00	0.00	0.00
40.00	24.0	0.00	0.00	0.00	0.00	0.00
42.00	24.0	0.00	0.00	0.00	0.00	0.00
44.00	24.0	0.00	0.00	0.00	0.00	0.00
46.00	24.0	0.00	0.00	0.00	0.00	0.00
48.00	24.0	0.00	0.00	0.00	0.00	0.00
50.00	24.0	0.00	0.00	0.00	0.00	0.00
52.00	24.0	0.00	0.00	0.00	0.00	0.00
54.00	24.0	0.00	0.00	0.00	0.00	0.00
56.00	24.0	0.00	0.00	0.00	0.00	0.00
58.00	24.0	0.00	0.00	0.00	0.00	0.00
60.00	24.0	0.00	0.00	0.00	0.00	0.00
62.00	24.0	0.00	0.00	0.00	0.00	0.00
64.00	24.0	0.00	0.00	0.00	0.00	0.00
66.00	24.0	0.00	0.00	0.00	0.00	0.00
68.00	24.0	0.00	0.00	0.00	0.00	0.00
70.00	24.0	0.00	0.00	0.00	0.00	0.00
72.00	24.0	0.00	0.00	0.00	0.00	0.00
74.00	24.0	0.00	0.00	0.00	0.00	0.00
76.00	24.0	0.00	0.00	0.00	0.00	0.00
78.00	24.0	0.00	0.00	0.00	0.00	0.00
80.00	24.0	0.00	0.00	0.00	0.00	0.00
82.00	24.0	3.68	46.86	50.54	25.27	144.27
84.00	24.0	10.40	47.04	57.45	28.72	151.53
86.00	24.0	15.36	48.11	63.47	31.74	159.69
88.00	24.0	18.40	50.97	69.37	34.68	171.31
90.00	24.0	21.92	53.23	75.16	37.58	181.63
92.00	24.0	28.26	52.24	80.50	40.25	184.98
94.00	24.0	38.07	49.39	87.46	43.73	186.24
96.00	24.0	48.69	43.82	92.51	46.25	180.15
98.00	24.0	49.85	0.00	49.85	24.93	49.85
100.00	24.0	49.85	0.00	49.85	24.93	49.85
102.00	24.0	49.85	0.00	49.85	24.93	49.85
104.00	24.0	49.85	0.00	49.85	24.93	49.85
106.00	24.0	49.85	0.00	49.85	24.93	49.85
108.00	24.0	49.85	0.00	49.85	24.93	49.85
110.00	24.0	49.85	0.00	49.85	24.93	49.85
112.00	24.0	49.85	0.00	49.85	24.93	49.85
114.00	24.0	49.85	0.00	49.85	24.93	49.85
116.00	24.0	49.85	0.00	49.85	24.93	49.85
118.00	24.0	49.85	0.00	49.85	24.93	49.85

120.00	24.0	49.85	0.00	49.85	24.93	49.85
122.00	24.0	49.85	0.00	49.85	24.93	49.85
124.00	24.0	49.85	0.00	49.85	24.93	49.85
126.00	24.0	49.85	0.00	49.85	24.93	49.85
128.00	24.0	49.85	0.00	49.85	24.93	49.85
130.00	24.0	49.85	0.00	49.85	24.93	49.85
132.00	24.0	49.85	0.00	49.85	24.93	49.85
134.00	24.0	49.85	0.00	49.85	24.93	49.85
136.00	24.0	49.85	0.00	49.85	24.93	49.85
138.00	24.0	49.85	0.00	49.85	24.93	49.85
140.00	24.0	49.85	0.00	49.85	24.93	49.85
142.00	24.0	49.85	0.00	49.85	24.93	49.85
144.00	24.0	49.85	0.00	49.85	24.93	49.85
146.00	24.0	49.85	0.00	49.85	24.93	49.85
148.00	24.0	49.85	0.00	49.85	24.93	49.85
150.00	24.0	49.85	0.00	49.85	24.93	49.85
152.00	24.0	49.85	0.00	49.85	24.93	49.85
154.00	24.0	49.85	0.00	49.85	24.93	49.85
156.00	24.0	49.85	0.00	49.85	24.93	49.85
158.00	24.0	49.85	0.00	49.85	24.93	49.85
160.00	24.0	49.85	0.00	49.85	24.93	49.85
162.00	24.0	53.39	0.00	53.39	26.69	53.39
164.00	24.0	62.83	71.18	134.01	67.01	276.38
166.00	24.0	71.53	72.53	144.07	72.03	289.14
168.00	24.0	79.04	75.24	154.28	77.14	304.76
170.00	24.0	87.77	77.05	164.82	82.41	318.91
172.00	24.0	99.38	76.04	175.41	87.71	327.49
174.00	24.0	112.55	73.84	186.38	93.19	334.06
176.00	24.0	126.11	71.05	197.17	98.58	339.27
178.00	24.0	132.74	22.31	155.04	77.52	199.65
180.00	24.0	138.61	22.74	161.35	80.67	206.83
182.00	24.0	143.93	24.02	167.94	83.97	215.98
184.00	24.0	148.98	26.85	175.82	87.91	229.52
186.00	24.0	154.96	29.22	184.18	92.09	242.61
188.00	24.0	162.13	29.60	191.73	95.87	250.94
190.00	24.0	170.23	32.07	202.30	101.15	266.45
192.00	24.0	178.41	40.14	218.55	109.28	298.84
194.00	24.0	185.81	50.90	236.71	118.35	338.50
196.00	24.0	192.48	63.31	255.78	127.89	382.39
198.00	24.0	201.68	74.01	275.69	137.84	423.70
200.00	24.0	207.77	74.77	282.54	141.27	432.08

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.

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)
200.00	24.0	207.77	74.77	282.54	141.27	432.08
202.00	24.0	213.96	76.91	290.87	145.43	444.69
204.00	24.0	220.66	80.08	300.74	150.37	460.89
206.00	24.0	228.22	83.65	311.88	155.94	479.18
208.00	24.0	236.06	87.46	323.52	161.76	498.45
210.00	24.0	243.82	92.05	335.87	167.93	519.96
212.00	24.0	250.94	98.14	349.07	174.54	545.35
214.00	24.0	257.75	104.57	362.32	181.16	571.46
216.00	24.0	264.68	110.63	375.31	187.65	596.56
218.00	24.0	272.80	115.87	388.67	194.34	620.42
220.00	24.0	282.45	119.53	401.98	200.99	641.03
222.00	24.0	293.17	121.35	414.52	207.26	657.22
224.00	24.0	303.16	117.65	420.81	210.40	656.10
226.00	24.0	312.85	110.14	422.98	211.49	643.25
228.00	24.0	321.96	105.07	427.03	213.51	637.18
230.00	24.0	330.42	103.82	434.24	217.12	641.87
232.00	24.0	361.44	99.07	460.51	230.25	658.64
234.00	24.0	371.71	91.23	462.94	231.47	645.39
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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: .....SR 50 RS&H\Geotechnical\6 Miscellaneous\FB-Deep\SPT-6 24 in.in
Project number: J4471G
Job name: FTE PD&E SR 408 to SR 50
Engineer: RJP
Units: English

Analysis Information:
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Analysis Type: SPT

Soil Information:
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Boring date: 11-20-20, Boring Number: SPT-6
Station number: Offset:

Ground Elevation: 0.000(ft)

Hammer type: Safety Hammer

ID	Depth (ft)	No. of Blows (Blows/ft)	Soil Type
1	0.00	0.00	5- Cavity layer
2	2.00	0.00	5- Cavity layer
3	4.00	0.00	5- Cavity layer
4	6.00	0.00	5- Cavity layer
5	8.00	0.00	5- Cavity layer
6	10.00	0.00	5- Cavity layer
7	13.00	0.00	5- Cavity layer
8	18.00	0.00	5- Cavity layer
9	23.00	0.00	5- Cavity layer
10	28.00	1.00	5- Cavity layer
11	33.00	0.00	5- Cavity layer
12	38.00	0.00	5- Cavity layer
13	43.00	2.00	5- Cavity layer
14	48.00	0.00	5- Cavity layer
15	53.00	1.00	5- Cavity layer
16	58.00	0.00	5- Cavity layer
17	63.00	3.00	5- Cavity layer

18	68.00	0.00	5- Cavity layer
19	71.00	12.00	3- Clean sand
20	78.00	17.00	3- Clean sand
21	80.00	4.00	5- Cavity layer
22	88.00	2.00	5- Cavity layer
23	93.00	5.00	5- Cavity layer
24	98.00	2.00	5- Cavity layer
25	103.00	3.00	5- Cavity layer
26	108.00	3.00	5- Cavity layer
27	113.00	0.00	5- Cavity layer
28	118.00	2.00	5- Cavity layer
29	123.00	0.00	5- Cavity layer
30	128.00	3.00	5- Cavity layer
31	133.00	5.00	5- Cavity layer
32	138.00	8.00	5- Cavity layer
33	143.00	7.00	5- Cavity layer
34	146.00	100.00	3- Clean sand
35	153.00	44.00	3- Clean sand
36	155.00	5.00	5- Cavity layer
37	161.00	24.00	3- Clean sand
38	168.00	9.00	3- Clean sand
39	169.90	0.00	2- Clay and silty sand
40	170.00	57.00	3- Clean sand
41	178.00	59.00	3- Clean sand
42	183.00	43.00	3- Clean sand
43	185.00	9.00	5- Cavity layer
44	191.00	32.00	3- Clean sand
45	195.00	18.00	5- Cavity layer
46	203.00	17.00	5- Cavity layer
47	208.00	10.00	5- Cavity layer
48	211.00	27.00	3- Clean sand
49	218.00	16.00	3- Clean sand
50	223.00	25.00	3- Clean sand
51	228.00	21.00	3- Clean sand
52	233.00	21.00	3- Clean sand
53	238.00	26.00	3- Clean sand
54	238.10	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	0.00	-71.00	71.00	0.49	5-Void
2	-71.00	-80.00	9.00	13.11	3-Clean Sand
3	-80.00	-146.00	66.00	3.30	5-Void
4	-146.00	-155.00	9.00	87.56	3-Clean Sand
5	-155.00	-161.00	6.00	5.00	5-Void
6	-161.00	-169.90	8.90	20.80	3-Clean Sand
7	-169.90	-170.00	0.10	0.00	2-Clay and Silty Sand
8	-170.00	-185.00	15.00	55.80	3-Clean Sand
9	-185.00	-191.00	6.00	9.00	5-Void
10	-191.00	-195.00	4.00	32.00	3-Clean Sand
11	-195.00	-211.00	16.00	16.19	5-Void
12	-211.00	-238.10	27.10	22.38	3-Clean Sand
13	-238.10	-238.10	0.00	0.00	5-

Driven Pile Data:
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Pile unit weight = 489.00(pcf), Section Type: Pipe

Pile Geometry:

Width (in)	Length (ft)	Tip Elev. (ft)	Thickness (in)	Pile End	Plug Condition
24.00	2.00	-2.00	0.50	CLOSED	PLUGGED
24.00	4.00	-4.00	0.50	CLOSED	PLUGGED
24.00	6.00	-6.00	0.50	CLOSED	PLUGGED
24.00	8.00	-8.00	0.50	CLOSED	PLUGGED
24.00	10.00	-10.00	0.50	CLOSED	PLUGGED
24.00	12.00	-12.00	0.50	CLOSED	PLUGGED
24.00	14.00	-14.00	0.50	CLOSED	PLUGGED
24.00	16.00	-16.00	0.50	CLOSED	PLUGGED
24.00	18.00	-18.00	0.50	CLOSED	PLUGGED
24.00	20.00	-20.00	0.50	CLOSED	PLUGGED
24.00	22.00	-22.00	0.50	CLOSED	PLUGGED
24.00	24.00	-24.00	0.50	CLOSED	PLUGGED
24.00	26.00	-26.00	0.50	CLOSED	PLUGGED
24.00	28.00	-28.00	0.50	CLOSED	PLUGGED
24.00	30.00	-30.00	0.50	CLOSED	PLUGGED
24.00	32.00	-32.00	0.50	CLOSED	PLUGGED
24.00	34.00	-34.00	0.50	CLOSED	PLUGGED
24.00	36.00	-36.00	0.50	CLOSED	PLUGGED
24.00	38.00	-38.00	0.50	CLOSED	PLUGGED
24.00	40.00	-40.00	0.50	CLOSED	PLUGGED
24.00	42.00	-42.00	0.50	CLOSED	PLUGGED
24.00	44.00	-44.00	0.50	CLOSED	PLUGGED
24.00	46.00	-46.00	0.50	CLOSED	PLUGGED
24.00	48.00	-48.00	0.50	CLOSED	PLUGGED

24.00	50.00	-50.00	0.50	CLOSED	PLUGGED
24.00	52.00	-52.00	0.50	CLOSED	PLUGGED
24.00	54.00	-54.00	0.50	CLOSED	PLUGGED
24.00	56.00	-56.00	0.50	CLOSED	PLUGGED
24.00	58.00	-58.00	0.50	CLOSED	PLUGGED
24.00	60.00	-60.00	0.50	CLOSED	PLUGGED
24.00	62.00	-62.00	0.50	CLOSED	PLUGGED
24.00	64.00	-64.00	0.50	CLOSED	PLUGGED
24.00	66.00	-66.00	0.50	CLOSED	PLUGGED
24.00	68.00	-68.00	0.50	CLOSED	PLUGGED
24.00	70.00	-70.00	0.50	CLOSED	PLUGGED
24.00	72.00	-72.00	0.50	CLOSED	PLUGGED
24.00	74.00	-74.00	0.50	CLOSED	PLUGGED
24.00	76.00	-76.00	0.50	CLOSED	PLUGGED
24.00	78.00	-78.00	0.50	CLOSED	PLUGGED
24.00	80.00	-80.00	0.50	CLOSED	PLUGGED
24.00	82.00	-82.00	0.50	CLOSED	PLUGGED
24.00	84.00	-84.00	0.50	CLOSED	PLUGGED
24.00	86.00	-86.00	0.50	CLOSED	PLUGGED
24.00	88.00	-88.00	0.50	CLOSED	PLUGGED
24.00	90.00	-90.00	0.50	CLOSED	PLUGGED
24.00	92.00	-92.00	0.50	CLOSED	PLUGGED
24.00	94.00	-94.00	0.50	CLOSED	PLUGGED
24.00	96.00	-96.00	0.50	CLOSED	PLUGGED
24.00	98.00	-98.00	0.50	CLOSED	PLUGGED
24.00	100.00	-100.00	0.50	CLOSED	PLUGGED
24.00	102.00	-102.00	0.50	CLOSED	PLUGGED
24.00	104.00	-104.00	0.50	CLOSED	PLUGGED
24.00	106.00	-106.00	0.50	CLOSED	PLUGGED
24.00	108.00	-108.00	0.50	CLOSED	PLUGGED
24.00	110.00	-110.00	0.50	CLOSED	PLUGGED
24.00	112.00	-112.00	0.50	CLOSED	PLUGGED
24.00	114.00	-114.00	0.50	CLOSED	PLUGGED
24.00	116.00	-116.00	0.50	CLOSED	PLUGGED
24.00	118.00	-118.00	0.50	CLOSED	PLUGGED
24.00	120.00	-120.00	0.50	CLOSED	PLUGGED
24.00	122.00	-122.00	0.50	CLOSED	PLUGGED
24.00	124.00	-124.00	0.50	CLOSED	PLUGGED
24.00	126.00	-126.00	0.50	CLOSED	PLUGGED
24.00	128.00	-128.00	0.50	CLOSED	PLUGGED
24.00	130.00	-130.00	0.50	CLOSED	PLUGGED
24.00	132.00	-132.00	0.50	CLOSED	PLUGGED
24.00	134.00	-134.00	0.50	CLOSED	PLUGGED
24.00	136.00	-136.00	0.50	CLOSED	PLUGGED
24.00	138.00	-138.00	0.50	CLOSED	PLUGGED
24.00	140.00	-140.00	0.50	CLOSED	PLUGGED
24.00	142.00	-142.00	0.50	CLOSED	PLUGGED
24.00	144.00	-144.00	0.50	CLOSED	PLUGGED

24.00	146.00	-146.00	0.50	CLOSED	PLUGGED
24.00	148.00	-148.00	0.50	CLOSED	PLUGGED
24.00	150.00	-150.00	0.50	CLOSED	PLUGGED
24.00	152.00	-152.00	0.50	CLOSED	PLUGGED
24.00	154.00	-154.00	0.50	CLOSED	PLUGGED
24.00	156.00	-156.00	0.50	CLOSED	PLUGGED
24.00	158.00	-158.00	0.50	CLOSED	PLUGGED
24.00	160.00	-160.00	0.50	CLOSED	PLUGGED
24.00	162.00	-162.00	0.50	CLOSED	PLUGGED
24.00	164.00	-164.00	0.50	CLOSED	PLUGGED
24.00	166.00	-166.00	0.50	CLOSED	PLUGGED
24.00	168.00	-168.00	0.50	CLOSED	PLUGGED
24.00	170.00	-170.00	0.50	CLOSED	PLUGGED
24.00	172.00	-172.00	0.50	CLOSED	PLUGGED
24.00	174.00	-174.00	0.50	CLOSED	PLUGGED
24.00	176.00	-176.00	0.50	CLOSED	PLUGGED
24.00	178.00	-178.00	0.50	CLOSED	PLUGGED
24.00	180.00	-180.00	0.50	CLOSED	PLUGGED
24.00	182.00	-182.00	0.50	CLOSED	PLUGGED
24.00	184.00	-184.00	0.50	CLOSED	PLUGGED
24.00	186.00	-186.00	0.50	CLOSED	PLUGGED
24.00	188.00	-188.00	0.50	CLOSED	PLUGGED
24.00	190.00	-190.00	0.50	CLOSED	PLUGGED
24.00	192.00	-192.00	0.50	CLOSED	PLUGGED
24.00	194.00	-194.00	0.50	CLOSED	PLUGGED
24.00	196.00	-196.00	0.50	CLOSED	PLUGGED
24.00	198.00	-198.00	0.50	CLOSED	PLUGGED
24.00	200.00	-200.00	0.50	CLOSED	PLUGGED

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)
2.00	24.0	0.00	0.00	0.00	0.00	0.00
4.00	24.0	0.00	0.00	0.00	0.00	0.00
6.00	24.0	0.00	0.00	0.00	0.00	0.00
8.00	24.0	0.00	0.00	0.00	0.00	0.00
10.00	24.0	0.00	0.00	0.00	0.00	0.00
12.00	24.0	0.00	0.00	0.00	0.00	0.00
14.00	24.0	0.00	0.00	0.00	0.00	0.00
16.00	24.0	0.00	0.00	0.00	0.00	0.00

18.00	24.0	0.00	0.00	0.00	0.00	0.00
20.00	24.0	0.00	0.00	0.00	0.00	0.00
22.00	24.0	0.00	0.00	0.00	0.00	0.00
24.00	24.0	0.00	0.00	0.00	0.00	0.00
26.00	24.0	0.00	0.00	0.00	0.00	0.00
28.00	24.0	0.00	0.00	0.00	0.00	0.00
30.00	24.0	0.00	0.00	0.00	0.00	0.00
32.00	24.0	0.00	0.00	0.00	0.00	0.00
34.00	24.0	0.00	0.00	0.00	0.00	0.00
36.00	24.0	0.00	0.00	0.00	0.00	0.00
38.00	24.0	0.00	0.00	0.00	0.00	0.00
40.00	24.0	0.00	0.00	0.00	0.00	0.00
42.00	24.0	0.00	0.00	0.00	0.00	0.00
44.00	24.0	0.00	0.00	0.00	0.00	0.00
46.00	24.0	0.00	0.00	0.00	0.00	0.00
48.00	24.0	0.00	0.00	0.00	0.00	0.00
50.00	24.0	0.00	0.00	0.00	0.00	0.00
52.00	24.0	0.00	0.00	0.00	0.00	0.00
54.00	24.0	0.00	0.00	0.00	0.00	0.00
56.00	24.0	0.00	0.00	0.00	0.00	0.00
58.00	24.0	0.00	0.00	0.00	0.00	0.00
60.00	24.0	0.00	0.00	0.00	0.00	0.00
62.00	24.0	0.00	0.00	0.00	0.00	0.00
64.00	24.0	0.00	0.00	0.00	0.00	0.00
66.00	24.0	0.00	0.00	0.00	0.00	0.00
68.00	24.0	0.00	0.00	0.00	0.00	0.00
70.00	24.0	0.96	0.00	0.96	0.48	0.96
72.00	24.0	3.55	26.26	29.81	14.91	82.33
74.00	24.0	6.82	24.97	31.79	15.90	81.73
76.00	24.0	10.35	20.97	31.32	15.66	73.26
78.00	24.0	14.21	16.58	30.80	15.40	63.96
80.00	24.0	16.23	0.00	16.23	8.11	16.23
82.00	24.0	16.23	0.00	16.23	8.11	16.23
84.00	24.0	16.23	0.00	16.23	8.11	16.23
86.00	24.0	16.23	0.00	16.23	8.11	16.23
88.00	24.0	16.23	0.00	16.23	8.11	16.23
90.00	24.0	16.23	0.00	16.23	8.11	16.23
92.00	24.0	16.23	0.00	16.23	8.11	16.23
94.00	24.0	16.23	0.00	16.23	8.11	16.23
96.00	24.0	16.23	0.00	16.23	8.11	16.23
98.00	24.0	16.23	0.00	16.23	8.11	16.23
100.00	24.0	16.23	0.00	16.23	8.11	16.23
102.00	24.0	16.23	0.00	16.23	8.11	16.23
104.00	24.0	16.23	0.00	16.23	8.11	16.23
106.00	24.0	16.23	0.00	16.23	8.11	16.23
108.00	24.0	16.23	0.00	16.23	8.11	16.23
110.00	24.0	16.23	0.00	16.23	8.11	16.23
112.00	24.0	16.23	0.00	16.23	8.11	16.23

114.00	24.0	16.23	0.00	16.23	8.11	16.23
116.00	24.0	16.23	0.00	16.23	8.11	16.23
118.00	24.0	16.23	0.00	16.23	8.11	16.23
120.00	24.0	16.23	0.00	16.23	8.11	16.23
122.00	24.0	16.23	0.00	16.23	8.11	16.23
124.00	24.0	16.23	0.00	16.23	8.11	16.23
126.00	24.0	16.23	0.00	16.23	8.11	16.23
128.00	24.0	16.23	0.00	16.23	8.11	16.23
130.00	24.0	16.23	0.00	16.23	8.11	16.23
132.00	24.0	16.23	0.00	16.23	8.11	16.23
134.00	24.0	16.23	0.00	16.23	8.11	16.23
136.00	24.0	16.23	0.00	16.23	8.11	16.23
138.00	24.0	16.23	0.00	16.23	8.11	16.23
140.00	24.0	16.23	0.00	16.23	8.11	16.23
142.00	24.0	16.23	0.00	16.23	8.11	16.23
144.00	24.0	17.11	0.00	17.11	8.56	17.11
146.00	24.0	24.18	65.15	89.33	44.66	219.63
148.00	24.0	34.42	62.58	97.00	48.50	222.17
150.00	24.0	43.91	54.87	98.78	49.39	208.52
152.00	24.0	52.66	51.53	104.19	52.09	207.24
154.00	24.0	59.76	53.55	113.31	56.66	220.42
156.00	24.0	60.99	0.00	60.99	30.49	60.99
158.00	24.0	62.81	0.00	62.81	31.40	62.81
160.00	24.0	66.45	0.00	66.45	33.22	66.45
162.00	24.0	71.56	62.85	134.41	67.20	260.11
164.00	24.0	76.06	58.49	134.55	67.28	251.52
166.00	24.0	79.62	62.85	142.47	71.23	268.17
168.00	24.0	82.05	68.16	150.20	75.10	286.51
170.00	24.0	83.44	77.64	161.08	80.54	316.36
172.00	24.0	91.47	78.14	169.61	84.80	325.89
174.00	24.0	98.74	79.48	178.22	89.11	337.18
176.00	24.0	105.91	81.14	187.05	93.53	349.32
178.00	24.0	115.44	80.24	195.68	97.84	356.16
180.00	24.0	126.63	74.78	201.41	100.71	350.98
182.00	24.0	134.89	70.06	204.95	102.47	345.07
184.00	24.0	141.89	72.32	214.21	107.10	358.84
186.00	24.0	143.17	0.00	143.17	71.59	143.17
188.00	24.0	145.44	0.00	145.44	72.72	145.44
190.00	24.0	149.98	0.00	149.98	74.99	149.98
192.00	24.0	156.08	47.85	203.93	101.96	299.63
194.00	24.0	159.48	36.74	196.22	98.11	269.71
196.00	24.0	159.91	0.00	159.91	79.95	159.91
198.00	24.0	159.91	0.00	159.91	79.95	159.91
200.00	24.0	159.91	0.00	159.91	79.95	159.91

NOTES

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

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)
200.00	24.0	159.91	0.00	159.91	79.95	159.91
202.00	24.0	159.91	0.00	159.91	79.95	159.91
204.00	24.0	159.91	0.00	159.91	79.95	159.91
206.00	24.0	159.91	0.00	159.91	79.95	159.91
208.00	24.0	159.91	0.00	159.91	79.95	159.91
210.00	24.0	161.91	0.00	161.91	80.95	161.91
212.00	24.0	167.29	40.29	207.59	103.79	288.17
214.00	24.0	172.10	40.84	212.94	106.47	294.63
216.00	24.0	175.39	42.77	218.16	109.08	303.69
218.00	24.0	177.66	46.43	224.09	112.04	316.95
220.00	24.0	180.10	51.21	231.31	115.65	333.72
222.00	24.0	183.45	56.32	239.77	119.88	352.40
224.00	24.0	187.53	61.76	249.29	124.65	372.82
226.00	24.0	191.97	66.62	258.60	129.30	391.85
228.00	24.0	196.81	69.72	266.54	133.27	405.98
230.00	24.0	201.63	72.29	273.93	136.96	418.52
232.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
234.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
236.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
238.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				
240.00	24.0	Soil Elevations Must Extend At or Below Contribution Zone				

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.

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.