

CREATIVE ENVIRONMENTAL SOLUTIONS

GEOLOGISTS | ENGINEERS | ENVIRONMENTAL SCIENTISTS

700 DESOTO AVENUE, BROOKSVILLE, FL 34601

(352) 796-3374

August 11, 2025

Alex Tolksdorf
Staff Engineer
Environmental Resource Permit Bureau, Regulation Division
Southwest Florida Water Management District
7601 U.S. 301 North (Fort King Highway)
Tampa, Florida 33637-6759

Reference: Environmental Resource Permit Application
3KS Family, LLLP - Crystal River Borrow Pit
Application/Petition No.: 912905
Citrus County, Florida

Dear Alex:

Creative Environmental Solutions, Inc. (CES), as agent for 3KS Family, LLLP, is providing this response to the Request for Additional Information dated June 27, 2025. The required supporting materials is provided.

If you should have any questions, please contact the undersigned at 352-796-3374. Thank you again for your time and consideration.

Sincerely,

George K. Foster, P.G.
President

Enclosures: RAI Response with Attachments

Response To Request for Additional Information, June 27, 2025
3KS Family, LLLP – Crystal River Borrow Pit
Application No. 912905

This submittal addresses agency comments in the Request for Additional Information dated June 27, 2025, for the above-referenced project.

SITE INFORMATION:

1. The submitted borings within the footprint of the proposed pond do not extend below the proposed pond bottom. It appears that additional borings are present on the submitted boring map however that information is not present in the provided boring logs. Please revise accordingly or provide borings that extend at least 2 feet below the proposed pond bottom. These borings will be used to verify that the depth of the pond shall not be excavated within two feet of underlying limestone. [Section 5.4.1, ERP Applicant's Handbook Vol. II (A.H.V.II)]

Response: Attached please find the March 3, 2025, geotechnical report prepared by TestLab, Inc., for Superior Construction. Also attached is a separate sheet showing the boring locations and boring elevations. The depths of the borings varied, but most went deeper than the proposed excavation. The shallowest observation of limestone was at approximately -6 feet elevation at B-16. The top of the limestone as found at approximately -8 feet elevation at three other locations, and then progressively deeper at the others (or not encountered). As noted in the submittal package, neither the clayey strata which is generally between the sand and the limestone, nor the limestone have any material value. Excavation will cease the moment either one is encountered.

ENVIRONMENTAL CONSIDERATIONS:

2. Please provide documentation from the chosen mitigation bank stating that 1.71 freshwater herbaceous credits are available at the bank and are reserved specifically for withdrawal for this project. [Rules 62-330.060(2), 62-330.301(1)(d), 62-330.302(1)(a), F.A.C, Section 10.3. of the ERP Applicant's Handbook Vol. I (A.H.V.I)]

Response: We have verified that appropriate mitigation credits are available within the Upper Coastal Basin at one or more mitigation banks. We wish to refrain from purchasing credits or a reservation letter until all other completeness items have been addressed.

PLANS:

3. Please note the minimum top of bank elevation on the submitted plans. Based on the existing contours it appears that all tie-ins to existing grade will be higher than this elevation on the edges of the systems. [Rule 62-330.301(1)(i), F.A.C.]

Response: Minimum Top of Bank EL =10.0 has been added to the plans on Sheet C1.0 and Sheet C3.0. The top of bank ties into existing grade at or higher than this elevation.

CONSTRUCTION SCHEDULE AND TECHNIQUES:

4. The submitted response noted that no offsite discharges are anticipated in the dewatering process and stated that this is located on Sheet C3.0. Please clarify the location of this note further as I was not able to locate it on the submitted plans. [Rule 62-330.301(1)(i), F.A.C.]

Response: Sheet C3.0 includes the following note at least 3 places. The project states that there will be no dewatering, therefore the note does not include a dewatering reference.



DRAINAGE INFORMATION:

5. It appears that storage modelling is used to demonstrate there will be no adverse offsite impacts due to the proposed encroachment. Please provide the following items to provide reasonable assurance the encroachment is accurately modelled, and no adverse offsite impacts will occur. [Section 3.3, A.H.V.II]

- a. Delineate the extent of the proposed encroachment and any proposed compensation on the submitted plans. Please label each of the impacts as they are labelled in the submitted calculations.

Response: The requested information has been added to the plans

- b. If the regional model is used to determine the utilized floodplain elevations, no action is needed on this item. If it is not used, please provide clarification on how these elevations were determined.

Response: The regional model was utilized to determine the utilized floodplain elevations.

The following comments, although not required by District rule, are provided for your consideration and information:

6. Please note that this will be your only request for clarification and once your response is received your application will be considered complete. Please ensure that you respond to all questions completely.

Response: Noted.

7. Please be aware that applications not deemed complete by December 28, 2025 are subject to the water quality treatment performance criteria established in Senate Bill 7040, ratified on June 28,

2024. Further information regarding the updated rules and design criteria, implementation timeline and grandfathering provisions can be found at the following link:

<https://floridadep.gov/water/engineeringhydrology-geology/content/erp-stormwater-resource-center>.

Response: An operation and maintenance plan, estimated operation and maintenance costs, and certification of financial capability were provided in the previous submittal.



March 3, 2025

Superior Construction
jcardenas@superiorconstruction.com
813-545-7534

Reference: Geotechnical Exploration Report
Lecanto Soil Borings
Parcel ID: 17E18S12 40000
Parcel ID: 17E18S11 20000 (partial)
Citrus County, Florida
Test Lab Project No: 1511.23.1

Dear Mr. Juan Cardenas:

Test Lab, Inc. (Test Lab) has completed a geotechnical exploration for the above referenced project, and we are submitting our findings in this report. We conducted this project in general accordance with our proposal, which was authorized by you.

This report explains our understanding of the project and provides a description of the site, the subsurface conditions encountered and presents our conclusions regarding depths of select fill for Florida Department of Transportation (FDOT) purposes/projects.

Test Lab appreciates the opportunity to be of service to you. We look forward to helping you through project completion. Please contact us if you have any questions.

Respectfully submitted,

Test Lab, Inc.

4112 West. Osborne Avenue, Tampa, Florida 33614
Florida Certificate of Authorization No. 1450

Connie A
Johnson-
Gearhart

Digitally signed by Connie
A Johnson-Gearhart
Date: 2025.03.03 19:32:00
-05'00'

Connie A. Johnson-Gearhart, P.E.
Senior Project Manager
Florida License No. 69013



This item has been digitally signed and sealed by Connie A. Johnson-Gearhart, 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.

Attachments: Boring Location Plan
Soil Profile Sheets

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GEOTECHNICAL EXPLORATION REPORT
LECANTO SOIL BORINGS
CITRUS COUNTY, FLORIDA
TEST LAB PROJECT NO. 1511.23.1

1.0 EXECUTIVE SUMMARY

The following is a summary of the geotechnical field exploration findings and laboratory testing. This summary should not be used for planning and design without reading the entire report, which contains more detailed information regarding the testing performed and our conclusions.

1. Test Lab performed thirty-five (35) Standard Penetration Borings (SPT) to depths of 20 to 55 feet below existing grade. The SPT borings generally encountered very loose to very dense sand (A-3/A-2-4) (select fill) from around existing grade to a depth of about 4 to 50 feet below current grade. In most borings, the sandy soil was generally followed by alternating, intermittent layers of very loose to medium dense silty sand to silty-clayey sand (A-2-4) and very soft to very stiff sandy lean clay to sandy fat clay (A-6/A-7-6). The clay stratum was generally underlain by limestone to the boring completion depths.
2. Due to the drilling methods utilized, the groundwater table was not apparent within the depths explored by borings B-4, B-5, B-10, B-13 through B-16, B-18, B-19 and B-21 through B-34 and was noted with GNA below the respective soil profile. The remaining borings encountered the groundwater table at depths ranging from 6 to 9 feet below existing grade.
3. Test Lab performed laboratory tests on select samples to aid in determining soil characteristics. The laboratory testing included Grain Size Analysis, Atterberg Limits, and Natural Moisture Content. The test results are indicated on **Soil Profile(s) Sheets 2 to 8**.
4. Soil material use and/or removal should be completed in accordance with FDOT index 120-001. Index 120-001 should be referenced for additional specifications.

The material from Stratum 1 (A-3/A-2-4) (soils with less than 12 percent passing the 200 sieve) appears to conform to the properties of select fill and is satisfactory for use in roadway embankment and subgrade when utilized in accordance with Index 120-001.

The material from Stratum 2 (A-2-4) appears satisfactory for the use in the embankment when utilized in accordance with Index 120-001. However, this material is likely to retain excess moisture and may be difficult to dry and compact. It should be used above the water level existing at the time of construction.

The material from Stratum 3 (A-6/A-7-6) is plastic to highly plastic material and is not satisfactory for use in roadway embankment. This material shall be removed in accordance with Index 120-002.

2.0 INTRODUCTION

2.1 GENERAL DISCUSSION

The purpose of the exploration was to evaluate the encountered subsurface conditions to identify depths of select fill for use on Florida Department of Transportation (FDOT) projects, specifically

as fill during construction of the nearby Suncoast Parkway. This report presents a brief discussion of our understanding of the project, the exploration procedures, results, and our conclusions regarding depths of select fill.

2.2 EXISTING SITE

The project site is located in Citrus County, Florida and is comprised of parcel ID 17E18S12 40000 and part of parcel ID 17E18S11 20000. Aerial photographs showed the parcel as heavily wooded. However, the testing areas had been recently cleared in anticipation of the planned fieldwork and future expansion of the Suncoast Parkway.

3.0 **SUBSURFACE EXPLORATION AND TESTING METHODS**

3.1 SCOPE OF EXPLORATION

The subsurface soils were explored using a total of thirty-five (35) Standard Penetration Test (SPT) borings advanced to depths of approximately 20 to 55 feet below existing grade. Our staff located the boring locations in the field with the use of a handheld Global Positioning System (GPS) device. The approximate locations of the borings are illustrated on **Sheet 1**. Following the field exploration, the soil samples were analyzed in our laboratory and classified by a geotechnical engineer.

3.2 FIELD EXPLORATION AND TESTING

The SPT borings were performed in general accordance with ASTM D-1586 entitled "Standard Method for Penetration Test and Split-Barrel Sampling of Soils." After drilling to the required depth and cleaning the borehole, the sampler (2" O.D.) was driven 18 or 24 inches into the undisturbed soil by a 140-pound drop-hammer falling 30 inches. The number of blows required to drive the sampler the second and third 6-inch increments is known as the Standard Penetration Resistance ("N"-value). The various soils encountered in the borings were visually classified in the field and representative soil samples were obtained and transported to our laboratory for further examination by a geotechnical engineer. The soils encountered in the borings were classified utilizing the American Association of State Highway and Transportation (AASHTO). At the completion of the drilling operations, the boreholes were plugged in accordance with Southwest Florida Water Management District guidelines. The procedures used by Test Lab for field sampling and testing are in general accordance with ASTM procedures and established engineering practice. The locations of the SPT borings and the subsurface conditions encountered at the SPT borings performed along with other pertinent information are presented on **Sheets 2 to 8**.

3.3 LABORATORY TESTING

Laboratory testing was performed on select soil samples collected from the borings. The samples selected were chosen to confirm classification. The laboratory tests were carried out in general accordance with ASTM procedures. The results are shown on the Soil Profile Sheets, adjacent to the depth increment of the test sample on **Sheets 2 to 8**. The following is a list of the laboratory testing performed and the corresponding test designation.

- i. Grain-Size Analyses - The grain-size analyses were conducted in general accordance with the AASHTO test designation T-088 (ASTM test designation D-422).

- ii. Atterberg Limits - The liquid limit and the plastic limit tests ("Atterberg Limits") were conducted in general accordance with the AASHTO test designations T-089 and T-090, respectively (ASTM test designation D-4318).
- iii. Natural Moisture Content - The moisture content tests were conducted in general accordance with the AASHTO test designation T-265 (ASTM test designation D-2216).

4.0 SUBSURFACE CONDITIONS

4.1 SOIL STRATA

The soil strata encountered at the site are summarized in the table below, with the respective soil stratum number, soil description, and AASHTO soil classification:

Stratum Number	Soil Description	AASHTO Classification
1	Light Brown to Dark Brown to Reddish Brown to Grayish Brown to Light Gray to Gray to Light Brownish Gray to Reddish Gray to Pale Yellow to Yellow Sand SAND to SAND with Silt	A-3/A-2-4
2	Light Gray to Gray to Light Brown to Brown to Light Brownish Gray Silty Sand to Silty-Clayey SAND	A-2-4
3	Yellowish Brown to Greenish Gray Sandy Lean CLAY to Sandy Fat CLAY	A-6/A-7-6
4	Limestone	*

**AASHTO does not provide classification for Limestone*

The borings also contained rootlets/roots, clay inclusions, cemented sands, limestone fragments and when discernable amounts were observed, were noted adjacent to the soil profile at the depth encountered. The subsurface soil stratification is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The soil profiles included on **Sheets 2 to 8** should be reviewed for specific information at individual boring locations. The SPT soil profile includes soil descriptions, stratifications, and penetration resistances. The stratifications shown on the boring profiles represent the conditions only at the actual boring location. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual transition may be gradual.

4.2 GROUNDWATER

Due to the drilling methods utilized, the groundwater table was not apparent within the depths explored by borings B-4, B-5, B-10, B-13 through B-16, B-18, B-19 and B-21 through B-34 and was noted with GNA below the respective soil profile. The remaining borings encountered the groundwater table at depths ranging from 6 to 9 feet below existing grade. The groundwater levels fluctuate with time due to seasonal moisture changes and locally heavy precipitation events. Therefore, future groundwater levels may be encountered at depths different from those identified in our borings.

5.0 CONCLUSIONS

The following conclusions are based on the soil borings and laboratory testing performed:

1. Test Lab performed thirty-five (35) Standard Penetration Borings (SPT) to depths of 20 to 55 feet below existing grade. The SPT borings generally encountered A-3/A-2-4 materials (select fill) to depths of ranging between 4 and 50 feet below current grade.
2. The SPT borings generally encountered very loose to very dense sand (A-3/A-2-4) (select fill) from around existing grade to a depth of about 4 to 50 feet below current grade. In most borings, the sandy soil was generally followed by alternating, intermittent layers of very loose to medium dense silty sand to silty-clayey sand (A-2-4) and very soft to very stiff sandy lean clay to sandy fat clay (A-6/A-7-6). The clay stratum was generally underlain by limestone to the boring completion depths.
3. Due to the drilling methods utilized, the groundwater table was not apparent within the depths explored by borings B-4, B-5, B-10, B-13 through B-16, B-18, B-19 and B-21 through B-34 and was noted with GNA below the respective soil profile. The remaining borings encountered the groundwater table at depths ranging from 6 to 9 feet below existing grade.
4. Soil material use and/or removal be completed in accordance with FDOT Index 120-001. The following summarizes the generalized use or non-use of the soils that will most likely be encountered during excavation.
 - The material from Stratum 1 (A-3/A-2-4) (soils with less than 12 percent passing the 200 sieve) appears to conform to the properties of select fill and is satisfactory for use in roadway embankment when utilized in accordance with Index 120-001.
 - The material from Stratum 2 (A-2-4) appears satisfactorily for the use in the embankment when utilized in accordance with Index 120-001. However, this material is likely to retain excess moisture and may be difficult to dry and compact. It should be used above the water level existing at the time of construction.
 - The material from Stratum 3 (A-6/A-7-6) is plastic to highly plastic material and is not satisfactory for use in roadway embankment. This material shall be removed in accordance with Index 120-002.

6.0 QUALITY CONTROL SERVICES

Test Lab should be kept involved throughout the duration of excavation of the material to maintain continuity and to verify that our conclusions are properly interpreted and implemented. To achieve this, we should be retained to perform laboratory testing on excavated material (soil or limestone) considered for sale. Test Lab's familiarity with the site and soils encountered, can make us a valuable part of your quality assurance team.

7.0 LIMITATIONS OF REPORT

This report has been prepared for the exclusive use of **Superior Construction** and their designers for specific application to the project previously discussed. Our conclusions have been prepared using generally accepted standards of geotechnical engineering and engineering geology practice in the State of Florida. No other warranty is expressed or implied.

Our conclusions are based on the information furnished to us, the data obtained from the previously described exploration and our experience. They do not necessarily reflect variations in the subsurface conditions, which are likely to exist intermediate of our borings and in unexplored areas of the site due to the inherent variability of the subsurface conditions in this geologic region as well as past land use. Should such variations become apparent during construction, it will be necessary to re-evaluate our conclusions based upon on-site observation of the conditions.

If changes are made to the possible excavation location, then the conclusions presented in this report may no longer be valid. In such cases, our firm should review the proposed changes to evaluate whether our conclusions need to be modified. The results of this review should be provided in writing.

Sampling and testing of the soil, rock, groundwater, surface water and air for the presence of environmental contamination was beyond the scope of this exploration. We will be glad to provide these services at your request.

The lines on the boring logs designating the interface between the various strata may only be approximate boundaries when the transition is gradual or could not be detected by the drilling operations.

The groundwater table measured at the site during the investigation is only indicative of the conditions at that time.

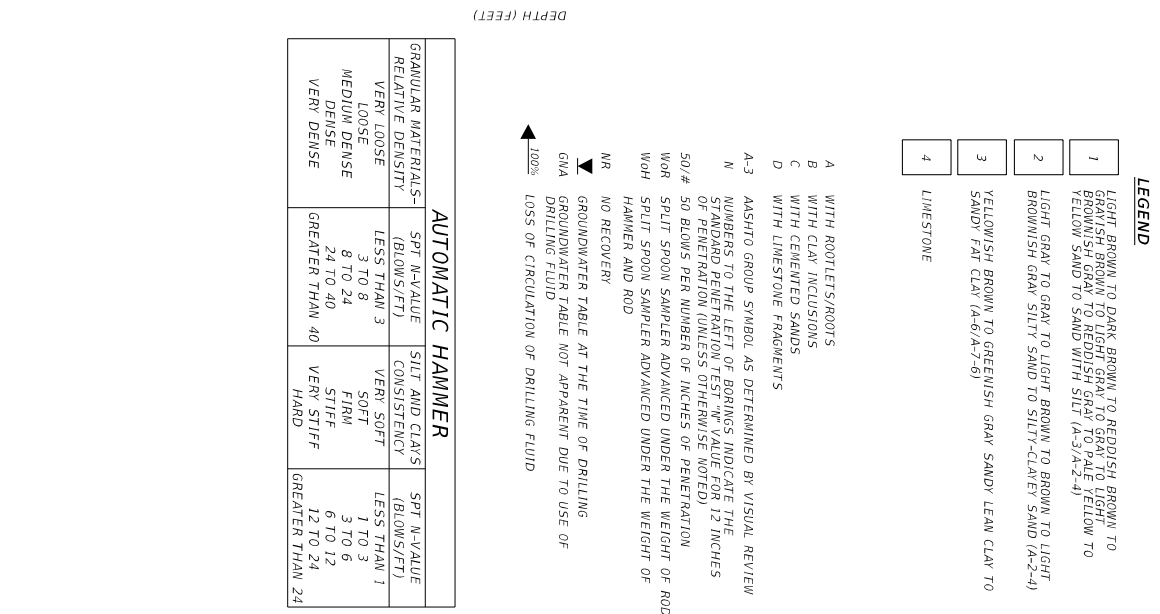
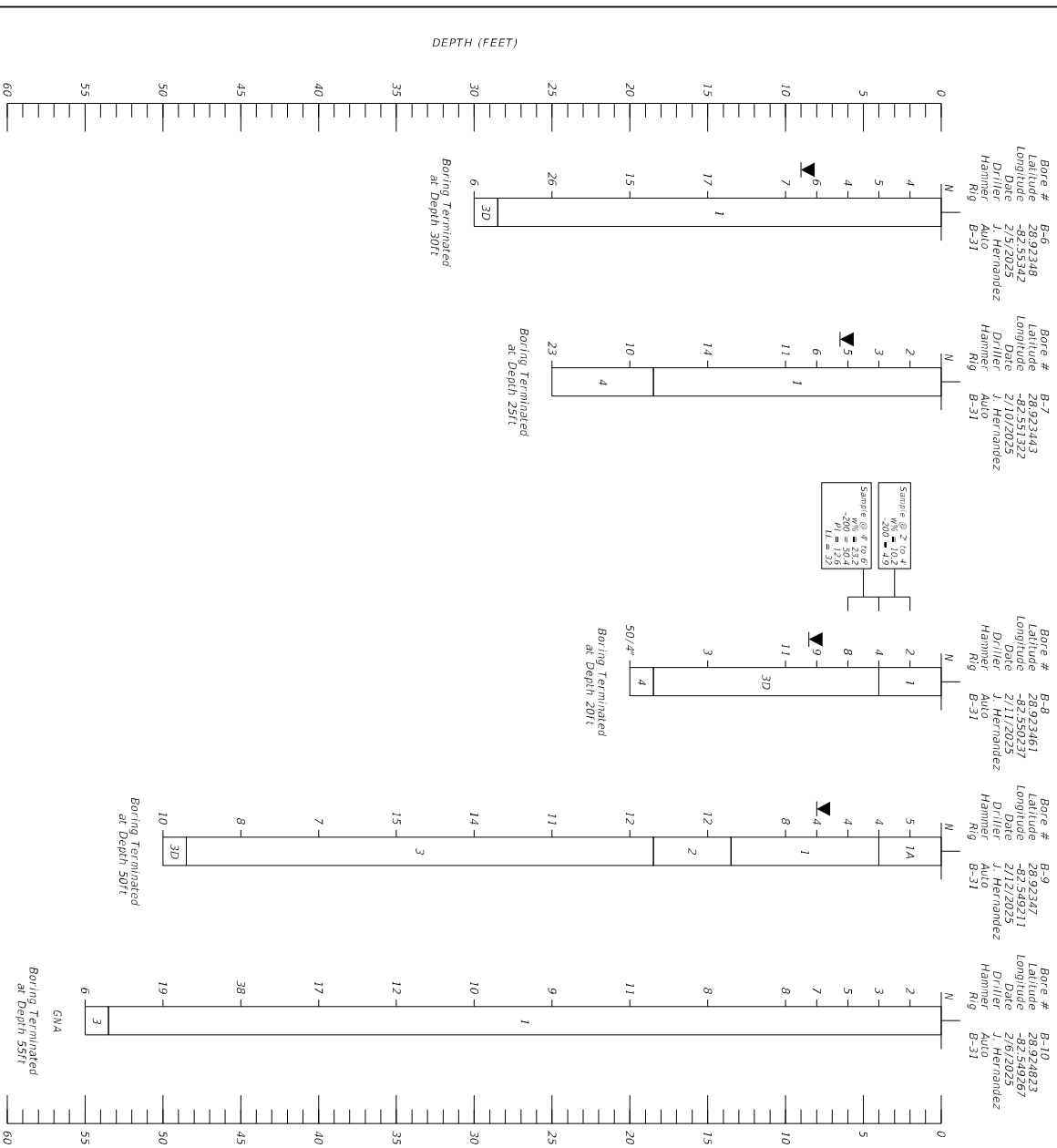
The site is underlain by limestone bedrock that is susceptible to dissolution and the subsequent development of karst features such as voids and sinkholes in the natural soil overburden. Construction in a sinkhole prone area is therefore accompanied by some risk that internal soil erosion and ground subsidence could affect the mine expansion in the future. It is not possible to investigate or design to completely eliminate the possibility of future sinkhole related problems. In any event, the Owner must understand and accept this risk.



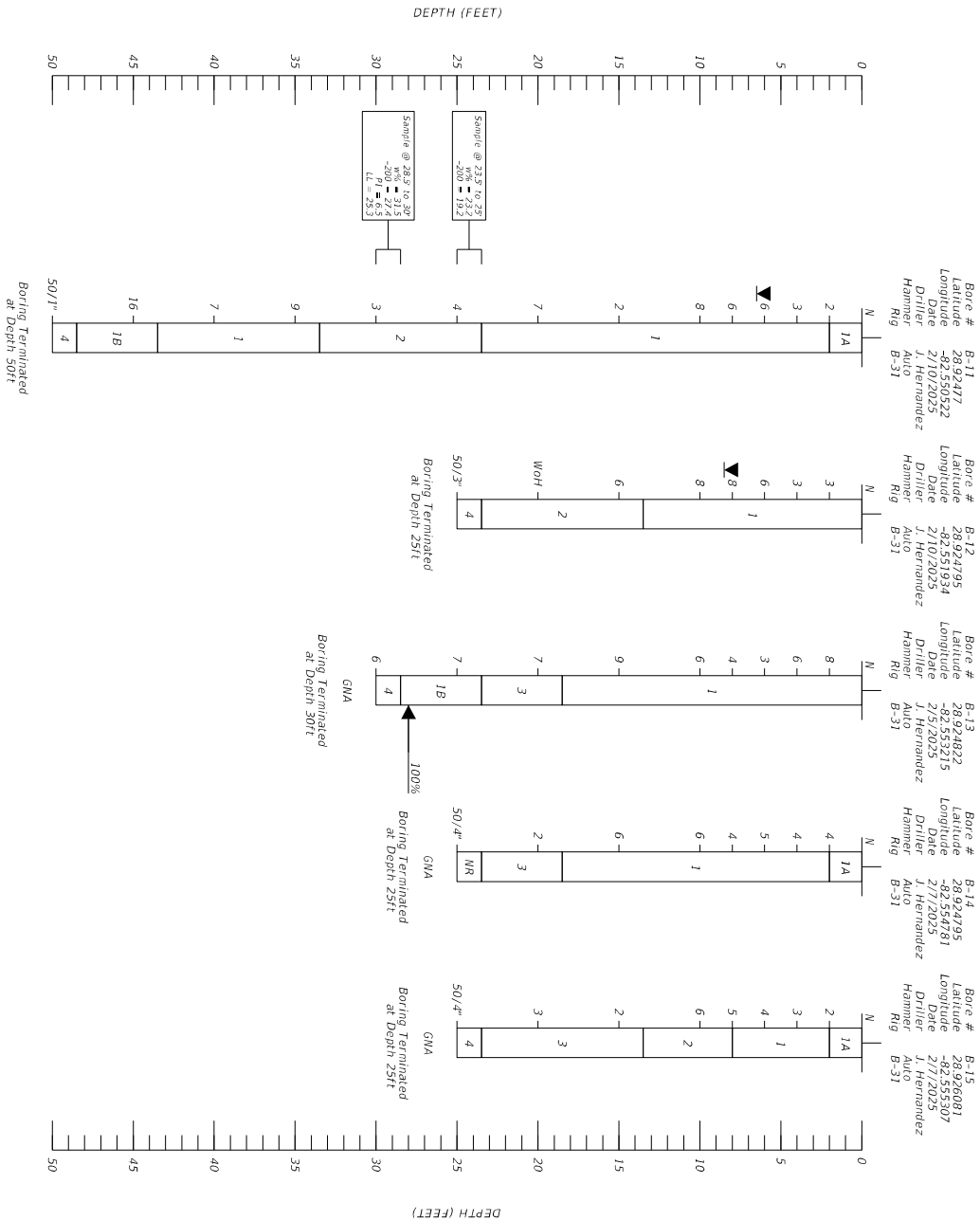
REVISIONS				ENGINEER OF RECORD			STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	CONNIE A. JOHNSON-GEARHART, P.E. LICENSE NUMBER: 69013 TEST LAB, INC. 4112 WEST OSBORNE AVENUE TAMPA, FLORIDA 33614			ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
							SR 589	CITRUS	442764-2-52-01	

BORING LOCATION PLAN

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



ENGINEER OF RECORD						STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		SHEET NO.
REVISIONS								
DATE	DESCRIPTION	DATE	DESCRIPTION					
				CONNIE A. JOHNSON-GARHART, P.E. LICENSE NUMBER- 69013 TEST LAB, INC. 4112 WEST OSBORNE AVENUE TAMPA, FLORIDA 33614				
				ROAD NO.		COUNTY	FINANCIAL PROJECT ID	<i>SOIL PROFILES</i>
				SR 589		CITRUS	442764-2-52-01	
								3



AUTOMATIC HAMMER			
GRAVULAIR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT)	SILT AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 TO 8	SOFT	1 TO 3
MEDIUM DENSE	8 TO 24	FIRM	3 TO 6
DENSE	24 TO 40	STIFF	6 TO 12
VERY DENSE	GREATER THAN 40	VERY STIFF HARD	12 TO 24 GREATER THAN 24

DEPTH (FEET)

1	LIGHT BROWN TO DARK BROWN TO REDDISH BROWN TO GRAYISH BROWN TO LIGHT GRAY TO GRAY TO LIGHT YELLOW SAND TO SAND WITH SILT (A-3/A-2-4)
2	BROWNISH GRAY TO GRAY TO LIGHT BROWN TO BROWN TO LIGHT BROWNISH GRAY SILTY SAND TO SILTY-CLAYEY SAND (A-2-4)
3	YELLOWISH BROWN TO GREENISH GRAY SAND/LEAN CLAY TO SANDY FAT CLAY (A-6/A-7-6)
4	LIMESTONE

A WITH ROOTLETS/ROOTS
 B WITH CLAY INCLUSIONS
 C WITH CEMENTED SANDS
 D WITH LIMESTONE FRAGMENTS

AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW

N-3 NUMBERS TO THE LEFT OF BORINGS INDICATE THE STANDARD PENETRATION TEST "N" VALUE FOR 12 INCHES OF PENETRATION (UNLESS OTHERWISE NOTED)

50/4 50 BLOWS PER NUMBER OF INCHES OF PENETRATION

SILT SPOON SAMPLER ADVANCED UNDER THE WEIGHT OF ROD

WH SPLIT SPOON SAMPLER ADVANCED UNDER THE WEIGHT OF HAMMER AND ROD

NR NO RECOVERY

GROUNDWATER TABLE AT THE TIME OF DRILLING

GMA GROUNDWATER TABLE NOT APPARENT DUE TO USE OF DRILLING FLUID

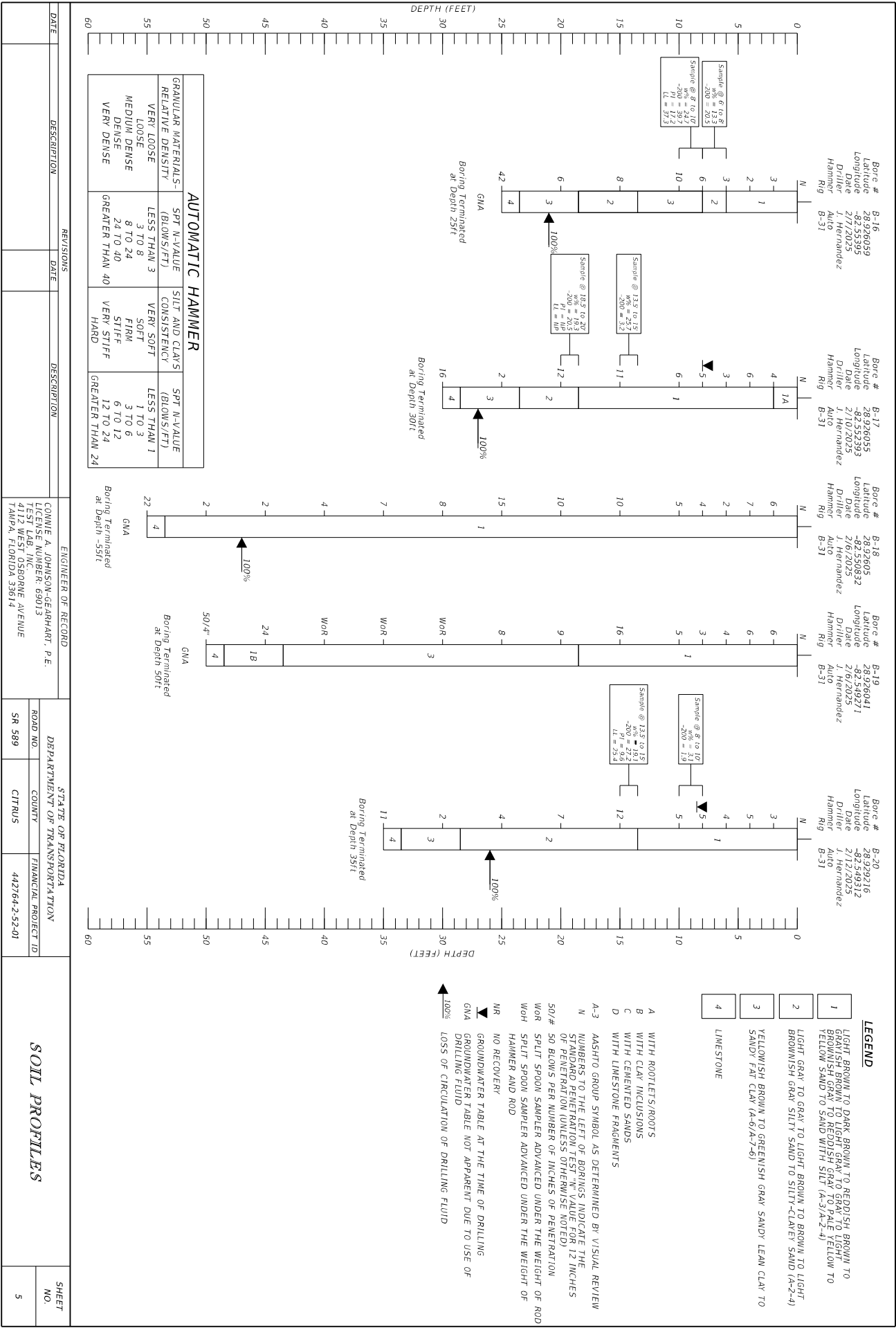
100% LOSS OF CIRCULATION OF DRILLING FLUID

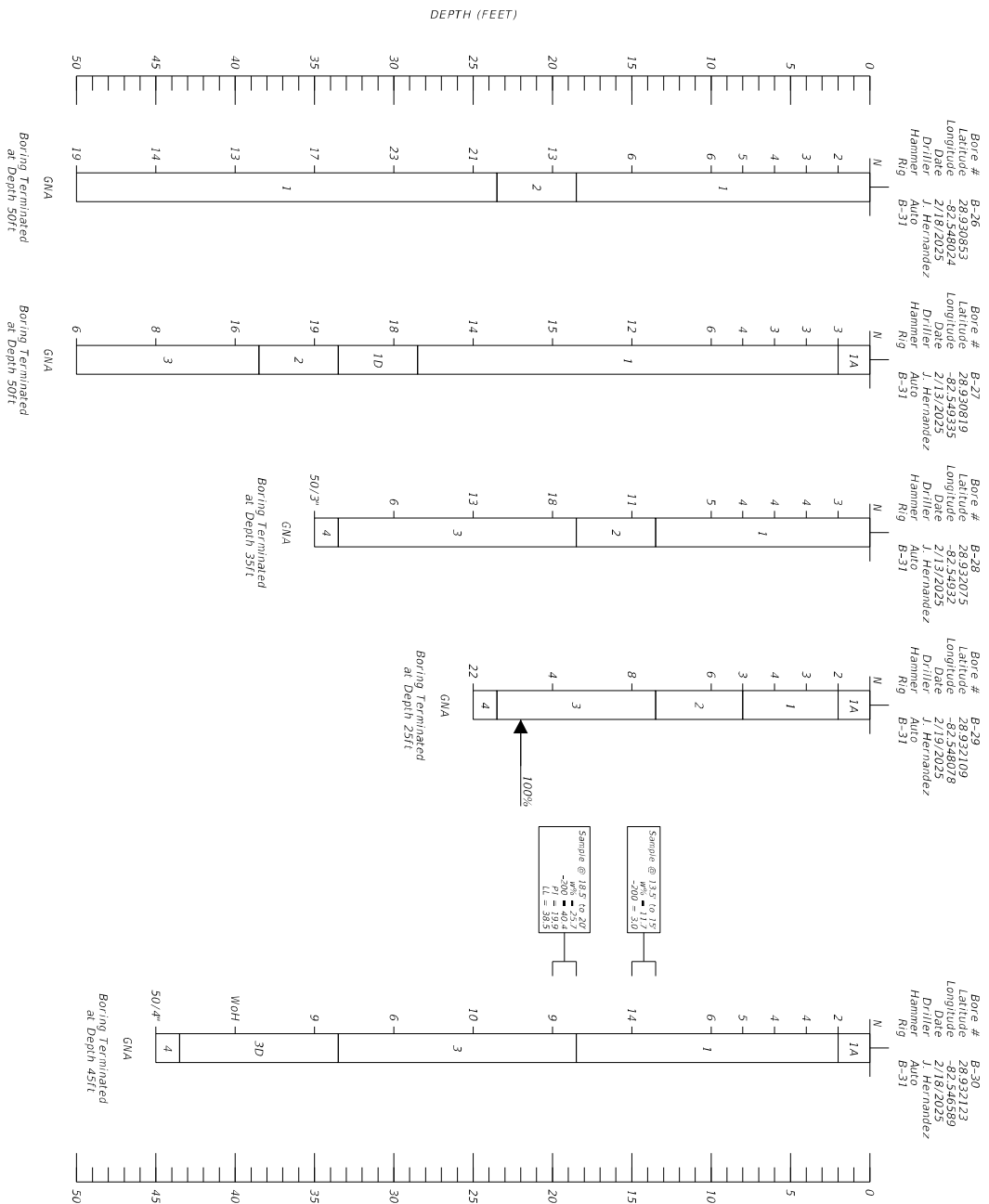
LEGEND

1	LIGHT BROWN TO DARK BROWN TO REDDISH BROWN TO GRAYISH BROWN TO LIGHT GRAY TO GRAY TO YELLOW TO YELLOW SAND TO SAND WITH SILT (A-3/A-2-4)
2	LIGHT GRAY TO GRAY TO LIGHT BROWN TO BROWN TO LIGHT BROWNISH GRAY SILTY SAND TO SILTY-CLAYEY SAND (A-2-4)
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4	LIMESTONE

SOIL PROFILES

REVISIONS		ENGINEER OF RECORD		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	
			CONNIE A. JOHNSON-GEHART, P.E. LICENSE NUMBER: 69013 TEST LAB. INC. 4112 WEST OSBORNE AVENUE TAMPA, FLORIDA 33614	SR 589	CITRUS	442764-2-52-01
SOIL PROFILES						4





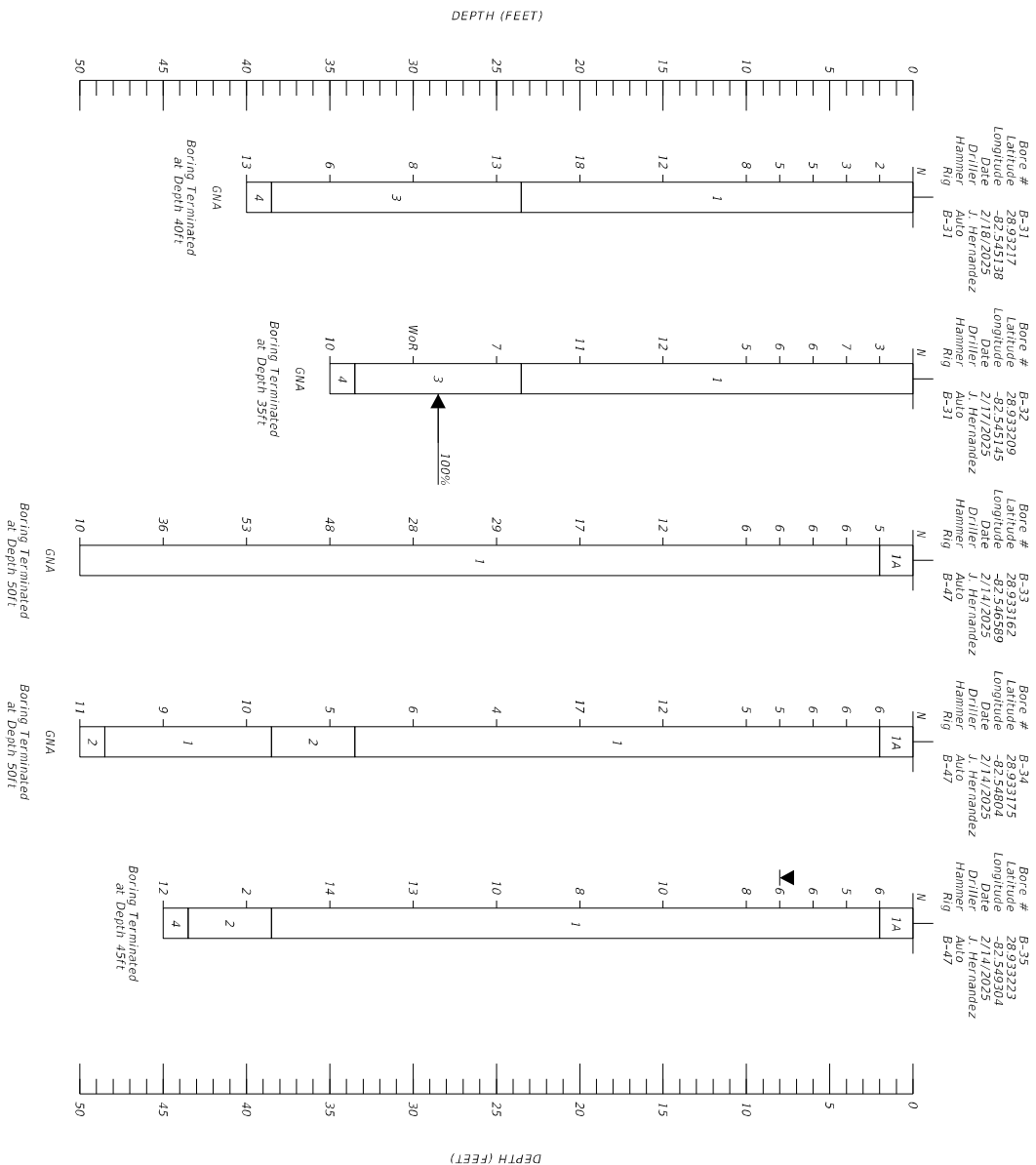
1	LIGHT BROWN TO DARK BROWN TO REDDISH BROWN TO GRAYISH BROWN TO LIGHT GRAY TO GRAY TO LIGHT GRAY TO LIGHT GRAY TO LIGHT GRAY TO LIGHT GRAY TO YELLOW SAND TO SAND WITH SILT (A-3/A-2-4)
2	LIGHT GRAY TO GRAY TO LIGHT BROWN TO BROWN TO LIGHT BROWNISH GRAY SILTY SAND TO SILTY-CLAYEY SAND (A-2-4)
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4	LIMESTONE

LEGEND

A-3
 NASTRO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW
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 50/# 50 BLOWS PER NUMBER OF INCHES OF PENETRATION
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 100% LOSS OF CIRCULATION OF DRILLING FLUID
 DEPTH (FEET)

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LOOSE	3 TO 8	SOFT	1 TO 3
MEDIUM DENSE	8 TO 24	FIRM	3 TO 6
DENSE	24 TO 40	STIFF	6 TO 12
VERY DENSE	GREATER THAN 40	VERY STIFF	12 TO 24
		HARD	GREATER THAN 24

ENGINEER OF RECORD				STATE OF FLORIDA		SHEET NO.
				DEPARTMENT OF TRANSPORTATION		
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	
	CONNIE A. JOHNSON-GARHART, P.E. LICENSE NUMBER: 69013 TEST LAB, INC. 4112 WEST OSBORNE AVENUE TAMPA, FLORIDA 33614			SR 589	CITRUS	442764-2-52-01
						7



1	LIGHT BROWN TO DARK BROWN TO REDDISH BROWN TO GRAYISH BROWN TO LIGHT GRAY TO GRAY TO YELLOW TO YELLOW SAND TO SAND WITH SILT (A-3/A-2-4)
2	LIGHT GRAY TO GRAY TO LIGHT BROWN TO BROWN TO LIGHT BROWNISH GRAY SILTY SAND TO SILTY-CLAYEY SAND (A-2-4)
3	YELLOWISH BROWN TO GREENISH GRAY SANDY LEAN CLAY TO SANDY FAT CLAY (A-6/A-7-6)
4	LIMESTONE

LEGEND

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4	LIMESTONE

A-3 WITH ROOTLETS/ROOTS
 A WITH CLAY INCLUSIONS
 B WITH CLAY INCLUSIONS
 C WITH CEMENTED SANDS
 D WITH LIMESTONE FRAGMENTS

AASHTO GROUP SYMBOL AS DETERMINED BY VISUAL REVIEW

N NUMBERS TO THE LEFT OF BORINGS INDICATE THE STANDARD PENETRATION TEST VALUE FOR 12 INCHES OF BORED HOLE (UNLESS OTHERWISE SPECIFIED)

50/# SO BLOWS PER NUMBER OF INCHES OF PENETRATION

W# SPLIT SPOON SAMPLER ADVANCED UNDER THE WEIGHT OF ROD

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NR NO RECOVERY

GROUNDWATER TABLE AT THE TIME OF DRILLING

GWA GROUNDWATER TABLE NOT APPARENT DUE TO USE OF DRILLING FLUID

LOSS OF CIRCULATION OF DRILLING FLUID

100%

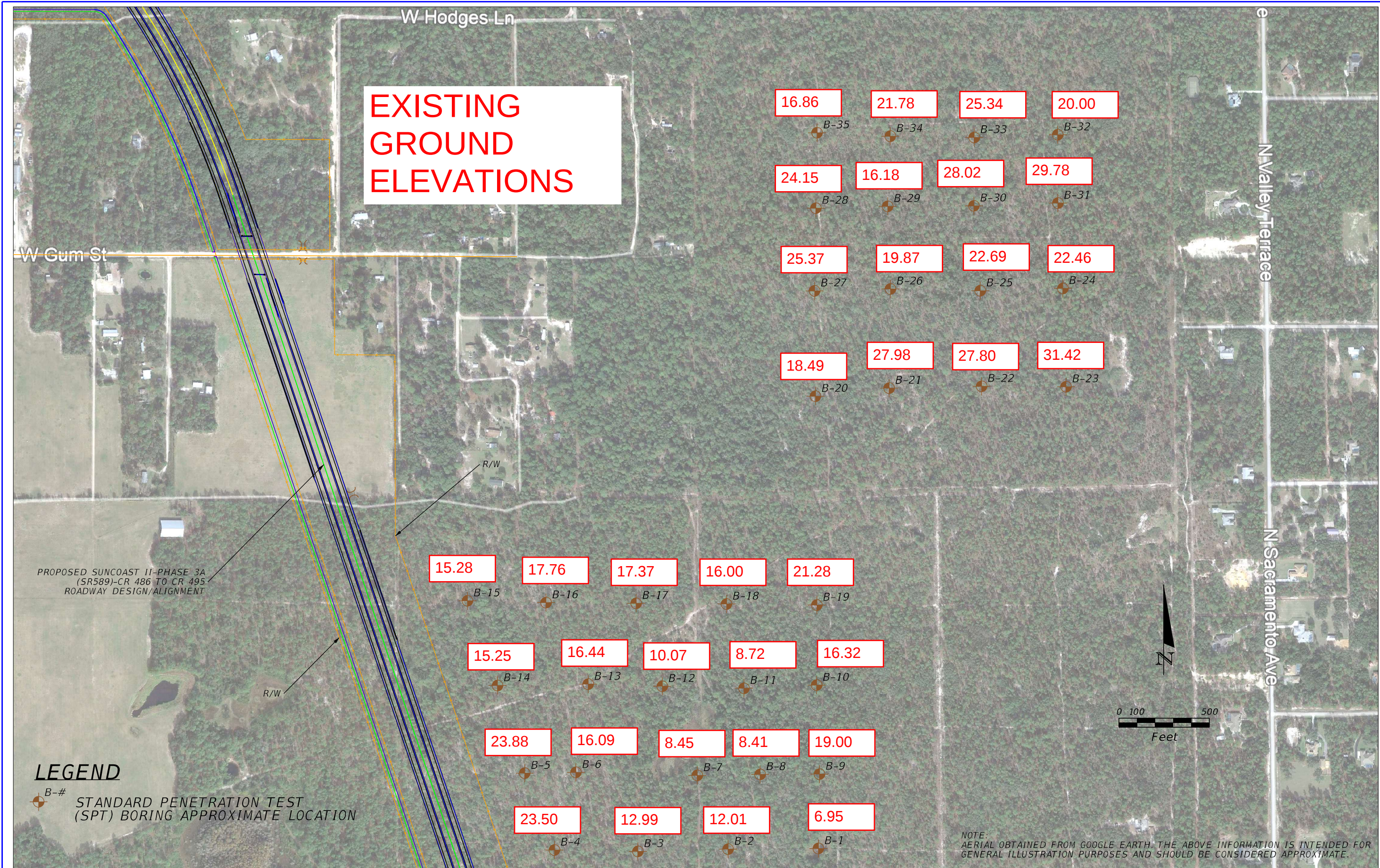
AUTOMATIC HAMMER			
GRANULAR MATERIALS- RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT)	SILT AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 TO 8	SOFT	1 TO 3
MEDIUM DENSE	8 TO 24	FIRM	3 TO 6
DENSE	24 TO 40	STIFF	6 TO 12
VERY DENSE	GREATER THAN 40	VERY STIFF	12 TO 24
		HARD	GREATER THAN 24

AUTOMATIC HAMMER

GRANULAR MATERIALS— RELATIVE DENSITY	SPT N-VALUE (BLOWS/FT)	SILT AND CLAYS CONSISTENCY	SPT N-VALUE (BLOWS/FT)
VERY LOOSE	LESS THAN 3	VERY SOFT	LESS THAN 1
LOOSE	3 TO 8	SOFT	1 TO 3
MEDIUM DENSE	8 TO 24	FIRM	3 TO 6
DENSE	24 TO 40	STIFF	6 TO 12
VERY DENSE	GREATER THAN 40	VERY STIFF HARD	12 TO 24 GREATER THAN 24

SOIL PROFILES

ENGINEER OF RECORD		STATE OF FLORIDA		SHEET NO.
DEPARTMENT OF TRANSPORTATION				
DATE	DESCRIPTION	ROAD NO.	COUNTY	
	CONNIE A. JOHNSON-GARHART, P.E. LICENSE NUMBER: 69013 TEST LAB, INC. 4112 WEST OSBORNE AVENUE TAMPA, FLORIDA 33614			
		SR 589	CITRUS	442764-2-52-01
SOIL PROFILES				8



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