Final Report of Geotechnical Exploration
For

JEA 5th Street West – Imeson Road to Melson Avenue
New Force Main Project

MAE Project No. 0103-0018
September 11, 2020

Prepared for:

MOTT MACDONALD

Prepared by:

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Geotechnical ◤ Environmental ◤ Inspection ◤ Testing

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Brett Harbison, State of Florida, Professional Engineer, License No. 74679. This item has been electronically signed and sealed by Brett Harbison, P.E. on 9/11/2020 using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Mr. Bruce A. Neu, P.E.
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Jacksonville, Florida 32256

Subject: Final Report of Geotechnical Exploration
JEA 5th Street West – Imeson Road to Melson Avenue – New Force Main Project
Jacksonville, Florida
MAE Project No. 0103-0018

Dear Mr. Neu:

Meskel & Associates Engineering, PLLC (MAE) has completed our geotechnical exploration for the subject project. Our work was performed in general accordance with our proposal dated February 5, 2019. The purpose of the exploration was to evaluate the general subsurface conditions encountered along the proposed force main route, and to provide recommendations for pipe bedding and backfilling, and site preparation. As requested by JEA, a supplemental exploration was also performed in general accordance with our proposal dated March 31, 2020, to further define the limits of unsuitable soils for pipe bedding and backfill that may be encountered during the force main instillation.

This report includes a summary of our findings and recommendations related to the force main route on 5th Street West from Melson Avenue to Pickettville Road and west along the railroad easement to the terminus at Imeson Road, as well as that for a small segment of 8-inch gravity sewer to be upgraded to a 15-inch gravity sewer from 1st Street West going north to tie into an existing JEA trunk line. Below is a summary of our findings; however, we recommend that you consider this report in its entirety.

In summary, the borings performed generally encountered loose to medium dense fine sands to fine sands with silt (A-3, SP, SP-SM), fine sands with silt to silty fine sands (A-2-4, SP-SM, SM), and clayey fine sands (A-2-6/A-6, SC) to the boring termination depths of 10, 12, 40, and 60 feet below the existing ground surface. Layers of sandy clay soils (A-6, A-7-6, CL, CH) of varying thicknesses were encountered from approximately 2 to 10 feet below the ground surface. These clay soils (A-2-6, A-6, A-7-6, SC, CL, CH) were generally encountered in the upper 10 feet, however the deeper borings also encountered thin layers above and extending to the termination depths.

Based on our evaluation of the encountered subsurface conditions, it is our opinion that the soils encountered are adaptable to support the proposed pipeline using cut-and-cover methods, and Jack-and-Bore/HDD methods where applicable, provided the site preparation recommendations provided in this report are followed.

We appreciate this opportunity to be of service as your geotechnical consultant on this phase of the project. If you have any questions, or if we may be of any further service, please contact us.

Sincerely,
MESKEL & ASSOCIATES ENGINEERING, PLLC
MAE FL Registry No. 28142

W. Josh Mele, E.I.
Staff Engineer

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Distribution: Mr. Bruce A. Neu, P.E. – Mott MacDonald Florida, LLC 1 PDF

TABLE OF CONTENTS

Subject **Page No.**

1.0 PROJECT INFORMATION 1
1.1 General 1
1.2 Project Description 1
2.0 FIELD EXPLORATION 2
2.1 Standard Penetration Test Borings 2
2.2 Hand Auger Borings 2
2.3 Pavement Cores with Hand Auger Borings 3
2.4 Bulk Soil Sampling 3
3.0 LABORATORY TESTING 3
3.1 Soil Index Testing 3
3.2 Corrosion Series Tests 3
4.0 GENERAL SUBSURFACE CONDITIONS 3
4.1 General Soil Profile 3
4.2 Groundwater Level 7
4.3 Review of the USDA Web Soil Survey Map 7
4.4 Seasonal High Groundwater Level 8
4.5 Pavement Core Samples 9
5.0 DESIGN RECOMMENDATIONS 9
5.1 General 9
5.2 Pipeline and Manhole Support Recommendations 9
5.3 Environmental Classification 12
5.4 Manhole Structures Design Recommendations 12
6.0 SITE PREPARATION AND EARTHWORK RECOMMENDATIONS 13
6.1 Clearing 13
6.2 Temporary Groundwater & Surface Water Control 14
6.3 Preparation of Pipe Bedding Soils 14
6.4 Compaction of Excavation Bottom 15
6.5 Excavation Protection 15
6.6 Structural Backfill and Compaction of Structural Backfill 16
6.7 Roadway Reconstruction Considerations 16
7.0 QUALITY CONTROL TESTING 16
8.0 REPORT LIMITATIONS 16

FIGURES

Figure 1. Site Location Map
Figures 2A-2L. Field Exploration Plan
Figures 3-40. Generalized Soil Profiles

APPENDICES

Appendix A. Soil Boring Logs
Field Exploration Procedures
Key to Boring Logs
Key to Soil Classification
Appendix B. Summary of Laboratory Index Test Results
Summary of Corrosion Series Test Results
Laboratory Test Procedures

1.0 PROJECT INFORMATION

1.1 General

Project information was provided to us by Mr. Bruce Neu, P.E., with Mott MacDonald Florida, LLC (Mott) via several emails and telephone conversations. We were provided with the JEA Solicitation Number 112-18, "Engineering Services for the Route Study and Design of the 5th St W - Imeson Rd to Melson Ave Project" including Appendix C, which included the Technical Specifications and Project Definitions of this project for our review and reference. In addition, we were provided an annotated aerial titled JEA 5th Street Force Main – Boring and Core Locations that denoted the approximate locations of the requested borings along the planned water main alignment.

1.2 Project Description

The site for the subject project is in Jacksonville, Florida. The general site location is shown on Figure 1.

Based on the provided information and our discussions with Mr. Neu, we understand that the JEA is installing a new 20-inch force main from Imeson Road to Melson Avenue in Jacksonville, Florida. There were originally three proposed routes for this project. The final route is along 5th Street West from Melson Avenue under I-295 to Pickettville Road, then north on Pickettville Road to the CSX Railroad easement and west along the easement to Imeson Road. The total length of this route is approximately 17,200 feet.

Currently, most of the Buckman Wastewater Service area is connected by a series of 12-inch / 12-inch dual pipe and 16-inch single pipe force main segments to the gravity trunk sewer at the Melson Avenue intersection with 5th Street West. The existing force mains are at capacity. It is proposed to install a parallel 20-inch force main from Imeson Road to Melson Avenue to relieve current flows and accommodate future flows from the west side of the service area.

The proposed 20-inch force main will be installed at Imeson Road and be installed west along the CSX RR easement to Pickettville Road. The force main will be installed south on Pickettville Road following the existing double 12-inch mains and head east on 5th Street West to Melson Avenue. Along this alignment, there are multiple railroad crossings and one aerial crossing. In addition, the force main will need to be installed under I-295, Lane Avenue and Edgewood Avenue. At the Edgewood Avenue crossing, the existing 12-inch force mains penetrate a box culvert.

Additionally, a receiving force main discharge manhole is included on the west side of the 5th Street West and Melson Avenue intersection with a new gravity trunk sewer segment flowing east across the intersection. Also, a doghouse manhole over the existing 36-inch RCP trunk sewer east of the intersection is proposed.

There will be jack-and-bore crossings at Edgewood Avenue, Lane Avenue and at the three CSX RR crossings. In addition, HDD will be used to cross under I-295 and below a large ditch crossing 5th Street West just west of Edgewood Avenue. The remainder of the approximate 17,200-foot pipeline will be installed by open-cut construction.

In addition, there will be a small segment of 8-inch gravity sewer to be upgraded to a 15-inch gravity sewer from 1st Street West going north through a heavily wooded and wet vacant tract to tie into an existing JEA trunk line. The length of this upgraded pipeline is about 100 feet.

Also, an existing Sanitary Manhole structure near the center of the intersection of 5th Street West and Melson Avenue is planned to be replaced.

After our initial authorization of our original scope of services, JEA requested a supplemental exploration be performed to further define the limits of unsuitable clay soils near pipe bedding elevations and backfill limits that may be encountered during the force main installation. Our supplemental scope also includes sampling to assist with obtaining a *FDEP Generic Permit for the Discharge of Groundwater* and developing a FDOT Dewatering Report for the planned Jack-and-Bore operations near the FDOT ROW. These activities will be reported under separate cover.

If actual project information varies from these conditions, then the recommendations in this report may need to be re-evaluated. Any changes in these conditions should be provided so the need for re-evaluation of our recommendations can be assessed prior to final design.

2.0 FIELD EXPLORATION

Our initial field exploration was performed during the period of July 17 through October 8, 2019. A supplemental exploration was then performed during the period of April 30 through June 2, 2020. Aerials obtained from Google Earth, which show the approximate boring and pavement core locations, are included as the Boring Pavement Core Location Plan, Figures 2A through 2L. The boring locations were determined by MAE and Mott, and then GPS coordinates were obtained from Google Earth. Prior to starting our field exploration, utility locate requests were submitted to the Sunshine State One-Call Center. Our field personnel then located each boring using a Garmin GPSMAP 78 hand-held GPS receiver, and marked its location for reference. Once the site utilities were located and marked, our field crew mobilized to the site. The approximate boring locations as shown on Figures 2A through 2L should be considered accurate only to the degree implied by the method of layout. A summary of the field procedures discussed below is included in Appendix A.

All borings were performed utilizing our truck-mounted or ATV-mounted drill rigs.

2.1 Standard Penetration Test Borings

To explore the subsurface conditions along the proposed pipeline route from Melson Avenue to Pickettville Road, we located and performed 119 Standard Penetration Test (SPT) borings that were drilled to depths of approximately 5, 10, 12, 25, 40, and 60 feet below the existing ground surface. To explore the subsurface conditions at the planned 8-inch gravity sewer crossing 1st Street West, we advanced 2 SPT borings to an approximate depth of 15 feet below the existing grade. All SPT borings were performed in general accordance with the methodology outlined in ASTM D 1586.

It should be noted that boring FM-14 was terminated at 5 feet due to hitting an obstruction. FM-30 was not performed due to proximity of borings JB-3 through JB-6.

Split-spoon soil samples recovered during performance of the borings were visually described in the field and representative portions of the samples were transported to our laboratory for soil classification and testing. The borings advanced to a depth of 12 feet or less were backfilled with soil cuttings upon completion, and all the deeper borings were backfilled with a cementitious grout.

2.2 Hand Auger Borings

Due to standing water, borings B-79 through B-85 were performed as hand augers (B-79A through B-85A). It appears this area has been used as a recreational off-road trucking trail and standing water as deep as 4 to 5 feet was encountered when our ATV rig mobilized to the site. Please refer to the *Field Exploration Plan* (Figure 2F) for approximate limits of the surface water which prohibited drill rig access at these boring locations.

To explore the subgrade conditions at these locations, we advanced each bore hole using a hand-held bucket auger to a depth of 5.5 to 7 feet beneath the existing ground surface in general accordance with the methodology outlined in ASTM D 1452. Representative soil samples recovered from the auger borings were returned to our laboratory for soil classification and testing.

2.3 Pavement Cores with Hand Auger Borings

Multiple borings performed for the force main alignment were performed within the existing pavement section of 5th Street West. The section thicknesses are detailed in Section 4.1.

2.4 Bulk Soil Sampling

Four bulk soil samples were obtained along the planned pipeline alignment for corrosivity testing. These samples were obtained near locations PC-1, PC-3, PC-5, and PC-7 along the planned pipeline alignment at depths from 2 to 6 feet below the existing ground surface.

3.0 LABORATORY TESTING

Representative soil samples obtained during our field exploration were visually classified by a geotechnical engineer. The borings performed for the cut-and-cover portion of the pipeline were classified using the *AASHTO Soil Classification System* in general accordance with ASTM D 3282, and the borings performed for the Jack-and-Bore and HDD portions of the pipeline, and the culvert crossing on 1st Street West, were classified using the *Unified Soil Classification System* (USCS) in general accordance with ASTM D 2488. *Keys* to both *Soil Classification Systems* are included in Appendix A.

3.1 Soil Index Testing

Quantitative laboratory testing was run on selected samples of the soils encountered during the field exploration to better define their composition and to provide data for correlation to their anticipated strength and compressibility characteristics. The laboratory testing determined the Atterberg limits, the natural moisture content, the percent of fine material passing a U.S. No. 200 sieve (percent fines), and the organic fines content of the selected soil samples. The results of the laboratory testing are shown in the *Summary of Laboratory Index Test Results* table included in Appendix B, on the *Generalized Soil Profiles* sheets (Figures 3 through 40), and on the soil boring logs at the respective depths from which the tested samples were recovered. A summary of the laboratory test procedures is also included in Appendix B.

3.2 Corrosion Series Tests

As previously stated, four bulk soil samples were obtained along the planned pipeline alignment for corrosivity testing. These samples were obtained near locations PC-1, PC-3, PC-5, and PC-7 along the planned pipeline alignment at depths from 2 to 6 feet below the existing ground surface. The testing included soil pH, resistivity, and chloride and sulfate contents. The test results are included in Section 5.3 and on the *Summary of Corrosion Series Test Results* table in Appendix B.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 General Soil Profile

Graphical presentation of the generalized subsurface conditions is presented on the *Generalized Soil Profile sheets*, Figures 3 through 40. Detailed boring logs are included in Appendix A. When reviewing these records, the soil conditions will vary between the boring locations.

In general, most of the borings encountered a surficial topsoil layer 2 to 6 inches thick. Multiple borings encountered the flexible pavement section with thicknesses shown in the table below.

Boring Number	Approximate Asphalt Layer Thickness (inches)	Approximate Base Layer Thickness (inches)	Base Material Type
FM-1	3	--	Limerock
FM-3	3	8 ½	Limerock
FM-4	3 ¾	8 ¼	Limerock
FM-5	2 ½	8	Limerock
FM-6	2	9	Limerock
FM-7	2 ½	8 ½	Limerock
FM-8	2	9	Limerock
FM-9	2	10	Limerock
FM-10	3 ½	8 ½	Limerock
FM-11	2 ¼	8 ½	Limerock
FM-21	3	--	Limerock
FM-22	5	7	Limerock
FM-24	4	8	Limerock
FM-26	3	5	Limerock
FM-27	4	8	Limerock
FM-28	5	7	Limerock
FM-32	4	8	Limerock
FM-35	2	--	--
FM-86	9	2	Sand Asphalt Hot Mix (SAHM)
FM-87	10	2	Sand Asphalt Hot Mix (SAHM)
FM-88	8	3	Sand Asphalt Hot Mix (SAHM)
FM-89	8	3	Sand Asphalt Hot Mix (SAHM)
FM-90	11	2	Sand Asphalt Hot Mix (SAHM)
FM-91	7	5	Sand Asphalt Hot Mix (SAHM)
FM-92	6	8	Sand Asphalt Hot Mix (SAHM)
FM-93	8	2	Sand Asphalt Hot Mix (SAHM)
FM-94	7	4	Sand Asphalt Hot Mix (SAHM)
FM-95	9	2	Sand Asphalt Hot Mix (SAHM)
FM-96	3	3	Sand Asphalt Hot Mix (SAHM)
FM-97	3	5	Sand Asphalt Hot Mix (SAHM)
FM-98	4	6	Sand Asphalt Hot Mix (SAHM)
FM-99	5	7	Sand Asphalt Hot Mix (SAHM)
FM-100	5	7	Sand Asphalt Hot Mix (SAHM)
FM-101	4	6	Sand Asphalt Hot Mix (SAHM)
FM-102	5	6	Sand Asphalt Hot Mix (SAHM)
FM-103	4	6	Sand Asphalt Hot Mix (SAHM)
FM-110	1	6	Sand Asphalt Hot Mix (SAHM)
FM-111	7	5	Limerock
FM-112	8	6	Limerock
FM-113	7	5	Limerock

Boring Number	Approximate Asphalt Layer Thickness (inches)	Approximate Base Layer Thickness (inches)	Base Material Type
FM-114	8	6	Limerock
FM-115	8	8	Limerock
FM-116	8	6	Limerock
FM-117	7	5	Limerock
FM-118	2	8	Limerock
FM-119	3	5	Limerock
FM-120	4	9	Limerock
FM-121	4	6	Limerock
FM-122	3	9	Limerock
FM-123	3	7	Limerock
FM-124	3	6	Limerock
FM-125	3	9	Limerock
FM-126	4	10	Limerock
JB-11	3	8	Limerock
JB-12	3	8	Limerock
DD-1	4 ½	--	--
PC-1	1 ⅝	12	Limerock
PC-2	6	6	Limerock
PC-3	7 ⅝	6	Limerock
PC-4	6 ½	6	Limerock
PC-5	4 ½	6 ½	Sand Asphalt Hot Mix (SAHM)
PC-6	3 ½	--	--
PC-7	8	--	--

(--) A discernible base course material was not encountered at these locations.

Underlying the surficial topsoil and pavement section where encountered, the borings advanced through loose to medium dense fine sands to fine sands with silt (A-3, SP, SP-SM), fine sands with silt to silty fine sands (A-2-4, SP-SM, SM), and clayey fine sands (A-2-6, A-6, SC) to the boring termination depths of 5, 10, 40, and 60 feet below the existing ground surface. Layers of sandy clay (A-2-6, A-6, A-7-6, CL, CH) of varying thicknesses were encountered from approximately 0.5 to 12 feet below the ground surface. These clayey soils (A-2-6, A-6, A-7-6, CL, CH) were generally encountered in the upper 10 feet, however the deeper borings also encountered thin layers prior to the termination depths. The near surface soils often contained trace to few amounts of organic fines, small roots, and/or gravel sized rock fragments.

The following table shows the approximate depth to the top of clayey sand or sandy clay layers encountered in the borings.

Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)	Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)
FM-1	2	10	FM-88	2	12
FM-3	4	10	FM-89	6	12

Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)	Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)
FM-4	4	10	FM-90	2	12
FM-5	4	10	FM-91	2	12
FM-6	3.5	10	FM-92	2	12
FM-7	8	10	FM-93	4	12
FM-8	4	6	FM-95	4	6
FM-9	4	6	FM-96	4	8
FM-10	4	10	FM-97	2	12
FM-11	4	10	FM-98	2	12
FM-12	2	10	FM-86	2	12
FM-13	2	10	FM-87	2	12
FM-14	2	5	FM-99	2	6
FM-15	0.5	10	FM-100	2	8
FM-16	2	10	FM-101	2	12
FM-17	4	6	FM-102	4	10
FM-18	6	10	FM-103	4	12
FM-19	4.5	6	FM-104	6	12
FM-21	2.5	5	FM-105	4	12
FM-27	4	6	FM-106	4	12
FM-29	2	10	FM-108	2	10
FM-31	4.5	10	FM-110	4	8
FM-32	4	10	FM-111	6	8
FM-33	6	10	FM-112	6	10
FM-34	0.3	2	FM-113	2	12
FM-35	2	10	FM-114	2	12
FM-36	2	10	FM-115	2	12
FM-37	3	10	FM-116	2	12
FM-38	6	8	FM-117	2	12
FM-39	4	6	FM-118	2	12
FM-40	2	10	FM-119	6	12
FM-41	2	10	FM-120	4	6
FM-42	4	6	FM-121	6	12
FM-47	2	10	FM-122	4	12
FM-63	2	10	FM-123	4	12
FM-64	4	10	FM-124	4	12
FM-65	2	10	FM-125	4	12
FM-66	2	12	FM-126	2	12

Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)	Boring Number	Depth to Top of Clay Soil Layer (feet)	Depth to Bottom of Clay Soil Layer (feet)
FM-67	2	12	JB-1	2	13.5
FM-68	2	12	JB-2	0	18.5
FM-69	0.5	12	JB-3 *	2/18.5	13.5/23.5
FM-70	2	12	JB-5 *	4/23.5	18.5/28.5
FM-71	0.5	12	JB-6	4	13.5
FM-72	2	10	JB-7	2	13.5
FM-73	2	10	JB-8 *	2/23.5	13.5/28.5
FM-74	2	10	JB-9	2	33.5
FM-75	2	12	JB-10*	2/23.5	13.5/28.5
FM-76	2	12	JB-11	2	18.5
FM-77	2	12	JB-12*	4/13.5	6/18.5
FM-78	2	12	DD-1*	8 / 28.5	13.5 / 38.5
FM-79	1	4	DD-2	28.5	53.5
FM-80	1	6	DD-3*	6/23.5	18.5/43.4
FM-81	1.5	5.5	GC-1	0.25	6
FM-82	1	3	GC-2	2	4
FM-83	1	1.5	GC-3*	2/18.5	10/25

(*) Two layers of clay soil were encountered.

4.2 Groundwater Level

The groundwater level was encountered at each of the boring locations at the time of drilling. The measured groundwater depths along the pipeline alignment varied from 2 feet 5 inches to 9 feet 7 inches below the existing ground surface. Groundwater was not encountered at the time of drilling at the pavement core locations. However, this does not mean that groundwater does not occur at these locations, or that groundwater will not occur within the depths explored at another time. Additionally, surface water was encountered near borings B-79A through B-85A.

It should be anticipated that the groundwater levels will fluctuate seasonally and with changes in climate. As such, we recommend that the water table be remeasured prior to construction. Measured groundwater levels are shown on the Generalized Soil Profiles sheets (Figures 3 through 40) and on the soil boring logs.

4.3 Review of the USDA Web Soil Survey Map

The results of a review of the USDA Soil Survey Conservation Service (SSCS) Web Soil Survey of Duval County is shown in the table below. There are 7 predominant soil map units at the project site as shown below.

The soil drainage class, hydrological group, and estimated seasonal high groundwater levels reported in the Soil Survey are as follows:

Map Unit Symbol	Map Unit Name	Drainage Class	Hydrologic Group	Depth to the Water Table [1] (inches)
44	Mascotte - Pelham complex[3], 0 to 2 percent slopes	Poorly Drained	C/D	6 to 18
51	Pelham fine sand, 0 to 2 percent slopes	Poorly Drained	B/D	6 to 12
66	Surrency loamy fine sand, depressional, 0 to 2 percent slopes	Very Poorly Drained	B/D	0
69	Urban land[2]	---	---	---
73	Urban land – Mascotte – Sapelo complex, 0 to 2 percent slopes	Poorly Drained	C/D, B/D	6 to 18
74	Pelham – Urban land complex[3], 0 to 2 percent slopes	Poorly Drained	B/D	0 to 12
82	Pelham fine sand, Ponded, 0 to 2 percent slopes	Poorly Drained	B/D	6 to 12

[1] The "Water table" above refers to a saturated zone in the soil which occurs during specified months, typically the summer wet season. Estimates of the upper limit shown in the Web Soil Survey are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

[2] The Urban land classification does not have an associated soil type, drainage class, hydrologic group, and estimated seasonal high groundwater levels typically reported in the Soil Survey.

[3] The term "complex", as defined by the USDA, refers to a map unit consisting of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the map.

4.4 Seasonal High Groundwater Level

In estimating Seasonal High Groundwater Levels (SHGL), several factors are taken into consideration including antecedent rainfall, soil redoximorphic features (i.e., soil mottling), stratigraphy (including presence of hydraulically restrictive layers), vegetative indicators, effects of development, and relief points such as drainage ditches, low-lying areas, etc.

Based on our interpretation of the current site conditions, including the boring logs and review of published data, we estimate the SHGL at most of the boring locations along the route to be generally 1 to 2 feet above the water levels measured at the time of our field work, but will generally perch at the top of the clay soil layers shown in Section 4.1 of this report.

It is possible that groundwater levels may exceed the estimated SHGL as a result of significant or prolonged rains. Therefore, we recommend that design drawings and specifications account for the possibility of groundwater level variations, and construction planning should assume that such variations will occur.

4.5 Pavement Core Samples

The pavement layers (asphalt and base) as encountered at the boring locations were measured in the field. The layer thicknesses are shown in Section 4.1.

The asphalt layer, when encountered in the borings, appeared to be 1 to 2 distinct layers with fine aggregate. The base course material, when encountered, appeared to be limerock or sand asphalt hot mix (SAHM) and appeared to be relatively dry at the time of our exploration.

5.0 DESIGN RECOMMENDATIONS

5.1 General

The following geotechnical engineering evaluation and recommendations are based on the results of the field and laboratory testing performed, our experience with similar soil conditions, and our understanding of the provided project information as presented in this report. If the project information presented in this report is incorrect, please contact us so that these recommendations can be reviewed. Also, the discovery of any site or subsurface conditions during construction that deviate from the data presented herein should be reported to us for evaluation. We recommend that we be provided the opportunity to review the plans and earthwork specifications before construction to verify that our recommendations have been properly interpreted and implemented.

5.2 Pipeline and Manhole Support Recommendations

It is our understanding that the 20-inch diameter force main will have an invert elevation approximately 4 to 5 feet below the existing ground surface outside of the HDD and Jack-and-Bore segments, which includes the minimum cover requirement of 30 to 36 inches. Based on the results of the subsurface exploration and laboratory testing as discussed in this report, we consider the subsurface conditions at the site adaptable for supporting these portions of the proposed pipelines when constructed by cut-and-cover methods upon properly prepared subgrade soils.

As discussed earlier in the report, the borings for the cut and cover portion of the proposed pipeline routes (borings FM-1 through FM-47, FM-63 through FM-126) generally encountered a pavement section or surficial topsoil layer, up to 8 inches in depth, underlain by loose to medium dense fine sands to fine sands with silt (A-3, SP, SP-SM), fine sands with silt to silty fine sands (A-2-4, SP-SM, SM), and clayey fine sands (A-2-6/A-6, SC) to the boring termination depths of 5, 10, 40, and 60 feet below the existing ground surface. Layers of sandy clay (A-6, A-7-6, CL, CH) of varying thicknesses were encountered from approximately 0.5 to 12 feet below the ground surface. These clayey soils (A-2-6, A-6, A-7-6, CL, CH) were generally encountered in the upper 10 feet, however the deeper borings also encountered thin layers prior to the termination depths.

The A-3/SP/SP-SM soils are suitable for use as pipe backfill soil. These soils should be placed and compacted as discussed in Section 6.0 below. These soils are also suitable as pipe bedding soil.

Clay soils (A-2-6, A-6, A-7-6, SC, CL, CH) are not considered suitable as pipe backfill or at the manhole/wet-well structure bottom elevations, nor as backfill around the sides and within 12 inches of the top of the pipe or manhole/wet-well excavations. They are also not suitable for pipe bedding. During pipeline trench excavations, these soils should be separated from the fine sands to fine sands with silt (A-3, SP, and SP-SM) soils intended for use as backfill. Clay soils encountered at the pipe invert elevation should be over-excavated and replaced with suitable pipe bedding soil as discussed in Section 6.0.

Silty fine sands (A-2-4, SM) are not recommended for reuse as fill due to their affinity for moisture, which makes them difficult to place and compact; however, the silty fine sands could be blended with the fine sands with silt (A-3, SP, and SP-SM) soils as long as the blended soil meets the structural backfill recommendations provided in Section 6.6 below.

It should be expected that these silty sands (A-2-4, SM) and clay soils (A-2-6, A-6, A-7-6, SC, CL, CH) will be encountered during excavation for the pipeline and manhole/wet-well structures, as well as at or near the planned pipe invert and manhole/wet-well structure bottom elevations. The silty sands (A-2-4, SM) should be removed to a depth of at least 6 inches below the pipe invert and 12 inches below the manhole bottom elevation and should be replaced with suitable structural fill soil as described in Section 6.0 below. The clay soils (A-2-6, A-6, A-7-6, SC, CL, CH) should be excavated to a depth of at least 6 inches below the pipe invert and 24 inches below the manhole bottom elevation and should be replaced with suitable structural fill soil as described in Section 6.0 below. During pipeline trench excavations, the clay and silty soils should be separated from the other soils intended for reuse and removed from the site.

Alternatively, a graded aggregate conforming to ASTM No. 67 stone as noted in the JEA *Water & Wastewater Standards Manual*, latest edition, may be used as pipe bedding and should be compacted to form a stable working surface. If the ASTM No. 67 stone will be in contact with clay soils, then a non-woven geotextile should be placed at the gravel/clay soil interface to function as a separation layer. This fabric will help reduce the potential for infiltration of the clay fines into the gravel material.

Assuming the project information as understood at the beginning of this report is correct and provided the site preparation and earthwork construction recommendations outlined in Section 6.0 of this report are performed, the following parameters may be used for design.

5.2.1 Pavement Section Recommendations

Traffic patterns and anticipated loading conditions were not available at the time that this report was prepared. However, we anticipate that traffic loads will be produced primarily by daily automobile traffic, periodic trash removal trucks, commercial trucks, and heavily loaded emergency vehicles throughout a given week. The thickness of pavements subjected to heavy truck traffic should be determined using expected traffic volumes, vehicle types, and vehicle loads and should be in accordance with local, city or county ordinances.

Pavement layer thickness can be determined using AASHTO, Asphalt Institute and/or other appropriate methods based on specific wheel loads, axle configurations, frequencies, and desired pavement.

MINIMUM RECOMMENDED PAVEMENT THICKNESS (INCHES)				
Pavement Section	**Asphaltic Concrete Type SP-9.5**	**Limerock Base Course (LBR 100)**	**Stabilized Subbase Course (LBR 60)**	**Free Draining Subgrade (A-3, SP, SP-SM Soil)**
Industrial	2	8	12	12

The minimum recommended thicknesses in the table above are considered adequate for the following traffic loading assumptions:

- Design Life = 20 years
- Terminal Serviceability = 2.5
- Industrial Pavement Section – Assumed loads of 50,000 E_{18}SALs

If anticipated traffic loading varies from the assumptions above, MAE can provide revised thickness recommendations; however, detailed traffic loading information, including anticipated vehicle types and weights, as listed above, will be required.

5.2.2 Lateral Pressure Design Parameters

Walls for any underground structures that are backfilled on one side and restrained against rotation at the top, should be designed to resist lateral pressures from soil and groundwater based on the following equivalent fluid unit weights:

- Above Water Table - Equivalent Fluid Density 60 lb/ ft^3
- Below Water Table - Equivalent Fluid Density 90 lb/ ft^3

For the design of lateral loads on underground walls, we recommend that the groundwater level be assumed to be at the ground surface. Lateral pressure distributions in accordance with the above do not consider forces from construction equipment, wheel loads or other surcharge loads. To account for this loading, a pressure equal to 0.5 times the anticipated surface surcharge should be applied over the full height of all walls.

5.2.3 Resisting Lateral Forces

Horizontal forces that act on pipeline structures such as thrust and anchor blocks can be resisted to some extent by the earth pressures that develop in contact with the buried perpendicular face of the block structure, and by shearing resistance mobilized along the block structures base and subgrade interface. Allowable passive earth pressure resistance may be determined using the following equivalent fluid densities:

- Above Water Table - Equivalent Fluid Density 100 lb/ft^3
- Below Water Table - Equivalent Fluid Density 60 lb/ft^3

A factor of safety of 3 was used for the above values. It is assumed the block structures are surrounded by well compacted structural backfill, as described in Section 6.6 below, extending at least 5 feet horizontally beyond the vertical bearing face. In addition, it is presumed that the block structures can withstand horizontal movements on the order of 0.5-inch before mobilizing full passive resistance.

The allowable sliding shearing resistance mobilized along the base of the block structure may be determined by the following formula:

$$P = {}^{1}/_{3} V \tan({}^{2}/_{3}\Phi)$$

Where: P = Allowable shearing resistance force
V = Net vertical force (total weight of block and soil overlying the structure minus hydrostatic uplift forces)
Φ = Angle of internal friction = 30°

The following unit weights can be used to calculate the weight of the overburden soil:

- Compacted Moist Soil 110 lb/ ft^3
- Saturated Soil 120 lb/ ft^3

5.2.4 Hydrostatic Uplift Resistance

It is anticipated that the buried structures will exert little or no net downward pressure on the soils; rather, the structures may be subject to hydrostatic uplift pressure when empty. Underground structures should be designed to resist hydrostatic uplift pressures appropriate for their depth below final grade and the seasonal high groundwater table. Hydrostatic uplift forces can be resisted in several ways including:

1. Addition of dead weight to the structure.
2. Mobilizing the dead weight of the soil surrounding the structure through extension of footings outside the perimeter of the structure.

A moist compacted soil unit weight of 110 lb/ft^3 may be used in designing structures to resist buoyancy.

5.2.5 Thrust Block Soil Bearing Pressure

The maximum allowable net soil bearing pressure for use in design of thrust blocks should not exceed 2,000 psf. Net bearing pressure is defined as the soil bearing pressure at the foundation bearing level in excess of the natural overburden pressure at that level. The structure should be designed based on the maximum load that could be imposed by all loading conditions.

The structures should bear in either compacted suitable natural soils or compacted structural fill. The bearing level soils, after compaction, should exhibit densities equivalent to 95 percent of the modified Proctor maximum dry density (ASTM D 1557), to a depth of at least one foot below the bearing level.

5.3 Environmental Classification

Four bulk soil samples were obtained from borings performed within the planned pipeline alignment. The purpose of these samples was to run soil corrosion potential tests to determine the environmental classification of the soils for ductile iron valve and fitting instillation. The samples are classified in accordance with FDOT procedures contained in Chapter 1.3.2.1 of the January 2020 edition of the FDOT *Structures Design Guidelines.* Based on the results of these tests, the encountered soils were classified as Slightly to Moderately Aggressive. Sample locations and test results are shown on the *Summary of Corrosion Series Test Results* in Appendix B.

5.4 Manhole Structures Design Recommendations

Based on the results of the subsurface explorations, laboratory testing, and provided information, as included in this report, we consider the subsurface conditions at the site adaptable for supporting the manholes as cast-in-place concrete structures with concrete slab floors when constructed upon properly prepared subgrade soils. Provided the site preparation and earthwork construction recommendations outlined in Section 6.0 of this report are performed, the following parameters may be used for design of below-grade utilities.

5.4.1 Lateral Pressure Design Parameters

In general, walls that have adjacent compacted fill will be subjected to lateral earth pressures. Walls that are restrained at the top and bottom will be subjected to at-rest soil pressures, while walls that are not restrained at the top, and where sufficient movement is anticipated, will be subjected to active earth pressures. Surcharge effects for sloped backfill, point or area loads behind the walls, and adequate drainage provisions should be incorporated in the wall design. Passive resistance, resulting from footing embedment at the wall toe, could be neglected for safer design. The following soil parameters can be

used for the project where suitable fill soils, as described in Section 6.4, are placed adjacent to the overflow structure:

- Backfill Soil Unit Weight, Saturated (γ_{sat}) = 115 pcf
- Backfill Soil Unit Weight, Moist (γ_m) = 110 pcf
- Backfill Soil Angle of Internal Friction (ϕ) = 30 degrees
- Coefficient of Active Earth Pressure, k_a = 0.33
- Coefficient of At-Rest Earth Pressure, k_o = 0.5
- Coefficient of Passive Earth Pressure, k_p = 3.0
- Foundation Soil Unit Weight, Saturated (γ_{sat}) = 120 pcf
- Foundation Soil Angle of Internal Friction (ϕ) = 30 degrees

The above parameters are based on structural backfill (SP, SP-SM) placed and compacted behind the vault walls as discussed in Section 6.4, and on compaction of the wall foundation soils as discussed in Section 6.4. A coefficient of friction for poured in-place concrete of 0.45 may be used in the wall design. The wet well structure should be designed to include all temporary construction and permanent traffic and surcharge loads acting on the walls.

Please refer to Section 5.2.4 for Hydrostatic Uplift Resistance recommendations for the buried structure.

6.0 SITE PREPARATION AND EARTHWORK RECOMMENDATIONS

Site preparation as outlined in this section should be performed to provide more uniform foundation bearing conditions and to reduce the potential for post-construction settlements of the planned pipelines.

6.1 Clearing

Prior to construction, the location of existing underground utility lines within the construction area should be established. Provisions should then be made to relocate interfering utilities to appropriate locations. It should be noted that if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion which may subsequently lead to excessive settlement of overlying structures.

6.1.1 Pipelines and Manholes

During the excavation process, pavement section materials such as asphalt and limerock should be stockpiled a safe distance from the construction areas to be removed from the site. We do not recommend use of any of the pavement materials as backfill within the pipeline or structure excavations. Clearing and stripping operations should be performed as shown in Section 125 of the *FDOT Standard Specifications for Road and Bridge Construction* (current edition).

It should be anticipated that up to about 8 inches of topsoil and soils containing significant amounts of organic materials, as encountered in the borings, may be encountered along the planned pipeline route. The actual depths of topsoil and surficial organic soils should be determined by MAE using visual observation and judgment during earthwork operations. The topsoil and surficial organic soils should not be reused as backfill material within the pipeline excavations. However, they may be stockpiled and used subsequently in areas to be grassed.

In order to facilitate compaction operations, dewatering within the trench limits should continue until moisture contents are 2 percent or more below the standard Proctor optimum moisture content.

6.2 Temporary Groundwater & Surface Water Control

The groundwater level was encountered at the boring locations at depths varying from 2 feet 5 inches to 9 feet 7 inches below the existing ground surface at the time of our exploration. Because of the need for excavation to the pipeline invert elevations and for excavation of the Jack-and-Bore and HDD pits, followed by compaction of the bedding and backfill soils, it will be necessary to install temporary groundwater control measures to dewater areas where near-surface groundwater levels exist at the time of construction, in order to facilitate the excavation and compaction processes.

Groundwater control measures should be determined by the contractor but can consist of sumps or well points (or a combination of these or other methods) capable of lowering the groundwater level to at least 2 feet below the required depth of excavation. The dewatering system should not be decommissioned until excavation, compaction, and fill placement is complete, and sufficient deadweight exists on the structures to prevent uplift. It should be anticipated that well point installation into the dense to very dense soils encountered at several of the borings may be difficult, and additional efforts may be necessary to adequately dewater excavations in these soils.

During excavation of the pipe trenches, surface water during rainfall events should be diverted or captured and re-routed to avoid impacts to the excavation. Any roadway swales or ditches that are filled with water prior to construction should be drained to prevent infiltration into the pipe trenches. Rainfall runoff should be diverted away from these ditches to prevent construction impacts. Any adjacent wetlands that tend to stage up with water during rainfall events or the wet season should be temporarily diked to prevent impacts to the pipeline construction.

6.3 Preparation of Pipe Bedding Soils

As discussed earlier in the report, a surficial topsoil layer up to 8 inches thick was encountered at most of the boring locations along the planned pipeline alignment. Underlying the surficial layers, where encountered, the borings advanced through loose to medium dense fine sands to fine sands with silt (A-3, SP, SP-SM), fine sands with silt to silty fine sands (A-2-4, SP-SM, SM), and clayey fine sands (A-2-6, A-6, SC) to the boring termination depths of 5, 10, 40, and 60 feet below the existing ground surface. Layers of sandy clay (A-6, A-7-6, CL, CH) of varying thicknesses were encountered from approximately 0.5 to 12 feet below the ground surface. The near surface soils often contained trace to few amounts of organic fines, small roots, and/or gravel sized rock fragments.

The topsoil layer should be stripped within the area of the proposed pipe trenches and discarded or used in areas to be grassed. Where the pipeline will bear in fine sands with silt (A-3, SP, SP-SM), these soils should be excavated to the proposed bearing elevation and the exposed excavation surface should be compacted as outlined in Section 6.4 below. The A-3, SP, and SP-SM soils, as encountered in the borings, without roots may be reused as pipe backfill as long as the excavated soils meet the Structural Fill criteria in Section 6.6. It should be expected that the moisture content of the soils excavated below the groundwater table at the time of construction will above the optimum moisture content for compaction. These soils should be stockpiled to drain excess moisture prior to placement and compaction.

The silty sands (A-2-4, SM) and clay soils (A-2-6, A-6, A-7-6, SC, CL, CH) as encountered in the borings are not considered suitable for support of the pipeline at the invert elevation (pipe bedding). Silty sands and clay soils that are within 12 inches of the pipe invert should be removed to a depth of at least 12 inches below the pipe invert elevation and replaced with compacted structural fill soil as described in Section 6.6 below. The purpose of this is to provide more uniform bearing conditions, and to reduce the potential for post construction settlements of the pipeline. The silty sands and clay soils should also not be reused as pipe backfill due to their affinity for moisture and should be separated from the A-3, SP, and SP-SM soils

that are to be reused as pipe backfill. As an alternative, A-2-4 soils could be blended with the A-3, SP, and SP-SM soils if the blended soil meets the structural backfill criteria provided in Section 6.6 below.

An alternative bedding material for the pipe is a graded aggregate conforming to ASTM No. 67 stone as noted in the JEA *Water & Wastewater Standards Manual*, latest edition. If graded aggregate is used as pipe bedding where clayey soils are encountered, then a non-woven geotextile should be placed at the gravel/clayey soil interface to function as a separate layer. The gravel should be placed in equal lifts not exceeding 6 inches in thickness, with each lift compacted to form a stable working surface. Once the pipe is installed, the excavation should be backfilled with compacted structural fill to final grades.

Dewatering of the pipeline trench excavations should be anticipated. Temporary groundwater control measures as discussed in Section 6.2 should be followed during excavation of the trench, compaction of the pipe bedding soils, and during placement and compaction of the pipe backfill soils.

6.4 Compaction of Excavation Bottom

After installing the temporary groundwater control measures, where deemed necessary, and achieving the required depth of excavation, the exposed sand soil surface should be compacted using hand-operated equipment. Typically, the material should exhibit moisture contents within ±2 percent of the modified Proctor optimum moisture content (ASTM D 1557) during the compaction operations. Compaction should continue until densities of at least 98 percent of the modified Proctor maximum dry density (ASTM D 1557) have been achieved within the upper one foot below the exposed surface within the pipeline excavation.

In areas where the existing silty sands or clay soils are over-excavated deeper than the pipe bedding elevation and backfilled with structural fill or aggregate, this initial compaction of the excavation bottom soils is not necessary.

Should the bearing level soils experience pumping and soil strength loss during the compaction operations, compaction work should be immediately terminated and (1) the disturbed soils removed and backfilled with dry structural fill soils that are then compacted, or (2) the excess moisture content within the disturbed soils allowed to dissipate before recompacting.

Care should be exercised to avoid damaging any nearby structures while the compaction operations are underway. Compaction should cease if deemed detrimental to adjacent structures.

6.5 Excavation Protection

Excavation work for the pipeline construction will be required to meet OSHA Excavation Standard Subpart P regulations for Type C Soils. The use of excavation support systems will be necessary where there is not sufficient space to allow the side slopes of the excavation to be laidback to at least 1.5H:1V (1.5 horizontal to 1 vertical) to provide a safe and stable working area and to facilitate adequate compaction along the sides of the excavation. In addition, it should be anticipated that an excavation support system may be necessary to protect adjacent existing structures, pavement and/or utilities that are located along the proposed pipeline alignment.

The method of excavation support should be determined by the contractor but can consist of a trench box, drilled-in soldier piles with lagging, interlocking steel sheeting or other methods. The support structure should be designed according to OSHA sheeting and bracing requirements by a Florida licensed Professional Engineer. Where pipeline excavations and the construction of excavation support systems are within 50 feet of existing structures, the existing structures should be monitored for adverse reactions to construction vibrations and dewatering activities.

6.6 Structural Backfill and Compaction of Structural Backfill

Structural backfill placed within the pipeline excavation, and in areas in which over-excavation of unsuitable soils is required below the pipeline elevation, should be placed in loose lifts not exceeding six inches in thickness and compacted using hand-operated compaction equipment. This procedure should continue until the backfill elevation is 12 inches above the top of the pipe. At backfill elevations greater than 12 inches above the top of pipe, structural backfill may be placed in loose lifts not exceeding 12 inches in thickness and compacted by hand-operated compaction equipment.

Structural backfill is defined as a non-plastic, granular soil having less than 10 percent material passing the No. 200 mesh sieve and containing less than 4 percent organic material. The sand soils (A-3, SP, SP-SM) meeting the properties given above, as encountered in the borings, may be used as backfill. The silty sand (A-2-4, SM) soils as encountered in the borings can be blended with the A-3, SP, and SP-SM soils if the blended soil meets the structural backfill recommendations given above. Clayey soils (A-2-6, SC) are not suitable for pipe bedding or backfill material. These soils should be stockpiled separately from soils intended for reuse as fill material and removed from the site.

The backfill soils should exhibit moisture contents within ±2 percent of the modified Proctor optimum moisture content (ASTM D 1557) during the compaction operations. Compaction should continue until densities of at least 98 percent of the modified Proctor maximum dry density (ASTM D 1557) have been achieved within each lift of compacted structural backfill.

We recommend that soil excavated from the pipeline trenches that will be reused as backfill be stockpiled a safe distance from the excavations and in such a manner that promotes runoff away from the open trenches and limits saturation of the excavated soil.

6.7 Roadway Reconstruction Considerations

Roadway reconstruction should be performed in accordance with the appropriate sections of the current edition of the City Standard Specifications.

7.0 QUALITY CONTROL TESTING

A representative number of field in-place density tests should be made in the upper 2 feet of compacted natural soils, in each lift of compacted backfill and fill, and in the upper 12 inches below the bearing levels in the pipeline excavations. The density tests are considered necessary to verify that satisfactory compaction operations have been performed. We recommend density testing be performed at a minimum of one location for every 300 feet of pipeline.

8.0 REPORT LIMITATIONS

This report has been prepared for the exclusive use of Mott MacDonald Florida, LLC and JEA for specific application to the design and construction of the *JEA 5th Street West – Imeson Road to Melson Avenue – New Force Main* project. An electronically signed and sealed version, and a version of our report that is signed and sealed in blue ink, may be considered an original of the report. Copies of an original should not be relied on unless specifically allowed by MAE in writing. Our work for this project was performed in accordance with generally accepted geotechnical engineering practice. No warranty, express or implied, is made.

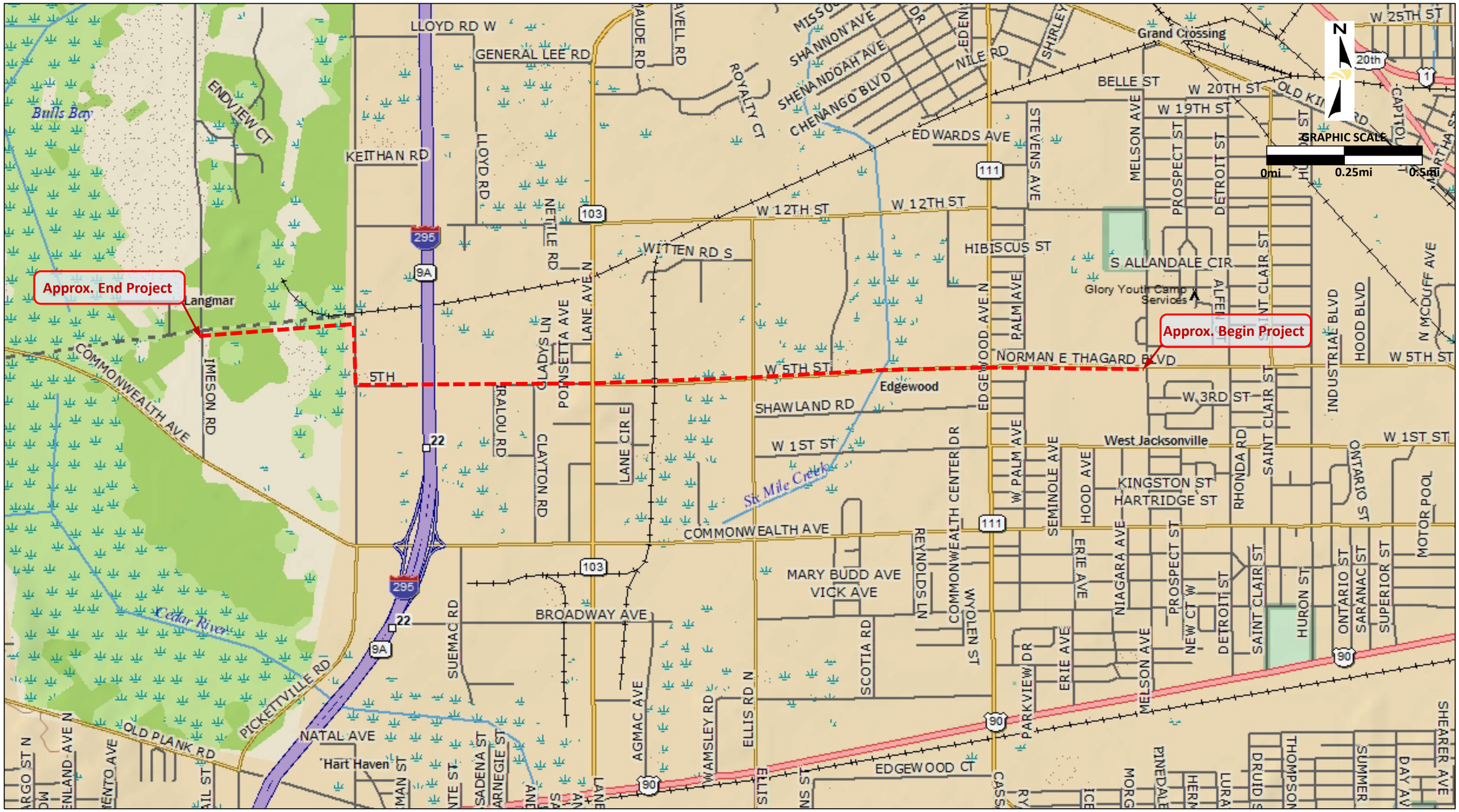
The analyses and recommendations contained in this report are based on the data obtained from this project. This testing indicates subsurface conditions only at the specific locations and times, and only to

the depths explored. These results do not reflect subsurface variations that may exist away from the boring locations and/or at depths below the boring termination depths. Subsurface conditions and water levels at other locations may differ from conditions occurring at the tested locations. In addition, the passage of time may result in a change in the conditions at the tested locations. If variations in subsurface conditions from those described in this report are observed during construction, the recommendations in this report must be re-evaluated.

The scope of our services did not include any environmental assessment or testing for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the subject site. Any statements made in this report, and/or notations made on the generalized soil profiles or boring logs, regarding odors or other potential environmental concerns are based on observations made during execution of our scope of services and as such are strictly for the information of our client. No opinion of any environmental concern of such observations is made or implied. Unless complete environmental information regarding the site is already available, an environmental assessment is recommended.

If changes in the design or location of the pipelines occur, the conclusions and recommendations contained in this report may need to be modified. We recommend that these changes be provided to us for our consideration. MAE is not responsible for conclusions, interpretations, opinions or recommendations made by others based on the data contained in this report.

Figures



Project Manager:	BHH
Drawn by:	MCV
Checked by:	MCV
Approved by:	WJM

Project No.	0103-0018
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Date:	7/17/2020

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SITE LOCATION MAP

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO. 1

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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO. 2A

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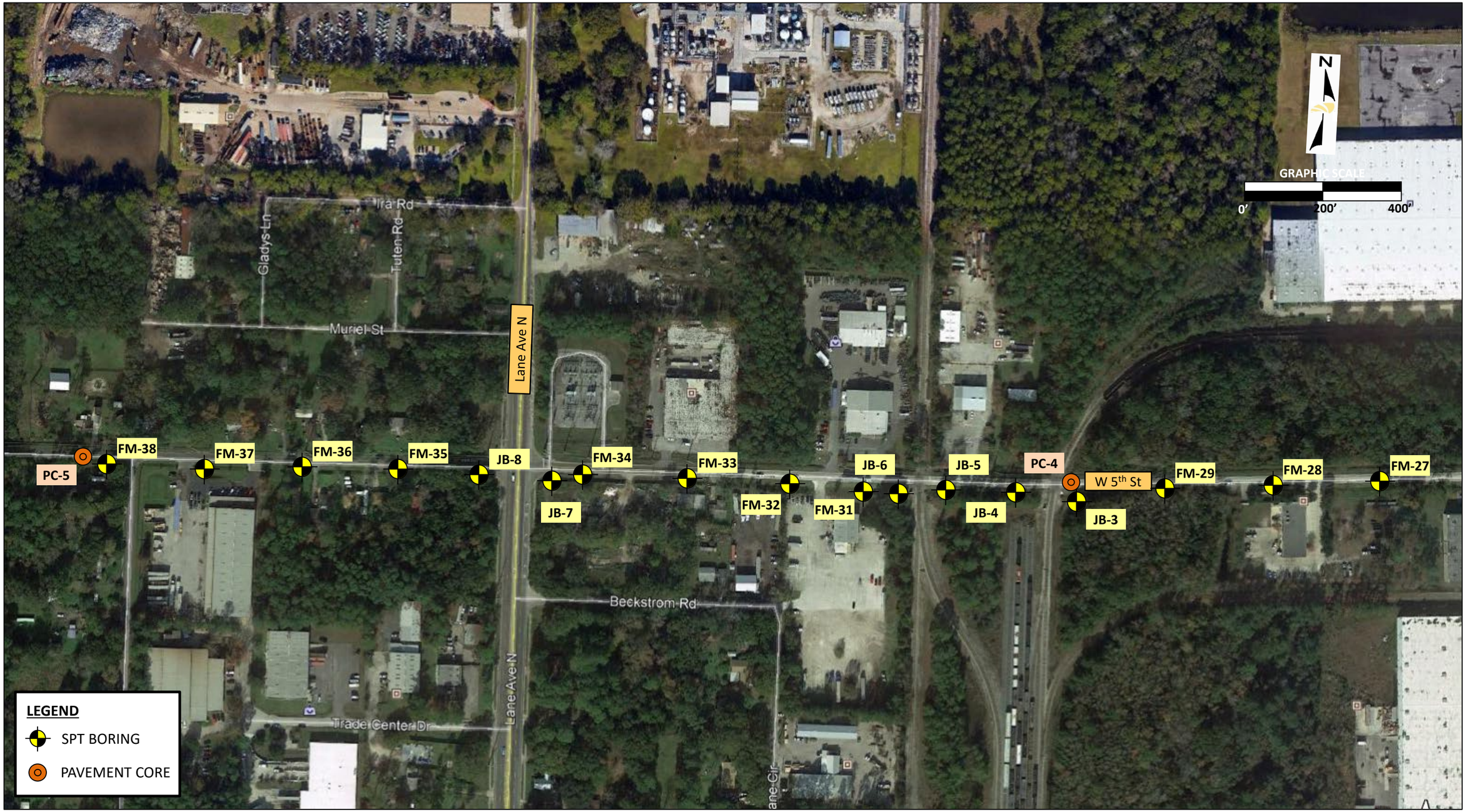
FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.
2B



Project Manager:	BHH
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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.
2C

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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.

2D

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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.

2E

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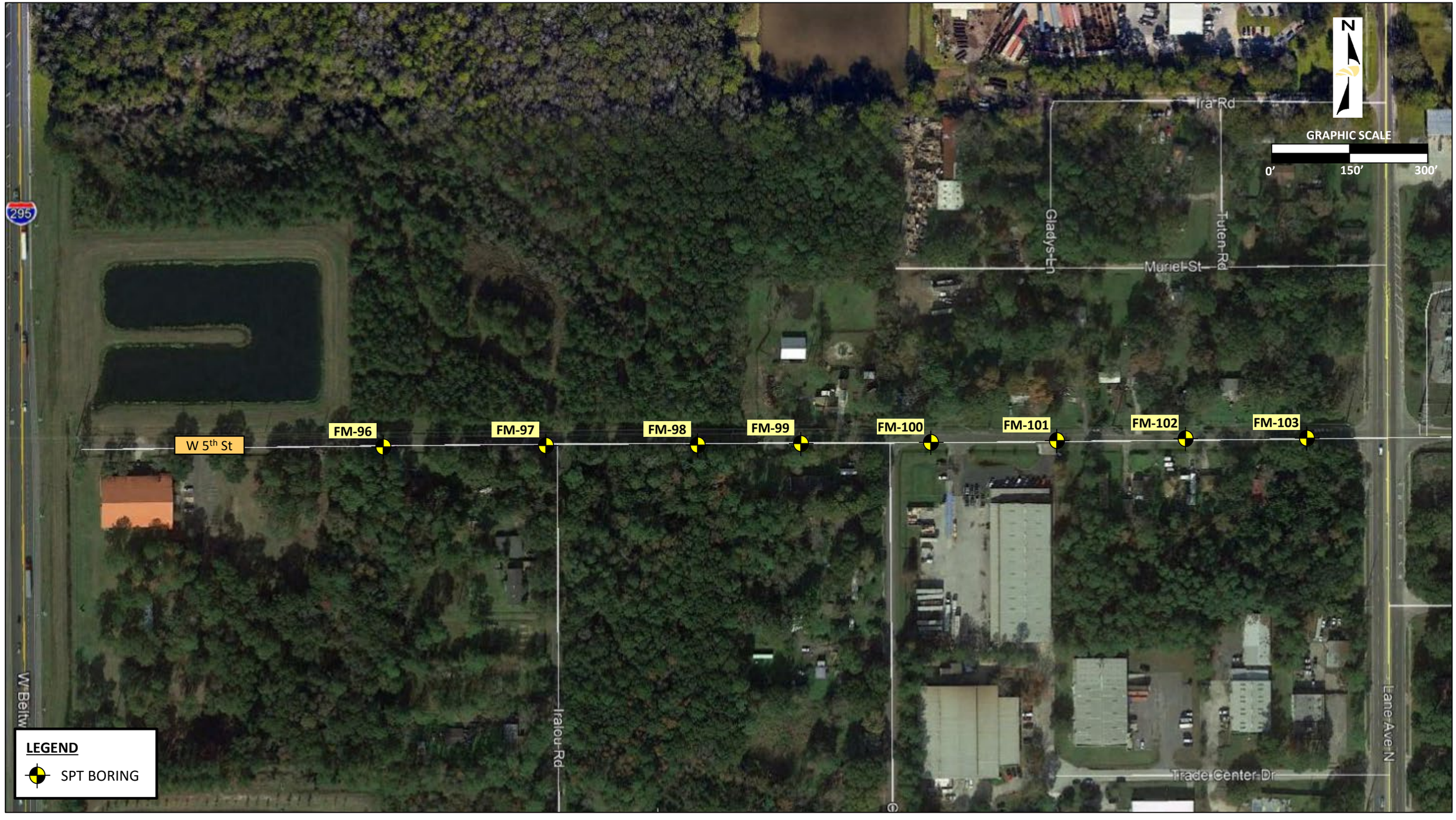
FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.

2F



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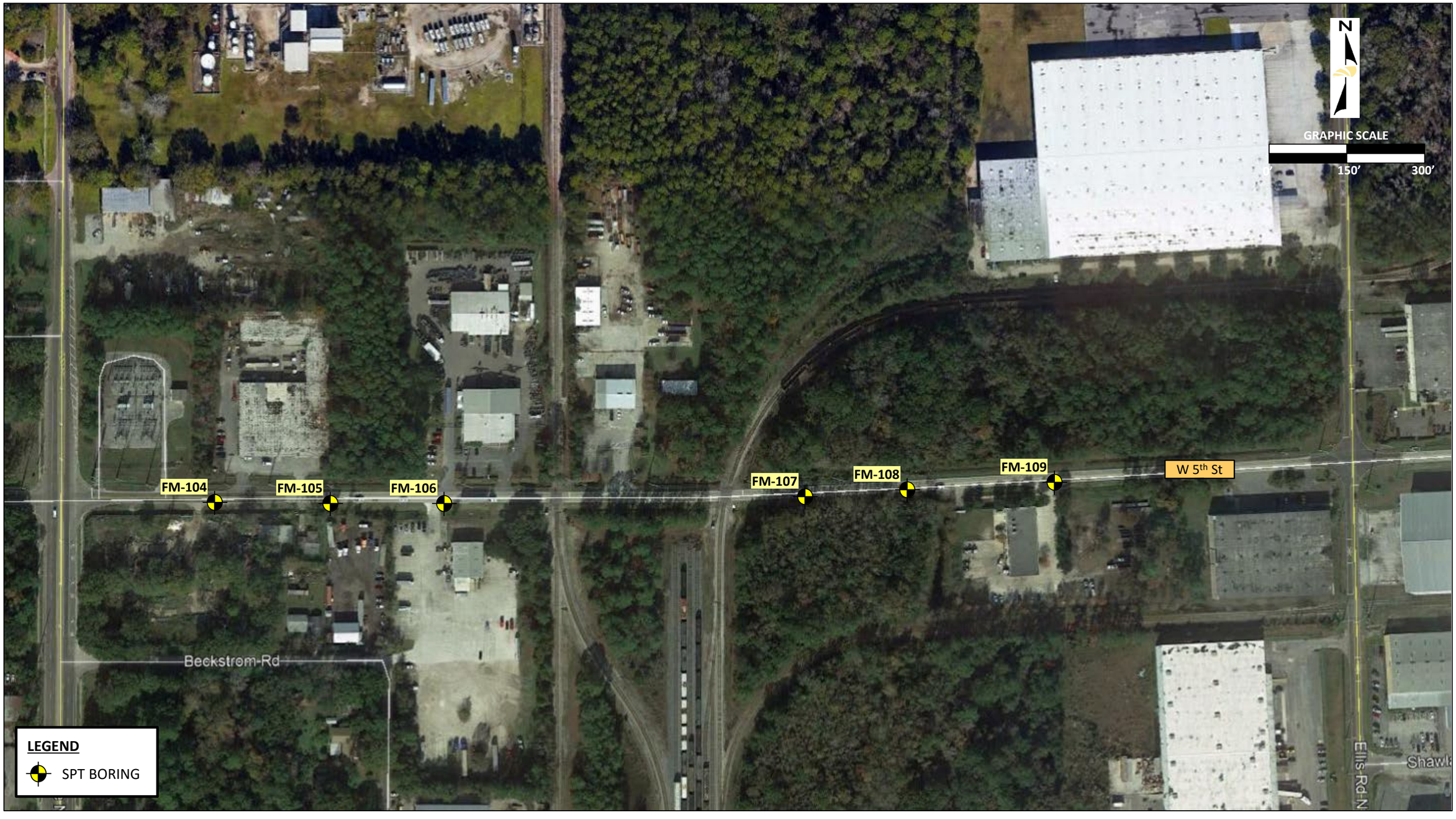
Approved by:	WJM	Date:	7/17/2020		

FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO. 2G



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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.
2H

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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.

2I

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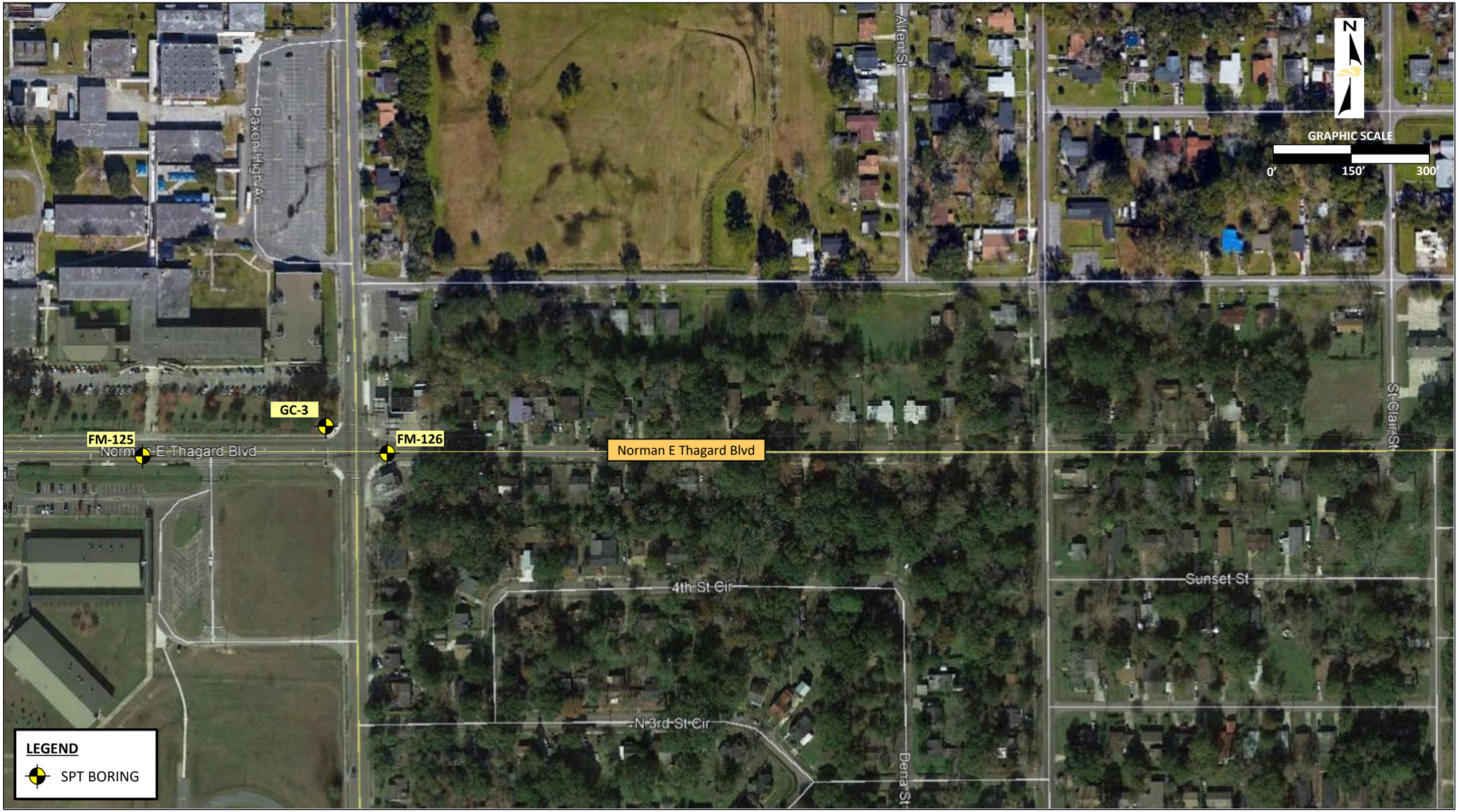
FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO. 2J



Project Manager:	BHH
Drawn by:	MCV
Checked by:	MCV
Approved by:	WJM

Project No.	0103-0018
Scale:	AS SHOWN
File Name:	0103-0018.BLP
Date:	7/17/2020

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FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO.

2K

Project Manager:	BHH
Drawn by:	MCV
Checked by:	MCV
Approved by:	WJM

Project No.	0103-0018
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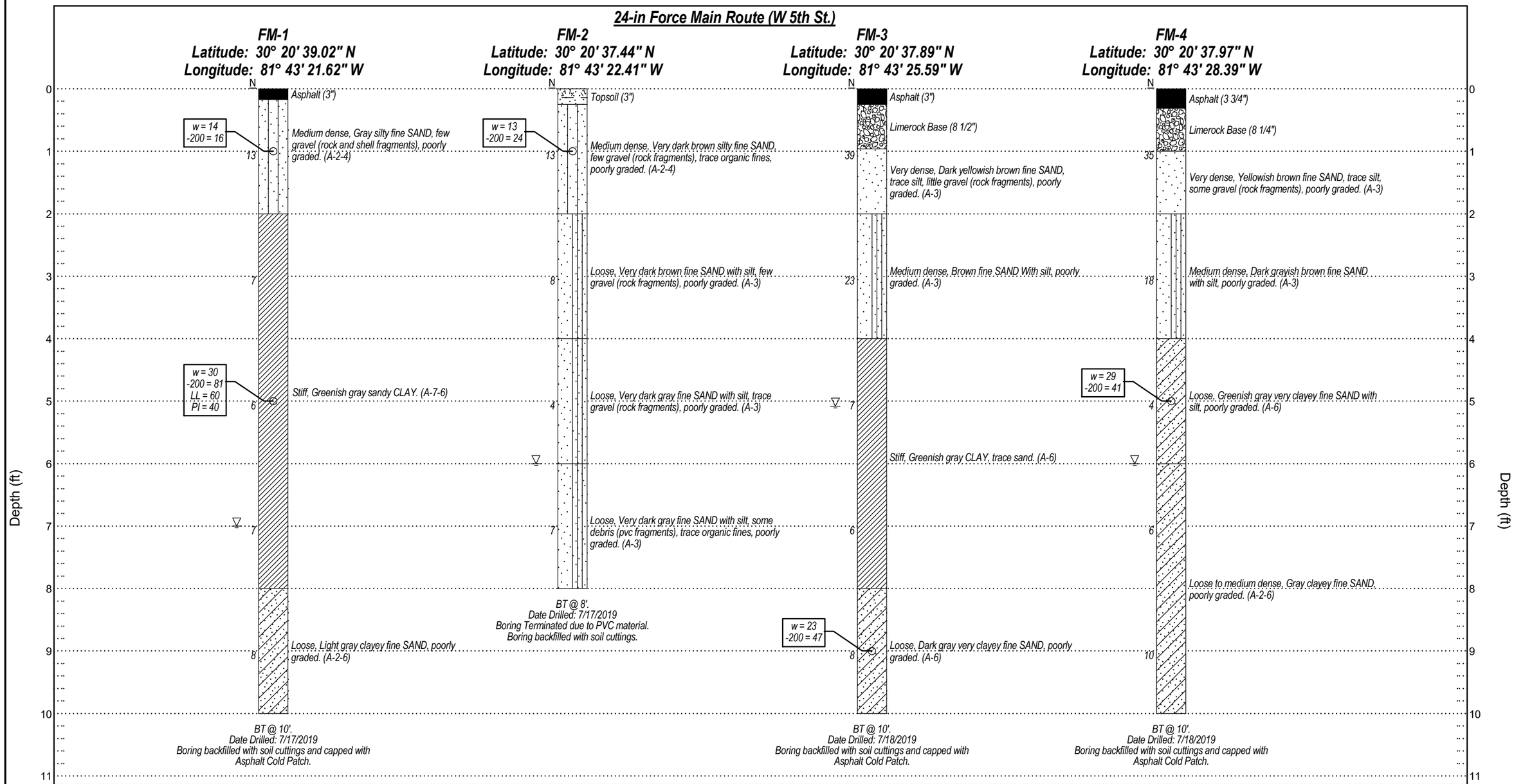
FIELD EXPLORATION PLAN

JEA 5TH STREET WEST - IMESON ROAD TO MELSON AVENUE
JACKSONVILLE, FLORIDA

FIG NO. 2L

24-in Force Main Route (W 5th St.)



Legend

- Asphalt
- Clayey Fine Sand
- Fine Sand with Silt
- Topsoil
- Clay
- Silty Fine Sand

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)	LL	Liquid Limit
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 3

24-in Force Main Route (W 5th St.)

FM-5
Latitude: 30° 20' 37.82" N
Longitude: 81° 43' 31.38" W

Depth (ft)	N	Description
0		Asphalt (2 1/2")
		Limerock Base (8")
1	39	Very dense, Yellowish brown fine SAND, trace silt, some gravel (rock fragments), poorly graded. (A-3)
2	23	Medium dense, Light yellowish brown fine SAND with silt, poorly graded. (A-3)
4		▽
	w = 25 -200 = 52	
5	6	Stiff, Greenish gray very sandy CLAY. (A-6)
7	8	
9	13	Medium dense, Greenish gray clayey fine SAND, poorly graded. (A-2-6)
10		BT @ 10'. Date Drilled: 7/18/2019 Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-6
Latitude: 30° 20' 38.12" N
Longitude: 81° 43' 34.20" W

Depth (ft)	N	Description
0		Asphalt (2")
		Limerock Base (9")
1	32	Very dense, Dark brown fine SAND, trace silt, some gravel (shell fragments), poorly graded. (A-3)
2	17	Medium dense, Brown fine SAND with silt, poorly graded. (A-3)
5	9	▽
	w = 23 -200 = 49	
7	9	Medium dense, Greenish gray very clayey fine SAND, poorly graded. (A-6)
9	10	
10		BT @ 10'. Date Drilled: 7/18/2019 Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-7
Latitude: 30° 20' 37.92" N
Longitude: 81° 43' 36.78" W

Depth (ft)	N	Description
0		Asphalt (2 1/2")
		Limerock Base (8 1/2")
1	34	Very dense, Dark yellowish brown fine SAND, trace silt, few gravel (shell fragments), poorly graded. (A-3)
2		w = 10 -200 = 12
3	18	Medium dense, Dark yellowish brown fine SAND with silt, poorly graded. (A-2-4)
5	6	Loose, Greenish gray silty fine SAND, trace root fragments, poorly graded. (A-2-4)
7	6	▽
8		
9	11	Stiff, Greenish gray sandy CLAY. (A-6)
10		BT @ 10'. Date Drilled: 7/18/2019 Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-8
Latitude: 30° 20' 37.97" N
Longitude: 81° 43' 39.63" W

Depth (ft)	N	Description
0		Asphalt (2")
		Limerock Base (9")
1	22	Medium dense, Dark brown fine SAND, trace silt, few gravel (rock fragments), poorly graded. (A-3)
3	14	Medium dense, Yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
5	7	Loose, Dark gray clayey fine SAND, poorly graded. (A-2-6)
	w = 23 -200 = 25	
7	7	Loose, Dark grayish olive silty fine SAND, trace clay, poorly graded. (A-2-4)
7		▽
9	10	Medium dense, Greenish gray fine SAND with silt, poorly graded. (A-3)
10		BT @ 10'. Date Drilled: 7/18/2019 Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Legend

- Asphalt
- Limerock Base
- Fine Sand
- Fine Sand with Silt
- Clay
- Clayey Fine Sand

- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling
- w — Natural Moisture Content (%)
- -200 — % Passing No. 200 U.S. Standard Sieve

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Mott MacDonald Florida, LLC

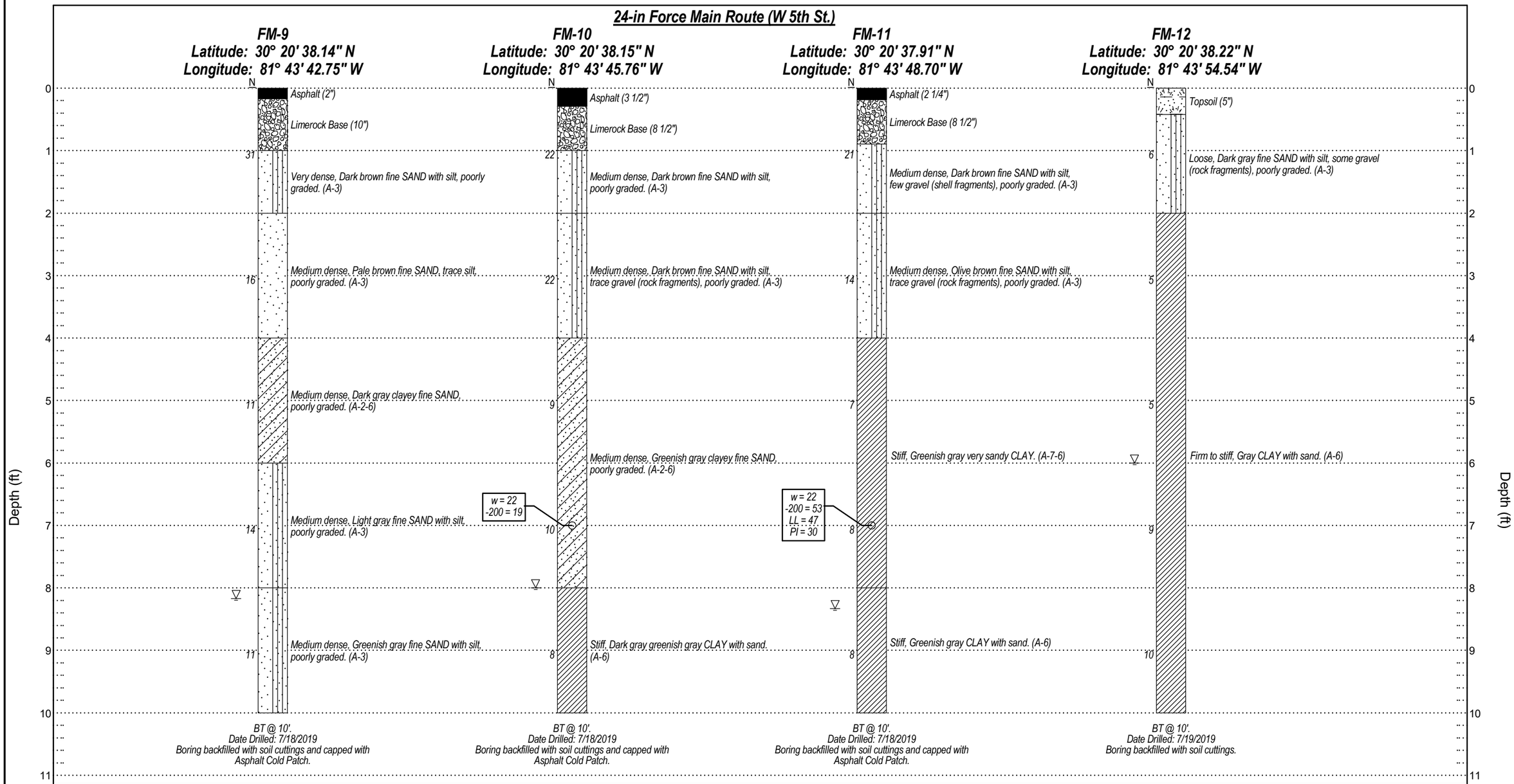
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 4

24-in Force Main Route (W 5th St.)



Legend

- Asphalt
- Clayey Fine Sand
- Limerock Base
- Clay
- Fine Sand with Silt
- Topsoil

- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling
- w — Natural Moisture Content (%)
- -200 — % Passing No. 200 U.S. Standard Sieve
- LL — Liquid Limit
- PI — Plasticity Index

REVISIONS					
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7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 5

24-in Force Main Route (W 5th St.)

FM-13
Latitude: 30° 20' 37.76" N
Longitude: 81° 43' 58.04" W

N

- 0–2': Topsoil (5")
- 7: Loose, Dark gray fine SAND with silt, trace root fragments, poorly graded. (A-3)
- w = 27, -200 = 45
- 2: Very loose, Gray very clayey fine SAND, poorly graded. (A-6)
- 4: Firm, Gray CLAY, trace sand. (A-6)
- ▽ 10
- 6: Stiff to firm, Greenish gray CLAY, trace sand. (A-6)

BT @ 10'.
Date Drilled: 7/19/2019
Boring backfilled with soil cuttings.

FM-14
Latitude: 30° 20' 38.11" N
Longitude: 81° 44' 00.42" W

N

- 0–2': Topsoil (5")
- 5: Loose, Yellowish brown fine SAND with clay, some gravel (rock fragments), trace roots, poorly graded. (A-3)
- 3: Firm, Gray CLAY with sand. (A-6)
- Firm, Greenish gray CLAY with sand. (A-6)
- ▽ 5

BT @ 5'.
Date Drilled: 7/19/2019
Boring terminated due to unknown obstruction
Boring backfilled with soil cuttings.

FM-15
Latitude: 30° 20' 38.23" N
Longitude: 81° 44' 03.48" W

N

- 0–2': Topsoil (6")
- w = 24, -200 = 29
- 3: Loose, Very dark gray clayey fine SAND, few root fragments, poorly graded. (A-2-6)
- w = 22, -200 = 50
- 6: Loose, Greenish gray very clayey fine SAND, trace root fragments, poorly graded. (A-6)
- 8: Stiff, Greenish gray CLAY with sand, poorly graded. (A-6)
- ▽ 10
- 11: Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 7/19/2019
Boring backfilled with soil cuttings.

FM-16
Latitude: 30° 20' 38.05" N
Longitude: 81° 44' 06.07" W

N

- 0–2': Topsoil (6")
- 5: Loose, Light brownish gray fine SAND with silt, trace clay and root fragments, poorly graded. (A-3)
- w = 24, -200 = 64
- 7: Stiff, Greenish gray very sandy CLAY. (A-6)
- w = 18, -200 = 28
- 9: Medium dense, Grayish brown clayey fine SAND, poorly graded. (A-2-6)
- ▽ 10
- 12: Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 7/19/2019
Boring backfilled with soil cuttings.

Depth (ft): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Legend

- Topsoil
- Clay
- Fine Sand with Silt
- Fine Sand
- Clayey Fine Sand
- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling
- w — Natural Moisture Content (%)
- -200 — % Passing No. 200 U.S. Standard Sieve

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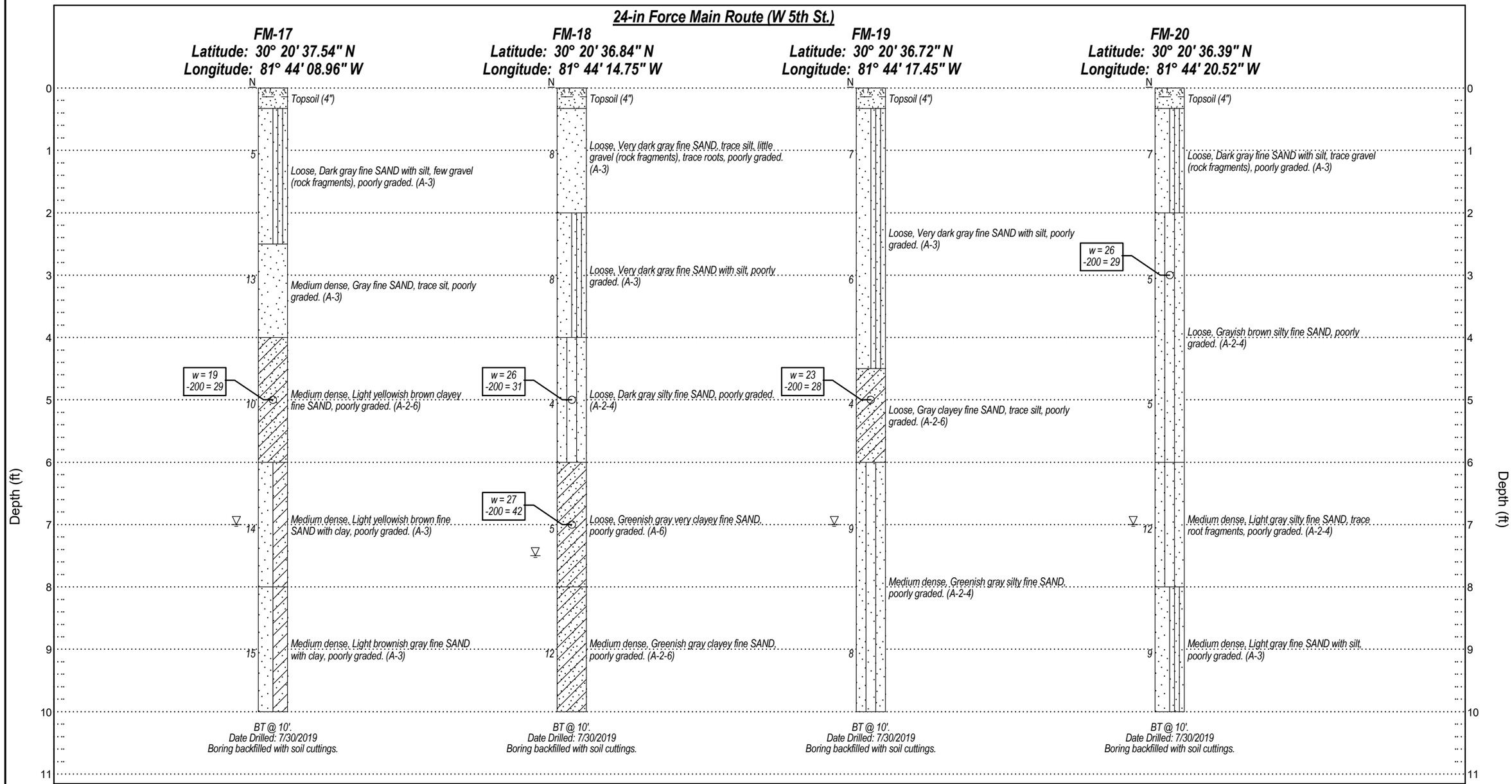
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 6

24-in Force Main Route (W 5th St.)



Legend

	Topsoil		Fine Sand with Silt		Fine Sand
	Clayey Fine Sand		Fine Sand with Clay		Silty Fine Sand

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve

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Mott MacDonald Florida, LLC

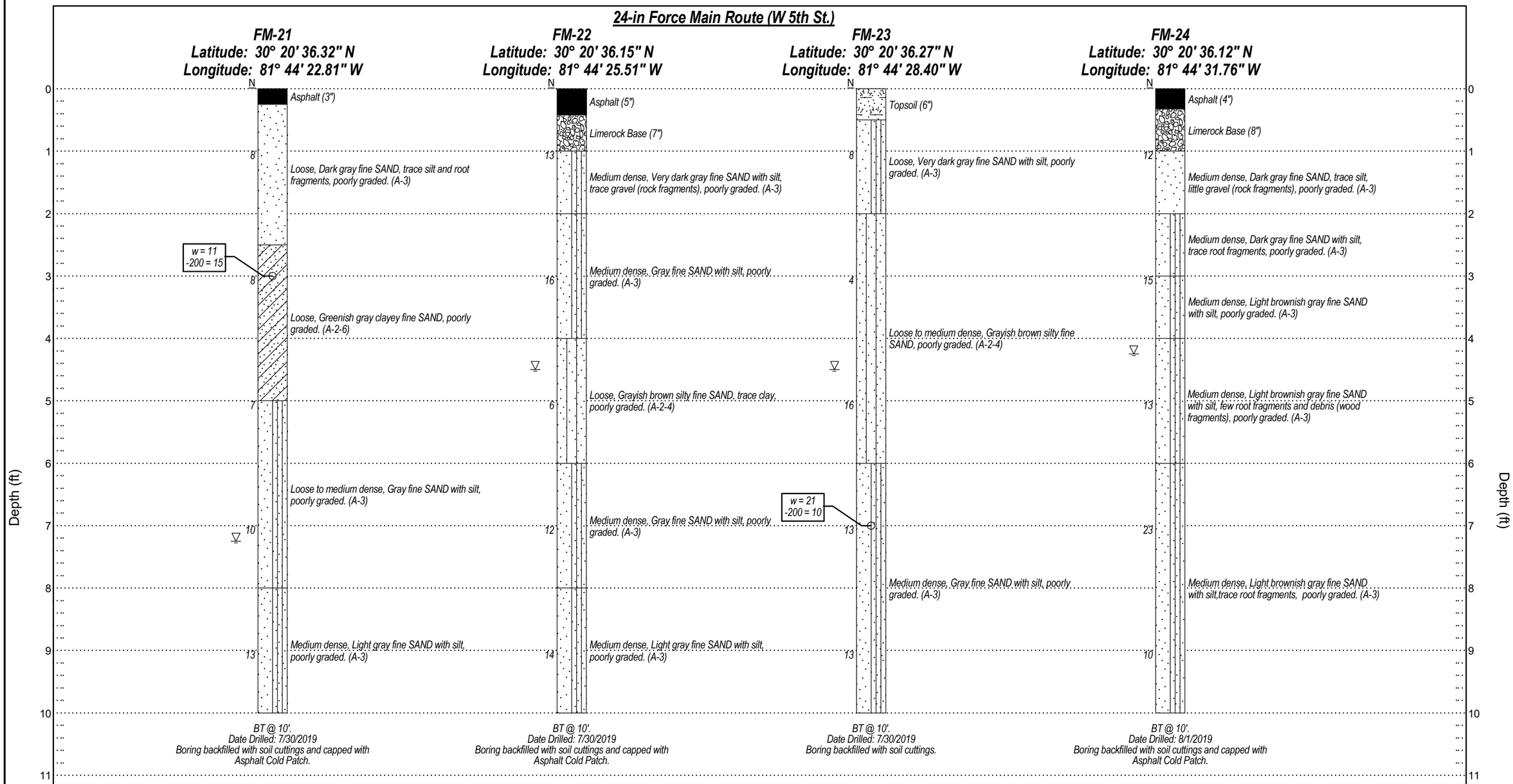
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 7

24-in Force Main Route (W 5th St.)



Legend

- Asphalt
- Fine Sand with Silt
- Fine Sand
- Limerock Base
- Clayey Fine Sand
- Silty Fine Sand

N — Standard Penetration Resistance, Blows/Foot

BT — Boring Terminated at Depth Below Existing Grade

(A-3) — AASHTO Soil Classification System

▽ — Depth to Groundwater at Time of Drilling

w — Natural Moisture Content (%)

-200 — % Passing No. 200 U.S. Standard Sieve

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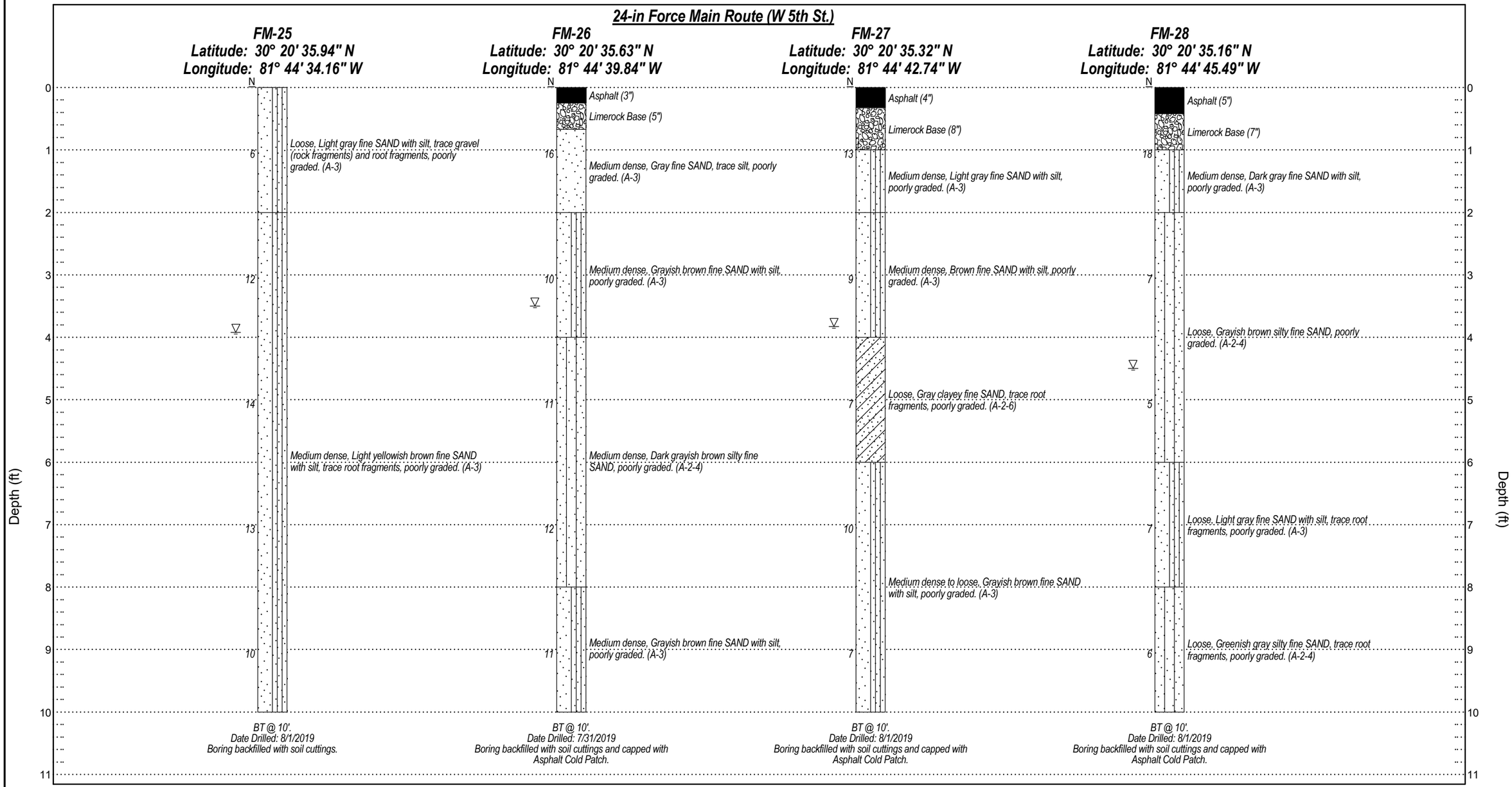
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 8

24-in Force Main Route (W 5th St.)



Legend

- Fine Sand with Silt
- Fine Sand
- Asphalt
- Silty Fine Sand
- Limerock Base
- Clayey Fine Sand
- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling

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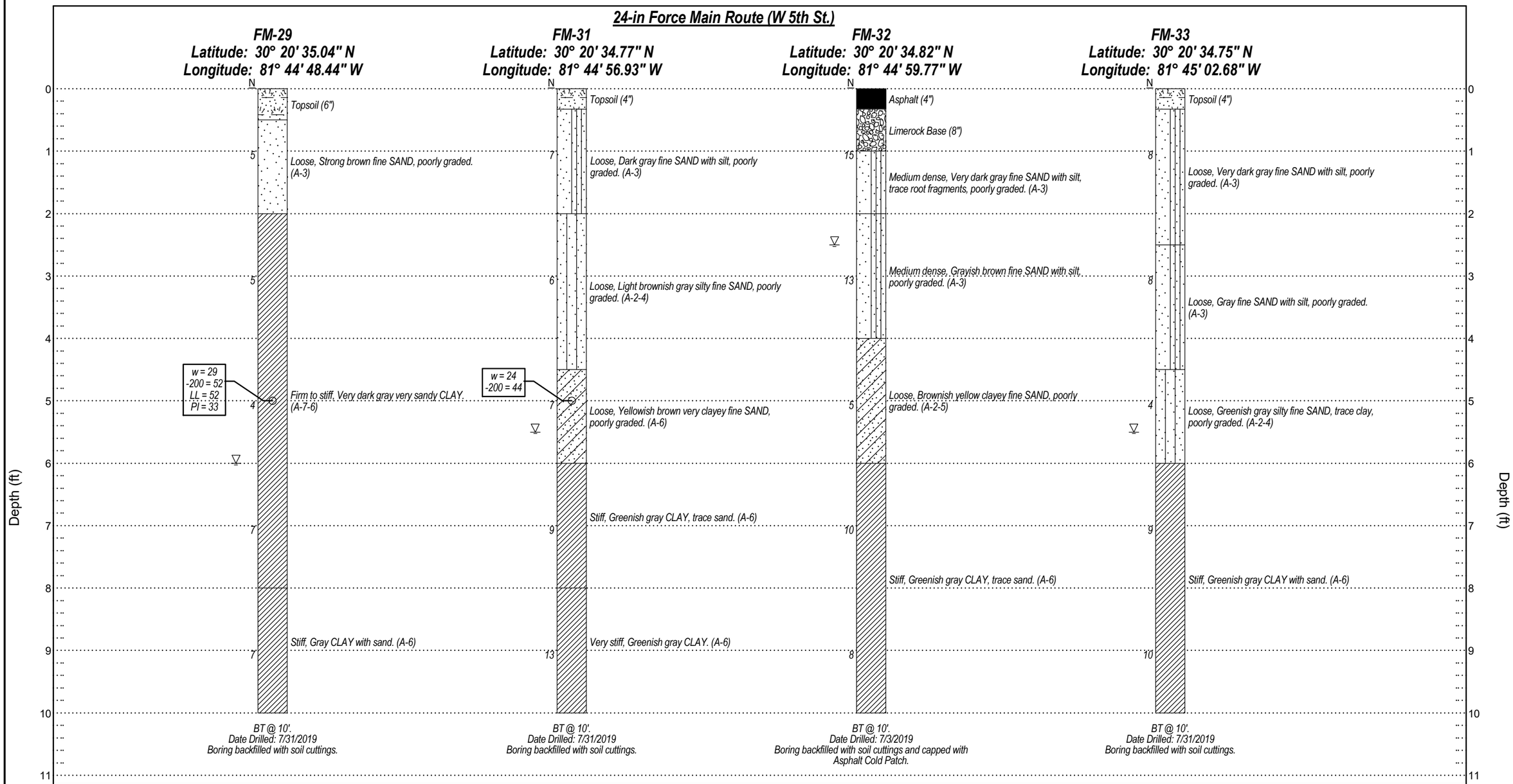
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 9

24-in Force Main Route (W 5th St.)



Legend

Topsoil	Fine Sand	Clay	N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)	LL	Liquid Limit
Fine Sand with Silt	Silty Fine Sand	Clayey Fine Sand	BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

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7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 10

24-in Force Main Route (W 5th St.)

FM-34
Latitude: 30° 20' 34.89" N
Longitude: 81° 45' 05.65" W

N

- 0–1: Topsoil (4")
- 9 — Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)
- 6 — Loose, Dark gray silty fine SAND, trace clay, poorly graded. (A-2-4)
- w = 21, -200 = 17
- 2 — Very loose, Dark gray silty fine SAND, poorly graded. (A-2-4)
- 7 — Loose to medium dense, Dark gray fine SAND with silt, poorly graded. (A-3)
- 9 — Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 7/31/2019

FM-35
Latitude: 30° 20' 34.85" N
Longitude: 81° 45' 10.63" W

N

- Asphalt (2")
- 8 — Loose, Gray fine SAND, trace silt, trace gravel (rock fragments), poorly graded. (A-3)
- 4 — Loose to medium dense, Grayish brown clayey fine SAND, poorly graded. (A-2-6)
- 11 — Very loose, Dark gray silty fine SAND, poorly graded. (A-2-4)
- 11 — Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 8/2/2019

FM-36
Latitude: 30° 20' 34.83" N
Longitude: 81° 45' 13.55" W

N

- Topsoil (4")
- 8 — Loose, Gray fine SAND with silt, trace root fragments, poorly graded. (A-3)
- w = 19, -200 = 35
- 6 — Loose, Grayish brown clayey fine SAND, poorly graded. (A-2-6)
- w = 25, -200 = 62, LL = 67, PI = 45
- 9 — Stiff, Grayish brown very sandy CLAY. (A-7-6)
- 11 — Medium dense, Grayish brown clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 8/2/2019

FM-37
Latitude: 30° 20' 34.72" N
Longitude: 81° 45' 16.36" W

N

- Topsoil (4")
- 8 — Loose, Gray fine SAND, trace silt, poorly graded. (A-3)
- Loose, Very dark gray silty fine SAND, poorly graded. (A-2-4)
- w = 49, -200 = 57
- 4 — Firm, Very dark gray very sandy CLAY. (A-6)
- WOH — Very loose, Very dark gray clayey fine SAND, trace root fragments, poorly graded. (A-2-6)
- w = 27, -200 = 46
- 3 — Loose to medium dense, Greenish gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 8/2/2019

Depth (ft)

Legend

- Topsoil
- Fine Sand with Silt
- Clay
- Clayey Fine Sand
- Asphalt
- Silty Fine Sand
- Fine Sand

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve
WOH — Sampler advanced by weight of hammer
LL — Liquid Limit
PI — Plasticity Index

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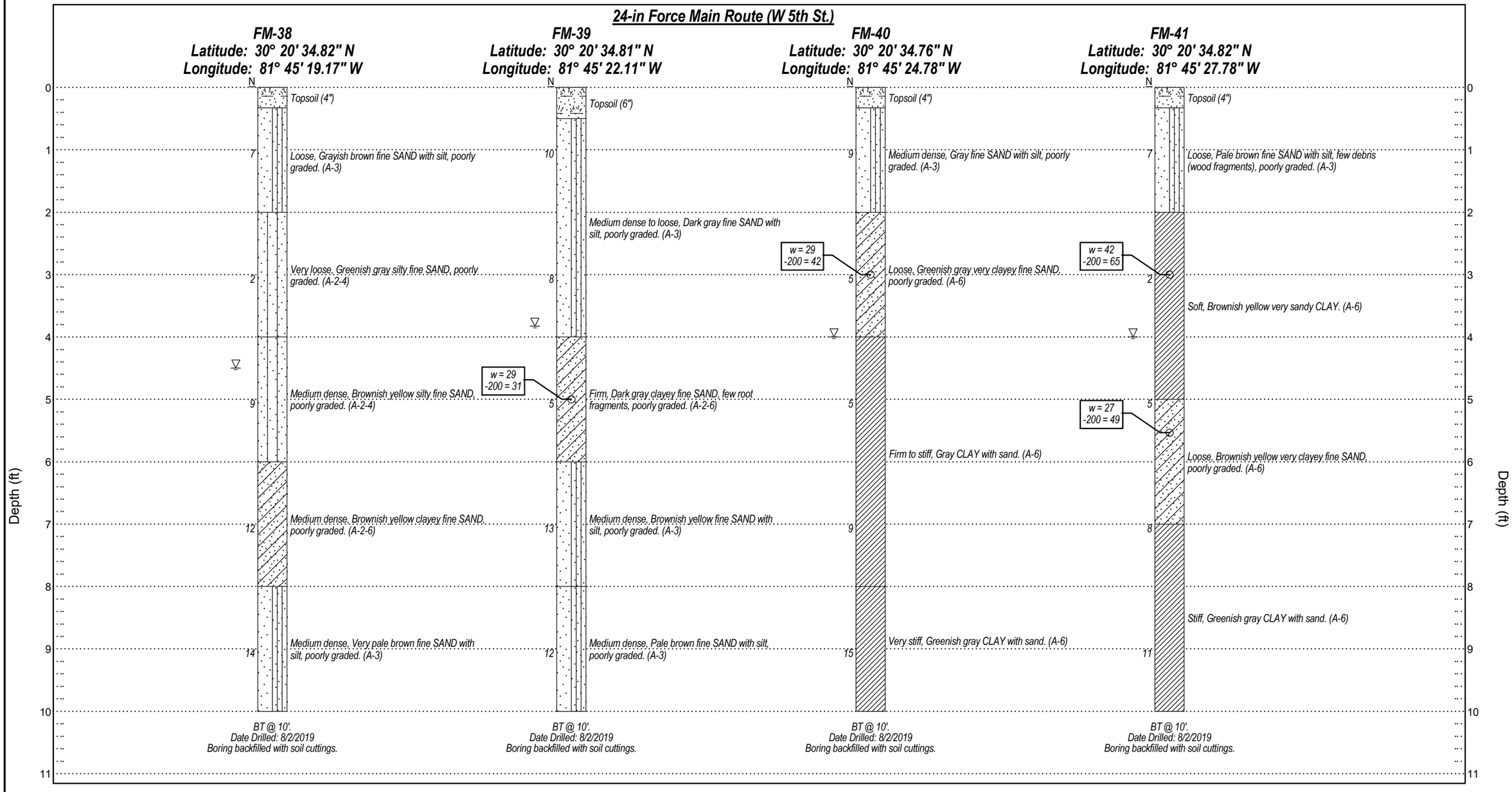
SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 11

24-in Force Main Route (W 5th St.)



Legend

Topsoil
Clayey Fine Sand
Fine Sand with Silt
Clay
Silty Fine Sand

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

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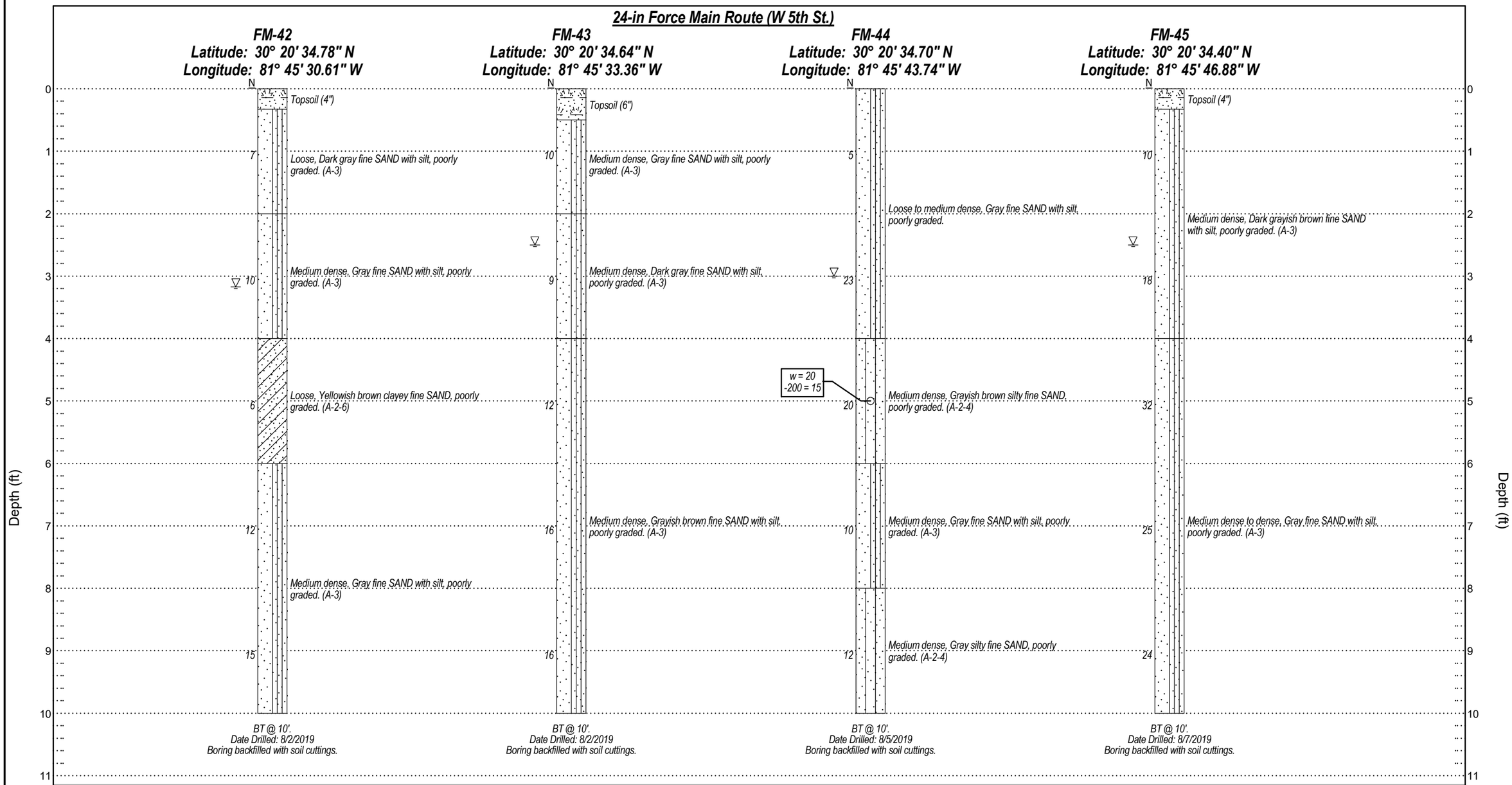
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 12

24-in Force Main Route (W 5th St.)



Legend

Topsoil

Fine Sand with Silt

Clayey Fine Sand

Silty Fine Sand

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve

REVISIONS					
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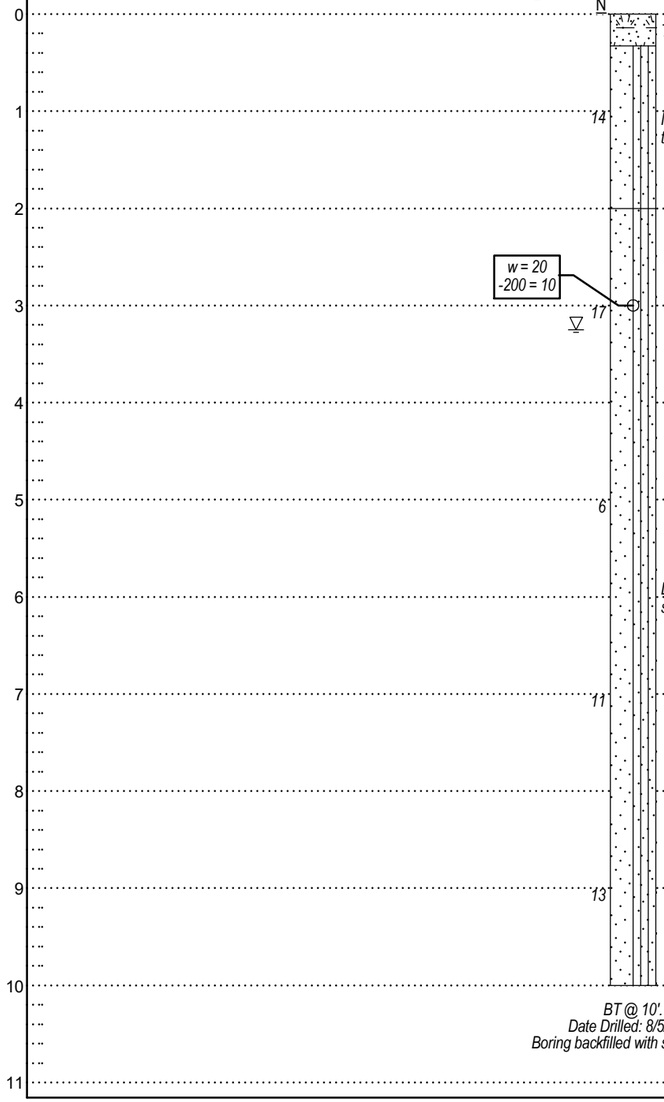
SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

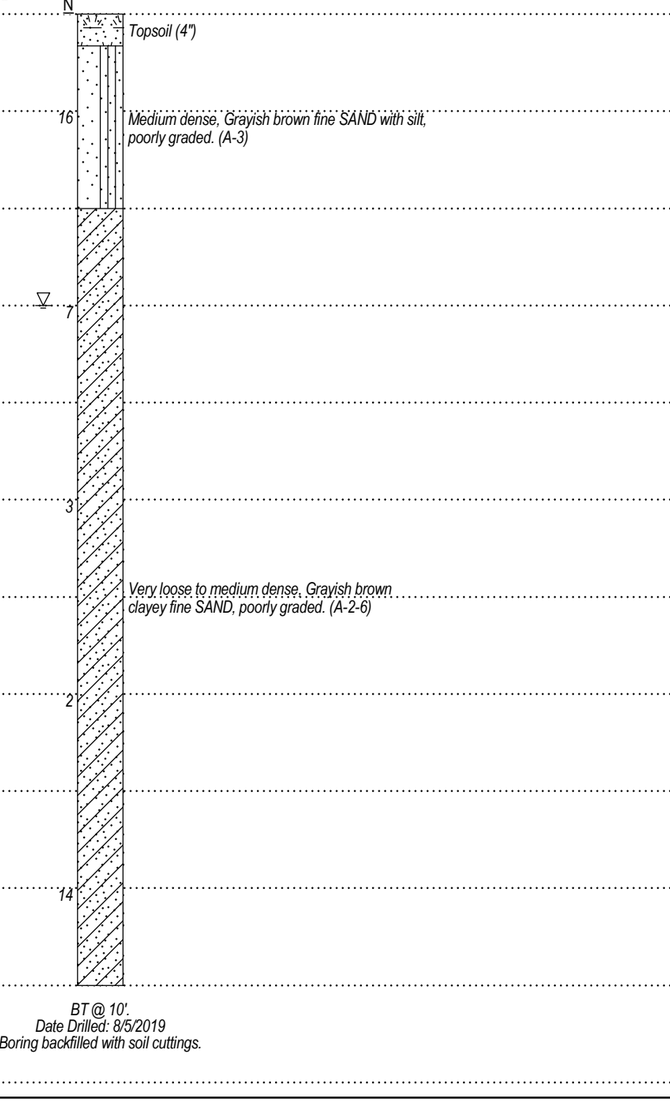
FIGURE NO. 13

24-in Force Main Route (W 5th St.)

FM-46
Latitude: 30° 20' 34.53" N
Longitude: 81° 45' 49.52" W



FM-47
Latitude: 30° 20' 34.48" N
Longitude: 81° 45' 51.90" W



Depth (ft)

0 1 2 3 4 5 6 7 8 9 10 11

Legend

Topsoil | Fine Sand with Silt | Clayey Fine Sand

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve

REVISIONS					
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3728 Philips Highway, Suite 208, Jacksonville, FL 32207

Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 14

24-in Force Main Route (Pickettville Rd.)

FM-63
Latitude: 30° 20' 40.14" N
Longitude: 81° 45' 52.82" W

N	Description
	Asphalt (6")
	Limerock Base (6")
30	Dense, Dark gray fine SAND with silt, little gravel (rock fragments), poorly graded. (A-3)
	Dense, Gray fine SAND with silt, poorly graded. (A-3)
4	Loose, Greenish gray clayey fine SAND, poorly graded. (A-2-6)
5	Firm, Greenish gray CLAY with sand. (A-6)
6	Loose to medium dense, Greenish gray clayey fine SAND, poorly graded. (A-2-6)
12	

BT @ 10'.
Date Drilled: 10/11/2019
Boring backfilled with soil cuttings.

FM-64
Latitude: 30° 20' 46.32" N
Longitude: 81° 45' 53.16" W

N	Description
	Asphalt (4 1/2")
	Limerock Base (5")
23	Medium dense, Dark gray fine SAND, trace silt, poorly graded. (A-3)
13	Medium dense, Very dark gray silty fine SAND, poorly graded. (A-2-4)
4	Loose, Greenish gray clayey fine SAND, poorly graded. (A-2-6)
4	Loose, Grayish brown clayey fine SAND, trace debris (glass fragments), poorly graded. (A-2-6)
7	Loose, Greenish gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 10'.
Date Drilled: 10/11/2019
Boring backfilled with soil cuttings.

24-in Force Main Route (Imeson Rd.)

FM-65
Latitude: 30° 20' 43.06" N
Longitude: 81° 46' 21.02" W

N	Description
	Topsoil (3")
4	Loose, Gray silty fine SAND with clay, poorly graded. (A-2-4)
1	Soft, Brownish yellow CLAY with sand. (A-6)
8	
7	Stiff to firm, Greenish gray CLAY, trace sand. (A-6)
5	

BT @ 10'.
Date Drilled: 10/9/2019
Boring backfilled with soil cuttings.

Depth (ft)

Legend

- Asphalt
- Fine Sand with Silt
- Limerock Base
- Clayey Fine Sand
- Fine Sand
- Clay

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Meskel & Associates Engineering
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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 15

Jack & Bore Crossing (W 5th St. & Edgewood Ave N)

JB-1
Latitude: 30° 20' 38.41" N
Longitude: 81° 43' 51.29" W

Depth (ft)	N	Description
0		Topsoil (3")
	5	Loose, Dark yellowish brown fine SAND, few gravel (rock and shell fragments), trace root fragments, poorly graded. (SP)
	5	Loose, Light yellowish brown clayey fine SAND, poorly graded. (SC)
	9	Stiff, Greenish gray very sandy CLAY. (CH)
	7	
	10	Stiff, Greenish gray very sandy CLAY, trace gravel (shell and rock fragments). (CH)
	6	Loose, Greenish gray silty fine SAND, poorly graded. (SM)
	7	Loose, Gray fine SAND with silt, poorly graded. (SP-SM)
	4	Loose, Greenish gray silty fine SAND, poorly graded. (SM)
	5	Loose, Greenish gray silty fine SAND, few gravel (shell fragments), poorly graded. (SM)
	14	Medium dense, Dark grayish brown fine SAND with silt, poorly graded. (SP-SM)
	14	Medium dense, Dark greenish gray fine SAND with silt, poorly graded. (SP-SM)
40		BT @ 40.'

w = 30, -200 = 69 (at 5 ft)
w = 28, -200 = 29 (at 15 ft)

Date Drilled: 8/6/2019
Boring Grouted upon Termination.

JB-2
Latitude: 30° 20' 38.15" N
Longitude: 81° 43' 52.90" W

Depth (ft)	N	Description
0		Topsoil (2")
	6	Stiff, Greenish gray sandy CLAY. (CH)
	7	Loose, Light yellowish brown very clayey fine SAND, poorly graded. (SC)
	6	Stiff, Greenish gray sandy CLAY. (CH)
	10	
	7	
	7	Loose, Greenish gray clayey fine SAND, poorly graded. (SC)
	12	
	4	Medium dense to loose, Greenish gray silty fine SAND, poorly graded. (SM)
	6	
	10	Medium dense, Dark grayish brown silty fine SAND, poorly graded. (SM)
	20	Medium dense, Dark gray silty fine SAND, poorly graded. (SM)
40		BT @ 40.'

w = 31, -200 = 76 (at 5 ft)
w = 25, -200 = 13 (at 15 ft)

Date Drilled: 8/6/2019
Boring Grouted upon Termination.

Legend

- Topsoil
- Clay
- Fine Sand
- Silty Fine Sand
- Clayey Fine Sand
- Fine Sand with Silt

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(SP) — Unified Soil Classification System (USCS)
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

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DATE:	MAE PROJECT NO.
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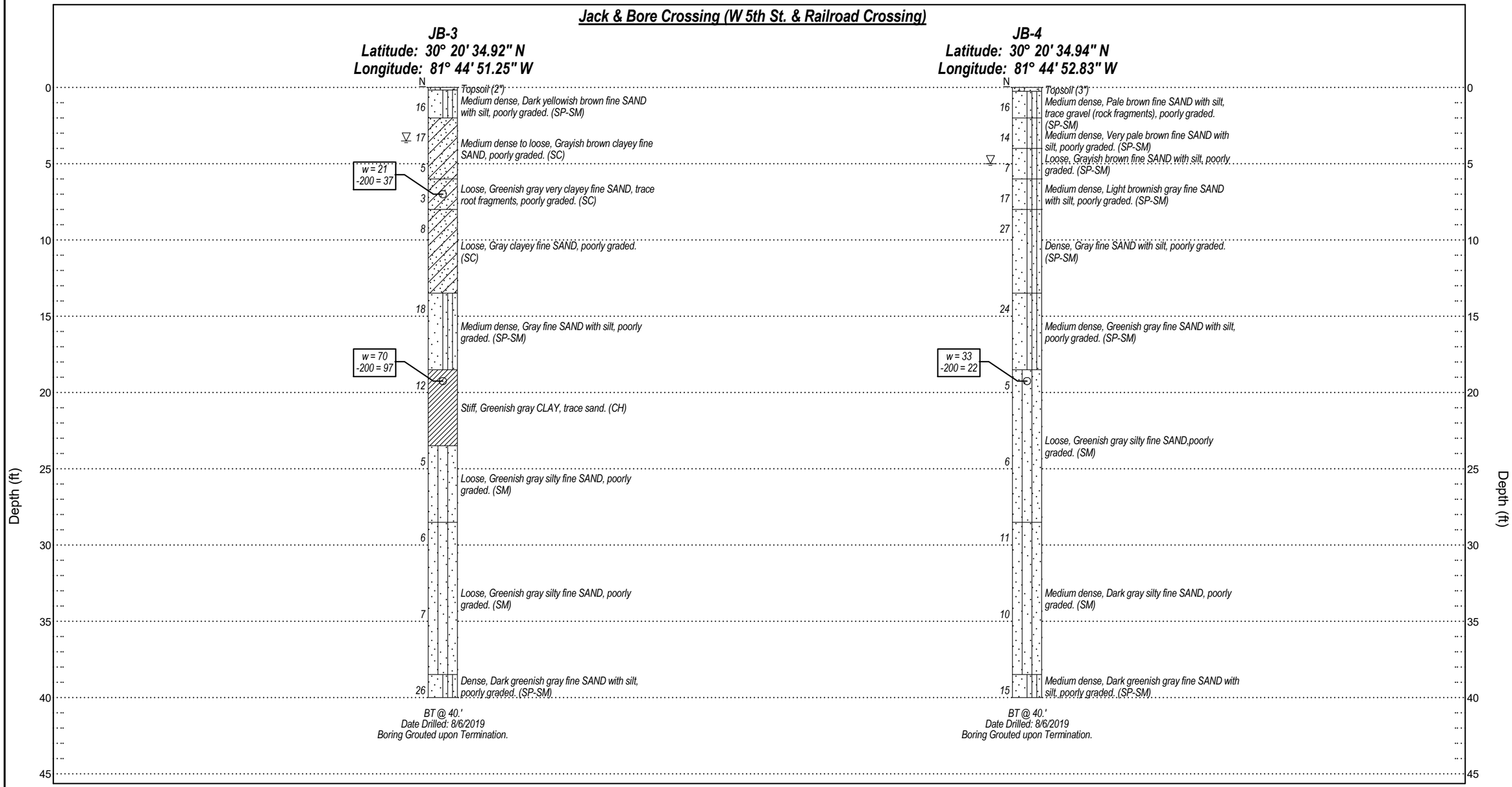
SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue*
Jacksonville, Florida

FIGURE NO. 16

Jack & Bore Crossing (W 5th St. & Railroad Crossing)



Legend

Topsoil
Clay
Fine Sand with Silt
Silty Fine Sand
Clayey Fine Sand

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(SP) — Unified Soil Classification System (USCS)
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS					
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Mott MacDonald Florida, LLC

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7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

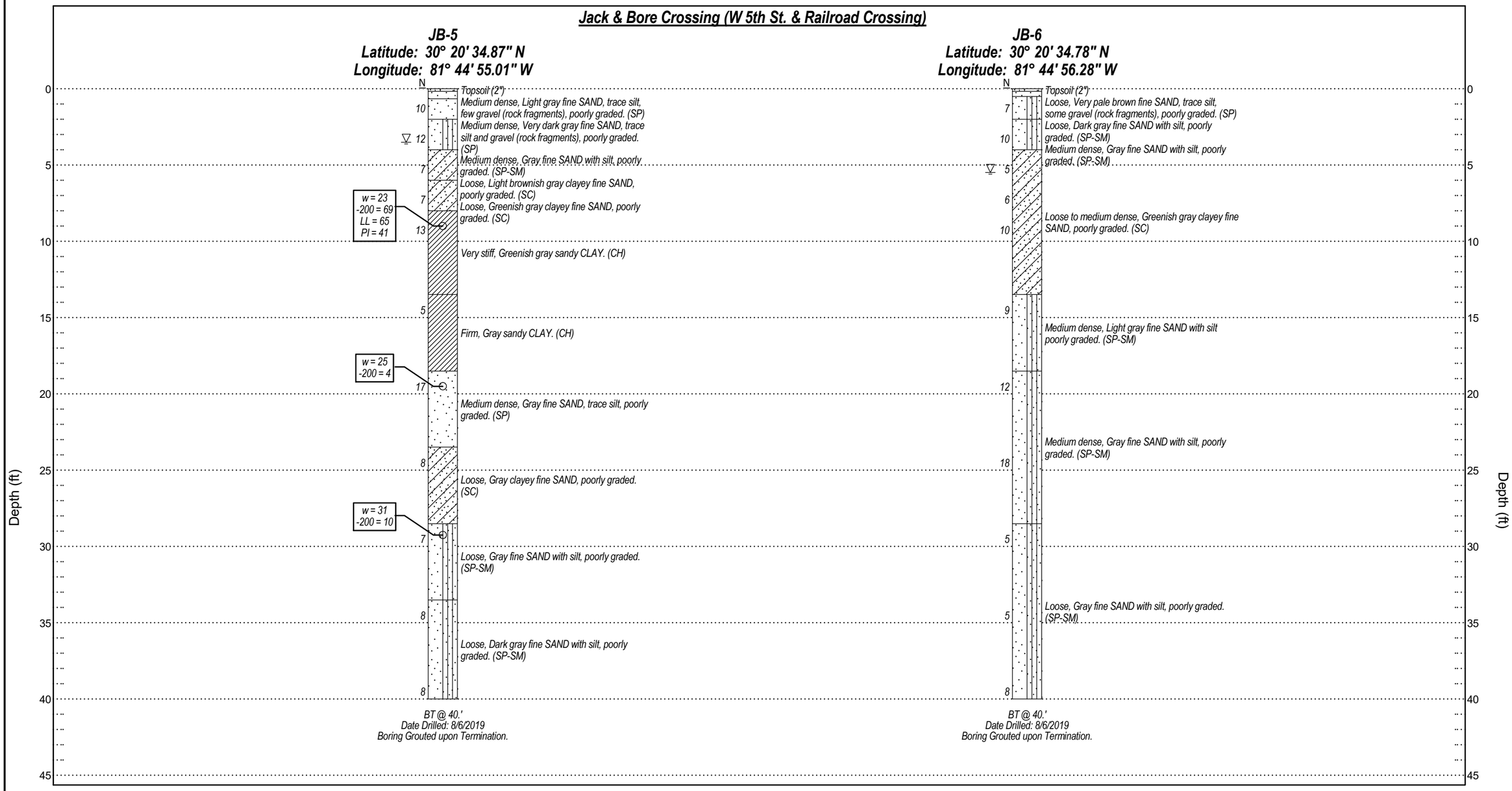
PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 17

Jack & Bore Crossing (W 5th St. & Railroad Crossing)

JB-5
Latitude: 30° 20' 34.87" N
Longitude: 81° 44' 55.01" W

JB-6
Latitude: 30° 20' 34.78" N
Longitude: 81° 44' 56.28" W



Legend

Topsoil
Clayey Fine Sand
Fine Sand
Clay
Fine Sand with Silt

N	Standard Penetration Resistance, Blows/Foot	(SP)	Unified Soil Classification System (USCS)	w	Natural Moisture Content (%)	LL	Liquid Limit
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

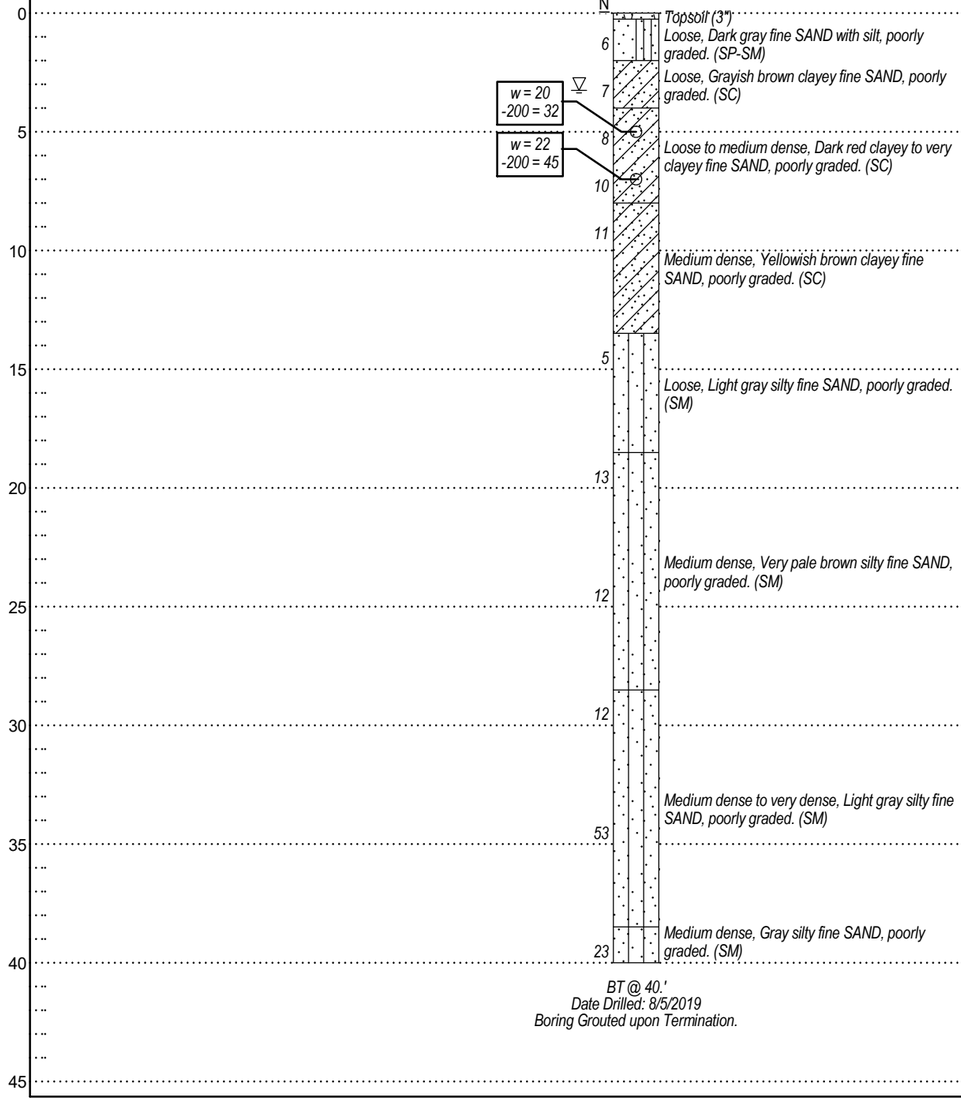
SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 18

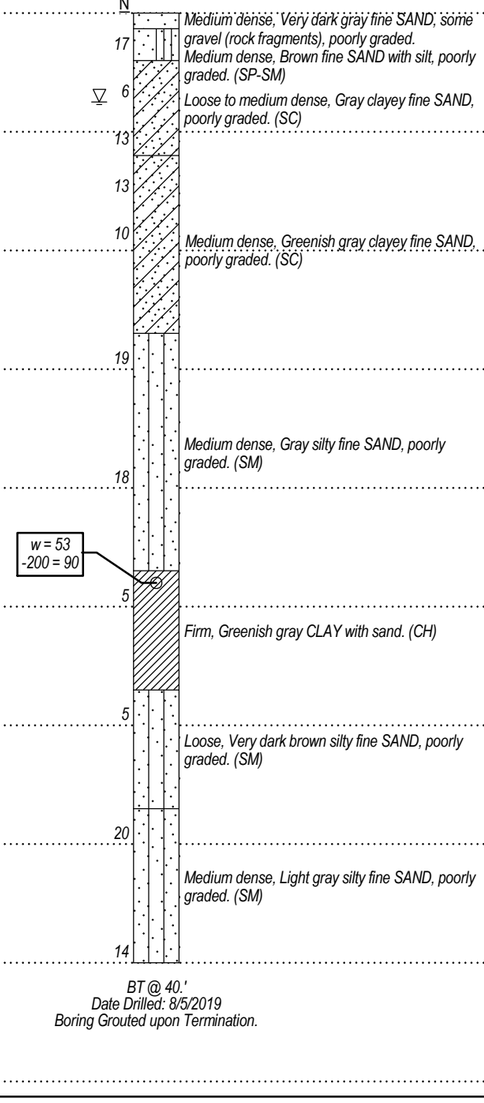
Jack & Bore Crossing (W 5th St. & Lane Ave N)

JB-7
Latitude: 30° 20' 34.67" N
Longitude: 81° 45' 06.27" W



BT @ 40.'
Date Drilled: 8/5/2019
Boring Grouted upon Termination.

JB-8
Latitude: 30°20'34.87"N
Longitude: 81°45'8.84"W



BT @ 40.'
Date Drilled: 8/5/2019
Boring Grouted upon Termination.

Depth (ft)

0 5 10 15 20 25 30 35 40 45

Legend

Topsoil
Silty Fine Sand
Fine Sand with Silt
Fine Sand
Clayey Fine Sand
Clay

N Standard Penetration Resistance, Blows/Foot
BT Boring Terminated at Depth Below Existing Grade
(SP) Unified Soil Classification System (USCS)
▽ Depth to Groundwater at Time of Drilling
w Natural Moisture Content (%)
-200 % Passing No. 200 U.S. Standard Sieve

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 19

HDD Borings (W 5th St. & I-295 W Beltway)

DD-1
Latitude: 30° 20' 34.67" N
Longitude: 81° 45' 36.91" W

Depth (ft)	N	Description
0		Asphalt (4 1/2")
	9	Medium dense to loose, Dark gray fine SAND with silt, poorly graded. (SP-SM)
	6	
5	15	Medium dense, Light gray fine SAND with silt, poorly graded. (SP-SM)
	14	w = 21, -200 = 37
	5	Loose, Gray very clayey fine SAND, poorly graded. (SC)
10		
	25	Dense to medium dense, Light brownish gray silty fine SAND, poorly graded. (SM)
15		
	10	w = 26, -200 = 27
20		
	10	Medium dense, Greenish gray silty fine SAND, poorly graded. (SM)
25		
	5	Loose, Greenish gray very clayey fine SAND, poorly graded. (SC)
30		w = 48, -200 = 93, LL = 90, PI = 53
	5	Firm, Greenish gray CLAY with sand. (CH)
35		
	6	Loose, Very dark gray fine SAND with silt, poorly graded. (SP-SM)
40		
	34	Very dense, Gray fine SAND with silt, poorly graded. (SP-SM)
45		
	21	Medium dense, Dark gray fine SAND with silt, poorly graded. (SP-SM)
50		
	13	Medium dense, Dark gray silty fine SAND, poorly graded. (SM)
55		
	50	Very dense, Light gray clayey fine SAND, poorly graded. (SC)
60		BT @ 60.'
65		Date Drilled: 8/5/2019
		Boring Grouted and Capped with Asphalt Cold Patch.

DD-2
Latitude: 30° 20' 34.62" N
Longitude: 81° 45' 38.85" W

Depth (ft)	N	Description
0		Topsoil (3")
	17	Medium dense, Dark grayish brown fine SAND, trace silt, some gravel (rock fragments), poorly graded. (SP)
	19	Medium dense, Dark brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (SP-SM)
	31	
	47	Very dense, Very dark brown fine SAND with silt, poorly graded. (SP-SM)
	30	Very dense, Light yellowish brown fine SAND with silt, poorly graded. (SP-SM)
		Very dense, Light gray fine SAND with silt, poorly graded. (SP-SM)
15	35	
	21	Medium dense, Light brownish gray fine SAND with silt, poorly graded. (SP-SM)
20		
	22	
	6	w = 35, -200 = 59
25		Stiff, Greenish gray very sandy CLAY. (CH)
	5	
30		
	5	Loose, Dark greenish gray clayey fine SAND, poorly graded. (SC)
35		
	5	
40		
	21	Medium dense, Dark gray fine SAND with silt, poorly graded. (SP-SM)
45		
	18	Medium dense, Gray silty fine SAND, poorly graded. (SM)
50		
55		
60		BT @ 60.'
65		Date Drilled: 8/9/2019
		Boring Grouted upon Termination.

DD-3
Latitude: 30° 20' 34.69" N
Longitude: 81° 45' 41.02" W

Depth (ft)	N	Description
0		Topsoil (1")
	21	Medium dense, Very dark gray fine SAND with silt, trace silt and root fragments, poorly graded. (SP-SM)
	6	w = 22, -200 = 26
	10	Loose, Dark grayish brown silty fine SAND, poorly graded. (SM)
	8	w = 24, -200 = 48
	10	Loose to medium dense, Greenish gray very clayey fine SAND, poorly graded. (SC)
15	7	
		Loose, Gray clayey fine SAND, poorly graded. (SC)
20	11	Medium dense, Grayish brown fine SAND with silt,poorly graded. (SP-SM)
	5	
25		
	7	Loose, Greenish gray very clayey fine SAND, poorly graded. (SC)
30		
	4	w = 73, -200 = 98
35		Firm, Greenish gray CLAY with sand. (CH)
	4	
40		
	44	Loose, Dark greenish gray silty fine SAND, poorly graded. (SM)
45		
	16	Very dense, Gray silty fine SAND, poorly graded. (SM)
50		
55	35	Medium dense, Dark greenish gray silty fine SAND, poorly graded. (SM)
60		Very dense, Greenish gray clayey fine SAND, few gravel (shell fragments), poorly graded. (SC)
65		BT @ 60.'
		Date Drilled: 8/7/2019
		Boring Grouted upon Termination.

Legend

- Asphalt
- Silty Fine Sand
- Fine Sand
- Fine Sand with Silt
- Clay
- Clayey Fine Sand
- Topsoil

N	Standard Penetration Resistance, Blows/Foot	(SP)	Unified Soil Classification System (USCS)	w	Natural Moisture Content (%)	LL	Liquid Limit
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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3728 Philips Highway, Suite 208, Jacksonville, FL 32207

Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 20

Jack & Bore Crossing (Railroad Crossing & Trail)

JB-9
Latitude: 30° 20' 44.69" N
Longitude: 81° 46' 07.31" W

N	Depth (ft)	Description
7	0	Topsoil (4")
		Loose, Brownish yellow silty fine SAND, trace clay, poorly graded. (SM)
6 ▽	5	
		Loose to medium dense, Light yellowish brown clayey fine SAND, poorly graded. (SC)
14		
22		
21	10	Medium dense, Greenish gray clayey fine SAND, poorly graded. (SC)
10	15	Medium dense, Light gray clayey fine SAND, poorly graded. (SC)
5	20	Loose, Greenish gray clayey fine SAND, poorly graded. (SC)
6	25	Stiff, Greenish gray CLAY with sand. (CL)
5	30	Loose, Greenish gray clayey fine SAND, poorly graded. (SC)
5	35	Loose, Very dark brown silty fine SAND, poorly graded. (SM)
7	40	Loose, Gray silty fine SAND, poorly graded. (SM)

BT @ 40.'
Date Drilled: 10/9/2019
Boring Grouted upon Termination.

JB-10
Latitude: 30° 20' 44.85" N
Longitude: 81° 46' 05.99" W

N	Depth (ft)	Description
10	0	Topsoil (3")
		Medium dense, Dark gray fine SAND with silt, poorly graded. (SP-SM)
10 ▽	5	
13		
14		Medium dense, Greenish gray clayey fine SAND, poorly graded. (SC)
17	10	
16	15	Medium dense, Grayish brown silty fine SAND, poorly graded. (SM)
5	20	Loose, Light gray silty fine SAND, poorly graded. (SM)
7	25	Stiff, Greenish gray CLAY with sand. (CL)
22	30	
44	35	Medium dense to very dense, Gray silty fine SAND, poorly graded. (SM)
18	40	

BT @ 40.'
Date Drilled: 10/10/2019
Boring Grouted upon Termination.

Legend

- Topsoil
- Silty Fine Sand
- Fine Sand with Silt
- Clay
- Clayey Fine Sand

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(SP) — Unified Soil Classification System (USCS)
▽ — Depth to Groundwater at Time of Drilling

REVISIONS					
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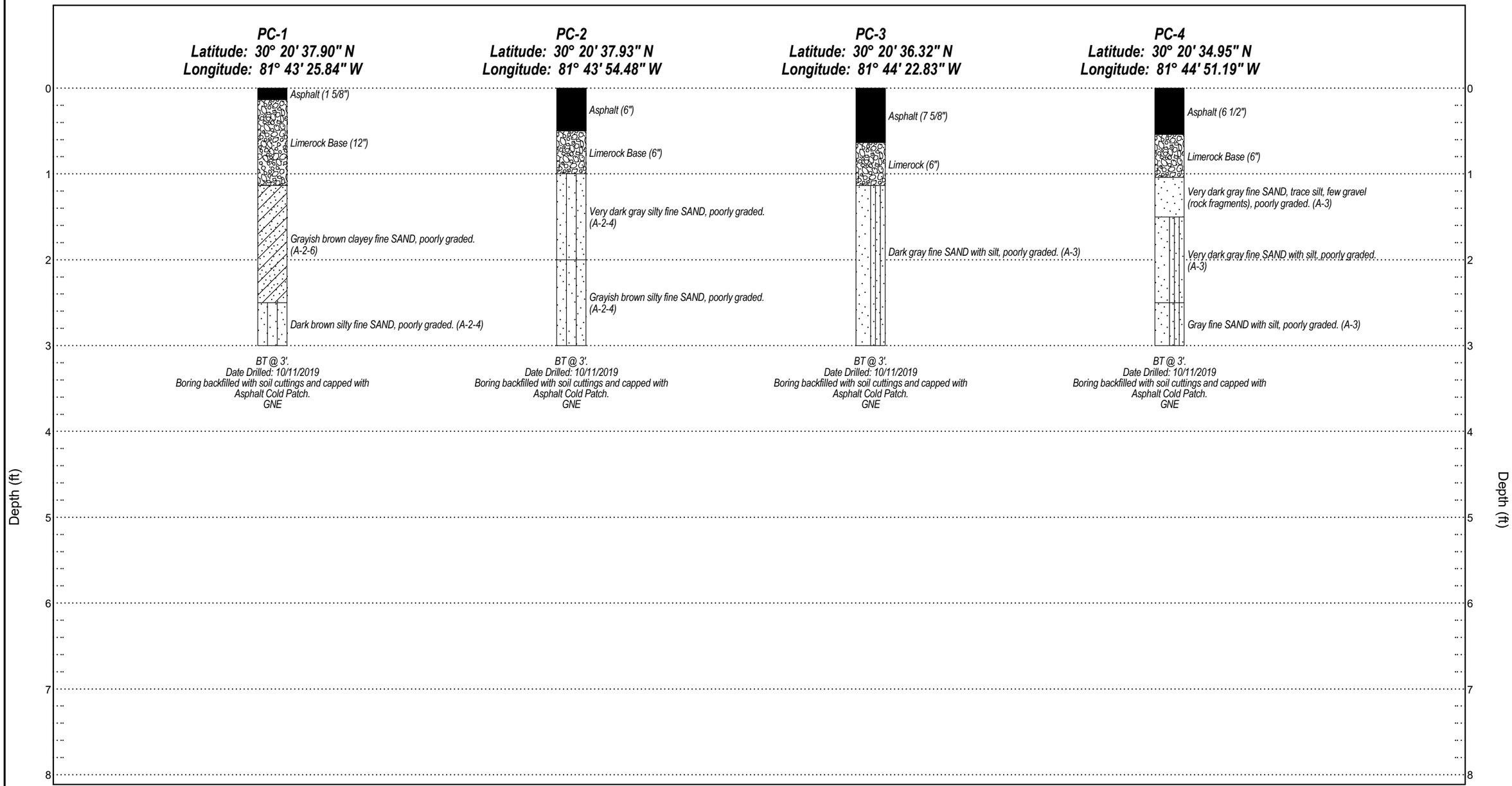
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 21



Legend

- Asphalt
- Limerock Base
- Clayey Fine Sand
- Silty Fine Sand
- Fine Sand with Silt
- Fine Sand

(A-3) *AASHTO Soil Classification System*

BT *Boring Terminated at Depth Below Existing Grade*

GNE *Groundwater Level Not Encountered at Time of Drilling*

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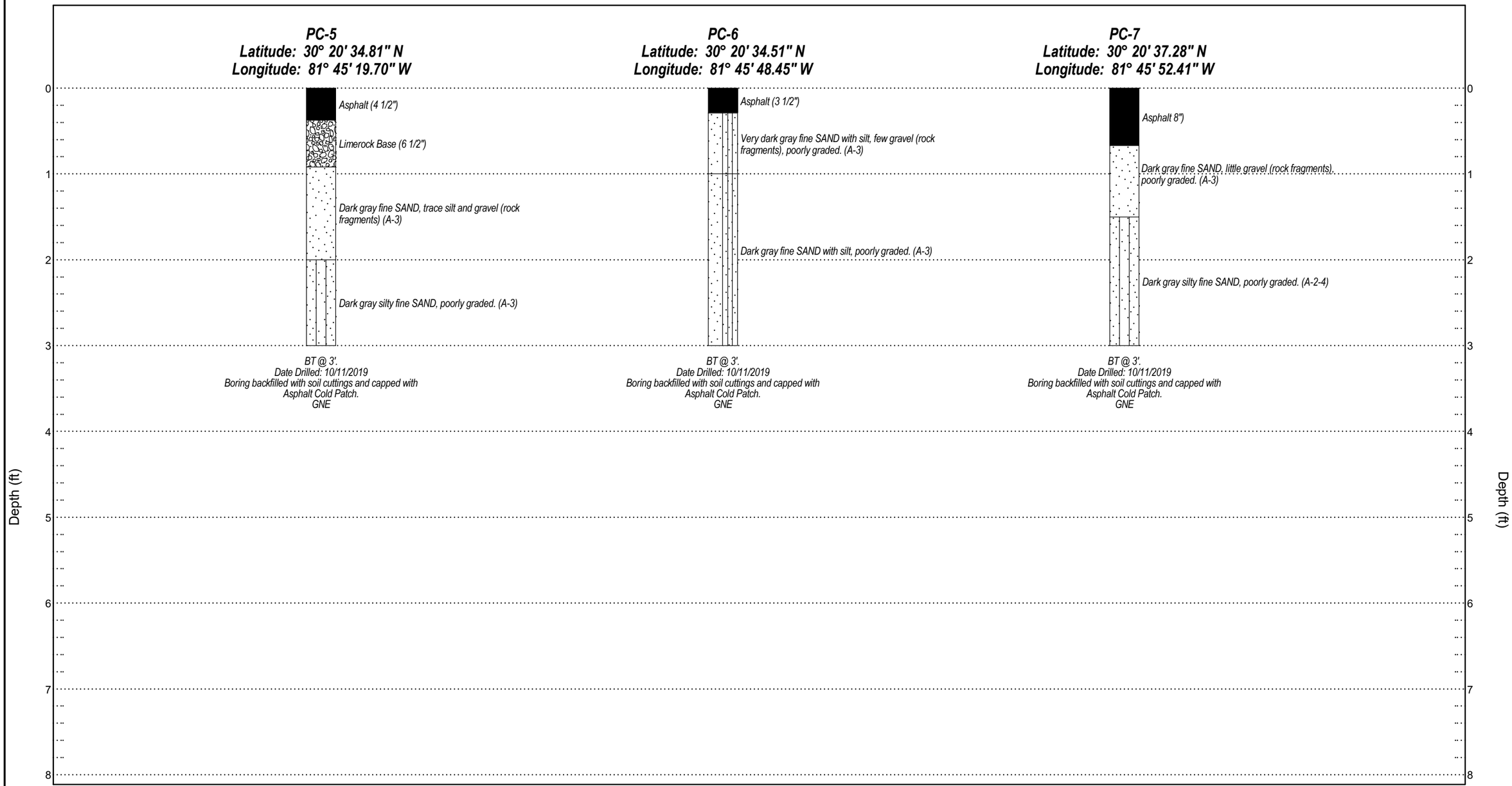
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 22



Legend

- Asphalt
- Limerock Base
- Fine Sand
- Silty Fine Sand
- Fine Sand with Silt

(A-3) *AASHTO Soil Classification System*

BT *Boring Terminated at Depth Below Existing Grade*

GNE *Groundwater Level Not Encountered at Time of Drilling*

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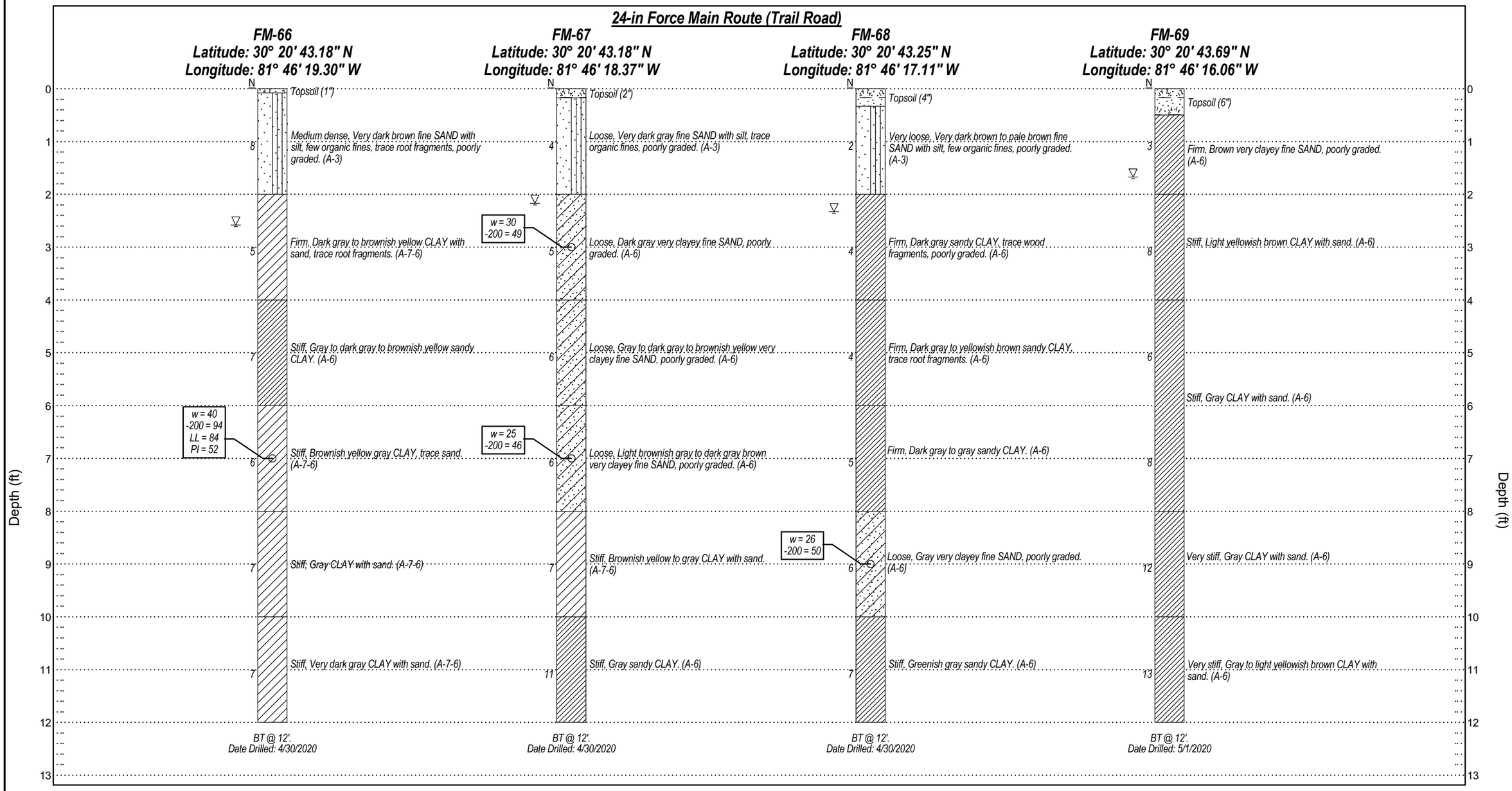
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 23

24-in Force Main Route (Trail Road)



Legend

Topsoil
Clay
Fine Sand with Silt
Clayey Fine Sand
Clay, High Plasticity

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve
LL — Liquid Limit
PI — Plasticity Index

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 24

24-in Force Main Route (Trail Road)

FM-70
Latitude: 30° 20' 43.65" N
Longitude: 81° 46' 14.80" W

N

Depth (ft)	N	Description
0		Topsoil (6")
1	4	Loose, Very dark gray fine SAND with silt, poorly graded. (A-3)
2		▽
3	3	Firm, Dark gray CLAY with sand. (A-6)
4	8	
5		
6		Stiff to very stiff, Gray CLAY with sand. (A-6)
7	13	
8		
9	14	Very stiff, Dark gray CLAY with sand. (A-6)
10		
11	15	Very stiff, Light brownish gray CLAY with sand. (A-6)
12		BT @ 12'. Date Drilled: 5/1/2020
13		

FM-71
Latitude: 30° 20' 43.76" N
Longitude: 81° 46' 14.01" W

▽ N

Depth (ft)	N	Description
0		Topsoil (6")
1	3	Firm, Dark grayish brown CLAY with sand. (A-6)
2		
3	5	
4		Firm to Stiff, Light brownish gray to brownish yellow CLAY with sand. (A-6)
5	9	
6		
7	10	Stiff, Grayish brown CLAY with sand. (A-6)
8		
9	9	Stiff to very stiff, Greenish gray CLAY with sand. (A-6)
10		
11	13	
12		BT @ 12'. Date Drilled: 5/1/2020
13		

FM-72
Latitude: 30° 20' 43.72" N
Longitude: 81° 46' 12.72" W

▽ N

Depth (ft)	N	Description
0		Topsoil (3")
1	0	Very loose, Dark gray fine SAND with silt, trace root fragments, poorly graded. (A-3)
2		
3	7	Loose, Gray clayey fine SAND, poorly graded. (A-2-6)
4		
5	10	Medium dense, Gray clayey fine SAND, few root fragments, poorly graded. (A-2-6)
6		
7	15	w = 17 -200 = 32
8		Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)
9	20	
10		
11	16	Medium dense, Gray silty fine SAND, trace clay nodules, poorly graded. (A-2-4)
12		BT @ 12'. Date Drilled: 5/1/2020
13		

FM-73
Latitude: 30° 20' 43.97" N
Longitude: 81° 46' 11.67" W

N

Depth (ft)	N	Description
0		Topsoil (5")
1	5	Loose, Dark gray fine SAND with silt, poorly graded. (A-3)
2		
3	4	w = 20 -200 = 31 Loose, Gray to brownish yellow clayey fine SAND, poorly graded. (A-2-6)
4		
5	14	Very stiff, Gray CLAY with sand. (A-6)
6		
7	15	Medium dense, Gray very clayey fine SAND, poorly graded. (A-2-6)
8		
9	18	Very stiff, Gray CLAY with sand. (A-6)
10		
11	15	Medium dense, Gray silty fine SAND, trace clay, poorly graded. (A-2-4)
12		BT @ 12'. Date Drilled: 5/1/2020
13		

Legend

Topsoil
Clayey Fine Sand
Fine Sand with Silt
Silty Fine Sand
Clay

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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3728 Philips Highway, Suite 208, Jacksonville, FL 32207

Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 25

24-in Force Main Route (Trail Road)

FM-74
Latitude: 30° 20' 44.59" N
Longitude: 81° 46' 10.73" W

N

- 2 — Topsoil (4")
- 2 — Very loose, Gray fine SAND with silt, poorly graded. (A-3)
- 5 — Loose to medium dense, Gray to brownish yellow clayey fine SAND, poorly graded. (A-2-6)
  - w = 17, -200 = 31, LL = 42, PI = 25
- 13
- 17 — Very stiff, Gray CLAY with sand. (A-6)
- 18
- 15 — Medium dense, Gray silty fine SAND, trace clay, poorly graded. (A-2-4)

BT @ 12'.
Date Drilled: 5/1/2020

FM-75
Latitude: 30° 20' 44.23" N
Longitude: 81° 46' 09.29" W

N

- 3 — Topsoil (6")
- 3 — Loose, Very dark gray fine SAND with silt, poorly graded. (A-3)
- 6
- 9 — Loose to medium dense, Gray to brownish yellow very clayey fine SAND, poorly graded. (A-6)
  - w = 21, -200 = 40
- 11
- 14

BT @ 12'.
Date Drilled: 5/1/2020

FM-76
Latitude: 30° 20' 44.83" N
Longitude: 81° 46' 04.73" W

N

- 5 — Loose, Very dark gray fine SAND with silt, poorly graded. (A-3)
- 6 — Loose, Gray to yellowish brown clayey fine SAND with silt, poorly graded. (A-2-6)
- 3 — Loose, Dark gray clayey fine SAND, poorly graded. (A-2-6)
- 7 — Stiff, Greenish gray CLAY with sand. (A-6)
- 7
- 8 — Loose to medium dense, Gray to greenish gray clayey fine SAND with silt, poorly graded. (A-2-6)

BT @ 12'.
Date Drilled: 5/5/2020

FM-77
Latitude: 30° 20' 44.94" N
Longitude: 81° 46' 03.60" W

N

- 4 — Loose, Very dark gray fine SAND with silt, poorly graded. (A-3)
- 4 — Loose, Gray clayey fine SAND, trace silt, poorly graded. (A-2-6)
- 6 — Loose, Gray clayey fine SAND, poorly graded. (A-2-6)
- 7 — Loose, Gray to greenish gray clayey fine SAND, poorly graded. (A-2-6)
- 5
- 8 — Loose to medium dense, Light brownish gray to gray clayey fine SAND, poorly graded. (A-2-6)

BT @ 12'.
Date Drilled: 5/5/2020

Depth (ft): 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13

Legend

- Topsoil
- Clay
- Fine Sand with Silt
- Silty Fine Sand
- Clayey Fine Sand

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)	LL	Liquid Limit
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

REVISIONS

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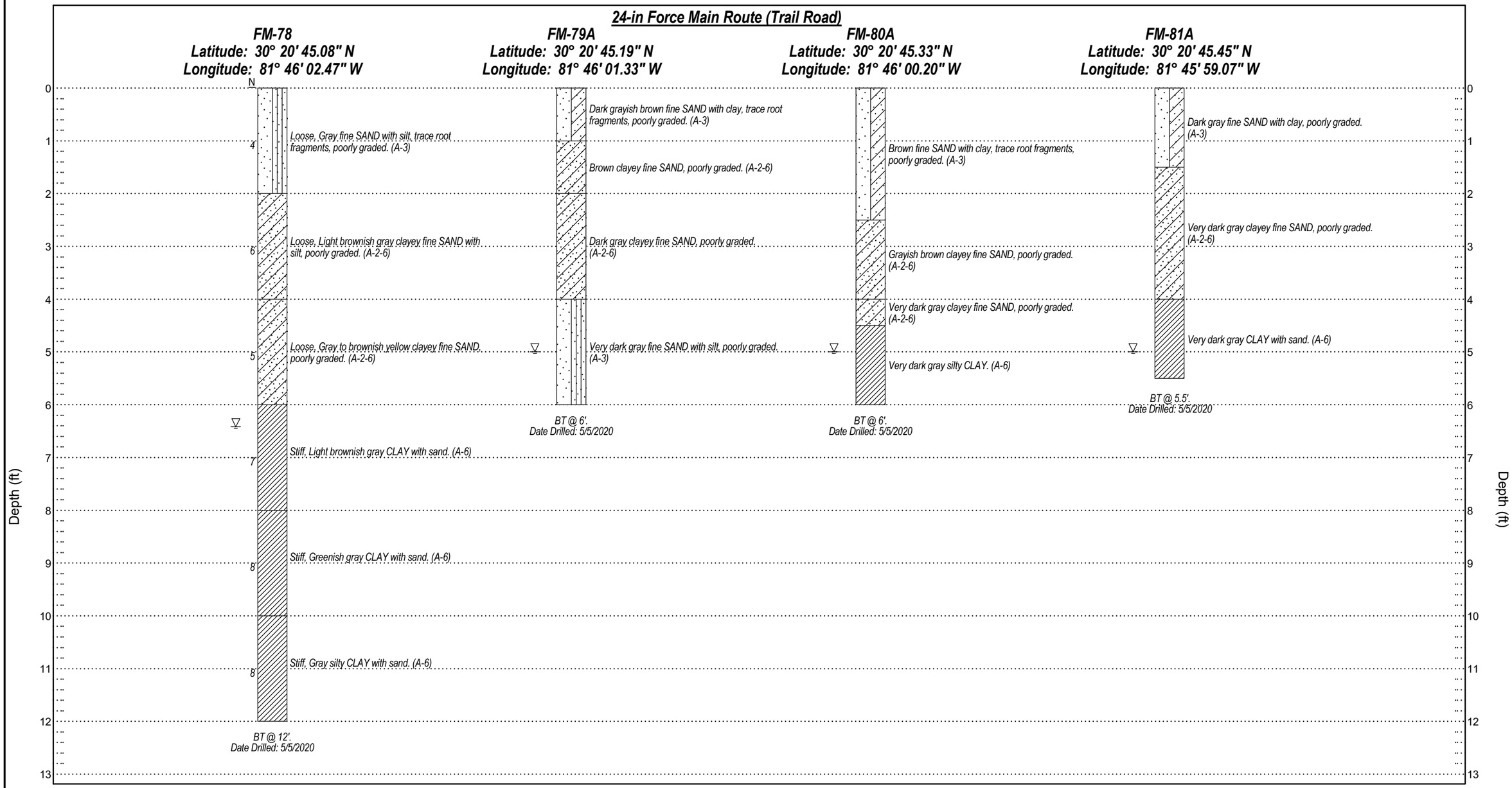
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 26

24-in Force Main Route (Trail Road)



Legend

Fine Sand with Silt

Fine Sand with Clay

Clayey Fine Sand

Clay

N — Standard Penetration Resistance, Blows/Foot

BT — Boring Terminated at Depth Below Existing Grade

(A-3) — AASHTO Soil Classification System

▽ — Depth to Groundwater at Time of Drilling

REVISIONS					
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SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 27

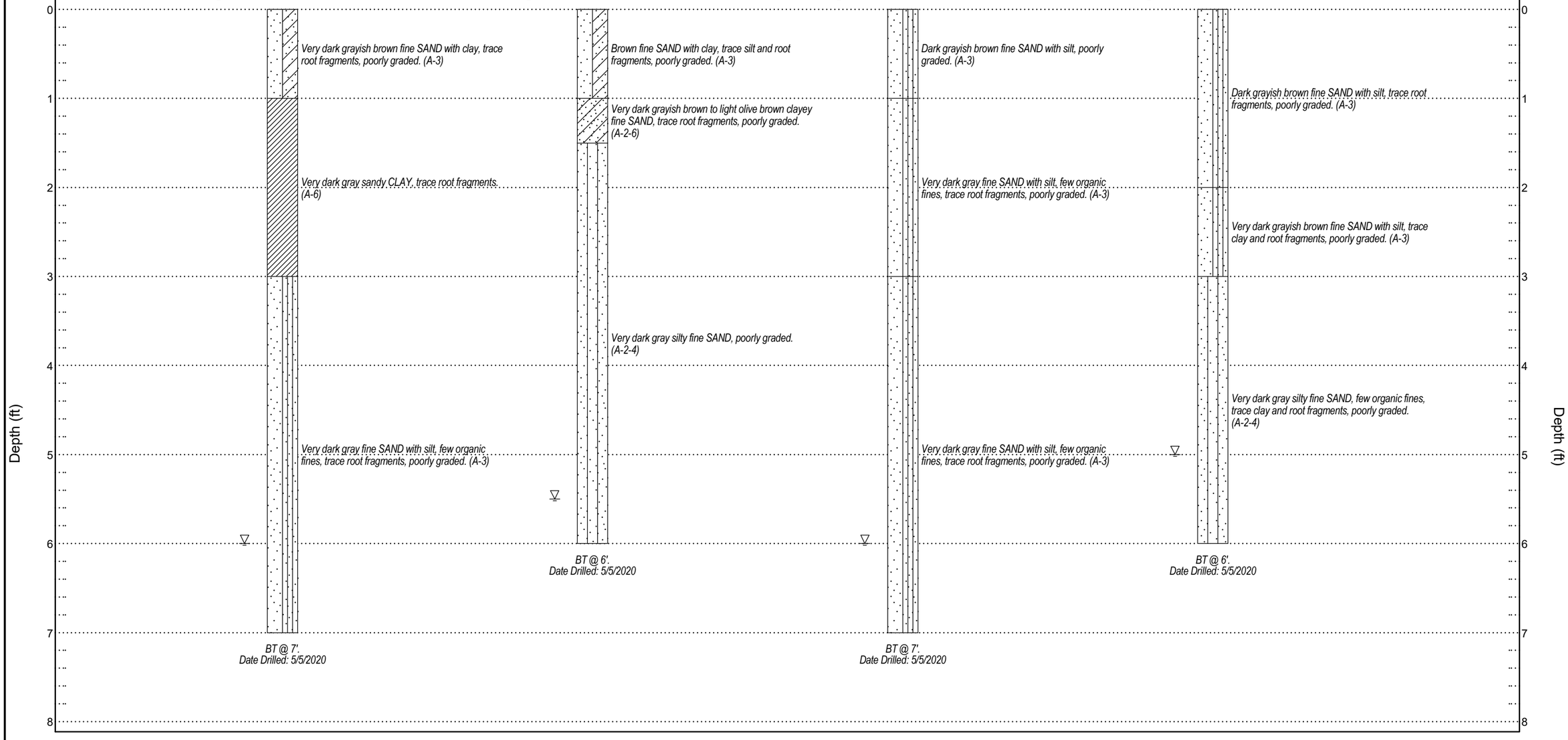
24-in Force Main Route (Trail Road)

FM-82A
Latitude: 30° 20' 45.58" N
Longitude: 81° 45' 57.93" W

FM-83A
Latitude: 30° 20' 45.71" N
Longitude: 81° 45' 56.81" W

FM-84A
Latitude: 30° 20' 45.83" N
Longitude: 81° 45' 55.67" W

FM-85A
Latitude: 30° 20' 45.97" N
Longitude: 81° 45' 54.54" W



Legend

- Fine Sand with Clay
- Clay
- Fine Sand with Silt
- Clayey Fine Sand
- Silty Fine Sand

N — *Standard Penetration Resistance, Blows/Foot*

BT — *Boring Terminated at Depth Below Existing Grade*

(A-3) — *AASHTO Soil Classification System*

▽ — *Depth to Groundwater at Time of Drilling*

REVISIONS					
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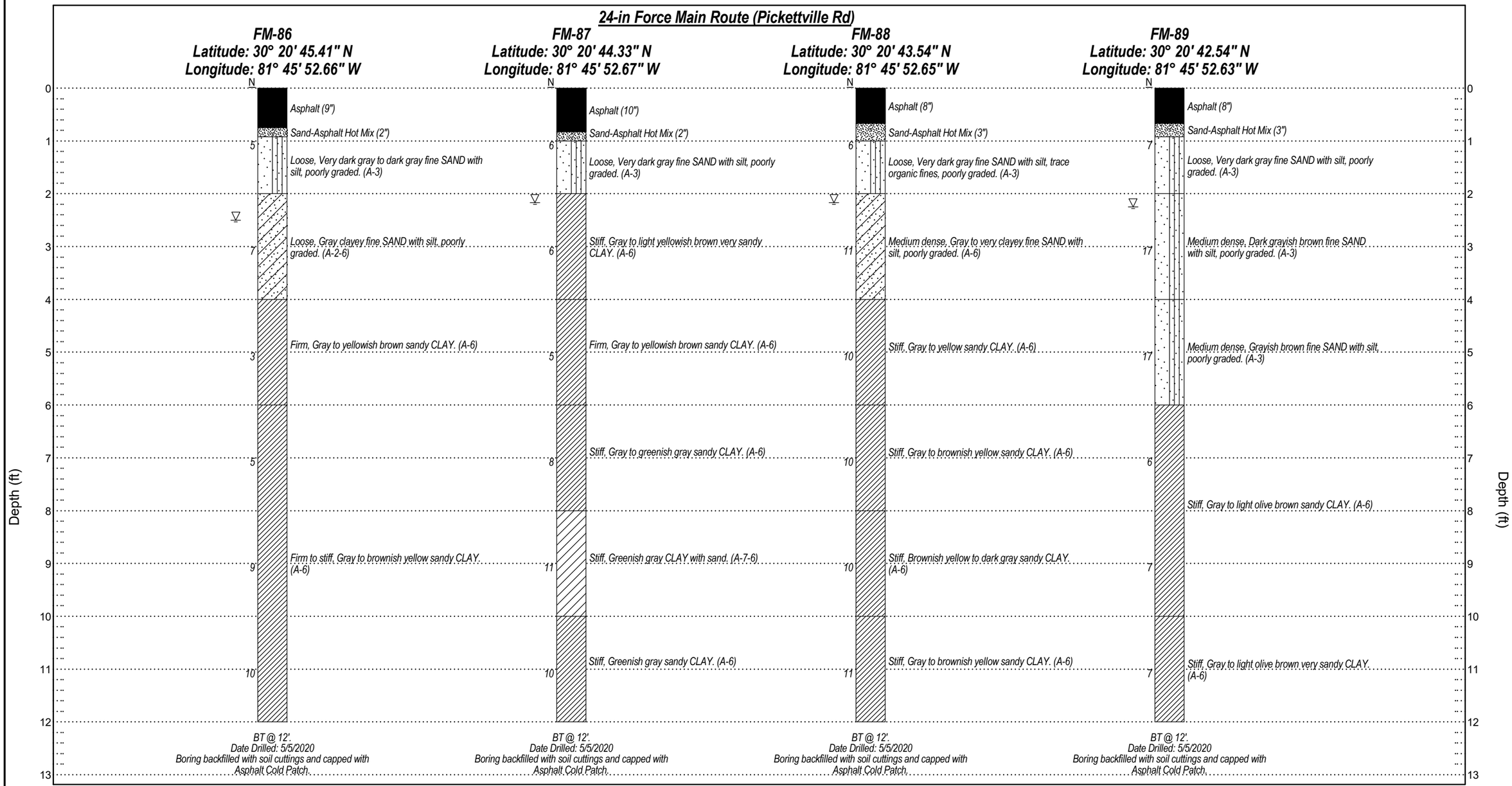
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue*
Jacksonville, Florida

FIGURE NO. 28

24-in Force Main Route (Pickettville Rd)



Legend

- Asphalt
- Sand-Asphalt Hot Mix
- Fine Sand with Silt
- Clayey Fine Sand
- Clay
- Clay, High Plasticity

N — Standard Penetration Resistance, Blows/Foot

BT — Boring Terminated at Depth Below Existing Grade

(A-3) — AASHTO Soil Classification System

▽ — Depth to Groundwater at Time of Drilling

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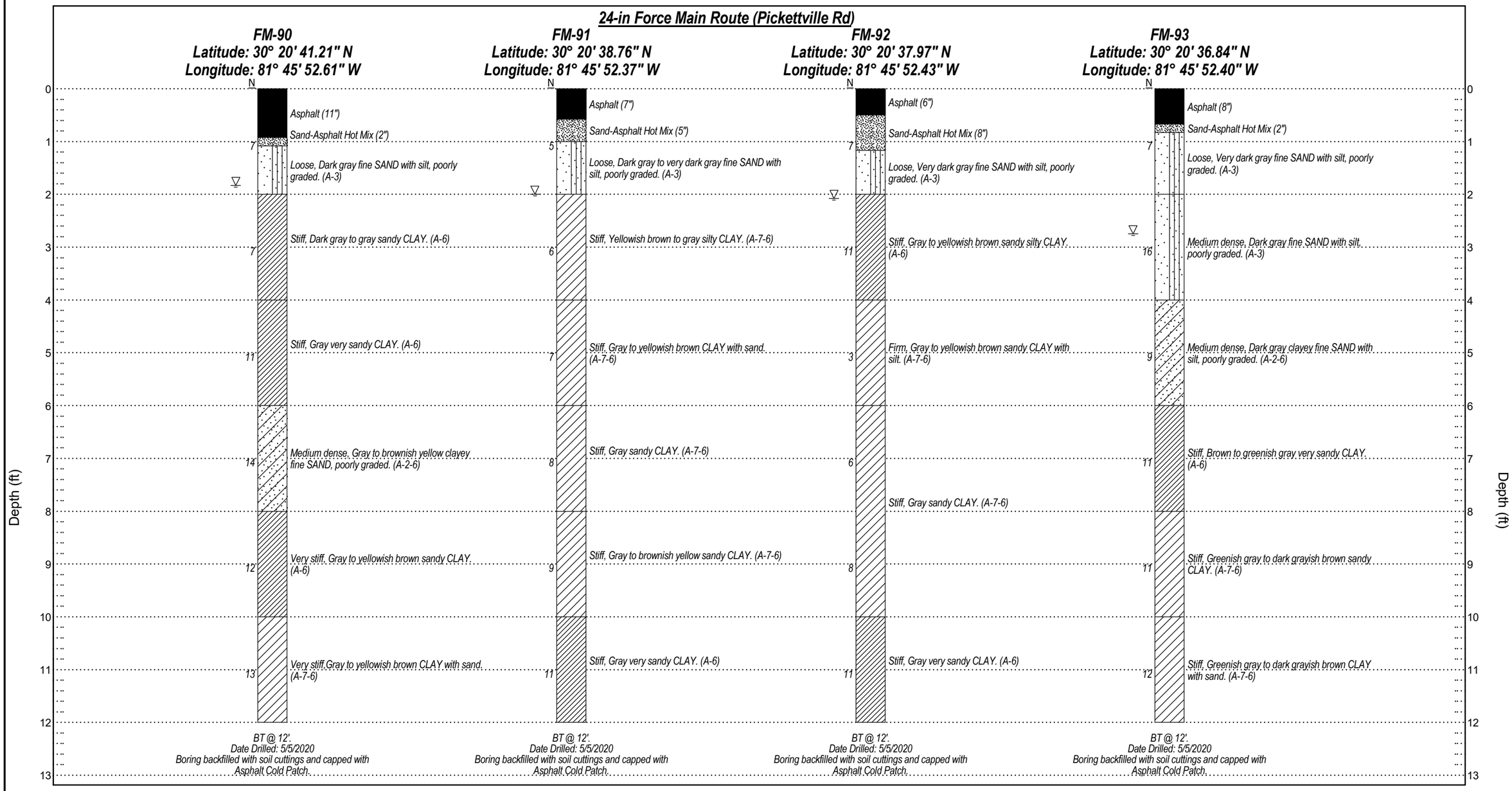
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue*
Jacksonville, Florida

FIGURE NO. 29

24-in Force Main Route (Pickettville Rd)



Legend

Asphalt	Sand-Asphalt Hot Mix	Fine Sand with Silt	N	Standard Penetration Resistance, Blows/Foot	(A-3) AASHTO Soil Classification System	w	Natural Moisture Content (%)
Clay	Clayey Fine Sand	Clay, High Plasticity	BT	Boring Terminated at Depth Below Existing Grade	▽ Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve

REVISIONS					
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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 30

24-in Force Main Route (Pickettville Rd)

FM-94
Latitude: 30° 20' 35.81" N
Longitude: 81° 45' 52.37" W

Depth (ft)	N	Description
0		Asphalt (7")
		Sand-Asphalt Hot Mix (4")
1	6	Loose, Very dark brown fine SAND with silt, trace organic fines, poorly graded. (A-3)
2		
3	18 ▽	Medium dense, Dark grayish brown fine SAND with silt, poorly graded. (A-3)
4		
5	20	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded. (A-3)
6		
7	18	Medium dense, Gray fine SAND with silt, poorly graded. (A-3)
8		
9	11	Medium dense, Dark gray to gray fine SAND with silt, poorly graded. (A-3)
10		
11	10	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded. (A-3)
12		
13		

BT @ 12'.
Date Drilled: 5/5/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-95
Latitude: 30° 20' 34.73" N
Longitude: 81° 45' 51.30" W

Depth (ft)	N	Description
0		Asphalt (9")
		Sand-Asphalt Hot Mix (2")
1	4	Loose, Very dark gray fine SAND with silt, poorly graded. (A-3)
2	▽	
3	13	Medium dense, Light gray to yellow fine SAND with silt, poorly graded. (A-3)
4		
5	11	Medium dense, Gray clayey fine SAND, poorly graded. (A-3)
6		
7	23	Medium dense, Gray fine SAND with silt, poorly graded. (A-3)
8		
9	10	Medium dense, Light gray fine SAND with silt, poorly graded. (A-3)
10		
11	11	Medium dense, Gray fine SAND with silt, trace clay, poorly graded. (A-3)
12		
13		

BT @ 12'.
Date Drilled: 5/5/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

24-in Force Main Route (W 5th St.)

FM-96
Latitude: 30° 20' 34.91" N
Longitude: 81° 45' 30.11" W

Depth (ft)	N	Description
0		Asphalt (3")
		Sand-Asphalt Hot Mix (9")
1	18	Medium dense, Dark gray fine SAND with silt, poorly graded. (A-3)
2		
3	9 ▽	Medium dense, Grayish yellow fine SAND with clay, poorly graded. (A-3)
4		
5	6	w = 27 -200 = 35 LL = 42 PI = 25 Loose, Gray to yellowish brown clayey fine SAND, poorly graded. (A-2-7)
6		
7	17	Medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)
8		
9	20	Medium dense, Gray fine SAND with silt, trace clay, poorly graded. (A-3)
10		
11	17	
12		
13		

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-97
Latitude: 30° 20' 34.79" N
Longitude: 81° 45' 26.64" W

Depth (ft)	N	Description
0		Asphalt (5")
		Sand-Asphalt Hot Mix (5")
1	18	Medium dense, Very dark gray to gray fine SAND with silt, trace organic fines, poorly graded. (A-3)
2		
3	7 ▽	Stiff, Gray to brownish yellow sandy CLAY. (A-6)
4		
5	17	Medium dense, Pale brownish gray clayey fine SAND, poorly graded. (A-2-6)
6		
7	20	Medium dense, Grayish brown clayey fine SAND, poorly graded. (A-2-6)
8		w = 30 -200 = 62
9	16	Very stiff, Greenish gray very sandy CLAY with sand. (A-6)
10		
11	16	Very stiff, Light greenish gray to yellowish brown sandy CLAY. (A-6)
12		
13		

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Legend

- Asphalt
- Sand-Asphalt Hot Mix
- Fine Sand with Silt
- Clayey Fine Sand
- Fine Sand with Clay
- Clay

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve
LL — Liquid Limit
PI — Plasticity Index

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 31

24-in Force Main Route (W 5th St.)

FM-98
Latitude: 30° 20' 34.79" N
Longitude: 81° 45' 22.97" W

Depth (ft)	N	Description
0		Asphalt (4")
		Sand-Asphalt Hot Mix (6")
1		Medium dense, Very dark brown to grayish brown fine SAND with silt, few organic fines, poorly graded. (A-3)
2		
3	5	Loose, Gray to yellowish brown very clayey fine SAND, poorly graded. (A-6)
4		
5	13	Medium dense, Brownish yellow to gray very clayey fine SAND, poorly graded. (A-6)
6		
7	10	Medium dense, Gray to yellowish brown clayey fine SAND, poorly graded. (A-2-6)
8		
9	11	Stiff, Gray to yellowish red sandy CLAY. (A-6)
10		
11	11	Stiff, Gray sandy CLAY. (A-6)
12		
13		

w = 28, -200 = 40

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-99
Latitude: 30° 20' 34.79" N
Longitude: 81° 45' 20.69" W

Depth (ft)	N	Description
0		Asphalt (5")
		Sand-Asphalt Hot Mix (7")
1	16	Medium dense, Dark gray to gray fine SAND with silt, poorly graded. (A-3)
2		
3	2	Very loose, Gray to pale brown very clayey fine SAND, poorly graded. (A-6)
4	4	Firm, Dark gray to yellowish brown to light gray sandy CLAY. (A-6)
5		
6		
7	13	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded. (A-3)
8		
9	12	
10		
11	13	Medium dense, Gray to pale brown silty fine SAND, poorly graded. (A-2-4)
12		
13		

w = 28, -200 = 43

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-100
Latitude: 30° 20' 34.85" N
Longitude: 81° 45' 17.76" W

Depth (ft)	N	Description
0		Asphalt (5")
		Sand-Asphalt Hot Mix (7")
1	5	Loose, Gray to dark gray fine SAND with silt, poorly graded. (A-3)
2		
3	3	Loose, Dark gray very clayey fine SAND, poorly graded. (A-6)
4		
5	1	Soft, Very dark gray to grayish brown sandy CLAY. (A-6)
6		
7	9	Medium dense, Greenish gray very clayey fine SAND, poorly graded, (A-2-6)
8		
9	10	Medium dense, Gray fine SAND with silt, poorly graded. (A-3)
10		
11	11	Medium dense, Gray fine SAND with silt, poorly graded. (A-3)
12		
13		

w = 27, -200 = 46

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-101
Latitude: 30° 20' 34.85" N
Longitude: 81° 45' 14.88" W

Depth (ft)	N	Description
0		Asphalt (4")
		Sand-Asphalt Hot Mix (6")
1	11	Medium dense, Gray fine SAND with silt, trace root fragments, poorly graded. (A-3)
2		
3	2	Firm, Yellowish brown to gray very sandy CLAY. (A-6)
4		
5	5	Firm, Gray to brownish yellow very sandy CLAY. (A-6)
6		
7	7	Stiff, Gray sandy CLAY. (A-6)
8		
9	13	Very stiff, Gray CLAY with sand. (A-7-6)
10		
11	14	Medium dense, Gray to olive brown clayey fine SAND, poorly graded. (A-2-6)
12		
13		

BT @ 12'.
Date Drilled: 4/28/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Legend

- Asphalt
- Sand-Asphalt Hot Mix
- Fine Sand with Silt
- Clayey Fine Sand
- Clay
- Clay, High Plasticity
- Silty Fine Sand

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

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Mott MacDonald Florida, LLC

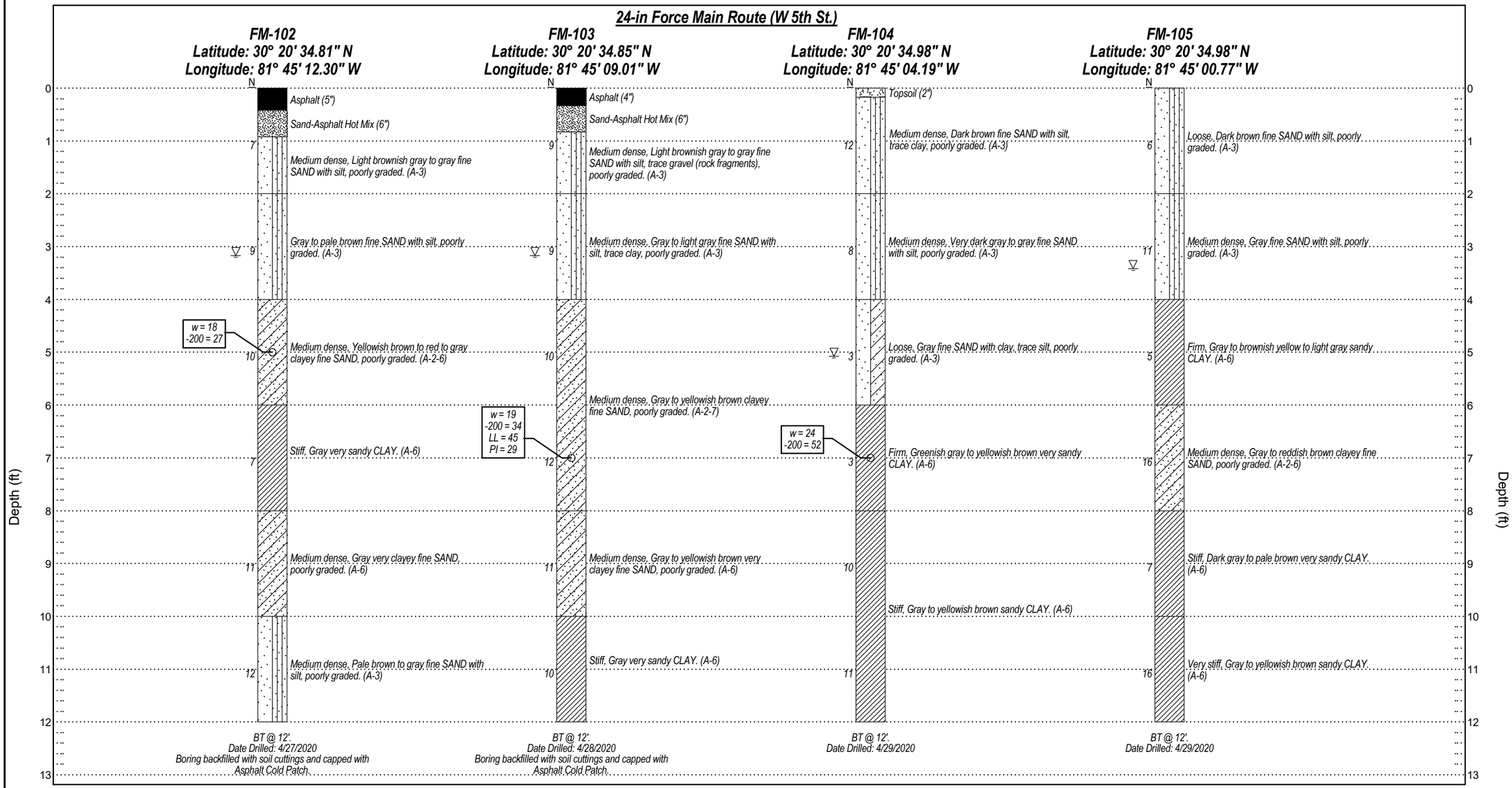
DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 32

24-in Force Main Route (W 5th St.)



Legend

- Asphalt
- Sand-Asphalt Hot Mix
- Fine Sand with Silt
- Clayey Fine Sand
- Clay
- Topsoil
- Fine Sand with Clay

N	Standard Penetration Resistance, Blows/Foot	(A-3)	AASHTO Soil Classification System	w	Natural Moisture Content (%)	LL	Liquid Limit
BT	Boring Terminated at Depth Below Existing Grade	▽	Depth to Groundwater at Time of Drilling	-200	% Passing No. 200 U.S. Standard Sieve	PI	Plasticity Index

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7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 33

24-in Force Main Route (W 5th St.)

FM-106
Latitude: 30° 20' 34.85" N
Longitude: 81° 44' 58.19" W

Depth (ft)	N	Description
0–1	7	Loose, Very dark brown fine SAND with silt, poorly graded. (A-3)
2–3	10	Medium dense, Pale brown fine SAND with silt, poorly graded. (A-3)
4–5	10	w = 18, -200 = 30 Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded. (A-2-6)
6–8	9	Stiff, Gray to brownish yellow sandy CLAY. (A-6)
8–10	11	Stiff, Gray to light olive brown sandy CLAY. (A-6)
10–11	7	Medium dense, Gray fine SAND with clay, trace silt, poorly graded. (A-3)
11–12		BT @ 12'. Date Drilled: 4/29/2020

FM-107
Latitude: 30° 20' 35.09" N
Longitude: 81° 44' 50.15" W

Depth (ft)	N	Description
0–1	8	Medium dense, Very dark brown to brown fine SAND with silt, trace organic fines, poorly graded. (A-3)
2–3	8	Medium dense, Very dark gray fine SAND with silt, few organic fines, trace root fragments, poorly graded. (A-3)
4–5	7	Loose, Dark gray fine SAND with silt, poorly graded. (A-3)
6–7	5	w = 23, -200 = 32 Loose, Gray to dark gray clayey fine SAND, poorly graded. (A-2-6)
8–9	32	Dense, Gray fine SAND, poorly graded. (A-3)
9–11	18	Medium dense, Gray fine SAND with clay, trace silt, poorly graded. (A-3)
11–12		BT @ 12'. Date Drilled: 4/29/2020

FM-108
Latitude: 30° 20' 35.03" N
Longitude: 81° 44' 47.64" W

Depth (ft)	N	Description
0–1	7	Loose, Very dark grayish brown fine SAND with silt, trace clay nodules, poorly graded. (A-3)
2–4	5	Firm, Very dark gray sandy CLAY. (A-7-6)
4–6	7	Stiff, Gray CLAY with sand. (A-6)
6–8	11	Stiff, Gray CLAY with sand, trace root fragments. (A-6)
8–9	14	Medium dense, Gray clayey fine SAND with silt, poorly graded. (A-2-6)
9–11	6	Loose, Gray fine SAND with silt, poorly graded. (A-3)
11–12		BT @ 12'. Date Drilled: 4/29/2020

FM-109
Latitude: 30° 20' 35.21" N
Longitude: 81° 44' 44.99" W

Depth (ft)	N	Description
0–1		Topsoil (2")
1–2	15	Medium dense, Light gray fine SAND with silt, some gravel (rock fragments), poorly graded. (A-3)
2–4	0	Very loose, Yellowish brown silty fine SAND, poorly graded. (A-2-4)
4–6	5	Loose, Brown fine SAND with silt, poorly graded. (A-3)
6–8	3	
8–9	6	Loose, Grayish brown silty fine SAND, poorly graded. (A-2-4)
9–11	6	
11–12		BT @ 12'. Date Drilled: 4/29/2020

Legend

- Fine Sand with Silt
- Fine Sand
- Topsoil
- Clayey Fine Sand
- Fine Sand with Clay
- Silty Fine Sand
- Clay
- Clay, High Plasticity

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS

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Mott MacDonald Florida, LLC

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7/17/2020	0103-0018

SHEET TITLE: Generalized Soil Profiles

PROJECT NAME: JEA 5th Street West - Imeson Road to Melson Avenue
Jacksonville, Florida

FIGURE NO. 34

24-in Force Main Route (W 5th St.)

FM-110
Latitude: 30° 20' 36.39" N
Longitude: 81° 44' 23.62" W

N

0	Asphalt (1") / Sand-Asphalt Hot Mix (6")	
7	Loose, Very pale brown fine SAND with silt, poorly graded. (A-3)	5
5	Loose, Grayish brown clayey fine SAND, poorly graded. (A-2-6)	5
8	Medium dense, Light yellowish brown clayey fine SAND with silt, trace root fragments, poorly graded. (A-2-6)	9
16	Medium dense, Light yellowish brown fine SAND with silt, poorly graded. (A-3)	13
18	Medium dense, Light yellowish brown to greenish gray clayey fine SAND, poorly graded. (A-2-6)	6
16	Stiff, Greenish gray to brownish yellow CLAY with sand. (A-6)	w = 18, -200 = 26
18	Medium dense, Light yellowish brown to greenish gray fine SAND with clay, poorly graded. (A-2-6)	w = 26, -200 = 13
16	Medium dense, Light greenish gray silty fine SAND, poorly graded. (A-2-4)	15

BT @ 12'.
Date Drilled: 4/29/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-111
Latitude: 30° 20' 36.59" N
Longitude: 81° 44' 19.14" W

N

0	Asphalt (7") / Sand-Asphalt Hot Mix (5")	
25	Dense to medium dense, Yellowish brown fine SAND with silt, poorly graded. (A-3)	22
7	Loose, Gray fine SAND with clay, poorly graded. (A-3)	9
13	Medium dense, Light yellowish brown to greenish gray fine SAND with silt, trace clay, poorly graded. (A-3)	15

BT @ 12'.
Date Drilled: 4/29/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-112
Latitude: 30° 20' 36.78" N
Longitude: 81° 44' 16.31" W

N

0	Asphalt (8") / Limerock Base (6")	
15	Medium dense, Dark grayish brown to light yellowish brown fine SAND with silt, poorly graded. (A-3)	13
18	Medium dense, Very dark gray fine SAND with silt, poorly graded. (A-3)	14
6	Stiff, Greenish gray to brownish yellow CLAY with sand. (A-6)	w = 18, -200 = 26
18	Medium dense, Light yellowish brown to greenish gray fine SAND with clay, poorly graded. (A-2-6)	w = 26, -200 = 13
16	Medium dense, Light greenish gray silty fine SAND, poorly graded. (A-2-4)	15

BT @ 12'.
Date Drilled: 4/29/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-113
Latitude: 30° 20' 37.43" N
Longitude: 81° 44' 07.07" W

N

0	Asphalt (7") / Limerock Base (5")	
6	Loose, Light yellowish brown fine SAND with silt, poorly graded. (A-3)	10
10	Medium dense, Brownish yellow clayey fine SAND, poorly graded. (A-2-6)	14
16	Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded. (A-2-6)	18
18		15

BT @ 12'.
Date Drilled: 4/30/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Depth (ft)

Legend

- Asphalt
- Sand-Asphalt Hot Mix
- Fine Sand with Silt
- Clayey Fine Sand
- Silty Fine Sand
- Fine Sand with Clay
- Limerock Base
- Clay

N — Standard Penetration Resistance, Blows/Foot
(A-3) — AASHTO Soil Classification System
w — Natural Moisture Content (%)
BT — Boring Terminated at Depth Below Existing Grade
▽ — Depth to Groundwater at Time of Drilling
-200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Meskel & Associates Engineering
FL. Registry No. 28142
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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 35

24-in Force Main Route (W 5th St.)

FM-114
Latitude: 30° 20' 37.55" N
Longitude: 81° 44' 04.61" W

N	Depth (ft)	Description
	0	Asphalt (8")
9	1	Limerock Base (6")
		Medium dense, Brown fine SAND with silt, poorly graded. (A-3)
4	3	Loose, Dark gray to yellowish brown very clayey fine SAND, poorly graded. (A-6)
11	5	Stiff, Light greenish gray sandy CLAY. (A-7-6)
		w = 22, -200 = 73, LL = 48, PI = 32
12	7	
	8	▽
11	9	Stiff to very stiff, Gray to greenish gray sandy CLAY. (A-6)
14	11	
	12	BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-115
Latitude: 30° 20' 37.97" N
Longitude: 81° 44' 01.97" W

N	Depth (ft)	Description
	0	Asphalt (8")
8	1	Limerock Base (8")
		Medium dense, Brownish yellow fine SAND with silt, poorly graded. (A-3)
4	3	
8	5	Firm to very stiff, Gray to brownish yellow very sandy CLAY. (A-6)
		w = 23, -200 = 61
10	7	
	8	▽
16	9	
	10	
18	11	
	12	BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-116
Latitude: 30° 20' 37.79" N
Longitude: 81° 43' 59.85" W

N	Depth (ft)	Description
	0	Asphalt (8")
16	1	Limerock Base (6")
		Medium dense, Dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
6	3	Stiff, Gray to brownish yellow CLAY with sand. (A-6)
		w = 20, -200 = 38
8	5	Medium dense, Light yellowish brown very clayey fine SAND, poorly graded. (A-6)
11	7	Stiff, Light brownish gray CLAY with sand. (A-6)
	8	▽
12	9	Stiff, Yellowish brown greenish gray CLAY with sand. (A-6)
17	11	Very stiff, Light brownish gray CLAY with sand. (A-6)
	12	BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-117
Latitude: 30° 20' 37.86" N
Longitude: 81° 43' 56.41" W

N	Depth (ft)	Description
	0	Asphalt (7")
5	1	Limerock Base (5")
		Loose, Brown fine SAND with silt, trace clay and gravel (rock fragments), poorly graded. (A-3)
6	3	
10	5	Stiff, Gray to yellowish brown CLAY with sand. (A-6)
9	7	
	8	▽
12	9	Stiff, Light yellowish brown CLAY with sand. (A-6)
		w = 24, -200 = 36
14	11	Medium dense, Gray very clayey fine SAND, poorly graded. (A-6)
	12	BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Legend

- Asphalt
- Limerock Base
- Fine Sand with Silt
- Clayey Fine Sand
- Clay, High Plasticity
- Clay

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(A-3) — AASHTO Soil Classification System
▽ — Depth to Groundwater at Time of Drilling
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve
LL — Liquid Limit
PI — Plasticity Index

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 36

24-in Force Main Route (Norman E Thagard Blvd.)

FM-118
Latitude: 30° 20' 37.93" N
Longitude: 81° 43' 50.21" W

Depth (ft)	N	Description
0		Asphalt (2")
		Limerock Base (8")
1	18	Medium dense, Brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
2		
3	25	
4		Dense to medium dense, Gray clayey fine SAND, poorly graded. (A-2-6)
5	14	
6		w = 32, -200 = 83
7	11	Stiff, Gray sandy CLAY. (A-6)
8		
9	12	
10		Stiff, Greenish gray CLAY with sand. (A-6)
11	11	
12		BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.
13		

FM-119
Latitude: 30° 20' 37.92" N
Longitude: 81° 43' 47.35" W

Depth (ft)	N	Description
0		Asphalt (3")
		Limerock Base (5")
1	5	
2		Loose, Very dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
3	4	
4		
5	2	Very loose, Very dark grayish brown silty fine SAND, trace root fragments and organic fines, poorly graded. (A-2-4)
6		
7	8	Medium dense, Greenish gray very clayey fine SAND, poorly graded. (A-2-6)
8		
9	9	
10		Stiff, Greenish gray CLAY with sand. (A-6)
11	10	
12		BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.
13		

FM-120
Latitude: 30° 20' 37.92" N
Longitude: 81° 43' 41.55" W

Depth (ft)	N	Description
0		Asphalt (4")
		Limerock Base (9")
1	5	
2		Loose, Very dark grayish brown fine SAND with silt, poorly graded. (A-3)
3	6	
4		w = 24, -200 = 33
5	4	Loose, Gray very clayey fine SAND, poorly graded. (A-2-6)
6		
7	11	
8		
9	16	Medium dense, Gray fine SAND with silt, poorly graded. (A-3)
10		
11	12	
12		BT @ 12'. Date Drilled: 4/30/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.
13		

FM-121
Latitude: 30° 20' 37.91" N
Longitude: 81° 43' 38.20" W

Depth (ft)	N	Description
0		Asphalt (4")
		Limerock Base (6")
1	10	Medium dense, Brown fine SAND with silt, poorly graded. (A-3)
2		
3	14	
4		Medium dense, Light yellowish brown fine SAND with silt, trace gravel (rock fragments) and clay, poorly graded. (A-3)
5	9	
6		
7	6	Loose, Light yellowish brown clayey fine SAND, poorly graded. (A-2-6)
8		w = 24, -200 = 43
9	8	
10		Medium dense, Gray very clayey fine SAND, poorly graded. (A-6)
11	10	
12		BT @ 12'. Date Drilled: 5/1/2020. Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.
13		

Legend

- Asphalt
- Clayey Fine Sand
- Limerock Base
- Clay
- Fine Sand with Silt
- Silty Fine Sand

- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling
- w — Natural Moisture Content (%)
- -200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 37

24-in Force Main Route (Norman E Thagard Blvd.)

FM-122
Latitude: 30° 20' 37.79" N
Longitude: 81° 43' 35.99" W

- N 5 — Asphalt (3"); Limerock Base (9"); Loose, Dark yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
- N 13 — Medium dense, Pale brown to brown fine SAND with silt, trace gravel (shell and rock fragments), poorly graded. (A-3)
- ▽ 7 — Loose, Gray clayey fine SAND, poorly graded. (A-2-6)
- w = 19, -200 = 35; 12 — Medium dense, Dark gray clayey fine SAND, poorly graded. (A-2-6)
- 11 — Medium dense, Gray clayey fine SAND with silt, poorly graded. (A-2-6)
- 10 — Stiff, Greenish gray CLAY with sand. (A-6)

BT @ 12'.
Date Drilled: 5/1/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-123
Latitude: 30° 20' 37.76" N
Longitude: 81° 43' 32.50" W

- N 6 — Asphalt (3"); Limerock Base (7"); Loose, Dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
- ▽ 9 — Medium dense, Dark grayish brown fine SAND with silt, poorly graded. (A-3)
- w = 22, -200 = 23; 6 — Loose, Gray to greenish gray very clayey fine SAND, poorly graded. (A-2-6)
- w = 39, -200 = 65; 6 — Stiff, Greenish gray VERY SANDY CLAY. (A-6)
- 7 — Loose, Dark gray t0 greenish gray very clayey fine SAND, poorly graded. (A-2-6)
- 6 — Stiff, Greenish gray CLAY with sand. (A-6)

BT @ 12'.
Date Drilled: 5/1/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-124
Latitude: 30° 20' 37.75" N
Longitude: 81° 43' 30.17" W

- N 7 — Asphalt (3"); Limerock Base (6"); Loose, Brown fine SAND with silt, poorly graded. (A-3)
- ▽ 12 — Medium dense, Dark grayish brown fine SAND with silt, poorly graded. (A-3)
- 6 — Loose, Gray clayey fine SAND, poorly graded. (A-2-6)
- 4 — Loose, Dark greenish gray very clayey fine SAND, poorly graded. (A-2-6)
- w = 18, -200 = 33; 13 — Medium dense, Light grayish olive clayey fine SAND, poorly graded. (A-2-6)
- 13 — Stiff, Greenish gray CLAY with sand. (A-6)

BT @ 12'.
Date Drilled: 5/1/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

FM-125
Latitude: 30° 20' 37.78" N
Longitude: 81° 43' 26.73" W

- N 4 — Asphalt (3"); Limerock Base (9"); Loose, Dark brown fine SAND with silt, trace gravel (shell fragments), poorly graded. (A-3)
- ▽ 17 — Medium dense, Gray fine SAND with clay, trace silt, poorly graded. (A-3)
- 4 — Loose, Gray clayey fine SAND, poorly graded. (A-2-6)
- w = 30, -200 = 46; 7 — Loose, Gray to brownish yellow very clayey fine SAND, poorly graded. (A-6)
- 6 — Loose, Brownish yellow clayey fine SAND, poorly graded. (A-2-6)
- w = 20, -200 = 35, LL = 33, PI = 18; 7 — Loose, Brownish yellow clayey fine SAND, poorly graded. (A-2-6)

BT @ 12'.
Date Drilled: 5/1/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Depth (ft)

Legend

- Asphalt
- Limerock Base
- Fine Sand with Silt
- Clayey Fine Sand
- Clay
- Fine Sand with Clay
- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (A-3) — AASHTO Soil Classification System
- ▽ — Depth to Groundwater at Time of Drilling
- w — Natural Moisture Content (%)
- -200 — % Passing No. 200 U.S. Standard Sieve
- LL — Liquid Limit
- PI — Plasticity Index

REVISIONS

DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 38

24-in Force Main Route (Norman E Thagard Blvd.)

FM-126
Latitude: 30° 20' 37.91" N
Longitude: 81° 43' 21.21" W

N	Description
	Asphalt (1")
4	Limerock Base (10")
5	Loose, Dark yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (A-3)
	Loose, Gray very clayey fine SAND, poorly graded. (A-2-6)
12	Medium dense, Dark gray clayey fine SAND, poorly graded. (A-2-6)
10	Medium dense, Gray to greenish gray very clayey fine SAND, poorly graded. (A-2-6)
11	
8	Medium dense, Dark gray very clayey fine SAND, poorly graded. (A-2-6)

w = 20, -200 = 30

w = 28, -200 = 42

BT @ 12.'
Date Drilled: 5/1/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Jack & Bore Crossing (Norman E Thagard Blvd & Palm Ave.)

JB-11
Latitude: 30° 20' 38.15" N
Longitude: 81° 43' 46.43" W

N	Description
	Asphalt (3")
9	Limerock Base (8")
11	Medium dense, Brown fine SAND with silt, trace gravel (rock fragments), poorly graded. (SP-SM)
9	Stiff, Gray to grayish brown very sandy CLAY. (CL)
9	Medium dense, Gray very clayey fine SAND, poorly graded. (SC)
11	Medium dense, Gray to greenish gray clayey fine SAND, poorly graded. (SC)
6	Stiff, Greenish gray to gray sandy CLAY. (CL)
5	Firm, Greenish gray silty CLAY, trace sand, few gravel (shell fragments). (CH)
27	Loose, Greenish gray silty fine SAND, poorly graded. (SM)
9	Dense, Greenish gray to light gray fine SAND with silt, poorly graded. (SP-SM)
7	Medium dense, Gray fine SAND with silt, poorly graded. (SP-SM)
10	Loose to medium dense, Very dark greenish gray fine SAND with silt, poorly graded. (SP-SM)

BT @ 40.'
Date Drilled: 5/5/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

JB-12
Latitude: 30° 20' 38.04" N
Longitude: 81° 43' 44.21" W

N	Description
	Asphalt (3")
14	Limerock Base (8")
8	Medium dense, Brown fine SAND with silt, trace gravel (shell fragments), poorly graded. (SP-SM)
14	Medium dense, Light yellowish brown fine SAND with silt, poorly graded. (SP-SM)
11	Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded. (SC)
11	Medium dense, Gray silty fine SAND, trace clay, poorly graded. (SM)
5	Medium dense, Pale brown fine SAND with silt, poorly graded. (SP-SM)
5	Firm, Greenish gray sandy CLAY with silt. (CL)
12	Loose, Greenish gray silty fine SAND, poorly graded. (SM)
19	Medium dense, Greenish gray silty fine SAND, poorly graded. (SM)
8	Medium dense, Gray silty fine SAND, poorly graded. (SM)
34	Dense, Light gray fine SAND with clay, trace silt and gravel (rock fragments), poorly graded. (SP-SC)

BT @ 40.'
Date Drilled: 5/5/2020
Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

Depth (ft): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45

Legend

- Asphalt
- Limerock Base
- Fine Sand with Silt
- Clayey Fine Sand
- Clay
- Clay, High Plasticity
- Silty Fine Sand
- Fine Sand with Clay

N — Standard Penetration Resistance, Blows/Foot
BT — Boring Terminated at Depth Below Existing Grade
(SP) — Unified Soil Classification System (USCS)
▽ — Depth to Groundwater at Time of Drilling
(A-3) — AASHTO Soil Classification System
w — Natural Moisture Content (%)
-200 — % Passing No. 200 U.S. Standard Sieve

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 39

8-inch Gravity Sewer

GC-1
Latitude: 30° 20' 24.00" N
Longitude: 81° 44' 17.50" W

N

- 2 — Topsoil (3")
- 10 — Very loose, Dark gray clayey fine SAND, trace root fragments, poorly graded. (SC)
- 8 — Medium dense, Dark gray clayey fine SAND, poorly graded. (SC)
- 12 — Medium dense, Dark gray fine SAND with silt, poorly graded. (SP-SM)
- 15 — Medium dense, Dark gray fine SAND with silt, trace clay nodules, poorly graded. (SP-SM)
- 16 — Medium dense, Dark gray fine SAND with silt, poorly graded. (SP-SM)

BT @ 15.'
Date Drilled: 6/2/2020

GC-2
Latitude: 30° 20' 23.50" N
Longitude: 81° 44' 17.00" W

N

- 10 — Medium dense, Grayish brown fine SAND with silt, poorly graded. (SP-SM)
- 10 — Medium dense, Grayish brown clayey fine SAND, poorly graded. (SC)
- 7 — Loose, Dark gray silty fine SAND, trace wood fragments, poorly graded. (SM)
- 14 — Medium dense, Dark gray fine SAND with silt, trace wood fragments, poorly graded. (SP-SM)
- 16 — Medium dense, Grayish brown fine SAND with silt, poorly graded. (SP-SM)
- 23 — Medium dense, Gray fine SAND with silt, trace root fragments, poorly graded. (SP-SM)

BT @ 15.'
Date Drilled: 6/2/2020

Sanitary Manhole

GC-3
Latitude: 30° 20' 38.39" N
Longitude: 81° 43' 22.49" W

N

- Gray to dark gray fine SAND with silt, trace gravel (rock fragments) and organic fines, poorly graded. (SP-SM)
- Dark brown to yellowish brown very sandy CLAY, trace root fragments. (CL)
- 4 — Firm, Dark grayish brown to brownish yellow very sandy CLAY. (CL)
- 6 — Loose, Dark grayish brown to gray very clayey fine SAND, poorly graded. (SC)
- 8 — Medium dense, Gray to brownish yellow very clayey fine SAND, poorly graded. (SC)
- 9 — Medium dense, Grayish brown silty fine SAND, trace clay, poorly graded. (SM)
- 12 — Very stiff, Dark gray to pale olive sandy CLAY. (CL)
- 13 — Very stiff, Dark brown sandy CLAY. (CL)

BT @ 25.'
Date Drilled: 5/6/2020
GNE to 10 ft.

Depth (ft): 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26

Legend

- Topsoil
- Silty Fine Sand
- Clayey Fine Sand
- Clay
- Fine Sand with Silt
- N — Standard Penetration Resistance, Blows/Foot
- BT — Boring Terminated at Depth Below Existing Grade
- (SP) — Unified Soil Classification System (USCS)
- ▽ — Depth to Groundwater at Time of Drilling
- GNE — Groundwater Level Not Encountered at Time of Drilling

REVISIONS					
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION

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Mott MacDonald Florida, LLC

DATE:	MAE PROJECT NO.
7/17/2020	0103-0018

SHEET TITLE: *Generalized Soil Profiles*

PROJECT NAME: *JEA 5th Street West - Imeson Road to Melson Avenue Jacksonville, Florida*

FIGURE NO. 40

Appendix A

Meskel & Associates Engineering, PLLC
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Meskel & Associates Engineering

BORING FM-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/17/19 **COMPLETED** 7/17/19 **LATITUDE** 30° 20' 39.02" N **LONGITUDE** 81° 43' 21.62" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Medium dense, Gray silty fine SAND, few gravel (rock and shell fragments), poorly graded.	A-2-4		7 8 5 5	13	14	16						
	2				2 3 4 3	7								
5	3	Stiff, Greenish gray sandy CLAY.	A-7-6		3 3 3 3	6	30	81		60	40			
	4	▽			2 3 4 4	7								
10	5	Loose, Light gray clayey fine SAND, poorly graded.	A-2-6		3 4 4 5	8								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.00 ft *▽ **END OF DAY** ---

Meskel & Associates Engineering, PLLC
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Jacksonville, FL 32207
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Meskel & Associates Engineering

BORING FM-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/17/19 **COMPLETED** 7/17/19 **LATITUDE** 30° 20' 37.44" N **LONGITUDE** 81° 43' 22.41" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Medium dense, Very dark brown silty fine SAND, few gravel (rock fragments), trace organic fines, poorly graded.	A-2-4		4 5 8 8	13	13	24						
	2	Loose, Very dark brown fine SAND with silt, few gravel (rock fragments), poorly graded.	A-3		3 4 4 3	8								
5	3	Loose, Very dark gray fine SAND with silt, trace gravel (rock fragments), poorly graded. ▽	A-3		2 2 2 2	4								
	4	Loose, Very dark gray fine SAND with silt, some debris (pvc fragments), trace organic fines, poorly graded.	A-3		6 4 3 3	7								
		Bottom of borehole at 8 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.89" N **LONGITUDE** 81° 43' 25.59" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Limerock Base (8 1/2") Very dense, Dark yellowish brown fine SAND, trace silt, little gravel (rock fragments), poorly graded.	A-3		20 19	39								
	2	Medium dense, Brown fine SAND With silt, poorly graded.	A-3		13 12 11 10	23								
5	3	▽ Stiff, Greenish gray CLAY, trace sand.	A-6		3 3 4 5	7								
	4				6 3 3 4	6								
10	5	Loose, Dark gray very clayey fine SAND, poorly graded.	A-6		2 3 5 5	8	23	47						
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.08 ft *▽ **END OF DAY** ---

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BORING FM-4

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.97" N **LONGITUDE** 81° 43' 28.39" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3 3/4") Limerock Base (8 1/4") Very dense, Yellowish brown fine SAND, trace silt, some gravel (rock fragments), poorly graded.	A-3		16 19	35								
	2	Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		11 10 8 8	18								
5	3	Loose, Greenish gray very clayey fine SAND with silt, poorly graded. ▽	A-6		2 2 2 2	4	29	41						
	4	Loose to medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		2 2 4 4	6								
10	5				3 5 5 6	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-5

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.82" N **LONGITUDE** 81° 43' 31.38" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2 1/2") Limerock Base (8") Very dense, Yellowish brown fine SAND, trace silt, some gravel (rock fragments), poorly graded.	A-3		13 19 20	39	25	52						
	2	Medium dense, Light yellowish brown fine SAND with silt, poorly graded.	A-3		13 12 11 10	23								
5	3	▽ Stiff, Greenish gray very sandy CLAY.	A-6		4 3 3 2	6								
	4				3 4 4 4	8								
10	5	Medium dense, Greenish gray clayey fine SAND, poorly graded.	A-2-6		4 6 7 7	13								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.25 ft *▽ **END OF DAY** ---

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BORING FM-6

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 38.12" N **LONGITUDE** 81° 43' 34.20" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2") Limerock Base (9") Very dense, Dark brown fine SAND, trace silt, some gravel (shell fragments), poorly graded.	A-3		13 19	32								
	2	Medium dense, Brown fine SAND with silt, poorly graded.	A-3		10 9 8 5	17								
5	3	▽	A-6		5 5 4 3	9								
	4	Medium dense, Greenish gray very clayey fine SAND, poorly graded.			4 4 5 6	9	23	49						
10	5				5 5 5 5	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-7

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.92" N **LONGITUDE** 81° 43' 36.78" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2 1/2") Limerock Base (8 1/2") Very dense, Dark yellowish brown fine SAND, trace silt, few gravel (shell fragments), poorly graded.	A-3		15 19	34	10	12						
	2	Medium dense, Dark yellowish brown fine SAND with silt, poorly graded.	A-2-4		9 9 9 8	18								
5	3	Loose, Greenish gray silty fine SAND, trace root fragments, poorly graded.	A-2-4		4 3 3 3	6								
	4 ▽				2 3 3 3	6								
10	5	Stiff, Greenish gray sandy CLAY.	A-6		3 5 6 7	11								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.25 ft *▽ **END OF DAY** ---

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BORING FM-8

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.97" N **LONGITUDE** 81° 43' 39.63" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (2") Limerock Base (9")												
	1	Medium dense, Dark brown fine SAND, trace silt, few gravel (rock fragments), poorly graded.	A-3		11 11	22								
	2	Medium dense, Yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		10 8 6 5	14								
5	3	Loose, Dark gray clayey fine SAND, poorly graded.	A-2-6		3 3 4 4	7								
	4	Loose, Dark grayish olive silty fine SAND, trace clay, poorly graded. ▽	A-2-4		3 3 4 6	7	23	25						
10	5	Medium dense, Greenish gray fine SAND with silt, poorly graded.	A-3		5 4 6 5	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.50 ft *▽ **END OF DAY** ---

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BORING FM-9

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 38.14" N **LONGITUDE** 81° 43' 42.75" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2") Limerock Base (10") Very dense, Dark brown fine SAND with silt, poorly graded.	A-3		13 18	31								
	2	Medium dense, Pale brown fine SAND, trace silt, poorly graded.	A-3		8 8 8 6	16								
5	3	Medium dense, Dark gray clayey fine SAND, poorly graded.	A-2-6		6 6 5 5	11								
	4	Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		5 6 8 7	14								
10	5	Medium dense, Greenish gray fine SAND with silt, poorly graded.	A-3		5 5 6 6	11								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.17 ft *▽ **END OF DAY** ---

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BORING FM-10

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 38.15" N **LONGITUDE** 81° 43' 45.76" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3 1/2") Limerock Base (8 1/2") Medium dense, Dark brown fine SAND with silt, poorly graded.	A-3		8 14	22								
	2	Medium dense, Dark brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		10 11 11 12	22								
5	3	Medium dense, Greenish gray clayey fine SAND, poorly graded.	A-2-6		4 4 5 5	9								
	4	▽			4 5 5 5	10	22	19						
10	5	Stiff, Dark gray greenish gray CLAY with sand.	A-6		4 4 4 4	8								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.00 ft *▽ **END OF DAY** ---

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BORING FM-11

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **LATITUDE** 30° 20' 37.91" N **LONGITUDE** 81° 43' 48.70" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2 1/4") Limerock Base (8 1/2") Medium dense, Dark brown fine SAND with silt, few gravel (shell fragments), poorly graded.	A-3		7 14	21								
	2	Medium dense, Olive brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		10 8 6 5	14								
5	3	Stiff, Greenish gray very sandy CLAY.	A-7-6		2 3 4 4	7								
	4				3 4 4 5	8	22	53		47	30			
10	5	▽ Stiff, Greenish gray CLAY with sand.	A-6		4 4 4 4	8								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.33 ft *▽ **END OF DAY** ---

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BORING FM-12

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/19/19 **COMPLETED** 7/19/19 **LATITUDE** 30° 20' 38.22" N **LONGITUDE** 81° 43' 54.54" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (5") Loose, Dark gray fine SAND with silt, some gravel (rock fragments), poorly graded.	A-3		2 3 3 3	6								
	2				3 3 2 2	5								
5	3	▽ Firm to stiff, Gray CLAY with sand.	A-6		2 2 3 3	5								
	4				3 4 5 5	9								
10	5				4 5 5 5	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-13

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/19/19 **COMPLETED** 7/19/19 **LATITUDE** 30° 20' 37.76" N **LONGITUDE** 81° 43' 58.04" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (5") Loose, Dark gray fine SAND with silt, trace root fragments, poorly graded.	A-3		3 3 4 4	7								
	2	Very loose, Gray very clayey fine SAND, poorly graded.	A-6		2 1 1 2	2	27	45						
5	3	Firm, Gray CLAY, trace sand.	A-6		2 2 2 2	4								
	4	▽ Stiff to firm, Greenish gray CLAY, trace sand.	A-6		3 5 5 6	10								
10	5				3 3 3 3	6								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.67 ft *▽ **END OF DAY** ---

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BORING FM-14

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/19/19 **COMPLETED** 7/19/19 **LATITUDE** 30° 20' 38.11" N **LONGITUDE** 81° 44' 00.42" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (5")												
	1	Loose, Yellowish brown fine SAND with clay, some gravel (rock fragments), trace roots, poorly graded.	A-3		2 3 2 2	5								
	2	Firm, Gray CLAY with sand.	A-6		1 1 2 3	3								
5	3	Firm, Greenish gray CLAY with sand. ▽	A-6		2 2									
		Bottom of borehole at 5 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-15

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/19/19 **COMPLETED** 7/19/19 **LATITUDE** 30° 20' 38.23" N **LONGITUDE** 81° 44' 03.48" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6") Loose, Very dark gray clayey fine SAND, few root fragments, poorly graded.	A-2-6		1 1 2 1	3	24	29						
	2	Loose, Greenish gray very clayey fine SAND, trace root fragments, poorly graded.	A-6		2 3 3 4	6	22	50						
5	3				2 4 4 4	8								
	4	▽ Stiff, Greenish gray CLAY with sand, poorly graded.	A-6		4 5 5 6	10								
	5				4 5 6 6	11								
10		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.08 ft *▽ **END OF DAY** ---

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BORING FM-16

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/19/19 **COMPLETED** 7/19/19 **LATITUDE** 30° 20' 38.05" N **LONGITUDE** 81° 44' 06.07" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6") Loose, Light brownish gray fine SAND with silt, trace clay and root fragments, poorly graded.	A-3		2 2 3 4	5								
	2	Stiff, Greenish gray very sandy CLAY.	A-6		3 3 4 4	7	24	64						
5	3	Medium dense, Grayish brown clayey fine SAND, poorly graded.	A-2-6		3 4 5 5	9	18	28						
	4				4 5 5 6	10								
10	5	▽ Medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		4 6 6 8	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.58 ft *▽ **END OF DAY** ---

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BORING FM-17

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 37.54" N **LONGITUDE** 81° 44' 08.96" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (4")												
	1	Loose, Dark gray fine SAND with silt, few gravel (rock fragments), poorly graded.	A-3		2 2 3 3	5								
	2	Medium dense, Gray fine SAND, trace sit, poorly graded.	A-3		6 6 7 8	13								
5	3	Medium dense, Light yellowish brown clayey fine SAND, poorly graded.	A-2-6		5 5 5 5	10	19	29						
	4	▽ Medium dense, Light yellowish brown fine SAND with clay, poorly graded.	A-3		5 7 7 6	14								
10	5	Medium dense, Light brownish gray fine SAND with clay, poorly graded.	A-3		6 7 8 8	15								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.00 ft *▽ **END OF DAY** ---

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BORING FM-18

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.84" N **LONGITUDE** 81° 44' 14.75" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (4")												
	1	Loose, Very dark gray fine SAND, trace silt, little gravel (rock fragments), trace roots, poorly graded.	A-3		5 4 4 5	8								
	2	Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 4 4 3	8								
5	3	Loose, Dark gray silty fine SAND, poorly graded.	A-2-4		1 1 3 3	4	26	31						
	4	▽ Loose, Greenish gray very clayey fine SAND, poorly graded.	A-6		2 3 3 4	5	27	42						
10	5	Medium dense, Greenish gray clayey fine SAND, poorly graded.	A-2-6		4 5 7 8	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.50 ft *▽ **END OF DAY** ---

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BORING FM-19

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.72" N **LONGITUDE** 81° 44' 17.45" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4")			3 3 4 4	7								
	2	Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		2 2 4 5	6								
5	3	Loose, Gray clayey fine SAND, trace silt, poorly graded.	A-2-6		4 2 2 2	4	23	28						
	4 ▽	Medium dense, Greenish gray silty fine SAND, poorly graded.	A-2-4		4 4 5 5	9								
10	5				5 4 4 5	8								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.00 ft *▽ **END OF DAY** ---

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BORING FM-20

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.39" N **LONGITUDE** 81° 44' 20.52" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Dark gray fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		3 3 4 4	7	26	29						
	2	Loose, Grayish brown silty fine SAND, poorly graded.	A-2-4		2 3 2 2	5								
5	3				2 3 2 3	5								
	4	▽ Medium dense, Light gray silty fine SAND, trace root fragments, poorly graded.	A-2-4		4 5 7 7	12								
10	5	Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		3 4 5 5	9								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.00 ft *▽ **END OF DAY** ---

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BORING FM-21

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.32" N **LONGITUDE** 81° 44' 22.81" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (3")												
	1	Loose, Dark gray fine SAND, trace silt and root fragments, poorly graded.	A-3		4 4 4 4	8								
	2	Loose, Greenish gray clayey fine SAND, poorly graded.	A-2-6		3 4 4 3	8	11	15						
5	3				4 3 4 4	7								
	4 ▽	Loose to medium dense, Gray fine SAND with silt, poorly graded.	A-3		4 5 5 6	10								
	5	Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		5 5 8 7	13								
10		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.25 ft *▽ **END OF DAY** ---

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BORING FM-22

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.15" N **LONGITUDE** 81° 44' 25.51" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (5") Limerock Base (7")			6 6 7	13								
	2	Medium dense, Very dark gray fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3											
	3	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		6 8 8 8	16								
5	4	▽ Loose, Grayish brown silty fine SAND, trace clay, poorly graded.	A-2-4		4 3 3 3	6								
	5	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		4 5 7 6	12								
10	6	Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		5 6 8 8	14								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.50 ft *▽ **END OF DAY** ---

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BORING FM-23

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/30/19 **COMPLETED** 7/30/19 **LATITUDE** 30° 20' 36.27" N **LONGITUDE** 81° 44' 28.40" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (6")			3 4 4 3	8	21	10						
		Loose, Very dark gray fine SAND with silt, poorly graded.	A-3											
		Loose to medium dense, Grayish brown silty fine SAND, poorly graded.	A-2-4		3 2 2 4	4								
5		▽			5 8 8 12	16								
		Medium dense, Gray fine SAND with silt, poorly graded.	A-3		6 6 7 9	13								
10					6 6 7 6	13								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.50 ft *▽ **END OF DAY** ---

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BORING FM-24

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/1/19 **COMPLETED** 8/1/19 **LATITUDE** 30° 20' 36.12" N **LONGITUDE** 81° 44' 31.76" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (4") Limerock Base (8")			5 7	12								
	2	Medium dense, Dark gray fine SAND, trace silt, little gravel (rock fragments), poorly graded.	A-3											
	3	Medium dense, Dark gray fine SAND with silt, trace root fragments, poorly graded.	A-3		8 8 7 5	15								
		Medium dense, Light brownish gray fine SAND with silt, poorly graded.	A-3											
5	4	▽ Medium dense, Light brownish gray fine SAND with silt, few root fragments and debris (wood fragments), poorly graded.	A-3		5 6 7 7	13								
	5	Medium dense, Light brownish gray fine SAND with silt,trace root fragments, poorly graded.	A-3		6 10 13 15	23								
10	6				5 5 5 5	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.25 ft *▽ **END OF DAY** ---

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BORING FM-25

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/1/19 **COMPLETED** 8/1/19 **LATITUDE** 30° 20' 35.94" N **LONGITUDE** 81° 44' 34.16" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Light gray fine SAND with silt, trace gravel (rock fragments) and root fragments, poorly graded.	A-3		3 4 2 3	6								
	2				5 7 5 6	12								
5	3	Medium dense, Light yellowish brown fine SAND with silt, trace root fragments, poorly graded.	A-3		5 6 8 8	14								
	4				5 6 7 7	13								
10	5				4 5 5 5	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.92 ft *▽ **END OF DAY** ---

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BORING FM-26

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/31/19 **LATITUDE** 30° 20' 35.63" N **LONGITUDE** 81° 44' 39.84" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Limerock Base (5")			12	16								
	2	Medium dense, Gray fine SAND, trace silt, poorly graded.	A-3		9 7									
	3	▽ Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		4 5 5 6	10								
5	4	Medium dense, Dark grayish brown silty fine SAND, poorly graded.	A-2-4		6 6 5 6	11								
	5				5 6 6 7	12								
	6	Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		5 5 6 5	11								
10		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

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BORING FM-27

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/1/19 **COMPLETED** 8/1/19 **LATITUDE** 30° 20' 35.32" N **LONGITUDE** 81° 44' 42.74" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (4") Limerock Base (8") Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		8 5	13								
	2	Medium dense, Brown fine SAND with silt, poorly graded. ▽	A-3		4 4 5 4	9								
5	3	Loose, Gray clayey fine SAND, trace root fragments, poorly graded.	A-2-6		3 3 4 5	7								
	4	Medium dense to loose, Grayish brown fine SAND with silt, poorly graded.	A-3		3 5 5 4	10								
10	5				3 4 3 4	7								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.83 ft *▽ **END OF DAY** ---

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BORING FM-28

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/1/19 **COMPLETED** 8/1/19 **LATITUDE** 30° 20' 35.16" N **LONGITUDE** 81° 44' 45.49" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (5") Limerock Base (7") Medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		8 10	18								
	2	Loose, Grayish brown silty fine SAND, poorly graded.	A-2-4		7 4 3 3	7								
5	3	▽			2 2 3 4	5								
	4	Loose, Light gray fine SAND with silt, trace root fragments, poorly graded.	A-3		5 3 4 3	7								
10	5	Loose, Greenish gray silty fine SAND, trace root fragments, poorly graded.	A-2-4		3 3 3 4	6								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.50 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG_ASPLT - NEW TEMPLATE 7-30-12.GDT - 5/8/20 11:31 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-29

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/31/19 **LATITUDE** 30° 20' 35.04" N **LONGITUDE** 081° 44' 48.44" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (6")												
	1	Loose, Strong brown fine SAND, poorly graded.	A-3		3 2 3 3	5								
	2				2 2 3 2	5								
5	3	Firm to stiff, Very dark gray very sandy CLAY. ▽	A-7-6		3 2 2 2	4	29	52		52	33			
	4				4 3 4 5	7								
10	5	Stiff, Gray CLAY with sand.	A-6		2 4 3 3	7								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-31

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/31/19 **LATITUDE** 30° 20' 34.77" N **LONGITUDE** 81° 44' 56.93" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (4")												
	1	Loose, Dark gray fine SAND with silt, poorly graded.	A-3		3 3 4 4	7								
	2	Loose, Light brownish gray silty fine SAND, poorly graded.	A-2-4		2 3 3 4	6								
5	3	▽ Loose, Yellowish brown very clayey fine SAND, poorly graded.	A-6		3 4 3 3	7	24	44						
	4	Stiff, Greenish gray CLAY, trace sand.	A-6		4 5 4 5	9								
10	5	Very stiff, Greenish gray CLAY.	A-6		5 6 7 6	13								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

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BORING FM-32

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/3/19 **LATITUDE** 30° 20' 34.82" N **LONGITUDE** 81° 44' 59.77" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (4") Limerock Base (8") Medium dense, Very dark gray fine SAND with silt, trace root fragments, poorly graded.	A-3		7 8	15								
	2	▽ Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		7 6 7 5	13								
5	3	Loose, Brownish yellow clayey fine SAND, poorly graded.	A-2-5		2 2 3 4	5								
	4	Stiff, Greenish gray CLAY, trace sand.	A-6		3 5 5 6	10								
10	5				3 4 4 6	8								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG_ASPLT - NEW TEMPLATE 7-30-12.GDT - 5/8/20 11:32 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-33

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/31/19 **LATITUDE** 30° 20' 34.75" N **LONGITUDE** 1° 45' 02.68" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 4 4 5	8								
	2	Loose, Gray fine SAND with silt, poorly graded.	A-3		3 4 4 5	8								
5	3	▽ Loose, Greenish gray silty fine SAND, trace clay, poorly graded.	A-2-4		2 2 2 2	4								
	4	Stiff, Greenish gray CLAY with sand.	A-6		3 4 5 4	9								
10	5				4 5 5 4	10								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

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BORING FM-34

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 7/31/19 **COMPLETED** 7/31/19 **LATITUDE** 30° 20' 34.89" N **LONGITUDE** 81° 45' 05.65" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		4 4 5 5	9								
	2	Loose, Dark gray silty fine SAND, trace clay, poorly graded.	A-2-4		5 3 3 3	6								
5	3	▽ Very loose, Dark gray silty fine SAND, poorly graded.	A-2-4		1 1 1 1	2	21	17						
	4	Loose to medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		3 4 3 4	7								
10	5				3 5 4 4	9								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

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BORING FM-35

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.85" N **LONGITUDE** 81° 45' 10.63" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2") Loose, Gray fine SAND, trace silt, trace gravel (rock fragments), poorly graded.	A-3		3 4 4 5	8								
	2	▽			3 2 2 3	4								
5	3	Loose to medium dense, Grayish brown clayey fine SAND, poorly graded.	A-2-6		4 5 6 6	11								
	4				6 6 5 6	11								
10	5	Medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		7 6 6 7	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.00 ft *▽ **END OF DAY** ---

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BORING FM-36

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.83" N **LONGITUDE** 81° 45' 13.55" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Gray fine SAND with silt, trace root fragments, poorly graded.	A-3		5 4 4 3	8								
	2	Loose, Grayish brown clayey fine SAND, poorly graded. ▽	A-2-6		2 2 4 3	6	19	35						
5	3	Stiff, Grayish brown very sandy CLAY.	A-7-6		3 4 5 4	9	25	62		67	45			
	4				5 6 5 6	11								
10	5	Medium dense, Grayish brown clayey fine SAND, poorly graded.	A-2-6		9 9 10 9	19								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.00 ft *▽ **END OF DAY** ---

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BORING FM-37

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.72" N **LONGITUDE** 81° 45' 16.36" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Gray fine SAND, trace silt, poorly graded.	A-3		3 4 4 3	8								
	2	Loose, Very dark gray silty fine SAND, poorly graded. ▽	A-2-4		1 2 2 2	4								
	3	Firm, Very dark gray very sandy CLAY.	A-6				49	57						
5	4	Very loose, Very dark gray clayey fine SAND, trace root fragments, poorly graded.	A-2-6		0 0 0 0	0								
	5	Loose to medium dense, Greenish gray clayey fine SAND, poorly graded.	A-2-6		1 1 2 2	3	27	46						
10	6				4 4 5 4	9								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.00 ft *▽ **END OF DAY** ---

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BORING FM-38

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.82" N **LONGITUDE** 81° 45' 19.17" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (4")												
	1	Loose, Grayish brown fine SAND with silt, poorly graded.	A-3		3 3 4 4	7								
	2	Very loose, Greenish gray silty fine SAND, poorly graded.	A-2-4		2 1 1 2	2								
5	3	▽ Medium dense, Brownish yellow silty fine SAND, poorly graded.	A-2-4		3 4 5 3	9								
	4	Medium dense, Brownish yellow clayey fine SAND, poorly graded.	A-2-6		4 6 6 7	12								
10	5	Medium dense, Very pale brown fine SAND with silt, poorly graded.	A-3		5 8 6 5	14								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.50 ft *▽ **END OF DAY** ---

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BORING FM-39

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.81" N **LONGITUDE** 81° 45' 22.11" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6")			4 5 5 6	10								
	2	Medium dense to loose, Dark gray fine SAND with silt, poorly graded. ▽	A-3		3 4 4 2	8								
5	3	Firm, Dark gray clayey fine SAND, few root fragments, poorly graded.	A-2-6		2 2 3 3	5	29	31						
	4	Medium dense, Brownish yellow fine SAND with silt, poorly graded.	A-3		3 4 9 9	13								
10	5	Medium dense, Pale brown fine SAND with silt, poorly graded.	A-3		5 6 6 5	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.83 ft *▽ **END OF DAY** ---

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BORING FM-40

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.76" N **LONGITUDE** 81° 45' 24.78" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Medium dense, Gray fine SAND with silt, poorly graded.	A-3		3 4 5 5	9	29	42						
	2	Loose, Greenish gray very clayey fine SAND, poorly graded. ▽	A-6		3 2 3 2	5								
5	3	Firm to stiff, Gray CLAY with sand.	A-6		1 2 3 3	5								
	4				4 5 4 4	9								
10	5	Very stiff, Greenish gray CLAY with sand.	A-6		2 8 7 7	15								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.00 ft *▽ **END OF DAY** ---

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BORING FM-41

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.82" N **LONGITUDE** 81° 45' 27.78" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Pale brown fine SAND with silt, few debris (wood fragments), poorly graded.	A-3		3 3 4 4	7								
	2	Soft, Brownish yellow very sandy CLAY. ▽	A-6		3 1 1 1	2	42	65						
5	3				2 2 3 2	5	27	49						
	4	Loose, Brownish yellow very clayey fine SAND, poorly graded.	A-6		5 4 4 3	8								
10	5	Stiff, Greenish gray CLAY with sand.	A-6		5 5 6 5	11								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.00 ft *▽ **END OF DAY** ---

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BORING FM-42

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.78" N **LONGITUDE** 81° 45' 30.61" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (4")												
	1	Loose, Dark gray fine SAND with silt, poorly graded.	A-3		3 4 3 4	7								
	2	▽ Medium dense, Gray fine SAND with silt, poorly graded.	A-3		5 5 5 5	10								
5	3	Loose, Yellowish brown clayey fine SAND, poorly graded.	A-2-6		1 2 4 5	6								
	4	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		5 7 5 12	12								
10	5				6 7 8 9	15								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-43

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/2/19 **LATITUDE** 30° 20' 34.64" N **LONGITUDE** 81° 45' 33.36" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6") Medium dense, Gray fine SAND with silt, poorly graded.	A-3		3 5 5 3	10								
	2	▽ Medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		4 4 5 4	9								
5	3				5 5 7 7	12								
	4	Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		7 8 8 9	16								
10	5				5 7 9 11	16								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 5/8/20 11:34 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-44

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/5/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.70" N **LONGITUDE** 81° 45' 43.74" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY M.Bedgood **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose to medium dense, Gray fine SAND with silt, poorly graded.			3 2 3 3	5								
	2 ▽				8 13 10 13	23								
5	3	Medium dense, Grayish brown silty fine SAND, poorly graded.	A-2-4		7 9 11 13	20	20	15						
	4	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		6 6 4 5	10								
10	5	Medium dense, Gray silty fine SAND, poorly graded.	A-2-4		6 6 6 6	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.00 ft *▽ **END OF DAY** ---

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BORING FM-45

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/7/19 **COMPLETED** 8/7/19 **LATITUDE** 30° 20' 34.40" N **LONGITUDE** 81° 45' 46.88" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4")			4 4 6 6	10								
	2	▽ Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		4 7 11 14	18								
5	3				7 14 18 25	32								
	4	Medium dense to dense, Gray fine SAND with silt, poorly graded.	A-3		10 12 13 11	25								
10	5				9 10 14 13	24								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

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BORING FM-46

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/5/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.53" N **LONGITUDE** 81° 45' 49.52" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY M.Bedgood **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Medium dense, Dark gray fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		5 6 8 8	14	20	10						
	2	▽			10 10 7 6	17								
5	3	Loose to medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		6 3 3 6	6								
	4				4 5 6 8	11								
10	5				7 6 7 5	13								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.25 ft *▽ **END OF DAY** ---

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BORING FM-47

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/5/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.48" N **LONGITUDE** 81° 45' 51.90" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY M.Bedgood **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		8 8 8 8	16								
	2	▽			3 3 4 3	7								
5	3	Very loose to medium dense, Grayish brown clayey fine SAND, poorly graded.	A-2-6		3 2 1 1	3								
	4				1 1 1 2	2								
10	5				4 6 8 8	14								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.00 ft *▽ **END OF DAY** ---

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BORING FM-63

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30° 20' 40.14" N **LONGITUDE** 81° 45' 52.82" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (6")												
		Limerock Base (6")												
	1	Dense, Dark gray fine SAND with silt, little gravel (rock fragments), poorly graded.	A-3		18 12 18	30								
	2	Dense, Gray fine SAND with silt, poorly graded.	A-3		14/0"									
	3	▽ Loose, Greenish gray clayey fine SAND, poorly graded.	A-2-6		4 2 2 2	4								
5	4	Firm, Greenish gray CLAY with sand.	A-6		2 3 2 3	5								
	5	Loose to medium dense, Greenish gray clayey fine SAND, poorly graded.	A-2-6		2 3 3 6	6								
10	6				6 7 5 6	12								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-64

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30° 20' 46.32" N **LONGITUDE** 81° 45' 53.16" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4 1/2")												
		Limerock Base (5")												
	1	Medium dense, Dark gray fine SAND, trace silt, poorly graded.	A-3		11 12 11	23								
	2	▽ Medium dense, Very dark gray silty fine SAND, poorly graded.	A-2-4		11 7 6 9	13								
5	3	Loose, Greenish gray clayey fine SAND, poorly graded.	A-2-6		3 2 2 2	4								
	4	Loose, Grayish brown clayey fine SAND, trace debris (glass fragments), poorly graded.	A-2-6		2 2 2 2	4								
10	5	Loose, Greenish gray clayey fine SAND, poorly graded.	A-2-6		2 3 4 6	7								
		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

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BORING FM-65

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/9/19 **COMPLETED** 10/9/19 **LATITUDE** 30° 20' 43.06" N **LONGITUDE** 81° 46' 21.02" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Loose, Gray silty fine SAND with clay, poorly graded.	A-2-4		1 1 3 1	4								
	2	Soft, Brownish yellow CLAY with sand.	A-6		0 1 0 0	1								
5	3				2 4 4 4	8								
	4	Stiff to firm, Greenish gray CLAY, trace sand.	A-6		3 3 4 5	7								
	5				3 3 2 3	5								
10		Bottom of borehole at 10 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 0.00 ft *▽ **END OF DAY** ---

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BORING JB-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 38.41" N **LONGITUDE** 81° 43' 51.29" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Hayward **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Loose, Dark yellowish brown fine SAND, few gravel (rock and shell fragments), trace root fragments, poorly graded.	SP		2 3 2 2	5								
	2	Loose, Light yellowish brown clayey fine SAND, poorly graded.	SC		3 3 2 3	5								
5	3	Stiff, Greenish gray very sandy CLAY.	CH		3 5 4 4	9	30	69						
	4	▽			4 4 3 4	7								
10	5				4 5 5 4	10								
		Stiff, Greenish gray very sandy CLAY, trace gravel (shell and rock fragments).	CH											
15	6				2 3 3	6	28	29						
		Loose, Greenish gray silty fine SAND, poorly graded.	SM											
20	7	Loose, Gray fine SAND with silt, poorly graded.	SP-SM		3 3 4	7								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.00 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Loose, Gray fine SAND with silt, poorly graded. *(continued)*	SP-SM											
25	8	Loose, Greenish gray silty fine SAND, poorly graded.	SM		2 2 2	4								
30	9	Loose, Greenish gray silty fine SAND, few gravel (shell fragments), poorly graded.	SM		1 2 3	5								
35	10	Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	SP-SM		5 6 8	14								
40	11	Medium dense, Dark greenish gray fine SAND with silt, poorly graded.	SP-SM		9 7 7	14								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.00 ft *▽ **END OF DAY** ---

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BORING JB-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 38.15" N **LONGITUDE** 81° 43' 52.90" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Hayward **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (2")												
	1	Stiff, Greenish gray sandy CLAY.	CH		2 3 3 3	6								
	2	Loose, Light yellowish brown very clayey fine SAND, poorly graded.	SC		2 4 3 2	7								
5	3	Stiff, Greenish gray sandy CLAY.	CH		2 3 3 5	6	31	76						
	4 ▽				4 5 5 4	10								
10	5	Loose, Greenish gray clayey fine SAND, poorly graded.	SC		5 4 3 4	7								
15	6				2 3 4	7								
20	7	Medium dense to loose, Greenish gray silty fine SAND, poorly graded.	SM		2 6 6	12	25	13						

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.67 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20														
25	8	Medium dense to loose, Greenish gray silty fine SAND, poorly graded. *(continued)*	SM		2 2 2	4								
30	9				2 3 3	6								
35	10	Medium dense, Dark grayish brown silty fine SAND, poorly graded.	SM		3 4 6	10								
40	11	Medium dense, Dark gray silty fine SAND, poorly graded.	SM		7 9 11	20								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.67 ft *▽ **END OF DAY** ---

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BORING JB-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 34.92" N **LONGITUDE** 81° 44' 51.25" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY M.Bedgood **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (2") Medium dense, Dark yellowish brown fine SAND with silt, poorly graded.	SP-SM		13 10 6 5	16								
	2	▽ Medium dense to loose, Grayish brown clayey fine SAND, poorly graded.	SC		8 9 8 5	17								
5	3				4 3 2 1	5								
	4	Loose, Greenish gray very clayey fine SAND, trace root fragments, poorly graded.	SC		2 1 2 2	3	21	37						
10	5	Loose, Gray clayey fine SAND, poorly graded.	SC		8 5 3 3	8								
15	6	Medium dense, Gray fine SAND with silt, poorly graded.	SP-SM		8 8 10	18								
20	7	Stiff, Greenish gray CLAY, trace sand.	CH		8 7 5	12	70	97						

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Stiff, Greenish gray CLAY, trace sand. *(continued)*	CH											
25	8	Loose, Greenish gray silty fine SAND, poorly graded.	SM		2 2 3	5								
30	9	Loose, Greenish gray silty fine SAND, poorly graded.	SM		5 3 3	6								
35	10	Loose, Greenish gray silty fine SAND, poorly graded.	SM		4 3 4	7								
40	11	Dense, Dark greenish gray fine SAND with silt, poorly graded.	SP-SM		14 13 13	26								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

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BORING JB-4

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 34.94" N **LONGITUDE** 81° 44' 52.83" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY M.Bedgood **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Medium dense, Pale brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	SP-SM		8 7 9 9	16								
	2	Medium dense, Very pale brown fine SAND with silt, poorly graded.	SP-SM		10 7 7 3	14								
5	3	▽ Loose, Grayish brown fine SAND with silt, poorly graded.	SP-SM		5 3 4 6	7								
	4	Medium dense, Light brownish gray fine SAND with silt, poorly graded.	SP-SM		8 8 9 8	17								
10	5	Dense, Gray fine SAND with silt, poorly graded.	SP-SM		10 14 13 16	27								
15	6	Medium dense, Greenish gray fine SAND with silt, poorly graded.	SP-SM		11 11 13	24								
20	7	Loose, Greenish gray silty fine SAND,poorly graded.	SM		3 2 3	5	33	22						

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-4

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20														
25	8	Loose, Greenish gray silty fine SAND,poorly graded. *(continued)*	SM		5 3 3	6								
30	9	Medium dense, Dark gray silty fine SAND, poorly graded.	SM		5 6 5	11								
35	10				6 5 5	10								
40	11	Medium dense, Dark greenish gray fine SAND with silt, poorly graded.	SP-SM		8 8 7	15								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING JB-5

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 34.87" N **LONGITUDE** 81° 44' 55.01" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (2")												
	1	Medium dense, Light gray fine SAND, trace silt, few gravel (rock fragments), poorly graded.	SP		4 7 3 6	10								
		Medium dense, Very dark gray fine SAND, trace silt and gravel (rock fragments), poorly graded.	SP											
	2	▽ Medium dense, Gray fine SAND with silt, poorly graded.	SP-SM		6 6 6 6	12								
5	3	Loose, Light brownish gray clayey fine SAND, poorly graded.	SC		3 4 3 4	7								
	4	Loose, Greenish gray clayey fine SAND, poorly graded.	SC		3 4 3 5	7								
10	5	Very stiff, Greenish gray sandy CLAY.	CH		6 6 7 6	13	23	69		65	41			
15	6	Firm, Gray sandy CLAY.	CH		3 2 3	5								
20	7	Medium dense, Gray fine SAND, trace silt, poorly graded.	SP		8 8 9	17	25	4						

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-5

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Medium dense, Gray fine SAND, trace silt, poorly graded. *(continued)*	SP											
25	8	Loose, Gray clayey fine SAND, poorly graded.	SC		7 4 4	8								
30	9	Loose, Gray fine SAND with silt, poorly graded.	SP-SM		3 3 4	7	31	10						
35	10	Loose, Dark gray fine SAND with silt, poorly graded.	SP-SM		3 3 5	8								
40	11				3 4 4	8								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

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BORING JB-6

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/6/19 **COMPLETED** 8/6/19 **LATITUDE** 30° 20' 34.78" N **LONGITUDE** 81° 44' 56.28" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (2") Loose, Very pale brown fine SAND, trace silt, some gravel (rock fragments), poorly graded.	SP		5	7								
		Loose, Dark gray fine SAND with silt, poorly graded.	SP-SM		4 3 5									
	2	Medium dense, Gray fine SAND with silt, poorly graded.	SP-SM		6 6 4 3	10								
5	3	▽			2 3 2 3	5								
	4				2 2 4 6	6								
10	5	Loose to medium dense, Greenish gray clayey fine SAND, poorly graded.	SC		3 4 6 8	10								
	6				5 5 4	9								
15		Medium dense, Light gray fine SAND with silt poorly graded.	SP-SM											
20	7	Medium dense, Gray fine SAND with silt, poorly graded.	SP-SM		5 6 6	12								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-6

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20														
25	8	Medium dense, Gray fine SAND with silt, poorly graded. *(continued)*	SP-SM		4 10 8	18								
30	9				2 2 3	5								
35	10	Loose, Gray fine SAND with silt, poorly graded.	SP-SM		1 2 3	5								
40	11				2 3 5	8								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

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BORING JB-7

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/5/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.67" N **LONGITUDE** 81° 45' 06.27" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Loose, Dark gray fine SAND with silt, poorly graded.	SP-SM		2 2 4 5	6								
	2	▽ Loose, Grayish brown clayey fine SAND, poorly graded.	SC		4 4 3 2	7								
5	3	Loose to medium dense, Dark red clayey to very clayey fine SAND, poorly graded.	SC		2 3 5 6	8	20	32						
	4				3 4 6 6	10	22	45						
10	5				4 5 6 8	11								
		Medium dense, Yellowish brown clayey fine SAND, poorly graded.	SC											
15	6				2 2 3	5								
		Loose, Light gray silty fine SAND, poorly graded.	SM											
20	7	Medium dense, Very pale brown silty fine SAND, poorly graded.	SM		3 5 8	13								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.25 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-7

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20														
25	8	Medium dense, Very pale brown silty fine SAND, poorly graded. *(continued)*	SM		3 4 8	12								
30	9	Medium dense to very dense, Light gray silty fine SAND, poorly graded.	SM		3 5 7	12								
35	10				13 25 28	53								
40	11	Medium dense, Gray silty fine SAND, poorly graded.	SM		11 15 8	23								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.25 ft *▽ **END OF DAY** ---

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BORING JB-8

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/5/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.87" N **LONGITUDE** 81° 45' 08.84" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Medium dense, Very dark gray fine SAND, some gravel (rock fragments), poorly graded.			7 8 9	17								
		Medium dense, Brown fine SAND with silt, poorly graded.	SP-SM											
	2	▽ Loose to medium dense, Gray clayey fine SAND, poorly graded.	SC		4 3 3 4	6								
5	3				6 6 7 10	13								
	4				5 8 5 8	13								
10	5	Medium dense, Greenish gray clayey fine SAND, poorly graded.	SC		5 5 5 4	10								
15	6				8 9 10	19								
		Medium dense, Gray silty fine SAND, poorly graded.	SM											
20	7				8 7 11	18								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.75 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-8

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Medium dense, Gray silty fine SAND, poorly graded. *(continued)*	SM											
25	8	Firm, Greenish gray CLAY with sand.	CH		1 2 3	5	53	90						
30	9	Loose, Very dark brown silty fine SAND, poorly graded.	SM		2 2 3	5								
35	10	Medium dense, Light gray silty fine SAND, poorly graded.	SM		8 9 11	20								
40	11				8 7 7	14								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.75 ft *▽ **END OF DAY** ---

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BORING JB-9

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/9/19 **COMPLETED** 10/9/19 **LATITUDE** 30° 20' 44.69" N **LONGITUDE** 81° 46' 07.31" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Loose, Brownish yellow silty fine SAND, trace clay, poorly graded.	SM		2 3 4 5	7								
	2	▽ Loose to medium dense, Light yellowish brown clayey fine SAND, poorly graded.	SC		2 3 3 6	6								
5	3				2 5 9 10	14								
	4				6 10 12 15	22								
	5	Medium dense, Greenish gray clayey fine SAND, poorly graded.	SC		5 10 11 15	21								
10														
	6				4 5 5	10								
15		Medium dense, Light gray clayey fine SAND, poorly graded.	SC											
	7	Loose, Greenish gray clayey fine SAND, poorly graded.	SC		2 3 2	5								
20														

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.16 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-9

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Loose, Greenish gray clayey fine SAND, poorly graded. *(continued)*	SC											
25	8	Stiff, Greenish gray CLAY with sand.	CL		3 3 3	6								
30	9	Loose, Greenish gray clayey fine SAND, poorly graded.	SC		1 2 3	5								
35	10	Loose, Very dark brown silty fine SAND, poorly graded.	SM		3 2 3	5								
40	11	Loose, Gray silty fine SAND, poorly graded.	SM		4 3 4	7								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.16 ft *▽ **END OF DAY** ---

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BORING JB-10

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/10/19 **COMPLETED** 10/10/19 **LATITUDE** 30° 20' 44.85" N **LONGITUDE** 81° 46' 05.99" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Medium dense, Dark gray fine SAND with silt, poorly graded.	SP-SM		4 5 5 11	10								
	2				6 5 5 4	10								
5	3				4 6 7 8	13								
	4	Medium dense, Greenish gray clayey fine SAND, poorly graded.	SC		4 6 8 9	14								
10	5				6 7 10 11	17								
	6				4 8 8	16								
15		Medium dense, Grayish brown silty fine SAND, poorly graded.	SM											
20	7	Loose, Light gray silty fine SAND, poorly graded.	SM		2 2 3	5								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.00 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-10

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Loose, Light gray silty fine SAND, poorly graded. *(continued)*	SM											
25	8				5 3 4	7								
		Stiff, Greenish gray CLAY with sand.	CL											
30	9				8 11 11	22								
35	10	Medium dense to very dense, Gray silty fine SAND, poorly graded.	SM		11 23 21	44								
40	11				4 10 8	18								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.00 ft *▽ **END OF DAY** ---

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BORING DD-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/2/19 **COMPLETED** 8/5/19 **LATITUDE** 30° 20' 34.67" N **LONGITUDE** 81° 45' 36.91" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4 1/2")												
	1	Medium dense to loose, Dark gray fine SAND with silt, poorly graded.	SP-SM		11 6 3	9								
	2				2 2 4 6	6								
5	3	Medium dense, Light gray fine SAND with silt, poorly graded.	SP-SM		6 7 8 8	15								
	4				5 6 8 8	14								
10	5	Loose, Gray very clayey fine SAND, poorly graded.	SC		3 2 3 2	5	21	37						
15	6	Dense to medium dense, Light brownish gray silty fine SAND, poorly graded.	SM		6 12 13	25								
20	7				4 5 5	10								

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.42 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Dense to medium dense, Light brownish gray silty fine SAND, poorly graded. *(continued)*	SM											
25	8	Medium dense, Greenish gray silty fine SAND, poorly graded.	SM		4 5 5	10	26	27						
30	9	Loose, Greenish gray very clayey fine SAND, poorly graded.	SC		2 2 3	5								
35	10	Firm, Greenish gray CLAY with sand.	CH		3 2 3	5	48	93		90	53			
40	11	Loose, Very dark gray fine SAND with silt, poorly graded.	SP-SM		2 3 3	6								

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.42 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
		Loose, Very dark gray fine SAND with silt, poorly graded. *(continued)*	SP-SM											
45	12				12 15 19	34								
		Very dense, Gray fine SAND with silt, poorly graded.	SP-SM											
50	13				9 7 14	21								
		Medium dense, Dark gray fine SAND with silt, poorly graded.	SP-SM											
55	14				4 5 8	13								
		Medium dense, Dark gray silty fine SAND, poorly graded.	SM											
60	15	Very dense, Light gray clayey fine SAND, poorly graded.	SC		0 50 0	50								

Bottom of borehole at 60 feet.

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.42 ft *▽ **END OF DAY** ---

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BORING DD-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/9/19 **COMPLETED** 8/9/19 **LATITUDE** 30° 20' 34.62" N **LONGITUDE** 81° 45' 38.85" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Mclellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (3")												
	1	Medium dense, Dark grayish brown fine SAND, trace silt, some gravel (rock fragments), poorly graded.	SP		5 8 9 11	17								
	2	Medium dense, Dark brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	SP-SM		5 8 11 12	19								
5	3	Very dense, Very dark brown fine SAND with silt, poorly graded.	SP-SM		6 11 20 30	31								
	4	Very dense, Light yellowish brown fine SAND with silt, poorly graded.	SP-SM		10 19 28 28	47								
10	5	▽			10 14 16 19	30								
		Very dense, Light gray fine SAND with silt, poorly graded.	SP-SM											
15	6				9 14 21	35								
20	7	Medium dense, Light brownish gray fine SAND with silt, poorly graded.	SP-SM		11 11 10	21								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 9.67 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20														
25	8	Medium dense, Light brownish gray fine SAND with silt, poorly graded. *(continued)*	SP-SM		7 8 14	22								
30	9	Stiff, Greenish gray very sandy CLAY.	CH		1 3 3	6								
35	10				2 2 3	5	35	59						
40	11	Loose, Dark greenish gray clayey fine SAND, poorly graded.	SC		1 2 3	5								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 9.67 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
45	12	Loose, Dark greenish gray clayey fine SAND, poorly graded. *(continued)*	SC		2 3 2	5								
50	13				1 3 2	5								
55	14	Medium dense, Dark gray fine SAND with silt, poorly graded.	SP-SM		1 4 17	21								
60	15	Medium dense, Gray silty fine SAND, poorly graded.	SM		6 10 8	18								
		Bottom of borehole at 60 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 9.67 ft *▽ **END OF DAY** ---

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BORING DD-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 8/7/19 **COMPLETED** 8/7/19 **LATITUDE** 30° 20' 34.69" N **LONGITUDE** 81° 45' 41.02" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.Hayward **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (1") Medium dense, Very dark gray fine SAND with silt, trace silt and root fragments, poorly graded.	SP-SM		9 10 11 10	21								
	2	▽ Loose, Dark grayish brown silty fine SAND, poorly graded.	SM		6 4 2 4	6								
5	3				3 4 6 9	10	22	26						
	4				4 4 4 6	8	24	48						
10	5	Loose to medium dense, Greenish gray very clayey fine SAND, poorly graded.	SC		3 5 5 5	10								
15	6	Loose, Gray clayey fine SAND, poorly graded.	SC		3 3 4	7								
20	7	Medium dense, Grayish brown fine SAND with silt,poorly graded.	SP-SM		4 5 6	11								

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Medium dense, Grayish brown fine SAND with silt,poorly graded. *(continued)*	SP-SM											
25	8				2 2 3	5								
30	9	Loose, Greenish gray very clayey fine SAND, poorly graded.	SC		3 3 4	7								
35	10				2 2 2	4								
40	11	Firm, Greenish gray CLAY with sand.	CH		1 2 2	4	73	98						

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING DD-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
		Firm, Greenish gray CLAY with sand. *(continued)*	CH											
45	12	Loose, Dark greenish gray silty fine SAND, poorly graded.	SM		1 2 2	4								
50	13	Very dense, Gray silty fine SAND, poorly graded.	SM		4 15 29	44								
55	14	Medium dense, Dark greenish gray silty fine SAND, poorly graded.	SM		4 6 10	16								
60	15	Very dense, Greenish gray clayey fine SAND, few gravel (shell fragments), poorly graded.	SC		9 17 18	35								
		Bottom of borehole at 60 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING PC-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'37.91"N **LONGITUDE** 81°43'25.85"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (1 5/8")												
	1	Limerock Base (12")												
	2	Grayish brown clayey fine SAND, poorly graded.	A-2-6											
2.5	3	Dark brown silty fine SAND, poorly graded.	A-2-4											
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING PC-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'37.93"N **LONGITUDE** 81°43'54.48"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (6")												
	1	Limerock Base (6")												
	2	Very dark gray silty fine SAND, poorly graded.	A-2-4											
2.5	3	Grayish brown silty fine SAND, poorly graded.	A-2-4											
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING PC-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'36.33"N **LONGITUDE** 81°44'22.84"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (7 5/8")												
	1	Limerock (6")												
	2	Dark gray fine SAND with silt, poorly graded.	A-3											
2.5	3													
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING PC-4

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'34.95"N **LONGITUDE** 81°44'51.19"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (6 1/2")												
		Limerock Base (6")												
	1	Very dark gray fine SAND, trace silt, few gravel (rock fragments), poorly graded.	A-3											
	2	Very dark gray fine SAND with silt, poorly graded.	A-3											
2.5	3													
		Gray fine SAND with silt, poorly graded.	A-3											
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING PC-5

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'34.82"N **LONGITUDE** 81°45'19.71"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (4 1/2")												
	1	Limerock Base (6 1/2")												
	2	Dark gray fine SAND, trace silt and gravel (rock fragments)	A-3											
2.5	3	Dark gray silty fine SAND, poorly graded.	A-3											
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING PC-6

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 10/11/19 **COMPLETED** 10/11/19 **LATITUDE** 30°20'34.52"N **LONGITUDE** 81°45'48.46"W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Core/Hand Auger

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** —

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0.0		Asphalt (3 1/2")												
	1	Very dark gray fine SAND with silt, few gravel (rock fragments), poorly graded.	A-3											
	2	Dark gray fine SAND with silt, poorly graded.	A-3											
2.5	3													
		Bottom of borehole at 3 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch. GNE-Groundwater Level Not Encountered at Time of Drilling.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

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BORING FM-66

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 43.18" N **LONGITUDE** 81° 46' 19.30" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (1") Medium dense, Very dark brown fine SAND with silt, few organic fines, trace root fragments, poorly graded.	A-3		2 4 4 4	8								
	2	▽ Firm, Dark gray to brownish yellow CLAY with sand, trace root fragments.	A-7-6		2 3 2 2	5								
5	3	Stiff, Gray to dark gray to brownish yellow sandy CLAY.	A-6		2 3 4 5	7								
	4	Stiff, Brownish yellow gray CLAY, trace sand.	A-7-6		2 3 3 3	6	40	94		84	52			
10	5	Stiff, Gray CLAY with sand.	A-7-6		2 4 3 4	7								
	6	Stiff, Very dark gray CLAY with sand.	A-7-6		3 3 4 4	7								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.58 ft *▽ **END OF DAY** ---

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BORING FM-67

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 43.18" N **LONGITUDE** 81° 46' 18.37" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (2") Loose, Very dark gray fine SAND with silt, trace organic fines, poorly graded.	A-3		2 2 2 2	4								
	2	Loose, Dark gray very clayey fine SAND, poorly graded.	A-6		2 2 3 3	5	30	49						
5	3	Loose, Gray to dark gray to brownish yellow very clayey fine SAND, poorly graded.	A-6		2 3 3 3	6								
	4	Loose, Light brownish gray to dark gray brown very clayey fine SAND, poorly graded.	A-6		3 3 3 4	6	25	46						
10	5	Stiff, Brownish yellow to gray CLAY with sand.	A-7-6		3 4 3 5	7								
	6	Stiff, Gray sandy CLAY.	A-6		3 5 6 6	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.17 ft *▽ **END OF DAY** ---

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BORING FM-68

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 43.25" N **LONGITUDE** 81° 46' 17.11" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Very loose, Very dark brown to pale brown fine SAND with silt, few organic fines, poorly graded.	A-3		1 1 1 2	2								
	2	▽ Firm, Dark gray sandy CLAY, trace wood fragments, poorly graded.	A-6		1 2 2 3	4								
5	3	Firm, Dark gray to yellowish brown sandy CLAY, trace root fragments.	A-6		2 2 2 2	4								
	4	Firm, Dark gray to gray sandy CLAY.	A-6		2 3 2 3	5								
10	5	Loose, Gray very clayey fine SAND, poorly graded.	A-6		2 3 3 4	6	26	50						
	6	Stiff, Greenish gray sandy CLAY.	A-6		1 3 4 3	7								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.33 ft *▽ **END OF DAY** ---

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BORING FM-69

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 43.69" N **LONGITUDE** 81° 46' 16.06" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6") Firm, Brown very clayey fine SAND, poorly graded. ▽	A-6		1 2 1 1	3								
	2	Stiff, Light yellowish brown CLAY with sand.	A-6		2 4 4 3	8								
5	3	Stiff, Gray CLAY with sand.	A-6		3 3 3 3	6								
	4				4 4 4 6	8								
10	5	Very stiff, Gray CLAY with sand.	A-6		4 5 7 7	12								
	6	Very stiff, Gray to light yellowish brown CLAY with sand.	A-6		4 6 7 9	13								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 1.67 ft *▽ **END OF DAY** ---

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BORING FM-70

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 43.65" N **LONGITUDE** 81° 46' 14.80" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (6")												
	1	Loose, Very dark gray fine SAND with silt, poorly graded. ▽	A-3		1 2 2 3	4								
	2	Firm, Dark gray CLAY with sand.	A-6		1 2 1 3	3								
5	3	Stiff to very stiff, Gray CLAY with sand.	A-6		2 3 5 6	8								
	4				3 6 7 7	13								
	5	Very stiff, Dark gray CLAY with sand.	A-6		4 6 8 9	14								
10	6	Very stiff, Light brownish gray CLAY with sand.	A-6		4 7 8 10	15								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.00 ft *▽ **END OF DAY** ---

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BORING FM-71

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 43.76" N **LONGITUDE** 81° 46' 14.01" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		▽ Topsoil (6")												
	1	Firm, Dark grayish brown CLAY with sand.	A-6		1 2 1 1	3								
	2	Firm to Stiff, Light brownish gray to brownish yellow CLAY with sand.	A-6		1 2 3 5	5								
5	3				2 4 5 4	9								
	4	Stiff, Grayish brown CLAY with sand.	A-6		3 5 5 5	10								
	5	Stiff to very stiff, Greenish gray CLAY with sand.	A-6		4 4 5 5	9								
10	6				3 5 8 8	13								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 0.00 ft *▽ **END OF DAY** ---

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BORING FM-72

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 43.72" N **LONGITUDE** 81° 46' 12.72" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		▽ Topsoil (3")												
	1	Very loose, Dark gray fine SAND with silt, trace root fragments, poorly graded.	A-3		0 0 0 0	0								
	2	Loose, Gray clayey fine SAND, poorly graded.	A-2-6		2 3 4 5	7								
5	3	Medium dense, Gray clayey fine SAND, few root fragments, poorly graded.	A-2-6		2 4 6 6	10								
	4	Medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		3 6 9 10	15	17	32						
10	5				4 8 12 12	20								
	6	Medium dense, Gray silty fine SAND, trace clay nodules, poorly graded.	A-2-4		5 7 9 12	16								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 0.00 ft *▽ **END OF DAY** ---

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BORING FM-73

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 43.97" N **LONGITUDE** 81° 46' 11.67" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Topsoil (5")												
	1	Loose, Dark gray fine SAND with silt, poorly graded.	A-3		1 3 2 3	5								
	2	▽ Loose, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		1 2 2 4	4	20	31						
5	3	Very stiff, Gray CLAY with sand.	A-6		4 6 8 7	14								
	4	Medium dense, Gray very clayey fine SAND, poorly graded.	A-2-6		5 7 8 10	15								
10	5	Very stiff, Gray CLAY with sand.	A-6		4 8 10 10	18								
	6	Medium dense, Gray silty fine SAND, trace clay, poorly graded.	A-2-4		5 7 8 9	15								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.08 ft *▽ **END OF DAY** ---

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BORING FM-74

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 44.59" N **LONGITUDE** 81° 46' 10.73" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (4") Very loose, Gray fine SAND with silt, poorly graded. ▽	A-3		1 1 1 2	2								
	2	Loose to medium dense, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		1 2 3 3	5								
5	3				4 5 8 9	13	17	31		42	25			
	4	Very stiff, Gray CLAY with sand.	A-6		6 8 9 8	17								
10	5				5 8 10 13	18								
	6	Medium dense, Gray silty fine SAND, trace clay, poorly graded.	A-2-4		6 6 9 9	15								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 1.67 ft *▽ **END OF DAY** ---

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BORING FM-75

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 44.23" N **LONGITUDE** 81° 46' 09.29" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY P.R.Young **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (6") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		1 1 2 2	3								
	2	▽			2 3 3 4	6								
5	3				3 4 5 7	9								
	4	Loose to medium dense, Gray to brownish yellow very clayey fine SAND, poorly graded.	A-6		4 7 6 9	13								
10	5				4 6 5 8	11	21	40						
	6				3 6 8 8	14								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.75 ft *▽ **END OF DAY** ---

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BORING FM-76

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 44.83" N **LONGITUDE** 81° 46' 04.73" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		2 3 2 2	5								
	2	Loose, Gray to yellowish brown clayey fine SAND with silt, poorly graded.	A-2-6		2 3 3 3	6								
5	3	▽ Loose, Dark gray clayey fine SAND, poorly graded.	A-2-6		2 2 1 3	3								
	4	Stiff, Greenish gray CLAY with sand.	A-6		3 4 3 3	7								
	5	Loose to medium dense, Gray to greenish gray clayey fine SAND with silt, poorly graded.	A-2-6		2 3 4 4	7								
10	6				3 4 4 6	8								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.42 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:08 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-77

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 44.94" N **LONGITUDE** 81° 46' 03.60" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		1 2 2 1	4								
	2	Loose, Gray clayey fine SAND, trace silt, poorly graded.	A-2-6		2 1 3 2	4								
5	3	▽ Loose, Gray clayey fine SAND, poorly graded.	A-2-6		2 3 3 3	6								
	4	Loose, Gray to greenish gray clayey fine SAND, poorly graded.	A-2-6		3 3 4 3	7								
	5	Loose to medium dense, Light brownish gray to gray clayey fine SAND, poorly graded.	A-2-6		2 2 3 2	5								
10	6				3 4 4 4	8								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-78

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.08" N **LONGITUDE** 81° 46' 02.47" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Gray fine SAND with silt, trace root fragments, poorly graded.	A-3		1 2 2 2	4								
	2	Loose, Light brownish gray clayey fine SAND with silt, poorly graded.	A-2-6		2 3 3 3	6								
5	3	Loose, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		2 2 3 2	5								
	4	▽ Stiff, Light brownish gray CLAY with sand.	A-6		3 3 4 3	7								
	5	Stiff, Greenish gray CLAY with sand.	A-6		2 4 4 3	8								
10	6	Stiff, Gray silty CLAY with sand.	A-6		3 3 5 4	8								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.42 ft *▽ **END OF DAY** ---

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BORING FM-79A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.19" N **LONGITUDE** 81° 46' 01.33" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Dark grayish brown fine SAND with clay, trace root fragments, poorly graded.	A-3											
	2	Brown clayey fine SAND, poorly graded.	A-2-6											
	3	Dark gray clayey fine SAND, poorly graded.	A-2-6											
	4	▽ Very dark gray fine SAND with silt, poorly graded.	A-3											
5		Bottom of borehole at 6 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-80A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.33" N **LONGITUDE** 81° 46' 00.20" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Brown fine SAND with clay, trace root fragments, poorly graded.	A-3											
	2	Grayish brown clayey fine SAND, poorly graded.	A-2-6											
	3	Very dark gray clayey fine SAND, poorly graded.	A-2-6											
5	4 ▽	Very dark gray silty CLAY.	A-6											
		Bottom of borehole at 6 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-81A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.45" N **LONGITUDE** 81° 45' 59.07" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Dark gray fine SAND with clay, poorly graded.	A-3											
	2	Very dark gray clayey fine SAND, poorly graded.	A-2-6											
5	3	▽ Very dark gray CLAY with sand.	A-6											
		Bottom of borehole at 6 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-82A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.58" N **LONGITUDE** 81° 45' 57.93" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Very dark grayish brown fine SAND with clay, trace root fragments, poorly graded.	A-3											
	2	Very dark gray sandy CLAY, trace root fragments.	A-6											
	3													
5	4	Very dark gray fine SAND with silt, few organic fines, trace root fragments, poorly graded. ▽	A-3											
		Bottom of borehole at 7 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-83A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.71" N **LONGITUDE** 81° 45' 56.81" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Brown fine SAND with clay, trace silt and root fragments, poorly graded.	A-3											
	2	Very dark grayish brown to light olive brown clayey fine SAND, trace root fragments, poorly graded.	A-2-6											
	3													
	4	Very dark gray silty fine SAND, poorly graded.	A-2-4											
5		▽												
		Bottom of borehole at 6 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.50 ft *▽ **END OF DAY** ---

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BORING FM-84A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.83" N **LONGITUDE** 81° 45' 55.67" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Dark grayish brown fine SAND with silt, poorly graded.	A-3											
	2	Very dark gray fine SAND with silt, few organic fines, trace root fragments, poorly graded.	A-3											
	3	Very dark gray fine SAND with silt, few organic fines, trace root fragments, poorly graded. ▽	A-3											
5		Bottom of borehole at 7 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.00 ft *▽ **END OF DAY** ---

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BORING FM-85A

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.97" N **LONGITUDE** 81° 45' 54.54" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Hand Auger

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE**

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Dark grayish brown fine SAND with silt, trace root fragments, poorly graded.	A-3											
	2	Very dark grayish brown fine SAND with silt, trace clay and root fragments, poorly graded.	A-3											
	3	Very dark gray silty fine SAND, few organic fines, trace clay and root fragments, poorly graded.	A-2-4											
5		▽												
		Bottom of borehole at 6 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.00 ft *▽ **END OF DAY** ---

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BORING FM-86

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 45.41" N **LONGITUDE** 81° 45' 52.66" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (9") Sand-Asphalt Hot Mix (2") Loose, Very dark gray to dark gray fine SAND with silt, poorly graded.	A-3		2 3	5								
	2	▽ Loose, Gray clayey fine SAND with silt, poorly graded.	A-2-6		3 3 4 3	7								
5	3	Firm, Gray to yellowish brown sandy CLAY.	A-6		1 2 1 2	3								
	4				1 2 3 4	5								
	5	Firm to stiff, Gray to brownish yellow sandy CLAY.	A-6		4 4 5 4	9								
10	6				5 4 6 6	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:08 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-87

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 44.33" N **LONGITUDE** 81° 45' 52.67" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (10") Sand-Asphalt Hot Mix (2") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 3	6								
	2	Stiff, Gray to light yellowish brown very sandy CLAY.	A-6		10 4 2 2	6								
5	3	Firm, Gray to yellowish brown sandy CLAY.	A-6		2 2 3 3	5								
	4	Stiff, Gray to greenish gray sandy CLAY.	A-6		3 3 5 5	8								
10	5	Stiff, Greenish gray CLAY with sand.	A-7-6		4 5 6 6	11								
	6	Stiff, Greenish gray sandy CLAY.	A-6		5 5 5 5	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.17 ft *▽ **END OF DAY** ---

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BORING FM-88

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 43.54" N **LONGITUDE** 81° 45' 52.65" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (8") Sand-Asphalt Hot Mix (3") Loose, Very dark gray fine SAND with silt, trace organic fines, poorly graded.	A-3		3 3	6								
	2	Medium dense, Gray to very clayey fine SAND with silt, poorly graded.	A-6		7 6 5 5	11								
5	3	Stiff, Gray to yellow sandy CLAY.	A-6		4 4 6 5	10								
	4	Stiff, Gray to brownish yellow sandy CLAY.	A-6		3 4 6 6	10								
10	5	Stiff, Brownish yellow to dark gray sandy CLAY.	A-6		4 4 6 5	10								
	6	Stiff, Gray to brownish yellow sandy CLAY.	A-6		5 6 5 5	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.17 ft *▽ **END OF DAY** ---

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BORING FM-89

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 42.54" N **LONGITUDE** 81° 45' 52.63" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (8") Sand-Asphalt Hot Mix (3") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	▽ Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		9 10 7 6	17								
5	3	Medium dense, Grayish brown fine SAND with silt, poorly graded.	A-3		7 8 9 8	17								
	4	Stiff, Gray to light olive brown sandy CLAY.	A-6		2 3 3 3	6								
10	5				3 3 4 7	7								
	6	Stiff, Gray to light olive brown very sandy CLAY.	A-6		4 3 4 4	7								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.25 ft *▽ **END OF DAY** ---

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BORING FM-90

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 41.21" N **LONGITUDE** 81° 45' 52.61" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (11") Sand-Asphalt Hot Mix (2") ▽ Loose, Dark gray fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	Stiff, Dark gray to gray sandy CLAY.	A-6		5 4 3 3	7								
5	3	Stiff, Gray very sandy CLAY.	A-6		3 5 6 7	11								
	4	Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		4 6 8 9	14								
10	5	Very stiff, Gray to yellowish brown sandy CLAY.	A-6		6 6 6 7	12								
	6	Very stiff,Gray to yellowish brown CLAY with sand.	A-7-6		5 6 7 6	13								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 1.83 ft *▽ **END OF DAY** ---

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BORING FM-91

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 38.76" N **LONGITUDE** 81° 45' 52.37" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (7") Sand-Asphalt Hot Mix (5") Loose, Dark gray to very dark gray fine SAND with silt, poorly graded. ▽	A-3		2 3	5								
	2	Stiff, Yellowish brown to gray silty CLAY.	A-7-6		7 4 2 2	6								
5	3	Stiff, Gray to yellowish brown CLAY with sand.	A-7-6		3 4 3 5	7								
	4	Stiff, Gray sandy CLAY.	A-7-6		3 4 4 6	8								
10	5	Stiff, Gray to brownish yellow sandy CLAY.	A-7-6		4 4 5 4	9								
	6	Stiff, Gray very sandy CLAY.	A-6		5 5 6 6	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.00 ft *▽ **END OF DAY** ---

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BORING FM-92

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 37.97" N **LONGITUDE** 81° 45' 52.43" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (6") Sand-Asphalt Hot Mix (8") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	Stiff, Gray to yellowish brown sandy silty CLAY.	A-6		5 6 5 6	11								
5	3	Firm, Gray to yellowish brown sandy CLAY with silt.	A-7-6		1 2 1 1	3								
	4	Stiff, Gray sandy CLAY.	A-7-6		3 3 3 3	6								
10	5				3 4 4 7	8								
	6	Stiff, Gray very sandy CLAY.	A-6		4 5 6 6	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.08 ft *▽ **END OF DAY** ---

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BORING FM-93

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 36.84" N **LONGITUDE** 81° 45' 52.40" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (8") Sand-Asphalt Hot Mix (2") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	▽ Medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		6 7 9 11	16								
5	3	Medium dense, Dark gray clayey fine SAND with silt, poorly graded.	A-2-6		6 7 2 2	9								
	4	Stiff, Brown to greenish gray very sandy CLAY.	A-6		2 4 7 6	11								
10	5	Stiff, Greenish gray to dark grayish brown sandy CLAY.	A-7-6		3 5 6 6	11								
	6	Stiff, Greenish gray to dark grayish brown CLAY with sand.	A-7-6		5 6 6 7	12								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.75 ft *▽ **END OF DAY** ---

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BORING FM-94

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 35.81" N **LONGITUDE** 81° 45' 52.37" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (7") Sand-Asphalt Hot Mix (4") Loose, Very dark brown fine SAND with silt, trace organic fines, poorly graded.	A-3		3 3	6								
	2	▽ Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		7 8 10 7	18								
5	3	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded.	A-3		8 10 10 11	20								
	4	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		8 9 9 11	18								
10	5	Medium dense, Dark gray to gray fine SAND with silt, poorly graded.	A-3		5 6 5 5	11								
	6	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded.	A-3		6 5 5 5	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-95

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 34.73" N **LONGITUDE** 81° 45' 51.30" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (9") Sand-Asphalt Hot Mix (2") Loose, Very dark gray fine SAND with silt, poorly graded.	A-3		2 2	4								
	2	Medium dense, Light gray to yellow fine SAND with silt, poorly graded.	A-3		6 6 7 5	13								
5	3	Medium dense, Gray clayey fine SAND, poorly graded.	A-3		4 4 7 8	11								
	4	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		6 7 16 13	23								
10	5	Medium dense, Light gray fine SAND with silt, poorly graded.	A-3		3 5 5 6	10								
	6	Medium dense, Gray fine SAND with silt, trace clay, poorly graded.	A-3		4 5 6 6	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.08 ft *▽ **END OF DAY** ---

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BORING FM-96

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.91" N **LONGITUDE** 81° 45' 30.11" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Sand-Asphalt Hot Mix (9") Medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		6 9 9	18	27	35		42	25			
	2	▽ Medium dense, Grayish yellow fine SAND with clay, poorly graded.	A-3		6 5 4 3	9								
5	3	Loose, Gray to yellowish brown clayey fine SAND, poorly graded.	A-2-7		4 3 3 3	6								
	4	Medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		7 8 9 8	17								
10	5	Medium dense, Gray fine SAND with silt, trace clay, poorly graded.	A-3		7 9 11 12	20								
	6				9 9 8 9	17								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

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BORING FM-97

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.79" N **LONGITUDE** 81° 45' 26.64" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (5")												
		Sand-Asphalt Hot Mix (5")												
	1	Medium dense, Very dark gray to gray fine SAND with silt, trace organic fines, poorly graded.	A-3		7 9 9	18								
	2	▽ Stiff, Gray to brownish yellow sandy CLAY.	A-6		3 3 4 3	7								
5	3	Medium dense, Pale brownish gray clayey fine SAND, poorly graded.	A-2-6		9 9 8 9	17								
	4	Medium dense, Grayish brown clayey fine SAND, poorly graded.	A-2-6		9 8 12 9	20								
10	5	Very stiff, Greenish gray very sandy CLAY with sand.	A-6		9 7 9 9	16	30	62						
	6	Very stiff, Light greenish gray to yellowish brown sandy CLAY.	A-6		6 7 9 12	16								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-98

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.79" N **LONGITUDE** 81° 45' 22.97" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4")												
		Sand-Asphalt Hot Mix (6")												
	1	Medium dense, Very dark brown to grayish brown fine SAND with silt, few organic fines, poorly graded.	A-3		6 7									
	2	▽ Loose, Gray to yellowish brown very clayey fine SAND, poorly graded.	A-6		4 2 3 2	5	28	40						
5	3	Medium dense, Brownish yellow to gray very clayey fine SAND, poorly graded.	A-6		5 7 6 4	13								
	4	Medium dense, Gray to yellowish brown clayey fine SAND, poorly graded.	A-2-6		4 4 6 3	10	18	23						
10	5	Stiff, Gray to yellowish red sandy CLAY.	A-6		6 5 6 6	11								
	6	Stiff, Gray sandy CLAY.	A-6		7 6 5 5	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.33 ft *▽ **END OF DAY** ---

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BORING FM-99

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.79" N **LONGITUDE** 81° 45' 20.69" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (5") Sand-Asphalt Hot Mix (7") Medium dense, Dark gray to gray fine SAND with silt, poorly graded.	A-3		7 9	16								
	2	▽ Very loose, Gray to pale brown very clayey fine SAND, poorly graded.	A-6		2 1 1 2	2	28	43						
5	3	Firm, Dark gray to yellowish brown to light gray sandy CLAY.	A-6		1 2 2 3	4								
	4	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded.	A-3		5 6 7 9	13								
10	5				5 6 6 5	12								
	6	Medium dense, Gray to pale brown silty fine SAND, poorly graded.	A-2-4		4 6 7 7	13								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.00 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:08 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-100

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.85" N **LONGITUDE** 81° 45' 17.76" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (5") Sand-Asphalt Hot Mix (7") Loose, Gray to dark gray fine SAND with silt, poorly graded.	A-3		3 2	5								
	2	▽ Loose, Dark gray very clayey fine SAND, poorly graded.	A-6		1 2 1 1	3	27	46						
5	3	Soft, Very dark gray to grayish brown sandy CLAY.	A-6		0 0 1 2	1								
	4	Medium dense, Greenish gray very clayey fine SAND, poorly graded,	A-2-6		3 4 5 4	9								
10	5	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		5 6 4 5	10								
	6	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		7 6 5 5	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.50 ft *▽ **END OF DAY** ---

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BORING FM-101

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.85" N **LONGITUDE** 81° 45' 14.88" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4")												
		Sand-Asphalt Hot Mix (6")												
	1	Medium dense, Gray fine SAND with silt, trace root fragments, poorly graded. ▽	A-3		5 6	11								
	2	Firm, Yellowish brown to gray very sandy CLAY.	A-6		2 1 1 2	2								
5	3	Firm, Gray to brownish yellow very sandy CLAY.	A-6		3 2 3 2	5								
	4	Stiff, Gray sandy CLAY.	A-6		3 4 3 4	7								
	5	Very stiff, Gray CLAY with sand.	A-7-6		5 7 6 8	13								
10	6	Medium dense, Gray to olive brown clayey fine SAND, poorly graded.	A-2-6		6 7 7 7	14								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 1.92 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:07 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-102

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/27/2020 **COMPLETED** 4/27/2020 **LATITUDE** 30° 20' 34.81" N **LONGITUDE** 81° 45' 12.30" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (5")												
		Sand-Asphalt Hot Mix (6")												
	1	Medium dense, Light brownish gray to gray fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	▽ Gray to pale brown fine SAND with silt, poorly graded.	A-3		3 4 5 4	9								
5	3	Medium dense, Yellowish brown to red to gray clayey fine SAND, poorly graded.	A-2-6		3 5 5 7	10	18	27						
	4	Stiff, Gray very sandy CLAY.	A-6		3 4 3 5	7								
10	5	Medium dense, Gray very clayey fine SAND, poorly graded.	A-6		4 5 6 5	11								
	6	Medium dense, Pale brown to gray fine SAND with silt, poorly graded.	A-3		7 6 6 6	12								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-103

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/28/2020 **COMPLETED** 4/28/2020 **LATITUDE** 30° 20' 34.85" N **LONGITUDE** 81° 45' 09.01" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4")												
		Sand-Asphalt Hot Mix (6")												
	1	Medium dense, Light brownish gray to gray fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		4 5	9								
	2	▽ Medium dense, Gray to light gray fine SAND with silt, trace clay, poorly graded.	A-3		3 4 5 4	9								
5	3	Medium dense, Gray to yellowish brown clayey fine SAND, poorly graded.	A-2-7		6 5 5 4	10								
	4				5 6 6 5	12	19	34		45	29			
10	5	Medium dense, Gray to yellowish brown very clayey fine SAND, poorly graded.	A-6		4 5 6 7	11								
	6	Stiff, Gray very sandy CLAY.	A-6		5 4 6 4	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-104

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 34.98" N **LONGITUDE** 81° 45' 04.19" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (2") Medium dense, Dark brown fine SAND with silt, trace clay, poorly graded.	A-3		6 7 5 6	12								
	2	Medium dense, Very dark gray to gray fine SAND with silt, poorly graded.	A-3		4 4 4 5	8								
5	3	▽ Loose, Gray fine SAND with clay, trace silt, poorly graded.	A-3		3 2 1 1	3								
	4	Firm, Greenish gray to yellowish brown very sandy CLAY.	A-6		1 1 2 3	3	24	52						
10	5	Stiff, Gray to yellowish brown sandy CLAY.	A-6		3 4 6 7	10								
	6				4 5 6 6	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.08 ft *▽ **END OF DAY** ---

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BORING FM-105

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 34.98" N **LONGITUDE** 81° 45' 00.77" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Dark brown fine SAND with silt, poorly graded.	A-3		2 3 3 4	6								
	2	▽ Medium dense, Gray fine SAND with silt, poorly graded.	A-3		4 6 5 6	11								
5	3	Firm, Gray to brownish yellow to light gray sandy CLAY.	A-6		4 3 2 1	5								
	4	Medium dense, Gray to reddish brown clayey fine SAND, poorly graded.	A-2-6		4 6 10 11	16								
10	5	Stiff, Dark gray to pale brown very sandy CLAY.	A-6		2 3 4 5	7								
	6	Very stiff, Gray to yellowish brown sandy CLAY.	A-6		5 7 9 11	16								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.42 ft *▽ **END OF DAY** ---

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BORING FM-106

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 34.85" N **LONGITUDE** 81° 44' 58.19" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Very dark brown fine SAND with silt, poorly graded.	A-3		2 3 4 4	7								
	2	▽ Medium dense, Pale brown fine SAND with silt, poorly graded.	A-3		5 5 5 3	10								
5	3	Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		3 5 5 6	10	18	30						
	4	Stiff, Gray to brownish yellow sandy CLAY.	A-6		3 3 6 11	9								
10	5	Stiff, Gray to light olive brown sandy CLAY.	A-6		4 5 6 8	11								
	6				3 3 4 4	7								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.92 ft *▽ **END OF DAY** ---

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BORING FM-107

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 35.09" N **LONGITUDE** 81° 44' 50.15" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Medium dense, Very dark brown to brown fine SAND with silt, trace organic fines, poorly graded.	A-3		3 4 4 5	8								
	2	▽ Medium dense, Very dark gray fine SAND with silt, few organic fines, trace root fragments, poorly graded.	A-3		4 5 3 5	8								
5	3	Loose, Dark gray fine SAND with silt, poorly graded.	A-3		2 4 3 2	7								
	4	Loose, Gray to dark gray clayey fine SAND, poorly graded.	A-2-6		1 2 3 2	5	23	32						
10	5	Dense, Gray fine SAND, poorly graded.	A-3		8 18 14 17	32								
	6	Medium dense, Gray fine SAND with clay, trace silt, poorly graded.	A-3		6 9 9 12	18								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-108

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 35.03" N **LONGITUDE** 81° 44' 47.64" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Loose, Very dark grayish brown fine SAND with silt, trace clay nodules, poorly graded.	A-3		3 3 4 3	7								
	2	Firm, Very dark gray sandy CLAY. ▽	A-7-6		2 2 3 2	5								
5	3	Stiff, Gray CLAY with sand.	A-6		3 3 4 4	7								
	4	Stiff, Gray CLAY with sand, trace root fragments.	A-6		6 5 6 6	11								
10	5	Medium dense, Gray clayey fine SAND with silt, poorly graded.	A-2-6		6 6 8 9	14								
	6	Loose, Gray fine SAND with silt, poorly graded.	A-3		2 3 3 3	6								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.92 ft *▽ **END OF DAY** ---

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BORING FM-109

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 35.21" N **LONGITUDE** 81° 44' 44.99" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (2") Medium dense, Light gray fine SAND with silt, some gravel (rock fragments), poorly graded.	A-3		8 8 7 4	15								
	2	▽ Very loose, Yellowish brown silty fine SAND, poorly graded.	A-2-4		1 0 0 1	0								
5	3	Loose, Brown fine SAND with silt, poorly graded.	A-3		2 3 2 3	5								
	4				1 2 1 1	3								
10	5	Loose, Grayish brown silty fine SAND, poorly graded.	A-2-4		3 3 3 3	6								
	6				3 3 3 3	6								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-110

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 36.39" N **LONGITUDE** 81° 44' 23.62" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (1") Sand-Asphalt Hot Mix (6")			4 3	7								
	2	Loose, Very pale brown fine SAND with silt, poorly graded.	A-3		3 3 2 1	5								
5	3	▽ Loose, Grayish brown clayey fine SAND, poorly graded.	A-2-6		3 2 3 3	5								
	4	Medium dense, Light yellowish brown clayey fine SAND with silt, trace root fragments, poorly graded.	A-2-6		3 3 5 7	8								
	5				5 6 10 12	16								
10	6	Medium dense, Light yellowish brown fine SAND with silt, poorly graded.	A-3		6 8 10 19	18								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 4.50 ft *▽ **END OF DAY** ---

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BORING FM-111

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 36.59" N **LONGITUDE** 81° 44' 19.14" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (7") Sand-Asphalt Hot Mix (5")			8 17	25								
	2	Dense to medium dense, Yellowish brown fine SAND with silt, poorly graded. ▽	A-3		15 12 10 11	22								
5	3	Loose, Gray fine SAND with clay, poorly graded.	A-3		4 3 4 4	7								
	4	Medium dense, Light yellowish brown to greenish gray clayey fine SAND, poorly graded.	A-2-6		3 4 5 5	9								
10	5	Medium dense, Light yellowish brown to greenish gray fine SAND with silt, trace clay, poorly graded.	A-3		6 6 7 6	13								
	6				4 6 9 6	15								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.83 ft *▽ **END OF DAY** ---

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BORING FM-112

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/29/2020 **COMPLETED** 4/29/2020 **LATITUDE** 30° 20' 36.78" N **LONGITUDE** 81° 44' 16.31" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (8")												
	1	Limerock Base (6")			6 9	15								
		Medium dense, Dark grayish brown to light yellowish brown fine SAND with silt, poorly graded.	A-3											
	2	Medium dense, Very dark gray fine SAND with silt, poorly graded. ▽	A-3		7 6 7 7	13								
5	3	Medium dense, Dark gray fine SAND with silt, poorly graded.	A-3		5 9 9 6	18								
	4	Stiff, Greenish gray to brownish yellow CLAY with sand.	A-6		3 3 3 3	6								
10	5	Medium dense, Light yellowish brown to greenish gray fine SAND with clay, poorly graded.	A-2-6		5 8 10 11	18	26	13						
	6	Medium dense, Light greenish gray silty fine SAND, poorly graded.	A-2-4		9 9 7 8	16								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.92 ft *▽ **END OF DAY** ---

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BORING FM-113

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.43" N **LONGITUDE** 81° 44' 07.07" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (7") Limerock Base (5") Loose, Light yellowish brown fine SAND with silt, poorly graded.	A-3		3 3	6								
	2	Medium dense, Brownish yellow clayey fine SAND, poorly graded.	A-2-6		2 4 6 6	10								
5	3				6 6 8 10	14								
	4	▽ Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded.	A-2-6		5 7 9 11	16	18	26						
10	5				6 8 10 11	18								
	6				5 6 9 9	15								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.17 ft *▽ **END OF DAY** ---

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BORING FM-114

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.55" N **LONGITUDE** 81° 44' 04.61" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (8") Limerock Base (6") Medium dense, Brown fine SAND with silt, poorly graded.	A-3		4 5	9								
	2	Loose, Dark gray to yellowish brown very clayey fine SAND, poorly graded.	A-6		3 2 2 2	4								
5	3	Stiff, Light greenish gray sandy CLAY.	A-7-6		3 5 6 6	11								
	4				4 5 7 8	12	22	73		48	32			
	5	Stiff to very stiff, Gray to greenish gray sandy CLAY.	A-6		6 6 5 6	11								
10	6				5 6 8 8	14								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.17 ft *▽ **END OF DAY** ---

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Meskel & Associates Engineering

BORING FM-115

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.97" N **LONGITUDE** 81° 44' 01.97" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (8") Limerock Base (8") Medium dense, Brownish yellow fine SAND with silt, poorly graded.	A-3		3 5	8								
	2				2 2 2 3	4								
5	3				3 4 4 4	8								
	4	Firm to very stiff, Gray to brownish yellow very sandy CLAY.	A-6		4 5 5 5	10								
	5	▽			6 7 9 11	16	23	61						
10	6				5 8 10 10	18								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.25 ft *▽ **END OF DAY** ---

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BORING FM-116

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.79" N **LONGITUDE** 81° 43' 59.85" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (8")												
	1	Limerock Base (6")			7 9	16								
		Medium dense, Dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3											
	2	Stiff, Gray to brownish yellow CLAY with sand.	A-6		2 3 3 4	6								
5	3	Medium dense, Light yellowish brown very clayey fine SAND, poorly graded.	A-6		3 3 5 6	8	20	38						
	4	Stiff, Light brownish gray CLAY with sand.	A-6		6 5 6 7	11								
	5	Stiff, Yellowish brown greenish gray CLAY with sand.	A-6		5 6 6 8	12								
10	6	Very stiff, Light brownish gray CLAY with sand.	A-6		5 8 9 9	17								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.17 ft *▽ **END OF DAY** ---

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BORING FM-117

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.86" N **LONGITUDE** 81° 43' 56.41" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (7") Limerock Base (5") Loose, Brown fine SAND with silt, trace clay and gravel (rock fragments), poorly graded.	A-3		2 3	5								
	2				2 3 3 4	6								
5	3	Stiff, Gray to yellowish brown CLAY with sand.	A-6		5 5 5 4	10								
	4				3 4 5 5	9								
	5	Stiff, Light yellowish brown CLAY with sand.	A-6		5 5 7 6	12								
10	6	Medium dense, Gray very clayey fine SAND, poorly graded.	A-6		5 6 8 8	14	24	36						
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 8.17 ft *▽ **END OF DAY** ---

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BORING FM-118

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.93" N **LONGITUDE** 81° 43' 50.21" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (2") Limerock Base (8") Medium dense, Brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		6 12	18								
	2	Dense to medium dense, Gray clayey fine SAND, poorly graded.	A-2-6		8 13 12 10	25								
5	3				5 8 6 4	14								
	4	▽ Stiff, Gray sandy CLAY.	A-6		4 5 6 7	11	32	83						
10	5	Stiff, Greenish gray CLAY with sand.	A-6		5 6 6 7	12								
	6				4 6 5 5	11								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.25 ft *▽ **END OF DAY** ---

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BORING FM-119

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.92" N **LONGITUDE** 81° 43' 47.35" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (3") Limerock Base (5")												
	1	Loose, Very dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		3 3 2 2	5								
	2				1 2 2 2	4								
5	3	Very loose, Very dark grayish brown silty fine SAND, trace root fragments and organic fines, poorly graded.	A-2-4		1 1 1 1	2								
	4	▽ Medium dense, Greenish gray very clayey fine SAND, poorly graded.	A-2-6		2 3 5 7	8								
	5	Stiff, Greenish gray CLAY with sand.	A-6		4 4 5 6	9								
10	6				5 5 5 7	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.08 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:08 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-120

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 4/30/2020 **COMPLETED** 4/30/2020 **LATITUDE** 30° 20' 37.92" N **LONGITUDE** 81° 43' 41.55" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (4") Limerock Base (9")			2 3	5								
	2	Loose, Very dark grayish brown fine SAND with silt, poorly graded.	A-3		3 3 3 3	6								
5	3	Loose, Gray very clayey fine SAND, poorly graded.	A-2-6		2 2 2 3	4	24	33						
	4	▽			4 5 6 6	11								
10	5	Medium dense, Gray fine SAND with silt, poorly graded.	A-3		5 7 9 11	16								
	6				4 5 7 7	12								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.08 ft *▽ **END OF DAY** ---

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BORING FM-121

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.91" N **LONGITUDE** 81° 43' 38.20" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (4")												
		Limerock Base (6")												
	1	Medium dense, Brown fine SAND with silt, poorly graded.	A-3		4 6	10								
	2	Medium dense, Light yellowish brown fine SAND with silt, trace gravel (rock fragments) and clay, poorly graded.	A-3		6 7 7 6	14								
5	3				3 4 5 4	9								
	4	Loose, Light yellowish brown clayey fine SAND, poorly graded.	A-2-6		3 3 3 4	6								
	5	Medium dense, Gray very clayey fine SAND, poorly graded.	A-6		3 4 4 5	8	24	43						
10	6				4 4 6 7	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.08 ft *▽ **END OF DAY** ---

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BORING FM-122

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.79" N **LONGITUDE** 81° 43' 35.99" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Limerock Base (9") Loose, Dark yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		2 3	5								
	2	Medium dense, Pale brown to brown fine SAND with silt, trace gravel (shell and rock fragments), poorly graded.	A-3		7 8 5 3	13								
5	3	▽ Loose, Gray clayey fine SAND, poorly graded.	A-2-6		2 2 5 6	7								
	4	Medium dense, Dark gray clayey fine SAND, poorly graded.	A-2-6		4 6 6 8	12	19	35						
10	5	Medium dense, Gray clayey fine SAND with silt, poorly graded.	A-2-6		5 5 6 6	11								
	6				4 5 5 5	10								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 5.17 ft *▽ **END OF DAY** ---

NEW MAE LOG AASTHO LAT_LONG - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:08 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING FM-123

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.76" N **LONGITUDE** 81° 43' 32.50" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (3") Limerock Base (7")												
	1	Loose, Dark grayish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		3 3	6								
	2	▽ Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		4 4 5 4	9								
5	3	Loose, Gray to greenish gray very clayey fine SAND, poorly graded.	A-2-6		2 3 3 4	6	22	23						
	4	Stiff, Greenish gray VERY SANDY CLAY.	A-6		2 3 3 3	6	39	65						
10	5	Loose, Dark gray t0 greenish gray very clayey fine SAND, poorly graded.	A-2-6		3 3 4 3	7								
	6	Stiff, Greenish gray CLAY with sand.	A-6		3 3 3 3	6								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.17 ft *▽ **END OF DAY** ---

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BORING FM-124

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.75" N **LONGITUDE** 81° 43' 30.17" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (3") Limerock Base (6")												
	1	Loose, Brown fine SAND with silt, poorly graded.	A-3		3 4	7								
	2	▽ Medium dense, Dark grayish brown fine SAND with silt, poorly graded.	A-3		4 6 6 5	12								
5	3	Loose, Gray clayey fine SAND, poorly graded.	A-2-6		2 3 3 2	6								
	4	Loose, Dark greenish gray very clayey fine SAND, poorly graded.	A-2-6		3 2 2 2	4								
	5	Medium dense, Light grayish olive clayey fine SAND, poorly graded.	A-2-6		3 6 7 9	13	18	33						
10	6				4 5 8 8	13								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.50 ft *▽ **END OF DAY** ---

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BORING FM-125

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.78" N **LONGITUDE** 81° 43' 26.73" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Limerock Base (9") Loose, Dark brown fine SAND with silt, trace gravel (shell fragments), poorly graded.	A-3		2 2	4								
	2	Medium dense, Gray fine SAND with clay, trace silt, poorly graded. ▽	A-3		8 10 7 4	17								
5	3	Loose, Gray to brownish yellow very clayey fine SAND, poorly graded.	A-6		2 2 2 2	4								
	4				3 3 4 4	7	30	46						
10	5				3 3 3 3	6								
	6	Loose, Brownish yellow clayey fine SAND, poorly graded.	A-2-6		3 4 3 3	7	20	35		33	18			
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.92 ft *▽ **END OF DAY** ---

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BORING FM-126

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/1/2020 **COMPLETED** 5/1/2020 **LATITUDE** 30° 20' 37.91" N **LONGITUDE** 81° 43' 21.21" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	AASHTO	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (1") Limerock Base (10") Loose, Dark yellowish brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	A-3		2 2	4								
	2	Loose, Gray very clayey fine SAND, poorly graded. ▽	A-2-6		2 2 3 9	5	20	30						
5	3	Medium dense, Dark gray clayey fine SAND, poorly graded.	A-2-6		7 5 7 6	12								
	4	Medium dense, Gray to greenish gray very clayey fine SAND, poorly graded.	A-6		4 5 5 5	10	28	42						
10	5				5 6 5 5	11								
	6	Medium dense, Dark gray very clayey fine SAND, poorly graded.	A-2-6		4 4 4 5	8								
		Bottom of borehole at 12 feet.												

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.67 ft *▽ **END OF DAY** ---

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BORING JB-11

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 38.15" N **LONGITUDE** 81° 43' 46.43" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Asphalt (3") Limerock Base (8") Medium dense, Brown fine SAND with silt, trace gravel (rock fragments), poorly graded.	SP-SM		4 5	9								
	2	Stiff, Gray to grayish brown very sandy CLAY.	CL		7 6 5 5	11								
5	3	Medium dense, Gray very clayey fine SAND, poorly graded.	SC		3 4 5 5	9								
	4	▽ Medium dense, Gray to greenish gray clayey fine SAND, poorly graded.	SC		3 5 4 5	9								
10	5	Stiff, Greenish gray to gray sandy CLAY.	CL		5 5 6 5	11								
15	6	Firm, Greenish gray silty CLAY, trace sand, few gravel (shell fragments).	CH		2 3 3	6								
20	7	Loose, Greenish gray silty fine SAND, poorly graded.	SM		2 3 2	5								

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.50 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-11

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Loose, Greenish gray silty fine SAND, poorly graded. *(continued)*	SM											
25	8	Dense, Greenish gray to light gray fine SAND with silt, poorly graded.	SP-SM		9 12 15	27								
30	9	Medium dense, Gray fine SAND with silt, poorly graded.	SP-SM		3 4 5	9								
35	10	Loose to medium dense, Very dark greenish gray fine SAND with silt, poorly graded.	SP-SM		4 3 4	7								
40	11				3 4 6	10								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 7.50 ft *▽ **END OF DAY** ---

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BORING JB-12

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/5/2020 **COMPLETED** 5/5/2020 **LATITUDE** 30° 20' 38.04" N **LONGITUDE** 81° 43' 44.21" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0		Asphalt (3") Limerock Base (8")												
	1	Medium dense, Brown fine SAND with silt, trace gravel (shell fragments), poorly graded.	SP-SM		7 7	14								
	2	Medium dense, Light yellowish brown fine SAND with silt, poorly graded.	SP-SM		5 4 4 5	8								
5	3	Medium dense, Gray to brownish yellow clayey fine SAND, poorly graded.	SC		5 8 6 7	14								
	4	▽ Medium dense, Gray silty fine SAND, trace clay, poorly graded.	SM		7 6 5 5	11								
10	5	Medium dense, Pale brown fine SAND with silt, poorly graded.	SP-SM		5 6 5 5	11								
15	6	Firm, Greenish gray sandy CLAY with silt.	CL		2 2 3	5								
20	7	Loose, Greenish gray silty fine SAND, poorly graded.	SM		3 2 3	5								

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.17 ft *▽ **END OF DAY** ---

(Continued Next Page)

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BORING JB-12

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
20		Loose, Greenish gray silty fine SAND, poorly graded. *(continued)*	SM											
25	8	Medium dense, Greenish gray silty fine SAND, poorly graded.	SM		3 6 6	12								
30	9				5 8 11	19								
35	10	Medium dense, Gray silty fine SAND, poorly graded.	SM		3 3 5	8								
40	11	Dense, Light gray fine SAND with clay, trace silt and gravel (rock fragments), poorly graded.	SP-SC		8 14 20	34								

Bottom of borehole at 40 feet.

NOTES Boring backfilled with soil cuttings and capped with Asphalt Cold Patch.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 6.17 ft *▽ **END OF DAY** ---

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BORING GC-1

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 6/2/2020 **COMPLETED** 6/2/2020 **LATITUDE** 30° 20' 24.00" N **LONGITUDE** 81° 44' 17.50" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Topsoil (3") Very loose, Dark gray clayey fine SAND, trace root fragments, poorly graded.	SC		2 1 1 3	2								
	2	▽ Medium dense, Dark gray clayey fine SAND, poorly graded.	SC		4 5 5 4	10								
5	3				3 4 4 3	8								
	4	Medium dense, Dark gray fine SAND with silt, poorly graded.	SP-SM		4 5 7 8	12								
	5				7 8 7 7	15								
10		Medium dense, Dark gray fine SAND with silt, trace clay nodules, poorly graded.	SP-SM											
	6	Medium dense, Dark gray fine SAND with silt, poorly graded.	SP-SM		9 8 8	16								
15		Bottom of borehole at 15 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 2.75 ft *▽ **END OF DAY** ---

NEW MAE LOG LAT/LONG-EOD_CUTTINGS - NEW TEMPLATE 7-30-12.GDT - 6/22/20 16:21 - F:\GINT\GINT FILES\PROJECTS\0103-0018\JEA 5TH W- IMERSON.GPJ

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BORING GC-2

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 6/2/2020 **COMPLETED** 6/2/2020 **LATITUDE** 30° 20' 23.50" N **LONGITUDE** 81° 44' 17.00" W

DRILLING CONTRACTOR MAE, PLLC **DRILLING METHOD** Standard Penetration Test

LOGGED BY D.McLellan **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Medium dense, Grayish brown fine SAND with silt, poorly graded.	SP-SM		8 6 4 4	10								
	2 ▽	Medium dense, Grayish brown clayey fine SAND, poorly graded.	SC		4 4 6 4	10								
5	3	Loose, Dark gray silty fine SAND, trace wood fragments, poorly graded.	SM		5 4 3 3	7								
	4	Medium dense, Dark gray fine SAND with silt, trace wood fragments, poorly graded.	SP-SM		5 6 8 9	14								
10	5	Medium dense, Grayish brown fine SAND with silt, poorly graded.	SP-SM		7 8 8 9	16								
15	6	Medium dense, Gray fine SAND with silt, trace root fragments, poorly graded.	SP-SM		9 12 11	23								
		Bottom of borehole at 15 feet.												

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

▽ **AT TIME OF DRILLING** 3.83 ft *▽ **END OF DAY** ---

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BORING GC-3

PROJECT NO. 0103-0018

PROJECT NAME JEA 5th Street West - Imeson Road to Melson Avenue

PROJECT LOCATION Jacksonville, Florida **CLIENT** Mott MacDonald Florida, LLC

DATE STARTED 5/6/2020 **COMPLETED** 5/6/2020 **LATITUDE** 30° 20' 38.39" N **LONGITUDE** 81° 43' 22.49" W

DRILLING CONTRACTOR Independent Drilling, Inc. **DRILLING METHOD** Standard Penetration Test

LOGGED BY S.Lewis **CHECKED BY** W. Josh Mele **GROUND ELEVATION** — **HAMMER TYPE** Automatic

DEPTH (ft)	SAMPLE DEPTH NUMBER	MATERIAL DESCRIPTION	USCS	GRAPHIC LOG	BLOW COUNTS	N-VALUE	MOISTURE CONTENT (%)	FINES CONTENT (%)	ORGANIC CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	POCKET PEN. (tsf)	RECOVERY % (RQD)	REMARKS
0	1	Gray to dark gray fine SAND with silt, trace gravel (rock fragments) and organic fines, poorly graded.	SP-SM											
	2	Dark brown to yellowish brown very sandy CLAY, trace root fragments.	CL											
5	3	Firm, Dark grayish brown to brownish yellow very sandy CLAY.	CL		1 2 2 2	4								
	4	Loose, Dark grayish brown to gray very clayey fine SAND, poorly graded.	SC		2 3 3 4	6								
10	5	Medium dense, Gray to brownish yellow very clayey fine SAND, poorly graded.	SC		3 4 4 6	8								
15	6	Medium dense, Grayish brown silty fine SAND, trace clay, poorly graded.	SM		4 4 5	9								
20	7	Very stiff, Dark gray to pale olive sandy CLAY.	CL		5 6 6	12								
25	8	Very stiff, Dark brown sandy CLAY.	CL		6 6 7	13								

Bottom of borehole at 25 feet.

NOTES Boring backfilled with soil cuttings.

GROUND WATER LEVELS

AT TIME OF DRILLING --- GNE **END OF DAY** ---

FIELD EXPLORATION PROCEDURES

Standard Penetration Test (SPT) Borings

The Standard Penetration Test (SPT) boring(s) were performed in general accordance with the latest revision of ASTM D 1586, "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." The borings were advanced by rotary drilling techniques. A split-barrel sampler was inserted to the borehole bottom and driven 18 to 24 inches into the soil using a 140-pound hammer falling an average of 30 inches per hammer blow. The number of hammer blows for the final 12 inches of penetration (18" sample) or for the sum of the middle 12 inches of penetration (24" sample) is termed the "penetration resistance, blow count, or N-value." This value is an index to several in-situ geotechnical properties of the material tested, such as relative density and Young's Modulus.

After driving the sampler, it was retrieved from the borehole and representative samples of the material within the split-barrel were containerized and sealed. After completing the drilling operations, the samples for each boring were transported to the laboratory where they were examined by a geotechnical engineer to verify the field descriptions and classify the soil, and to select samples for laboratory testing.

Hand Auger Boring

The auger boring(s) were performed manually by the use of a hand-held bucket auger in general accordance with the latest revision of ASTM D 1452, "Standard Practice for Soil Exploration and Sampling by Auger Borings." Representative samples of the soils brought to the ground surface by the auger were placed in sealed containers and transported to our laboratory where they were examined by a geotechnical engineer to verify the field descriptions and classify the soil, and to select samples for laboratory testing.

KEY TO BORING LOGS – AASHTO

Soil Classification

Soil classification of samples obtained at the boring locations is based on the American Association of State Highway and Transportation Officials (AASHTO) Classification System. Coarse grained soils have more than 50% of their dry weight retained on a #200 sieve. Their principal descriptors are: sand, cobbles and boulders. Fine grained soils have less than 50% of their dry weight retained on a #200 sieve. They are principally described as clays if they are plastic and silts if they are slightly to non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

BORING LOG LEGEND

Symbol	Description
N	Standard Penetration Resistance, the number of blows required to advance a standard spoon sampler 12" when driven by a 140-lb hammer dropping 30".
WOR	Split Spoon sampler advanced under the weight of the drill rods
WOH	Split Spoon sampler advanced under the weight of the SPT hammer
50/2"	Indicates 50 hammer blows drove the split spoon 2 inches; 50 Hammer blows for less than 6-inches of split spoon driving is considered "Refusal".
(SP)	Unified Soil Classification System
-200	Fines content, % Passing No. 200 U.S. Standard Sieve
w	Natural Moisture Content (%)
OC	Organic Content (%)
LL	Liquid Limit
PI	Plasticity Index
NP	Non-Plastic
PP	Pocket Penetrometer in tons per square foot (tsf)

MODIFIERS

SECONDARY CONSTITUENTS
(Sand, Silt or Clay)

Trace	Less than 5%
With	5% to 12%
Sandy, Silty or Clayey	12% to 35%
Very Sandy, Very Silty or Very Clayey	35% to 50%

ORGANIC CONTENT

Trace	2% or less
With	3% to 5%
Organic Soils	5% to 20%
Highly Organic Soils (Muck)	20% to 75%
PEAT	Greater than 75%

MINOR COMPONENTS
(Shell, Rock, Debris, Roots, etc.)

Trace	Less than 5%
Few	5% to 10%
Little	15% to 25%
Some	30% to 45%

RELATIVE DENSITY (Coarse-Grained Soils)

Relative Density	N-Value *
Very Loose	Less than 3
Loose	3 to 8
Medium Dense	8 to 24
Dense	24 to 40
Very Dense	Greater than 40

CONSISTENCY (Fine-Grained Soils)

Consistency	N-Value *
Very Soft	Less than 1
Soft	1 to 3
Firm	3 to 6
Stiff	6 to 12
Very Stiff	12 to 24
Hard	Greater than 24

RELATIVE HARDNESS (Limestone)

Relative Hardness	N-Value *
Soft	Less than 50
Hard	Greater than 50

* Using Automatic Hammer

KEY TO BORING LOGS – USCS

Soil Classification

Soil classification of samples obtained at the boring locations is based on the Unified Soil Classification System (USCS). Coarse grained soils have more than 50% of their dry weight retained on a #200 sieve. Their principal descriptors are: sand, cobbles and boulders. Fine grained soils have less than 50% of their dry weight retained on a #200 sieve. They are principally described as clays if they are plastic and silts if they are slightly to non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

BORING LOG LEGEND

Symbol	Description
N	Standard Penetration Resistance, the number of blows required to advance a standard spoon sampler 12" when driven by a 140-lb hammer dropping 30".
WOR	Split Spoon sampler advanced under the weight of the drill rods
WOH	Split Spoon sampler advanced under the weight of the SPT hammer
50/2"	Indicates 50 hammer blows drove the split spoon 2 inches; 50 Hammer blows for less than 6-inches of split spoon driving is considered "Refusal".
(SP)	Unified Soil Classification System
-200	Fines content, % Passing No. 200 U.S. Standard Sieve
w	Natural Moisture Content (%)
OC	Organic Content (%)
LL	Liquid Limit
PI	Plasticity Index
NP	Non-Plastic
PP	Pocket Penetrometer in tons per square foot (tsf)

MODIFIERS

SECONDARY CONSTITUENTS
(Sand, Silt or Clay)

Trace	Less than 5%
With	5% to 12%
Sandy, Silty or Clayey	12% to 35%
Very Sandy, Very Silty or Very Clayey	35% to 50%

ORGANIC CONTENT

Trace	Less than 5%
Organic Soils	5% to 20%
Highly Organic Soils (Muck)	20% to 75%
PEAT	Greater than 75%

MINOR COMPONENTS
(Shell, Rock, Debris, Roots, etc.)

Trace	Less than 5%
Few	5% to 10%
Little	15% to 25%
Some	30% to 45%

RELATIVE DENSITY (Coarse-Grained Soils)

Relative Density	N-Value *
Very Loose	Less than 3
Loose	3 to 8
Medium Dense	8 to 24
Dense	24 to 40
Very Dense	Greater than 40

CONSISTENCY (Fine-Grained Soils)

Consistency	N-Value *
Very Soft	Less than 1
Soft	1 to 3
Firm	3 to 6
Stiff	6 to 12
Very Stiff	12 to 24
Hard	Greater than 24

RELATIVE HARDNESS (Limestone)

Relative Hardness	N-Value *
Soft	Less than 50
Hard	Greater than 50

* Using Automatic Hammer

AASHTO Soil Classification System
(from AASHTO M 145 or ASTM D 3282)

General Classification	***Granular Materials*** *(35% or less passing the 0.075 mm sieve)*							***Silt-Clay Materials*** *(>35% passing the 0.075 mm sieve)*			
Group Classification	A-1		A-3	A-2				A-4	A-5	A-6	A-7
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5* A-7-6*
Sieve Analysis, % passing:											
2.00 mm (No. 10)	50 max	…	…	…	…	…	…	…	…	…	…
0.425 (No. 40)	30 max	50 max	51 min	…	…	…	…	…	…	…	…
0.075 (No. 200)	15 max	25 max	10 max	35 max	35 max	35 max	35 max	36 min	36 min	36 min	36 min
Characteristics of fraction passing 0.425 mm (No. 40):											
Liquid Limit	…		…	40 max	41 min	40 max	41 min	40 max	41 min	40 max	41 min
Plasticity Index	6 max		N.P.	10 max	10 max	11 min	11 min	10 max	10 max	11 min	11 min
Usual types of significant constituent materials	stone fragments, gravel and sand		fine sand	silty or clayey gravel and sand				silty soils		clayey soils	
General ***local*** rating as a subgrade	excellent to good			fair to poor							

* Plasticity index of A-7-5 subgroup is equal to or less than the LL - 30. Plasticity index of A-7-6 subgroup is greater than LL – 30

** *Northeast Florida*

Meskel & Associates Engineering

Unified Soil Classification System (USCS)
(from ASTM D 2487)

Major Divisions			*Group Symbol*	*Typical Names*
Coarse-Grained Soils More than 50% retained on the 0.075 mm (No. 4) sieve	**Gravels** 50% or more of coarse fraction retained on the 4.75 mm (No. 4) sieve	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		Gravels with Fines	GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sands 50% or more of coarse fraction passes the 4.75 (No. 4) sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines
			SP	Poorly graded sands and gravelly sands, little or no fines
		Sands with Fines	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils More than 50% passes the 0.075 mm (No. 200) sieve	**Silts and Clays** Liquid Limit 50% or less		ML	Inorganic silts, very fine sands, rock four, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly/sandy/silty/lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and Clays Liquid Limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
			CH	Inorganic clays or high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
Highly Organic Soils			PT	Peat, muck, and other highly organic soils

Prefix: G = Gravel, S = Sand, M = Silt, C = Clay, O = Organic
Suffix: W = Well Graded, P = Poorly Graded, M = Silty, L = Clay, LL < 50%, H = Clay, LL > 50%

Appendix B

Summary of Laboratory Index Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 103-0018

Boring No.	Sample No.	Approximate Depth (ft) [(1)]	Natural Moisture Content (%)	Percent Passing #200 (%)	Liquid Limit	Plasticity Index	Organic Content (%)	AASHTO/USCS Classification
FM-1	1	0 to 2.0	14	16	---	---	---	A-2-4
FM-1	3	4.0 to 6.0	30	81	60	40	---	A-7-6
FM-2	1	0 to 2.0	13	24	---	---	---	A-2-4
FM-3	5	8.0 to 10.0	23	47	---	---	---	A-6
FM-4	3	4.0 to 6.0	29	41	---	---	---	A-6
FM-5	3	4.0 to 6.0	25	52	---	---	---	A-6
FM-6	4	6.0 to 8.0	23	49	---	---	---	A-6
FM-7	2	2.0 to 4.0	10	12	---	---	---	A-2-4
FM-8	4	6.0 to 8.0	23	25	---	---	---	A-2-4
FM-10	4	6.0 to 8.0	22	19	---	---	---	A-2-6
FM-11	4	6.0 to 8.0	22	53	47	30	---	A-7-6
FM-13	2	2.0 to 4.0	27	45	---	---	---	A-6
FM-15	1	0 to 2.0	24	29	---	---	---	A-2-6
FM-15	2	2.0 to 4.0	22	50	---	---	---	A-6
FM-16	2	2.0 to 4.0	24	64	---	---	---	A-6
FM-16	3	4.0 t o 60	18	28	---	---	---	A-2-6
FM-17	3	4.5 to 6.0	19	29	---	---	---	A-2-6
FM-18	3	4.0 to 6.0	26	31	---	---	---	A-2-4
FM-18	4	6.0 to 8.0	27	42	---	---	---	A-6

Summary of Laboratory Index Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 103-0018

Boring No.	Sample No.	Approximate Depth (ft) (1)	Natural Moisture Content (%)	Percent Passing #200 (%)	Liquid Limit	Plasticity Index	Organic Content (%)	AASHTO/USCS Classification
FM-19	3	4.5 to 6.0	23	28	---	---	---	A-2-6
FM-20	2	2.0 to 4.0	26	29	---	---	---	A-2-4
FM-21	2	2.0 to 4.0	11	15	---	---	---	A-2-6
FM-23	4	6.0 to 8.0	21	10	---	---	---	A-3
FM-29	3	4.0 to 6.0	29	52	52	33	---	A-7-6
FM-31	3	4.0 to 6.0	24	44	---	---	---	A-6
FM-34	3	4.0 to 6.0	21	17	---	---	---	A-2-4
FM-36	2	2.0 to 4.0	19	35	---	---	---	A-2-6
FM-36	3	4.0 to 6.0	25	62	67	45	---	A-7-6
FM-37	2	2.0 to 4.0	49	57	---	---	---	A-6
FM-37	4	6.0 to 8.0	27	46	---	---	---	A-2-6
FM-39	3	4.0 to 6.0	29	31	---	---	---	A-2-6
FM-40	2	2.0 to 4.0	42	65	---	---	---	A-6
FM-41	2	2.0 to 4.0	27	49	---	---	---	A-6
FM-41	3	4.0 to 6.0	20	15	---	---	---	A-2-4
FM-44	3	4.0 to 6.0	20	15	---	---	---	A-2-4
FM-46	2	2.0 to 4.0	20	15	---	---	---	A-3
JB-1	3	4.0 to 6.0	30	69	---	---	---	CH
JB-1	6	13.5 to 15.0	28	29	---	---	---	SM

Summary of Laboratory Index Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 103-0018

Boring No.	Sample No.	Approximate Depth (ft) (1)	Natural Moisture Content (%)	Percent Passing #200 (%)	Liquid Limit	Plasticity Index	Organic Content (%)	AASHTO/USCS Classification
JB-2	3	4.0 to 6.0	31	76	---	---	---	CH
JB-2	7	18.5 to 20.0	25	13	---	---	---	SM
JB-3	4	6.0 to 8.0	21	37	---	---	---	SC
JB-3	7	18.5 to 20.0	70	97	---	---	---	CH
JB-4	7	18.5 to 20.0	33	22	---	---	---	SM
JB-5	6	8.0 to 10.0	23	69	65	41	---	CH
JB-5	8	18.5 to 20.0	25	4	---	---	---	SP
JB-5	10	27.5 to 30.0	31	10	---	---	---	SP-SM
JB-7	3	4.0 to 6.0	30	32	---	---	---	SC
JB-7	4	6.0 to 8.0	22	45	---	---	---	SC
JB-8	9	23.0 to 25.0	53	90	---	---	---	CH
DD-1	5	8.0 to 10.0	21	37	---	---	---	SC
DD-1	7	23.5 to 25.0	26	27	---	---	---	SM
DD-1	9	33.5 to 35.0	48	93	90	53	---	CH
DD-2	10	33.5 to 35.0	35	59	---	---	---	CH
DD-3	3	4.0 to 6.0	22	26	---	---	---	SM
DD-3	4	6.0 to 8.0	24	48	---	---	---	SC
DD-3	11	37.5 to 40	73	98	---	---	---	CH
FM-66	4	6 to 8	94	40	84	32	52.0	A-7-6

Summary of Laboratory Index Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 103-0018

Boring No.	Sample No.	Approximate Depth (ft) (1)	Natural Moisture Content (%)	Percent Passing #200 (%)	Liquid Limit	Plasticity Index	Organic Content (%)	AASHTO/USCS Classification
FM-67	2	2 to 4	49	30	---	---	---	A-6
FM-67	4	6 to 8	46	25	---	---	---	A-6
FM-68	5	8 to 10	50	26	---	---	---	A-6
FM-72	4	6 to 8	32	17	---	---	---	A-2-6
FM-73	2	2 to 4	31	20	---	---	---	A-2-6
FM-74	3	4 to 6	31	17	39	17	22.0	A-2-6
FM-75	5	8 to 10	40	21	---	---	---	A-6
FM-96	3	4 to 6	35	27	42	17	25.0	A-2-7
FM-97	5	8 to 10	62	30	---	---	---	A-6
FM-98	2	2 to 4	40	28	---	---	---	A-6
FM-98	4	6 to 8	23	18	---	---	---	A-2-6
FM-99	2	2 to 4	43	28	---	---	---	A-6
FM-100	2	2 to 4	46	27	---	---	---	A-6
FM-102	3	4 to 6	27	18	---	---	---	A-2-6
FM-103	4	6 to 8	34	19	45	16	29.0	A-2-7
FM-104	4	6 to 8	52	24	---	---	---	A-6
FM-106	3	4 to 6	30	18	---	---	---	A-2-6
FM-107	4	6 to 8	32	23	---	---	---	A-2-6
FM-112	5	8 to 10	13	26	---	---	---	A-2-6

Summary of Laboratory Index Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 103-0018

Boring No.	Sample No.	Approximate Depth (ft) (1)	Natural Moisture Content (%)	Percent Passing #200 (%)	Liquid Limit	Plasticity Index	Organic Content (%)	AASHTO/USCS Classification
FM-113	4	6 to 8	26	18	---	---	---	A-2-6
FM-114	4	6 to 8	73	22	48	16	32.0	A-7-6
FM-115	5	8 to 10	61	23	---	---	---	A-6
FM-116	3	4 to 6	38	20	---	---	---	A-6
FM-117	6	10 to 12	36	24	---	---	---	A-6
FM-118	4	6 to 8	83	32	---	---	---	A-6
FM-120	3	4 to 6	33	24	---	---	---	A-2-6
FM-121	5	8 to 10	43	24	---	---	---	A-6
FM-122	4	6 to 8	35	19	---	---	---	A-2-6
FM-123	3	4 to 6	23	22	---	---	---	A-2-6
FM-123	4	6 to 8	65	39	---	---	---	A-6
FM-124	5	8 to 10	33	18	---	---	---	A-2-6
FM-125	4	6 to 8	46	30	---	---	---	A-6
FM-125	6	10 to 12	35	20	33	15	18.0	A-2-6
FM-126	2	2 to 4	30	20	---	---	---	A-2-6
FM-126	4	6 to 8	42	28	---	---	---	A-6
(1) Feet below existing ground surface.								

Meskel & Associates Engineering

Summary of Corrosion Series Test Results
JEA 5th Street West - Imeson Road to Melson Avenue
MAE Project No.: 0103-0018

Boring No.	GPS Coordinates		Approx. Test Depth[2] (ft)	AASHTO Soil Class.	pH	Resistivity (ohm-cm)	Chlorides (ppm) [2]	Sulfates (ppm) [3]	Environmental Classification	
	Latitiude	Longitude							Steel Substructure	Concrete Substructure
PC-1	30°20'37.91"N	81°43'25.85"W	2 to 6	A-2-6	8.6	10,300	5	3	Slightly Aggressive	Slightly Aggressive
PC-3	30°20'36.33"N	81°44'22.84"W	2 to 6	A-3	8.6	7,350	5	3	Slightly Aggressive	Slightly Aggressive
PC-5	30°20'34.82"N	81°45'19.71"W	2 to 6	A-3	6.6	16,700	95	330	Moderately Aggressive	Slightly Aggressive
PC-7	30°20'37.28"N	81°45'52.42"W	2 to 6	A-2-4	8.4	12,300	5	3	Slightly Aggressive	Slightly Aggressive

(1) Feet below existing ground surface.

(2) Lower limit of detection for chlorides is 5 ppm

(3) Lower limit of detection for sulfate is 3 ppm

Meskel & Associates Engineering

LABORATORY TEST PROCEDURES

Percent Fines Content

The percent fines or material passing the No. 200 mesh sieve of the sample tested was determined in general accordance with the latest revision of ASTM D 1140. The percent fines are the soil particles in the silt and clay size range.

Natural Moisture Content

The water content of the tested sample was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ratio of "pore" or "free" water in a given mass of material to the mass of solid material particles.

Atterberg Limits

The Atterberg Limits consist of the Liquid Limit (LL) and the Plastic Limit (PL). The LL and PL were determined in general accordance with the latest revision of ASTM D 4318. The LL is the water content of the material denoting the boundary between the liquid and plastic states. The PL is the water content denoting the boundary between the plastic and semi-solid states. The Plasticity Index (PI) is the range of water content over which a soil behaves plastically and is denoted numerically by the difference between the LL and the PL. The water content of the sample tested was determined in general accordance with the latest revision of ASTM D 2216. The water content is defined as the ration of "pore" or "free" water in a given mass of material to the mass of solid material particles.

Organic Loss on Ignition (Percent Organics)

The organic loss on ignition or percent organic material in the sample tested was determined in general accordance with ASTM D 2974. The percent organics is the material, expressed as a percentage, which is burned off in a muffle furnace at 455±10 degrees Celsius.