



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, JACKSONVILLE DISTRICT
701 SAN MARCO BOULEVARD
JACKSONVILLE, FLORIDA 32207-8915

September 19, 2019

Regulatory Division
West Branch
Tampa Permits Section
Gainesville Field Office

PUBLIC NOTICE

Permit Application No. SAJ-2019-00608 (SP-JED)

TO WHOM IT MAY CONCERN: The Jacksonville District of the U.S. Army Corps of Engineers (Corps) has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. §1344) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. §403) as described below:

APPLICANT: St. Johns River Water Management District
Attn: Dr. Ann Shortelle
4049 Reid Street
Palatka, Florida 32177

WATERWAY AND LOCATION: The project would affect waters of the United States associated with Lake Apopka and the Lake Apopka North Shore Restoration Area located in the following areas of Lake or Orange County, Florida:

Section(s): 26, 27, 33-36 Township: 20 S Range: 26 E
Section(s): 22, 27-29, 31-35 Township: 20 S Range: 27 E
Section(s): 1-4, 22, 35 Township: 21 S Range: 26 E
Section(s): 1-15, 23, 24, 36 Township: 21 S Range: 27 E
Section(s): 7, 18, 19, 30, 31 Township: 21 S Range: 28 E

Directions to the site are as follows: From the intersection of US-441 and CR-414, travel NW on US-441/Orange Blossom Trail for 3.9 miles and then turn left on to West Jones Avenue. Stay on West Jones Avenue (which becomes Duda Road) for 3.7 miles and proceed to turn left on County Road 448A. Continue on CR-448A for 0.5 miles then turn right on to CR-48. Travel 1.2 miles to the Nutrient Reduction Facility site. Access to the site is then off road or on foot to the south.

APPROXIMATE CENTRAL COORDINATES: Latitude 28.655299°
Longitude -81.632399°

PROJECT PURPOSE:

Basic: The basic project purpose is maintenance dredging to accomplish environmental remediation and enhancement.

Overall: The overall project purpose is environmental and water quality remediation of Lake Apopka, and environmental enhancement of wetlands in the North Shore Restoration Area.

EXISTING CONDITIONS: Lake Apopka is a large shallow subtropical lake in central Florida. It is the fourth largest lake in the state (approximately 31,000 acres) and has been historically cited as the most severely polluted lake in Florida. The lake forms the headwaters of the Ocklawaha Chain of Lakes, which includes Lake Beauclair and numerous other downstream lakes. Outflows from Lake Apopka are a major factor in the eutrophication (oxygen depletion due to the presence of excess nutrients) of Lake Beauclair as a result of increased phosphorus loading, which occurred during the early 1900's and accelerated after the establishment of muck farms around Lake Apopka in the 1940's. A potential detrimental factor in the aquatic environment of Lake Apopka is a layer of unconsolidated flocculent sediments (UCF) that cover much of the lakebed and act as an internal loading source of phosphorous. The applicant has undertaken and initiated several dredge project to remove UCF from the lake bed. The proposed project is intended to continue those efforts.

The areas identified for UCF dredge spoil deposition are former muck farms along the north shore of Lake Apopka located to the east and west of the Apopka-Beauclair canal that are currently owned by the St. Johns River Water Management District within the Lake Apopka North Shore Restoration Area. The soils in these areas contain a relatively high level of contaminants from historic agricultural practices. In addition, the wetlands within the former muck farms have experienced exceptional subsidence resulting from the past agricultural uses. The applicant seeks authorization to dispose of the dredge spoil in this area for the two fold purpose of capping the contaminated sediments in this area, and repairing the subsidence that has caused the historic marsh communities on the north shore of Lake Apopka to transition to areas of open water. The applicant proposes to discharge sufficient dredge material to restore a bottom elevation which would support the historic marsh communities.

PROPOSED WORK: The applicant seeks a 10-year duration authorization to complete the following work:

Hydraulically dredge 26,666,598 cubic yards of material from seven areas dispersed throughout Lake Apopka totaling 12,826 acres;

Discharge the dredged material into 12,003 acres of waters of the United States encompassed within fourteen areas of the Lake Apopka North Shore Restoration Area. Dredged material would be transported from the point of discharge using a standard hydraulic dredge pipeline configuration. The pipeline would utilize a combination of floating on-water segments and land segments along the Apopka-Beauclair canal. Floating and land based booster pumps would be utilized along the pipeline route as necessary;

Discharge 561 cubic yards of fill material consisting of natural organic material such as peat to plant and establish submerged and floating aquatic vegetation communities within 600 acres of the proposed dredge areas.

The proposed work is more particularly described on the attached project plans and attachments.

AVOIDANCE AND MINIMIZATION INFORMATION – The applicant has provided the following information in support of efforts to avoid and/or minimize impacts to the aquatic environment:

According to the applicant, the removal of organic sediments from Lake Apopka with the subsequent discharge of these sediments atop contaminated soils in the Lake Apopka North Shore Restoration Area, would result in enhancement and remediation to Lake Apopka and the adjacent North Shore Restoration Area. The applicant proposes to utilize precision hydraulic dredging techniques to ensure that the proposed dredging is limited to UCF material, and avoid dredging native mineralized sediments. Furthermore, the applicant proposes to avoid dredging any areas within the proposed project footprint that currently support submerged aquatic vegetation.

The applicant proposes to utilize best management practices including turbidity and erosion controls to ensure that sediments and turbidity would not escape the authorized work area. Also, the applicant proposes to stage construction equipment on the existing levees and adjacent uplands to the greatest extent practicable, as well as utilize floating equipment whenever feasible to minimize impacts on existing wetlands and aquatic vegetation.

Lastly, the applicant proposes to cease discharges into the proposed spoil locations once the disposal results in an elevation which would support the marsh communities the applicant seeks to restore. Therefore, according to the applicant, any impacts to adjacent wetlands will be incidental and temporary in nature.

COMPENSATORY MITIGATION – The applicant has provided the following explanation why compensatory mitigation should not be required:

According to the applicant, the aquatic environment impacts associated with the proposed project would not result in a loss of wetland function or value. To the contrary, the applicant asserts that the proposed project would result in increased water quality and wetland function and value within the project area. Therefore, the applicant did not propose any compensatory mitigation in conjunction with the proposed project.

CULTURAL RESOURCES: The Corps is aware of historic properties within or in close proximity of the permit area. The Corps will initiate consultation with the State Historic Preservation Office and those federally recognized tribes with concerns in Florida and the Permit Area, and the Advisory Council on Historic Preservation as applicable

pursuant to 33 CFR 325, Appendix C and Section 106 of the National Historic Preservation Act, by separate letter.

ENDANGERED SPECIES:

Wood Stork: The Corps has determined the proposed project is **not likely to adversely affect** (NLAA) the wood stork. Since the applicant's proposal involves work within suitable foraging habitat for wood storks, the Corps utilized *The Corps of Engineers, U.S. Fish and Wildlife Service (FWS), Jacksonville Ecological Services Field Office, and State of Florida Effect Determination Key for the Wood Stork in Central and North Peninsular Florida, September 2008* (key) to evaluate the proposed project's potential impact on wood storks. Use of the key produced the following sequence indicating that the project is not likely to adversely affect (NLAA) the wood stork: A→B→C→D→E couplet 1. The project site is located within the core foraging area of the Lake Yale Nesting Colony (612027) and could potentially impact 12,000 +/- acres of suitable foraging habitat. However, this colony is located approximately 14.5 miles north of the project site. Also, the applicant contends that the project would result in the long term enhancement and remediation of 12,000+/- acres suitable foraging habitat in the Lake Apopka. The impacts to suitable foraging habitat that would preclude would stork use of the area would be temporary. In light of this fact, the applicant contends that the key supports a NLAA determination for the Wood stork and no further consultation with USFWS is necessary. The Corps will request U.S. Fish and Wildlife Service concurrence with this determination pursuant to Section 7 of the Endangered Species Act.

Eastern Indigo Snake: The Corps determined that the proposed project is **not likely to adversely affect** (NLAA) the Eastern Indigo Snake. Since the proposed project would partially occur in xeric habitat that could support gopher tortoise (*Gopherus polyphemus*) burrows, the Corps utilized the *Eastern Indigo Snake Programmatic Effect Determination Key, August 2013*, to evaluate the project's potential impacts to the Eastern Indigo Snake. Use of this key resulted in the following sequential determination: A→B→C→D→E(1) (NLAA). The proposed project would impact less than 25 acres of xeric habitat supporting less than 25 active or inactive burrows. Furthermore, any authorization the Corps may provide for the proposed project would include a special condition requiring the applicant to abide by the *Standard Protection Measures for the Eastern Indigo Snake, August 2013*. In light of these facts, the Corps determined that the proposed project is NLAA the Eastern Indigo Snake.

Everglades Snail Kite: The project site is located within the consultation area of the snail kite. However, the proposed work would not result in permanent, detrimental impacts to the wetlands within project site. Any detrimental impacts to snail kite feeding or resting areas would be temporary in nature. According to the applicant, the post project condition of the project site would exhibit improved water quality and enhanced wetland function. Therefore, the proposed project is **not likely to adversely affect** the Everglades Snail Kite. The Corps will request U.S. Fish and Wildlife Service

concurrence with this determination pursuant to Section 7 of the Endangered Species Act.

Florida scrub jay: The Corps has determined that the proposed project would have **no effect** on this species. The proposed project is located within the consultation area for the Florida scrub jay. However, the proposed work would not impact the type scrub oak habitat where this species is known to occur. Thus, the Corps determined that the proposed project would have no effect on this species.

Sand skinks and Bluetail mole skinks: The Corps has determined that the proposed project would have **no effect** on these species. The proposed project would not impact the habitat types where Skinks typically occur. The proposed work would occur within open water and marsh habitat that does not contain a mosaic of open sandy patches interspersed with forbs, shrubs which these species require. Thus, the Corps determined that the proposed project would have no effect on these species.

ESSENTIAL FISH HABITAT (EFH): This notice initiates consultation with the National Marine Fisheries Service on EFH as required by the Magnuson-Stevens Fishery Conservation and Management Act 1996. The proposed project would occur in a freshwater lake that does not support any anadromous or catadromous fishery resources. Therefore, our initial determination is that the proposed action would not have a substantial adverse impact on EFH or Federally managed fisheries in the Atlantic Ocean or Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

NOTE: This public notice is being issued based on information furnished by the applicant. This information has not been verified or evaluated to ensure compliance with laws and regulation governing the regulatory program. The jurisdictional line has not been verified by Corps personnel.

AUTHORIZATION FROM OTHER AGENCIES: Water Quality Certification may be required from the Florida Department of Environmental Protection and/or one of the state Water Management Districts.

COMMENTS regarding the potential authorization of the work proposed should be submitted in writing to the attention of the District Engineer through the Tampa Permits Section, Gainesville Field Office, 2833 NW 41st St. Unit 130, Gainesville, FL 32606 within 30 days from the date of this notice.

The decision whether to issue or deny this permit application will be based on the information received from this public notice and the evaluation of the probable impact to the associated wetlands. This is based on an analysis of the applicant's avoidance and minimization efforts for the project, as well as the compensatory mitigation proposed.

QUESTIONS concerning this application should be directed to the project manager, James Davidson, in writing at the Tampa Permits Section, Gainesville Field Office, 2833 NW 41st St. Unit 130, Gainesville, FL 32606; by electronic mail at james.e.davidson2@usace.army.mil; by facsimile transmission at (352)264-7733; or, by telephone at (352)264-7672.

IMPACT ON NATURAL RESOURCES: Coordination with U.S. Fish and Wildlife Service, Environmental Protection Agency (EPA), the National Marine Fisheries Services, and other Federal, State, and local agencies, environmental groups, and concerned citizens generally yields pertinent environmental information that is instrumental in determining the impact the proposed action will have on the natural resources of the area.

EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including cumulative impacts thereof; among these are conservation, economics, esthetics, general environmental concerns, wetlands, historical properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food, and fiber production, mineral needs, considerations of property ownership, and in general, the needs and welfare of the people. Evaluation of the impact of the activity on the public interest will also include application of the guidelines promulgated by the Administrator, EPA, under authority of Section 404(b) of the Clean Water Act or the criteria established under authority of Section 102(a) of the Marine Protection Research and Sanctuaries Act of 1972. A permit will be granted unless its issuance is found to be contrary to the public interest.

The US Army Corps of Engineers (Corps) is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other Interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this determination, comments are used to assess impacts to endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

COASTAL ZONE MANAGEMENT CONSISTENCY: In Florida, the State approval constitutes compliance with the approved Coastal Zone Management Plan. In Puerto Rico, a Coastal Zone Management Consistency Concurrence is required from the Puerto Rico Planning Board. In the Virgin Islands, the Department of Planning and

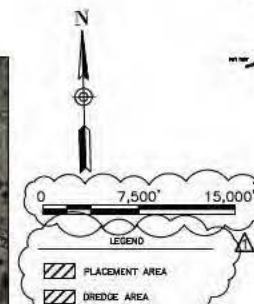
Natural Resources permit constitutes compliance with the Coastal Zone Management Plan.

REQUEST FOR PUBLIC HEARING: Any person may request a public hearing. The request must be submitted in writing to the District Engineer within the designated comment period of the notice and must state the specific reasons for requesting the public hearing.

ATTACHMENT A

Lake Apopka Dredge and Placement Typical Plans

LAKE APOPKA DREDGE AND PLACEMENT TYPICAL PLAN ORANGE AND LAKE COUNTY, FLORIDA



ATTENTION IS DIRECTED TO THE FACT THAT THESE PLANS MAY HAVE BEEN CHANGED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

GOVERNING SPECIFICATIONS:
FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION (FWC);
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP);
U.S. ARMY CORPS OF ENGINEERS (USACE)
IN THE EVENT OF A CONFLICT, THE MOST RESTRICTIVE APPLIES.

PLAN PREPARED BY:

wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC.
6256 GREENLAND ROAD,
JACKSONVILLE, FLORIDA 32258
TEL: (904) 596-5173
WEBSITE: WWW.WOODPLC.COM
EMAIL: Joseph.Wagner@woodplc.com
ENGINEER OR RECORD:
ROBERT J. WAGNER, P.E., D.NE. (FL63028)
CERTIFICATE OF AUTHORIZATION: FL 5392

PROJECT OWNER:



ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FLORIDA 32177

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
CERTIFICATE OF
AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

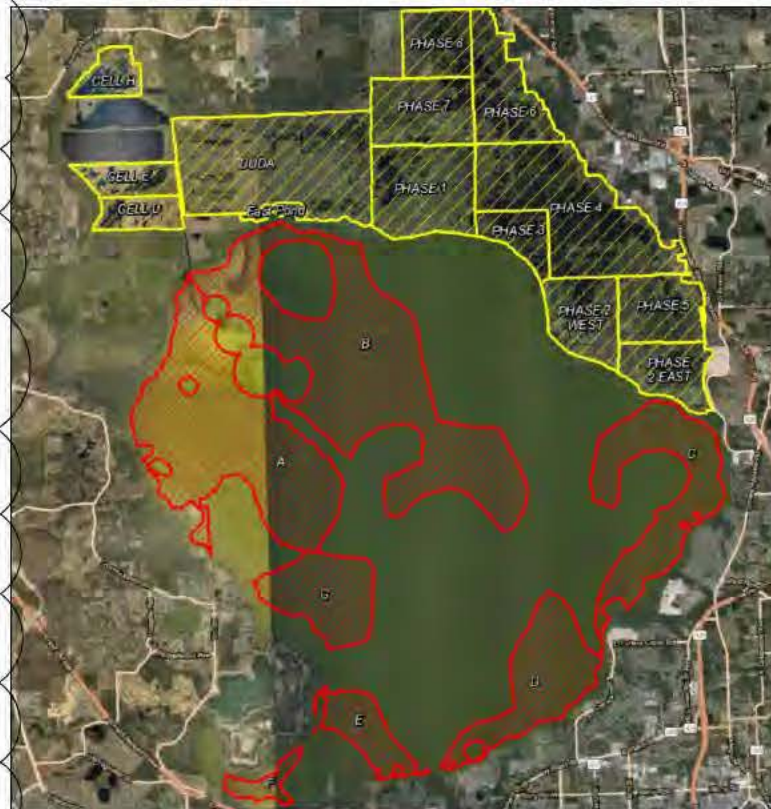
REVISIONS			
NO.	DATE	BY	APPROVED
1	9/8/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
COVER SHEET

SHEET NUMBER:	REV. 1
1	
SHEET 1 OF 34 SHEETS	

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5	TYPICAL DREDGE EXISTING & PROPOSED CROSS SECTION A (2)
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34	MATERIAL PLACEMENT SITE TYPICAL CROSS SECTION CELL H&H POND





Legend

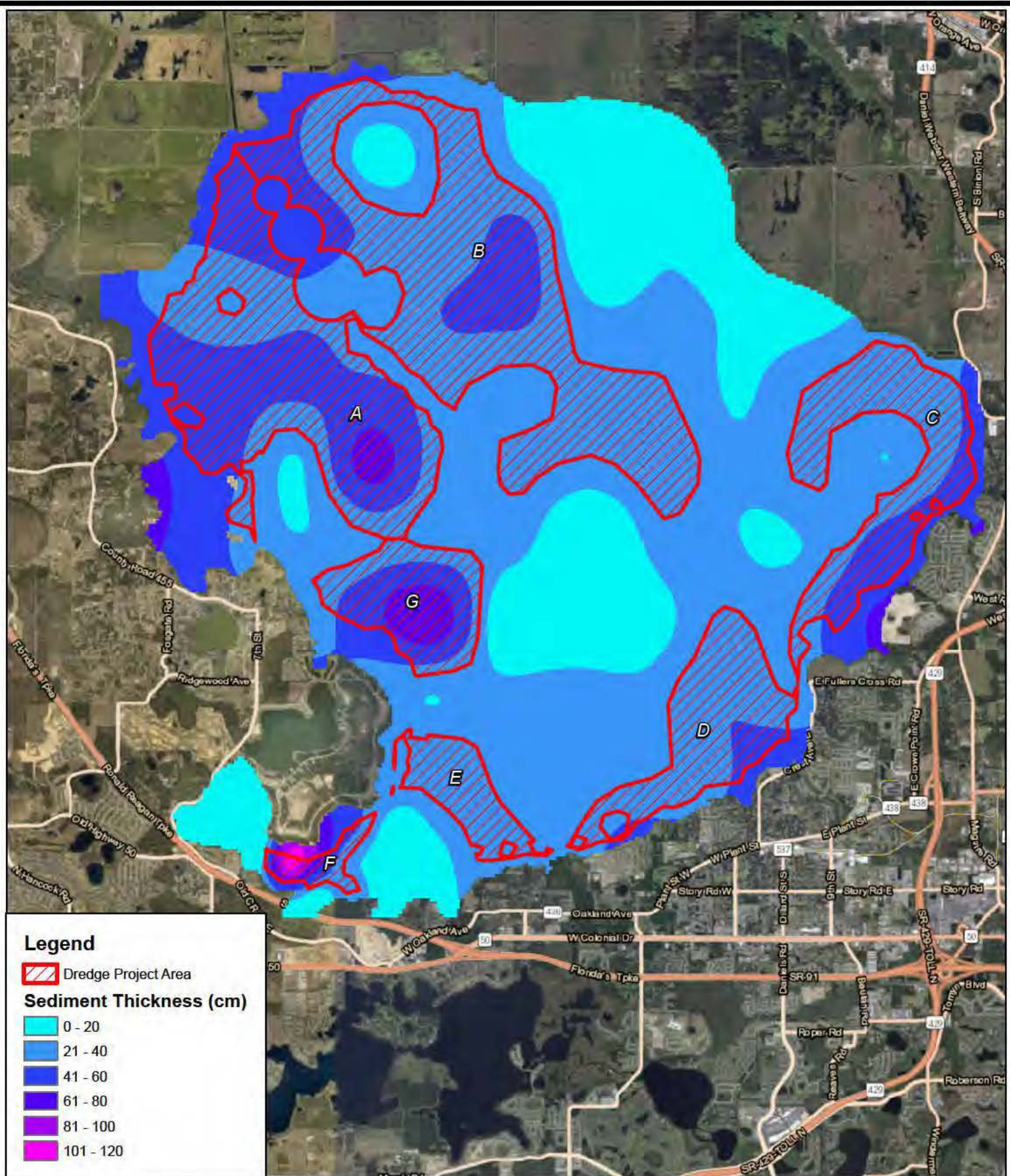
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Depth Contours (ft)

— Index

— Minor

Note: Based on 2008 survey. Lake level 65.6 ft NAVD88
Data Sources: ESRI 2014(Aerial) ; WOOD 2018: SJRWMD 2016



Source: Imagery, ESRI 2017; Wood 2018



0 3,500 7,000 14,000 Feet

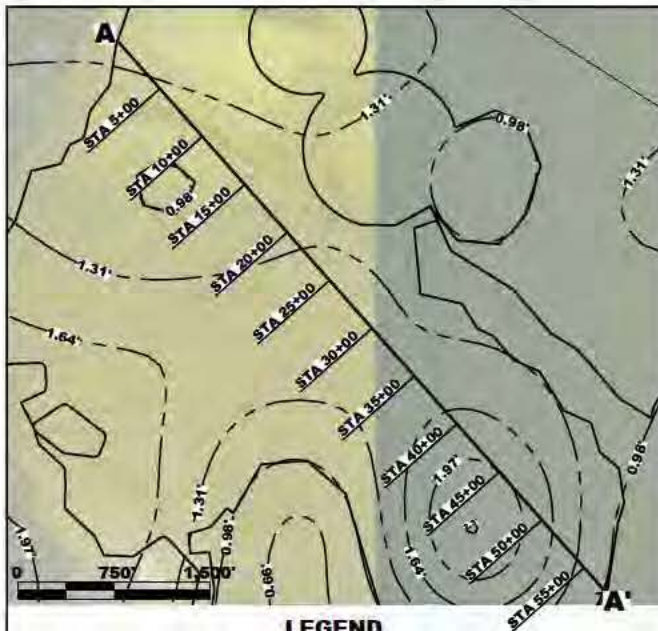
Lake Apopka Dredging Project

UCF Thickness Map

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DLA	1/15/2019	Florida
Checked	Date	Project No.
MFC	1/15/2019	6735179417

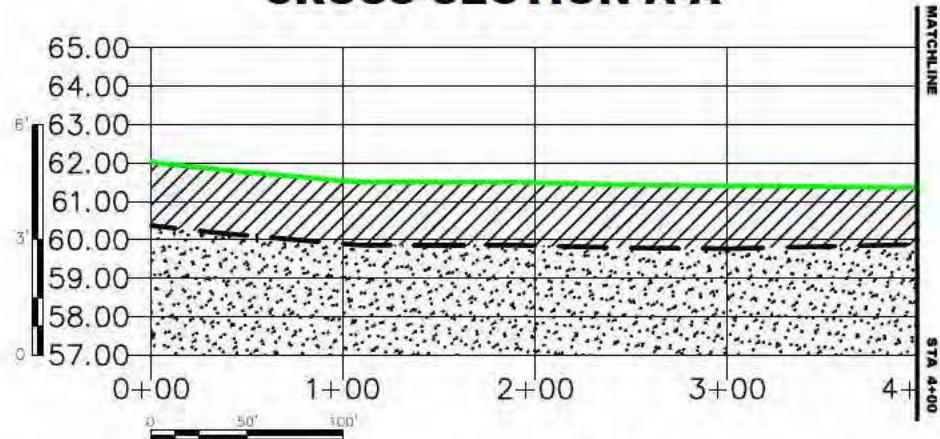
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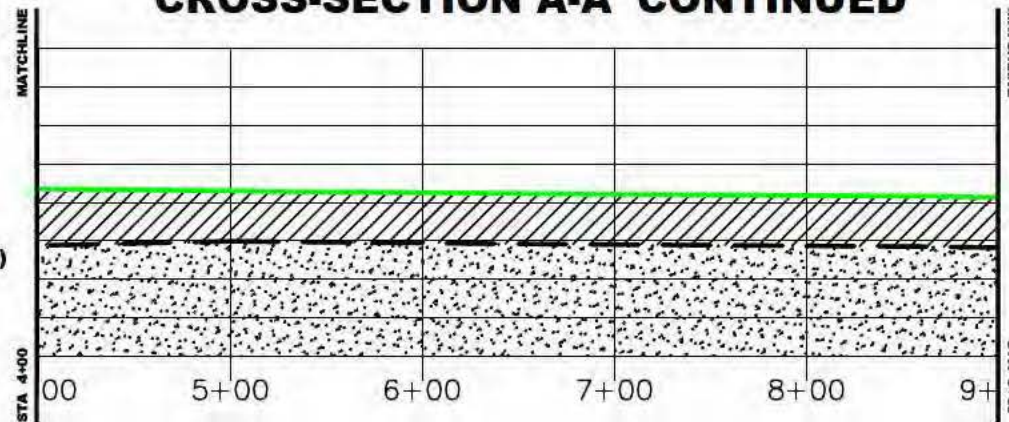


- LEGEND**
- **CROSS-SECTIONS**
 - - - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'- **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

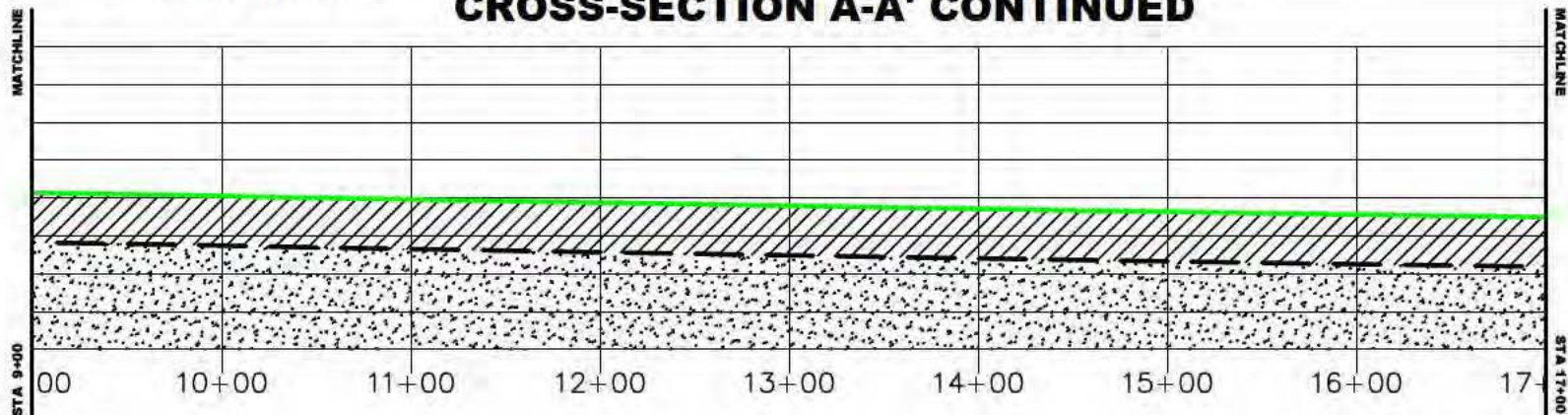
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CROSS-SECTION A-A' CONTINUED



CROSS-SECTION A-A' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
CERTIFICATE OF
AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



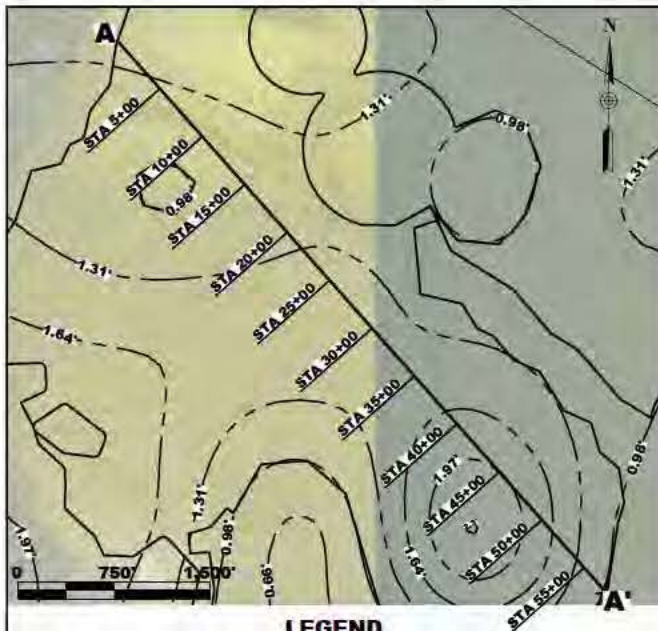
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R/L	R/JW

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DRAWN BY:	R/L
CHECKED BY:	SEM
APPROVED BY:	R/JW
DATE:	1/21/2019

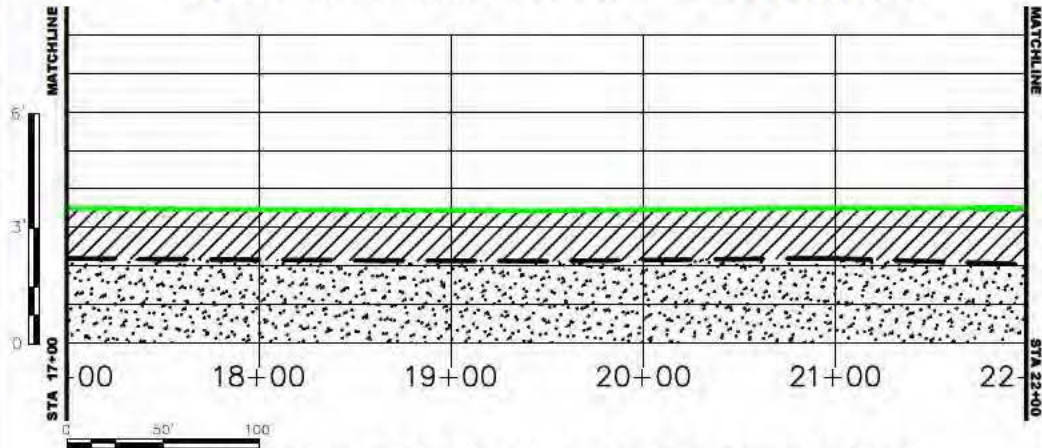
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TYPICAL DREDGE
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SHEET # OF 34 SHEETS	

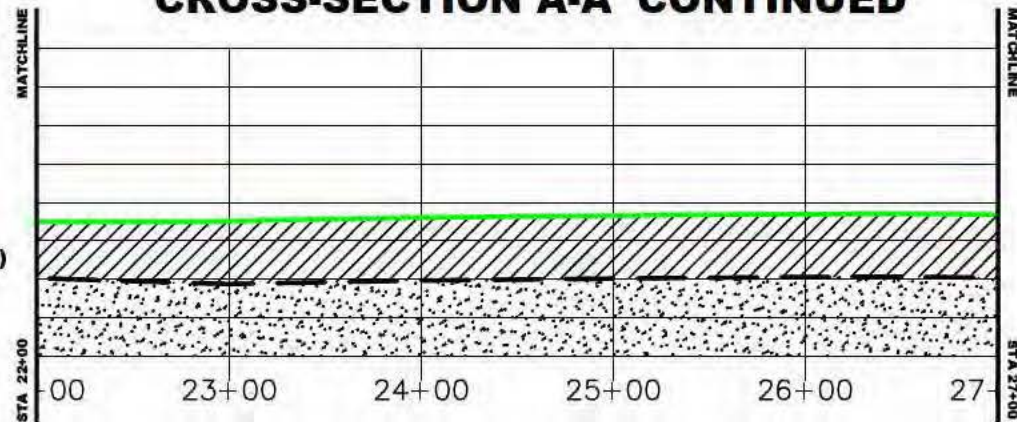


- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
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 - UNDERLYING SEDIMENT**
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 - 1.31'— **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

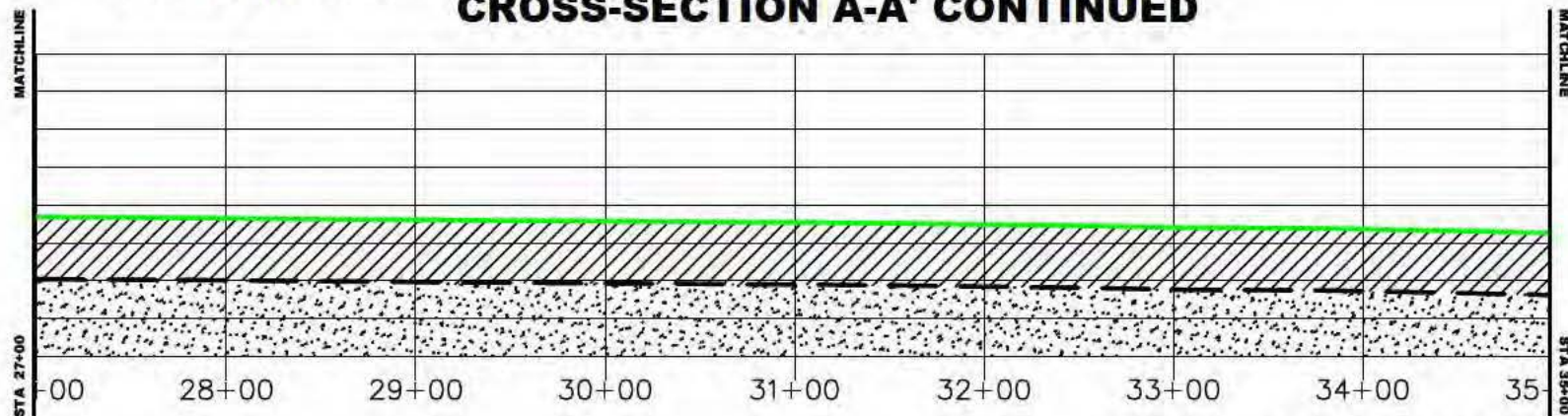
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NOTE: FOR PERMIT PURPOSES

DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88

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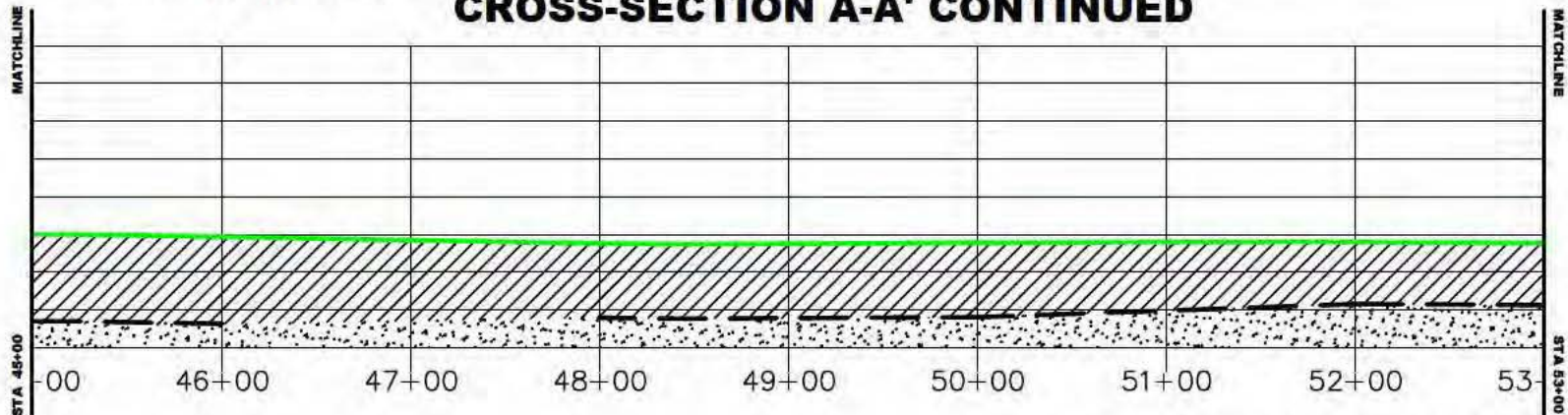
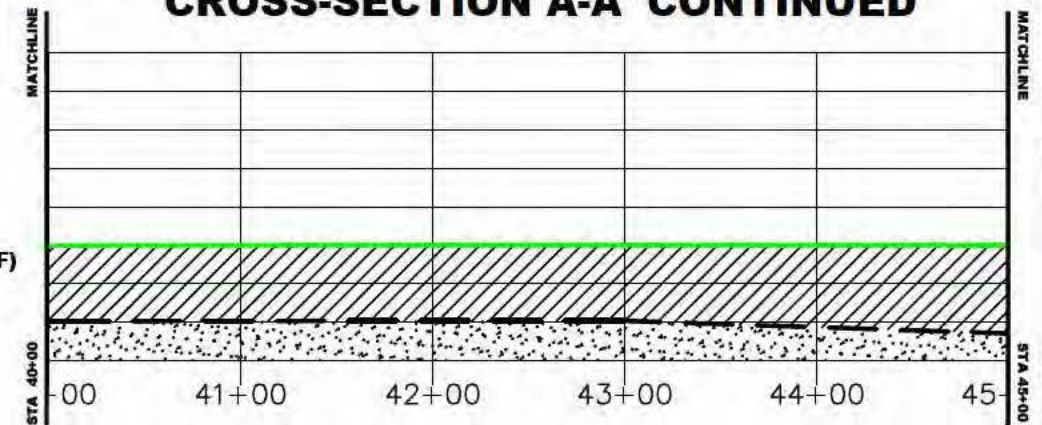
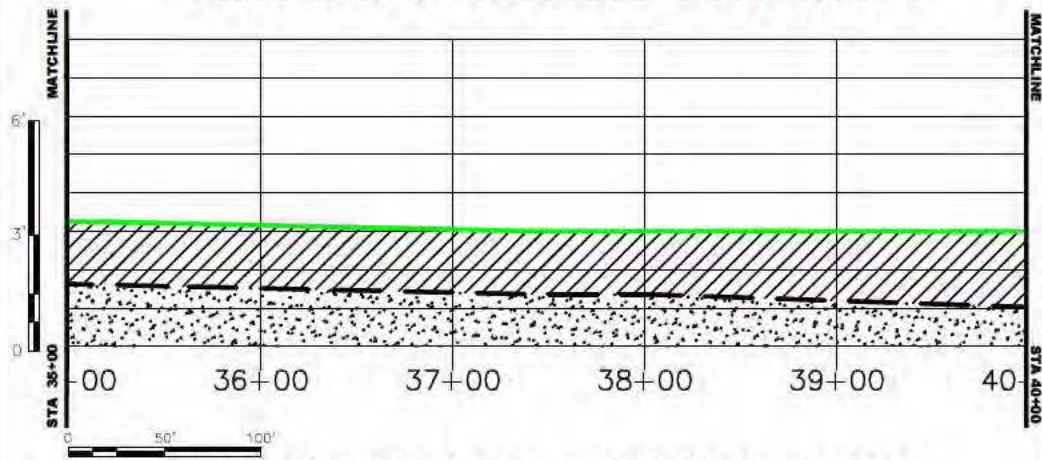
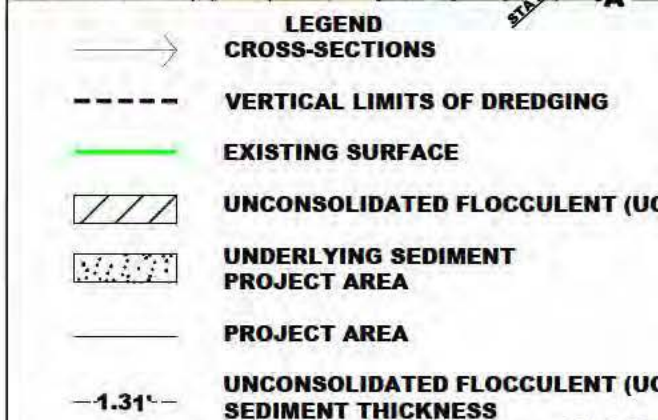
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

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DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

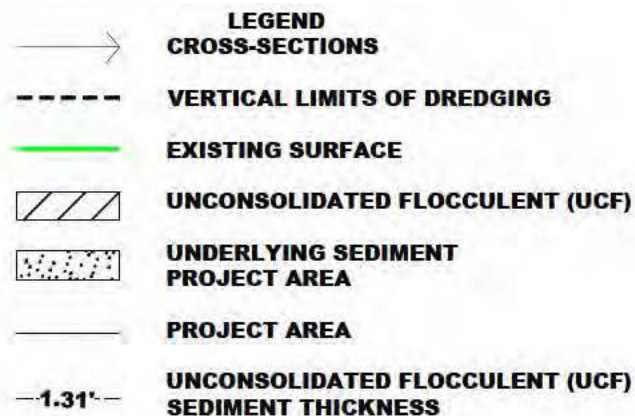
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TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION A (2)

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SHEET 5 OF 34 SHEETS	

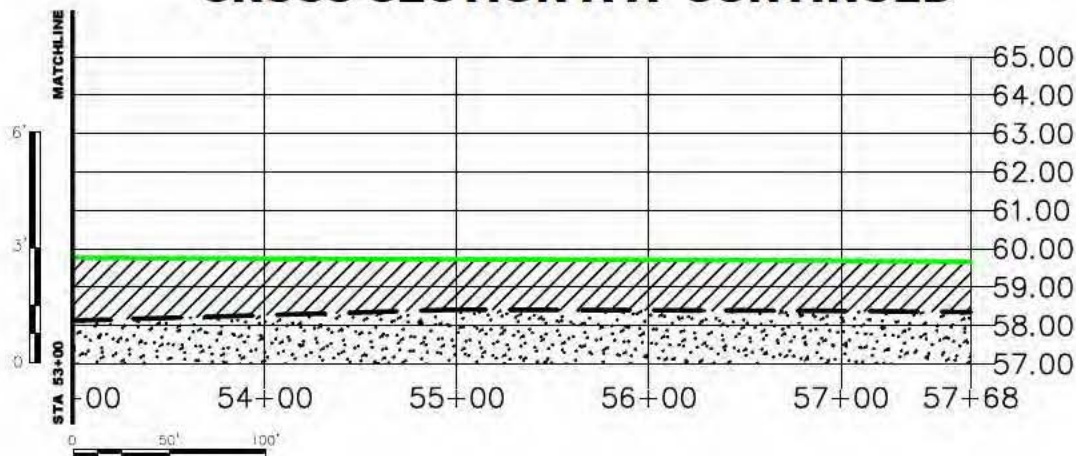


**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

SHEET NUMBER:	REV. 1
6	
SHEET 6 OF 34 SHEETS	



CROSS-SECTION A-A' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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LAKE APOPKA DREDGING AND PLACEMENT

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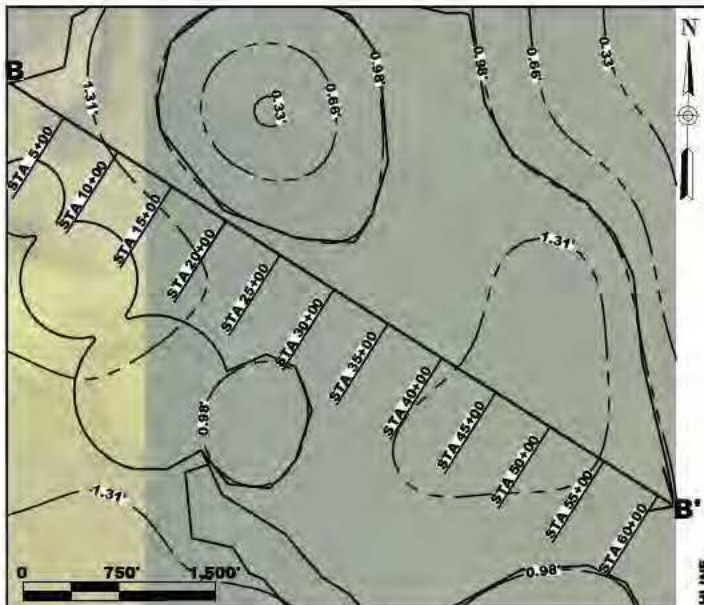
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6735-17-9417

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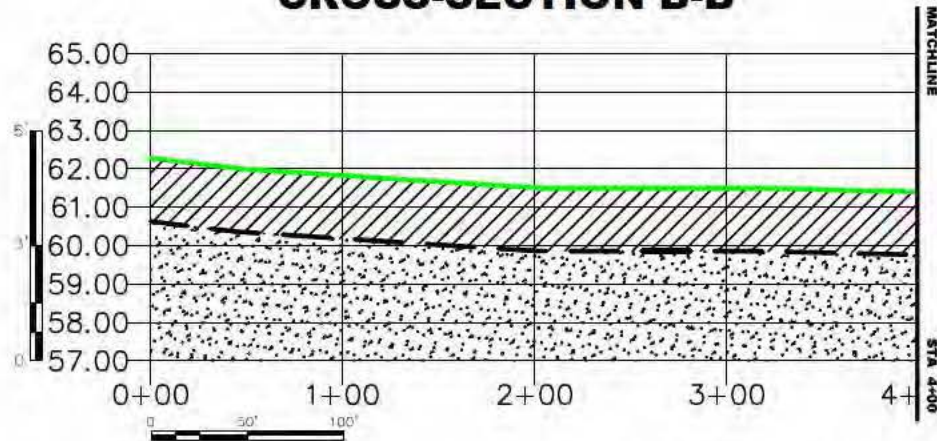
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DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

SHEET TITLE:
TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION A (4)

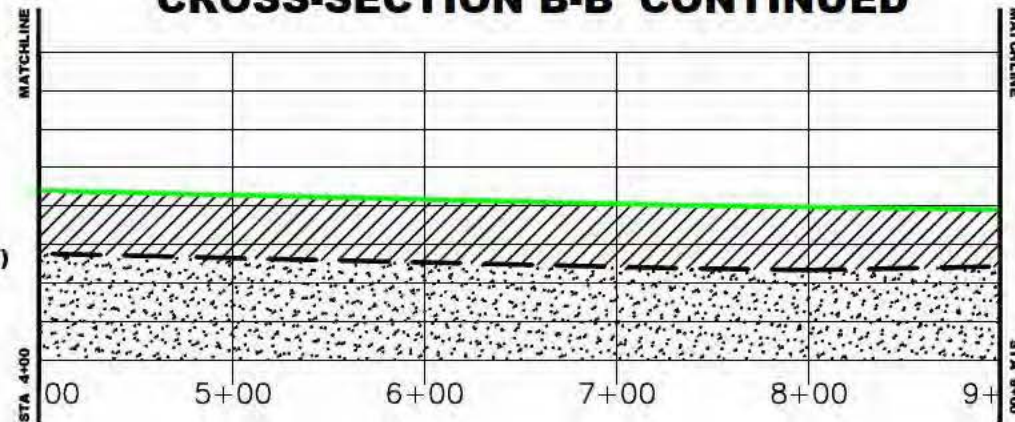
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7	
SHEET 7 OF 34 SHEETS	



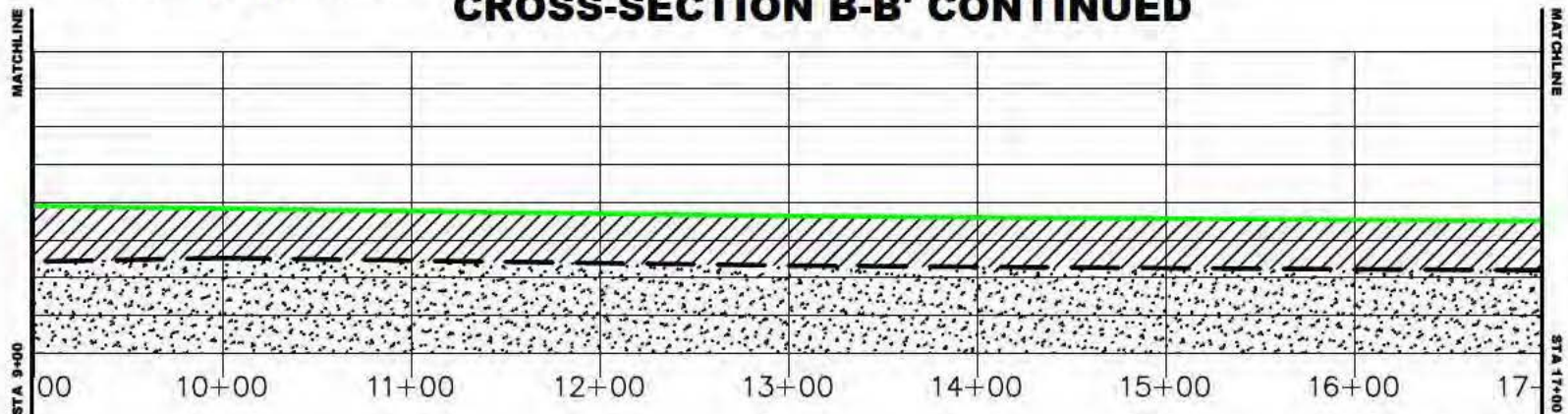
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CROSS-SECTION B-B' CONTINUED



CROSS-SECTION B-B' CONTINUED



NOTE: FOR PERMIT PURPOSES

DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
CERTIFICATE OF
AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



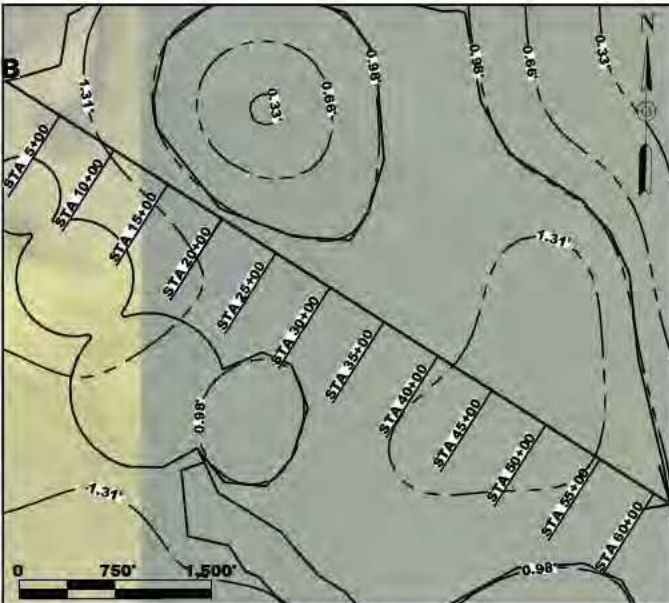
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2018	R/L	R/W

DESIGNED BY:	OTHERS
DRAWN BY:	R/L
CHECKED BY:	SEM
APPROVED BY:	R/W
DATE:	1/21/2019

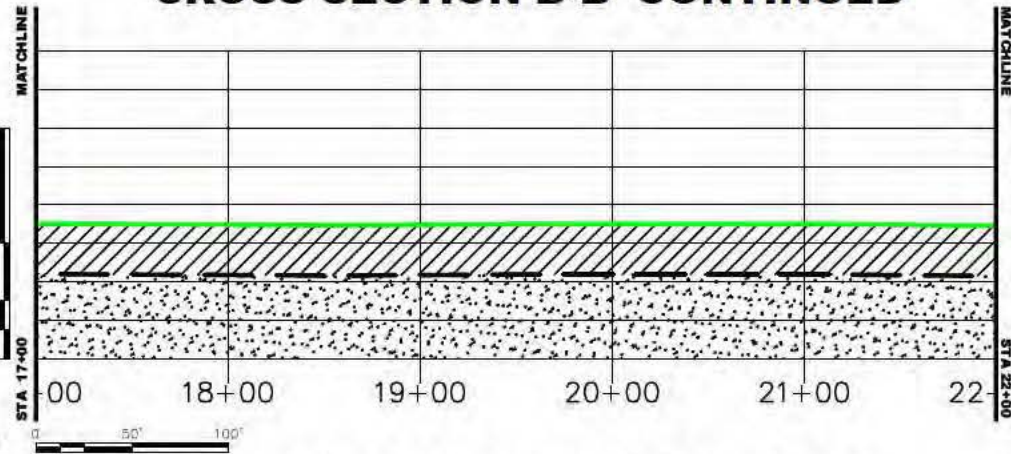
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TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION B (1)

SHEET NUMBER:	REV. 1
8	
SHEET 8 OF 34 SHEETS	

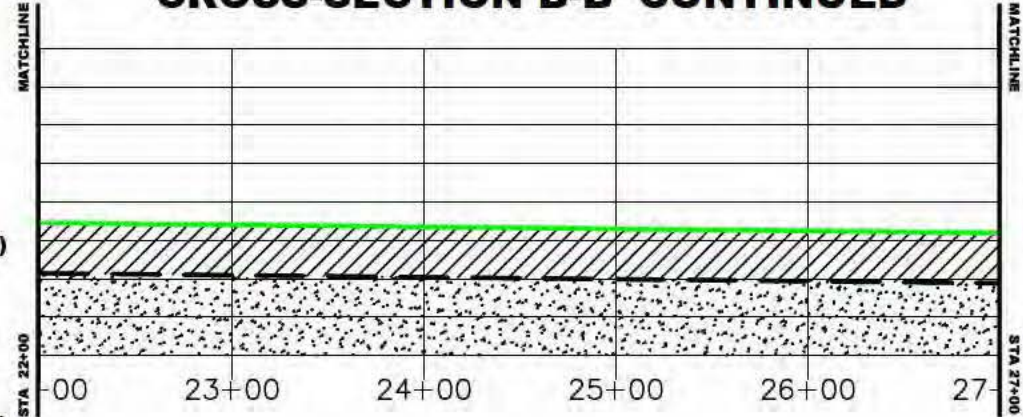


- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'— **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

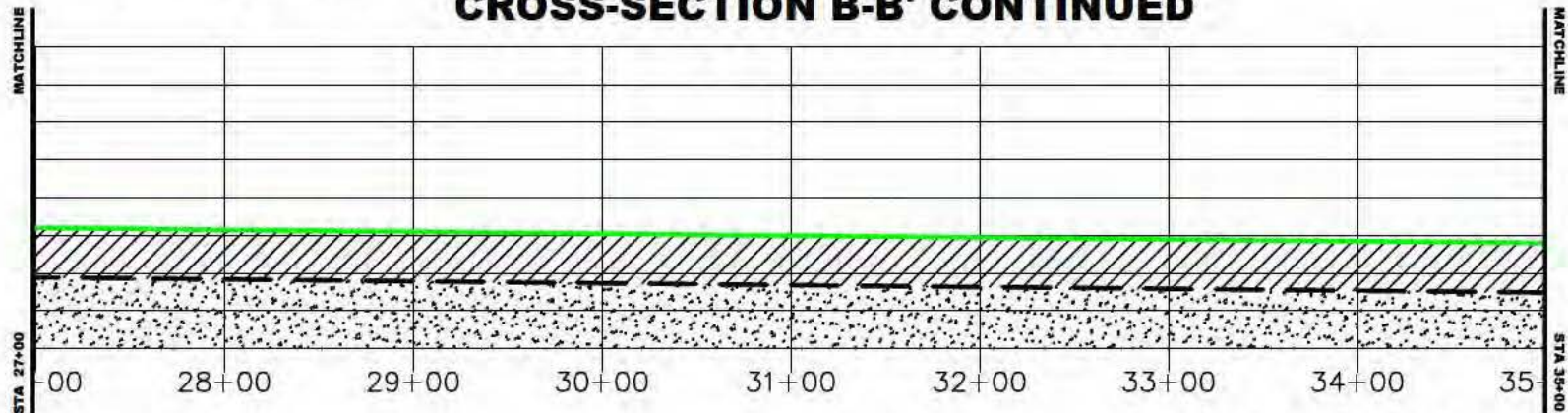
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CROSS-SECTION B-B' CONTINUED



CROSS-SECTION B-B' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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APPLICANT:

**ST. JOHNS
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MANAGEMENT
DISTRICT**



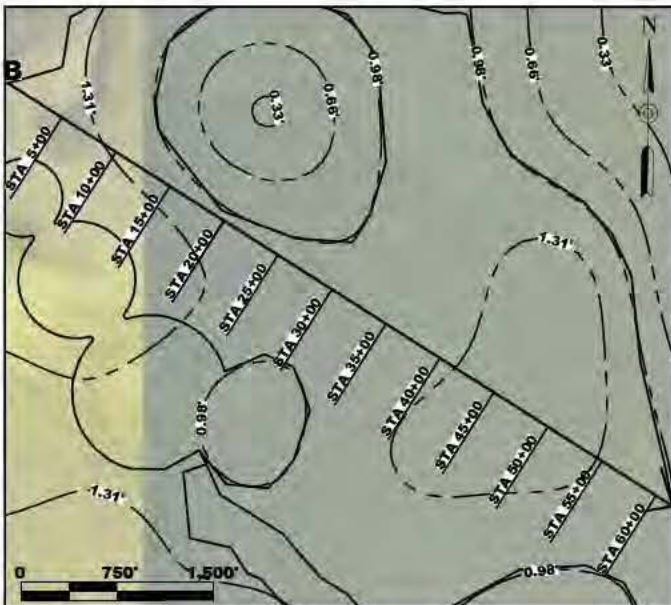
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2018	R/L	R/JW

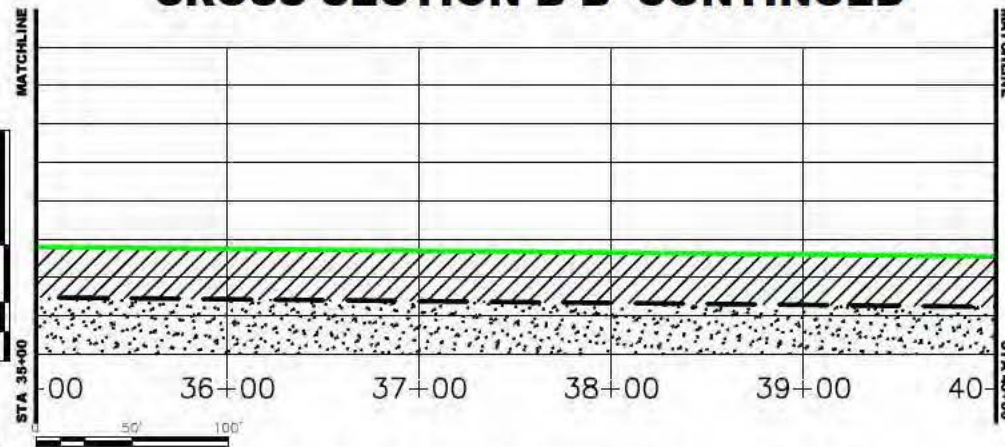
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CHECKED BY:	SEM
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DATE:	1/21/2019

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EXISTING & PROPOSED
CROSS SECTION B (2)

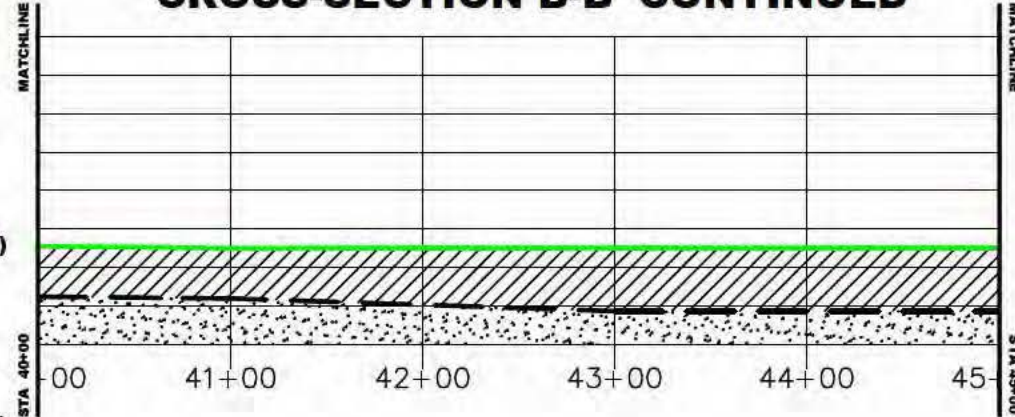
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9	
SHEET 9 OF 34 SHEETS	



CROSS-SECTION B-B' CONTINUED



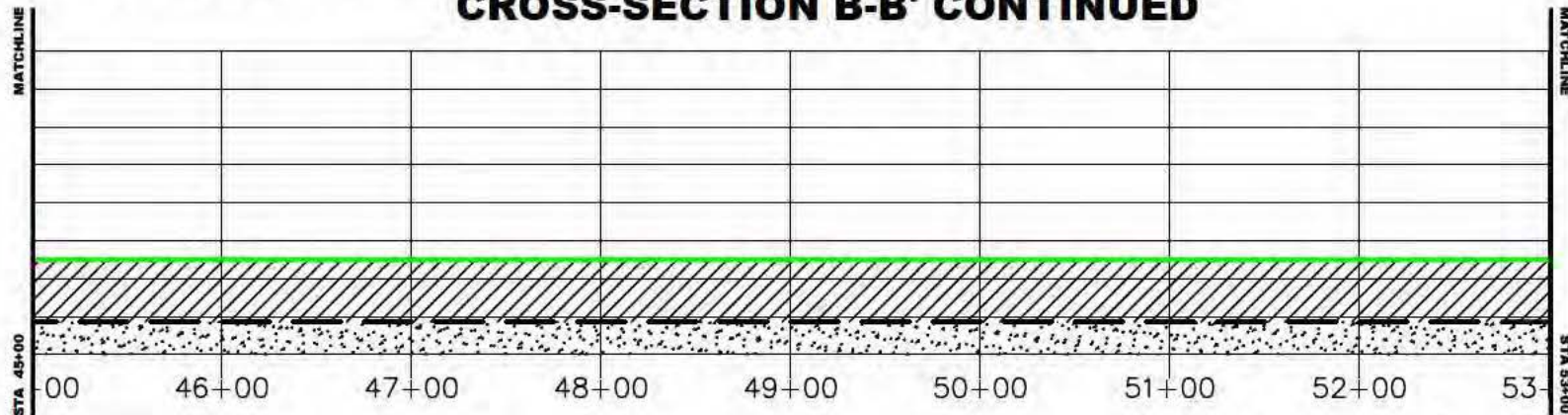
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LEGEND CROSS-SECTIONS

- VERTICAL LIMITS OF DREDGING
- EXISTING SURFACE
- UNCONSOLIDATED FLOCCULENT (UCF)
- UNDERLYING SEDIMENT
- PROJECT AREA
- UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS

CROSS-SECTION B-B' CONTINUED



NOTE: FOR PERMIT PURPOSES

DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88

wood.

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DISTRICT**



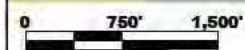
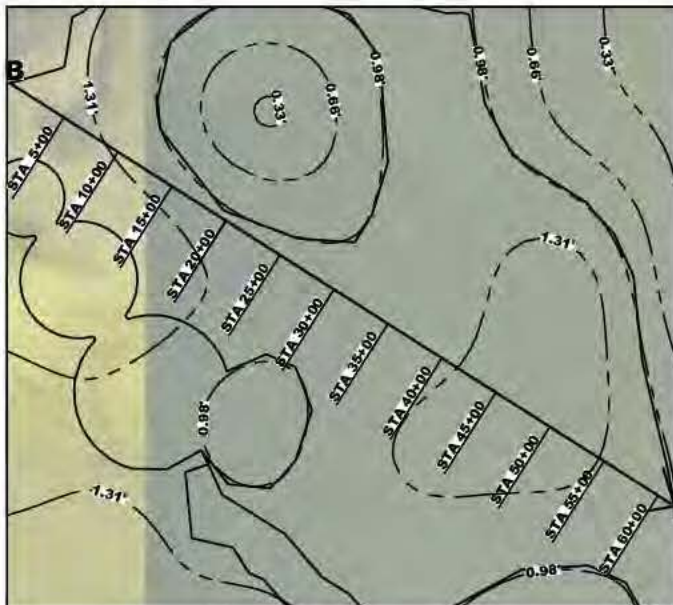
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R/L	R/W

DESIGNED BY:	OTHERS
DRAWN BY:	R/L
CHECKED BY:	SEM
APPROVED BY:	R/W
DATE:	1/21/2019

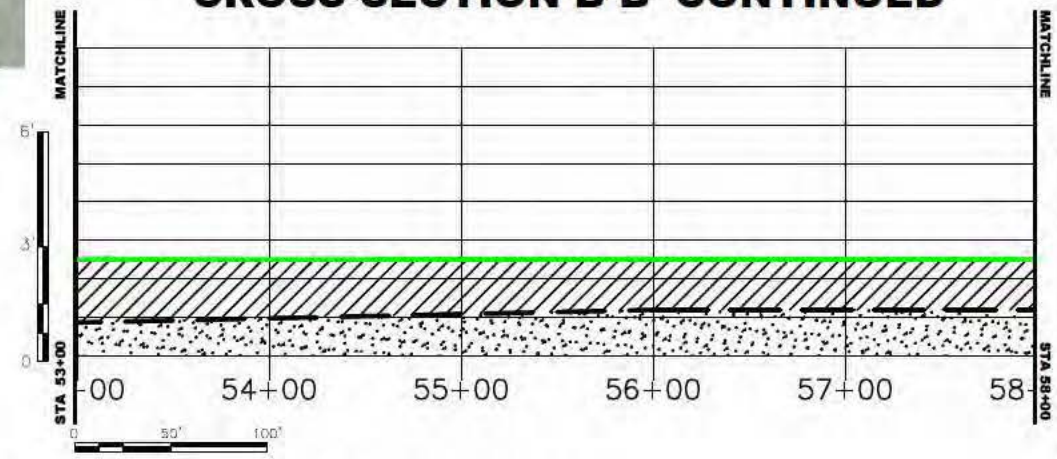
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EXISTING & PROPOSED
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SHEET NUMBER:	REV 1
10	
SHEET 10 OF 34 SHEETS	

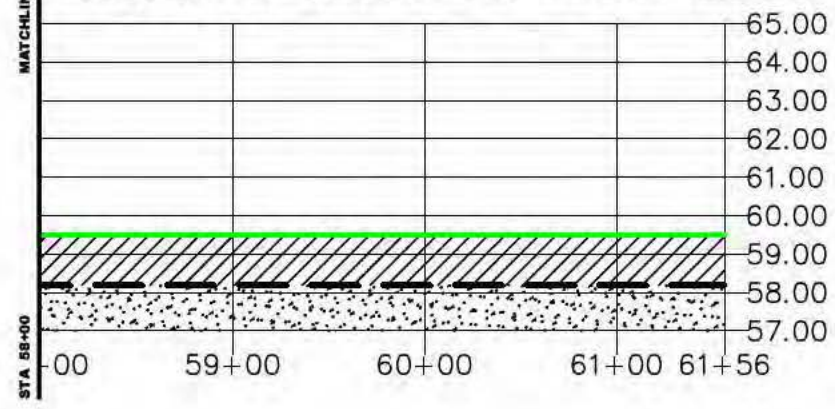


- LEGEND**
- CROSS-SECTIONS**
 - VERTICAL LIMITS OF DREDGING**
 - EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - PROJECT AREA**
 - UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

CROSS-SECTION B-B' CONTINUED



CROSS-SECTION B-B' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.


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APPLICANT:

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MANAGEMENT
DISTRICT**



WOOD PROJECT No.
6735-17-9417

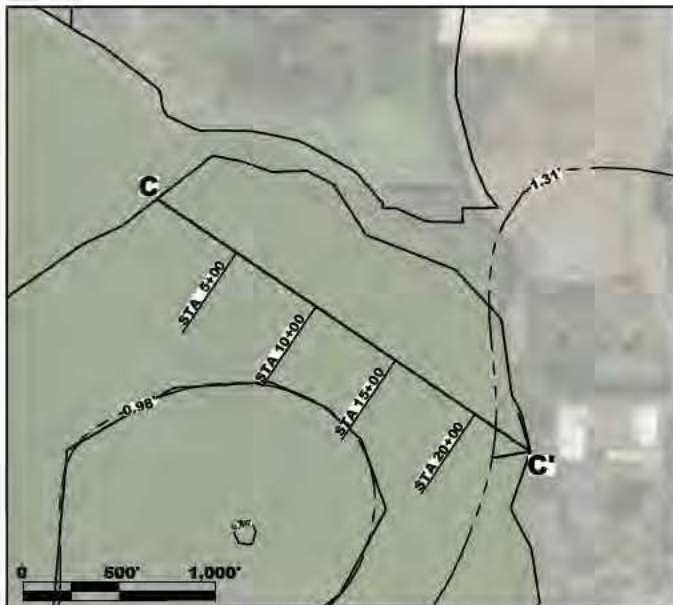
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NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

SHEET TITLE:

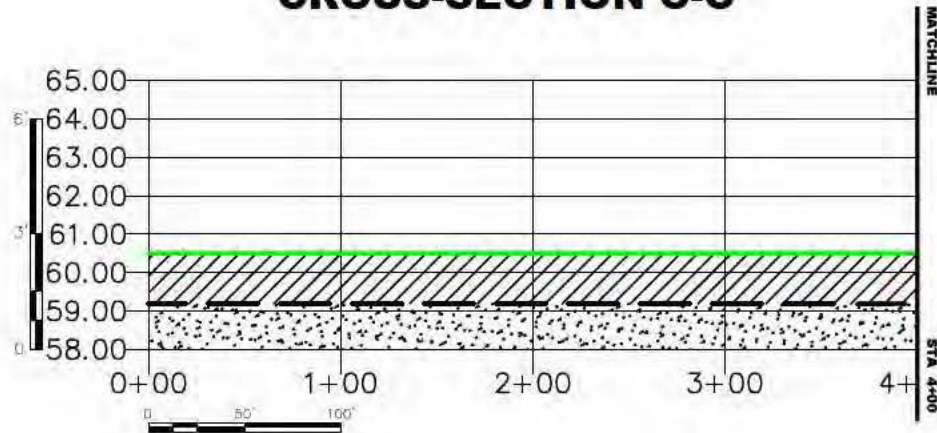
TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION B (4)

SHEET NUMBER:	REV 1
11	
SHEET 11 OF 34 SHEETS	

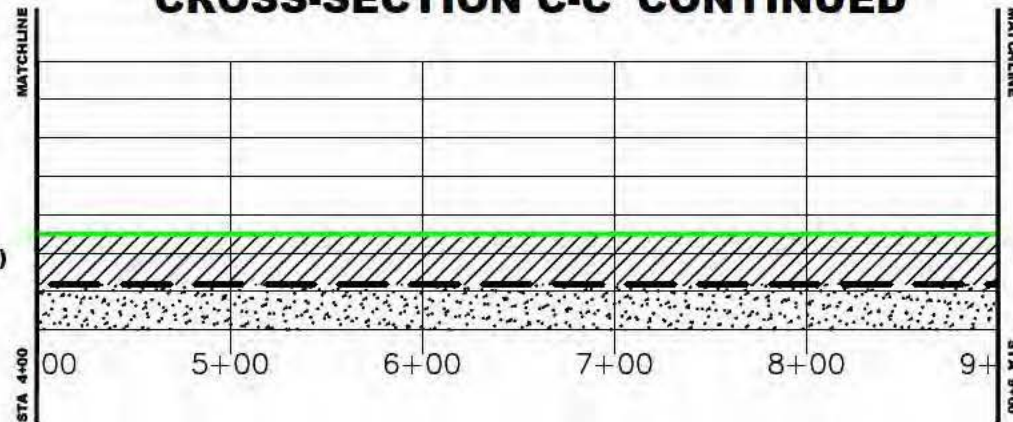


- LEGEND**
- **CROSS-SECTIONS**
 - - - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31' **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

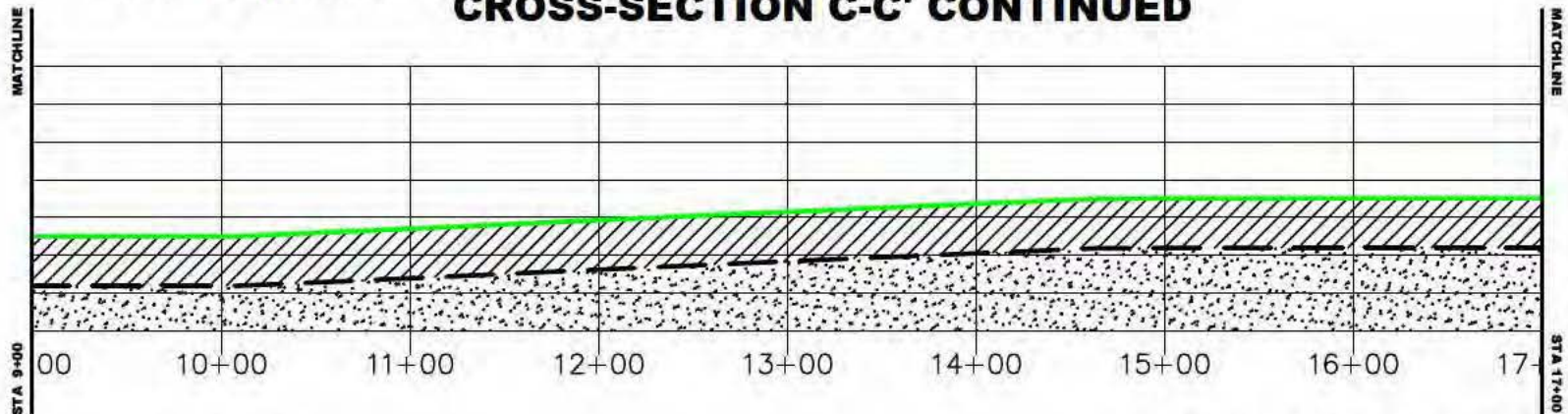
CROSS-SECTION C-C'



CROSS-SECTION C-C' CONTINUED



CROSS-SECTION C-C' CONTINUED



NOTE: FOR PERMIT PURPOSES

DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88

wood.

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PROJECT:

**LAKE APOPKA
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PLACEMENT**

APPLICANT:

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MANAGEMENT
DISTRICT**



WOOD PROJECT No.
6735-17-9417

REVISIONS		
NO.	DATE	BY
1	9/6/2019	RJL

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

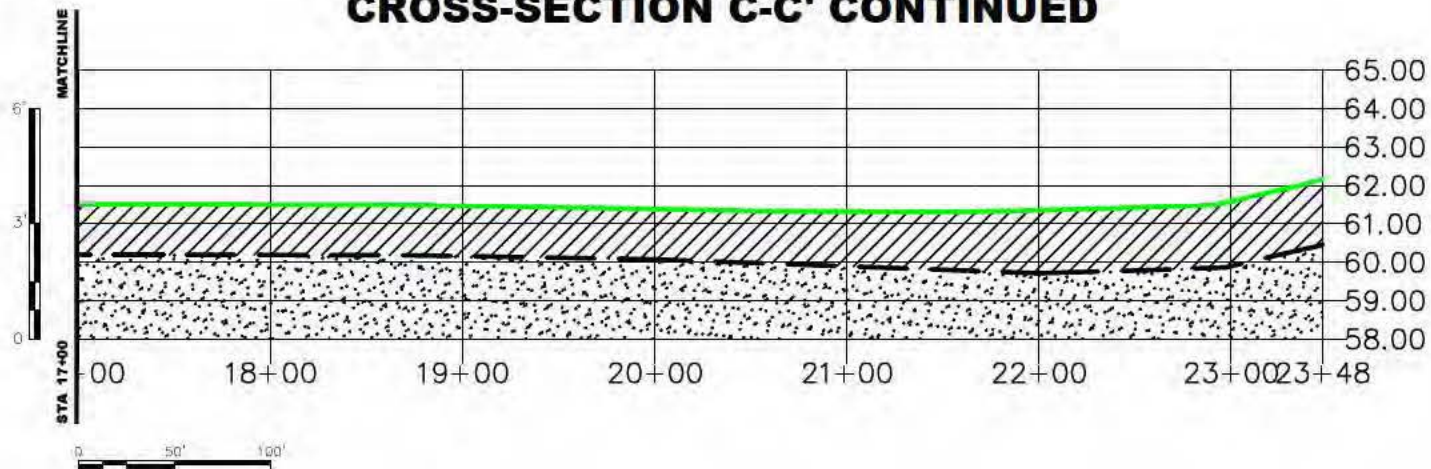
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TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION C (1)

SHEET NUMBER:	REV. 1
12	
SHEET 12 OF 34 SHEETS	



- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'- **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

CROSS-SECTION C-C' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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PROJECT:

**LAKE APOPKA
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PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



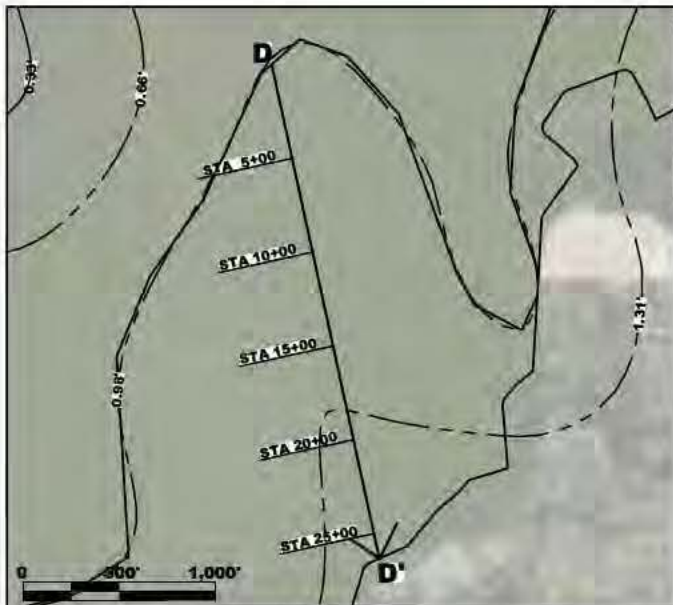
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
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APPROVED BY:	RJW
DATE:	1/21/2019

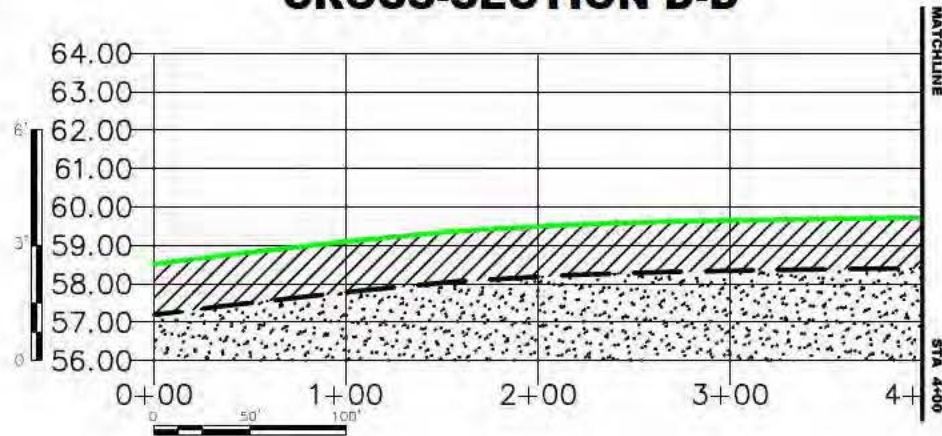
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EXISTING & PROPOSED
CROSS SECTION C (2)

SHEET NUMBER:	REV. 1
13	
SHEET 13 OF 34 SHEETS	

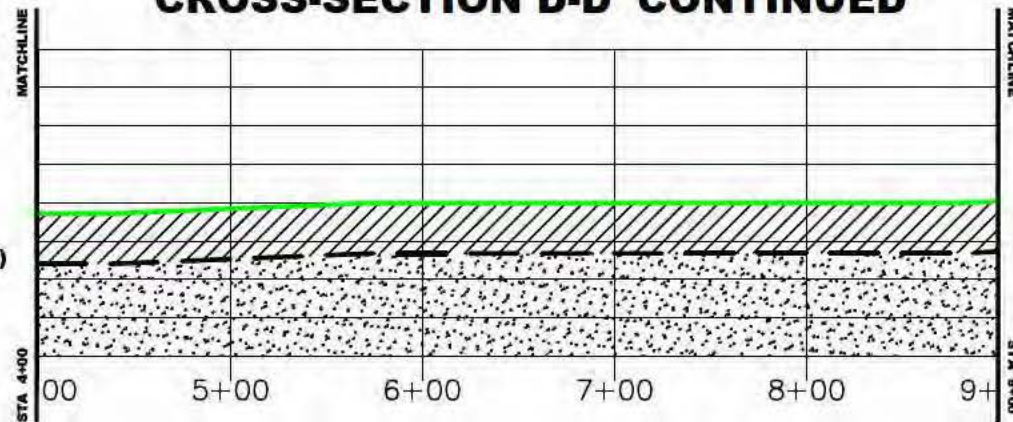


- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - ▨ **UNCONSOLIDATED FLOCCULENT (UCF)**
 - ▤ **UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

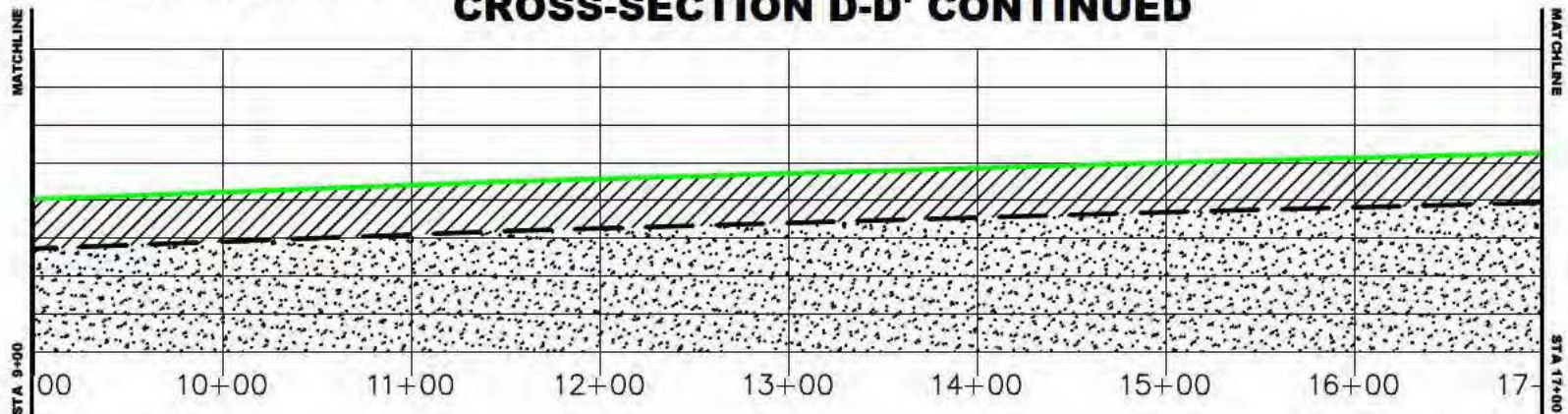
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CROSS-SECTION D-D' CONTINUED



CROSS-SECTION D-D' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



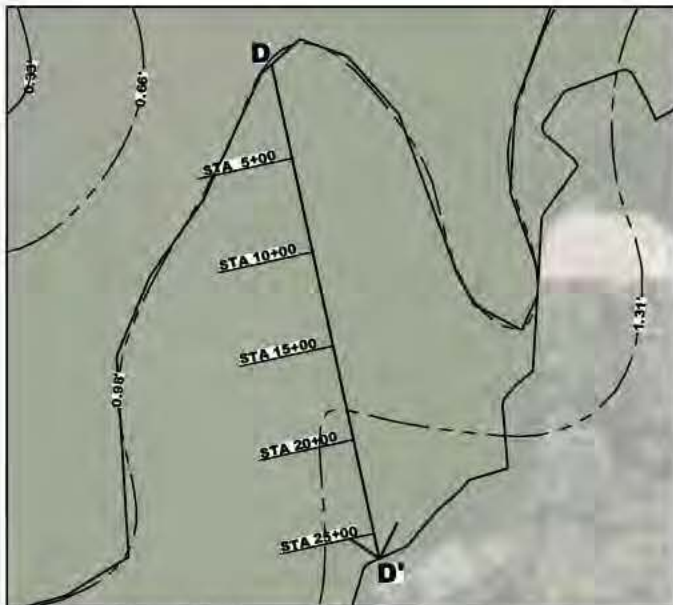
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2018	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

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EXISTING & PROPOSED
CROSS SECTION D (1)

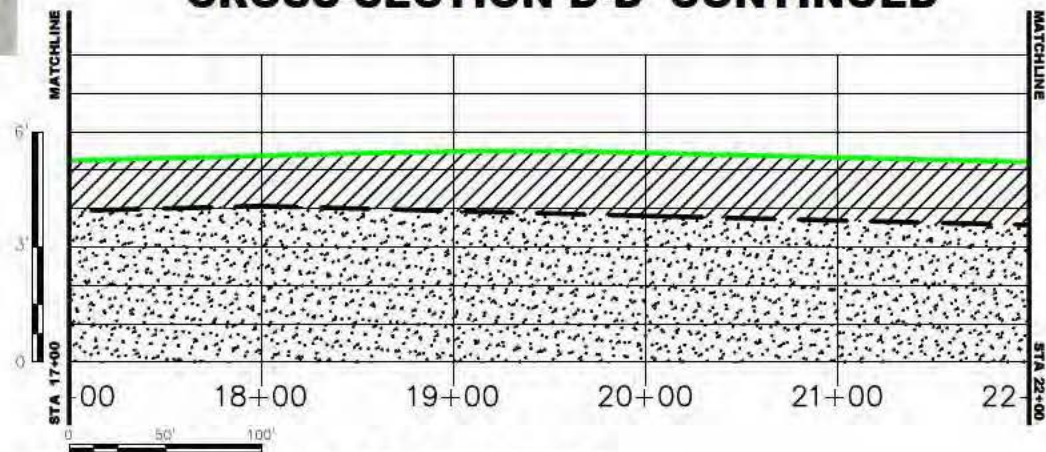
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14	
SHEET 14 OF 34 SHEETS	



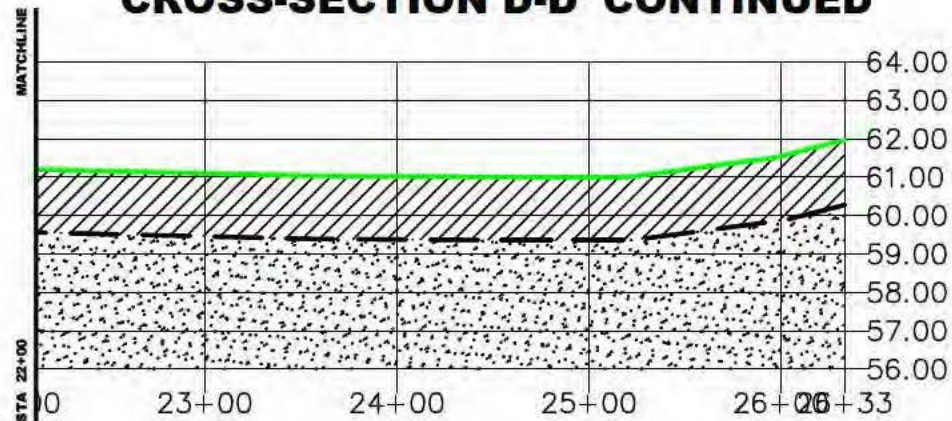
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- LEGEND**
- CROSS-SECTIONS**
 - VERTICAL LIMITS OF DREDGING**
 - EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - PROJECT AREA**
 - UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

CROSS-SECTION D-D' CONTINUED



CROSS-SECTION D-D' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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PROJECT:

**LAKE APOPKA
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PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



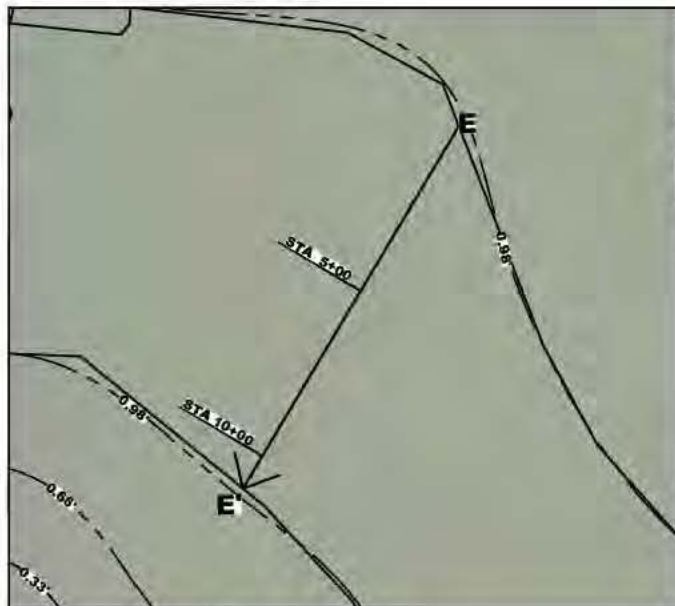
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

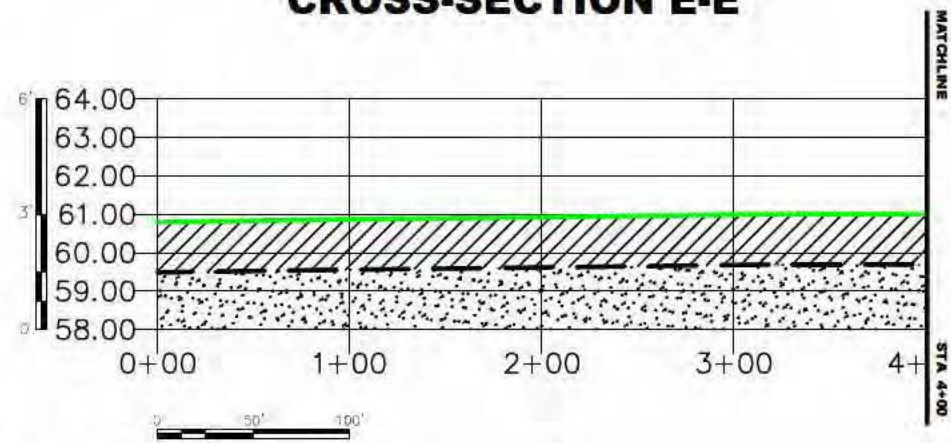
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EXISTING & PROPOSED
CROSS SECTION 0 (2)**

SHEET NUMBER:	REV. 1
15	
SHEET 15 OF 34 SHEETS	

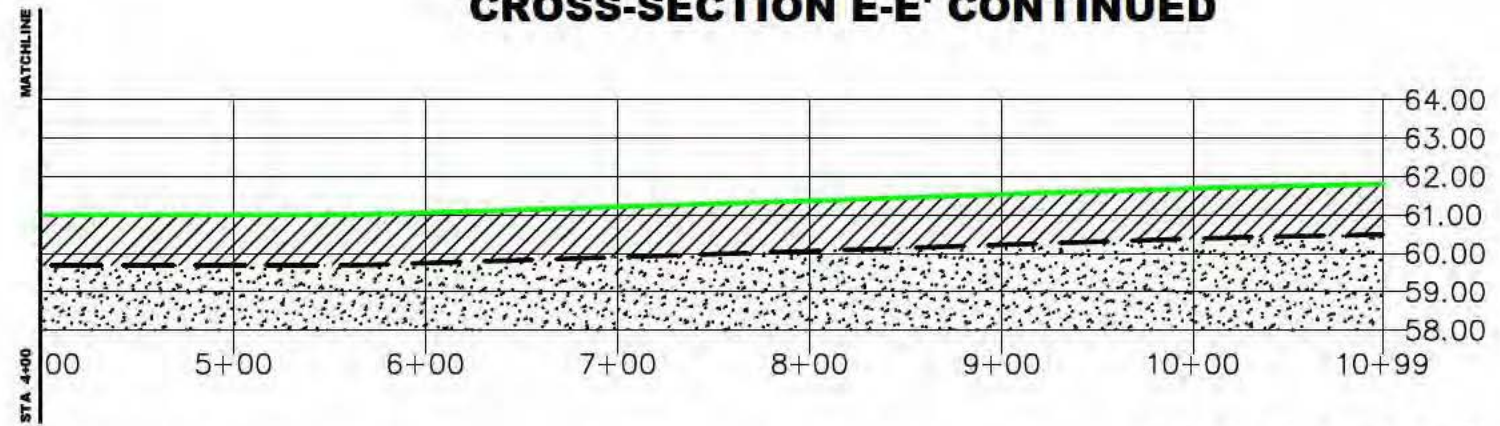


- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'— **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

CROSS-SECTION E-E'



CROSS-SECTION E-E' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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PROJECT:

**LAKE APOPKA
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PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**

WOOD PROJECT No:
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY: OTHERS

DRAWN BY: R.J.L.

CHECKED BY: SEM

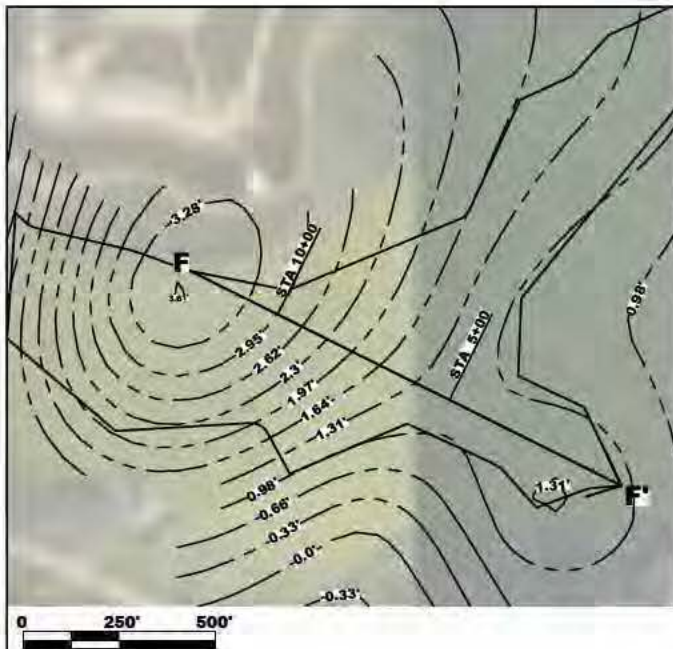
APPROVED BY: R.J.W.

DATE: 1/21/2019

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TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION E

SHEET NUMBER:	REV. 1
16	
SHEET 16 OF 34 SHEETS	

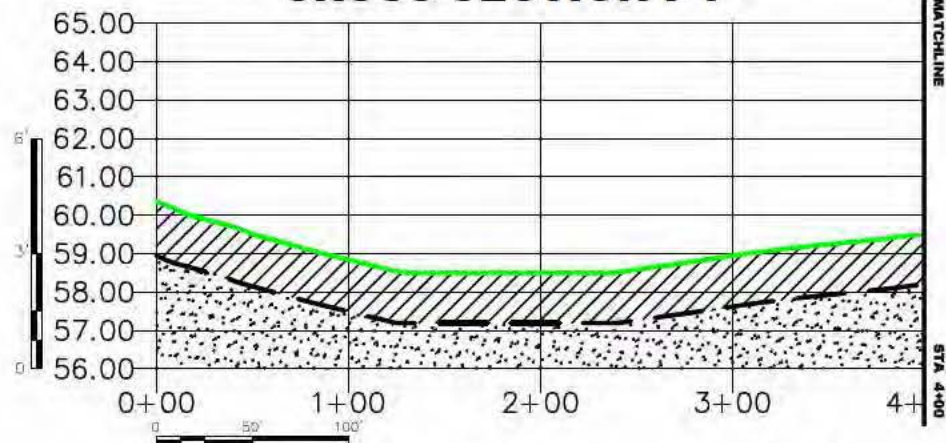


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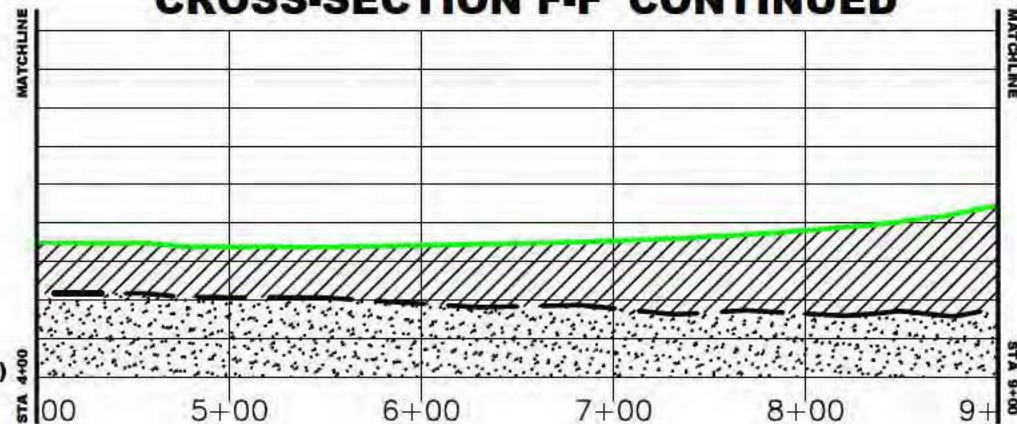
- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'— **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

NOTE: FOR PERMIT PURPOSES

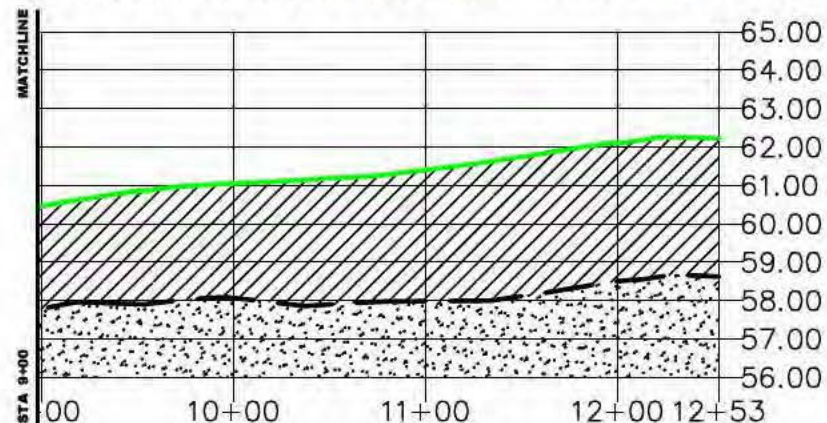
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CROSS-SECTION F-F' CONTINUED



CROSS-SECTION F-F' CONTINUED



DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88

wood.

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PROJECT:

**LAKE APOPKA
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PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



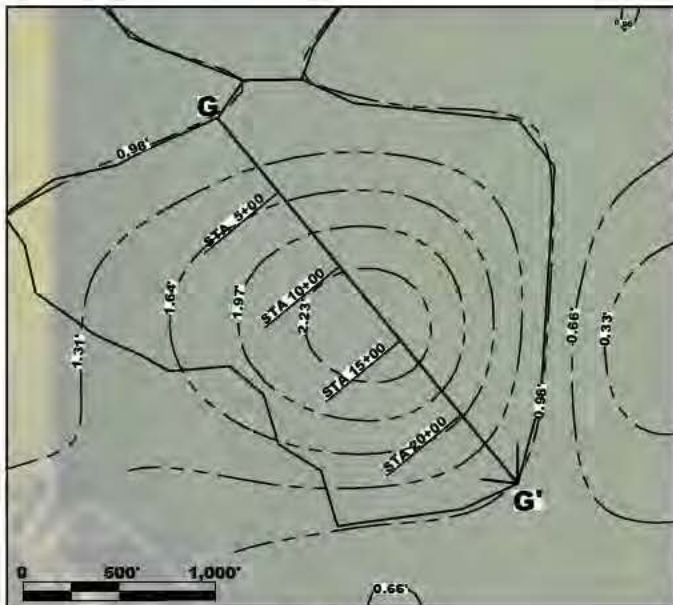
WOOD PROJECT No.
6735-17-9417

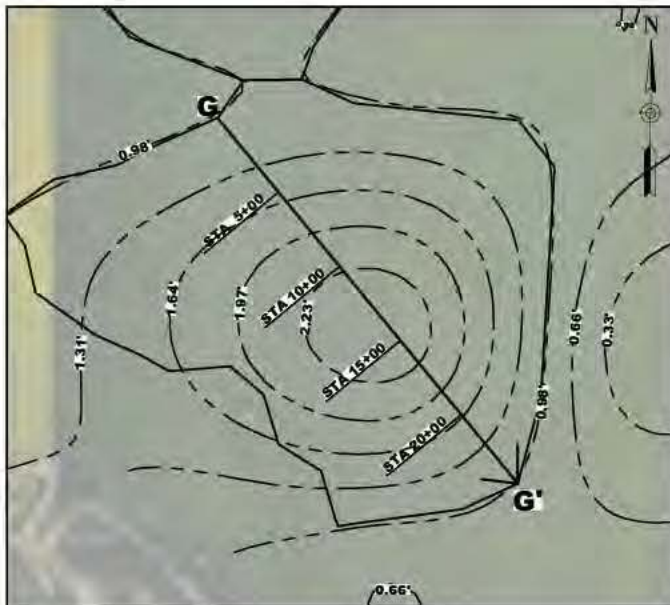
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NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

SHEET TITLE:
TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION F

SHEET NUMBER:	REV. 1
17	
SHEET 17 OF 34 SHEETS	

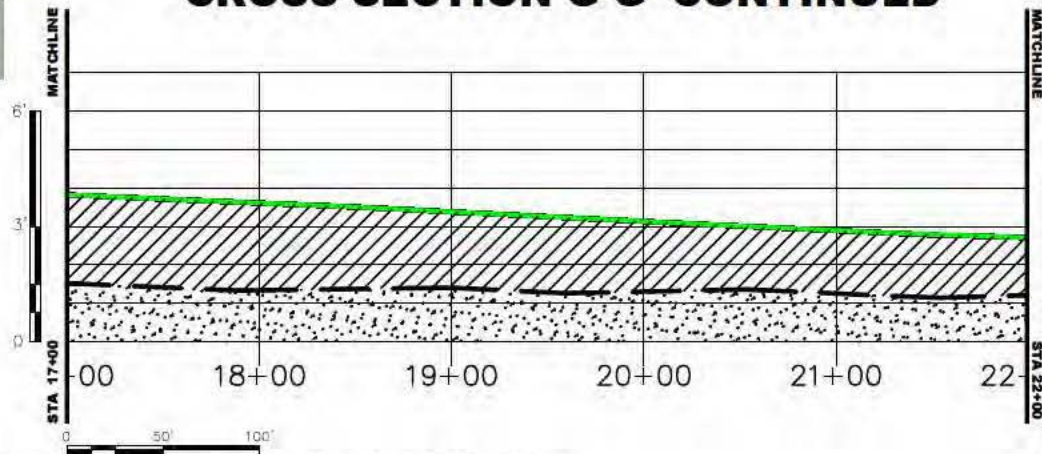




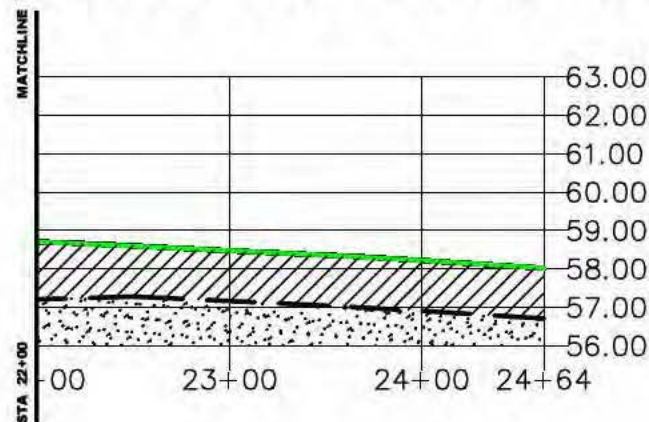
0 500' 1,000'

- LEGEND**
- **CROSS-SECTIONS**
 - **VERTICAL LIMITS OF DREDGING**
 - **EXISTING SURFACE**
 - UNCONSOLIDATED FLOCCULENT (UCF)**
 - UNDERLYING SEDIMENT**
 - **PROJECT AREA**
 - 1.31'— **UNCONSOLIDATED FLOCCULENT (UCF) SEDIMENT THICKNESS**

CROSS-SECTION G-G' CONTINUED



CROSS-SECTION G-G' CONTINUED



NOTE: FOR PERMIT PURPOSES

**DATA SOURCE :ESRI IMAGERY. WOOD
ELEVATION: NAVD88**

wood.

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NEWBERRY, FL 32669
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PROJECT:

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PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



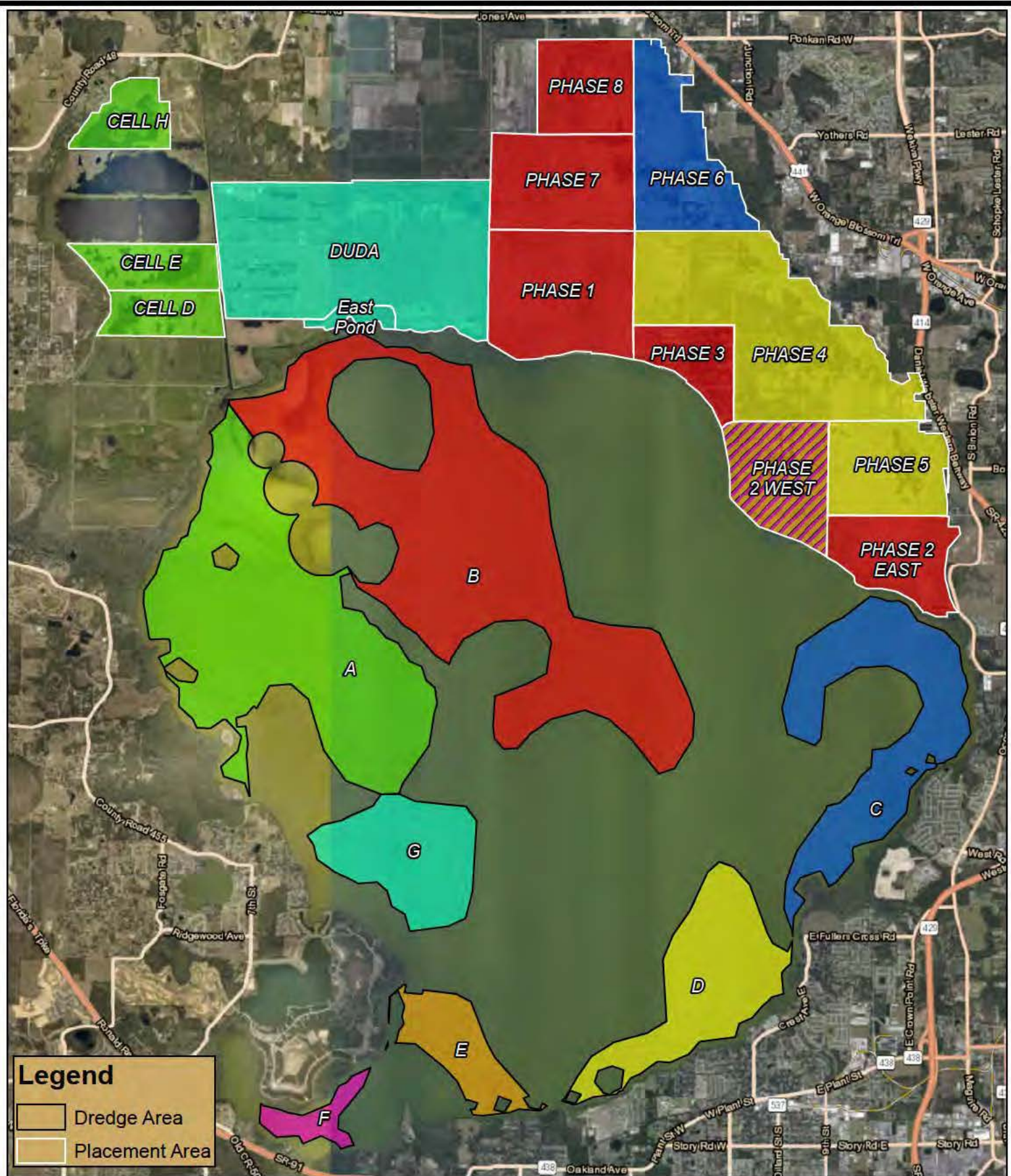
WOOD PROJECT No.
6735-17-9417

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	RJL	RJW

DESIGNED BY:	OTHERS
DRAWN BY:	RJL
CHECKED BY:	SEM
APPROVED BY:	RJW
DATE:	1/21/2019

SHEET TITLE:
TYPICAL DREDGE
EXISTING & PROPOSED
CROSS SECTION G (2)

SHEET NUMBER:	REV. 1
19	
SHEET 19 OF 34 SHEETS	



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018



Lake Apopka Dredging Project

Dredge Material Placement Map

Drawn	Date	Gainesville
DLA	1/4/2019	Florida
Checked	Date	Project No.
MFC	1/4/2019	6735179417

wood.

Sheet
20

Lake Area and Dredge Volume cubic yards		Placement Area and Available Volume (cubic yards)													
		Cell D	Cell E	Cell H	Phase 1	Phase 2 East	Phase 3	Phase 7	Phase 8	Phase 6	Phase 4	Phase 5	Phase 2 West	Duda	Duda - E Pond
		5,733,188	7,951,914	6,196,297	7,719,216	1,131,186	1,576,331	2,341,295	4,101,433	7,448,864	4,254,205	1,028,241	2,006,358	6,486,555	387,269
A	8,058,081														
B	8,573,652														
C	3,382,552														
D	2,403,364														
E	952,247														
F	597,654														
G	2,699,031														
Percent of Placement Capacity		41%			51%					45%	45%		77%	39%	

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
CERTIFICATE OF
AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

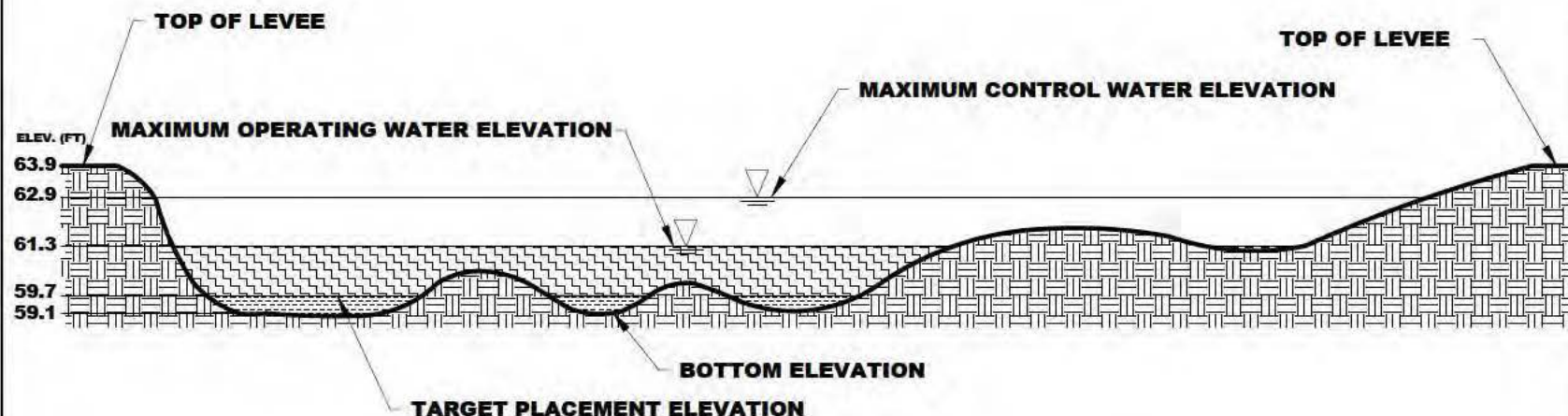
REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
DUDA

SHEET NUMBER:	REV. 1
21	
SHEET 21 OF 34 SHEETS	

CROSS SECTION - DUDA



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

ELEVATIONS ARE SCALED FOR EACH PLACEMENT AREA AND DEFINED BELOW:

MAXIMUM CONTROL WATER ELEVATION - THE LEVEL AT WHICH MANAGEMENT INFRASTRUCTURE IS THREATENED. SJRWMD DISCHARGES WATER TO THE INTERNAL WATER MANAGEMENT SYSTEM AS NEEDED TO AVOID EXCEEDING THIS ELEVATION.

MAXIMUM OPERATING WATER ELEVATION - THE MAXIMUM WATER ELEVATION THAT WILL BE ALLOWED DURING PLACEMENT OF SEDIMENT. EXISTING GROUND ELEVATIONS WILL NOT BE AFFECTED ABOVE THIS ELEVATION.

TARGET PLACEMENT ELEVATION - THE MAXIMUM ELEVATION FOR PLACEMENT OF SEDIMENT IF THE ENTIRE PLACEMENT CAPACITY OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW BOTTOM ELEVATION.

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

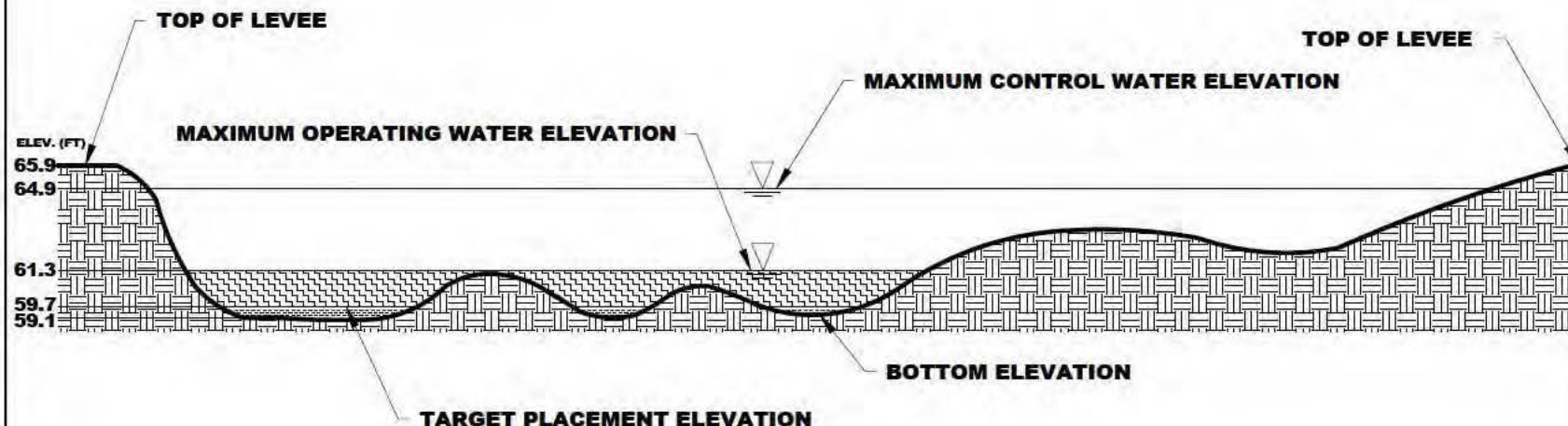
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NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
DUDA EAST POND

SHEET NUMBER:	REV. 1
22	
SHEET 22 OF 34 SHEETS	

CROSS SECTION - DUDA EAST POND



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

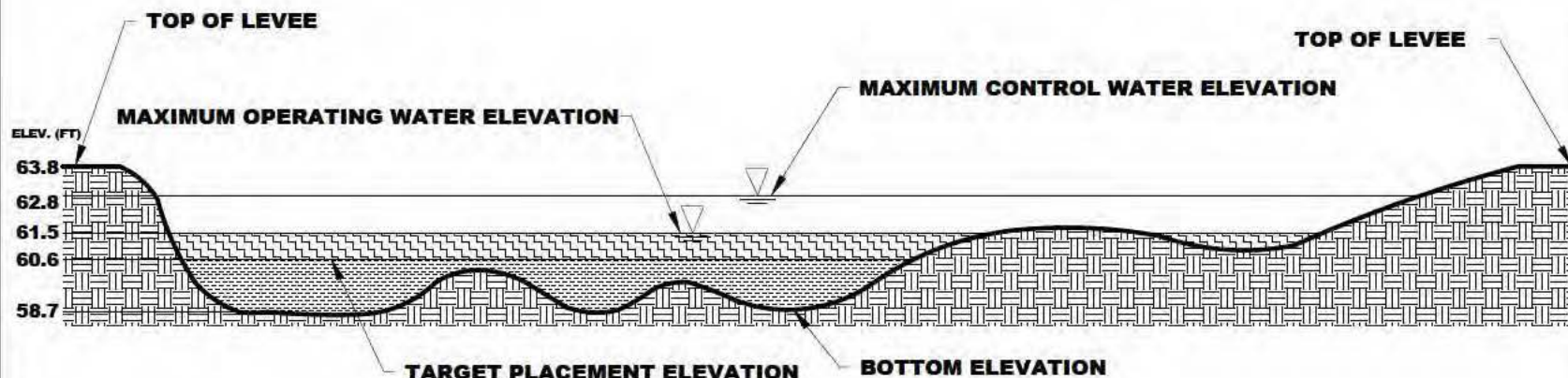
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1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 1

SHEET NUMBER:	REV. 1
23	
SHEET 23 OF 34 SHEETS	

CROSS SECTION - PHASE 1



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW
BOTTOM ELEVATION.**

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

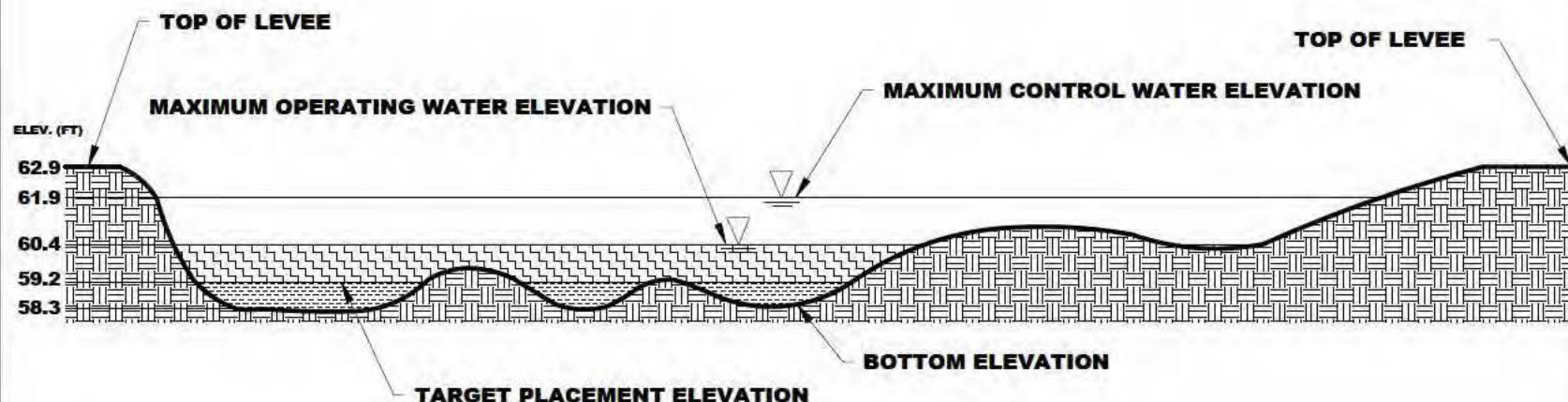
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1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
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CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 2 EAST

SHEET NUMBER:	REV. 1
24	
SHEET 24 OF 34 SHEETS	

CROSS SECTION - PHASE 2 EAST



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
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NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

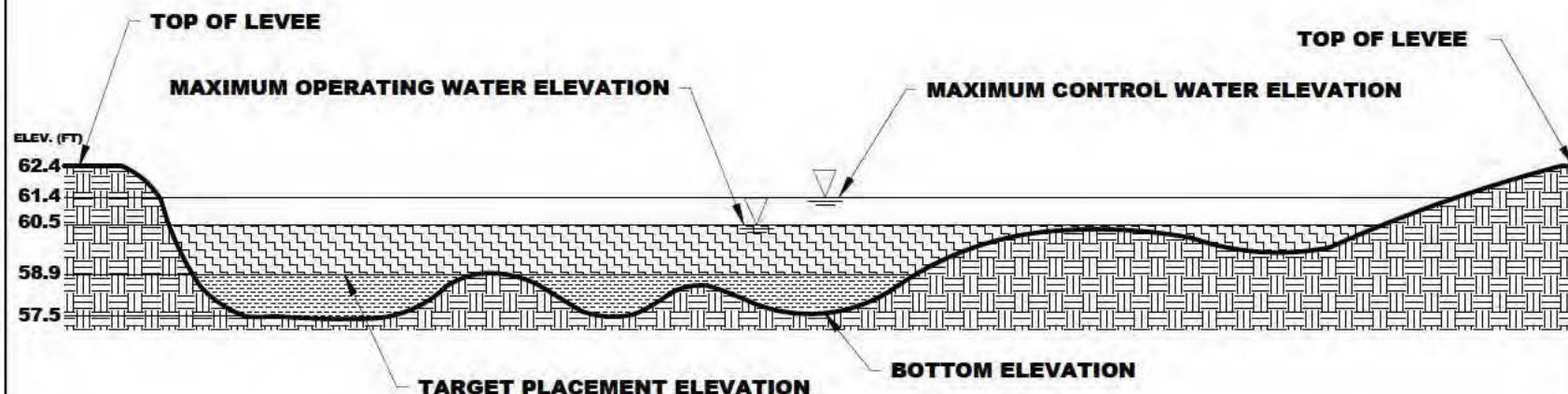
APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

CROSS SECTION - PHASE 2 WEST



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW
BOTTOM ELEVATION.**

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

-  **EXISTING SURFACE**
-  **GROUND**
-  **SHALLOW PLACEMENT AREA**
-  **DEEP PLACEMENT AREA**

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 2 WEST

SHEET NUMBER:	REV. 1
25	
SHEET 25 OF 34 SHEETS	

wood.

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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

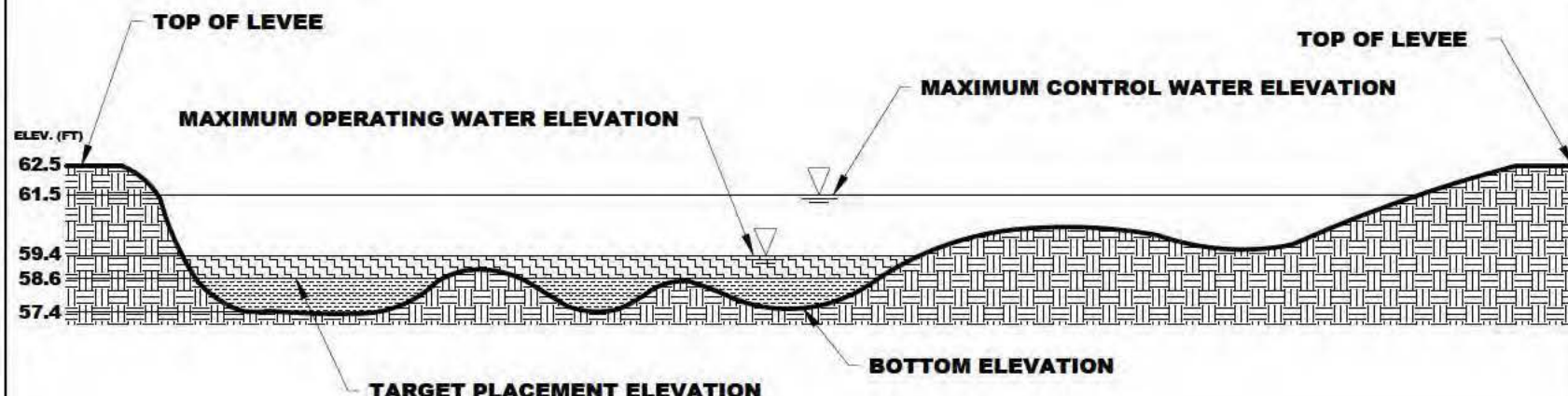
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DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 3

SHEET NUMBER:	REV. 1
26	
SHEET 26 OF 34 SHEETS	

CROSS SECTION - PHASE 3



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

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NEWBERRY, FL 32669
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

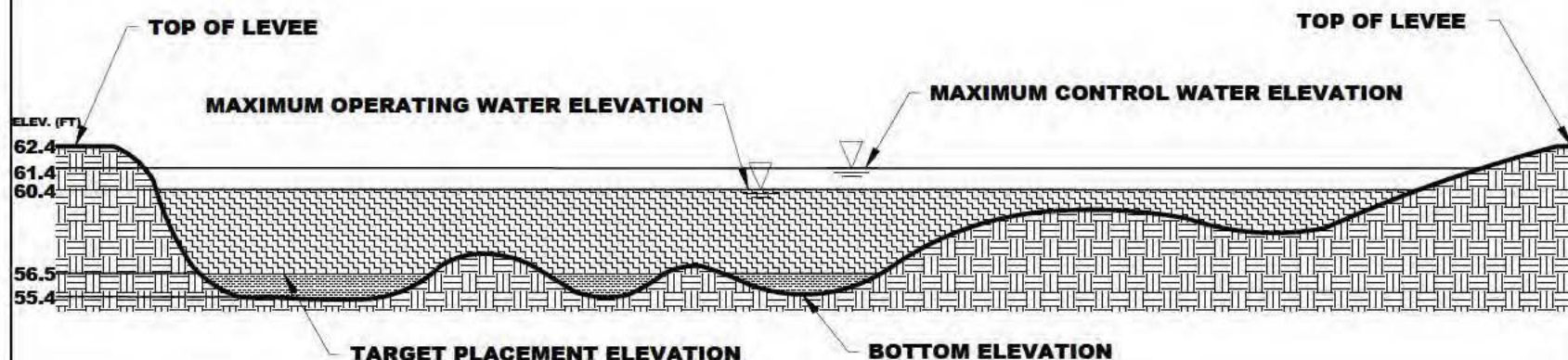
REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 4

SHEET NUMBER:	REV. 1
27	
SHEET 27 OF 34 SHEETS	

CROSS SECTION - PHASE 4



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW
BOTTOM ELEVATION.**

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

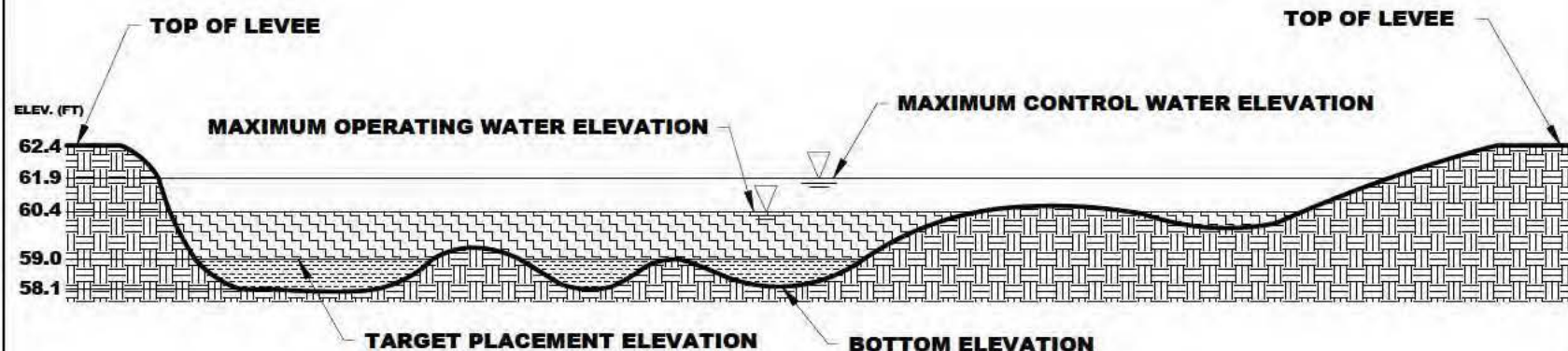
REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 5

SHEET NUMBER:	REV. 1
28	
SHEET 28 OF 34 SHEETS	

CROSS SECTION - PHASE 5



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW
BOTTOM ELEVATION.**

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



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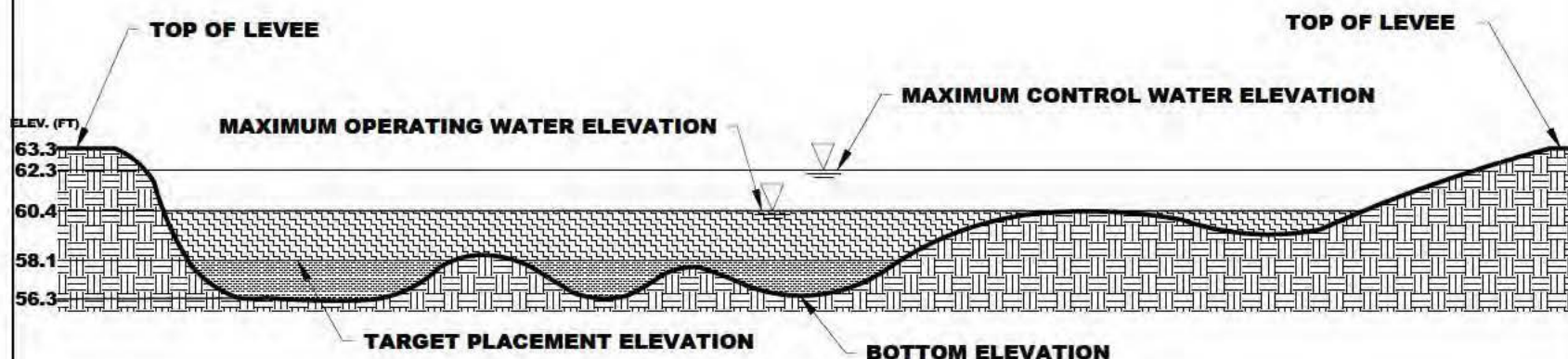
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1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 6

SHEET NUMBER:	REV. 1
29	
SHEET 29 OF 34 SHEETS	

CROSS SECTION - PHASE 6



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

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DISTRICT**



WOOD PROJECT No:
6735-17-9417

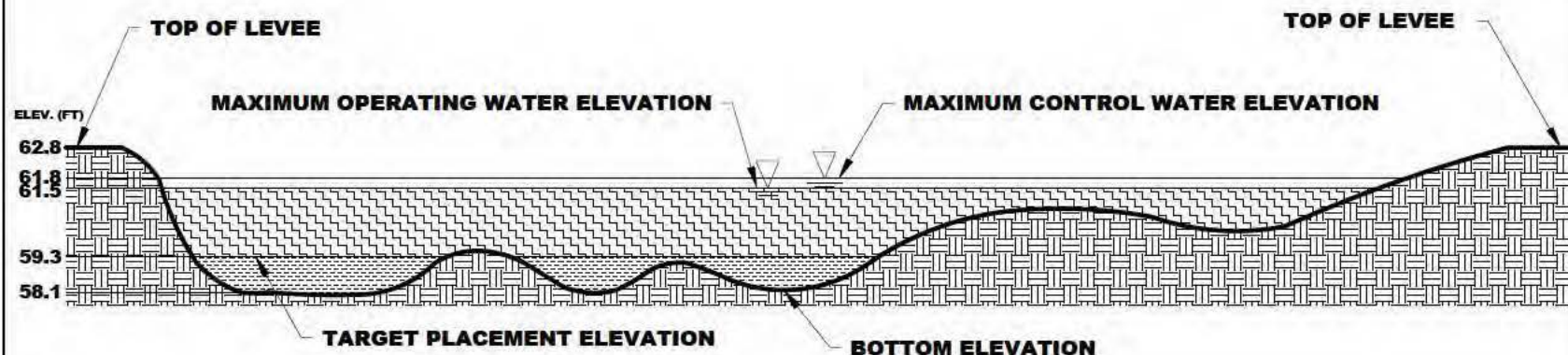
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CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 7

SHEET NUMBER:	REV. 1
30	
SHEET 30 OF 34 SHEETS	

CROSS SECTION - PHASE 7



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
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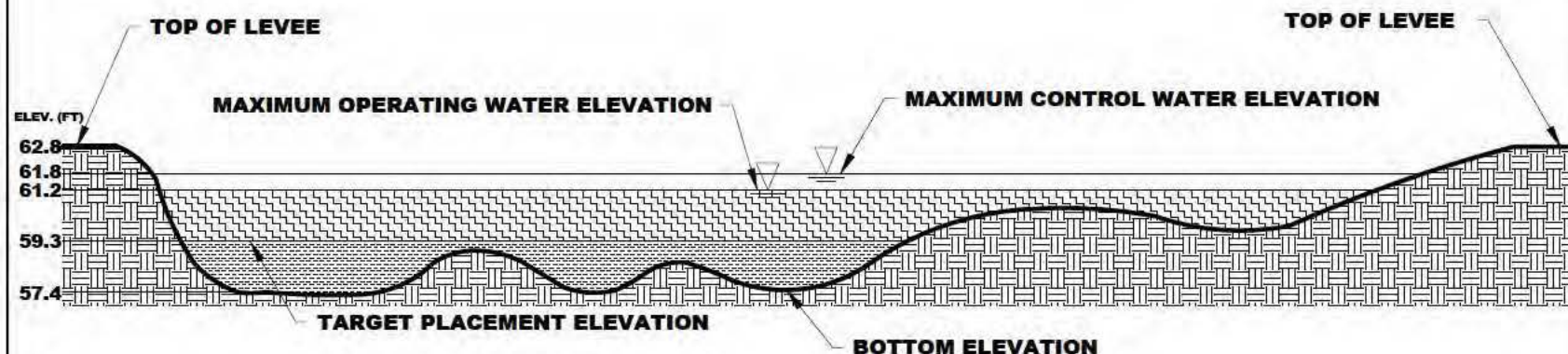
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APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
PHASE 8

SHEET NUMBER:	REV. 1
31	
SHEET 31 OF 34 SHEETS	

CROSS SECTION - PHASE 8



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

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PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
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MANAGEMENT
DISTRICT**



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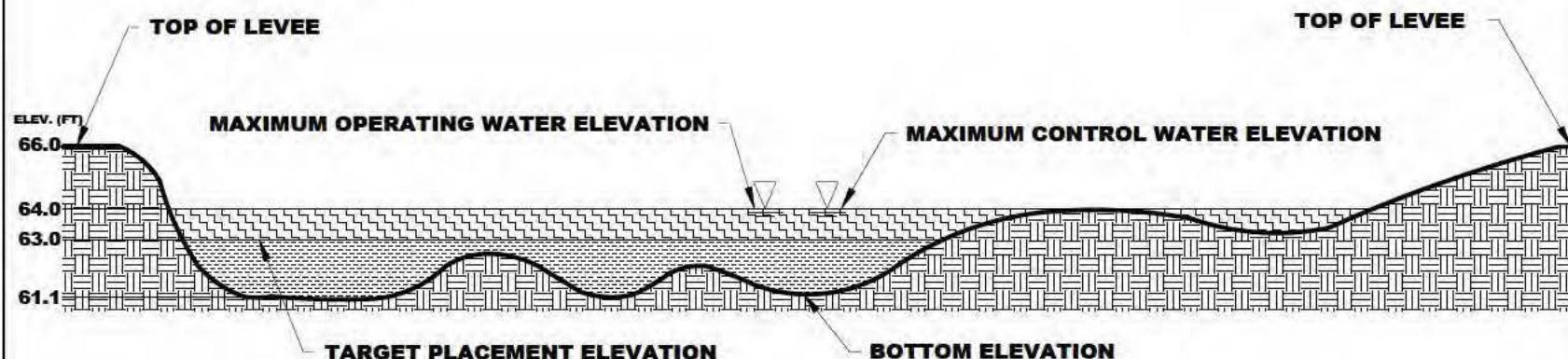
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DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
CELL D

SHEET NUMBER:	REV. 1
32	
SHEET 32 OF 34 SHEETS	

CROSS SECTION - CELL D



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

HORIZONTAL PROFILE IS TYPICAL AND NOT TO SCALE.

ELEVATIONS ARE SCALED FOR EACH PLACEMENT AREA AND DEFINED BELOW:

MAXIMUM CONTROL WATER ELEVATION - THE LEVEL AT WHICH MANAGEMENT INFRASTRUCTURE IS THREATENED. SJRWMD DISCHARGES WATER TO THE INTERNAL WATER MANAGEMENT SYSTEM AS NEEDED TO AVOID EXCEEDING THIS ELEVATION.

MAXIMUM OPERATING WATER ELEVATION - THE MAXIMUM WATER ELEVATION THAT WILL BE ALLOWED DURING PLACEMENT OF SEDIMENT. EXISTING GROUND ELEVATIONS WILL NOT BE AFFECTED ABOVE THIS ELEVATION.

TARGET PLACEMENT ELEVATION - THE MAXIMUM ELEVATION FOR PLACEMENT OF SEDIMENT IF THE ENTIRE PLACEMENT CAPACITY OF THE CELL WERE USED, THIS LEVEL WOULD BE THE NEW BOTTOM ELEVATION.

BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

wood.

404 SW 140TH TERRACE
NEWBERRY, FL 32669
TEL: (352) 332-3318
CERTIFICATE OF
AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

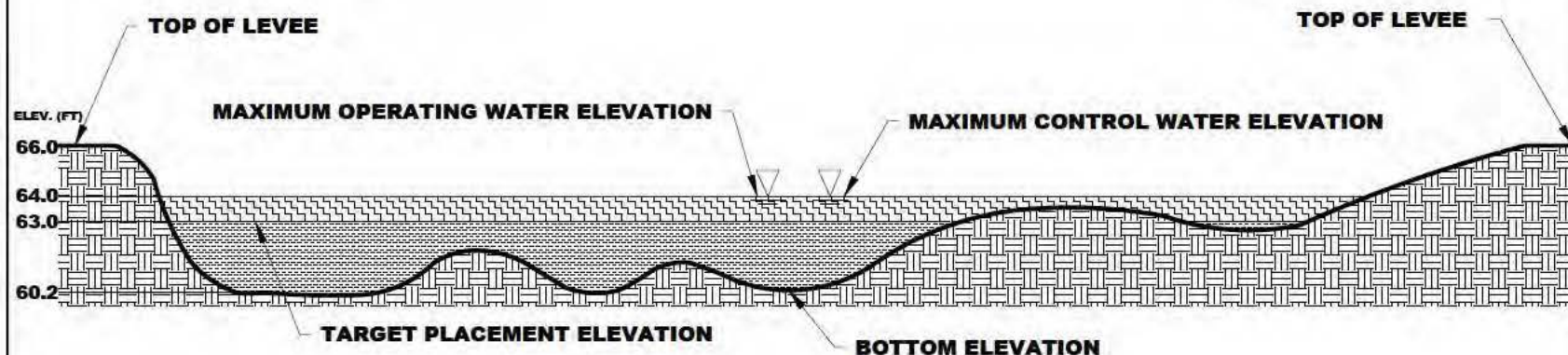
APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

CROSS SECTION - CELL E&E POND



NOTE:

CONCEPTUAL FOR PERMITTING PURPOSES.

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BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

- EXISTING SURFACE**
- GROUND**
- SHALLOW PLACEMENT AREA**
- DEEP PLACEMENT AREA**

REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
CELL E&E POND

SHEET NUMBER:	REV. 1
33	
SHEET 33 OF 34 SHEETS	

wood.

404 SW 140TH TERRACE
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TEL: (352) 332-3318
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AUTHORIZATION LICENSE
NUMBER 5392

PROJECT:

**LAKE APOPKA
DREDGING AND
PLACEMENT**

APPLICANT:

**ST. JOHNS
RIVER WATER
MANAGEMENT
DISTRICT**



WOOD PROJECT No:
6735-17-9417

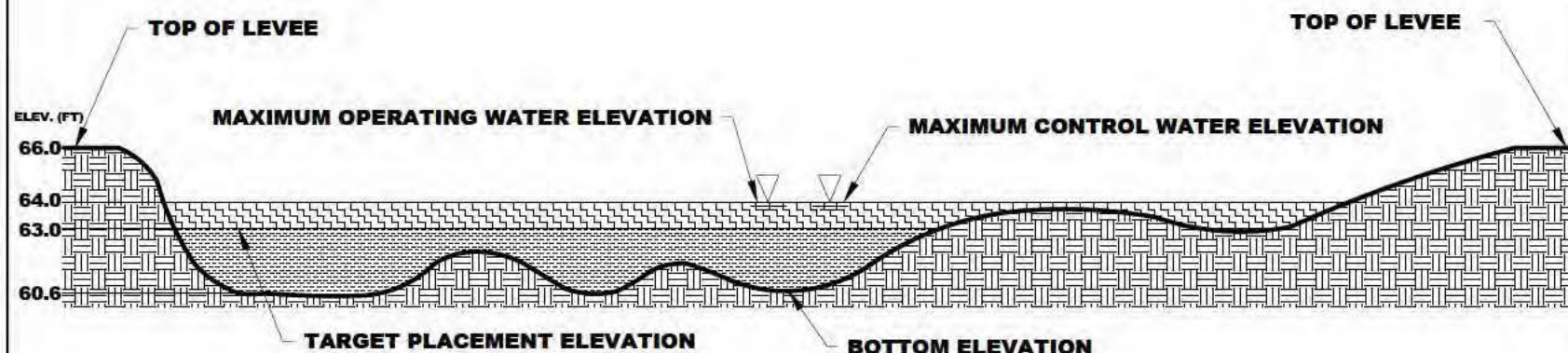
REVISIONS			
NO.	DATE	BY	APPROVED
1	9/6/2019	R.J.L.	R.J.W.

DESIGNED BY:	OTHERS
DRAWN BY:	R.J.L.
CHECKED BY:	SEM
APPROVED BY:	R.J.W.
DATE:	1/21/2019

SHEET TITLE:
MATERIAL PLACEMENT
SITE TYPICAL
CROSS SECTION
CELL H&H POND

SHEET NUMBER:	REV. 1
34	
SHEET 34 OF 34 SHEETS	

CROSS SECTION - CELL H&H POND



NOTE:

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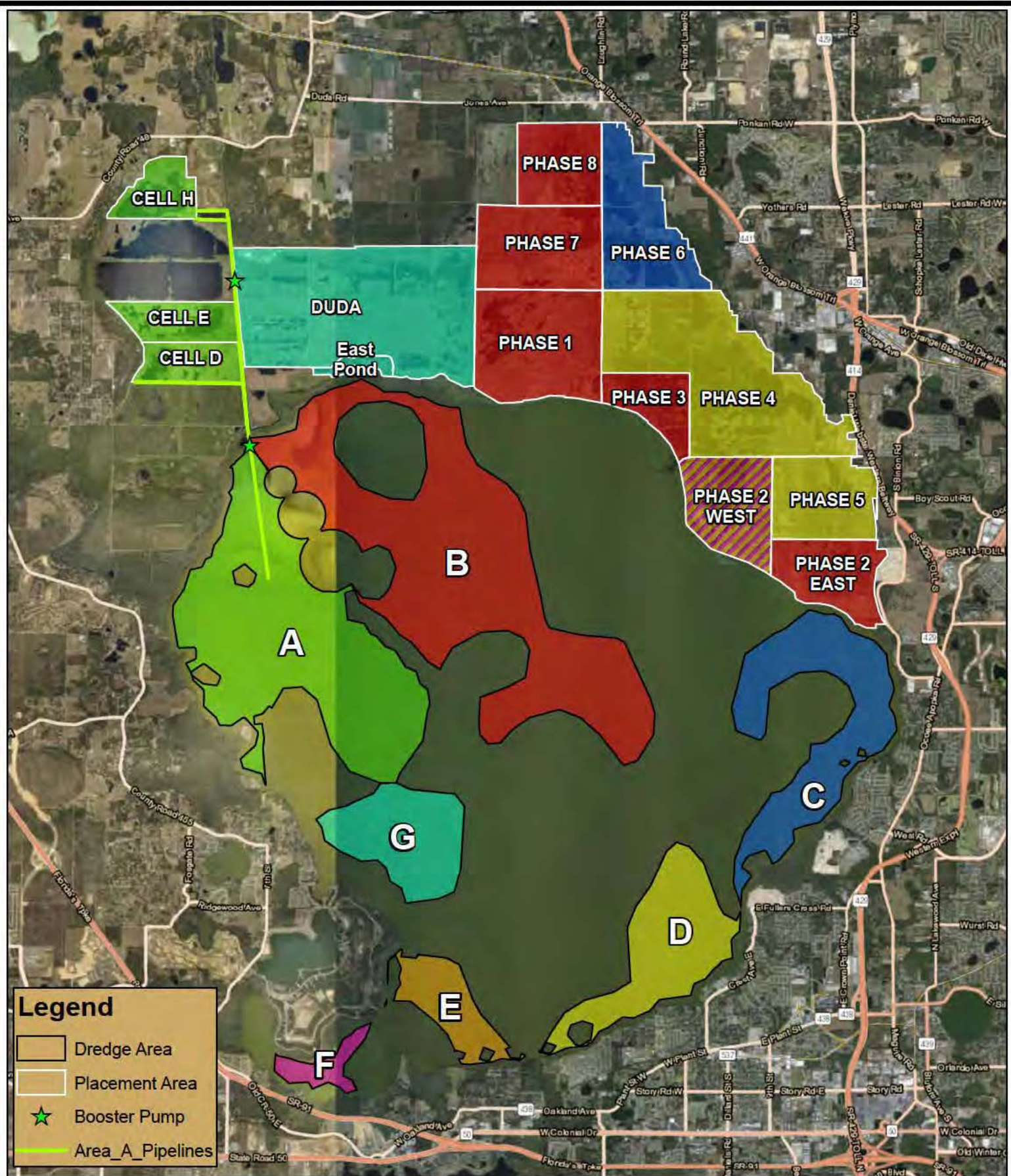
BOTTOM ELEVATION - 5TH PERCENTILE OF STAGE AREA CURVE.

LEGEND

	EXISTING SURFACE
	GROUND
	SHALLOW PLACEMENT AREA
	DEEP PLACEMENT AREA

ATTACHMENT B

Proposed Pipeline and Booster Pump Maps



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018

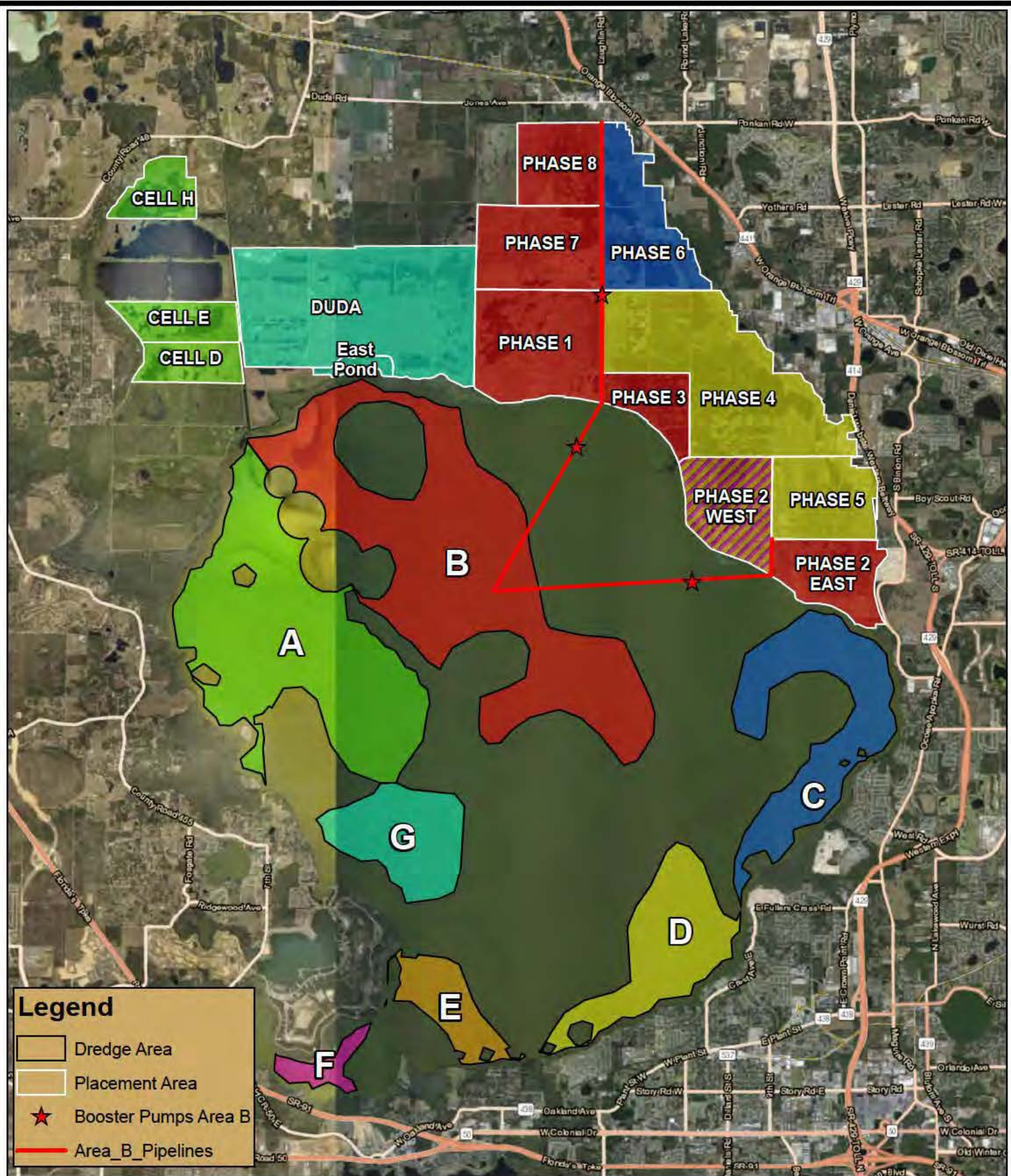
Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area A

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018



0 3,500 7,000 14,000 Feet

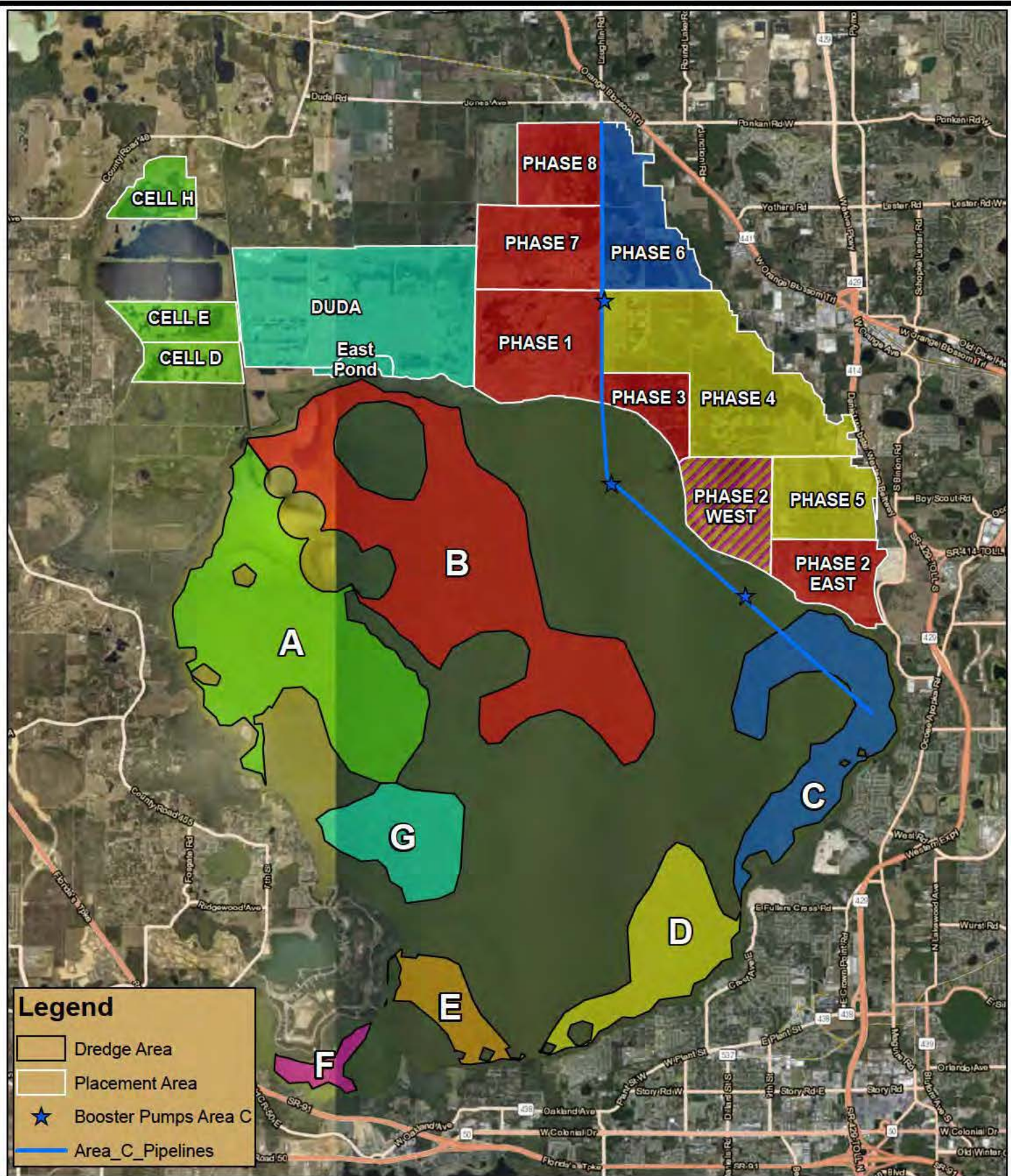
Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area B

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1



0 3,500 7,000 14,000 Feet

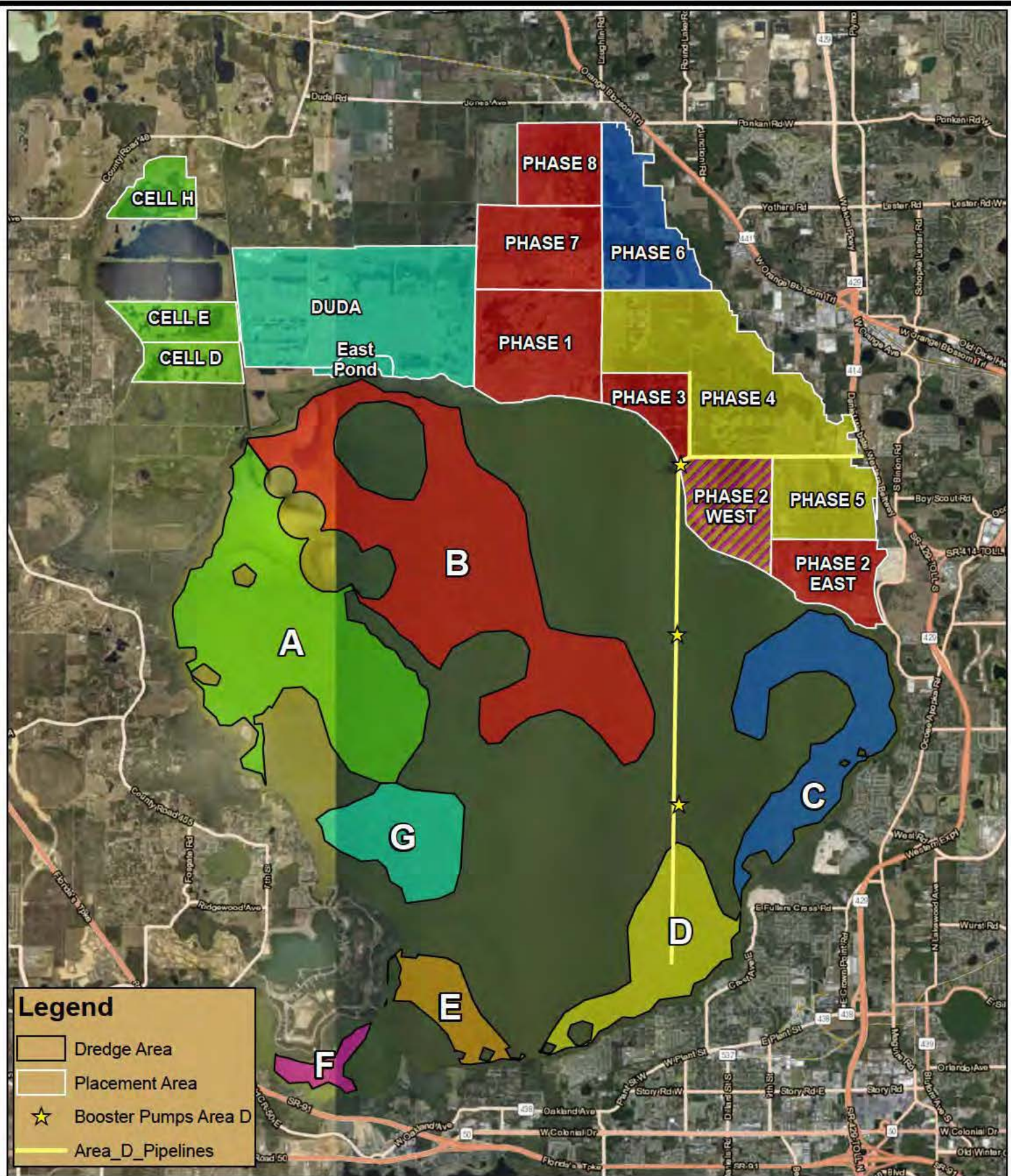
Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area C

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018



0 3,500 7,000 14,000 Feet

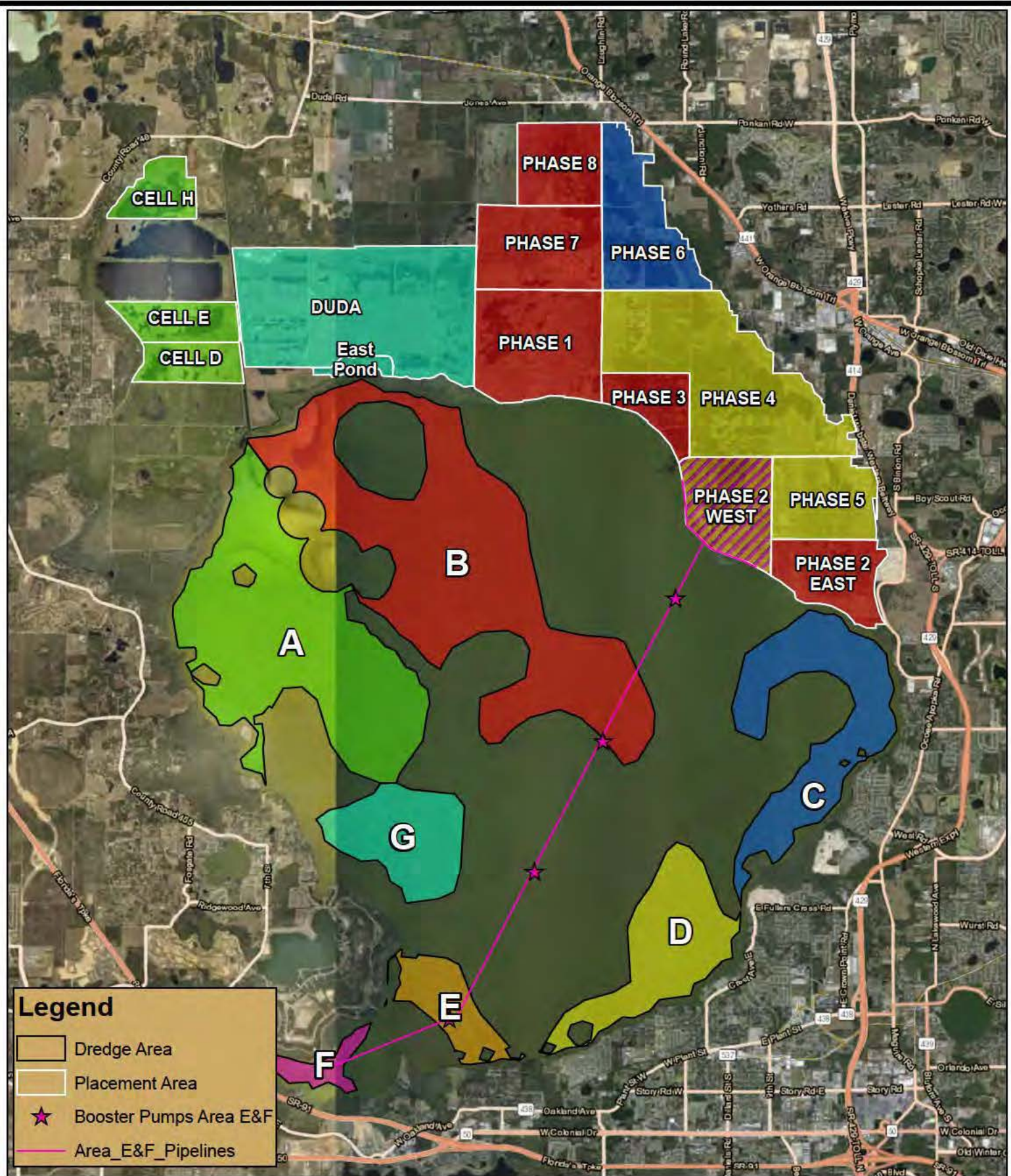
Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area D

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018



0 3,500 7,000 14,000 Feet

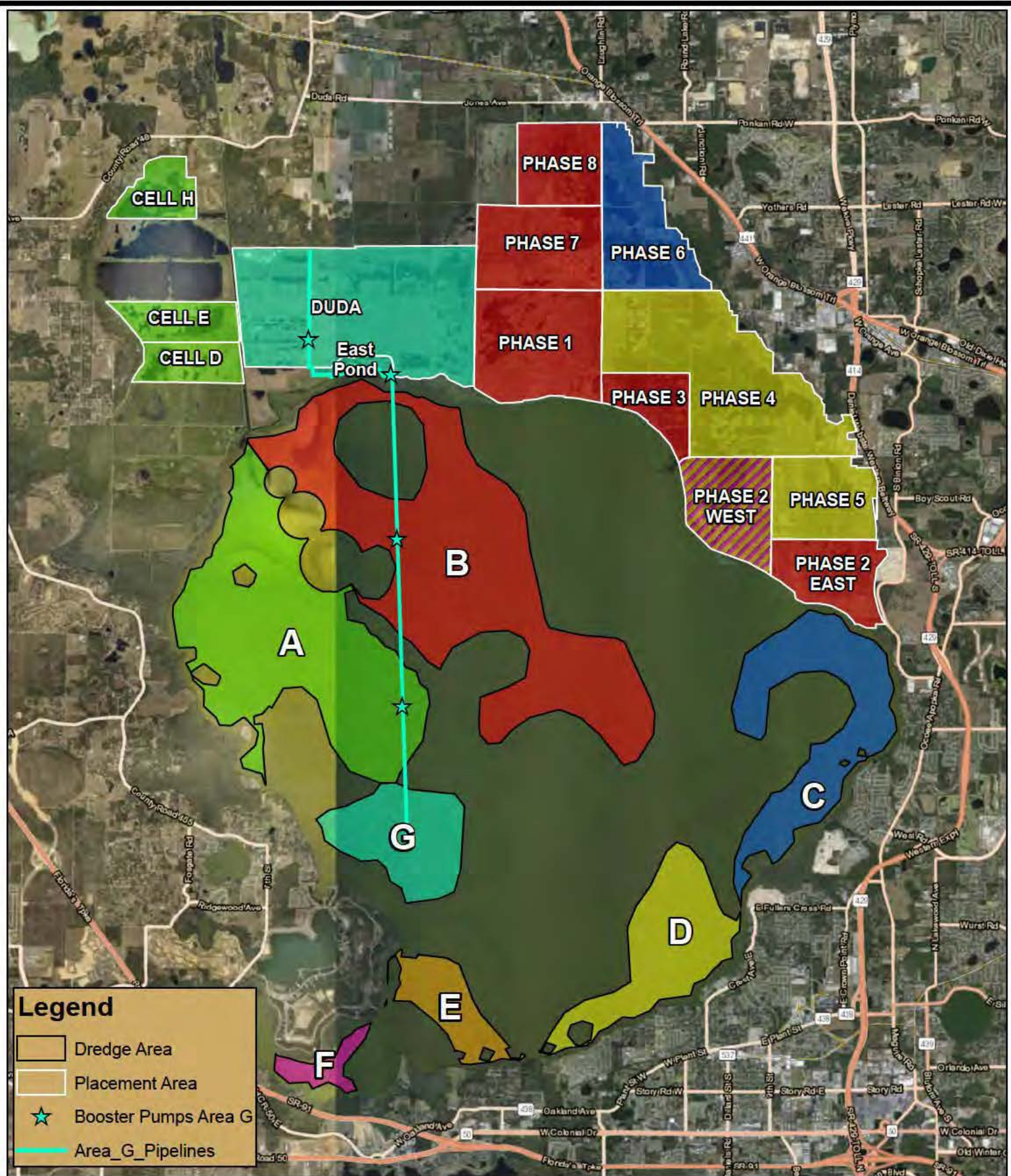
Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area E&F

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1



Source: Imagery, ESRI 2017; NWI 2017; Wood 2018



Lake Apopka Dredging Project

Proposed Pipeline Route - Dredge Area G

Drawn	Date	Gainesville
SEM	8/29/2019	Florida
Checked	Date	Project No.
MFC	8/29/2019	6735179417

wood.

Figure
1

ATTACHMENT C

Proposed Vegetation Planting Plans

Lake Apopka SAV Target Planting Areas - 600 potential acres



These data are generated by the St. Johns River Water Management District, considered provisional and subject to change. Please contact the District with any questions or requested updates.



0 3,450 6,900 13,800 20,700 27,600 Feet

Water depths at time of planting are expected to be between Maximum (65.1 ft NAVD) and Minimum Desirable Elevations (62.1 ft NAVD). Planting depths will be in 1.5 to 4.5 ft of water.

