CYPRESS
Environment & Infrastructure

906 Desoto Street
Ocean Springs, Mississippi 39564
T: 228-596-1580 F:800-507-6306
www.cypressei.com

December 29, 2022

Willa J. Brantley
Mississippi Department of Marine Resources
1141 Bayview Avenue | Biloxi, MS 39530
Office: 228-523-4108

District Engineer
Mobile District
Attn: CESAM-RD
P.O. Box 2288
Mobile, AL 36628-0001

To Whom it May Concern:

On behalf of the applicant, Cypress Environment & Infrastructure (Cypress) is submitting this permit request for a proposed dredge project in a man-made canal along Derry Lane in Jackson County, MS. The following documents are attached for your review:

- JPA Application Form
- Attachment A: Figures
- Attachment B: Agency Authorization
- Attachment C: Environmental Assessment
- Attachment D: Bathymetric Survey & Submerged Aquatic Vegetation Survey
- Attachment E: Adjacent Property Owners List

Sincerely,

Savannah R. Morales
Environmental Scientist

JOINT APPLICATION AND NOTIFICATION

U.S. ARMY CORPS OF ENGINEERS
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY/OFFICE OF P0LLUTION CONTROL

This form is to be used for proposed activities in waters of the United States in Mississippi and for the erection of structures on suitable sites for water dependent industry. Note that some items, as indicated, apply only to projects located in the coastal area of Hancock, Harrison and Jackson Counties.

1. Date
12/29/2022
month day year

2. Applicant name, mailing address, phone number and email address:
Jackson County Board of Supervisors
C/O Randy Bosarge
2915 Canty Street
Pascagoula, MS 39567

Agent name, mailing address, phone number and email address:
Cypress Environment and Infrastructure
C/O Savannah R. Morales
906 Desoto Street
Ocean Springs, MS

3. Official use only
COE _____
DMR _____
DEQ _____
A95 _____
DATE RECEIVED _____

4. Project location
Street Address See attached map City/Community Ocean Springs
Name of Waterway canal off of Old Fort Bayou Latitude 30.426345° Longitude (if known) -88.785208°
Geographic location: Section _____ Township _____ Range _____ County Jackson County

5. **Project description**

New work ☐ **Maintenance work** ☑

Dredging

☑ Channel	length 1,655	width see attachment	existing depth _____	proposed depth -4' to -6.5'
☐ Canal	length _____	width _____	existing depth _____	proposed depth _____
☐ Boat Slip	length _____	width _____	existing depth _____	proposed depth _____
☐ Marina	length _____	width _____	existing depth _____	proposed depth _____
☐ Other-Mooring Basin	length _____	width _____	existing depth _____	proposed depth _____

Cubic yards of material to be removed 1,778 Type of material Silt and Sandy silt
Location of spoil disposal area HCDC upland disposal area
Dimensions of spoil area _____ Method of excavation mechanical
How will excavated material be contained? excavated material will be placed on barge, dewatered, and hauled to a permitted upland disposal site

Construction of structures

☐ Bulkhead	Total length _____	Height above water _____	
☐ Pier	length _____	width _____	height _____
☐ Boat Ramp	length _____	width _____	slope _____
☐ Boat House	length _____	width _____	height _____

☐ Structures on designed sites for water dependent industry (Coastal area only). Explain in item 11 or include as attachment.
☐ Other (explain) _____

Filling
Dimensions of fill area n/a
Cubic yards of fill _____ Type of fill _____

Other regulated activities (i.e. Seismic exploration, burning or clearing of marsh) Explain.
n/a

6. **Additional information relating to the proposed activity**

Does project area contain any marsh vegetation? Yes ☐ No ☑

(If yes, explain) Project avoids marsh wetlands. Proposed impacts are SAV only.

Is any portion of the activity for which authorization is sought now complete? Yes ☐ No ☑

(If yes, explain) n/a

Month and year activity took place n/a

If project is for maintenance work on existing structures or existing channels, describe legal authorization for the existing work. Provide permit number, dates or other form(s) of authorization. _____

Has any agency denied approval for the activity described herein or for any activity that is directly related to the activity described herein?

Yes ☐ No ☑ (If yes, explain) _____

7. **Project schedule**

Proposed start date 07/01/2023 Proposed completion date 07/01/2024

Expected completion date (or development timetable) for any projects dependent on the activity described herein. n/a

8. **Estimated cost of the project** $108,124

9. **Describe the purpose of this project. Describe the relationship between this project and any secondary or future development the project is designed to support.** This maintenance dredging is to remove sedimentation and silting that is impeding boat access. The purpose of the dredging is to allow safe passage of boats for recreation and fishing of the surrounding neighborhoods. There is no relationship to future development, only maintenance of an existing canal

Intended use: Private ☐ Commercial ☐ Public ☑ Other (Explain) _____

10. **Describe the public benefits of the proposed activity and of the projects dependent on the proposed activity. Also describe the extent of public use of the proposed project.**

The public will benefit from the dredging through safer boating opportunities and access.

11. **Narrative Project Description:**

The Jackson County Board of Supervisors is proposing to dredge a total of 1,655 linear feet of the Derry Lane Canal to a approximately 1 to 15 feet wide and -4.0 to -6.5 feet deep Mean Lower Low Water (MLLW) channel bottom. The extent of the proposed dredging will be graded to match the existing channel bottom surface. The proposed project will avoid wetlands, but will impact submerged aquatic vegetation (SAV). Impacts to SAV have been minimized to the greatest extent practicable while still meeting the needs and purpose of the proposed project. The total area of SAV impacts includes 0.54 acres of Vallisneria americana and Myriophyllum spicatum mixed communities (Attachment A: Figure 3). Mitigation is proposed for SAV impacts.

12. Provide the names and addresses of the adjacent property owners. Also identify the property owners on the plan view of the drawing described in Attachment "A". (Attach additional sheets if necessary.)

1. See attached Attachment A: Figure 2 and Attachment E: Adjacent Property Owners List

2.

13. List all approvals or certifications received or applied for from Federal, State and Local agencies for any structures, construction, discharges, deposits or other activities described in this application. Note that the signature in Item 14 certifies that application has been made to or that permits are not required from the following agencies. If permits are not required, place N/A in the space for Type Approval.

Agency	***Type Approval***	***Application Date***	***Approval Date***
Dept. of Environmental Quality			
Dept. of Marine Resources			
Army Corps of Engineers			
City/County_____			
Other_____			

14. Certification and signatures

Application is hereby made for authorization to conduct the activities described herein. I agree to provide any additional information/data that may be necessary to provide reasonable assurance or evidence to show that the proposed project will comply with the applicable state water quality standards or other environmental protection standards both during construction and after the project is completed. I also agree to provide entry to the project site for inspectors from the environmental protection agencies for the purpose of making preliminary analyses of the site and monitoring permitted works. I certify that I am familiar with and responsible for the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I am the owner of the property where the proposed project is located or that I have a legal interest in the property and that I have full legal authority to seek this permit.

U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willingly falsifies, conceals, or covers up by any trick, scheme or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisoned not more than five years, or both.

Mississippi Coastal Program (Coastal area only)

I certify that the proposed project for which authorization is sought complies with the approved Mississippi Coastal Program and will be conducted in a manner consistent with the program.

Signature of Applicant or Agent

12/29/2022

Date

15. Fees

Payable to MS Dept. of Marine Resources
$50.00 Single-family residential application fee
$500.00 Commercial application fee
Public notice fee may be required

Please include appropriate fees for all projects proposed in coastal areas of Hancock, Harrison and Jackson Counties.

16. If project is in Hancock, Harrison or Jackson Counties, send one completed copy of this application form and appropriate fees listed in Item 15 to:

Department of Marine Resources
Bureau of Wetlands Permitting
1141 Bayview Avenue
Biloxi, MS 39530
(228) 374-5000

If project IS NOT in Hancock, Harrison or Jackson Counties, send one completed copy of this application form to each agency listed below:

District Engineer
Mobile District
Attn: CESAM-RD
P.O. Box 2288
Mobile, AL 36628-0001

District Engineer
Vicksburg District
Regulatory Branch
Attn: CEMVK-OD-F
4155 Clay Street
Vicksburg, MS 39183-3435

Director
Mississippi Dept. of Environmental Quality
Office of Pollution Control
P.O. Box 10385
Jackson, MS 39289

17. In addition to the completed application form, the following attachments are required:

Attachment "A" Drawings

Provide a vicinity map showing the location of the proposed site along with a written description of how to reach the site from major highways or landmarks. Provide accurate drawings of the project site with proposed activities shown in detail. All drawings must be to scale or with dimensions noted on drawings and must show a plan view and cross section or elevation. Use 8 1/2 x 11" white paper or drawing sheet attached.

Attachment "B" Authorized Agent

If applicant desires to have an agent or consultant act in his behalf for permit coordination, a signed authorization designating said agent must be provided with the application forms. The authorized agent named may sign the application forms and the consistency statement.

Attachment "C" Environmental Assessment *(Coastal Area Only)*

Provide an appropriate report or statement assessing environmental impacts of the proposed activity and the final project dependent on it. The project's effects on the wetlands and the effects on the life dependent on them should be addressed. Also provide a complete description of any measures to be taken to reduce detrimental offsite effects to the coastal wetlands during and after the proposed activity. Alternative analysis, minimization and mitigation information may be required to complete project evaluation.

Attachment "D" Variance or Revisions to Mississippi Coastal Program *(Coastal area only)*

If the applicant is requesting a variance to the guidelines in Section 2, Part III or a revision to the Coastal Wetlands Use Plan in Section 2, Part IV of the Rules, Regulations, Guidelines and Procedures of the Mississippi Coastal Program, a request and justification must be provided.

Attachment "A" Drawings

Attachment A: Figures

0 1 2 Miles

Coordinate System: NAD 1983 State Plane Mississippi East FIPS 2301 Feet

JACKSON COUNTY BOARD OF SUPERVISORS
Old Fort Bayou Tributaries Dredging Project
Jackson County, Mississippi

SITE VICINITY MAP

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Date: 12/22/2022

FIGURE 1

0 200 400 Feet

Coordinate System: NAD 1983 State Plane Mississippi East FIPS 2301 Feet

JACKSON COUNTY BOARD OF SUPERVISORS
Old Fort Bayou Tributaries Dredging Project
Jackson County, Mississippi

ADJACENT PROPERTY OWNERS

CYPRESS
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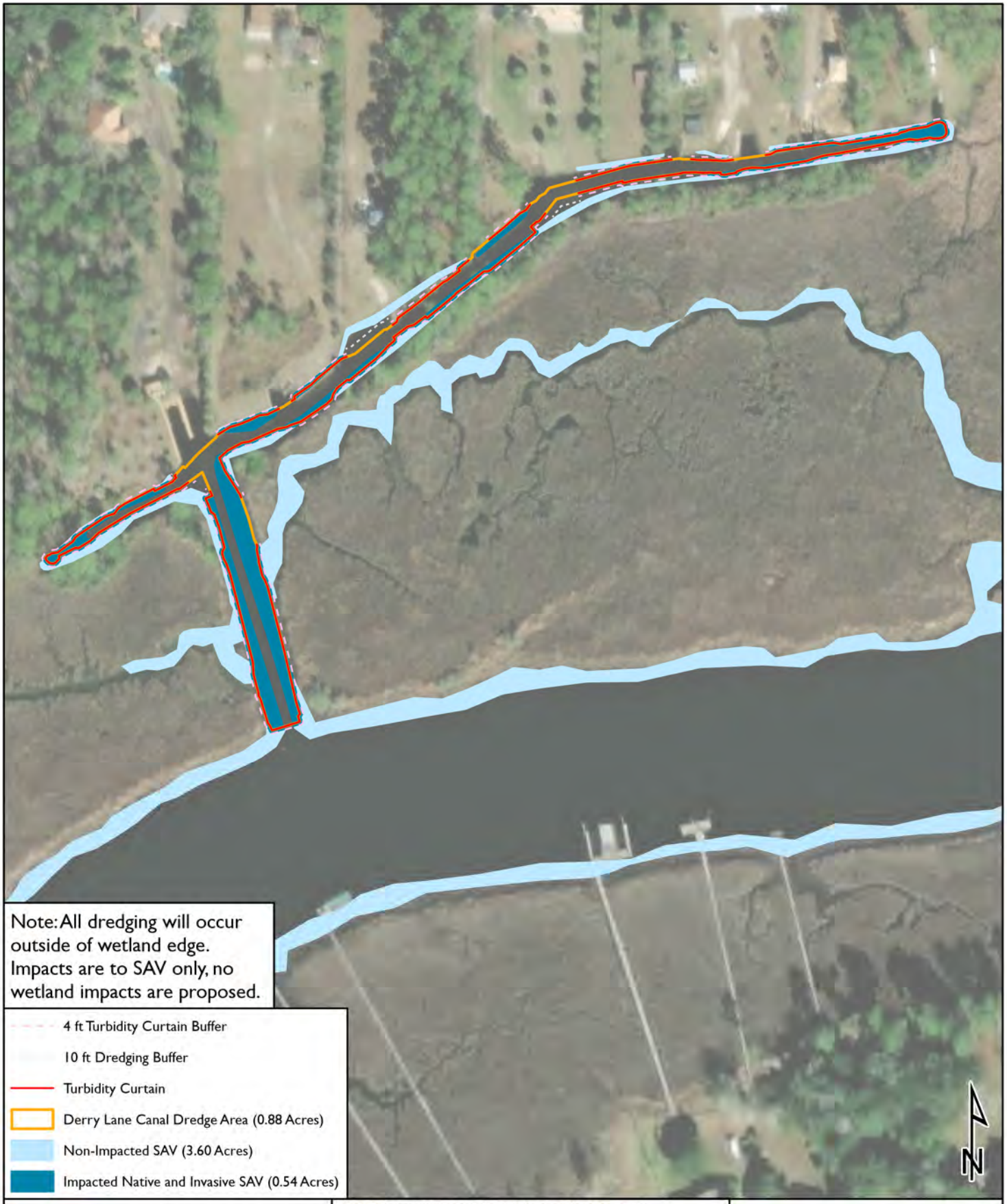
Date: 12/22/2022

FIGURE 2



0 160 320 Feet

Coordinate System: NAD 1983 State Plane Mississippi East FIPS 2301 Feet

JACKSON COUNTY BOARD OF SUPERVISORS
Old Fort Bayou Tributaries Dredging Project
Jackson County, Mississippi

SAV IMPACT MAP

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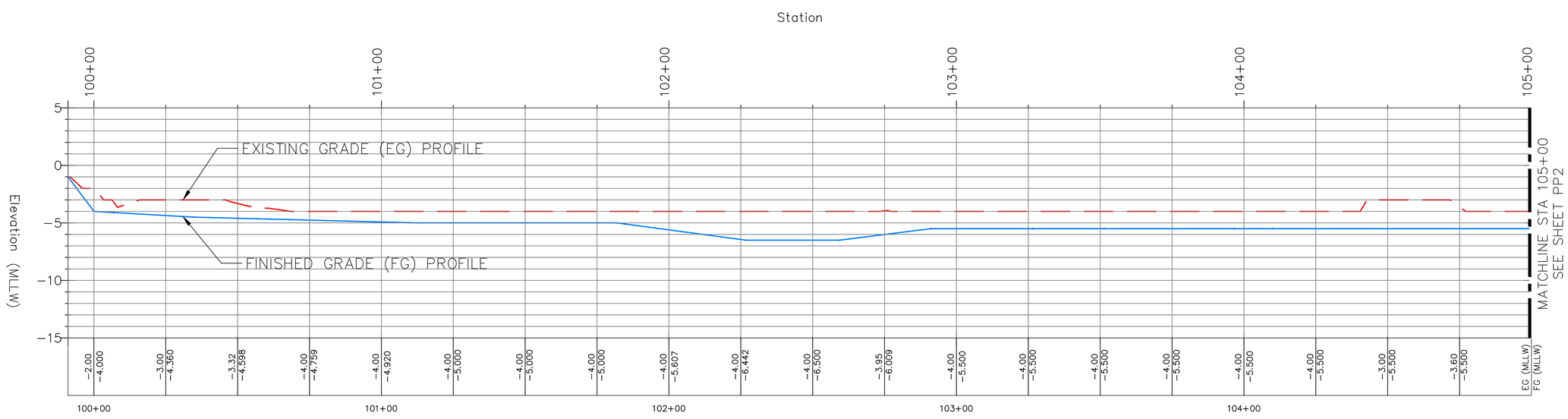
Date: 12/22/2022

FIGURE 3



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JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawn By: PAB	Scale: As Shown
Designed By: PAB	Date: 11/8/2022
Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

Drawing Title:

PLAN AND
PROFILE STA
100+00 - 105+00

Sheet Number:

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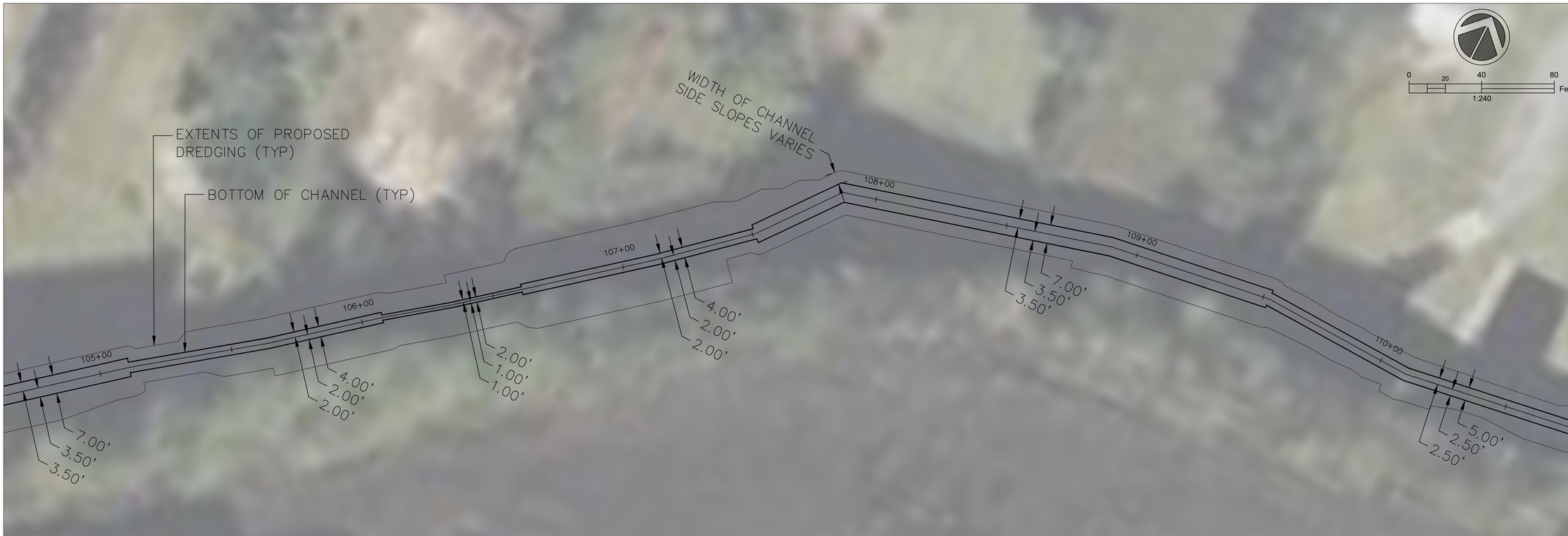

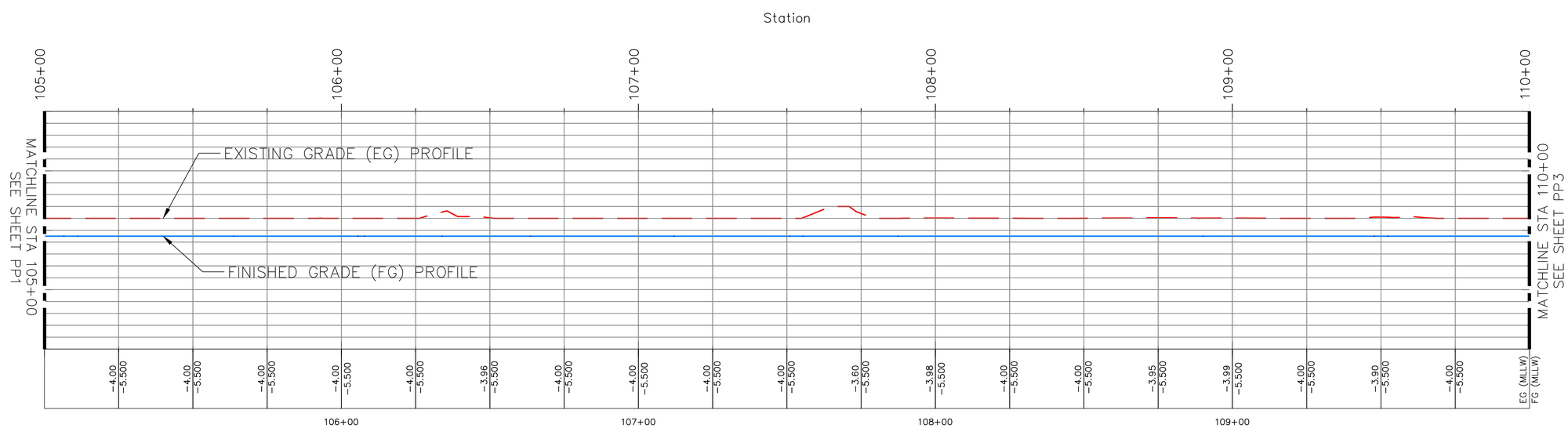

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JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

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Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

Drawing Title:

PLAN AND
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105+00 - 110+00

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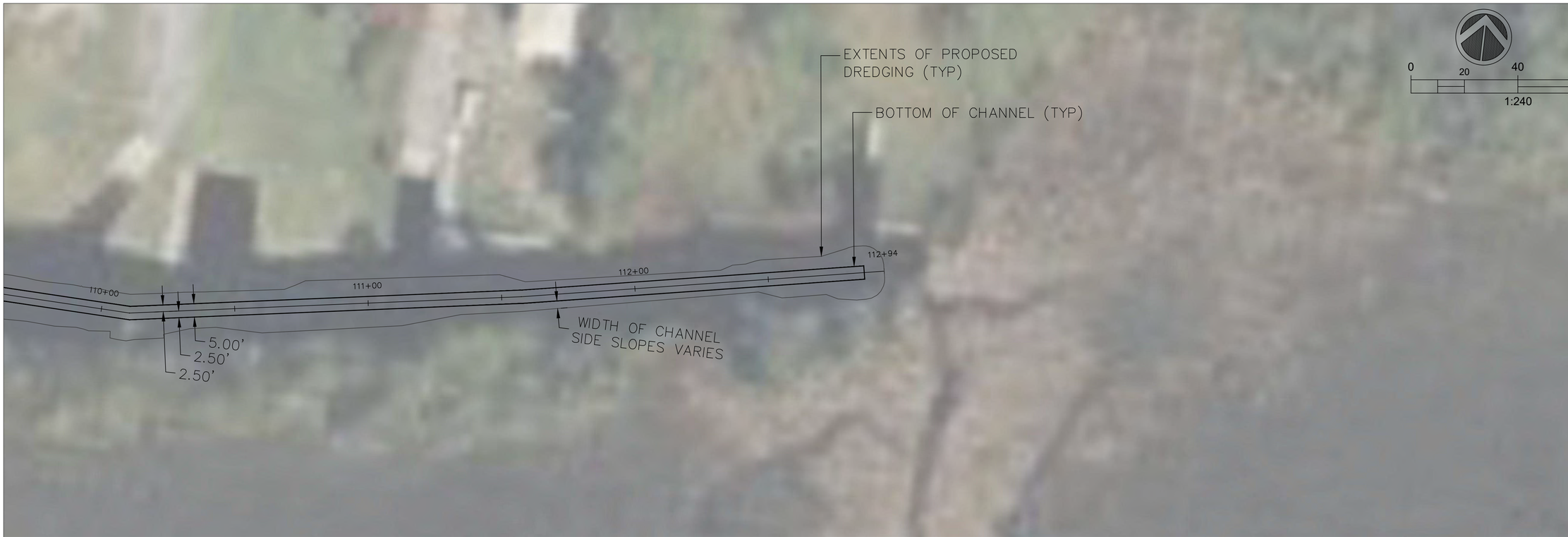

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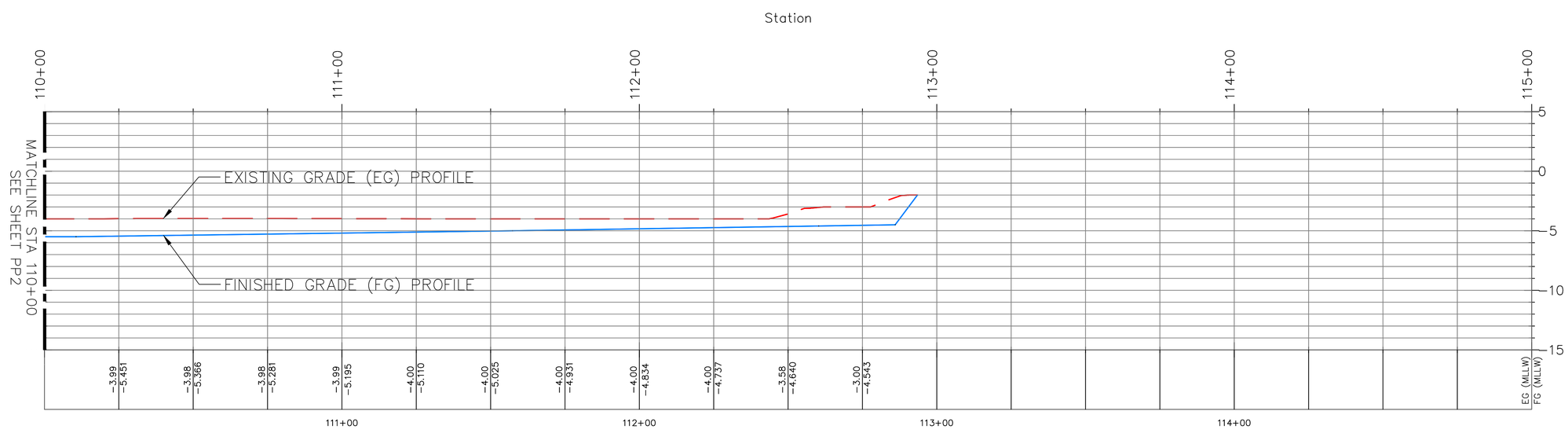

JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

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Designed By: PAB	Date: 11/8/2022
Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

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PLAN AND PROFILE STA 110+00 - 112+94

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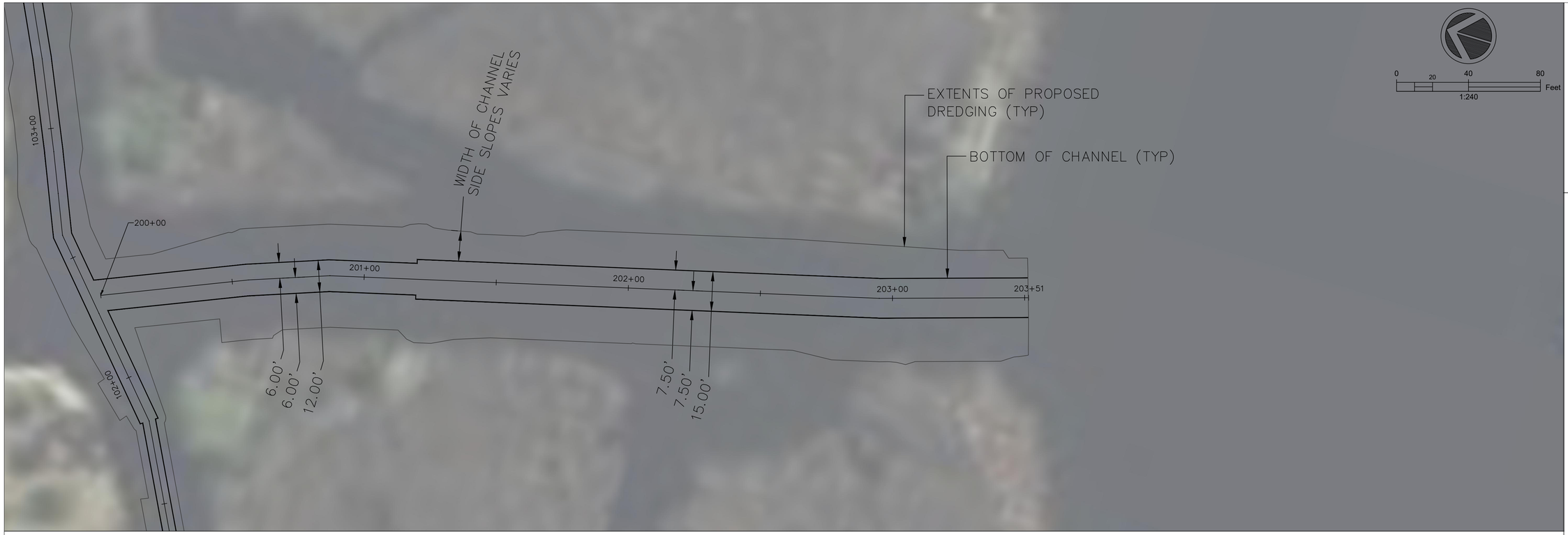

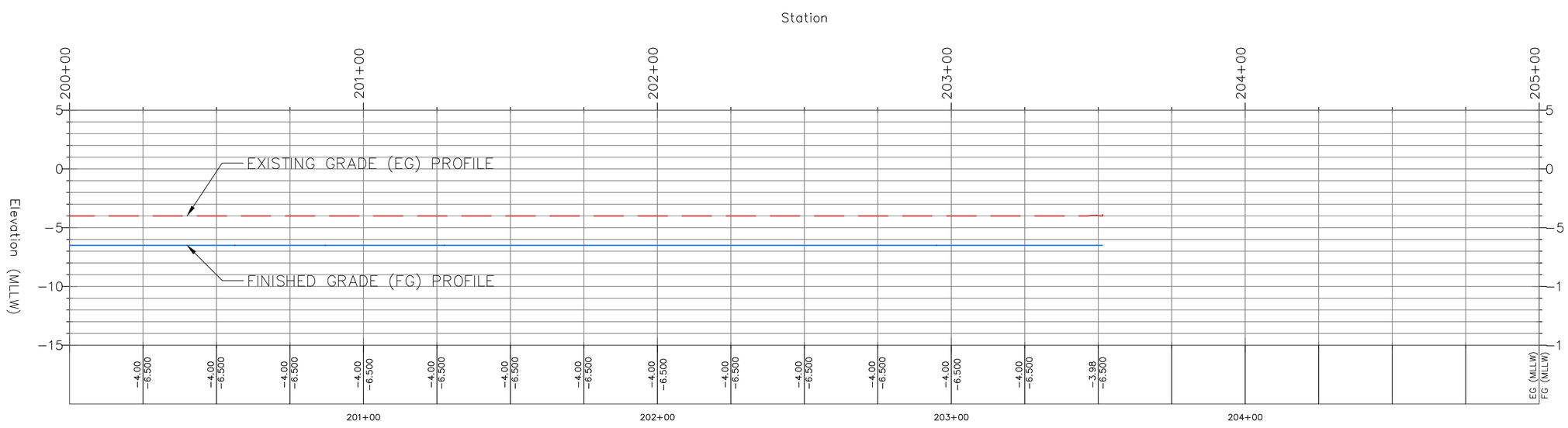

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JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

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Jackson County Project: PRJ-000182	

Drawing Title:

PLAN AND
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200+00 - 203+51

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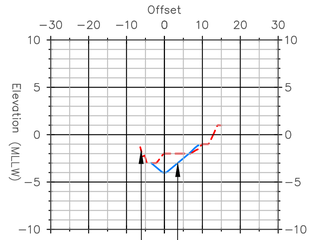

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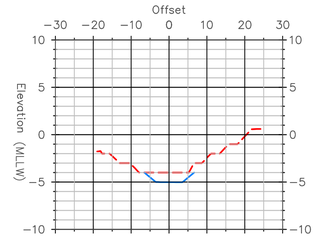

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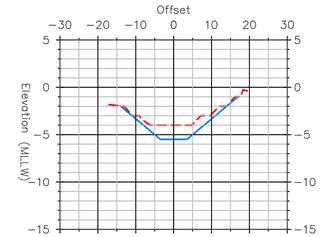

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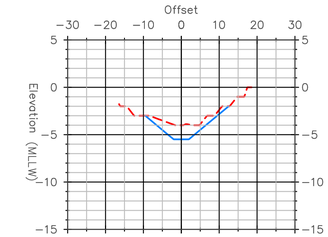

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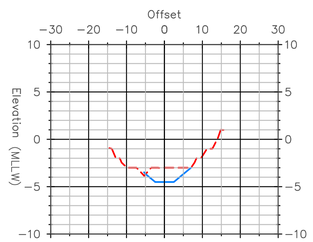

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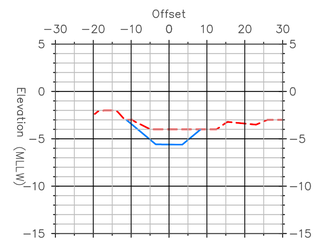

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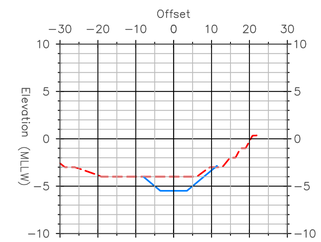

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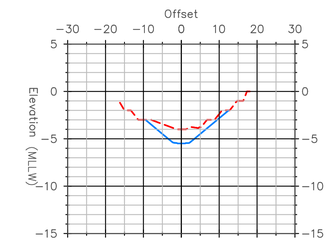

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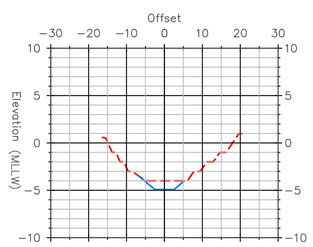

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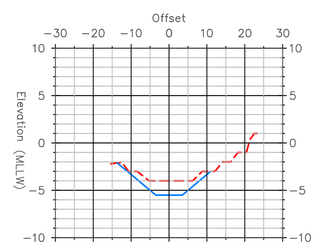

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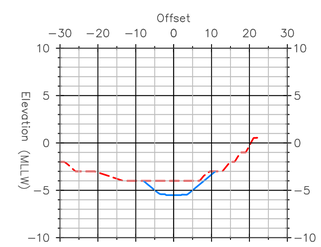

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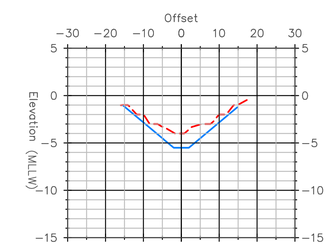

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'

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JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING
DERRY LANE

Drawing Revisions

Remarks	Date

Seal:

PRELIMINARY
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Drawn By: PAB	Scale: As Shown
Designed By: PAB	Date: 11/8/2022
Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

Drawing Title:

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Sheet Number:

XS1

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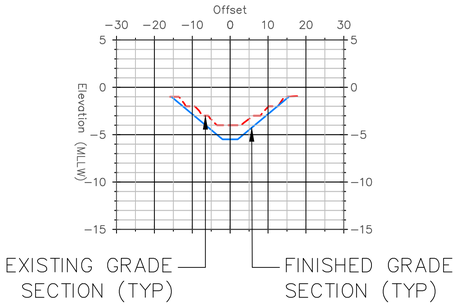

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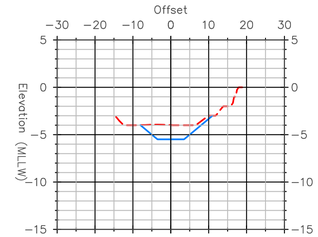

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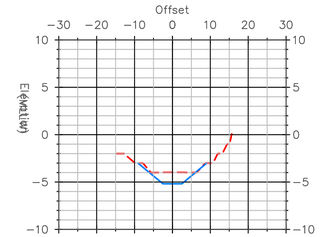

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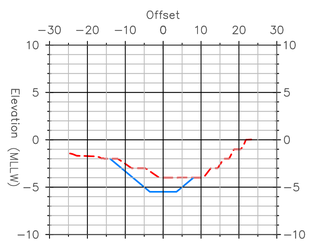

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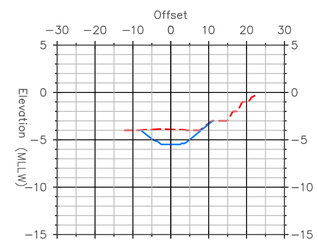

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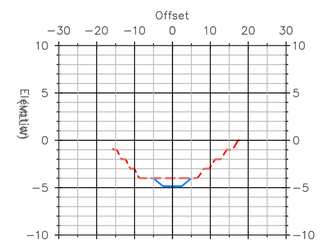

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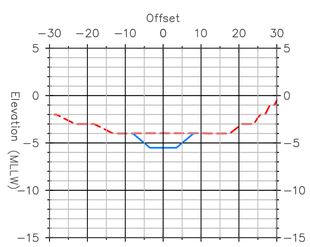

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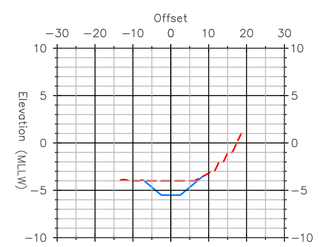

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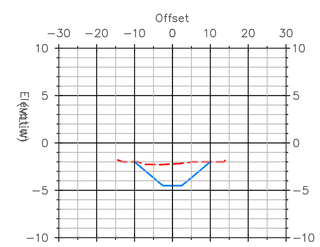

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VERTICAL SCALE: 1" = 8'

CYPRESS
Environment & Infrastructure

JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING
DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawn By: PAB	Scale: As Shown
Designed By: PAB	Date: 11/8/2022
Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

Drawing Title:
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XS2

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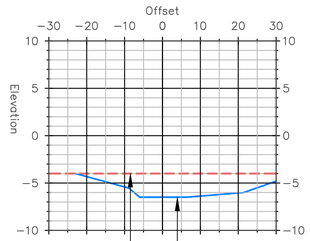

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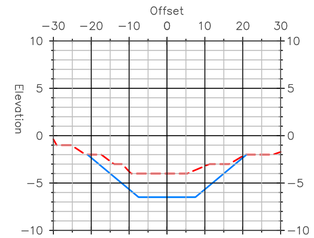

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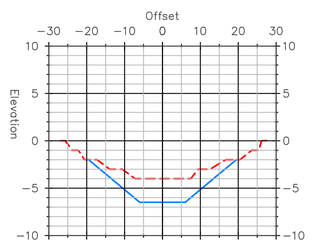

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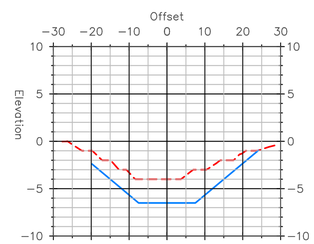

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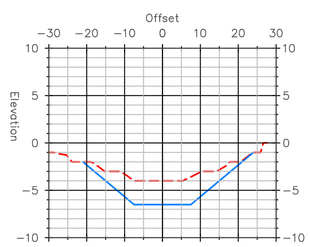

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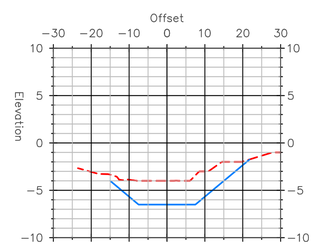

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 8'

CYPRESS
Environment & Infrastructure

JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING
DERRY LANE

Drawing Revisions

Remarks	Date

Seal:

PRELIMINARY
NOT FOR
CONSTRUCTION

Drawn By: PAB	Scale: As Shown
Designed By: PAB	Date: 11/8/2022
Checked By: JSZ	Project: 21421
Jackson County Project: PRJ-000182	

Drawing Title:
CROSS SECTIONS STA 200+00 - 203+51

Sheet Number:
XS3

Attachment B: Authorized Agent

RESOLUTION OF THE BOARD OF SUPERVISORS
OF JACKSON COUNTY, MISSISSIPPI DESIGNATING CYPRESS ENVIRONMENT &
INFRASTRUCTURE AS AGENT FOR THE SUBMISSION OF THE DMR JOINT
APPLICATION PERMIT FOR OLD FORT BAYOU TRIBUTARIES DREDGING PROJECT

WHEREAS, the Board of Supervisors desires to designate Cypress Environment & Infrastructure as Jackson County's Agent for the submission of the DMR Joint Application Permit for the Old Fort Bayou Tributaries Dredging Project;

BE IT, THEREFORE, RESOLVED that the Board of Supervisors hereby authorizes the President of the Board to execute the Agent Authorization form, a copy is attached hereto, designating Cypress Environment & Infrastructure as Jackson County's Agent for the submission of the DMR Joint Application Permit for the Old Fort Bayou Tributaries Dredging Project.

The motion to approve the foregoing resolution was made by Supervisor Taylor, seconded by Supervisor Morris, and the following vote was recorded:

Supervisor Cumbest	Yes
Supervisor Morris	Yes
Supervisor Taylor	Yes
Supervisor Ross	Yes
Supervisor Bosarge	Yes

RESOLVED, this the 6th day of September, 2022.

ATTEST:

Josh Eldridge, Clerk of the Board

BOARD OF SUPERVISORS OF
JACKSON COUNTY, MISSISSIPPI

By: _____
Randy Bosarge, President

CHANCERY CLERK
JACKSON COUNTY, MISS.

Attachment C: Environmental Assessment

Environmental Assessment and Project Summary

Derry Lane Canal Maintenance Dredging

Prepared for:
Jackson County Board of Supervisors

Date:
December 29, 2022

CYPRESS
Environment & Infrastructure

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1. Introduction

1.1. Project Location

This project is dredging an artificial waterway for navigation. It is a tributary running to Old Fort Bayou northeast of Ocean Springs in Jackson County, Mississippi. The site runs adjacent to Derry Lane and is centered at 30.426345°, -88.785208°. The total site area is 0.88 acres. The site location and vicinity are shown in Figure 1 (Attachment A).

1.2. Project Description & Components

The applicant, Jackson County Board of Supervisors, is seeking a permit to perform maintenance dredging within an artificial canal, hereinafter referred to as Derry Lane Canal, connecting Derry Lane residents to Old Fort Bayou. The objective of this project is to perform routine maintenance dredging to ensure safe depths for boating and docking within an established artificial canal of Jackson County. The proposed project will dredge 1,655 linear feet of the Derry Lane Canal to a width of approximately 1 to 15 feet wide and to a depth of -4.0 to -6.5 feet Mean Lower Low Water (MLLW). The extent of the proposed dredging will be graded to match the existing channel bottom surface.

Approximately 1,778 cubic yards of sediment will be removed from the channel. A 3:1 side slope will be maintained in the dredge area. A turbidity curtain will be used where submerged aquatic vegetation (SAV) is within 10 feet of the proposed project to minimize impacts to the greatest extent possible while still fulfilling the needs and objectives of the proposed project. Sediment will be mechanically removed, dewatered, and transferred to an upland disposal site.

2. Purpose and Need

The purpose of the project is to perform maintenance dredging to provide sufficient water depths for access and navigation within the artificial Derry Lane Canal. There is a need to remove material deposited by hurricanes and other discrete storm events.

3. Affected Environment

3.1. Wetlands and Waters of the U.S.

The proposed site is comprised of Section 10 navigable waters. Navigable waters are waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Section 10 of the Rivers and Harbors Appropriation Act of 1988 law prohibits any dredging or disposal of dredged materials, excavation, filling, channelization, or any other modification of a navigable water of the United States and applies to all structures and obstructions. The proposed dredge project will not increase the existing channel width, it will only increase the depth to ensure safe navigation.

3.2. Submerged Aquatic Vegetation

A submerged aquatic vegetation (SAV) survey was conducted on site by Cypress in August 2021 and is included in Attachment D. Two SAV species were identified within the site: *Vallisneria americana* and *Myriophyllum spicatum*. Where SAV was present, bottom sediment was primarily silt and organic material with some sand present at the mouth of the channel. A turbidity curtain will be used where SAV is present to minimize dredging related impacts to a 4-foot buffered area. The total area of unavoidable SAV impacts is 0.54 acres of *Vallisneria americana* and *Myriophyllum spicatum* mixed communities. There are no special aquatic sites such as sanctuaries, refuges, or coral reefs within the project area.

3.3. Endangered Species Act

No state or federally listed threatened or endangered species were observed on site. No burrows, nests, or other signs of state or federally listed species were observed on site. A formal Threatened & Endangered Species Survey was not conducted on this site, but the entire site was observed in detail during the field visits for the bathymetric and SAV survey.

3.3.1. Gulf Sturgeon

The federally threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) is found in the coastal rivers of the northeastern Gulf of Mexico generally from Lake Pontchartrain in Louisiana to the Suwanee River in Florida. Gulf sturgeon are primitive, anadromous fish that annually migrate from the Gulf of Mexico into freshwaters to spawn. Subadults and adults spend eight to nine months each year in rivers. Subadult and adult holding areas have been identified in the Pascagoula River. While the Mississippi Sound is designated as Gulf Sturgeon Critical Habitat the designated habitat does not extend past Highway 90 in Biloxi Bay or into Old Ford Bayou. Based on similar dredging projects in the area, the project location, and the proposed work, the project is not likely to adversely affect designated Gulf sturgeon critical habitat.

3.3.2. West Indian Manatee

The federally threatened West Indian manatee (*Trichechus manatus*) is an aquatic mammal that occurs in rivers, estuaries, and coastal areas of the Gulf of Mexico. Manatees have large bodies with paired flippers and a round, paddle-shaped tail. Most manatee sightings in Mississippi occur in tidal rivers such as the Pascagoula and Jordan rivers. Manatees have also been spotted in Biloxi Bay, Bay St. Louis, and nearshore in the Gulf of Mexico. Suitable habitat could potentially be in the proposed dredge area, but due to the existing project area conditions, the nature of the proposed work, and mobility of the species, it is the opinion of Cypress that the project may affect but is not likely to adversely affect the West Indian Manatee.

3.3.3. Eastern Black Rail

The federally threatened eastern black rail (*Laterallus jamaicensis jamaicensis*) is a small, secretive marsh-dependent bird. Although historically uncommon in Mississippi, the species may be found in coastal marshes during the winter months (i.e., non-nesting season). While it can be found in salt, brackish, and freshwater marshes, it has a very specific niche habitat, requiring dense herbaceous vegetation (i.e., rushes, grasses, sedges) to provide shelter and cover. Due to the existing project area conditions, the nature of the proposed work, and mobility of the species, it is the opinion of Cypress that the project is not likely to adversely affect the eastern black rail.

3.3.4. Piping Plover

The endangered piping plover (*Charadrius melodus*) is a small shorebird that breeds and winters on exposed wet sand in wash zones; intertidal ocean beach; wrack lines; washover passes; mud-, sand-, and algal flats; and shorelines of streams, ephemeral ponds, lagoons, and salt marshes by probing for invertebrates at or just below the surface. Small sand dunes, debris, and sparse vegetation within adjacent beaches provide shelter from wind and extreme temperatures. The piping plover does not nest in Mississippi but winters along the coastal beaches and barrier islands. Critical habitat has been designated along many sand beach areas along the Mississippi Gulf Coast. No suitable habitat was observed during site visits. The proposed project is not located within designated Piping Plover Critical Habitat. Due to the existing project area conditions, the nature of the proposed work, and mobility of the species, it is the opinion of Cypress that the project will not affect the piping plover.

3.3.5. Red Knot

The federally threatened red knot (*Calidris canutus rufa*) is a medium-sized shorebird that can be found in Mississippi during the winter months (generally October through March). In the southeastern United States, red knots forage along sandy beaches, tidal mudflats, salt marshes, and peat banks. Observations along the Texas coast indicate that red knots forage on beaches, oyster reefs, and exposed bay bottoms and roost on high sand flats, reefs, and other sites protected from high tides. Tidal mudflat, or peat bank habitats do not occur within the proposed dredge area. The marshes adjacent to the dredge area are brackish. Dredging will not impact adjacent wetlands. Based on the existing project area conditions, the nature of the proposed work, and mobility of the species, it is the opinion of Cypress that the project will not affect the red knot.

3.3.6. Wood Stork

Wood storks (*Mycteria americana*) are large, long-legged wading birds, with two distinct populations that occur seasonally in Mississippi during the non-breeding season (May through October) and are not distinguishable from one another. Typical foraging sites include freshwater marshes, swales, ponds, hardwood and cypress swamps, narrow tidal creeks or shallow tidal pools, and artificial wetlands (such as stock ponds; shallow, seasonally flooded roadside or agricultural ditches; and impoundments). Based on the existing project area conditions, the nature of the proposed work, and mobility of the species, it is the opinion of Cypress that the project will not affect the wood stork.

3.3.7. Gopher Tortoise

The federally threatened gopher tortoise (*Gopherus polyphemus*) occupies a range of upland habitat types but is most frequently associated with longleaf pine ecosystems. Suitable gopher tortoise habitat includes well-drained, sandy soils, an abundance of diverse herbaceous ground cover, and an open canopy and sparse shrub cover. No suitable habitat exists within the proposed project area. Based on the existing project area conditions and the nature of the proposed work, it is the opinion of Cypress that the project will not affect the gopher tortoise.

3.3.8. Mississippi Sandhill Crane

The federally endangered Mississippi sandhill crane (*Grus canadensis pulla*) is found only in a small non-migratory population in Mississippi. Historically, they were found in open plains and wet pine savannas across Mississippi, Louisiana, and Alabama. Critical habitat has been designated in an area of Lower Coastal Plain pine savanna in Jackson County, Mississippi. The proposed project does not fall within designated Sandhill Crane Critical Habitat. Based on the existing project area conditions, location, and the nature of the proposed work, it is the opinion of Cypress that the project will not affect the Mississippi sandhill crane.

3.3.9. Black Pinesnake

The federally threatened black pine snake (*Pituophis melanoleucus lodingi*) prefers uplands with well-drained, sandy soils in pine-dominated forests, particularly longleaf pine. Areas maintained with prescribed fire to create an open-canopied forest with abundant herbaceous groundcover is essential to maintain prey populations and basking opportunities. The presence of stumps is important to the species to provide underground refuge in the channels and holes left after the stump decomposes. Critical habitat is proposed for Forrest, George, Greene, Harrison, Jones, Marion, Perry, Stone, and Wayne counties in Mississippi. No suitable habitat exists within the proposed project area. Based on the existing project area conditions and the nature of the proposed work, it is the opinion of Cypress that the project will not affect the black pinesnake.

3.3.10. Louisiana Quillwort

The federally endangered Louisiana quillwort (*Isoetes louisianensis*) is a small, nonflowering grass-like semi-aquatic to aquatic plant. The species is restricted to sandy soils and gravel bars in or near shallow streams in riparian woodland and bayhead forests of pine flatwoods and upland longleaf pine. No clear, flowing stream with a hardwood overstory was observed in the proposed project area. Based on the existing project area conditions and the nature of the proposed work, it is the opinion of Cypress that the project will not affect the Louisiana quillwort.

3.3.11. Sea Turtles

Five species of federally protected sea turtles inhabit the Gulf of Mexico waters along the Mississippi coast: hawksbill (*Chelonia mydas*), Kemp's ridley (*Lepidochelys kempii*), leatherback (*Dermochelys coriacea*), Green (*Chelonia mydas*) and loggerhead (*Caretta caretta*). Although these are predominantly marine animals, they can come ashore to nest on barrier islands and mainland beaches. Currently, only the loggerhead sea turtle is known to nest in Mississippi. Critical habitat for the loggerhead sea turtle includes Horn and Petit Bois islands in Jackson County. No critical habitat or suitable habitat is found within the proposed dredge area. Based on the existing project area conditions and the nature of the proposed work, it is the opinion of Cypress that the project will not affect the above-listed sea turtle species.

3.3.12. Alabama Red-bellied Turtle

The federally endangered Alabama red-bellied turtle (*Pseudemys alabamensis*) is found in the lower Pascagoula River and its tributaries and bayous. It is also found in the Back Bay of Biloxi, Bayou Casotte, Bayou Cumbest, Biloxi River, Old Fort Bayou, and the Tchoutacabouffa River. The species is found in fresh and brackish water with depths of 1 to 2 meters containing submerged and emergent vegetation. This includes channels with little current bordered by extensive open

marshes (fresh, brackish, and salt marshes) comprised principally of black needle rush (*Juncus roemerianus*) and habitats farther upstream such as lakes, ditches, ponds, cypress swamps, and oxbows with ample aquatic vegetation. The US Fish and Wildlife Service's 2019 species status assessment for the Alabama red-bellied turtle confirmed a population in Old Fort Bayou. Based on the existing project area conditions, the nature of the proposed work, and the mobility of the species, it is the opinion of Cypress that the project may affect but is not likely to adversely affect the Alabama red-bellied turtle.

3.4. Magnuson-Stevens Fishery Conservation and Management Act

No Essential Fish Habitat (EFH) is designated within the project area by NOAA's Fisheries EFH Mapper tool (2022). It is the opinion of Cypress that the proposed work will have no effect on EFH.

3.5. Coastal Zone Management Act

This project is within Mississippi's Coastal Program area as it is in Jackson County, Mississippi, a coastal county that is subject to the Coastal Zone Management Act of 1972. All dredging maintenance activities will be consistent to the maximum, practical extent with Mississippi's Coastal Program.

Under the Mississippi Coastal Program (Title 22-Part 23: 107.03), all dredged material is to be viewed as a potential reusable resource and must be used immediately for that purpose when suitable, including an evaluation and determination of suitability for all proposed projects involving dredging of over 2,500 cubic yards of material. There are no beneficial use sites with capacity for receiving the dredged material associated with this project. All dredged material from this project will be dewatered and delivered to a Harrison County Development Commission designated upland disposal area.

4. Proposed Avoidance and Minimization

Maximum avoidance of impacts to SAV was incorporated into the project design. Complete avoidance of impacts to water bottoms and SAV is considered not practicable to meet the purpose of the proposed project. Complete avoidance of impacts to wetlands was incorporated into the project design.

The proposed dredge limits and depths have been minimized to the greatest extent practicable while maintaining a safe and sufficient water depth for navigation and maneuvering in accordance with the purpose and need of the project. All dredging will be completed from the waterway.

Best management practices will be used throughout the project to minimize construction-related impacts to water quality by remaining in compliance with state water quality standards. Dredge-induced turbidity and sedimentation will be minimized to marine habitats located within and/or adjacent to the proposed dredge area and disposal areas to the maximum extent practicable. A turbidity curtain will be deployed to minimize impacts.

5. Compensatory Mitigation

The proposed project would result in temporary impacts to waterbottoms. Direct wetland impacts will be avoided. Direct impacts to SAV are anticipated and unavoidable. The total area of SAV impacts includes 0.54 acres of *Vallisneria americana* and *Myriophyllum spicatum* mixed communities. Permittee Responsible Mitigation (PRM) is proposed as the mitigation option to provide offsets to unavoidable impacts to SAV. A tidal marsh restoration project incorporating intertidal/subtidal channel features to support SAV is proposed as an in-kind PRM option. All components of the PRM project are subject to approval by Mississippi Department of Marine Resources and U.S. Army Corps of Engineers.

References

U.S. Fish & Wildlife Service (USFWS). 2022. National Wetlands Inventory. Url: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/. Accessed: August 25, 2022

National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2022. Essential Fish Habitat (EFH) Mapper Tool. Url: https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper. Accessed: August 25, 2022.

United States Fish and Wildlife Service: IPaC: Information for Planning and Consultation. Url: https://ipac.ecosphere.fws.gov/

Attachment D: Bathymetric Survey and Submerged Aquatic Vegetation Survey

Bathymetric Survey
Submerged Aquatic Vegetation Survey

Site:

Old Fort Bayou Tributaries
Derry Lane, Moreton Place, & Solano Circle
Ocean Springs, Jackson County, Mississippi

Submitted to:

Jackson County Board of Supervisors

Prepared by:

Cypress Environment & Infrastructure

Date:

February 2, 2022

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Figure 9. Moreton Place Canal SAV *Zannichellia palustris*
Figure 10. Moreton Place Canal SAV *Ruppia maritima*
Figure 11. Solano Circle Canal SAV *Ruppia maritima*

I. Introduction

Cypress Environment and Infrastructure performed a bathymetric survey and submerged aquatic vegetation survey in support of a proposed dredging project in Ocean Springs, MS for the Jackson County Board of Supervisors. The project site is comprised of three canals draining to Old Fort Bayou.

II. Site Description

A. Vicinity

The project site is comprised of three canals draining to Old Fort Bayou located in Ocean Springs, MS. Figure 1 shows the vicinity and location of the project site.

1. Derry Lane Canal

The Derry Lane Canal project area is approximately 1,650 feet (ft.) in length and is located off of Derry Lane in Section 21, Township 7 South, and Range 8 West. Coordinates for the approximate center point of the project area are 30.426591°N and -88.785116°W.

2. Moreton Place Canal

The Moreton Place Canal project area is approximately 485 ft. in length and is located off of Moreton Place in Section 17, Township 7 South, and Range 8 West. Coordinates for the approximate center of the project area are 30.428915°N and -88.814516°W.

3. Solano Circle Canal

The Solano Circle Canal project area is approximately 2,588 ft. in length and is located off of Solano Circle in the Gulf Hills neighborhood in Section 13, Township 7 South, and Range 9 West. Solano Circle Canal drains to Bayou Porteaux which drains to Old Fort Bayou. Coordinates for the approximate center of the project area are 30.438883°N and -88.844334°W.

B. Study Areas

The study area for the bathymetric survey covers the project area where dredging is proposed at each canal. The study area for the submerged aquatic vegetation (SAV) survey covers waters within 1,000 ft. of the project area at each canal.

1. Derry Lane Canal

The Derry Lane Canal study areas included a 1.8-acre area surveyed for bathymetry and a 19.2-acre area surveyed for SAV.

2. Moreton Place Canal

The Moreton Place Canal study areas included a 0.9-acre area surveyed for bathymetry and an 11.3-acre area surveyed for SAV.

3. Solano Circle Canal

The Solano Circle Canal study areas included a 3.4-acre area surveyed for bathymetry and a 17.8-acre area surveyed for SAV.

III. Bathymetric Survey

A. Data Collection

Bathymetric surveys were completed in accordance with the current requirements of the standards of practice for land surveying in the state of Mississippi for a Class D survey (elevations ± 0.30 feet). A vertical datum was established at each canal using real-time kinematic (RTK) global navigation satellite system (GNSS) connected to the University of Southern Mississippi Gulf Coast Geospatial Center Continuously Operating Reference Station Network.

1. Derry Lane Canal

The Derry Lane Canal was surveyed October 26, 2021, October 29, 2021, and November 2, 2021. A total of 427 survey points were collected using RTK GNSS and a conventional survey method.

2. Moreton Place Canal

The Moreton Place Canal was surveyed on December 2, 2021. A total of 358 survey points were collected using a single beam echosounder integrated with RTK GNSS mounted to a survey boat.

3. Solano Circle Canal

The Solano Circle Canal was surveyed on December 16, 2021. A total of 1,641 survey points were collected using a single beam echosounder integrated with RTK GNSS mounted to a survey boat.

B. Results

Bathymetric survey points were used to create a triangulated irregular network (TIN) continuous surface across each study area. Elevation contours were created from the TIN surfaces for each study area.

1. Derry Lane Canal

Elevation contours of the Derry Lane Canal study area are shown in Figure 2. Depths ranged from 1.6 ft. mean low water[1] (MLW) along the marsh at the east end of the study area to -4.5 ft. MLW in the middle of the channel at multiple locations. Typical navigational depth within the study area ranged from -3.5 – -4.5 ft. MLW.

2. Moreton Place Canal

Elevation contours of the Moreton Place Canal study area are shown in Figure 3. Depths ranged from -0.5 ft. MLW at the north end of the study area to -6.9 ft. MLW at the center of the study area where a small spot has been scoured out. Typical navigational depth within the study area ranged from -2.4 – -4.5 ft. MLW.

3. Solano Circle Canal

Elevation contours of the Solano Circle Canal study area are shown in Figure 4. Depths ranged from -0.3 ft. MLW at the eastern most extent of the study area to -5.0 ft. MLW in the middle of the channel at multiple locations. Typical navigational depth within the study area ranged from -2.0 – -4.5 ft. MLW.

[1] Conversion from North American Vertical Datum of 1988 to Mean Low Water was performed by adding 0.62 feet to NAVD88 measurements. Conversion based on NOAA gauging station 8741533 NOAA Lab Pascagoula.

IV. Submerged Aquatic Vegetation Survey

A. Data Collection

Between August 17, 2021, and August 25, 2021, Cypress personnel conducted a survey for submerged aquatic vegetation (SAV) within 1,000 ft. of the project area at each canal. Areas potentially suitable for SAV have water depth of 6 ft. or less MLW. These areas were sampled by visual observation or grab sampling.

B. Results

1. Derry Lane Canal

Within the Derry Lane Canal study area, two species of SAV were observed. *Vallisneria americana* was present along the marsh edge across a majority of the study area at elevations between 0.1 – -3.9 ft. MLW (Figure 5). *Myriophyllum spicatum* was present in patches across the study area at elevations between -0.4 – -3.9 ft. MLW (Figure 6). Where SAV was present, bottom sediment was primarily silt and organic material, with some sand present at the mouth of the Derry Lane Canal.

2. Moreton Place Canal

Within the Moreton Place Canal study area, four species of SAV were observed. *Vallisneria americana* was present on shallow flats and along the marsh edge across a majority of the study area at elevations between -0.5 – -4.9 ft. MLW (Figure 7). *Myriophyllum spicatum* was present on shallow flats and along the marsh edge in patches across the study area at elevations between -0.5 – -4.9 ft. MLW (Figure 8). *Zannichellia palustris* was present along the marsh edge in patches across the study area at elevations between -0.5 – -3.0 ft. MLW (Figure 9). *Ruppia maritima* was present within a shallow flat outside the dredging area at elevations between -0.3 – -3.6 ft. MLW (Figure 10). Where SAV was present, bottom sediment was primarily silt and organic material.

3. Solano Circle Canal

Within the Solano Circle Canal study area, one species of SAV was observed. Sparse patches of *Ruppia maritima* were present on shallow flats adjacent to marsh vegetation at elevations between 0.3 – -1.7 ft. MLW (Figure 11). Where SAV was present, bottom sediment was primarily silt and organic material. No other SAV species were observed in the Solano Circle Canal study area.

Figures

N

0 0.26 0.52 1.04 Miles

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

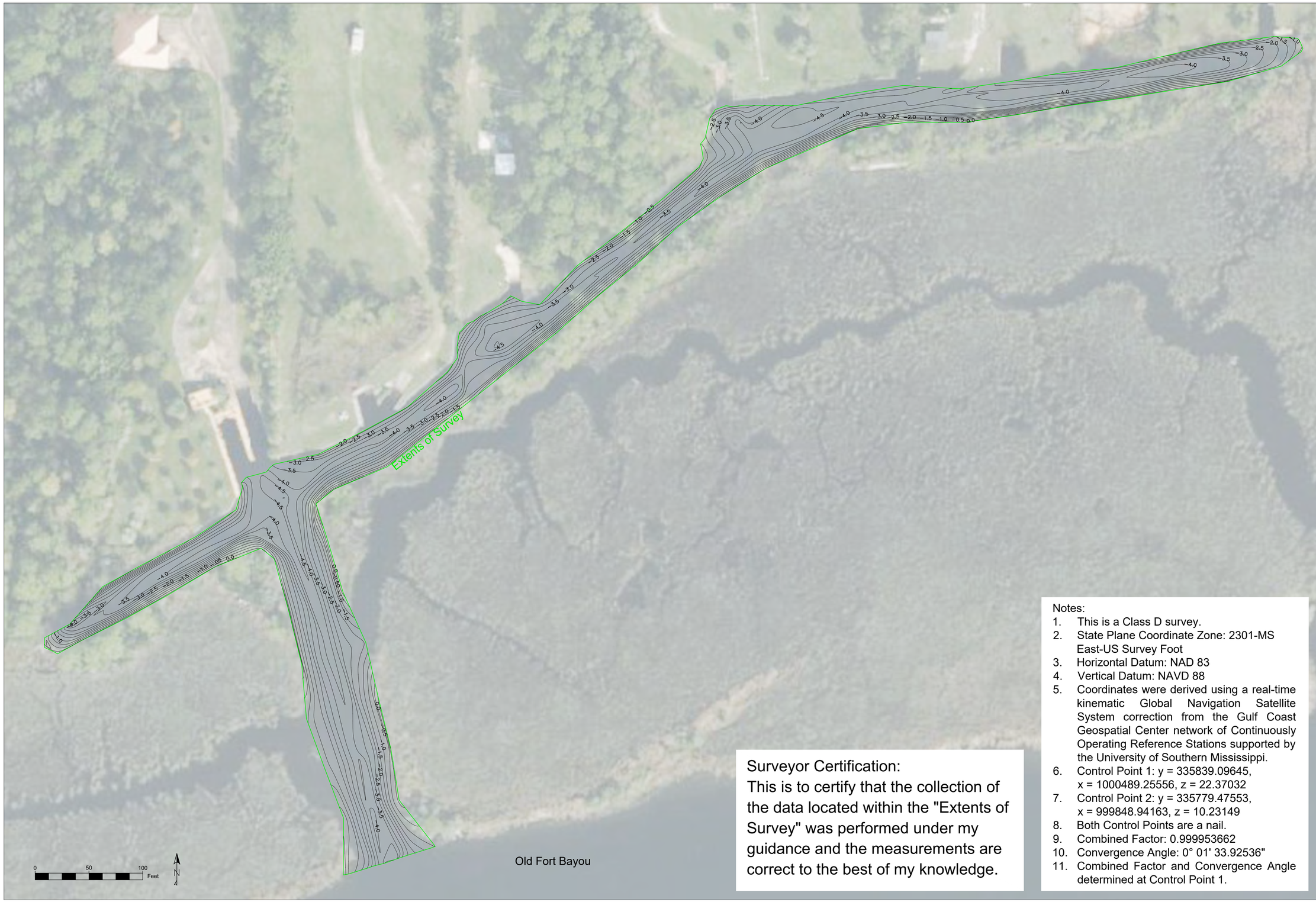
Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Project Vicinity & Location

FIGURE 1

CYPRESS
Environment & Infrastructure

Figure 2. Derry Lane Canal Bathymetric Survey



Surveyor Certification:
This is to certify that the collection of the data located within the "Extents of Survey" was performed under my guidance and the measurements are correct to the best of my knowledge.

Notes:

1. This is a Class D survey.
2. State Plane Coordinate Zone: 2301-MS East-US Survey Foot
3. Horizontal Datum: NAD 83
4. Vertical Datum: NAVD 88
5. Coordinates were derived using a real-time kinematic Global Navigation Satellite System correction from the Gulf Coast Geospatial Center network of Continuously Operating Reference Stations supported by the University of Southern Mississippi.
6. Control Point 1: y = 335839.09645, x = 1000489.25556, z = 22.37032
7. Control Point 2: y = 335779.47553, x = 999848.94163, z = 10.23149
8. Both Control Points are a nail.
9. Combined Factor: 0.999953662
10. Convergence Angle: 0° 01' 33.92536"
11. Combined Factor and Convergence Angle determined at Control Point 1.

CYPRESS
Environment & Infrastructure

JACKSON CO. OLD FORT BAYOU TRIBUTARIES DREDGING DERRY LANE

Drawing Revisions	
Remarks	Date

Seal:

Drawn By: LS	Scale: As Shown
Designed By:	Date: 11/30/21
Checked By: JMR	Project: 21421

Drawing Title:
HYDROGRAPHIC SURVEY

Sheet Number:
VG-01

Figure 3. Moreton Place Canal Bathymetric Survey

LEGEND

CURB LINES		WATER VALVE		PARCEL BOUNDARY	
BURIED TELEPHONE	—T—·—T·—	TELEPHONE BOX		ADJOINING PROPERT	
OVERHEAD LINES	—OHE——OHE—	UNKNOWN ELECTRICAL		SECTION LINE	
FIBER OPTIC CABLE	-FOC·—FOC·—	STREET LIGHTS		SET BACK LINES	
SANITARY SEWER	--SS·--SS--	POLES		EASEMENTS	
WATER MAINS	—·W—·W·—	GUY ANCHORS		SPOT ELEVATIONS	21.5
RAILROAD		TRANSFORMERS		INDEX CONTOURS	10
FENCES	—x—x—x—	ACCENT LIGHTS		CONTOURS	
BUILDINGS		SHORELINES		TEMPORARY CONTROL POINT	
CULVERTS		SIGNS		MONUMENTS	
CATCH BASINS		DECIDUOUS TREES		IRON PINS & PIPES AS NOTED	
MAN HOLES		GATE VALVE		RCP•REINFORCED CONCRETE PIPE	
FIRE HYDRANT		HVAC UNIT		CRS•LAWLER ½" CAPPED REBAR SET	
WATER METER		PIPE STUB		CTIF•CRIMP TOP IRON PIPE FOUND	
GAS METER		SANITARY CLEAN OUT		REC•DEED RECORD DIMENSION	
FIBER OPTIC CABLE		R/W•RIGHT OF WAY		ACT•ACTUAL FIELD MEASUREMENT	
CABLE TV BOX		CMP•CORRUGATED METAL PIPE		CRF•CAPPED REBAR FOUND	
ROOF DRAIN		CONC.•CONCRETE		IRF•IRON ROD (REBAR) FOUND	
HANDICAP PARKING		A/C•CENTRAL HVAC UNIT		XF•SCRIBED X FOUND IN CONCRETE	
PALM TREES		SEC.•GOVERNMENTAL SECTION		CMF•CONCRETE MONUMENT FOUND	

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FILE\\dgn\MISSISSIPPI\OCEANSPRINGS\ 21120-MORETON-BAYOU-12-2-21.DGN

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THIS THE 19TH DAY OF DECEMBER, 2021

W. J. LAWLER, III PLS 2409

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50 0 50 100 150
SCALE IN FEET

STATE OF MISSISSIPPI
REGISTERED PROFESSIONAL
LS • 2409
LAND SURVEYOR
W. J. LAWLER III
ORIGINAL SEAL

LAWLER AND COMPANY
LAND AND INDUSTRIAL SURVEYORS
2879 CLAUDIA LANE
THEODORE, ALABAMA 36590
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PRE-DREDGE HYDROGRAPHIC SURVEY

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DATE: 19 DEC., 2021	SCALE: 1"=50'	SHEET 01 OF 01
PROJECT No. 21-120		DRAWING No. 21-120-2

Figure 4. Solano Circle Canal Bathymetric Survey

LEGEND

CURB LINES	WATER VALVE	PARCEL BOUNDARY
BURIED TELEPHONE	TELEPHONE BOX	ADJOINING PROPERT
OVERHEAD LINES	UNKNOWN ELECTRICAL	SECTION LINE
FIBER OPTIC CABLE	STREET LIGHTS	SET BACK LINES
SANITARY SEWER	POLES	EASEMENTS
WATER MAINS	GUY ANCHORS	SPOT ELEVATIONS 21.5
RAILROAD	TRANSFORMERS	INDEX CONTOURS 10
FENCES	ACCENT LIGHTS	CONTOURS
BUILDINGS	SHORELINES	TEMPORARY CONTROL POINT
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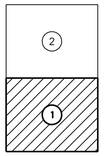
HANDICAP PARKING	A/C-CENTRAL HVAC UNIT	XF-SCRIBED X FOUND IN CONCRETE
PALM TREES	SEC.-GOVERNMENTAL SECTION	CMF-CONCRETE MONUMENT FOUND



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SCALE IN FEET

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SOLANO CIRCLE BAYOU DREDGE PROJECT
PRE-DREDGE HYDROGRAPHIC SURVEY

STATE OF MISSISSIPPI · REGISTERED PROFESSIONAL · LS 2409 · LAND SURVEYOR · W. J. LAWLER III · ORIGINAL DOCUMENT WITH SEAL

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LEGEND

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OVERHEAD LINES	UNKNOWN ELECTRICAL	SECTION LINE
FIBER OPTIC CABLE	STREET LIGHTS	SET BACK LINES
SANITARY SEWER	POLES	EASEMENTS
WATER MAINS	GUY ANCHORS	SPOT ELEVATIONS 21.5
RAILROAD	TRANSFORMERS	INDEX CONTOURS 10
FENCES	ACCENT LIGHTS	CONTOURS
BUILDINGS	SHORELINES	TEMPORARY CONTROL POINT
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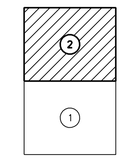

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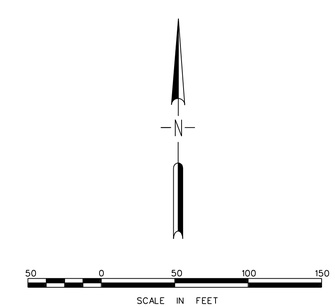

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STATE OF MISSISSIPPI REGISTERED PROFESSIONAL LS • 2409 LAND SURVEYOR W. J. LAWLER III ORIGINAL PROFESSIONAL SEAL

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Figure 3. Moreton Place Canal Bathymetric Survey

LEGEND

CURB LINES		WATER VALVE		PARCEL BOUNDARY	
BURIED TELEPHONE	—T—·—T·—	TELEPHONE BOX		ADJOINING PROPERT	
OVERHEAD LINES	—OHE——OHE—	UNKNOWN ELECTRICAL		SECTION LINE	
FIBER OPTIC CABLE	-FOC·—FOC·—	STREET LIGHTS		SET BACK LINES	
SANITARY SEWER	--SS·--SS--	POLES		EASEMENTS	
WATER MAINS	—·W—·W·—	GUY ANCHORS		SPOT ELEVATIONS	21.5
RAILROAD		TRANSFORMERS		INDEX CONTOURS	10
FENCES	—x—x—x—	ACCENT LIGHTS		CONTOURS	
BUILDINGS		SHORELINES		TEMPORARY CONTROL POINT	
CULVERTS		SIGNS		MONUMENTS	
CATCH BASINS		DECIDUOUS TREES		IRON PINS & PIPES AS NOTED	
MAN HOLES		GATE VALVE		RCP•REINFORCED CONCRETE PIPE	
FIRE HYDRANT		HVAC UNIT		CRS•LAWLER ½" CAPPED REBAR SET	
WATER METER		PIPE STUB		CTIF•CRIMP TOP IRON PIPE FOUND	
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Figure 4. Solano Circle Canal Bathymetric Survey

LEGEND

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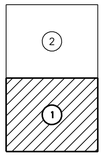

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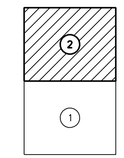
OVERHEAD LINES	UNKNOWN ELECTRICAL	SECTION LINE
FIBER OPTIC CABLE	STREET LIGHTS	SET BACK LINES
SANITARY SEWER	POLES	EASEMENTS
WATER MAINS	GUY ANCHORS	SPOT ELEVATIONS 21.5
RAILROAD	TRANSFORMERS	INDEX CONTOURS 10
FENCES	ACCENT LIGHTS	CONTOURS
BUILDINGS	SHORELINES	TEMPORARY CONTROL POINT
CULVERTS	SIGNS	MONUMENTS
CATCH BASINS	DECIDUOUS TREES	IRON PINS & PIPES AS NOTED
MAN HOLES	GATE VALVE	RCP•REINFORCED CONCRETE PIPE
FIRE HYDRANT	HVAC UNIT	CRS•LAWLER 1/2" CAPPED REBAR SET
WATER METER	PIPE STUB	CTIF•CRIMP TOP IRON PIPE FOUND
GAS METER	SANITARY CLEAN OUT	REC•DEED RECORD DIMENSION
FIBER OPTIC CABLE	R/W•RIGHT OF WAY	ACT•ACTUAL FIELD MEASUREMENT
CABLE TV BOX	CMP•CORRUGATED METAL PIPE	CRF•CAPPED REBAR FOUND
ROOF DRAIN	CONC.•CONCRETE	IRF•IRON ROD (REBAR) FOUND
HANDICAP PARKING	A/C•CENTRAL HVAC UNIT	XF•SCRIBED X FOUND IN CONCRETE
PALM TREES	SEC.•GOVERNMENTAL SECTION	CMF•CONCRETE MONUMENT FOUND



INDEX TO SHEETS

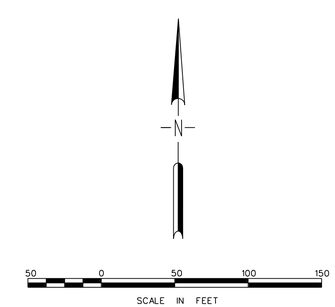
SYSTEM CALIBRATION STATEMENT:
ECHOSOUNDER CALIBRATED ACCORDING TO USCOE STANDARD PROCEEDURES
WHICH YIELDED A SPEED OF SOUND CORRECTION OF 5000 MILLISECONDS.
SURVEY COMPLETED USING 200KZ TRANSDUCER WITH 5° CONE.

GENERAL NOTES:
250 FOOT GRID BASED ON MISSISSIPPI STATE PLANE COORDINATE SYSTEM,
EAST ZONE, NAD 83 (2011) ESTABLISHED ON SITE USING RTK GPS.
ONE FOOT CONTOUR INTERVAL BASED ON MLW, 1929.
VERTICAL DATUM ESTABLISHED ON SITE USING RTK GPS CORS NETWORK, NAVD 1988.
NAVD ELEVATIONS CONVERTED TO MLW BY ADDING 0.62 FEET TO NAVD.
CONVERSION DATA TAKEN FROM NOAA GAUGING STATION 8741533, NOAA LAB PASCAGOULA
AND STATION 8747437 BAY WAVELAND YACHT CLUB.
HYDROGRAPHIC DATA COLLECTED WITH RTK GPS BASED AUTOMATED SYSTEM
MODELING AND CONTOURING ACCOMPLISHED WITH INROADS INSIDE MICROSTATION
FIELD SURVEY COMPLETED 16 DECEMBER, 2021
FILE:\dgn\MISSISSIPPI\OCEANSPRINGS\ 21120-SOLANO-CIRCLE-12-16-21.DGN

CERTIFICATION:
I, W. J. LAWLER, III, A REGISTERED LAND SURVEYOR IN THE STATE OF MISSISSIPPI
HEREBY CERTIFY THAT ALL PARTS OF THIS SURVEY AND DRAWING HAVE BEEN
COMPLETED IN ACCORDANCE WITH THE CURRENT REQUIREMENTS OF THE
STANDARDS OF PRACTICE FOR LAND SURVEYING IN THE STATE OF MISSISSIPPI TO
THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF FOR A CLASS D SURVEY.

THIS THE 18TH DAY OF DECEMBER, 2021

W. J. LAWLER, III PLS 2409



REVISIONS

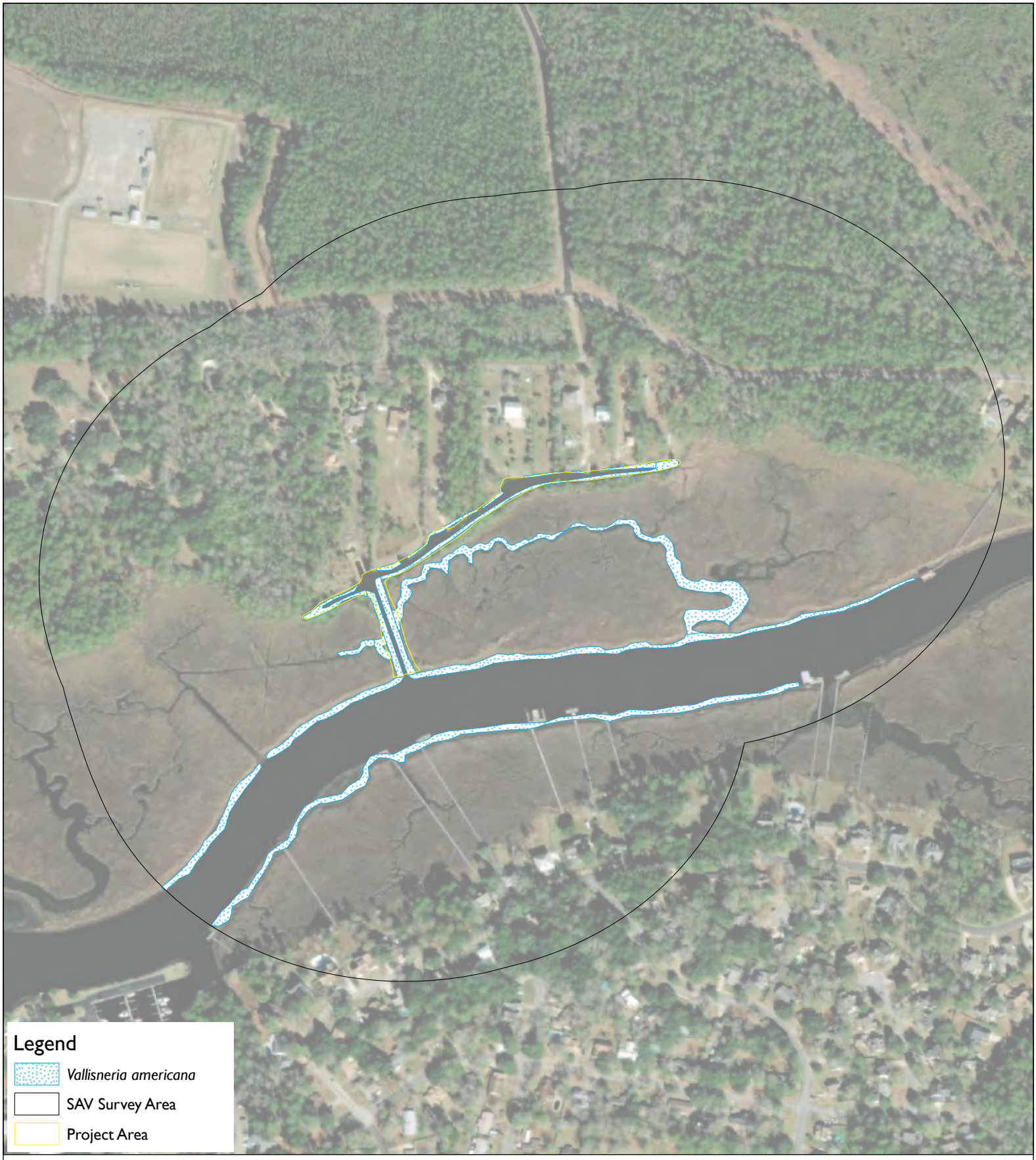
JACKSON COUNTY, MISSISSIPPI
SOLANO CIRCLE BAYOU DREDGE PROJECT
PRE-DREDGE HYDROGRAPHIC SURVEY

STATE OF MISSISSIPPI REGISTERED PROFESSIONAL LS • 2409 LAND SURVEYOR W. J. LAWLER III ORIGINAL PROFESSIONAL SEAL

LAWLER AND COMPANY
LAND AND INDUSTRIAL SURVEYORS
2879 CLAUDIA LANE
THEODORE, ALABAMA 36590
(251) 661-9411 FAX (251) 661-9177

REF:	CYPRESS ENVIRONMENTAL & INFRASTRUCTURE--MARC FOSTER	
DATE: 18 DEC., 2021	SCALE: 1"=50'	SHEET 02 OF 02
PROJECT No. 21-120		DRAWING No. 21-120-1

...\21120-SOLANO-S2.dgn 12/19/2021 10:01:38 AM



N

0 200 400 800 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Derry Lane Canal

Vallisneria americana

FIGURE 5

CYPRESS
Environment & Infrastructure

N

0 200 400 800 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Derry Lane Canal

Myriophyllum spicatum

FIGURE 6

CYPRESS
Environment & Infrastructure

N

0 145 290 580 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Moreton Place Canal

Vallisneria americana

FIGURE 7

CYPRESS
Environment & Infrastructure

N

0 145 290 580 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Moreton Place Canal

Myriophyllum spicatum

FIGURE 8

CYPRESS
Environment & Infrastructure

N

0 145 290 580 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Moreton Place Canal

Zannichellia palustris

FIGURE 9

CYPRESS
Environment & Infrastructure

N

0 145 290 580 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Moreton Place Canal

Ruppia maritima

FIGURE 10

CYPRESS
Environment & Infrastructure

N

0 170 340 680 Feet

Coordinate System:
NAD 1983 State Plane
Mississippi East FIPS 2301 Feet

Jackson County Board of Supervisors
Old Fort Bayou Tributaries

Submerged Aquatic Vegetation Survey
Solano Circle Canal

Ruppia maritima

FIGURE 11

CYPRESS
Environment & Infrastructure

Attachment E: Adjacent Property Owners List