

US ARMY CORPS OF ENGINEERS CORRESPONDENCE



DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, MOBILE DISTRICT  
P.O. BOX 2288  
MOBILE, AL 36628-0001

CESAM-RD-M  
PUBLIC NOTICE NO. SAM-2021-00025-RCV

January 20, 2021

**JOINT PUBLIC NOTICE**

**U.S. ARMY CORPS OF ENGINEERS**

**MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
OFFICE OF POLLUTION CONTROL (MDEQ)**

**MISSISSIPPI DEPARTMENT OF MARINE RESOURCES**

**PROPOSED IMPACTS FOR CONSTRUCTION OF A RAIL LINE,  
ON ESTUARINE WETLANDS ADJACENT TO THE ESCATAWPA RIVER,  
MOSS POINT, JACKSON COUNTY, MISSISSIPPI**

TO WHOM IT MAY CONCERN:

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403), Section 404 of the Clean Water Act (33 USC 1344), Please communicate this information to interested parties.

**APPLICANT:** Jackson County Port Authority (JCPA)  
Attention: Ms. Sandy Feathers  
PO Box 70  
Pascagoula, MS 39568

**WATERWAY AND LOCATION:** The new rail line is located in Section 19, Township 7 South, and Range 5 West of Moss Point, Jackson County, MS.

The approximate center point of the proposed modified rail is at 30.415546 degrees latitude and -88.514452 degrees longitude. The new rail begins at approximately 30.251207 / -88.310005 on the north and extends to 30.413308 / -88.508269 where it joins existing rail. This layout requires JCP A to purchase privately owned parcels of land.

**PROPOSED WORK:** A new rail connection is proposed to connect the existing rail line just south of the Escatawpa River and the rail line that is located within the MPITC.

The existing rail includes 22 crossings over roadways including US Highway 90. The proposed project includes discontinuing use of the section of rail that extends from near the Pascagoula River and crosses through downtown Pascagoula and Moss Point and instead utilizing existing rail that runs between Bayou Casotte and the

**Escatawpa River and crosses through the Moss Point Industrial and Technology Center (MPITC).**

The proposed construction length of the new rail line through estuarine wetlands crosses over 2,852 feet of estuarine wetlands and 807 feet of uplands. No forested wetlands are within the modified footprint. The proposed footprint will be constructed using rail constructed on elevated pilings, the impacts are associated with fill at the abutments and one section of marsh (21,820 square feet). The total impact for the proposed footprint is approximately 39,261 square feet (0.90 acres) and will require approximately 2,649 net cubic yards of fill.

The Federal Railroad Administration (FRA) is the lead Federal agency for this project.

**BACKGROUND:** A USACE permit to construct the North Rail Connector was received by JCPA on October 14, 2020 (SAM-2018-01204-RCV). The initial cost estimate for a railroad on fill versus an elevated rail line indicated that the fill construction method would be the most cost effective. Based on the recent geotechnical evaluation, the construction cost is estimated at approximately \$30 million. In an effort to reduce construction costs, the JCPA has evaluated other construction methods and rail line footprints. The evaluation has resulted in this current proposal for the use of an elevated rail crossing over a shorter section of marsh, crossing over a longer section of forested uplands and joining to existing rail at a different location.

The applicant has applied for coastal zone (CZ) consistency in accordance with the State Coastal Zone Management Program. A determination relative to CZ consistency will be made by the Mississippi Department of Marine Resources.

The Clean Water Act (CWA) Section 401 Certification Rule (Certification Rule, 40 CFR 121), requires certification for any license or permit that authorizes an activity that may result in a discharge. The applicant is responsible for requesting certification and providing required information to the certifying agency. As of the date of this public notice, the applicant has not submitted a certification request to the Mississippi Department of Environmental Quality (certifying authority).

This public notice is being distributed to all known interested persons in order to assist in developing facts on which a decision by the U.S. Army Corps of Engineers can be based. For accuracy and completeness of the record, all data in support of or in opposition to the proposed work should be submitted in writing setting forth sufficient detail to furnish a clear understanding of the reasons for support or opposition.

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 benefit 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 the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic 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, consideration of property ownership and, in general, the needs and welfare of the people.

The Corps of Engineers 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 of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state with particularity, the reasons for holding a public hearing.

Evaluation of the probable impacts involving deposits of dredged or fill material into waters of the United States will include the application of guidelines established by the Administrator of the U.S. Environmental Protection Agency.

FRA is the lead Federal agency for this project responsible for ensuring compliance with the National Historic Preservation Act. For comments related to Section 106 of the National Historic Preservation Act.

FRA is the lead Federal agency for this project responsible for ensuring compliance with the Endangered Species Act.

FRA is the lead Federal agency for this project responsible for ensuring compliance with the Magnuson Stevens Fishery Conservation and Management Act.

Correspondence concerning this Public Notice should refer to Public Notice Number SAM-2021-00025-RCV and should be directed to the District Engineer, U.S. Army Engineer District, Mobile, Post Office Box 2288, Mobile, Alabama 36628-0001, Attention: South Mississippi Branch, with a copy to the Mississippi Department of Environmental Quality, Office of Pollution Control, Post Office Box 2261, Jackson, Mississippi 39225, and the Mississippi Department of Marine Resources, 1141 Bayview Avenue, Biloxi, Mississippi 39530, in time to be received within **30 days** of the date of this public notice.

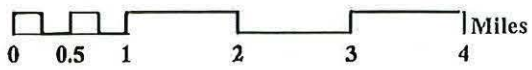
If you have any questions concerning this publication, you may contact the project manager for this application, **Mr. Rudolph C. Villarreal (Rudolph.c.villarreal@usace.army.mil)**,

phone (251) 690-3246. Please refer to the above Public Notice number.

For additional information about our Regulatory Program, please visit our website at: [www.sam.usace.army.mil](http://www.sam.usace.army.mil) and please take a moment to complete our customer satisfaction survey while you're there. Your responses are appreciated and will allow us to improve our services.

MOBILE DISTRICT  
U.S. Army Corps of Engineers

Enclosures



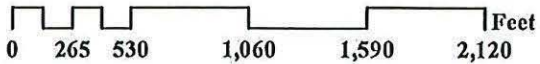
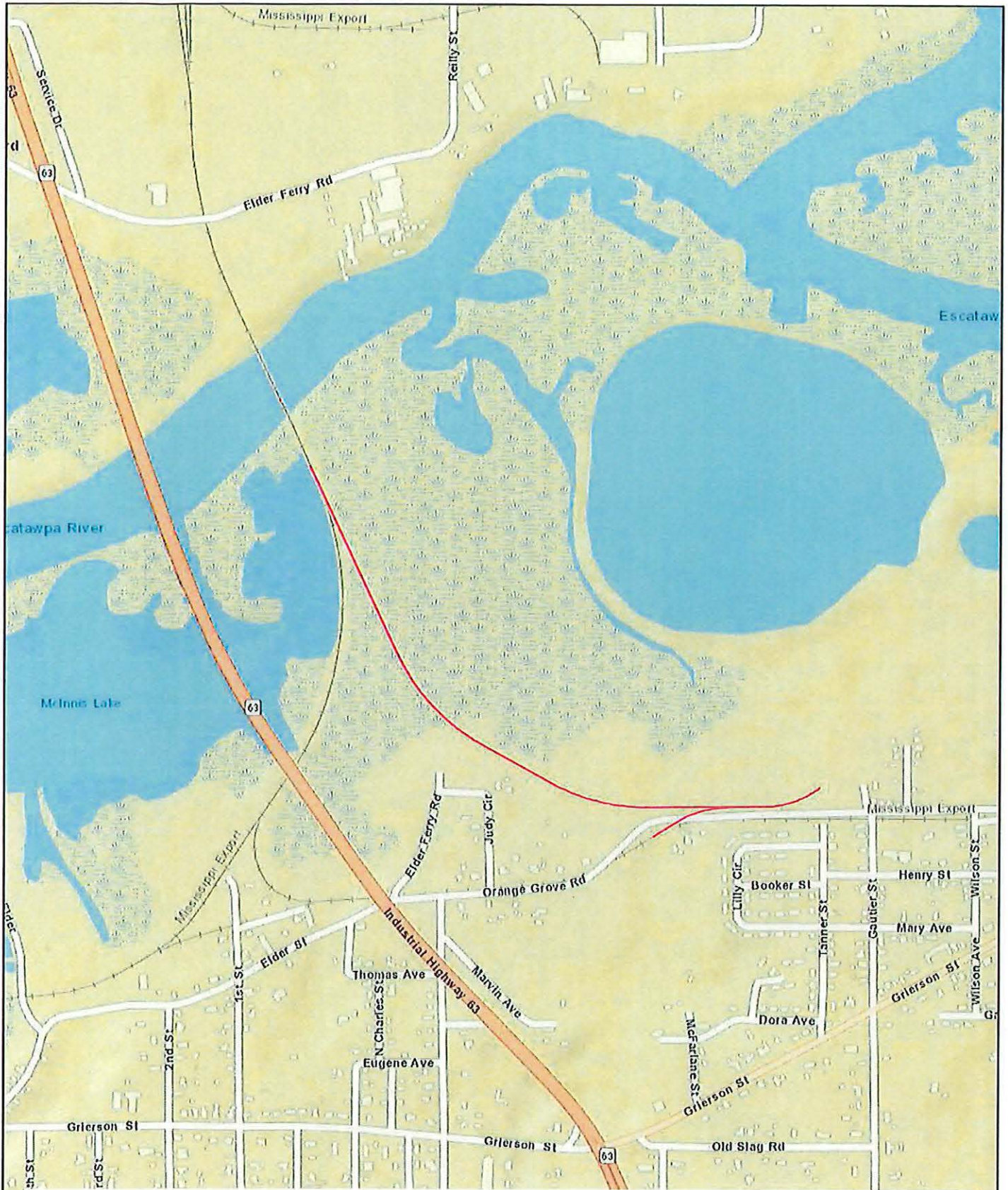
Moss Point, Mississippi

**Wildlife Solutions, Inc.**

Phone: 251-591-2682

1 inch = 2 miles





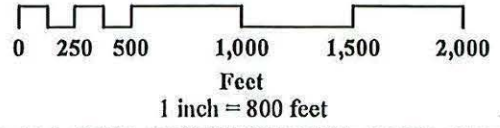
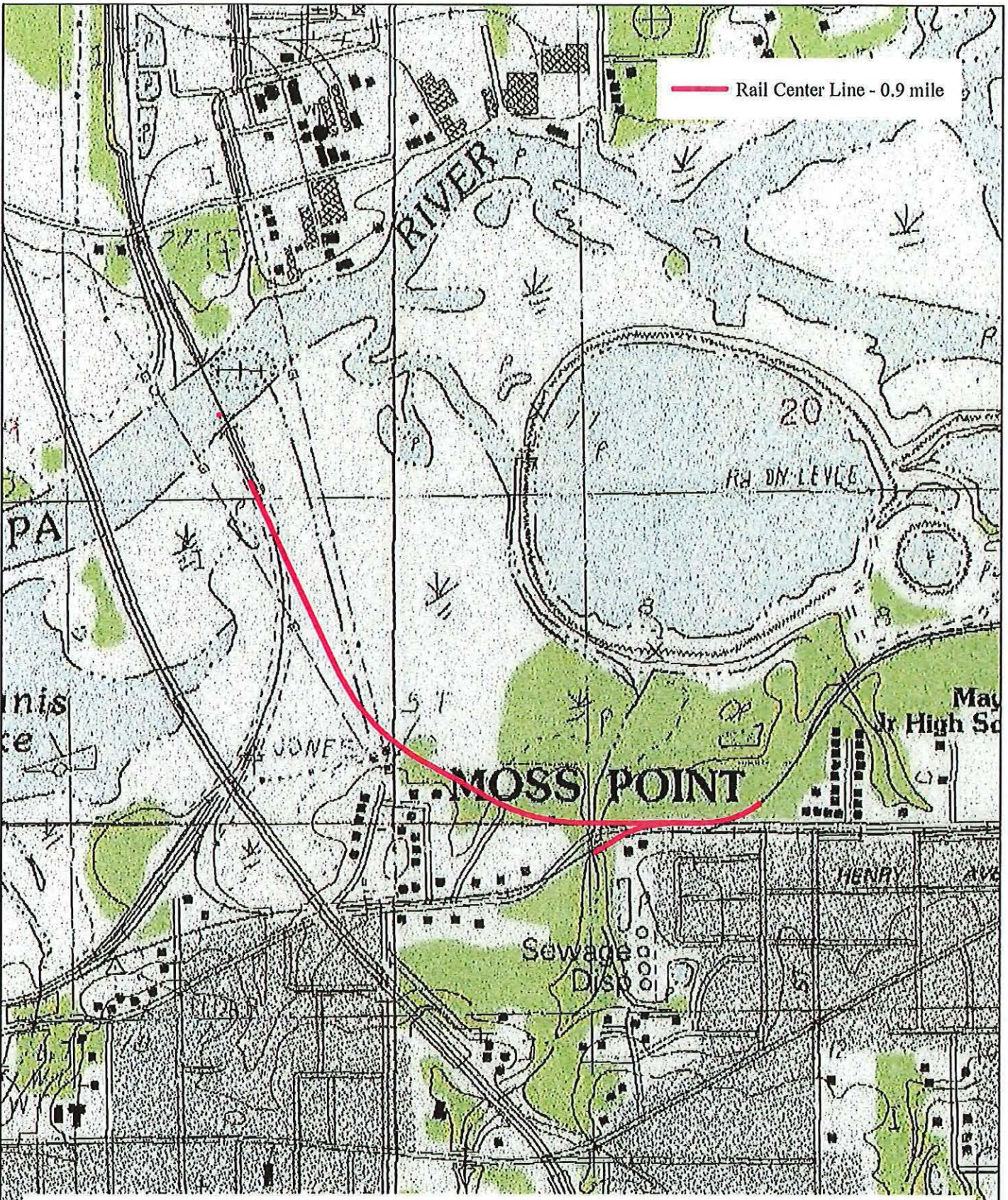
Moss Point, Mississippi

**Wildlife Solutions, Inc.**

Phone: 251-591-2682

1 inch = 800 feet





**Wildlife Solutions, Inc.**

Phone: 251-591-2682

-88.512122 30.414181 Decimal Degrees

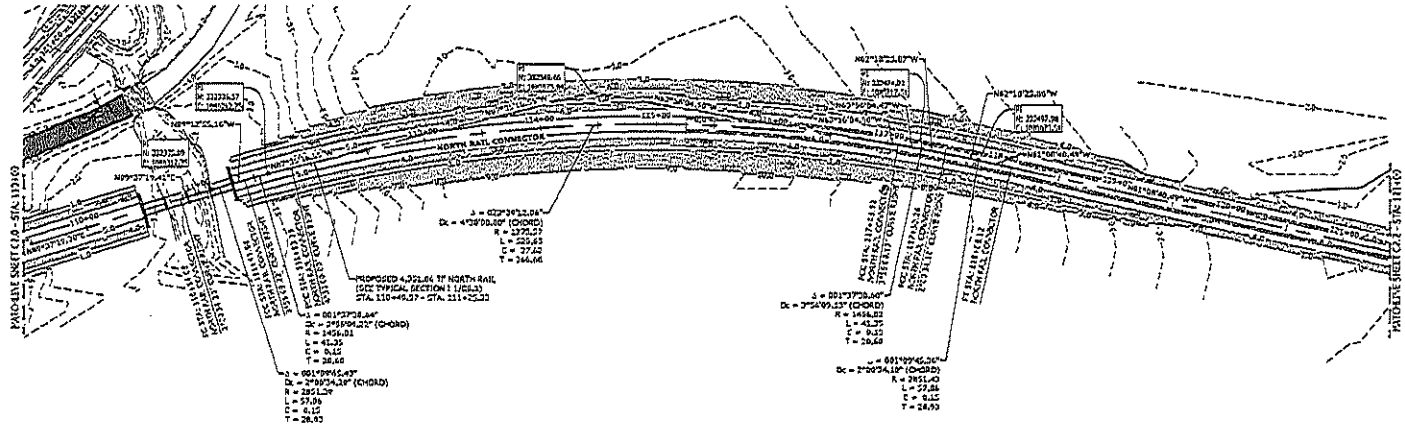


SAM-2021-00025-RCV

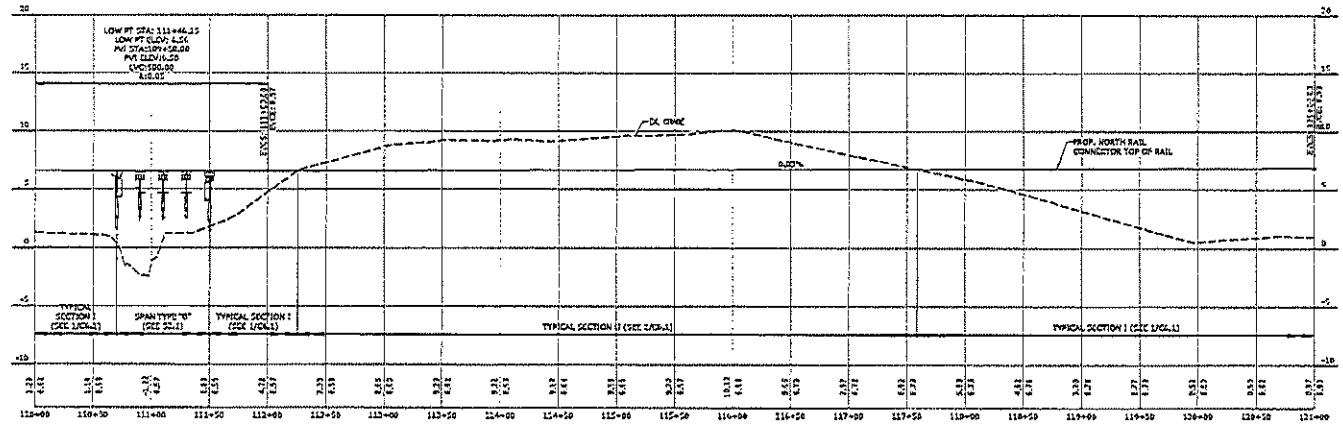


S:\Projects\16-Freight\1018-01A-2021-North Rail Connector\01 Planning\Asst\16-01-01\Concept-Drawings\2.0 - C2.1.dwg, C2.1, C:\D\2020 B:11:30 AM, Rev'd

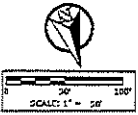
SAM-2021-00025-RCV



1 PROPOSED PLAN  
SCALE: 1" = 50'



2 PROFILE  
SCALE: H: 1" = 50' V: 1" = 5'



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PART OF PASCAGOULA RESTORE PROJECT  
NORTH RAIL CONNECTOR PLANNING ASSISTANCE  
NORTH RAIL CONNECTOR - PLAN & PROFILE  
STA: 110+00 - STA: 121+00

SCALE:	AS NOTED
DESIGNER:	21E-051
DATE:	11/15/21
DRAWN BY:	BLANDIER
CHECKED BY:	
APP'D:	

C2.1



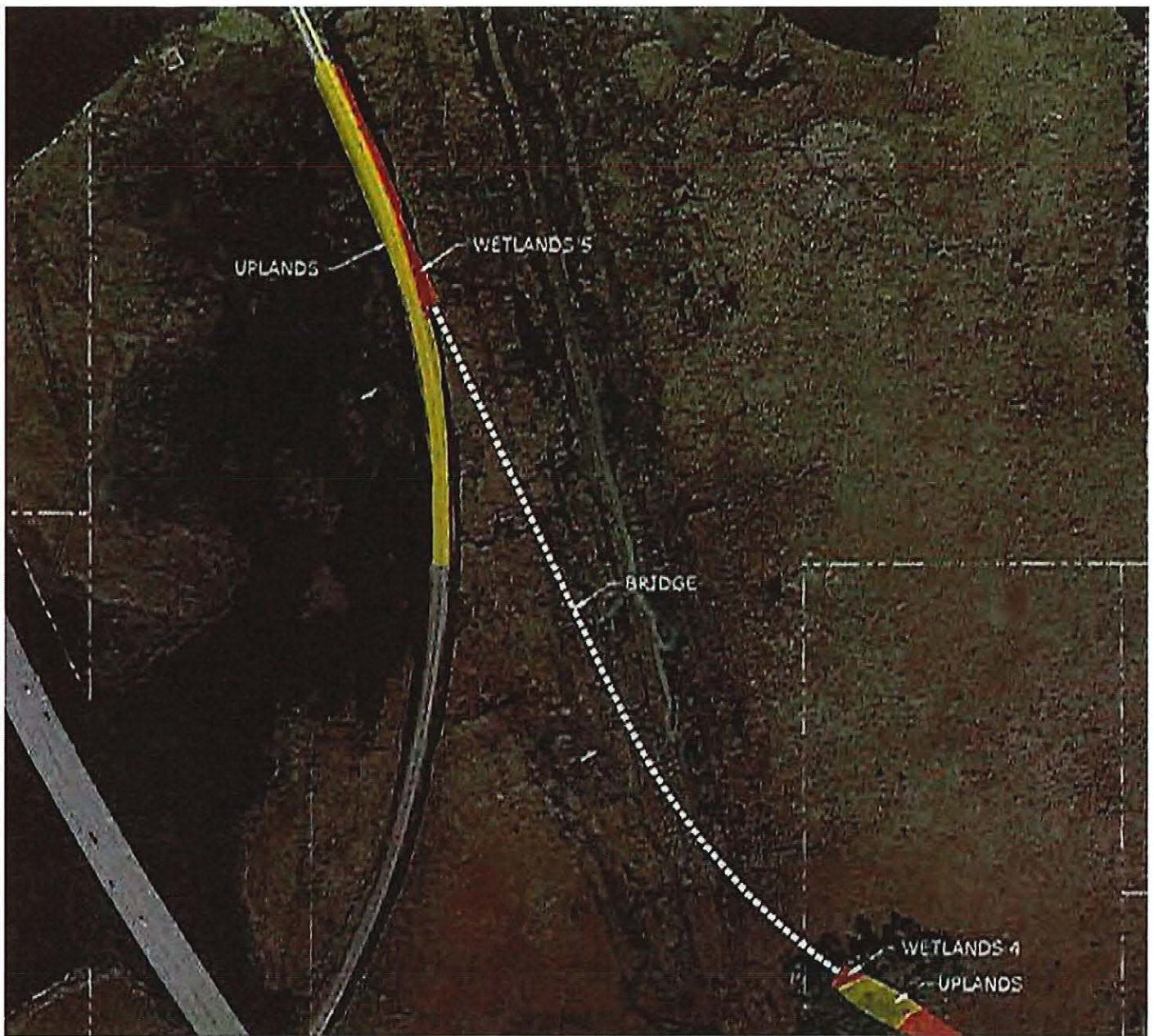






DETAIL 1 Wetland Impacts

SAM-2021-00025-RCV



Detail 2 Wetland Impacts

SAM-2021-00025-RCV



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Previously Permitted and Proposed Alignments

SAM-2021-00025-RCV



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DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, AL 36628-0001

February 24, 2021

Mississippi Branch  
Regulatory Division

Jackson County Port Authority  
C/o Compton Engineering  
Attention: Ms. Lisa Morrison  
Via email @ [lmorrison@comptonengineering.com](mailto:lmorrison@comptonengineering.com)

Dear Ms. Morrison:

This letter is regarding your application for a Department of the Army (DA) permit to construct your North Rail Project; File No. SAM-2021-00025-RCV. Enclosed is a copy of a letters from commenters received before the close of the comment period on March

It is the policy of the DA to provide an applicant the opportunity to furnish a proposed resolution or rebuttal to all objections and other substantive comments before a final decision is made on a proposed project. In this regard, I would appreciate receiving any comments that you may have on this matter.

You may voluntarily elect to contact any commenter in an attempt to resolve the matter but are not required to do so, since the DA alone is responsible for making the final decision on the application. However, you should be aware that all recommendations on projects proposed to be authorized by permit must be given full consideration in making our public interest review determination, as required by law.

The concerns expressed by two of the commenters appear to this office to be substantive. In order to complete the public interest review these concerns must be addressed. Please give your immediate attention to this matter to expedite the evaluation process of your permit application. In particular, I request that you more specifically address the following issues:

a. State when the Federal Railroad Administration (FRA) will initiate a consultation on Essential Fish Habitat with the National Marine Fisheries- Habitat Conservation Division.

b. State when a Cultural Resources Survey will be conducted, if any.



In addition, your previous application submittal of November 10, 2020 stated the project as a modification of the previous permit under SAM-2018-01204-RCV.

- 1) Please provide this office with an alternative analysis which reflects the relocation of the project as a new permit under SAM-2021-00025.
- 2) Please provide an absent "Appendix D" from your previous application which shows the location of all alternative site.
- 3) Please provide any updates on the stormwater and drainage plan that you have provided the Mississippi Department of Environmental Quality during your pre-filing meeting.
- 4) Please provide a new Hydrogeomorphic data set for the new mitigation plan.
- 5) Please provide a new conservation easement for review which reflects the new mitigation plan.

It is recommended that you provide this office with your comments on the matter within **30 days** of the date of this letter. Failure to do so could result in the denial of your permit unless there are substantive mitigating factors to preclude such a response.

Please contact me at (251) 690-3246, should you have any questions.

Sincerely,



Rudolph C. Villarreal  
Project Manager  
Regulatory Division

Enclosures

February 9, 2021

Mr. Rudolph C. Villarreal  
Mobile District, Corps of Engineers  
Post Office Box 2288  
Mobile, Alabama 36628-0001

RE: SAM-2021-00025-RCV; Proposed Rail Connection, S19, T7S, R5W, Moss Point, (USACE)  
MDAH Project Log #01-084-21, Jackson County

Dear Mr. Villarreal:

We have reviewed your January 20, 2021, request for cultural resources assessment, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After review, it is our determination that it appears that the majority of the proposed rail line has not been surveyed and there are archaeological sites near the APE (area of potential effect) and one site in the APE, therefore a cultural resources survey of the proposed rail line is needed prior to any construction. The resulting report should reference the project log number above on the title page.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

If you have any questions, please contact me at (601) 576-6940.

Sincerely,



Hal Bell  
Review and Compliance Officer

FOR: Katie Blount  
State Historic Preservation Officer

**Lisa D. Morrison**

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**From:** Villarreal, Rudolph C CIV USARMY CESAM (USA) <Rudolph.C.Villarreal@usace.army.mil>  
**Sent:** Thursday, February 25, 2021 12:39 PM  
**To:** Murphy, Amanda (FRA)  
**Cc:** Lisa D. Morrison  
**Subject:** RE: USACE Comments  
**Attachments:** 2021-02-25.AGCY.21-025.Forwarding of PN Comments(signed).pdf;  
21-02-24.PN.21-025.Consolidated comments to applicant.pdf

Amanda:

Please see the attached comment letter with associated attachment.  
Please contact me if you have any questions.

Thank you,

Rudy

Rudolph C. Villarreal  
Senior Project Manager  
US Army Corps of Engineers  
Mobile District  
Regulatory Division  
South Mississippi Branch  
Office. (251) 690-3246  
Cell: (251) 508-7049  
E-Mail. [rudolph.c.villarreal@usace.army.mil](mailto:rudolph.c.villarreal@usace.army.mil)

---

**From:** Villarreal, Rudolph C CIV USARMY CESAM (USA)  
**Sent:** Tuesday, February 23, 2021 5:44 PM  
**To:** 'Murphy, Amanda (FRA)' <amanda.murphy2@dot.gov>  
**Cc:** Lisa D. Morrison <lmorrison@comptonengineering.com>  
**Subject:** RE: USACE Comments

Amanda:

I will send out the comments to both Lisa and the FRA tomorrow via e-mail. Each comment letter is separate, and different in regard to the response request. They will be separate letters and sent via email. Your letter will be cc'd to NMFS-HCD.

A third letter, in response to NMFS-HCD initial comments to the current Public notice, will be sent after signature by my Supervisor, This letter will be cc'd to you.

As we discussed last Friday, please see attached NMFS initial response letter to the previous Public Notice under SAM-2018-01204-RCV, and the USACE response.

Please note the email address of Ms. Virginia Fay:

[virginia.fay@noaa.gov](mailto:virginia.fay@noaa.gov)

Thank you,

Rudy

Rudolph C. Villarreal  
Senior Project Manager  
US Army Corps of Engineers  
Mobile District  
Regulatory Division  
South Mississippi Branch  
Office. (251) 690-3246  
Cell: (251) 508-7049  
E-Mail. [rudolph.c.villarreal@usace.army.mil](mailto:rudolph.c.villarreal@usace.army.mil)

---

**From:** Murphy, Amanda (FRA) <[amanda.murphy2@dot.gov](mailto:amanda.murphy2@dot.gov)>

**Sent:** Tuesday, February 23, 2021 11:45 AM

**To:** Villarreal, Rudolph C CIV USARMY CESAM (USA) <[Rudolph.C.Villarreal@usace.army.mil](mailto:Rudolph.C.Villarreal@usace.army.mil)>

**Subject:** [Non-DoD Source] USACE Comments

Hello,

I wanted to follow up regarding our conversation on Friday, to see when the USACE comments might be sent?

Thanks,

Amanda Murphy, MAHP  
Environmental Protection Specialist  
Federal Railroad Administration  
202-339-7231 (cell)  
[Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov)



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

February 25, 2021

South Mississippi Branch  
Regulatory Division

SUBJECT: Cooperating Agency forwarding of Public Notice Comments for the Federal Railroad Administration-led North Rail Connector Project (SAM-2021-00025-RCV)

U.S. Department of Transportation  
Federal Railroad Administration  
Attention: Ms. Amanda Murphy  
1200 New Jersey Avenue SE  
Washington, D.C. 20590  
Sent via email: [Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov)

Ms. Murphy:

It is the policy of the Department of the Army (USACE) to provide the applicants of a project applicant the opportunity to furnish a proposed resolution or rebuttal to all objections and other substantive comments before a final decision is made on a proposed project. In this regard, I would appreciate receiving any comments that you may have on this matter.

As a cooperating agency, the USACE is forwarding these comments to you during the environmental evaluation process for the development and preparation of an Environmental Assessment (EA) for proposed North Rail Connector Project. The concerns expressed by two of the commenters appear to this office to be substantive. To complete my public interest review and separate permitting responsibilities, your EA, and your lead federal agency responsibilities under 36 CFR 800.2(a)(2), these concerns must be addressed. Any other comments from the USACE will be forthcoming following the completion and review of the revised mitigation plan.

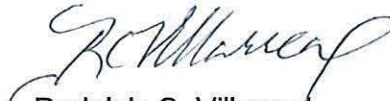
The attached comments were also sent to the applicant's agent, Ms. Lisa Morrison, on February 24, 2021 with the following request for additional information:

- a. State when the Federal Railroad Administration (FRA) will initiate a consultation on Essential Fish Habitat with the National Marine Fisheries- Habitat Conservation Division.
- b. State when a Cultural Resources Survey will be conducted, if any.

- c. Please provide this office with an alternative analysis which **quantitatively** reflects the relocation of the project as a new permit under SAM-2021-00025.
- d. Please provide an absent "Appendix D" from your previous application which shows the location of all alternative site.
- e. Please provide any updates on the stormwater and drainage plan that you have provided the Mississippi Department of Environmental Quality during your pre-filing meeting.
- f. Please provide a new Hydrogeomorphic data set for the new mitigation plan.
- g. Please provide a new conservation easement for review which reflects the new mitigation plan.

Copies of this correspondence is being furnished via email to Ms. Lisa Morrison, Compton Engineering @ [lmorrison@comptonengineering.com](mailto:lmorrison@comptonengineering.com). You can contact him at (251) 690-3246 or at [rudolph.c.villarreal@usace.army.mil](mailto:rudolph.c.villarreal@usace.army.mil) should you have any information or questions related to this project.

Sincerely,



Rudolph C. Villarreal  
Senior Project Manager  
Mobile District  
Regulatory Division

Enclosure

**From:** [Murphy, Amanda \(FRA\)](#)  
**To:** [Munther.N.Sahawneh@usace.army.mil](mailto:Munther.N.Sahawneh@usace.army.mil); [Villarreal, Rudolph C CIV USARMY CESAM \(USA\)](#)  
**Cc:** [Johnsen, Michael \(FRA\)](#); [Dixon, Marc \(FRA\)](#); [Sandy Feathers](#); [Lisa D. Morrison](#)  
**Subject:** Cooperating Agency Invitation: North Rail Connector Project (FRA/JCPA)  
**Date:** Friday, January 15, 2021 1:50:55 PM  
**Attachments:** [NRCP Project Figure 01152021.pdf](#)  
[NRCP EA Schedule 01142021.docx](#)  
[NRCP USACE Cooperating Agency Invite signed.pdf](#)

---

Dear Mr. Sahawneh,

Attached is a letter from the Federal Railroad Administration inviting USACE to be a Cooperating Agency for the proposed North Rail Connector Environmental Assessment. The Jackson County Port Authority is the project proponent. As indicated in the letter, we would appreciate a response before February 1.

Thank you,

Amanda Murphy, MAHP  
Environmental Protection Specialist  
Federal Railroad Administration  
202-339-7231 (cell)  
[Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov)



U.S. Department  
of Transportation

**Federal Railroad  
Administration**

1200 New Jersey Avenue, SE  
Washington, DC 20590

January 15, 2021

US Army Corps of Engineers  
Mobile District  
P.O. BOX 2288  
Mobile, Alabama

Attention: Mr. Munther N. Sahawneh  
Branch Chief  
Regulatory Division  
South Mississippi Branch

Re: Invitation to accept NEPA Cooperating Agency status for the Federal Railroad Administration-led North Rail Connector Project

Dear Mr. Sahawneh:

The Federal Railroad Administration (FRA) awarded the Jackson County Port Authority (JCPA) a grant for the proposed North Rail Connector Project (Proposed Project). The Proposed Project would connect rail owned by Mississippi Export Railroad (MSE) that crosses over the Escatawpa River just east of Highway 63 in Moss Point, Mississippi to an existing JCPA-owned rail line that crosses through the Moss Point Industrial and Technology Complex (MPITC). FRA anticipates that we will prepare an Environmental Assessment (EA) pursuant to the National Environmental Policy Act (NEPA) for the Proposed Project. The purpose of this letter is to invite the US Army Corps of Engineers (USACE) to be a cooperating agency on the EA, as your agency may have an interest based on your jurisdiction by law, including Section 404 of the Clean Water Act, and special expertise. FRA also requests that you designate us as the lead federal agency for National Historic Preservation Act Section 106 consultation for the Proposed Project.

The purpose of the Proposed Project is to provide additional railroad capacity and connectivity between existing infrastructure to support the growing needs of the Port of Pascagoula, Bayou Casotte Harbor. Currently, freight trains that travel from the north on the MSE line must pass through downtown Moss Point and Pascagoula to the Pascagoula Interchange to join CSX rail. This operation regularly blocks vehicular traffic and creates delays at four major roadway intersections. Also, the curve between the existing MSE line that joins with the rail line that enters into the MPITC is too tight to allow unit trains to travel. The Proposed Project is needed remove operational conflicts between railroads, reduce congestion, and accommodate the proposed restoration of passenger rail service.

Enclosed is a figure of the Proposed Project. The proposed rail line is located within JCPA owned land and several parcels are currently being assessed for purchase/right of way. The proposed rail line begins at approximate latitude/longitude 30.251207/-88.310005 on the north and extends to approximate latitude/longitude 30.413308/-88.508269 where it joins existing rail. The approximate center point of the proposed rail line is located at 30.415001 degrees latitude and -88.513679 degrees longitude.

The proposed rail line would cross over estuarine wetlands and forested uplands, and join on the east with an existing JCPA rail line that connects to an interchange located within the MPITC. The length of the



proposed rail line through estuarine wetlands is approximately 3,659 total linear feet with approximately 2,852 feet through marsh wetlands, and 807 through uplands. Most of the proposed rail would be elevated and fill will be used at the abutments to the pile structures. One area of marsh wetlands will be filled with a length of approximately 413 feet and 45.5 feet width. The total impact to wetlands from fill is approximately 39,261 square feet (0.90 acres). There would be approximately 2,649 cubic yards of fill. Construction would be conducted either from uplands or from existing rail. A construction staging area would be established within the MPITC in an area that was recently used for the same purpose. The staging area would be approximately 1-acre in size, and it is not located within a wetland.

Construction of the North Rail Connector Project would result in permanent filling of 0.90 acres of regulated estuarine wetland. JCPA would identify exact mitigation measures and wetland compensation ratios in collaboration with your agency and other regulatory agencies during the subsequent preliminary design and permitting phase. At this time, JCPA anticipates that mitigation requirements would be satisfied through permittee responsible mitigation in which an upland area is converted into estuarine wetland.

In accordance with 40 CFR § 1501.8, FRA requests USACE's assistance in the participation of our anticipated EA for proposed North Rail Connector Project as a cooperating agency. Further, we request that USACE designate FRA as the lead federal agency for Section 106 NHPA to streamline and fulfill collective Federal responsibilities under 36 CFR 800.2(a)(2). Please provide your written concurrence with this invitation and our proposed EA schedule within 15 days from the date on this letter. Should you decline to accept our invitation to be a cooperating agency, we advise that you provide a copy of your response to CEQ as specified at 40 CFR § 1501.8(c). We look forward to working cooperatively with you on this important project.

If you have any questions or would like to discuss our respective roles and responsibilities in more detail, please contact Ms. Amanda Murphy, FRA Environmental Protection Specialist at 202-339-7231 or [Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov).

Sincerely,

MICHAEL M  
JOHNSEN

Digitally signed by MICHAEL M  
JOHNSEN  
Date: 2021.01.15 12:05:32 -05'00'

Michael Johnsen  
Supervisory Environmental Protection Specialist

Cc: Rudolph C. Villarreal, Senior Project Manager, USACE Mobile - South Mississippi Branch  
Sandy Feathers, JCPA Assistant Port Director

Enclosures:  
Proposed Project Figure  
Proposed EA Schedule



REPLY TO  
ATTENTION OF:

DEPARTMENT OF THE ARMY  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

January 27, 2021

South Mississippi Branch  
Regulatory Division

SUBJECT: Participating Agency invitation to accept NEPA Cooperating Agency status  
For the Federal Railroad Administration-led North Rail Connector Project (SAM-2021-  
00025-RCV)

U.S. Department of Transportation  
Federal Railroad Administration  
Attention: Mr. Michael M. Johnsen  
1200 New Jersey Avenue SE  
Washington, D.C. 20590  
[michael.johnsen@dot.gov](mailto:michael.johnsen@dot.gov)

Mr. Johnsen:

The U.S. Army Corps of Engineers (USACE), Mobile District received your letter dated January 15, 2021, inviting the Mobile District to participate as a "Cooperating Agency" in the environmental evaluation process and development and preparation of an Environmental Assessment (EA) for proposed North Rail Connector Project as a cooperating agency.

In accordance with CEQ regulations 40 CFR §1501.8 for Lead and Cooperating Agencies, we accept your invitation to become a participating agency for the environmental evaluation process of this project.

In order to maintain a high level of interagency cooperation, the Mobile District agrees to participate in agency coordination meetings, provided consultation on relevant technical studies when appropriate, and review project information and study results. Further, USACE designates the Federal Railroad Administration as the lead federal agency for Section 106 NHPA to streamline and fulfill collective Federal responsibilities under 36 CFR 800.2(a)(2). In addition, please see the attached revision to the schedule for the EA. The USACE respectfully requests additional time for review of both the interested agency comment period, and the FRA and USACE review of version 2 of the EA.

Copies of this correspondence is being furnished via email to Ms. Amanda Murphy, FRA Environmental Protection Specialist @[Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov).

The Mobile District's project manager and primary point of contact for this project will be Mr. Rudolph Villarreal. You can contact him at (251) 690-3246 or at [rudolph.c.villarreal@usace.army.mil](mailto:rudolph.c.villarreal@usace.army.mil) should you have any information or questions related to this project.

Sincerely,

SAHAWNEH.MUNTH  
HER.N.1230711808  
Munther N. Sahawneh  
Chief, South Mississippi Branch  
Regulatory Division

Digitally signed by  
SAHAWNEH.MUNTH.HER.N.1230711  
808  
Date: 2021.01.28 12:07:49 -06'00'

enclosure



REPLY TO  
ATTENTION OF:

**DEPARTMENT OF THE ARMY**  
MOBILE DISTRICT, CORPS OF ENGINEERS  
P.O. BOX 2288  
MOBILE, ALABAMA 36628-0001

February 25, 2021

South Mississippi Branch  
Regulatory Division

SUBJECT: Cooperating Agency forwarding of Public Notice Comments for the Federal Railroad Administration-led North Rail Connector Project (SAM-2021-00025-RCV)

U.S. Department of Transportation  
Federal Railroad Administration  
Attention: Ms. Amanda Murphy  
1200 New Jersey Avenue SE  
Washington, D.C. 20590  
Sent via email: [Amanda.murphy2@dot.gov](mailto:Amanda.murphy2@dot.gov)

Ms. Murphy:

It is the policy of the Department of the Army (USACE) to provide the applicants of a project applicant the opportunity to furnish a proposed resolution or rebuttal to all objections and other substantive comments before a final decision is made on a proposed project. In this regard, I would appreciate receiving any comments that you may have on this matter.

As a cooperating agency, the USACE is forwarding these comments to you during the environmental evaluation process for the development and preparation of an Environmental Assessment (EA) for proposed North Rail Connector Project. The concerns expressed by two of the commenters appear to this office to be substantive. To complete my public interest review and separate permitting responsibilities, your EA, and your lead federal agency responsibilities under 36 CFR 800.2(a)(2), these concerns must be addressed. Any other comments from the USACE will be forthcoming following the completion and review of the revised mitigation plan.

The attached comments were also sent to the applicant's agent, Ms. Lisa Morrison, on February 24, 2021 with the following request for additional information:

- a. State when the Federal Railroad Administration (FRA) will initiate a consultation on Essential Fish Habitat with the National Marine Fisheries- Habitat Conservation Division.
- b. State when a Cultural Resources Survey will be conducted, if any.

- c. Please provide this office with an alternative analysis which **quantitatively** reflects the relocation of the project as a new permit under SAM-2021-00025.
- d. Please provide an absent "Appendix D" from your previous application which shows the location of all alternative site.
- e. Please provide any updates on the stormwater and drainage plan that you have provided the Mississippi Department of Environmental Quality during your pre-filing meeting.
- f. Please provide a new Hydrogeomorphic data set for the new mitigation plan.
- g. Please provide a new conservation easement for review which reflects the new mitigation plan.

Copies of this correspondence is being furnished via email to Ms. Lisa Morrison, Compton Engineering @ [lmorrison@comptonengineering.com](mailto:lmorrison@comptonengineering.com). You can contact him at (251) 690-3246 or at [rudolph.c.villarreal@usace.army.mil](mailto:rudolph.c.villarreal@usace.army.mil) should you have any information or questions related to this project.

Sincerely,



Rudolph C. Villarreal  
Senior Project Manager  
Mobile District  
Regulatory Division

Enclosure

February 9, 2021

Mr. Rudolph C. Villarreal  
Mobile District, Corps of Engineers  
Post Office Box 2288  
Mobile, Alabama 36628-0001

RE: SAM-2021-00025-RCV; Proposed Rail Connection, S19, T7S, R5W, Moss Point, (USACE)  
MDAH Project Log #01-084-21, Jackson County

Dear Mr. Villarreal:

We have reviewed your January 20, 2021, request for cultural resources assessment, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After review, it is our determination that it appears that the majority of the proposed rail line has not been surveyed and there are archaeological sites near the APE (area of potential effect) and one site in the APE, therefore a cultural resources survey of the proposed rail line is needed prior to any construction. The resulting report should reference the project log number above on the title page.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

If you have any questions, please contact me at (601) 576-6940.

Sincerely,



Hal Bell  
Review and Compliance Officer

FOR: Katie Blount  
State Historic Preservation Officer



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
**NATIONAL MARINE FISHERIES SERVICE**  
Southeast Regional Office  
263 13<sup>th</sup> Avenue South  
St. Petersburg, Florida 33701-5505  
<https://www.fisheries.noaa.gov/region/southeast>

February 11, 2021

F/SER46/JM:rs  
225-380-0089

Colonel Sebastien P. Jolly, Commander  
U.S. Army Corps of Engineers, Mobile District  
Post Office Box 2288  
Mobile, Alabama 36628-0001

Dear Colonel Jolly:

NOAA's National Marine Fisheries Service (NMFS) has reviewed Joint Public Notice (JPN) SAM-2021-00025-RCV dated January 20, 2021. The JPN indicated the Federal Railroad Administration (FRA) is the lead federal agency for this project and responsible for ensuring compliance with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act). The NMFS previously reviewed JPN SAM-2018-01204-RCV dated May 29, 2019 and provided two conservation recommendations on the project under provisions of the Magnuson-Stevens Act in a letter to the U.S. Army Corps of Engineers (USACE) dated June 25, 2019. The USACE permitted the applicant, Jackson County Port Authority (JCPA), to construct the North Rail Connector on October 14, 2020 (SAM-2018-01204-RCV). The initial cost estimated for a railroad on fill versus an elevated rail line indicated the fill construction method would be the most cost effective.

In an effort to reduce construction costs, the JCPA evaluated other construction methods and rail line footprints. Upon JCPA's review of a recent geotechnical evaluation, the cost estimated for elevated rail construction yielded rail crossings over a shorter section of marsh, crossing over longer sections of forested uplands, a connection to the existing rail at a different location, and reduced construction costs and impacts to essential fish habitat (EFH). Based on the information provided in the JPN (SAM-2021-00025-RCV), the JCPA proposes: (1) to discontinue use of a section of rail line, (2) construct a new rail connection to the existing rail line using elevated pilings, and (3) fill 0.90 acre of estuarine wetlands east of Highway 63 in Jackson County, Mississippi.

The wetlands in the vicinity of the project consist of tidally influenced brackish marsh. Water bottoms in the project area are composed of a mixture of sand and mud substrates. The proposed project is in an area potentially designated as EFH for various life stages of federally managed species, including red drum, brown shrimp, and white shrimp. The primary categories of EFH affected by project implementation, are estuarine emergent wetlands, estuarine water columns, and estuarine water bottoms. Detailed information on federally managed fisheries and their EFH is provided in the 2005 generic amendment of the Fishery Management Plans for the Gulf of Mexico prepared by the Gulf of Mexico Fishery Management Council. The generic amendment was prepared as required by the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act; P.L. 104-297).



In addition to being designated as EFH for various federally managed fishery species, wetlands, and water bottoms in the project area provide nursery and foraging habitats for a variety of economically important marine fishery species such as blue crab, gulf menhaden, spotted sea trout, sand trout, southern flounder, and striped mullet. Some of these species serve as prey for other fish species managed by the Gulf of Mexico Fishery Management Council (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks). Wetlands in the project area also produce nutrients and detritus, important components of the aquatic food web, which contributes to the overall productivity of the Pascagoula Bay estuary.

Under the EFH provisions of the Magnuson-Stevens Act, federal action agencies, such as the USACE and the FRA, are required to conduct an EFH consultation with NMFS. However, the FRA has not initiated an EFH consultation or provided the required EFH assessment at this stage of the federal permitting and authorization process. A complete EFH assessment should include all activities associated with this project and a description of measures taken to avoid, minimize, mitigate, or offset the adverse impacts of the proposed activities on EFH. Avoidance and minimization of direct wetland impacts should be pursued to the greatest extent practicable. The NMFS recommends an alternatives analysis including details on the selection of the footprint alignment, evaluation of other construction methods, and details on the utilization of existing rail lines, bridges, or other alignments be provided. Additionally, unavoidable EFH impacts will require in-kind mitigation. The NMFS is not aware of existing mitigation banks servicing the area providing this credit type. Therefore, a permittee responsible mitigation plan will be required.

Section 305(b)(4)(A) of the Magnuson-Stevens Act requires NMFS to provide EFH conservation recommendations for any federal action or permit which may result in adverse impacts to EFH. Therefore, NMFS recommends the following to ensure the conservation of EFH and associated marine fishery resources:

### **EFH Conservation Recommendations**

1. An alternatives analysis should be developed which accomplishes the project purpose and avoids or minimizes impacts to EFH.
2. A complete EFH assessment should be provided to NMFS including all activities associated with this project and a description of measures taken to avoid, minimize, mitigate, or offset the adverse impacts of the proposed activities on EFH.
3. A mitigation and monitoring plan should be developed which fully compensates for unavoidable impacts to EFH. The mitigation plan should be presented to NMFS for review. Should a permit be issued for this project, it should require the implementation of the mitigation plan concurrent with the construction of the development.



Consistent with Section 305(b)(4)(B) of the Magnuson-Stevens Act and NMFS' implementing regulation at 50 CFR 600.920(k), your office is required to provide a written response to our EFH conservation recommendations within 30 days of receipt. Your response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the proposed activity. If your response is inconsistent with our EFH conservation recommendations, you must provide a substantive discussion justifying the reasons for not implementing the recommendations. If it is not possible to provide a substantive response within 30 days, the Mobile District should provide an interim response to NMFS, to be followed by the detailed response. The detailed response should be provided in a manner to ensure that it is received by NMFS at least 10 days prior to the final approval of the action.

Thank you for your consideration of these comments. If you wish to discuss this project, further or have questions concerning our recommendations, please contact January Murray at (225) 380-0089, or by email at [January.Murray@noaa.gov](mailto:January.Murray@noaa.gov).

Sincerely,



Virginia M. Fay  
Assistant Regional Administrator  
Habitat Conservation Division

c:  
USACE, Mobile, Villarreal  
FRA, Murphy  
FWS, Jackson, Necaise  
F/SER46, Swafford  
F/SER4, Dale  
Files



STATE OF MISSISSIPPI  
TATE REEVES  
GOVERNOR  
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY  
CHRIS WELLS, EXECUTIVE DIRECTOR

January 27, 2021

Sandy Feathers  
Jackson County Port Authority, MPITC Rail Line  
PO BOX 70  
Pascagoula, MS 39568

Re: Jackson County Port Authority, MPITC Rail  
Line  
Jackson County  
COE No. SAM202100025RCV  
WQC No. WQC2021002

Dear Mr. Feathers:

This letter is to acknowledge receipt of the public notice relating to your 401 Water Quality Certification Request on 01/20/2021. Within thirty days after the date of receipt of the public notice, you will be notified of the major components required to complete the processing of your certification request.

If any of these actions involve construction activities, please notify us of your projected schedule for commencement of construction and completion of construction.

If you have any questions regarding the application or the permitting process, please contact Florance Bass at (601) 961-5171.

Sincerely,

Renee Smith  
Environmental Permits Division

cc: Rudolph Villarreal

75594 WQC20210001



# COMPTON ENGINEERING, INC.

ENGINEERING, SURVEYING & ENVIRONMENTAL SERVICES

156 Nixon Street  
Biloxi, MS 39530

Phone: 228.432.2133  
Fax: 228.432.8149

comptonengineering.com

March 10, 2021

Mr. Rudolph Villareal  
Department of the Army  
Mobile District, Corps of Engineers  
P.O. Box 2288  
Mobile, AL 36628-0001

Re: Jackson County Port Authority – North Rail Connector Rail Line, Moss Point, MS  
Response to comments letter dated February 25, 2021  
SAM-2021-00025-RCV

Dear Mr. Villareal:

This letter is in response to the comment letter dated February 25, 2021, regarding additional information needed for further evaluation of the permit application for the North Rail Connector project.

- A) State when the FRA will initiate a consultation on Essential Fish Habitat with the National Marine Fisheries – Habitat Conservation Division.

Response: FRA and JCPA submitted a letter to NMFS on March 8, 2021 requesting consultation on Essential Fish Habitat. The letter concluded that the project was not likely to adversely effect EFH and requested concurrence or a request for additional information within 30 days.

- B) State when a Cultural Resources Survey will be conducted, if any.

Response: A Cultural Resources Survey was contracted for in December 2020 and field work was conducted in January 2021. We are currently waiting for the final report to be submitted. The Cobb Institute of Archaeology is completing the report. They have indicated that they will be recommending project concurrence.

- C) Please provide this office with an alternative analysis which quantitatively reflects the relocation of the project as a new permit under SAM-2021-00025.

Response: Please see the attached Alternative Analysis. (Attachment 1)

- D) Please provide an absent Appendix D which shows the location of all alternative sites.

Please see the attached drawings. (Attachment 2)

- E) Please provide any updates on the stormwater and drainage plan that you have provided the Mississippi Department of Environmental Quality during your pre-filing meeting.

PASCAGOULA

BILOXI

BAY ST. LOUIS

Response: During the pre-filing meeting, MDEQ requested a copy of the SWPPP and SCNOI which were provided on December 14, 2020. A copy of the SWPPP and SCNOI are attached for your review. We have requested WQC in accordance with the 401 WQC regulations and MDEQ has indicated we will receive the approval shortly. (Attachment 3)

F) Please provide a new Hydrogeomorphic data set for the new mitigation plan.

Response: Please see the attached Draft Permittee Responsible Mitigation Plan that includes the updated Hydrogeomorphic Data Set. (Attachment 4)

G) Please submit a new conservation easement for review which reflects the new mitigation plan.

Response: We will submit a new draft conservation easement when the mitigation area is approved.

Please let me know if you have any questions or need any additional information.

Sincerely,

COMPTON ENGINEERING, INC.



Lisa D. Morrison, RPG  
Senior Geologist

LDM/cf

Attachments

cc: Amanda Murphy, Federal Railroad Administration

## ATTACHMENTS

Attachment 1 – Alternative Analysis

Attachment 2 – Maps of Alternative Alignments and Construction Methods (Appendix D from application)

Attachment 3 – SWPPP and SCNOI

Attachment 4 – Draft PRM and Hydrogeomorphic Data Set

## Attachment 1 – Alternative Analysis

## ALTERNATIVES EVALUATION

### Alternate Alignments and Construction Methods

- 1) Existing rail line - JCPA considered using the existing MSE rail line that crosses under Highway 63 and joins the main line at the MSE rail yard on the west side of Highway 63, however, this route includes a tight curve that would not be safe for unit trains (trains that are 50-60 cars long) to travel. This section of rail also is flooded on a frequent basis. Use of this section of rail has been discontinued due to safety considerations. Trains are not permitted to travel on a rail that is under water. The planned rail traffic will need to travel at approximately 20-25 miles per hour in order to make rail use economically advantageous.
- 2) Alternative alignments that avoided marsh - Two alternate alignments (2a and 2b) were considered that established an acceptable radius that would allow the trains to maintain the optimal speed. These alignments required the rail to be added south of the existing MSE rail line and impacted several single family residential properties. In addition, these alignments would pass under a portion of the Highway 63 bridge which would not provide enough vertical clearance for the trains to pass underneath. An acceptable vertical clearance for a main line rail is 22 feet. The two alignments considered only provided 21'7" and 20'7" of clearance.
- 3) Alternative alignment that crossed over marsh, freshwater forest and uplands - The previously permitted alignment includes approximately 3,576 linear feet through marsh and through 1,115 feet of forested wetlands. The rail would cross over 107 feet of uplands. This alignment was proposed to be constructed using an alternative construction method of filling the alignment from the south end working towards the north and using the previously filled area to access further along the alignment, so the areas outside of the fill area will not be impacted. Silt fence would be placed along the project footprint to prevent fill from moving outside of the project area. This alignment impacted 3.73 acres of marsh and 1.16 acres of freshwater forested wetlands for a total of approximately 4.89 acres. This alternative construction method and alignment was permitted, however, additional geotechnical work in the permitted project footprint indicated that subsurface conditions were not suitable for construction on fill. There would need to be two layers of fill on a footprint that was twice as wide as initially designed. This drove up the estimated costs to more than an alternative construction method and alignment.
- 4) An alternative construction method – An alternative construction method utilizing sheet pile was considered. This would involve driving sheet pile along the layout, filling in between the sheet pile and constructing the rail line on top of the fill. This allows a narrower footprint; however, it is a more expensive than filling and involves additional heavy equipment to drive the sheet piles that would damage additional wetlands outside of the rail footprint. Based on the cost and damage from heavy equipment, this option was not selected.

5) Construction of elevated rail in permitted footprint of approximately 4,800 linear feet - Construction of a combination of elevated rail and construction on fill was considered in the permitted alignment. This alternative would reduce the amount of fill discharged into the alignment but construction costs for this length of rail were estimated at approximately \$33 million. In addition, the method for building an elevated railroad at this location could require construction from barges or construction of a temporary access road adjacent to the railroad alignment resulting in additional destruction of the wetland habitat. The area was previously impacted by construction of power lines that cross the area and continues to be impacted by power line maintenance activities and it does not appear that the marsh vegetation has recovered.

6) No Action Alternative - With the No Action alternative, the main rail line would not be relocated and rail traffic would continue through downtown Pascagoula and Moss Point. Traffic congestion would increase as the expected rail traffic increases and the train length increases to as much as 60 to 70 cars for some trains. Air quality would continue to be negatively impacted by idling cars. Freight rail would continue to be congested and lines would not be available for future passenger rail traffic.

7) The Preferred Alternative - The preferred alternative moved the alignment to the west and south of the previously permitted footprint. This allowed for a shorter length over the estuary and included more upland areas. By using partial construction on pilings to elevate the portion of the rail over the marsh the impacts to the habitat were greatly reduced. The proposed alignment includes approximately 2,852 linear feet of elevated rail line over marsh (0.90 acres of impact from fill at the abutments and a small marsh area) and 807 feet of rail on uplands. The cost to construct a shorter length of elevated rail on pilings is also much less than the previously permitted construction on fill. Driving pilings to a stable depth is a more feasible option than filling and compacting on top of sediment. Construction will be from existing rail or from uplands. This combination of elevated rail line, fill, and a modified footprint resulted in an estimated cost of approximately \$15.5 million.



Attachment 2 – Maps of Alternative Alignments and Construction Methods  
(Appendix D from application)







Attachment 3 – SWPPP and SCNOI

# **STORM WATER POLLUTION PREVENTION PLAN**

for

**NORTH RAIL CONNECTOR PROJECT  
MOSS POINT, MISSISSIPPI**

On behalf of

**Jackson County Port Authority  
Pascagoula, MS 39568**

by



**COMPTON ENGINEERING, INC.**  
Engineering, Surveying, and Environmental Services

**1969 Market Street  
Pascagoula, MS 39568  
(228) 762-3970**

**NOVEMBER 2019  
Updated December 2020**

# TABLE OF CONTENTS

1. Mississippi DEQ Small Construction Notice of Intent (SCNOI)
  2. Narrative
    - 2.1. Project and Site Description
      - 2.1.1. Prior to Construction
      - 2.1.2. Following Construction
      - 2.1.3. Soils
      - 2.1.4. Adjacent Properties
  3. Planned Erosion, Sediment and Stormwater Controls
    - 3.1. Vegetative Controls
    - 3.2. Structural Controls
      - 3.2.1 General Construction Activities
      - 3.2.2 Sediment Basin
      - 3.2.3 Temporary Silt Fence
    - 3.3. Post Clearing Erosion Control
    - 3.4 Housekeeping Practices
      - 3.4.1 Temporary Storage and Laydown Areas
      - 3.4.2 Above Ground Storage Tanks/ Fuel Handling Areas
      - 3.4.3 Spill Kit
      - 3.4.4 Non-Stormwater Discharge Management
    - 3.5 Post Construction Control Measures
  4. Implementation Sequence
  5. Maintenance Plan
  6. Sanitary Wastewater
- Attachments
- Figure 1 – Site Location  
Figure 2 – Topographic Map
- Appendix A NRCS Soil Report

1. MISSISSIPPI DEQ SMALL CONSTRUCTION NOTICE OF INTENT (SCNOI)



# Submit only upon request from MDEQ



## SMALL CONSTRUCTION NOTICE OF INTENT (SCNOI)

GENERAL NPDES PERMIT MSR15 \_\_\_\_\_ (Number to be assigned by MDEQ if submitted)

Prior to the commencement of small construction activity (see Small Construction General Permit ACT11, T-27), the owner or operator of a small construction project must complete this form and develop a Storm Water Pollution Prevention Plan (SWPPP) as required by ACT5 of Mississippi's Small Construction General Permit. This SCNOI and SWPPP shall be submitted to the Mississippi Department of Environmental Quality (MDEQ) only upon request from MDEQ; however, the SCNOI and SWPPP must be maintained at the permitted site or locally available in case inspector review is necessary. Attachments with this SCNOI must include: a USGS quad map or copy showing site location (only if required to be submitted to MDEQ) and a Storm Water Pollution Prevention Plan (SWPPP). All questions must be answered - answer "NA" if the question is not applicable.

### PROJECT INFORMATION

<b>OWNER CONTACT PERSON:</b> <u>Mark McAndrews, Port Director</u>	<b>OPERATOR (if different from owner) CONTACT PERSON:</b> _____
<b>OWNER COMPANY NAME:</b> <u>Jackson County Port Authority</u>	<b>OPERATOR COMPANY:</b> _____
<b>OWNER STREET (P.O. BOX):</b> <u>PO Box 70</u>	<b>OPERATOR STREET (P.O. BOX):</b> _____
<b>OWNER CITY:</b> <u>Pascagoula</u>	<b>OPERATOR CITY:</b> _____
<b>STATE:</b> <u>MS</u> <b>ZIP:</b> <u>39568</u>	<b>STATE:</b> _____ <b>ZIP:</b> _____
<b>OWNER PHONE # (INCLUDE AREA CODE):</b> <u>228-762-4041</u>	<b>OPERATOR PHONE # (INCLUDE AREA CODE):</b> _____

**PROJECT NAME:** North Rail Connector

**DESCRIPTION OF CONSTRUCTION ACTIVITY:** Construction of elevated rail and rail on fill

**ACREAGE DISTURBED (to be covered by this permit, area must be less than five (5) acres):** 0.90

**PHYSICAL SITE ADDRESS (if not available, indicate the nearest named road. For linear projects, indicate the beginning of the project and identify all counties the project traverses,):**

**STREET:** north of Elder Street

**CITY:** Moss Point **COUNTY:** Jackson **ZIP:** 39567

**NEAREST NAMED RECEIVING STREAM:** Escatawpa River

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Signature:** Mark L. McAndrews **Date Signed:** 12/11/2020

**Printed Name:** Mark L. McAndrews **Title:** Port Director

\*This application shall be signed according to the Small Construction General Permit, ACT10, T-4, T-5.

## 2. NARRATIVE

### 2.1 Project and Site Description

The Jackson County Port Authority (JCPA) is proposing to construct a new rail line that will extend on the northwest from the existing MSE main line just east of Highway 63 in Moss Point, Mississippi, will cross over estuarine and forested wetlands and will join on the east with existing MSE line that provides access to the Port of Pascagoula east bank facility at Bayou Casotte. The rail is needed to allow MSE to abandon numerous rail crossings in Moss Point and Pascagoula and to transport a product manufactured in Jackson and George Counties to the Port of Pascagoula for shipment.

The length of the rail line through estuarine wetlands is approximately 3,659 total linear feet with approximately 2,952 feet through marsh wetlands, and 807 through uplands. The width of the proposed fill area is approximately 45.5 feet resulting in 39,261 square feet (0.90 acres) of estuarine impacts. There will be approximately 2,649 cubic yards of fill. For construction a laydown yard will be established within the MPITC in an area that was recently used for the same purpose. The laydown yard will be approximately 1 acres in size and is not located within a wetland.

The approximate center point of the proposed new rail line is located at 30.415001 degrees latitude and -88.513679 degrees longitude. The proposed new rail line is located within JCPA owned land and several parcels are currently being assessed for purchase.

The subject property is located in Section 19, Township 7 South, and Range 5 West of Jackson County, MS. A Site Location Map is shown on Figure 1. A topographic map showing the project location is shown on Figure 2.

The total project area is currently unimproved land and marsh. The intent of the control measures prepared herein are to prevent sediment-laden storm water runoff from occurring, to prevent sediment from leaving the site and erosion from taking place on the property.

TMDLs have been established for the Escatawpa River near the proposed project area. These TMDLs are for pH, Toxicity, Biological Oxygen Demand (BOD), fecal coliform and Chlorine. The project involves construction of a railroad partially elevated on piles and partially on a rock fill foundation. No materials will be used that would cause a discharge that would have an impact on the established TMDLs. Best Management Practices (silt fence, turbidity curtains) will be in place to prevent any sediment or run-off from leaving the construction site. A TMDL for mercury is applicable to upstream segments of the Escatawpa River which will not be impacted by the project.

#### 2.1.1 Prior to Construction

The proposed project site includes estuarine wetland, forested wetland and forested uplands. The area is flat with little change in relief across the proposed rail footprint.

### **2.1.2 Following Construction**

The project includes construction of approximately 3,659 linear feet of rail partially on an elevated rail and on approximately 45.5 feet wide rail bed construction on rip rap, geotextile fabric and metal rails.

### **2.1.3 Soils**

The web soil survey identifies the area as Axis mucky sandy clay loam, frequently flooded, the Smithton loam, and the Daleville silt loam. The Axis series consists of deep, very poorly drained, moderately permeable soils that formed in thick loamy marine sediments. These soils are on narrow to broad, level coastal marshes. The water table fluctuates with the tide. Slope is less than 2 percent. The Smithton series consists of very deep, poorly drained, moderately slowly permeable soils that formed in loamy alluvial sediments. These level to nearly level soils are on Pleistocene and younger stream terraces of the Western and Southern Coastal Plains. Slopes are dominantly less than 1 percent, but range to 3 percent. The Daleville series consists of poorly drained soils that formed in loamy marine or fluvial sediment. Permeability is slow. These nearly level soils are on uplands and terraces of the Southern Coastal Plain. They are saturated late in winter and early in spring. Water runs off the surface very slowly. Slopes range from 0 to 2 percent. A copy of the NRCS soil survey map is included in Appendix A.

### **2.1.4 Adjacent Properties**

The surrounding area consists of undeveloped marsh and wetlands to the north and west, upland residential and existing railroad to the south and wooded areas and existing rail line within the Moss Point Industrial and Technology Center (MPITC) to the east.

## **3.0 PLANNED EROSION, SEDIMENT, AND STORMWATER CONTROLS**

### **3.1 Vegetative Controls**

The construction method will include constructing a temporary road and driving piles from heavy equipment for the elevated portion of the project. The fill portion of the project will be constructed by building rail bed from the upland (south) end of the project, filling the rail footprint from already constructed portions of the rail and proceeding along in a fill and construct manner or filling from adjacent uplands. Vegetation will be removed from the upland forested and fresh water forested portion of the rail footprint. Any disturbed areas outside of the rail footprint will be seeded with grass as soon as practicable after grading and construction. If exposed soils are to be left undisturbed for 14 days or more, those soils will be seeded immediately with grass (interpreted to mean one working day). A 50 foot undisturbed vegetated buffer will be maintained around waters of the United States where possible. Where not feasible, structural controls will be used to prevent discharge to

undisturbed areas.

### **3.2 Structural Controls**

Structural controls will be described for specific areas and for specific types of construction activities at the site. A drawing showing the location of sedimentation and erosion controls is included in Appendix B.

#### **3.2.1 General Construction Activities**

A gravel paved road adjacent to the existing rail line in MPTIC will be used as a construction access road to the new rail footprint construction area. A construction entrance and equipment turnaround will be created at the end of the existing gravel access road to prevent damage from the heavy trucks and equipment in the area. This will help to remove sediment from construction vehicles and prevent sediment from leaving the property and onto public roadways. Details of the construction entrance are shown on the attached site plan and detail sheet in Appendix B. A laydown yard will be established in a prior cleared area within the MPTIC. Soil compaction and preservation of top soil will be accomplished by keeping heavy equipment to construction areas and not travelling over non-construction areas. Top soil will be stockpiled to be used in areas to be revegetated after construction. Steep slopes and storm drains are not present on site.

#### **3.2.2 Sediment Basin**

Since this project is a linear project with a fill width of approximately 45.5 feet and length of 3,600 feet, a sediment basin is not required. Most of the project is constructed on pilings.

#### **3.2.3 Temporary Silt Fence**

Temporary silt fence will be placed around the perimeter of the disturbed area to prevent sediment from leaving the site. The fence will be installed and maintained in accordance with specifications set forth in the Mississippi Department of Environmental Quality, "Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, Volume 1, Erosion and Sediment Control Manual, Volume 2, Volume 2 Stormwater Runoff Management Manual, and Volume 3, Appendices: Developing Plans & Designing Best Management Practices published 2011. Silt fence details are shown in Appendix B.

Accumulated sediment will be removed when it has reached  $1/3$  to  $1/2$  the height of the control.

Floating turbidity curtains will be used where needed in the areas of the elevated railway construction.

### **3.3 Post Clearing Erosion Control**

If exposed soils are to be left undisturbed for 14 days or more, those soils will be seeded temporarily with grass immediately, interpreted to mean within one working day.

### **3.4 Housekeeping Practices**

Scheduled equipment maintenance or repair will not be conducted on site. Should unforeseen equipment maintenance or repair be required, and fluids are accidentally released, they will be soaked up and visibly stained soils will be removed and properly disposed. No lubricant or fuel containers will be stored on site. Paints, solvents, fertilizers, chemicals or any other potentially toxic materials will not be stored on site. Waste receptacles will be supplied and regularly maintained at convenient locations throughout the duration of construction. Temporary restroom facilities will be supplied and maintained throughout the construction process. Dust suppression activities will be conducted on a regular basis/as needed on the roads, work areas and construction entrance to prevent windblown dirt/dust from leaving the site.

#### **3.4.1 Temporary Storage and Laydown Yards**

Equipment will be temporarily stored in a temporary construction laydown yard within the MPITC during construction activities. Inspections will be made daily for leaks or spills from heavy equipment. Drip pans will be used when leaks occur and any impacted soil will be cleaned up immediately. Oil stained soil will be placed in appropriate containers and disposed of properly.

#### **3.4.2 Above Ground Storage Tanks/ Fuel Handling Areas**

Fuel storage tanks may be stored on site for heavy equipment use. The AST's will be double walled or will be placed within a bermed area, on visqueen or on concrete to avoid release to the environment.

#### **3.4.3 Spill Kit**

A spill kit will be available on site to address any leaks or spills from heavy equipment or from any fuel storage tanks. The spill kit will also be available to protect from spills that approach storm drains, ditches or inlets.

#### **3.4.4 Non- Stormwater Discharge Management**

There will be no non-stormwater discharges allowed on site during construction activities other than dust control discharges. If necessary during construction, the contractor will spray clean water available from nearby fire hydrants or water trucks, as a dust control measure. The amount sprayed will be managed to prevent any run-off from occurring.

### 3.5 Post Construction Control Measures

Final stabilization will include seeding any non-paved areas within 7 days of construction completion. Silt fences will be left in place until vegetation is 90 percent established.

### 4. IMPLEMENTATION SEQUENCE

1. Obtain plan approval, and all applicable permits.
2. Mark off areas of disturbance and sensitive areas (marsh and other wetlands will be flagged)
3. Hold pre-construction meeting with contractor to review schedule and implementation of erosion control procedures.
4. Build construction entrance.
5. Install silt fencing or sediment traps where necessary.
6. Clear upland and forested wetland footprint of vegetation
7. If construction activities are not to begin within 14 days, cleared areas will be seeded immediately or within the next working day.
8. Construction activities begin.
9. Landscaping and final stabilization.

### 5. MAINTENANCE PLAN

1. All erosion and sediment controls and outfall discharge points will be checked for stability and operation at least once per week (for a minimum of four times per month) and following every runoff-producing rainfall. Any needed repairs will be made "immediately", interpreted to mean within the next working day.
2. Excessive sediment will be removed from in front of the structural BMPs when sediment has reached 1/3 to 1/2 the height of the control. The silt fencing will be replaced or re-seated as necessary.
3. All seeded areas will be fertilized and reseeded as necessary to maintain vigorous, dense vegetation. Where a disturbed area will be left undisturbed for 14 days or longer, vegetative controls will be implemented "immediately", interpreted to mean no later than the next work day.
4. New or additional employees will be acquainted with the plan as necessary.
5. All permanent measures will be monitored at least annually, and maintenance or modification made as needed.
6. Any necessary repair, replacement or supplementation of controls will be completed within 24 hours of noticed failure or as soon as field conditions allow.
7. The weekly inspection forms (Small Construction Forms Package) will be filled out and maintained in accordance with the permit.

### 6. SANITARY WASTEWATER

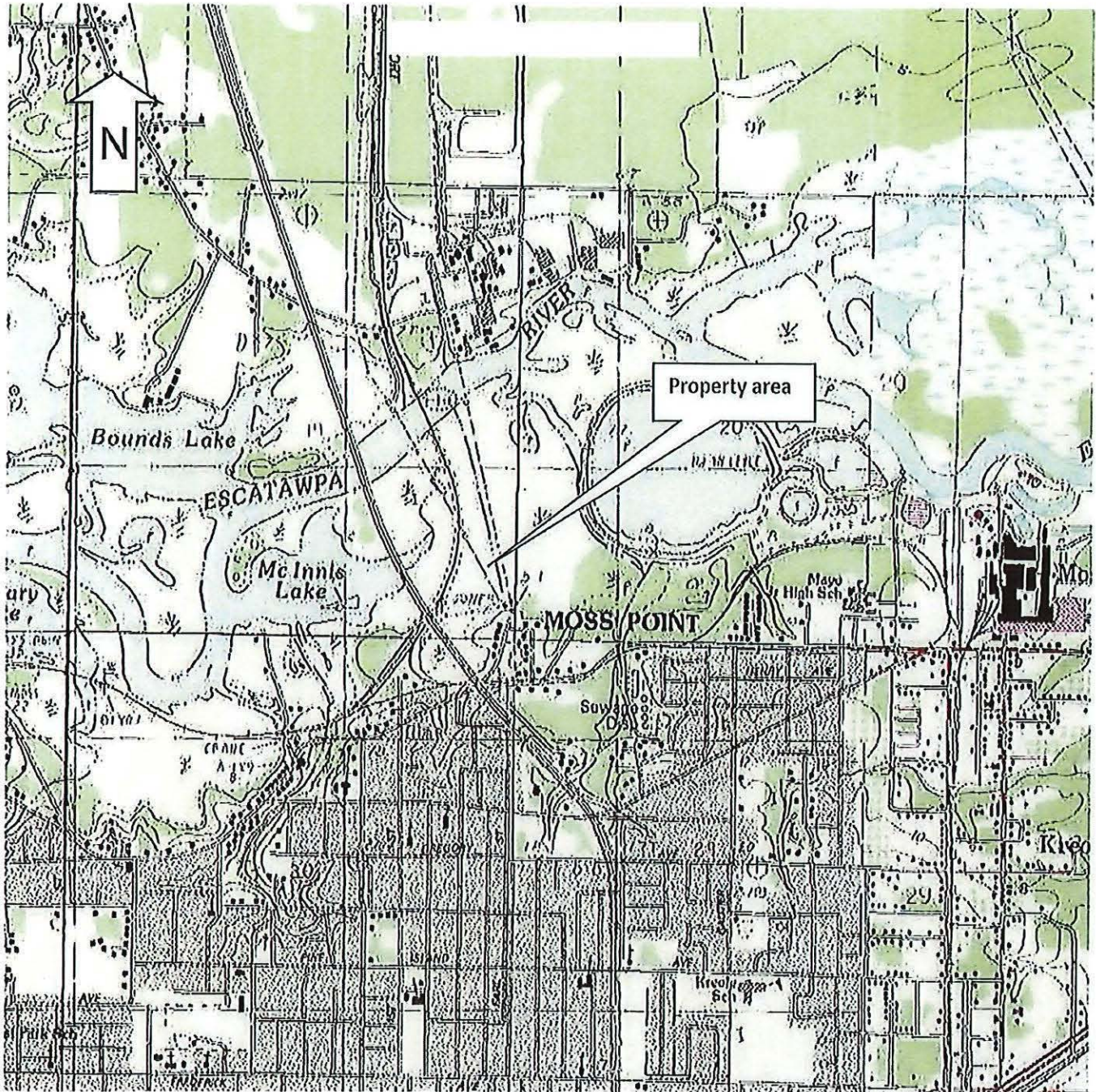
The facility will not have any sanitary sewer discharges. A portable toilet with a holding tank will be used during construction activities.



# Project Location Map Topographic Map







**COMPTON ENGINEERING, INC.**  
 Engineering, Surveying, and Environmental Services  
 156 Nixon Street  
 Diloxi, Mississippi 39530  
 Phone: (220) 432-2193 Fax: (220) 432-0149  
 E-mail: compton@comptonengineering.com

Site: North Rail Project Area  
 Moss Point, Jackson County, MS

Figure Title: Topographic Map (Map Source: USGS, 2012)

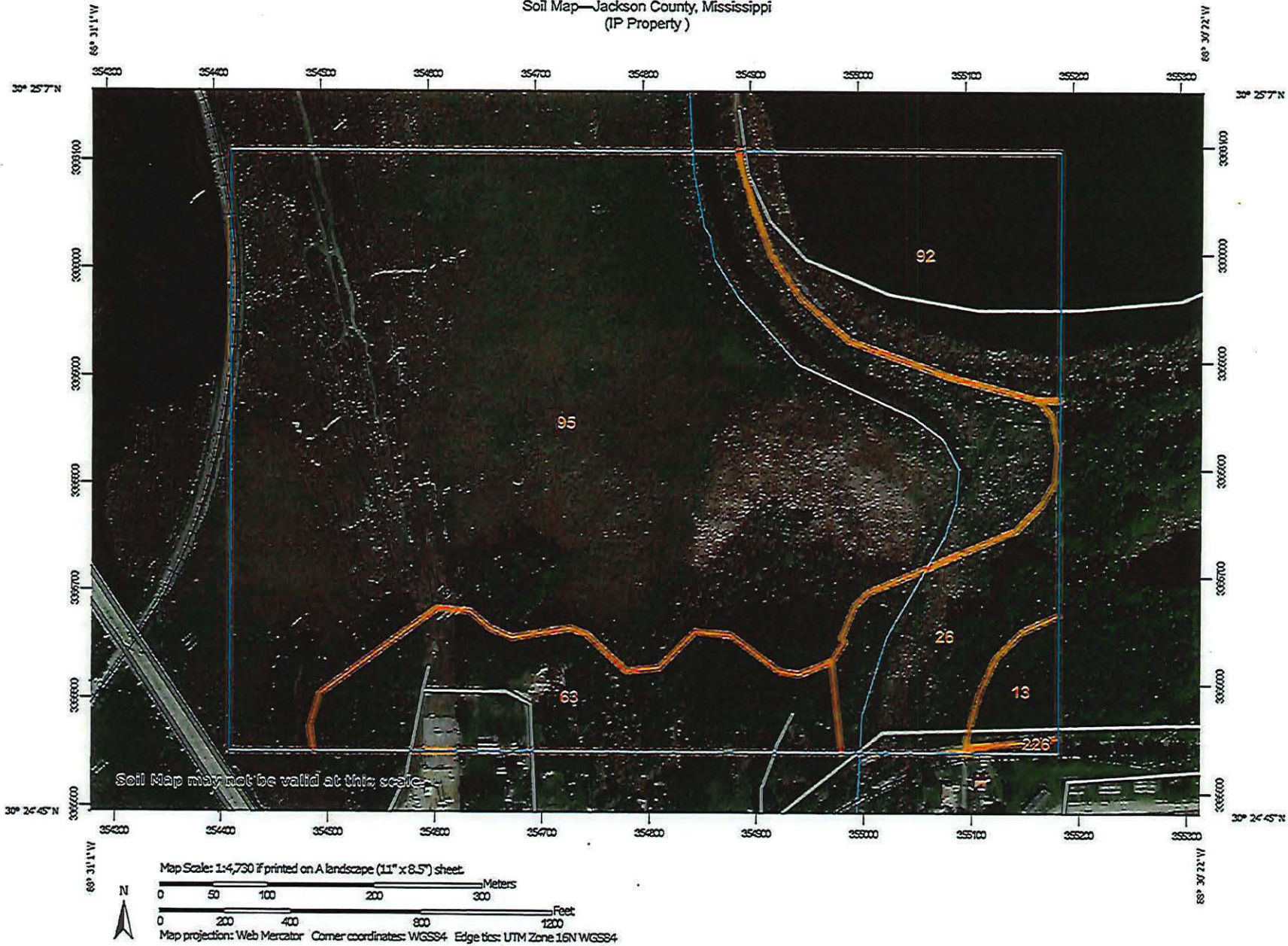
Appendix ID:

A





































# APPENDIX A

## NRCS Soil Survey Map

Soil Map—Jackson County, Mississippi  
(IP Property)



### MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
<b>Soils</b>	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
<b>Special Point Features</b>	 Special Line Features
 Blowout	<b>Water Features</b>
 Borrow Pit	 Streams and Canals
 Clay Spot	<b>Transportation</b>
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	<b>Background</b>
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodie Spot	

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Mississippi  
Survey Area Data: Version 15, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 21, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
13	Daleville silt loam, 0 to 1 percent slopes	1.8	1.7%
26	Smithton loam, 0 to 1 percent slopes, occasionally flooded	7.3	6.9%
63	Stough loam, 0 to 2 percent slopes	11.7	11.0%
92	Water (>40 acres)	13.1	12.2%
95	Axle mucky sandy clay loam, frequently flooded	72.0	68.1%
226	Bayou sandy loam, 0 to 1 percent slopes	0.2	0.2%
<b>Totals for Area of Interest</b>		<b>107.0</b>	<b>100.0%</b>

# APPENDIX B

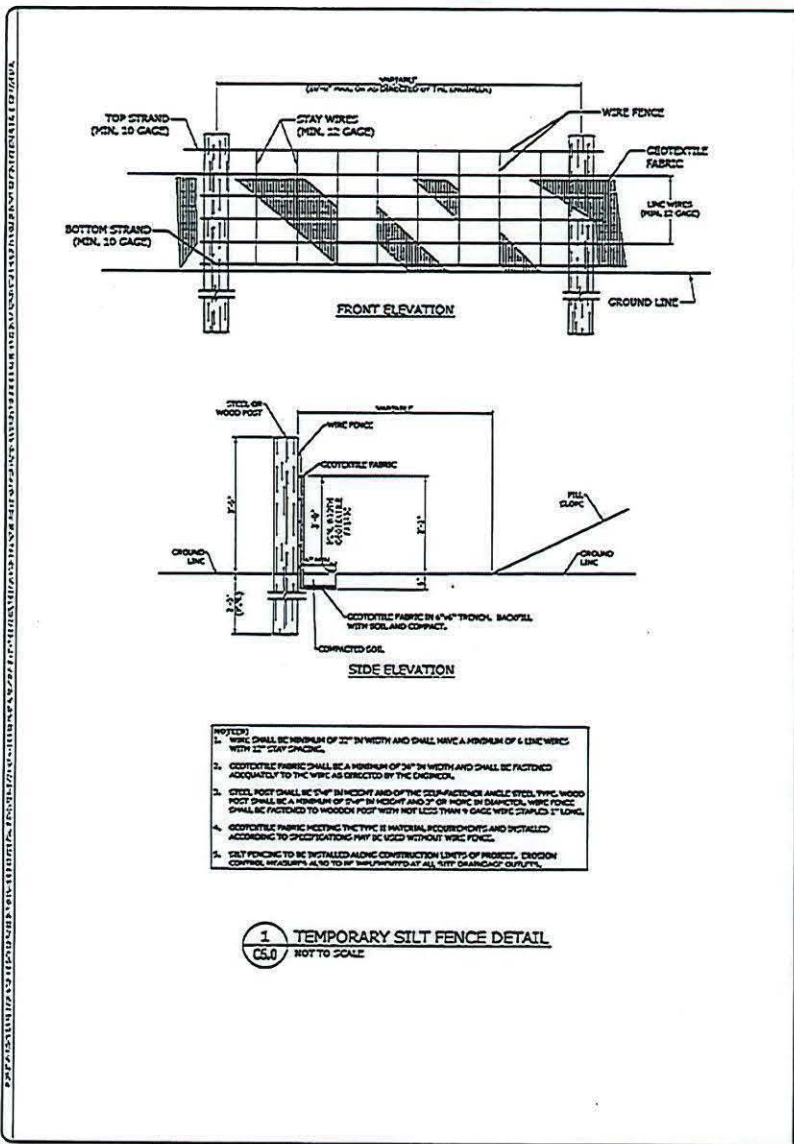
## Sediment and Erosion Controls Construction Entrance Details Silt Fence Details

Appendix B Erosion and Sedimentation Controls, Construction Entrance Details, Silt Fence Details



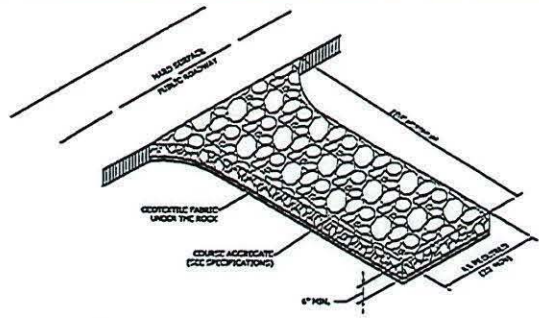


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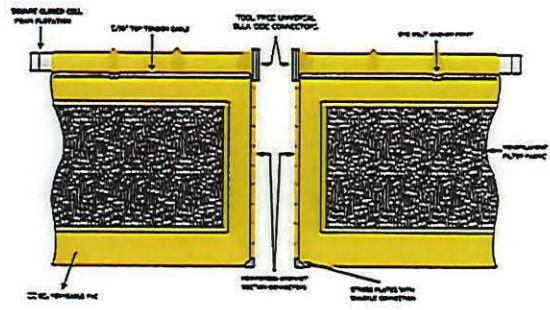
- NOTES**
1. WIRE SHALL BE MINIMUM OF 22" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINC WIPES WITH 12" STAY CHAINS.
  2. GEOTEXTILE FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FACTURED ADEQUATELY TO THE WIRE AS DIRECTED BY THE CHECKED.
  3. STEEL POST SHALL BE 2" X 4" IN HEIGHT AND OF THE CORNER-ANGLE STEEL TYPE. WOOD POST SHALL BE A MINIMUM OF 2" X 4" IN HEIGHT AND 2" OR MORE IN DIAMETER. WIRE FENCE SHALL BE FACTORED TO WOODEN POST WITH NOT LESS THAN 4 GAGE WIRE STAPLED 1" LONG.
  4. GEOTEXTILE FABRIC MEETING THE TYPE II MATERIAL REQUIREMENTS AND INSTALLED ACCORDING TO SPECIFICATIONS MAY BE USED WITHOUT WIRE FENCE.
  5. SILT FENCING TO BE INSTALLED ALONG CONSTRUCTION LIMITS OF PROJECT. EROSION CONTROL MEASURES ALSO TO BE IMPLEMENTED AT ALL CITY DRAINAGE OUTFALLS.

**1** TEMPORARY SILT FENCE DETAIL  
C6.0 NOT TO SCALE



- NOTES**
1. THE AREA OF THE CONSTRUCTION ENTRANCE SHALL BE DIMENSIONED 6 INCHES DEEP, 28 FEET LONG AND SHALL EXTEND THE FULL WIDTH OF ANY VERTICAL DRAGS (MINIMUM 28 FEET) LOCATED ON THE SITE.
  2. THE ENTRANCE SHALL BE PROPERLY MAINTAINED FOR THE DURATION OF THE PROJECT TO PREVENT THE TRACKING OF SEDIMENT ONTO PUBLIC SIDEWALKS. ALL MAINTENANCE AND REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
  3. THE ENTRANCE SHALL BE CHECKED ON A DAILY BASIS AND REPAIRS & LATER ANY DAMAGE EXIST FOR ANY DAMAGES. ANY DAMAGES FOUND SHALL BE REPAIRED BEFORE THE DAYS END AT NO ADDITIONAL COST TO THE OWNER.
  4. THE ENTRANCE SHALL BE PROPERLY CHAINED TO PREVENT THE FLOW OF SEDIMENT ONTO PUBLIC SIDEWALKS. ALL MATERIALS SPILLED, DEBRIS, WASTE OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO DRAIN DRAINS SHALL BE REMOVED IMMEDIATELY.
  5. MEASURES SHALL BE TAKEN TO PREVENT VEHICULAR TRAFFIC FROM BRAGGING THE CONSTRUCTION ENTRANCE DURING NIGHTS AND HOLIDAYS.

**2** TEMPORARY CONSTRUCTION ACCESS / EGRESS  
C6.0 NOT TO SCALE



**3** TYPE 2 TURBIDITY CURTAIN DETAIL  
C6.0 NOT TO SCALE

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**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
 EROSION CONTROL DETAILS

DATE: AS NOTED

DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE

C6.0





Attachment 4 – Draft PRM and Hydrogeomorphic Data Set

**DRAFT**  
**PERMITTEE-RESPONSIBLE MITIGATION (PRM)**  
**MITIGATION PLAN**

**Jackson County Port Authority**  
**North Rail Connector**  
**Moss Point, Mississippi**

Prepared For

**Jackson County Port Authority**  
PO Box 70  
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Prepared By



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MARCH 2021

CE Project No. 218-051

## TABLE OF CONTENTS

INTRODUCTION .....	2
1.0 PROJECT DESCRIPTION/OBJECTIVES.....	2
2.0 PROPOSED MITIGATION SITE/SITE SELECTION.....	3
3.0 SITE PROTECTION INSTRUMENT .....	3
4.0 BASELINE INFORMATION .....	3
5.1 IMPACT SITE .....	5
5.2 MITIGATION SITE .....	6
5.0 DETERMINATION OF CREDITS.....	7
6.0 MITIGATION WORK PLAN.....	7
7.0 MAINTENANCE PLAN.....	7
8.0 PERFORMANCE STANDARDS.....	7
9.0 MONITORING REQUIREMENTS.....	8
10.0 LONG TERM MANAGEMENT PLAN.....	8
11.0 ADAPTIVE MANAGEMENT PLAN.....	8
12.0 FINANCIAL ASSURANCES .....	8

### FIGURES

Figure 1	Site Location Map
Figure 2	Rail Layout and Wetland Impacts at Project Site
Figure 3	Proposed Mitigation Area

### Appendices

Appendix A – Wetland Delineation Report
Appendix B - Detailed Work Plan
Appendix C – HGM Worksheets

## INTRODUCTION

This Draft Permittee Responsible Mitigation Plan is for the modified layout area for the North Rail Connector in Jackson County, Mississippi. The rail layout is in the same general location as the permitted rail (SAM-2018-00124-RCV) but has been modified to impact less square footage of marsh wetlands and the construction method has been modified from mostly fill (4.79 acres of impact) to mostly elevated rail on pilings (0.90 acres of impact).

JCPA proposes to construct a rail line to connect an existing rail owned by Mississippi Export Railroad (MSE) that crosses over the Escatawpa River in Moss Point, Mississippi to an existing JCPA-owned rail line that crosses through the Moss Point Industrial and Technology Complex and provides access to the Port of Pascagoula, Bayou Casotte Harbor (the Proposed Project). The Proposed Project, referred to as the North Rail Connector, would be approximately 3,659 linear feet with 2,852 feet of elevated rail and 807 feet of rail constructed on fill or existing uplands. There would be approximately 2,649 cubic yards of fill at the pile abutments for the elevated rail and in an area of estuarine wetlands. Approximately 0.90 acres of wetlands will be filled associated with the project. An existing grade crossing on Orange Grove Road would be relocated approximately 50 feet to the west to allow for the curve needed to accommodate the train lengths and speed. The existing MSE rail at the west end would need to be adjusted to allow insertion of a turn out to join with the new elevated rail line. For construction, a laydown yard would be established within the MPITC in an area that was recently used for the same purpose. The laydown yard would be approximately 1 acre in size and not located within a wetland.

The purpose of the Proposed Project is to provide additional railroad capacity and connectivity between existing infrastructure to support the growing needs of the Port of Pascagoula, Bayou Casotte Harbor. Currently, freight trains that travel from the north on the MSE line must pass through downtown Moss Point and Pascagoula to the Pascagoula Interchange to join CSX rail. This operation regularly blocks vehicular traffic and creates delays at four major roadway intersections. Also, the curve alignment from the existing MSE line entering into the Moss Point Industrial and Technology Complex (MPITC) is too tight for the expected length of train to travel through that area safely. The Proposed Project is needed to remove operational conflicts between railroads, reduce congestion, and accommodate the proposed restoration of passenger rail service. The proposed layout of the new rail was determined by the requirements for clearance, maintaining speed of the trains, reducing impact to privately owned residential properties, and reducing the length of rail through wetlands.

The proposed project will fill approximately 39,261 square feet (0.9 acres) of jurisdictional wetlands. This mitigation plan is for creation of wetlands on parcels owned by Jackson County Port Authority that are adjacent or near to the proposed new rail line



impacts. This draft mitigation plan includes the twelve components outlined in 33 CFR 332.4(c)/40 CFR 230.92.4(c).

## 1.0 PROJECT DESCRIPTION/ OBJECTIVES

The proposed rail line is located in Jackson County on parcels 754.20-003.0004.00, 754.20-003.0008.00, 754.20-003.0010.00, 754.20-003.0011 and 754.20-03.0012.00. The approximate center point of the proposed new rail line is located at 30.415546 degrees latitude and -88.514452 degrees longitude. The proposed new rail line is bordered on the north and east by Secretary of State owned property and crosses privately owned property that Mississippi Export Railroad is currently in negotiations with to obtain right of way easements.

The subject property is located in Section 19, Township 7 South, and Range 5 West of Jackson County, MS. A Site Location Map is shown on **Figure 1**.

JCPA proposes to construct a total of approximately 3,659 linear feet of rail line combined in an elevated rail and rail constructed on fill. There will be approximately 2,852 linear feet of rail over marsh and 807 feet constructed on uplands. Impacts to marsh will be limited to fill at the abutments to the elevated sections. One section of wetland approximately 413 feet long by 15 feet wide will be filled for continuity of construction methods between sections built on uplands. This will total approximately 39,261 square feet (0.90 acres) of fill in wetlands. A wetland delineation was conducted along the proposed rail line layout to determine the location of marsh and forested wetlands or uplands. A copy of the Wetland Delineation Report is included in **Appendix A**. A drawing showing the proposed rail layout and the areas of impact is shown on **Figure 2**.

## 2.0 PROPOSED MITIGATION SITE/SITE SELECTION

The JCPA has already purchased mitigation credits for the proposed impacts to the forested wetlands associated with the permitted layout. There will be no forested wetland impacts and these credits cannot be used. The impacts to the marsh wetlands will be mitigated for by creation of marsh wetlands nearby. This creation proposal was chosen based on the location of the proposed mitigation area adjacent to the proposed rail line, the likelihood of success and ability to maintain the improvements over time. The adjacent and nearby marsh vegetation has already been impacted by industrial activity (the marsh is crossed by power lines and several power line towers are located within the marsh. These structures have to be maintained on a regular basis and the marsh has been damaged by marsh buggies, boats, or other equipment to provide access to the power line). It appears that any restoration or enhancement of the marsh

vegetation would be subject to future damage. Therefore, enhancement/restoration of the existing damaged marsh wetland was not chosen during site selection. The proposed mitigation area was evaluated to ensure that there was enough upland acreage that could be graded to the appropriate elevation that would allow marsh vegetation to grow. Based on field surveys of the area, approximately four acres were identified as available for mitigation activities.

The proposed mitigation area is located on the same parcels of land that the rail line will be located. The proposed mitigation area is optimal based on the following factors:

1. The existing marsh interfaces well defined uplands that belong to the project's owner.
2. The upland is easily accessible from a lightly traveled paved road allowing for easy ingress of trucks and machinery.
3. The upland is somewhat degraded due to the presence of invasive exotic plants such as Tallow, Privet, and Camphor.
4. The site can be worked completely from the upland side eliminating disturbance to existing wetlands.
5. Plenty of nearby commercial dirt pits to handle the fill once removed.

JCPA proposes to forestry mulch the entire upland area that is going to be converted. The vegetation will be cut all the way down to existing grade. Beginning at the wetland upland interface the upland will be graded using an excavator to remove approximately +/- 3ft of material. The vegetation and soil will be removed from the project area. The final elevation will be graded to match that of the existing tidal marsh and its tributaries. Slight variations will be maintained to accommodate different plant species. BMPs to protect water quality will be installed and maintained for the project's duration. Plants that will be installed after grading will be the same as those that already exist such as Smooth Cord Grass, Saw Grass, Black Needle Rush, Salt Grass, Marsh Hay, Cattails, and a few Bald Cypress along the shore. A detailed work plan for marsh creation is attached in **Appendix B** of this plan.

A map showing the proposed acres to be converted from uplands to marsh is shown on **Figure 3**.

### **3.0 SITE PROTECTION INSTRUMENT**

The mitigation area will be legally described and recorded as a conservation easement to remain as a natural area and prevent clearing or industrial development.

#### 4.0 BASELINE INFORMATION

The objective of the permittee responsible mitigation is to provide compensation for impacts to 39,261 square feet (0.90 acres) of fresh water emergent wetlands. The impact site and mitigation site are both located in the Gulf Coast Flatwoods region of the Southern Coastal Plain. The Southern Coastal Plain extends from South Carolina and Georgia through much of central Florida, and along the Gulf Coast lowlands of the Florida Panhandle, Alabama, and Mississippi. From a national perspective, it appears to be mostly flat plains, but it is a heterogeneous region containing barrier islands, coastal lagoons, tidal marsh, and swampy lowlands along the Gulf and Atlantic coasts. The Coastal plain was once covered by a variety of forest communities that included trees of longleaf pine (*Pinus palustris*), slash pine (*P. elliotii*), pond pine (*P. serotina*), beech (*Fagus grandifolia*), sweetgum (*Liquidambar styraciflua*), southern magnolia (*Magnolia grandiflora*), white oak (*Quercus alba*), and laurel oak (*Q. laurifolia*). Land cover in the region is now mostly slash and loblolly pine with oak-gum-cypress forest in some low-lying areas, citrus groves in Florida, pasture for beef cattle, and urban.

In Mississippi, the Gulf Coast Flatwoods is a narrow region of nearly level terraces and delta deposits composed of Quaternary-age sands and clays. Wet, sandy flats and broad depressions that are locally swampy are now usually forested or in pine plantations, while some of the better-drained land has been cleared for pasture or crops. Dominant land uses include woodland, wildlife habitat, and urban. Historically, pine savannas with slash and longleaf pine (*Pinus elliotii*, *P. palustris*) and a variety of grasses, sedges, rushes, pitcher plants and orchids were common. A high natural fire frequency was typical, often sparked by lightning and fueled by wiregrass (*Aristida* spp.) that maintained the more open savannas.

Ecoregions of the southeast also share other features, including: a high percentage of land area in wetlands, a dominant role of frequent fire over the majority of the landscape, a diversity of river and stream systems, limited but important karst areas, diverse estuarine and tidal systems, and significant large scale disturbance events, such as hurricanes. The area is characterized by a warm to hot, humid, maritime climate.

In North America, the Gulf Coastal Plain ecoregion is one of the true hotspots of biodiversity and endemism. Part of the reason for this is that the ecoregion has never been glaciated and has been continuously occupied by plants and animals since the Cretaceous, giving ample time for the evolution of narrow endemic species. Many species, particularly vascular plants, reptiles, amphibians, and fishes occur only in this ecoregion, and many of those are even more narrowly limited within the ecoregion.

The dominant ecological drivers of the terrestrial systems are soils (texture and chemistry), fire frequency, and hydrology. Habitats in the Gulf Coastal Plain include barrier island systems with annual-dominated beaches, maritime grasslands and scrub, maritime shrub hammocks, and evergreen forests (both broadleaf and needleleaf). These grade through salt marshes to productive estuaries. Inland, longleaf pine woodlands are dominant over most of the landscape, on upland and wetland sites and a wide variety of soils.

#### **4.1 Baseline – Impact Site**

Approximately 0.90 acres of wetlands will be permanently filled for the rail line. The wetlands are mapped on the National Wetlands Inventory Map for the Pascagoula North quadrangle as E2EM1Pd, which is described as estuarine, intertidal, emergent, persistent, irregularly flooded, partially drained (modified by ditches). This type of wetland comprises approximately 76 percent of the project area. Other types of wetlands near the project area include PFo4B (palustrine, forested, needle leaved evergreen, seasonally saturated), PSS3/1Rd (Palustrine, scrub-shrub, broad leaved evergreen, broad leaved deciduous, seasonally flooded, partially drained/ditched) which make up the nearby forested wetlands.

According to the FEMA flood map the property is in zone AE with base flood elevation of 10-11 feet which is within the 100 year flood plain (subject to inundation by the 1% annual chance flood). Hydric soil determination was based on confirmation of field indicators of hydric soils, as defined in *Field Indicators of Hydric Soils in the United States, Version 5.0* (NRCS 2002).

#### **4.2 Baseline Proposed Mitigation Site**

The proposed mitigation area includes forested uplands that are adjacent to the project area. The mitigation site provides habitat for small and medium sized mammals (raccoon, opossum, armadillo), reptiles, amphibians, and aquatic species (crayfish). The understory is densely overgrown with Chinese privet (*Triadica ligustrum*).

The proposed mitigation site is owned by Jackson County. The soils in the mitigation area are mapped as the Daleville silt loam, 0-1 percent slopes. The Daleville series consists of poorly drained soils that formed in loamy marine or fluvial sediment. Permeability is slow. These nearly level soils are on uplands and terraces of the Southern Coastal Plain. They are saturated late in winter and early in spring. Water runs off the surface very slowly. Slopes range from 0 to 1 percent. The proposed mitigation

area has been modified in elevation by placement of spoil material from excavation of the nearby drainage ditches. This has modified the hydrology and soil characteristics.

The proposed mitigation site has not been previously developed and is not currently occupied. If the property is not placed in a conservation easement, the potential exists for it to eventually be developed as part of the Moss Point Industrial Technology Center. The mitigation area exists near the railroad line. Given the proximity of multiple modes of transportation surrounding the mitigation site, it would be a prime area for development.

Although the proposed mitigation site is near the rail line, it is important to wildlife in the area as it provides a safe corridor for travel between other forested and wetland habitats within the MPITC. Converting the mitigation site into marsh wetland will replace habitat that is lost to filling for the rail line. The marsh will perform the functions of nursery for fish and crustaceans, shelter for birds and aquatic organisms and food for birds, mammals, reptiles, amphibians, and fish. Wildlife in the area will continue to nest, roost and breed in the area.

The impact area for the permitted rail line and the proposed marsh creation area were evaluated using the Hydrogeomorphic method to determine if the proposed marsh creation would sufficiently account for the impacts to the marsh by the proposed rail line. Results of the HGM evaluation indicate that the filling of wetlands in the impact area would result in a loss of 0.32 Functional Capacity Units (FCU) and the marsh creation area will result in a lift of 0.32 FCUs. This indicates that a ratio of 1:1 would be sufficient to mitigate for the loss as a result of the proposed project. A copy of the HGM worksheets is attached in **Appendix C**.

## **5.0 DETERMINATION OF CREDITS**

The JCPA previously purchased mitigation credits for the impacts to the forested wetlands associated with the permitted layout and to create wetlands in the surrounding area as mitigation for impacts to the marsh wetlands (since no credits are available for marsh mitigation). Since the impacts to the forested wetlands have been eliminated, the credit purchase is no longer needed. (JCPA will be working with the Corps and Wetland Solutions for a credit or refund for this prior purchase.) Since there are no credits available for purchase for marsh vegetation impacts, JCPA will conduct permittee responsible mitigation by creating marsh wetland from forested uplands at a ratio of 1:1 resulting in no net loss of wetlands as a result of the project.

## **6.0 MITIGATION WORK PLAN**

Improvement and management activities will be conducted by the Jackson County Port Authority. The mitigation area is located on the same parcels of land that the rail line will be located. JCPA proposes to forestry mulch the entire upland area that is going to be converted. The vegetation will be cut all the way down to existing grade. Beginning at the wetland upland interface the upland will be graded using an excavator to remove approximately +/- 3ft of material. The vegetation and soil will be removed from the project area. The final elevation will be graded to match that of the existing tidal marsh and its tributaries. Slight variations will be maintained to accommodate different plant species. BMPs to protect water quality will be installed and maintained for the project's duration. Plants that will be installed after grading will be the same as those that already exist such as Smooth Cord Grass, Saw Grass, Black Needle Rush, Salt Grass, Marsh Hay, Cattails and a few Bald Cypress along the shore. The detailed work plan is attached in Appendix A.

## **7.0 MAINTENANCE PLAN**

It will be the responsibility of the JCPA to conduct any required maintenance of the mitigation site. JCPA will contract with a qualified contractor to conduct annual maintenance activities for a period of five years. Invasive species will be removed during the annual maintenance activities.

## **8.0 PERFORMANCE STANDARDS**

Performance standards are observable or measurable attributes that can be used to determine if a compensatory mitigation project meets its objectives. Success of the management activities will be evaluated through the first five years with respect to hydrology and percent cover. Hydrology must meet the wetland definition of 1987 Corps of Engineers Wetland Manual, with saturation to the surface of the soil for 12.5% (31 days) of the growing season; and with aerial cover of at least 50% consisting of the planted species in emergent wetland areas.

## **9.0 MONITORING REQUIREMENTS**

It is anticipated that the JCPA will conduct annual monitoring of the mitigation area for five years. The first year will include two inspections and two reports. The goal of the annual monitoring will be to assess continued survival of the planted species and to remove any invasive species. Any regrowth of popcorn trees, Chinese privet or other invasive or noxious species will be removed. In addition to evaluation of the entire 0.9 acres for plant survival, monitoring plots will be established. These monitoring plots will be approximately 0.010 acres randomized circular plots and cover a total of

approximately 3,900 square feet (10% of the mitigation area). Annual monitoring reports will be submitted to the Corps of Engineers, Mobile District.

The annual report shall include, at a minimum, the following:

- A. A US Geological Survey topographic map with the track indicated.
- B. A detailed narrative that summarized the condition of the tract and all regular maintenance activities.
- C. Appropriate site maps that show the locations of sampling plots, permanent photographic stations, sampling transects, etc.
- D. Results of vegetation surveys.
- E. Monitoring Reports to be disseminated to:  
US Army Corps of Engineers  
Mobile District  
Regulatory Branch  
P.O. Box 2288  
Mobile, Alabama 36628

#### **10.0 LONG TERM MANAGEMENT PLAN**

Long term management of the property will be the responsibility of the JCPA. JCPA will continue to monitor the mitigation area after the performance standards have been achieved. Any growth of the invasive species will be managed as needed; however, reports will not be submitted.

#### **11.0 ADAPTIVE MANAGEMENT PLAN**

The JCPA will use adaptive management strategies to maintain the quality of wetlands at the mitigation site. Monitoring in an adaptive management context focuses on early identification of undesirable trends and provides the guidance, through an experimental construct, necessary to determine the appropriate remedial action to reverse an undesirable situation or trend. After the second annual monitoring report, the planted species survival should be 50%. If planted species have not reached the two year survival rate the need for additional plants will be evaluated. By year three the area should match the percent cover that exists in the reference site (adjacent brackish estuarine marsh). If by year three the planted species do not match the reference site cover, JCPA will evaluate the need for additional planting. The need for adaptive management will be evaluated in conjunction with input from the Corps of Engineers.

## 12.0 FINANCIAL ASSURANCES

JCPA has purchased a \$50,000 Performance Bond for the project to provide funds for remediation of the mitigation area if the success criteria are not met. JCPA has long been a good environmental steward of the properties that it owns and is responsible for and has conducted long term management of several properties with conservation easements, deed restrictions, memorandum of agreement or other protective documents.



## References

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Robert W. Lichvar and John T. Kartesz. 2009. North American Digital Flora: National Wetland Plant List, version 2.4.0 ([https://wetland\\_plants.usace.army.mil](https://wetland_plants.usace.army.mil)). U.S. Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH, and BONAP, Chapel Hill, NC. accessed [1/15/2019].

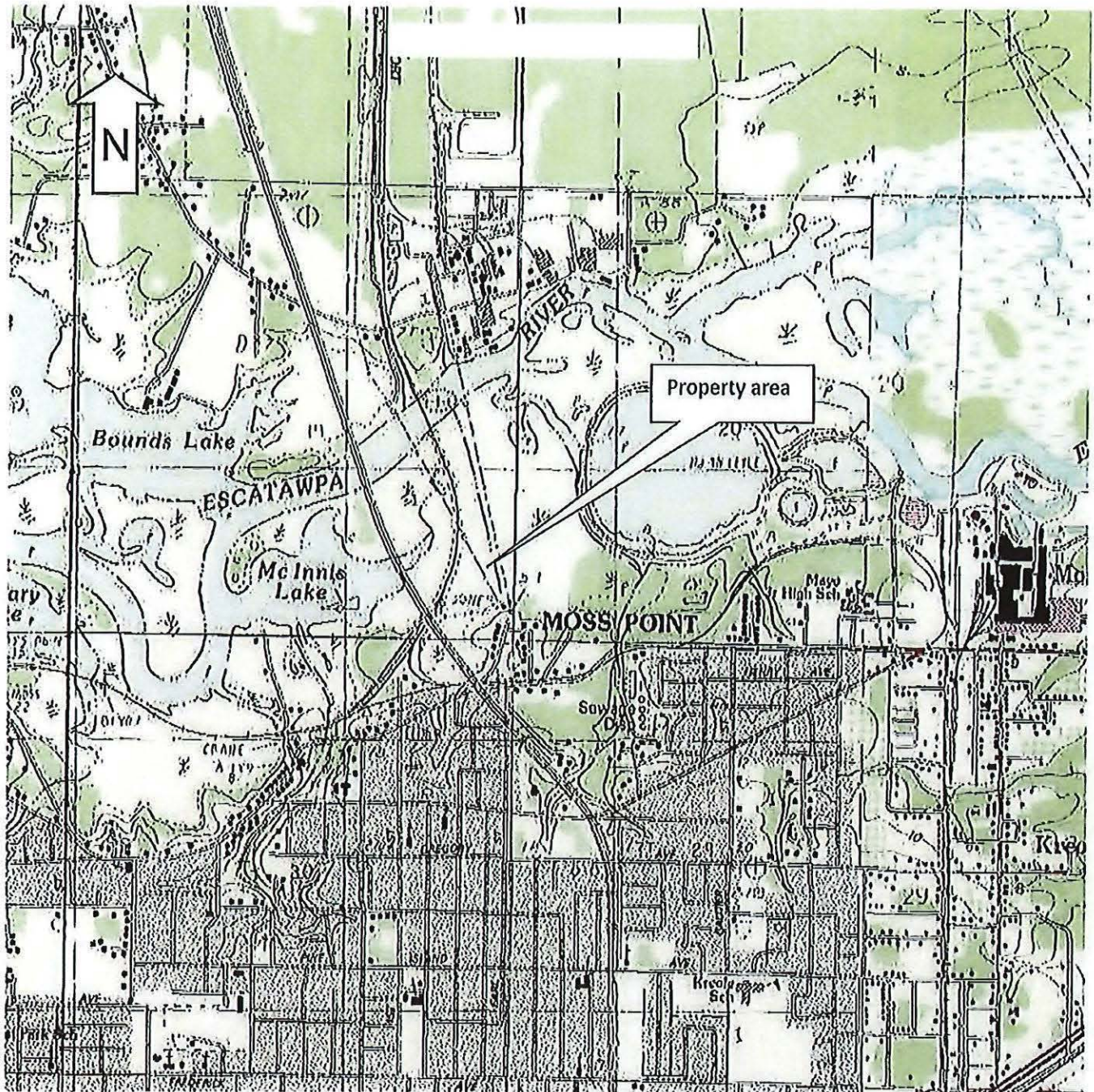
U. S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USDA, Natural Resources Conservation Service. 2010. *Field Indicators of Hydric Soils in the United States*, Version 7.0. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Wunderlin, R. P., and B. F. Hansen. 2008. *Atlas of Florida Vascular Plants* (<http://www.plantatlas.usf.edu>). [S. M. Landry and K. N. Campbell (application development), Florida Center for Community Design and Research.] Institute for Systematic Botany, University of South Florida, Tampa.

## FIGURES

**Figure 1 Site Location Map**



**COMPTON ENGINEERING, INC.**  
 Engineering, Surveying, and Environmental Services  
 156 Nixon Street  
 Biloxi, Mississippi 39530  
 Phone: (228) 432-2133 Fax: (228) 432-0149  
 E-mail: [compton@comptonengineering.com](mailto:compton@comptonengineering.com)

Site: North Rall Project Area  
 Moss Point, Jackson County, MS

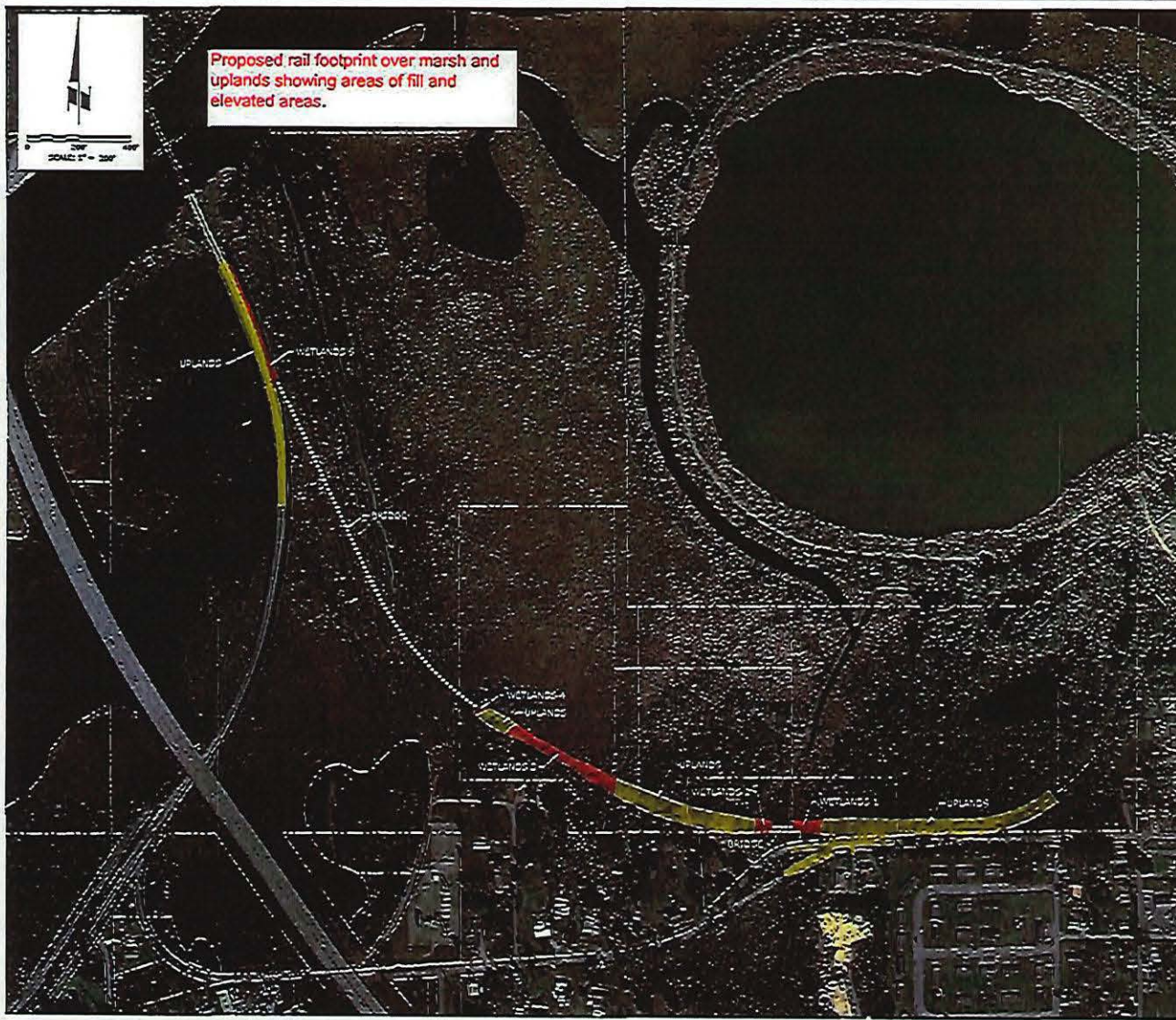
Figure Title: **Topographic Map** (Map Source: USGS, 2012)

Appendix ID:  
 A

**Figure 2 Rail Layout and Wetland Impacts at Project Site**



Proposed rail footprint over marsh and uplands showing areas of fill and elevated areas.



Cut/Fill Report

Contract: 2302-11-03 120056  
By: JMM  
Drawing: 2302-11-03-F001-001-001-North Rail Construction Planning  
Analysis/Construction/Cut/Fill/Volume/001/Project/2302-11-03/JCA-North  
Rail Construction Planning/Analysis/Construction/Cut/Fill/Volume/001

Volume Summary

Name	Type	Cut Factor	Fill Factor	St. Area (Sq. Ft.)	Cut (Cu. Yds)	Fill (Cu. Yds)	Net (Cu. Yds)
EG VS WETLANDS 1	WF	1.00	1.00	2190.15	25.82	26735	27000-4782
EG VS WETLANDS 2	WF	1.00	1.00	224.39	22.24	173.02	166.79-4782
EG VS WETLANDS 3	WF	1.00	1.00	2282.99	494.28	1271.44	1474.26-4782
EG VS WETLANDS 4	WF	1.00	1.00	126.25	11.24	47.23	15.74-4782
EG VS WETLANDS 5	WF	1.00	1.00	7422.78	6.00	1624.28	2994.79-4782

Totals

St. Area (Sq. Ft.)	Cut (Cu. Yds)	Fill (Cu. Yds)	Net (Cu. Yds)
14429.56	628.16	22973	2649.12-4782

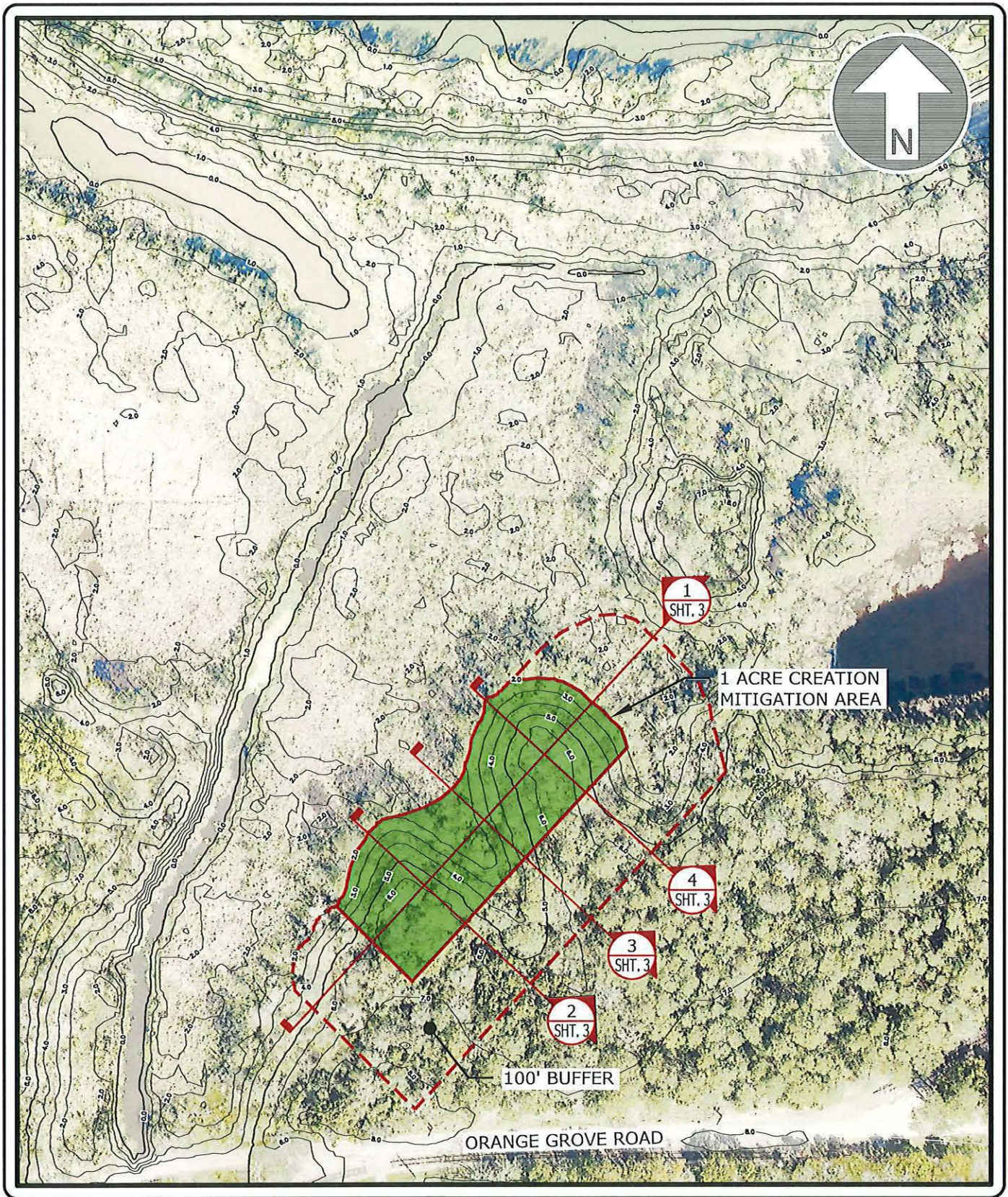
\* Value adjusted by cut or fill factor other than 1.0

C:\projects\10101\18\601\102\Drawings\2302-11-03-F001-001.dwg



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PROFESSIONAL - BRIDGE - SURVEYING  
228-A-9999 228-A-9999 228-A-9999  
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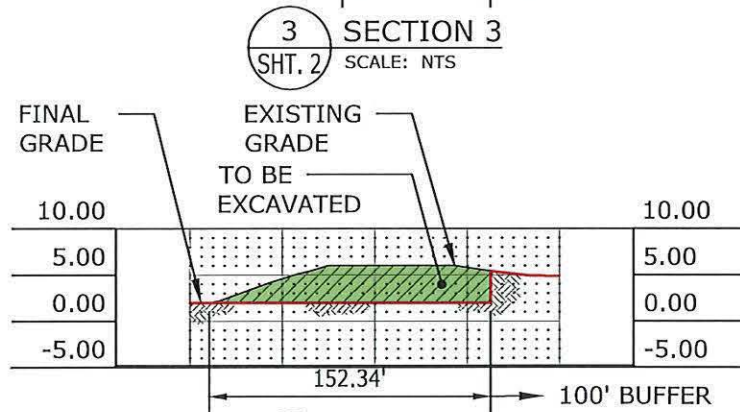
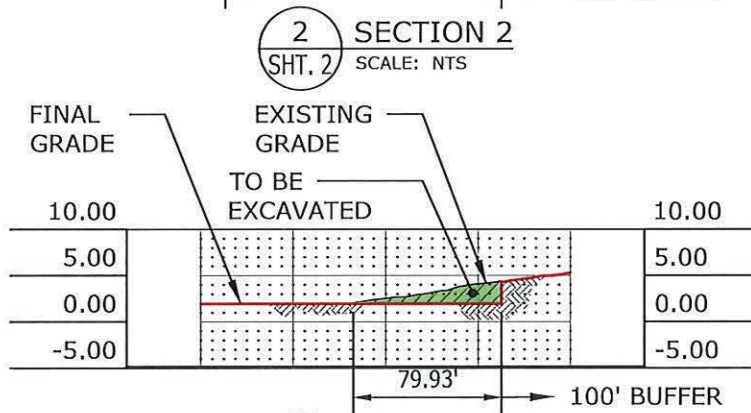
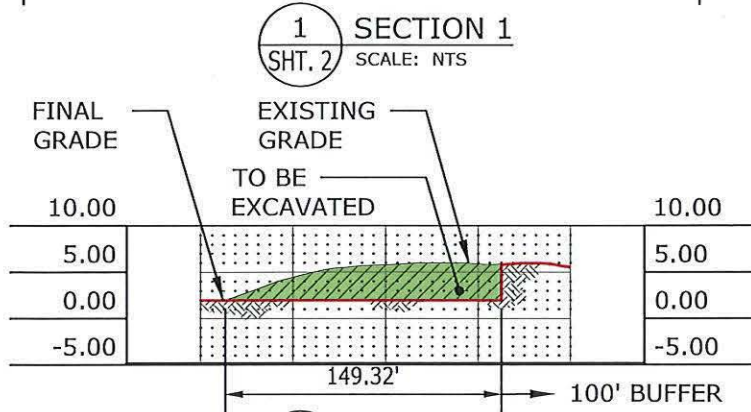
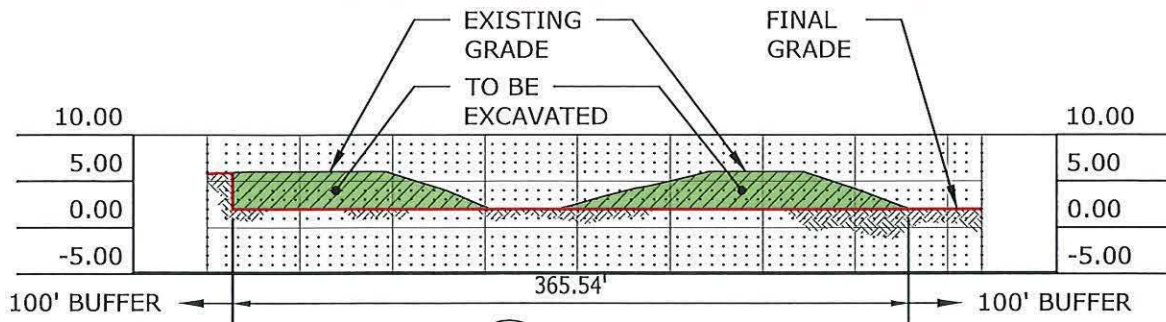
**Figure 3 Proposed Mitigation Area**



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218-051  
 JACKSON COUNTY PORT AUTHORITY (JCPA),  
 NORTH RAIL CONNECTOR,  
 PROPOSED PERMITTED RESPONSIBLE,  
 MITIGATION AREA,  
 SHEET 2  
 SCALE: NTS  
 DRN. BY: JDL





**COMPTON ENGINEERING, INC.**

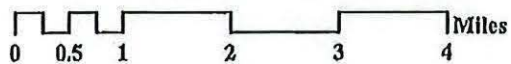
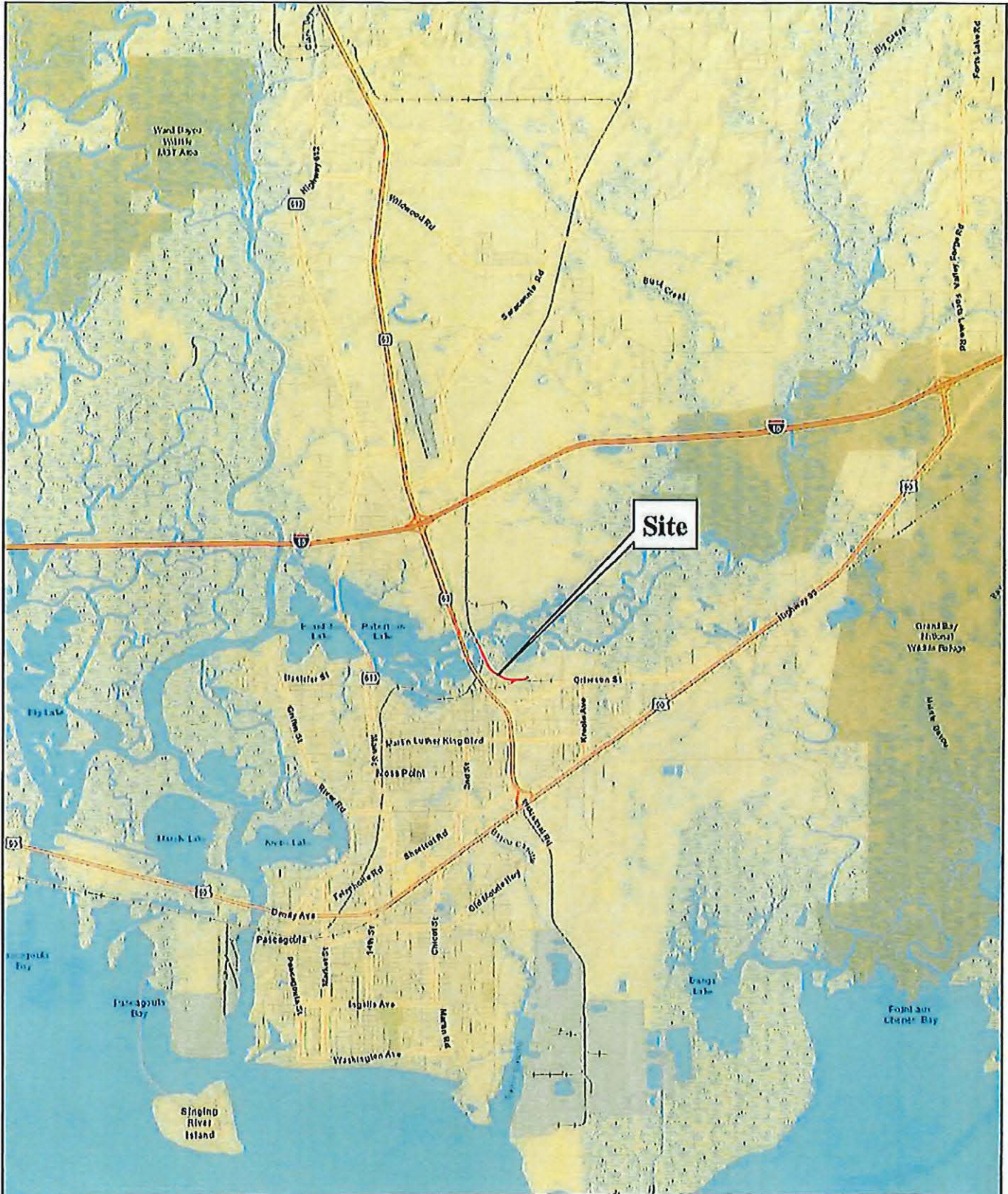
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MITIGATION AREA,  
SHEET 3  
SCALE: NTS  
DRN. BY: JDL

## Appendices

## Appendix A – Wetland Delineation Report



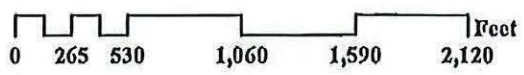
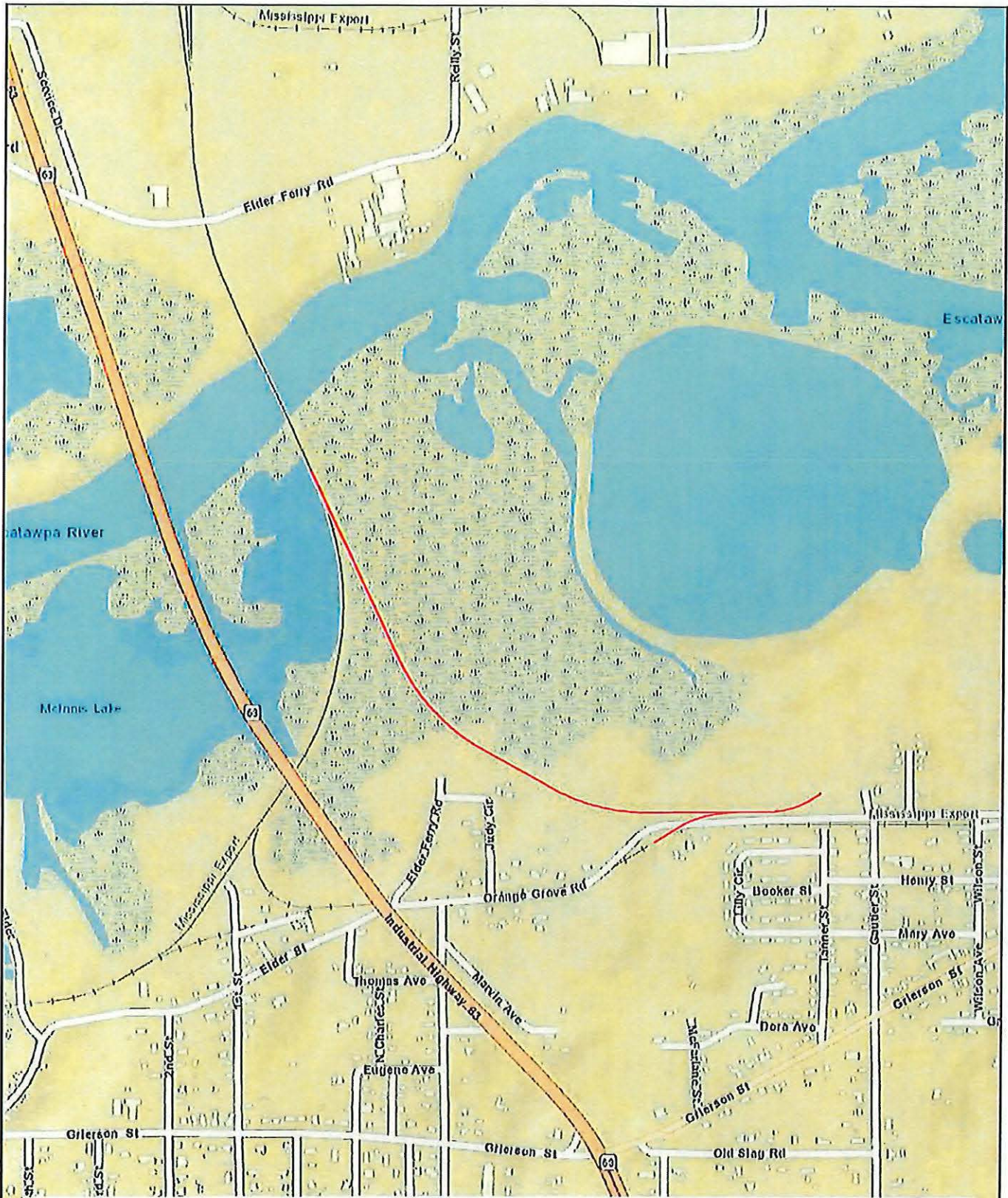
Moss Point, Mississippi

**Wildlife Solutions, Inc.**

Phone: 251-591-2682

1 inch = 2 miles





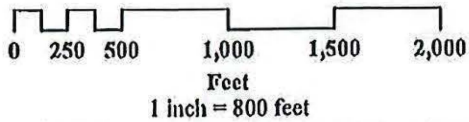
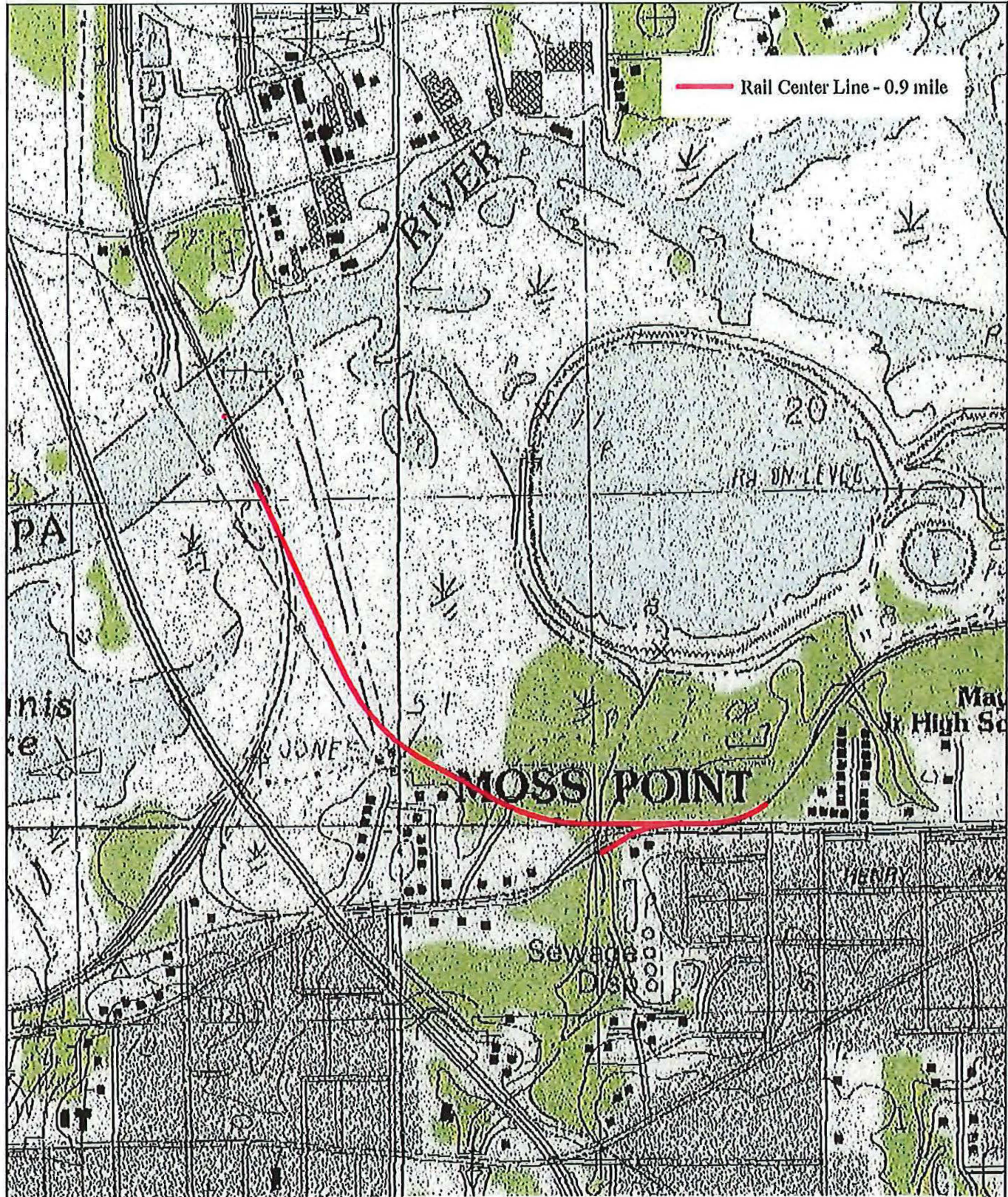
Moss Point, Mississippi

**Wildlife Solutions, Inc.**

Phone: 251-591-2682

1 inch = 800 feet








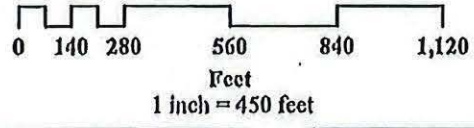
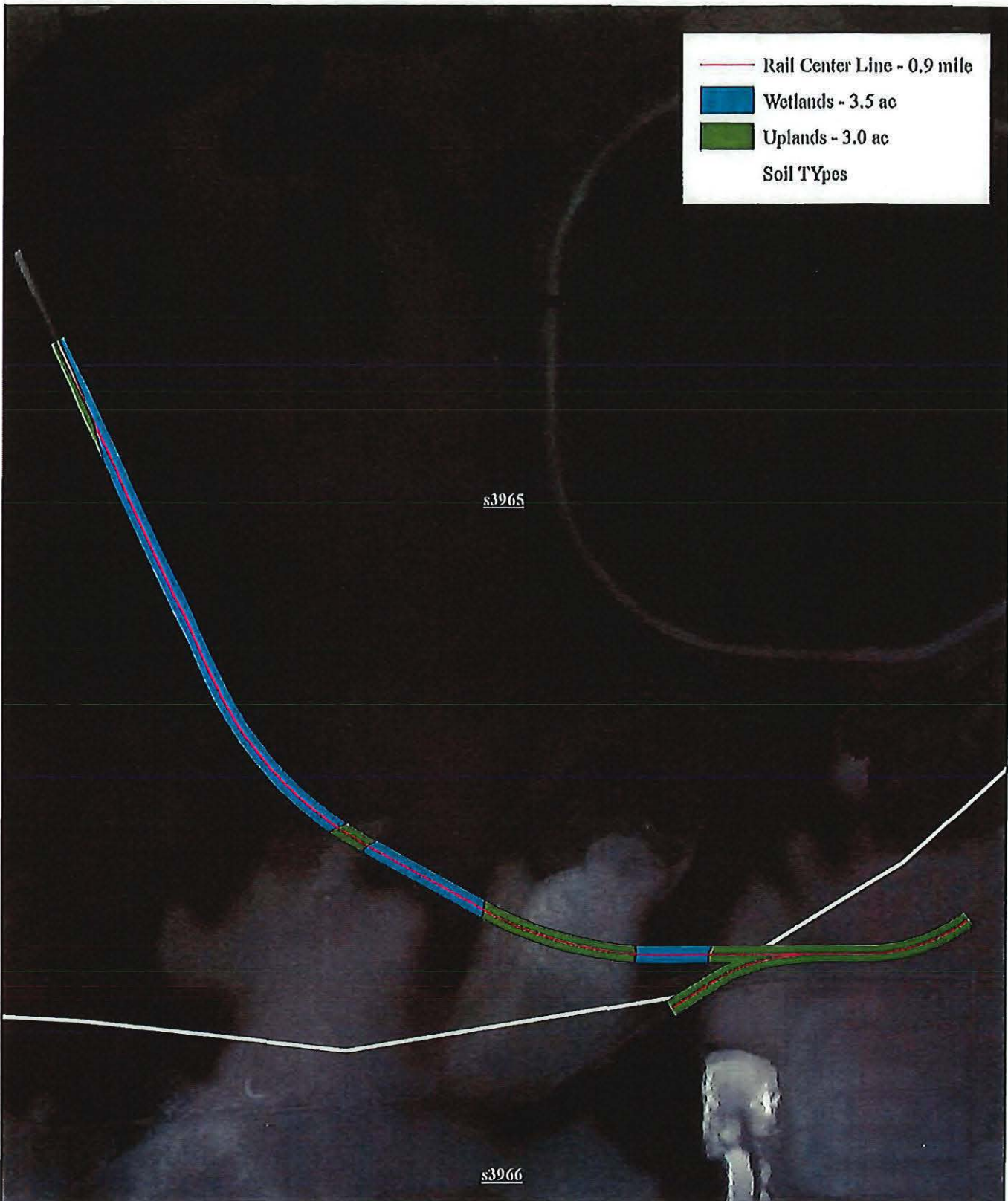
**Wildlife Solutions, Inc.**

Phone: 251-591-2682

-88.512122 30.414181 Decimal Degrees



-  Rail Center Line - 0.9 mile
-  Wetlands - 3.5 ac
-  Uplands - 3.0 ac
- Soil Types

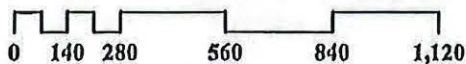
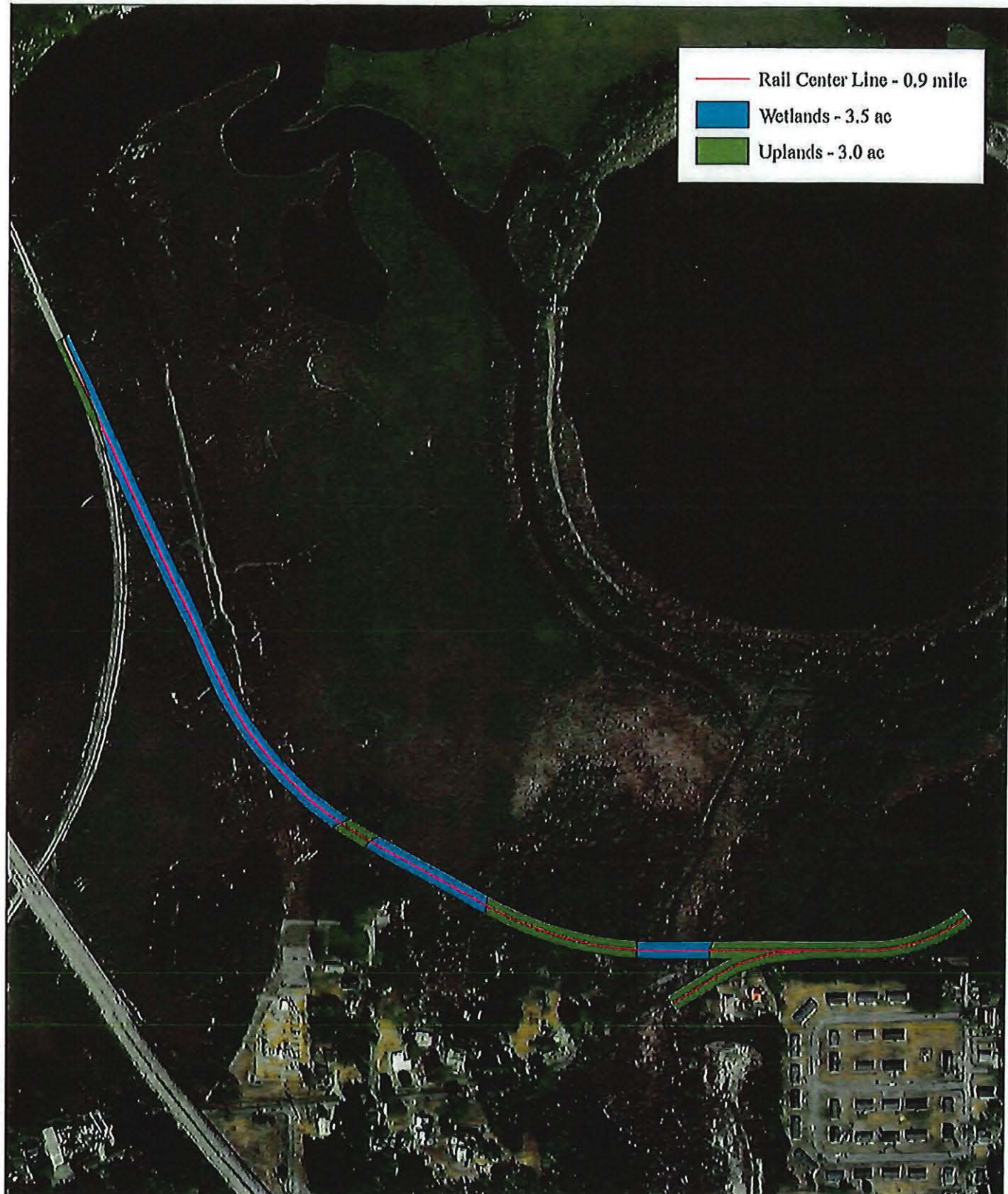


**Wildlife Solutions, Inc.**

Phone: 251-591-2682

-88.512122 30.414181 Decimal Degrees





Feet  
1 inch = 450 feet

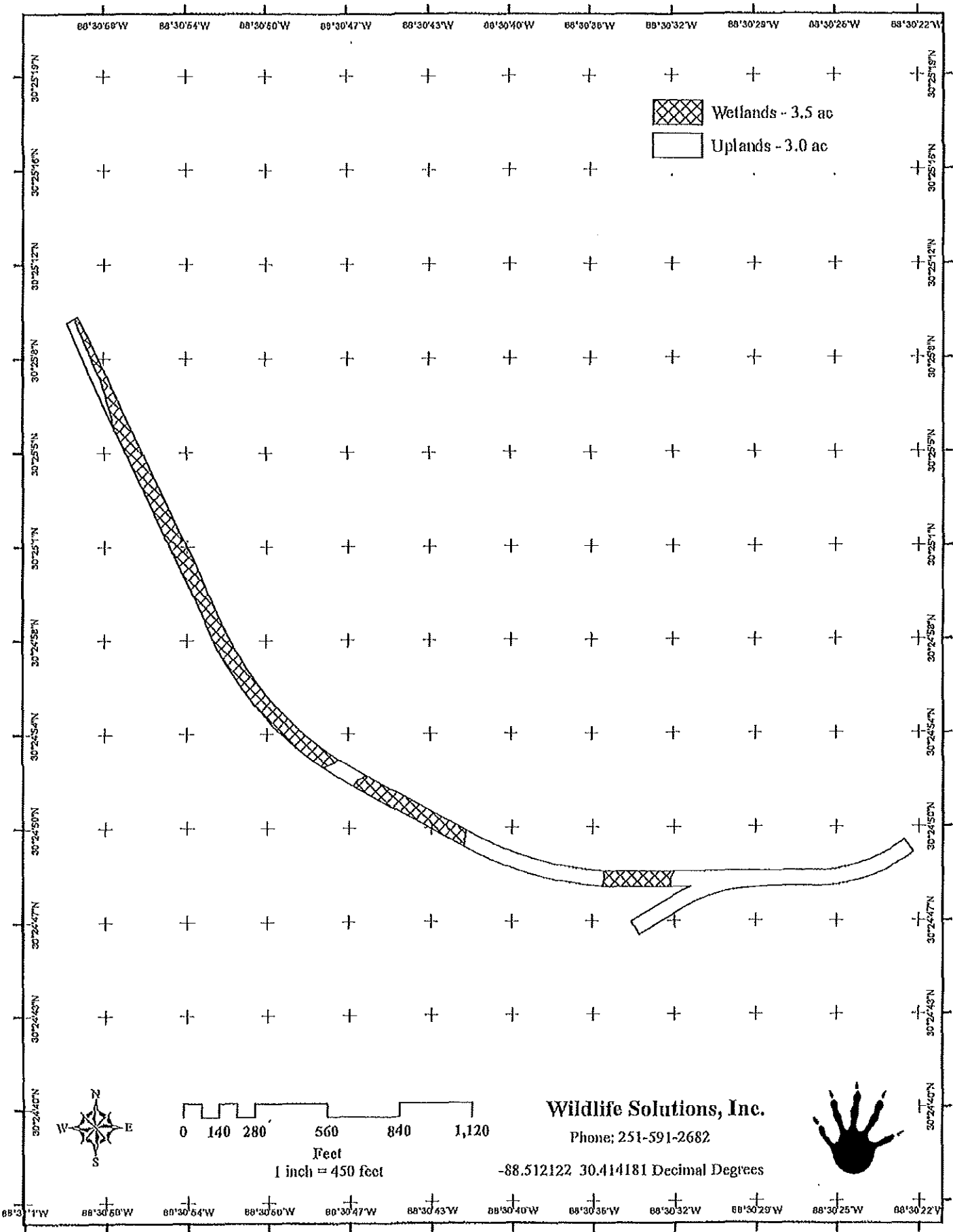
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-88.512122 30.414181 Decimal Degrees







## Appendix B - Detailed Work Plan

# Wetland Mitigation Work Plan

Jackson County Port Authority

North Rail Connector

Moss Point, Mississippi

*Prepared For*

Jackson County Port Authority

PO Box 70

Pascagoula, MS 39568

October, 2019

Revised March 2021

*Prepared By*

Wildlife Solutions, Inc.

250 S. School Street,  
OFFICE: 251-591-2682, FAX: 251-990-9830  
Fairhope, ALA. 36532

## Introduction

This Work Plan was prepared to support the Permittee Responsible Mitigation Plan prepared by Compton Engineering for the North Rail Connector project proposed by the Jackson County Port Authority. This plan includes the steps needed to convert an upland forested area into a tidal marsh.

## Site

JCPA has identified an area of uplands with sufficient acreage to mitigate for tidal marsh impacts at a ratio of approximately 1:1 (0.90 acres impacted:1.0 acres created). The upland site that is to be converted into a tidal marsh interfaces with an existing tidal marsh. Its plant community is typical of that found in the surrounding Coastal Flat Woods. The canopy is dominated by Slash Pine *pinus elliottii* and scattered Water Oaks *quercus nigra* with a mid story of smaller oaks along with Southern Magnolia *magnolia grandiflora*, Red Maple *Acer rubrum*, Sweet Gum *Liquidambar styraciflua*, Gallberry *ilex glabra*, Yaupon *ilex vomitoria*, and a heavy component of invasive species such as Camphor *cinnamomum camphora*, Tallow Tree *Triadica sebifera* and Chinese Privet *Ligustrum sinense*. Site access is optimal as it is bordered by a low traffic paved road along the southern border allowing easy ingress and egress for construction and monitoring. The hydrology of this system is groundwater driven and the water table fluctuates in elevation throughout the year depending on rainfall and tidal fluctuations.

## Construction

### *Site Survey*

Prior to the commencement of construction the entire site will be surveyed and staked delineating the limits of construction, zones of activity and establish bench marks for elevation.

### *Clearing and Erosion control*

The entire site will be cleared to existing grade by mechanical mulching followed by grubbing to remove any large stumps or debris. Any woody vegetation that is not mulched will be burned on site or hauled from the site to a proper disposal facility. Prior to the start of any trucking from the site a rock mud mat will be constructed at the road entrance to the site to decrease the tracking of soil onto the paved road. Prior to beginning excavation Class A silt fence will be installed along the construction limits of the project in areas at risk of sedimentation from storm water runoff. The silt fence along with any other storm water BMP's put in place will be maintained throughout the construction process until a time in which the site is stabilized by vegetation. A

Stormwater Pollution Prevention Plan and Small Construction Notice of Intent will be prepared and submitted to MDEQ if required.

### *Grading*

Excavation will commence at the northwest side of the project at the upland marsh interface using an excavator. The soil substrate will be removed to a level approximately the same grade as the existing marsh. Frequent checks will be made using an automatic level to ensure elevation is correct prior to the excavator moving to a point it cannot reach in order to minimize disturbance in the newly exposed tidal soil. Minor undulations in elevation within the excavated tidal zone are desired in order to facilitate a mosaic of various plant species as found in a natural system. Preliminary soil sampling does not indicate the presence of high chroma or pure clay soils at the desired final grade. However if encountered these areas will be cut down to approximately 6" below desired grade then back filled with newly excavated clean top soil from the site containing the highest levels of organic matter. As a proactive measure in case this type of material is required a stockpile of top soil will be kept on site and readily available until all grading is complete. It is estimated that approximately 13,000 cubic yards of material will be excavated in order to reach the desired grade within the limits of the marsh creation zone. All excavated materials not used as back fill will be hauled from the site and taken to a local commercial dirt pit. Once the excavation reaches the interface of the upland buffer a gradually sloping bank with variations will be created with a minimum slope ratio of 1:4. This bank will be stabilized using a combination of temporary and permanent seed then covered with clean wheat straw mulch to retain moisture and prevent erosion.

### *Planting and Seeding*

Once the dirt work is completed, all disturbed areas outside the tidal zone will be seeded with a temporary and permanent seed mix followed by an application of fertilizer in sequence as follows. The temporary seed mix will be done using a cool or warm season seed depending on time of application.

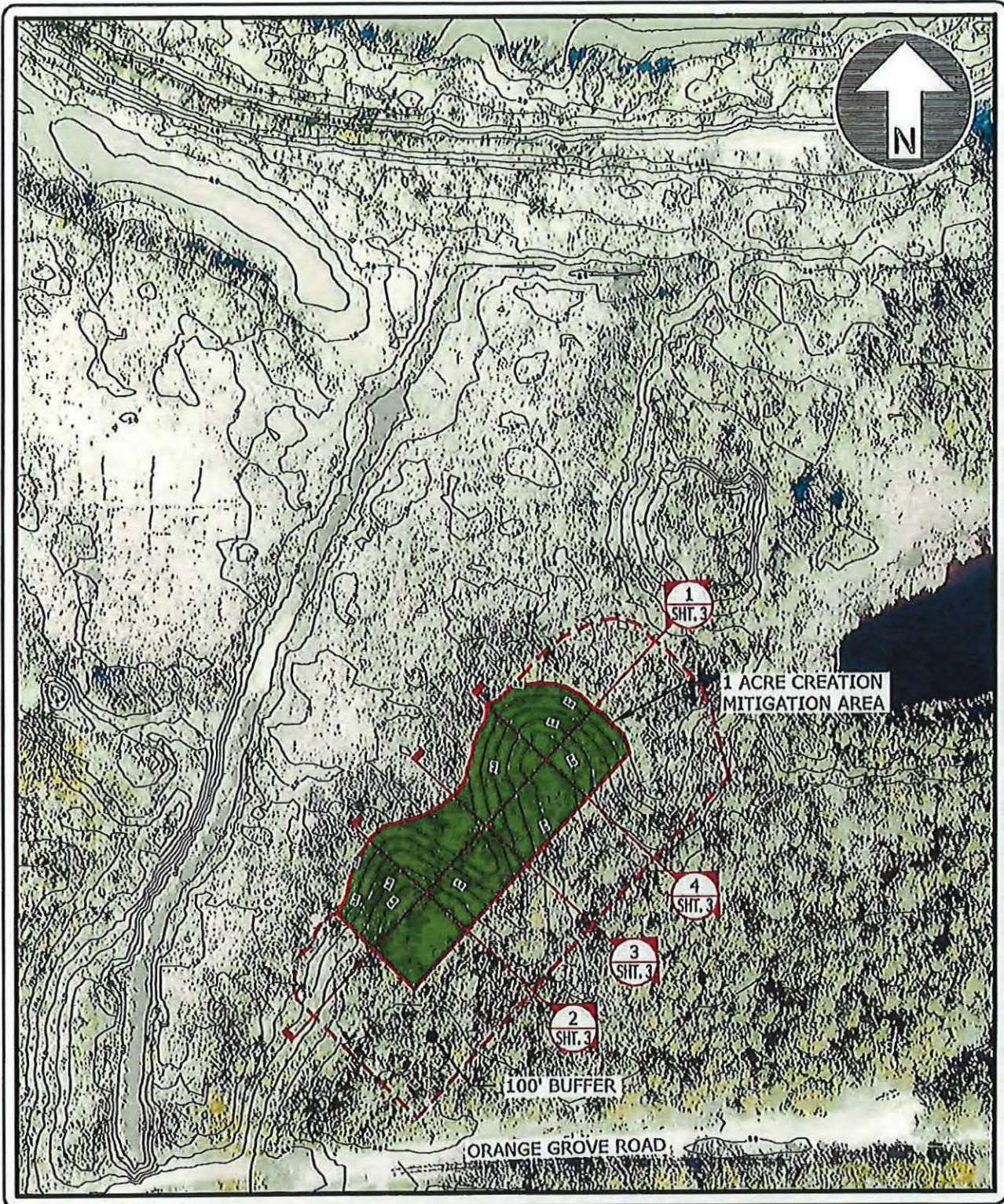
1. Permanent seed will consist of Ernst FACW Wetland Meadow Mix applied at a rate of 25 lbs per acre.
2. Cool season temporary seed will consist of Rye Grass applied at a rate of 50 lbs per acre.
3. Warm season temporary seed will consist of Brown Top Millet applied at a rate of 50 lbs per acre.
4. Seeding will be followed by an application of 10-10-10 fertilizer at a rate of 100 lbs per acre.

5. Immediately after seeding, the entire area will be covered with clean wheat straw mulch at a rate of 40 bales per acre.
6. Bald Cypress *Taxodium distichum* in one gallon containers will be planted along the newly created shoreline at random spacing and elevation to mimic adjacent existing shoreline conditions.

Herbaceous plants for the tidal marsh zone - planting density will be approximately 10,000 plugs per acre / 2' X 2' spacing, approximately 10,000 plugs will be required. The following plants listed are those currently found in tidal marsh in which the newly created marsh will interface. During planting, care will be taken to insure species composition and densities mimic as closely as possible the existing marsh. Actual plant quantities may vary among species as adjustments are made during planting to accommodate for micro site changes in elevation.

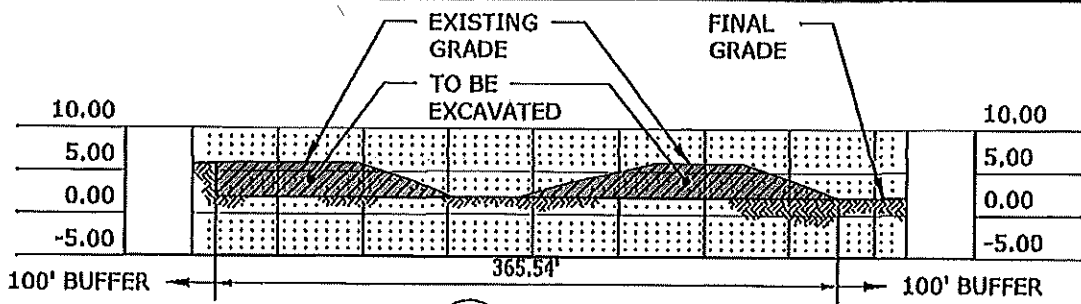
- 20-40% *Juncus roemerianus* (Black Needle Rush)
- 20-40% *Spartina alterniflora* (Smooth Cordgrass)
- 5-10% *Spartina patens* (Marsh Hay Cordgrass)
- 5-10% *Typha angustifolia* (Narrowleaf Cattail)
- 20-40 % *Cladium jamaicense* (Sawgrass)

**Note:** All seed source material for this project have been procured from authorized collection sites along the Mississippi and Alabama Gulf Coast. These sites are all located within 50 miles of the project site. All plants for this project will be procured from Tidelands Wetland Nursery, located in Loxley, Alabama.

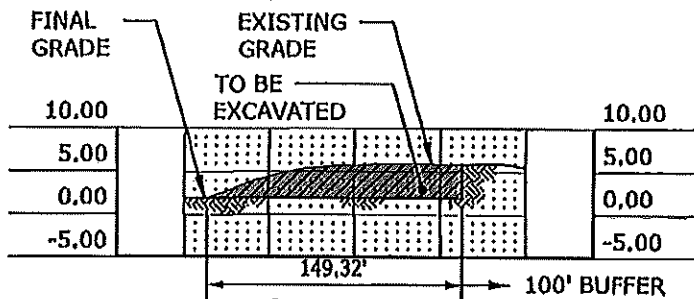


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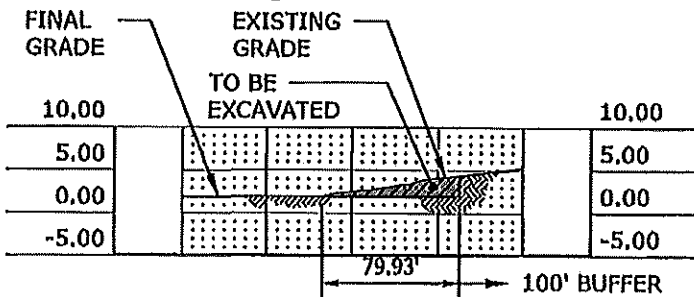
218-051  
 JACKSON COUNTY PORT AUTHORITY (JCPA),  
 NORTH RAIL CONNECTOR,  
 PROPOSED PERMITTED RESPONSIBLE,  
 MITIGATION AREA,  
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 DRN. BY: JDL



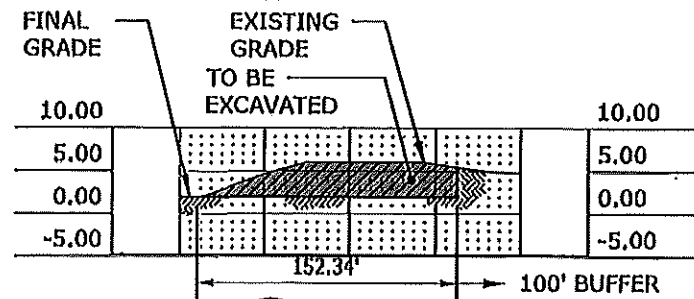
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3 SECTION 3  
SHT. 2 SCALE: NTS



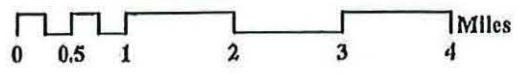
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SCALE: NTS  
DRN. BY: JDL





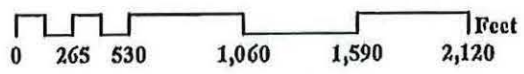
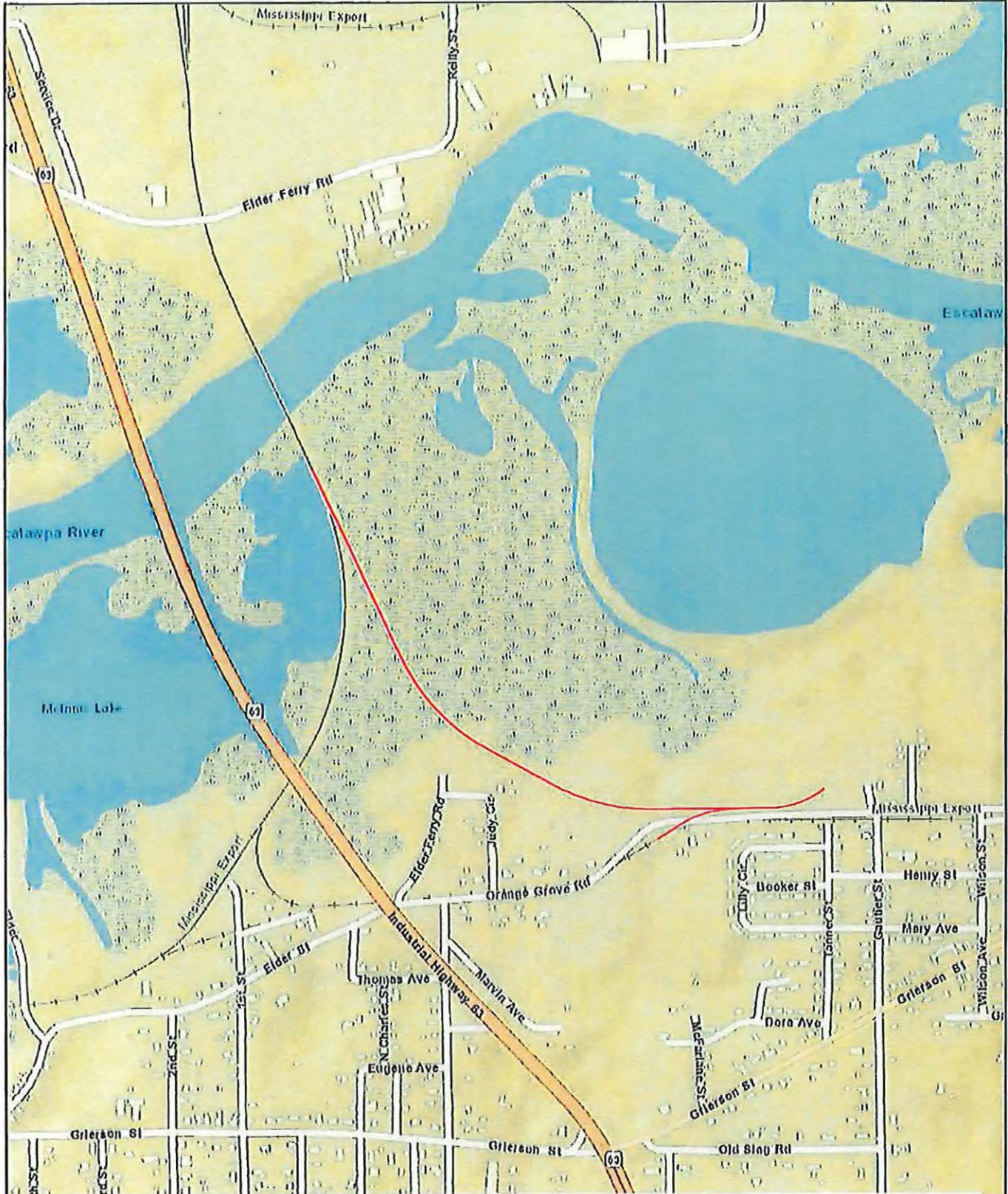
Moss Point, Mississippi

**Wildlife Solutions, Inc.**

Phone: 251-591-2682

1 inch = 2 miles





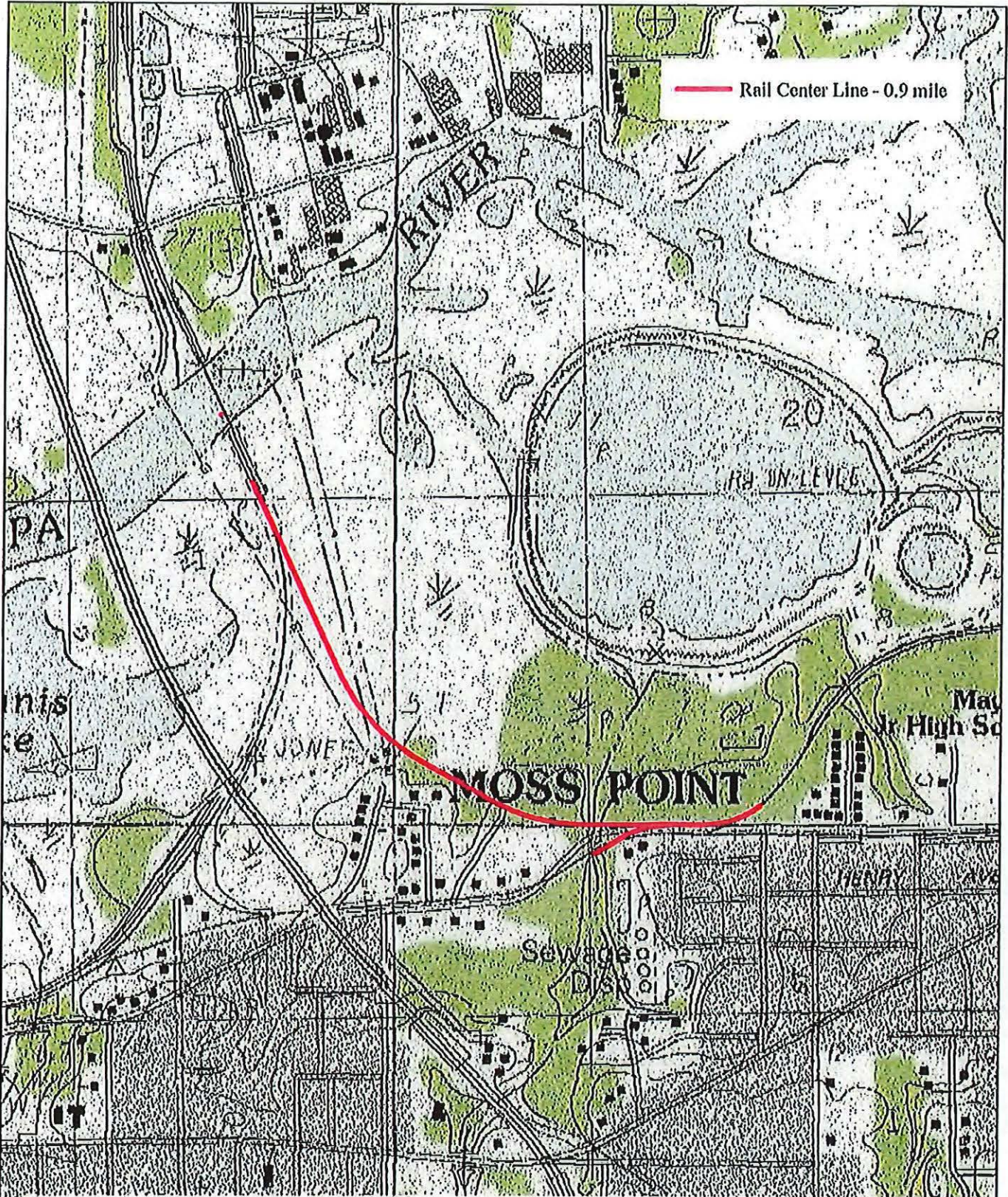
**Moss Point, Mississippi**

**Wildlife Solutions, Inc.**

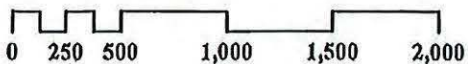
Phone: 251-591-2682

1 inch = 800 feet





— Rail Center Line - 0.9 mile






Feet  
1 inch = 800 feet

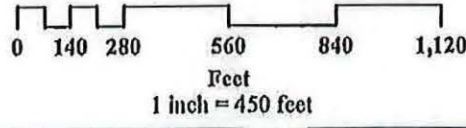
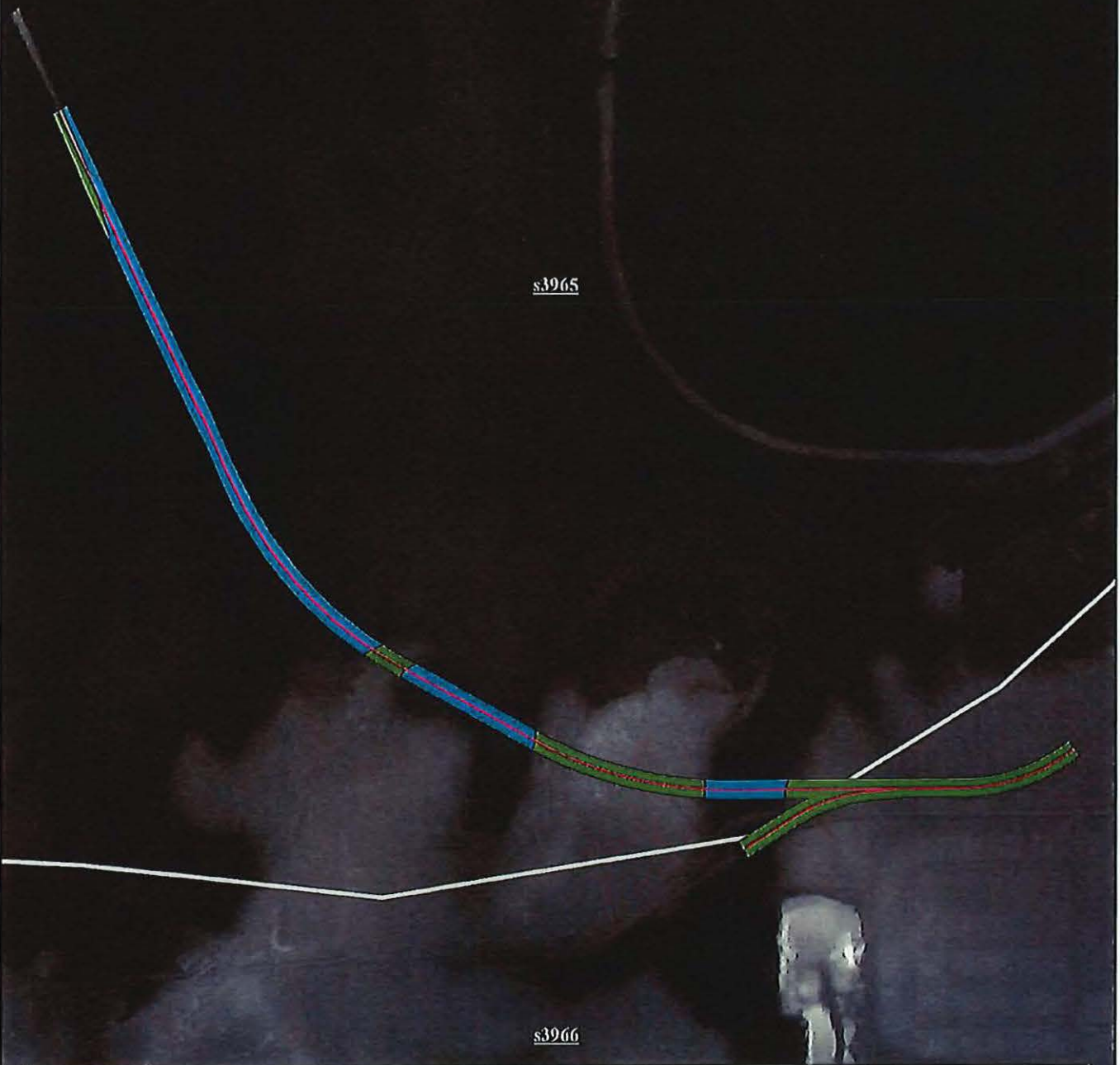
**Wildlife Solutions, Inc.**

Phone: 251-591-2682

-88.512122 30.414181 Decimal Degrees



-  Rail Center Line - 0.9 mile
-  Wetlands - 3.5 ac
-  Uplands - 3.0 ac
- Soil Types



**Wildlife Solutions, Inc.**  
Phone: 251-591-2682



-88.512122 30.414181 Decimal Degrees



0 140 280 560 840 1,120  
Feet

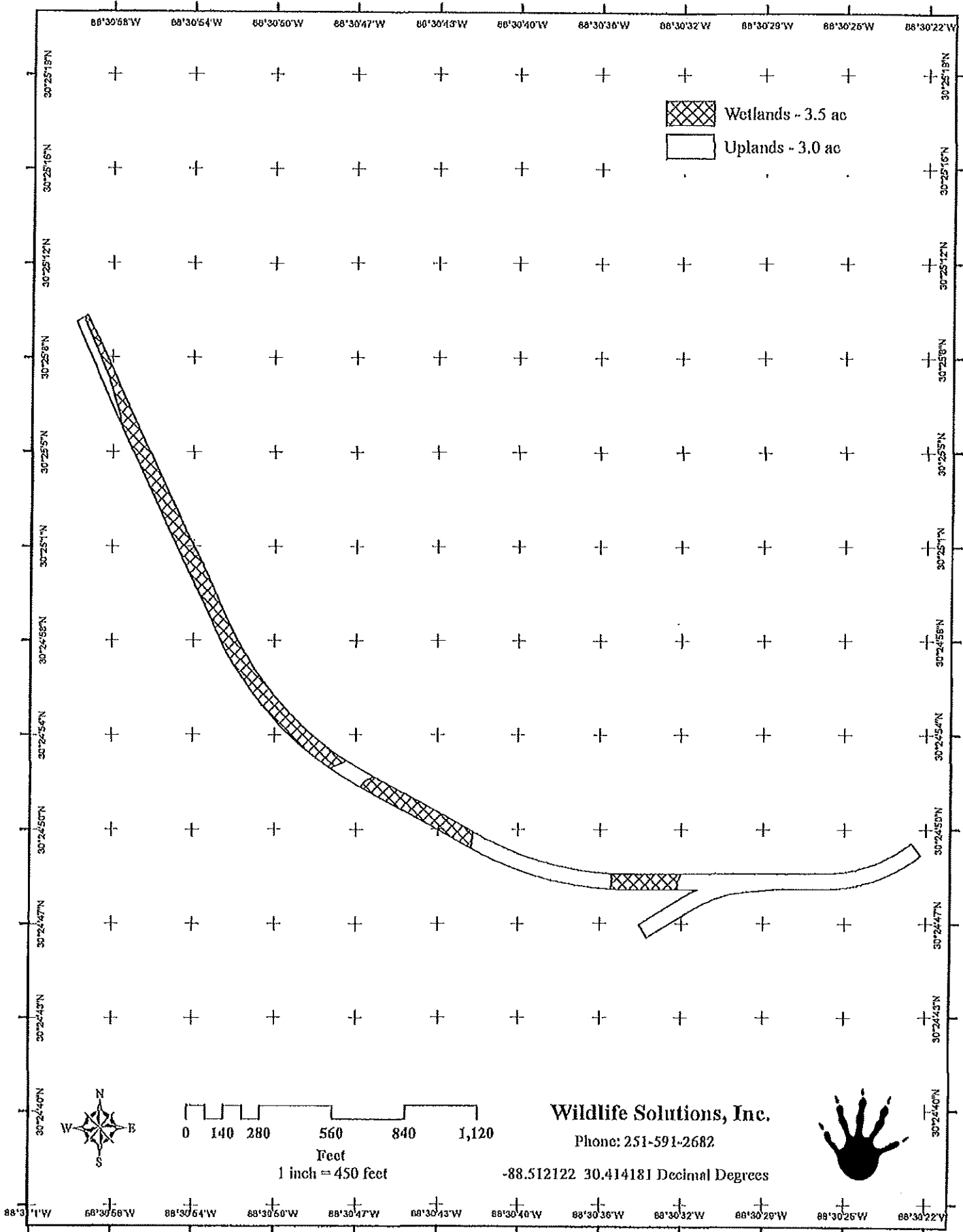
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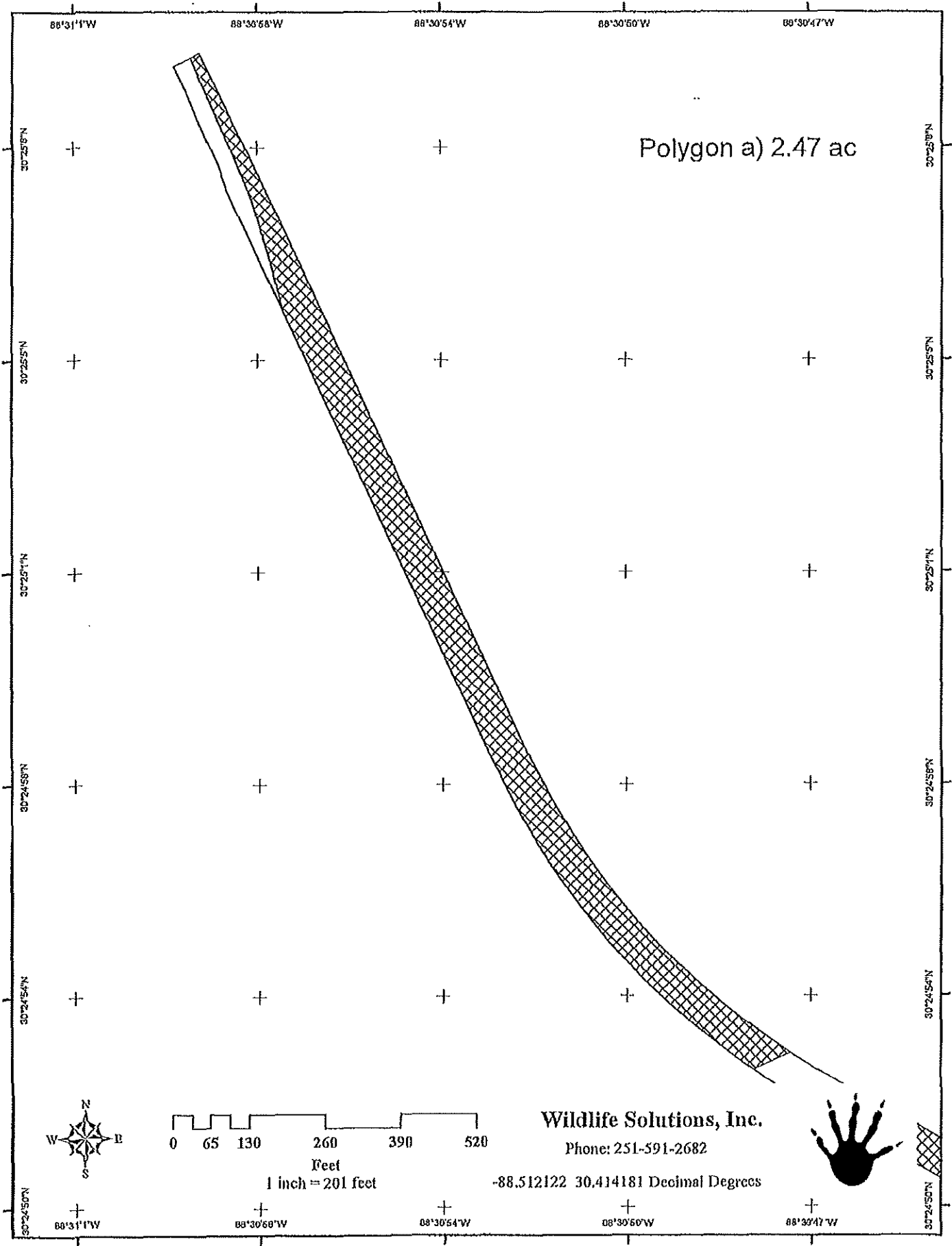
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Phone: 251-591-2682

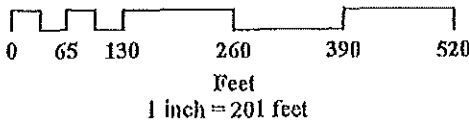
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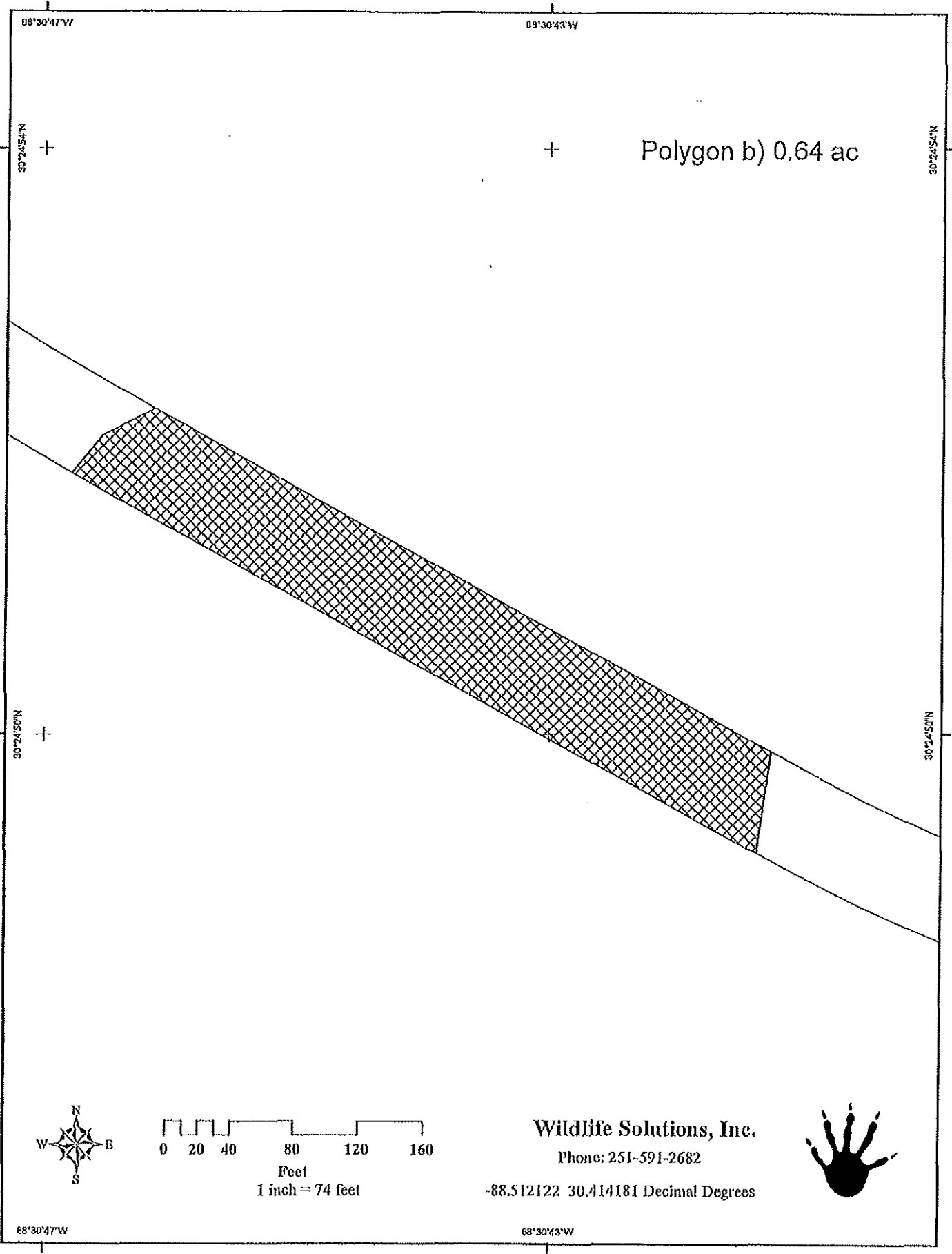


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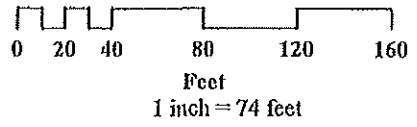
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-88.512122 30.414181 Decimal Degrees





Polygon b) 0.64 ac



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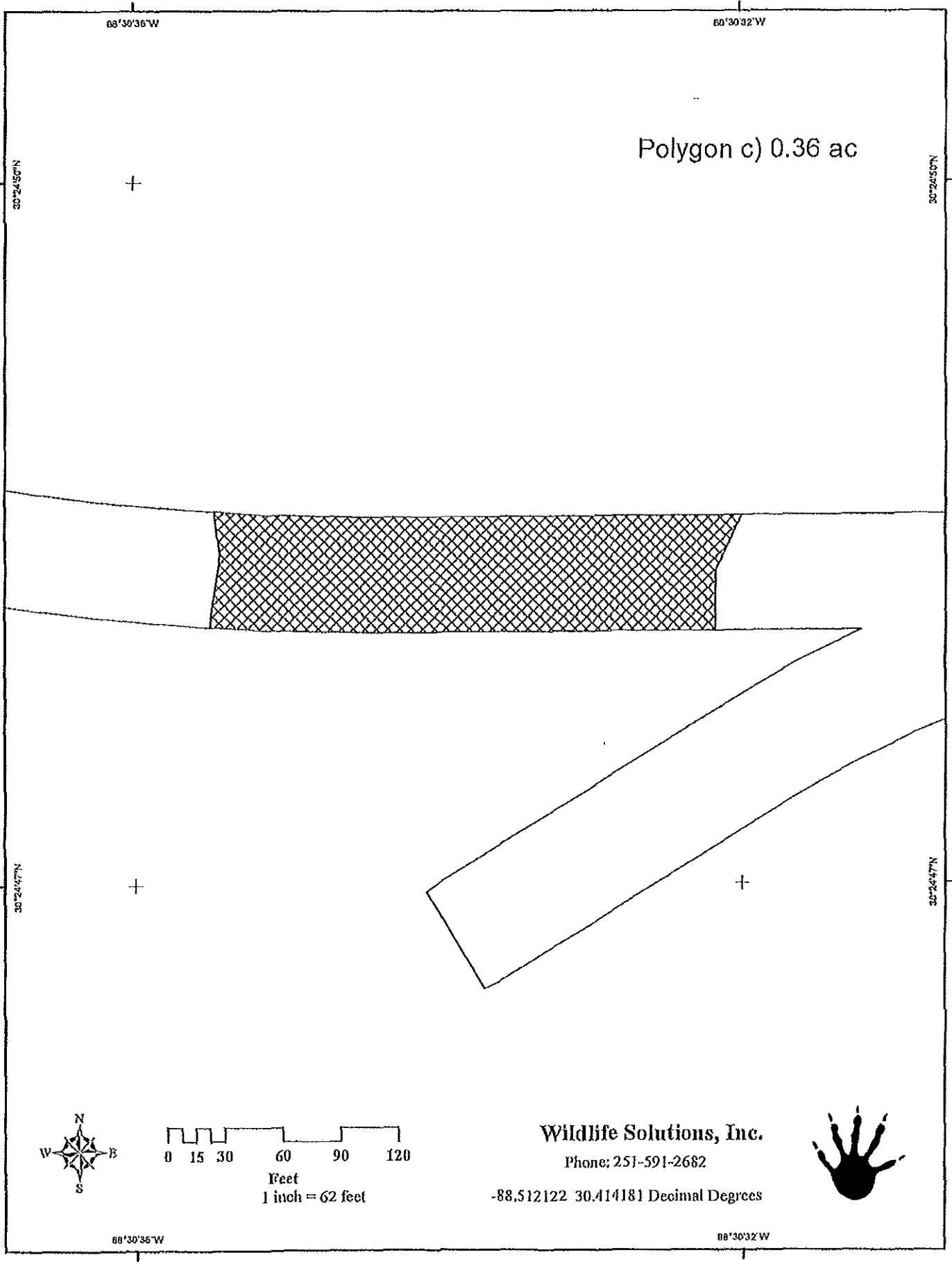
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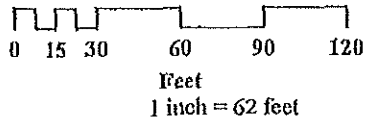
88°30'47\"/>

88°30'43\"/>





Polygon c) 0.36 ac



Wildlife Solutions, Inc.

Phone: 251-591-2682

-88.512122 30.414181 Decimal Degrees





**Appendix C – HGM Worksheets**

Impacted Tidal Marsh a) 0.081 ha, b) 0.203 ha, c) 0.081 ha

Mean FCI: a) 0.90 b) 0.84 c) 0.88 - Total FCU's: 0.32

Where:

Function 1: Wave Attenuation Energy

$$FCI = \left[ \left( \frac{3 \times V_{WAVE} + V_{COYR}}{4} \right) \times V_{KINSE} \right]^{1/2}$$

FCI's = a) 0.77 b) 0.54 c) 0.46

Function 2: Biochemical Cycling

$$FCI = (V_{RISO} \times V_{COYR} \times V_{LUNISE})^{1/3}$$

FCI's = a) 0.93 b) 0.93 c) 0.93

Function 3: Nekton Utilization

$$FCI = \left( \frac{V_{LOKE} + V_{RANO} + V_{SHD}}{3} \right)$$

FCI's = a) 0.90 b) 0.83 c) 1.0

Function 4: Wildlife Habitat

$$FCI = \left\{ V_{SHE} \times \left[ \frac{(V_{MEXHE} + V_{COYR})}{2} \right] \times \left[ \frac{(V_{ENSE} + V_{SHD})}{2} \right] \right\}^{1/2}$$

FCI's = a) 0.89 b) 0.91 c) 1.0

Function 5: Plant Structure & Composition

$$FCI = [\text{Minimum}(V_{COYR} \text{ or } V_{KINSE} \text{ or } V_{SIS} \text{ or } V_{WAVE})]$$

FCI's = a) 1.0 b) 1.0 c) 1.0

Created Tidal Marsh 0.38 Ha -- Lift equals 0.32 FCUs

Mean FCI: 0.85

Where:

Function 1: Wave Attenuation Energy

$$FCI = \left[ \left( \frac{3 \times V_{WAVE} + V_{WIND}}{4} \right) \times V_{LANDUSE} \right]^{1/2}$$

$$FCI = 0.77$$

Function 2: Biochemical Cycling

$$FCI = (V_{NITRO} \times V_{CYCLE} \times V_{LANDUSE})^{1/3}$$

$$FCI = 0.93$$

Function 3: Nekton Utilization

$$FCI = \left( \frac{V_{NEK} + V_{MUSK} + V_{SHO}}{3} \right)$$

$$FCI = 0.82$$

Function 4: Wildlife Habitat

$$FCI = \left[ V_{SHR} \times \left[ \frac{(V_{WIND} + V_{CYCLE})}{2} \right] \times \left[ \frac{(V_{NEK} + V_{WIND})}{2} \right] \right]^{1/2}$$

$$FCI = 0.75$$

Function 5: Plant Structure & Composition

$$FCI = [\text{Minimum}(V_{CYCLE} \text{ or } V_{WIND} \text{ or } V_{NEK} \text{ or } V_{WIND})]$$

$$FCI = 1.0$$

Assessment Team: WS  
 Project: North Rail  
 Date: 2/25/01  
 Size of the Wetland Assessment Area (WAA): 1.0 (ha)

Sample variables 1-5 using aerial photos, digital ortho-photo quadrangle imagery, etc., at a scale of (1:4800) (1 inch = 400 feet) (color infrared or true color preferred), using GIS or other means.

1.  $V_{SIZE}$  Wetland Patch Size (ha) 1.5  
 Calculate the area (in hectares) of the contiguous tidal fringe wetland within which the WAA is located. In some situations, the WAA may encompass the entire wetland patch and the WAA size and wetland patch size will be equal.
2.  $V_{LANOUSE}$  Adjacent land use  
 Determine the proportion of the WAA perimeter (expressed as a percentage, rounded to the nearest 5 percent) that is bounded by each of the following land use types.

Land Use Category	Description	Proportion of WAA Perimeter
Undeveloped naturally vegetated areas or open water	a) Open water: Shoreline is at least 100 m from navigation channel, if present. b) Terrestrial: > 75% of total area is naturally vegetated forested or grassy uplands or wetlands.	<input checked="" type="checkbox"/>
Mostly agricultural	More than 50% of the total area is occupied by cropland.	
Mostly developed	a) Open water: Harbors, ports, and marinas b) Terrestrial: More than 40% of the total area is developed (i.e., residential, commercial, or industrial areas; also includes point sources such as golf courses, wastewater treatment plant outfalls, feedlots, etc.)	
Mixed	a) Open water: areas where the shoreline is within 100 m of a navigation channel. b) Terrestrial: Does not fit any of the above categories, may include low-density rural residential, unpaved roads, etc.	

3.  $V_{WIDTH}$  Mean Marsh Width 392 (m)  
 Establish the appropriate number of transects according to the baseline length and record the length of each transect (in meters) in the boxes below, then calculate the average.

T1	<u>126</u>	T2	<u>400</u>	T3	<u>658</u>	T4		T5	
T6		T7		T8		T9		T10	

Assessment Team: WS  
 Project: North Rail  
 Date: 2/25/21

4. **V<sub>EXPOSE</sub>** **Wave Energy Exposure**  
 Circle the exposure condition that most closely corresponds to the site condition described in the table below.  
 Note: Sites with no exposed shorelines are not assessed for this function.

Site Description	Exposure
<b>Geomorphic Setting: Low-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of protected coves or embayments (concave shoreline) OR along the edge of a small tidal creek not used by commercial boat traffic.	Low
<b>Geomorphic Setting: Moderate-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of large tidal creeks or rivers that are used by recreational and/or commercial boat traffic.	Moderate
<b>Geomorphic Setting: Open Bay or Estuary</b> These sites have one or more shorelines located directly along the edges of an estuary or bay (e.g., Mississippi Sound, Mobile Bay). Shoreline is generally linear, exposed to relatively high wind and wave energy, with long fetch distances, or adjacent to navigation channel that is frequently used by recreational or commercial boat traffic.	High
<b>Geomorphic Setting: Zero-Energy Interior Marsh</b> These sites have no shorelines exposed to wind or wave energy present.	None

5. **V<sub>EDGE</sub>** **Aquatic Edge**  
 Circle the qualitative or quantitative measure that most closely corresponds to the site condition described in the table below. See pictorial key in Appendix E (Figures E1-E11) for specific examples. Note: *Unvegetated shorelines (i.e. sandy beaches) are not included as edge.*

Site Description	Qualitative Measure	Quantitative Measure
1) Well-developed tidal drainage network present (Figures E-1 and E-2). OR 2) Very narrow fringe marsh that lacks tidal creeks. One lengthwise shoreline that represents at least 40% of the total perimeter is exposed to tidal waters (e.g., Daphna Bayfront Park). 3) Other geomorphic configuration with a large amount of shoreline relative to total area (i.e., small island or narrow peninsula) (Figures E-3 and E-4).	High	≥ 225 m/ha
Simple tidal drainage network (may consist of one or more small channels) that are well-distributed across the total WAA area (Figures E-5 and E-6).	Moderate-High	175-224 m/ha
Tidal creeks may be lacking, or if present, drain only a small proportion of the total WAA area (Figures E-7, E-8, and E-9).	Moderate-Low	100-175 m/ha
Shoreline is generally linear or smooth curvilinear without embayments or convolutions. Tidal creeks typically absent. The area of marsh is large relative to shoreline length (Figure E-10).	Low	1-100 m/ha
No vegetated marsh-water interface present in WAA (Figure E-11).	Absent	0 m/ha

Assessment Team: WS  
 Project: North Rail  
 Date: 8/15/01

Sample variables 6-8 based on a walking reconnaissance of the WAA.

6. **V<sub>HYDRO</sub>** **Hydrologic regime**  
 Place a check in the box that most closely fits site conditions.

Site Description	V <sub>HYDRO</sub>
Site is open to free exchange of tidal waters. Lower edges of vegetated marsh surface are flooded on a regular basis as evidenced by wrack lines, watermarks, etc. No obvious hydrologic alteration, fill, or restrictions present.	<input checked="" type="checkbox"/>
Minor hydrologic alteration or restriction present (i.e., presence of low-elevation berm, which is frequently overtopped by high-tide events or has multiple breaches or large culverts; presence of some fill that raises a small portion (<20 percent of marsh area) of marsh surface above normal tidal flooding zone).	<input type="checkbox"/>
Moderate hydrologic alteration present (i.e., presence of high-elevation berm, which is infrequently overtopped by high-tide events or has a single opening, breach, or small culvert; greater extent of fill (>20 percent) that raises portions of marsh surface elevation above normal tidal flooding zone).	<input type="checkbox"/>
Severe hydrologic alteration; site receives tidal floodwaters only during extreme tide events (i.e., surface elevation of marsh is above normal tidal flooding zone; blocked culvert, etc.).	<input type="checkbox"/>
Site is isolated from tidal exchange. The principal source of flooding is water sources other than tidal action (i.e., precipitation or groundwater). <i>Note: If this condition exists, use of another wetland assessment model should be strongly considered unless the site was a tidal wetland prior to hydrologic modification.</i>	<input type="checkbox"/>

7. **V<sub>NHD</sub>** **Nekton Habitat Diversity**

Check the habitats present within the WAA	
Low marsh (daily tidal flooding)	<input checked="" type="checkbox"/>
High marsh (irregular tidal flooding)	<input checked="" type="checkbox"/>
Subtidal channels	<input checked="" type="checkbox"/>
Intertidal channels (exposed at low tide)	<input checked="" type="checkbox"/>
Shallow (< 1 m) sand or mud flats	<input checked="" type="checkbox"/>
Ponds or depressions (temporary or permanent)	<input checked="" type="checkbox"/>
Check the habitats present within 30 m of WAA perimeter	
Submerged aquatic vegetation	<input type="checkbox"/>
Oyster reef	<input type="checkbox"/>
Total number of nekton habitat types present	6



Assessment Team: NS  
 Project: North Rail  
 Date: 2/25/21

8. **V<sub>WHD</sub>** **Wildlife Habitat Diversity**  
 Check the habitats present within the WAA or adjacent to the WAA perimeter.

Wildlife Habitat Type	Check if present
Large patches of tall, robust herbaceous vegetation within the WAA that is at least irregularly flooded ( <i>S. alterniflora</i> , <i>J. roemerianus</i> , <i>Typha</i> spp., <i>Schoenoplectus</i> spp.) Does tall robust herbaceous vegetation occupy at least 50 percent of the total WAA area? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If tall robust herbaceous vegetation occurs in a narrow fringe, is this fringe greater than 10 m wide? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	✓
Short herbaceous vegetation within the WAA that is infrequently flooded ( <i>S. palens</i> , <i>Distichlis spicata</i> , <i>Borreria frutescens</i> , <i>Balis maritima</i> )	
Intertidal creeks and mudflats within the WAA that are exposed at low tide	✓
Naturally vegetated upland buffer adjacent to WAA with a minimum width of 30 m (forested, shrub-scrub, or dense herbaceous)	

Assessment Team: WS  
 Project: North Rail  
 Date: 2/26/21

Plant Community Field Data Sheet Page 1										
Record the BB cover class midpoint ( ) for each species.										
Braun-Blanquet Cover Indices: 1 = 1-5% (2.5%); 2 = 6-25% (16.6%); 3 = 26-50% (37.5); 4 = 51-75% (67.5%); 5 = >75% (87.5%)										
Horbaaceous Wetland Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10
<b>I. Tall, Robust Species<sup>1</sup></b>										
<i>Spartina alterniflora</i>										
<i>Spartina cynosuroides</i>										
<i>Juncus roemerianus</i>										
<i>Schoenoplectus americanus</i>										
<i>Schoenoplectus robustus</i>										
<i>Cladium jamaicense</i>	3									
<i>Typha angustifolia</i>	3	5								
<i>Zizaniopsis miliacea</i>										
<i>Phragmites australis</i>										
<sup>1</sup> Height (cm) for each plot										
<b>II. Low-Growing Species</b>										
<i>Batis maritima</i>										
<i>Crinum americanum</i>										
<i>Distichlis spicata</i>										
<i>Eleocharis</i> spp.										
<i>Ipomoea sagittata</i>										
<i>Pantederia cordata</i>										
<i>Sagittaria</i> spp.										
<i>Spartina patens</i>										
<i>Salicornia</i> spp.										
<i>Symphoricarpos tenuifolius</i>										
Total Cover by Plot	96	95								
<sup>2</sup> Height (cm) for each plot	180	60								

<sup>1</sup>Height is only measured for Group I species, if present.  
<sup>2</sup>Height is measured for species in Group II only if none of the species in Group I is present onsite.

Assessment Team: WS  
 Project: North Hill  
 Date: 5/15/21

Plant Community Field Data Sheet Page 2										
Record the BB cover class midpoint ( ) for each species.										
Braun-Blanquet Cover Indices: 1 = 1-5% (2.5%); 2 = 6-25% (15.5%); 3 = 26-50% (37.5); 4 = 51-75% (67.5%); 5 = >75% (87.5%)										
Woody Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10
<i>Acer rubrum</i>										
<i>Baccharis halimifolia</i>										
<i>Ilex vomitoria</i>										
<i>Ilex decidua</i>										
<i>Morella conifera</i>										
<i>Iva frutescens</i>										
<i>Nyssa</i> spp.										
<i>Toxodium distichum</i>										
Estimate Proportion of Entire Site Occupied by Woody Vegetation										
FACIFACU Species										
<i>Baccharis halimifolia</i>										
<i>Ilex vomitoria</i>										
<i>Morella conifera</i>										
<i>Panicum virgatum</i>										
Total FAC Cover by Plot OR										
Estimate Proportion of Entire Site Occupied by FACIFACU Species (Use whichever method results in the highest value for percent cover)										
Exotic or Invasive Species										
<i>Alternanthera philoxeroides</i>										
<i>Phragmites australis</i>										
<i>Cuscuta</i> spp.										
<i>Imperata cylindrica</i>										
<i>Panicum repens</i>										
<i>Triadica sebifera</i>										
<i>Typha latifolia</i>										
Total Exotic Cover by Plot OR										
Estimate Proportion of Entire Site Occupied by Exotics (Use whichever method results in the highest value for percent cover)										

Assessment Team: W.S  
 Project: North Rail  
 Date: 2/25/01  
 Size of the Wetland Assessment Area (WAA): 0.26 (ha)

Sample variables 1-5 using aerial photos, digital ortho-photo quadrangle imagery, etc., at a scale of (1:4800) (1 inch = 400 feet) (color infrared or true color preferred), using GIS or other means.

1.  $V_{SIZE}$  Wetland Patch Size (ha) 16  
 Calculate the area (in hectares) of the contiguous tidal fringe wetland within which the WAA is located. In some situations, the WAA may encompass the entire wetland patch and the WAA size and wetland patch size will be equal.
2.  $V_{LANDUSE}$  Adjacent land use  
 Determine the proportion of the WAA perimeter (expressed as a percentage, rounded to the nearest 5 percent) that is bounded by each of the following land use types.

Land Use Category	Description	Proportion of WAA Perimeter
Undeveloped naturally vegetated areas or open water	a) Open water: Shoreline is at least 100 m from navigation channel, if present. b) Terrestrial: > 75% of total area is naturally vegetated forested or grassy uplands or wetlands.	<u>100</u>
Mostly agricultural	More than 50% of the total area is occupied by cropland.	
Mostly developed	a) Open water: Harbors, ports, and marinas b) Terrestrial: More than 40% of the total area is developed (i.e., residential, commercial, or industrial areas; also includes point sources such as golf courses, wastewater treatment plant outfalls, feedlots, etc.)	
Mixed	a) Open water: areas where the shoreline is within 100 m of a navigation channel. b) Terrestrial: Does not fit any of the above categories, may include low-density rural residential, unpaved roads, etc.	

3.  $V_{WIDTH}$  Mean Marsh Width 406 (m)  
 Establish the appropriate number of transects according to the baseline length and record the length of each transect (in meters) in the boxes below, then calculate the average.

T1 <u>386</u>	T2 <u>289</u>	T3 <u>550</u>	T4	T5
T6	T7	T8	T9	T10

Assessment Team: WJ S  
 Project: North Rail  
 Date: 2/25/21

4.  $V_{EXPOSE}$  **Wave Energy Exposure**  
 Circle the exposure condition that most closely corresponds to the site condition described in the table below.  
 Note: Sites with no exposed shorelines are not assessed for this function.

Site Description	Exposure
<b>Geomorphic Setting: Low-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of protected coves or embayments (concave shoreline) OR along the edge of a small tidal creek not used by commercial boat traffic.	Low
<b>Geomorphic Setting: Moderate-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of large tidal creeks or rivers that are used by recreational and/or commercial boat traffic.	Moderate
<b>Geomorphic Setting: Open Bay or Estuary</b> These sites have one or more shorelines located directly along the edges of an estuary or bay (e.g., Mississippi Sound, Mobile Bay). Shoreline is generally linear, exposed to relatively high wind and wave energy, with long fetch distances, or adjacent to navigation channel that is frequently used by recreational or commercial boat traffic.	High
<b>Geomorphic Setting: Zero-Energy Interior Marsh</b> These sites have no shorelines exposed to wind or wave energy present.	None

5.  $V_{EDGE}$  **Aquatic Edge**  
 Circle the qualitative or quantitative measure that most closely corresponds to the site condition described in the table below. See pictorial key in Appendix E (Figures E1-E11) for specific examples. Note: *Unvegetated shorelines (i.e. sandy beaches) are not included as edge.*

Site Description	Qualitative Measure	Quantitative Measure
1) Well-developed tidal drainage network present (Figures E-1 and E-2). OR 2) Very narrow fringe marsh that lacks tidal creeks. One lengthwise shoreline that represents at least 40% of the total perimeter is exposed to tidal waters (e.g., Daphne Bayfront Park). 3) Other geomorphic configuration with a large amount of shoreline relative to total area (i.e., small island or narrow peninsula) (Figures E-3 and E-4).	High	$\geq 225$ m/ha
Simple tidal drainage network (may consist of one or more small channels) that are well-distributed across the total WAA area (Figures E-5 and E-6).	Moderate-High	175-224 m/ha
Tidal creeks may be locking, or if present, drain only a small proportion of the total WAA area (Figures E-7, E-8, and E-9).	Moderate-Low	100-175 m/ha
Shoreline is generally linear or smooth curvilinear without embayments or convolutions. Tidal creeks typically absent. The area of marsh is large relative to shoreline length (Figure E-10).	Low	1-100 m/ha
No vegetated marsh-water interface present in WAA (Figure E-11).	Absent	0 m/ha

Assessment Team: WS  
 Project: Worth Rail  
 Date: 2/25/21

Sample variables 6-8 based on a walking reconnaissance of the WAA.

6. **V<sub>HYDRO</sub>** **Hydrologic regime**  
 Place a check in the box that most closely fits site conditions.

Site Description	V <sub>HYDRO</sub>
Site is open to free exchange of tidal waters. Lower edges of vegetated marsh surface are flooded on a regular basis as evidenced by wrack lines, watermarks, etc. No obvious hydrologic alteration, fill, or restrictions present.	<input checked="" type="checkbox"/>
Minor hydrologic alteration or restriction present (i.e., presence of low-elevation berm, which is frequently overtopped by high-tide events or has multiple breaches or large culverts; presence of some fill that raises a small portion (<20 percent of marsh area) of marsh surface above normal tidal flooding zone).	<input type="checkbox"/>
Moderate hydrologic alteration present (i.e., presence of high-elevation berm, which is infrequently overtopped by high-tide events or has a single opening, breach, or small culvert; greater extent of fill (>20 percent) that raises portions of marsh surface elevation above normal tidal flooding zone).	<input type="checkbox"/>
Severe hydrologic alteration; site receives tidal floodwaters only during extreme tide events (i.e., surface elevation of marsh is above normal tidal flooding zone; blocked culvert, etc.).	<input type="checkbox"/>
Site is isolated from tidal exchange. The principal source of flooding is water sources other than tidal action (i.e., precipitation or groundwater). <i>Note: If this condition exists, use of another wetland assessment model should be strongly considered unless the site was a tidal wetland prior to hydrologic modification.</i>	<input type="checkbox"/>

7. **V<sub>NHD</sub>** **Nekton Habitat Diversity**

<b>Check the habitats present within the WAA</b>	
Low marsh (daily tidal flooding)	<input checked="" type="checkbox"/>
High marsh (irregular tidal flooding)	<input checked="" type="checkbox"/>
Subtidal channels	<input checked="" type="checkbox"/>
Intertidal channels (exposed at low tide)	<input checked="" type="checkbox"/>
Shallow (< 1 m) sand or mud flats	<input checked="" type="checkbox"/>
Ponds or depressions (temporary or permanent)	<input checked="" type="checkbox"/>
<b>Check the habitats present within 30 m of WAA perimeter</b>	
Submerged aquatic vegetation	<input type="checkbox"/>
Oyster reef	<input type="checkbox"/>
Total number of nekton habitat types present	<u>5</u>

Assessment Team: WS  
 Project: North Rail  
 Date: 2/25/21

8.  $V_{WHD}$  **Wildlife Habitat Diversity**  
 Check the habitats present within the WAA or adjacent to the WAA perimeter.

Wildlife Habitat Type	Check if present
Large patches of tall, robust herbaceous vegetation within the WAA that is at least irregularly flooded (S. alterniflora, J. roemerianus, Typha spp., Schoenoplectus spp.) Does tall robust herbaceous vegetation occupy at least 60 percent of the total WAA area? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If tall robust herbaceous vegetation occurs in a narrow fringe, is this fringe greater than 10 m wide? <input type="checkbox"/> YES <input type="checkbox"/> NO	✓
Short herbaceous vegetation within the WAA that is infrequently flooded (S. patens, Distichlis spicata, Borrichia frutescens, Baileya maritima)	✓
Intertidal creeks and mudflats within the WAA that are exposed at low tide	
Naturally vegetated upland buffer adjacent to WAA with a minimum width of 30 m (forested, shrub-scrub, or dense herbaceous)	✓

Assessment Team: LWS  
 Project: North Hill  
 Date: 5/25/01

Plant Community Field Data Sheet Page 1										
Record the BB cover class midpoint ( ) for each species.										
Braun-Blanquet Cover Indices: 1 = 1-5% (2.5%); 2 = 6-25% (15.6%); 3 = 26-50% (37.5); 4 = 51-75% (67.5%); 5 = >75% (87.6%)										
Herbaceous Wetland Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10
<b>I. Tall, Robust Species<sup>1</sup></b>										
<i>Spartina alterniflora</i>										
<i>Spartina cynosuroides</i>										
<i>Juncus roemerianus</i>										
<i>Schoenoplectus americanus</i>										
<i>Schoenoplectus robustus</i>										
<i>Cladium jamaicense</i>	5									
<i>Typha angustifolia</i>	1									
<i>Zizaniopsis miliacea</i>										
<i>Phragmites australis</i>										
<sup>1</sup> Height (cm) for each plot										
<b>II. Low-Growing Species</b>										
<i>Ball's maritima</i>										
<i>Cyperus americanum</i>										
<i>Distichlis spicata</i>										
<i>Eleocharis</i> spp.										
<i>Ipomoea sagittata</i>										
<i>Pontederia cordata</i>										
<i>Sagittaria</i> spp.										
<i>Spartina patens</i>										
<i>Salicornia</i> spp.										
<i>Symphoricarpon tenuifolium</i>										
Total Cover by Plot	65									
<sup>2</sup> Height (cm) for each plot	10*									
<sup>1</sup> Height is only measured for Group I species, if present.										
<sup>2</sup> Height is measured for species in Group II only if none of the species in Group I is present onsite.										



Assessment Team: WS

Project: North Run

Date: 2/25/21

Plant Community Field Data Sheet Page 2										
Record the BB cover class midpoint ( ) for each species.										
Braun-Blanquet Cover Indices: 1 = 1-5% (2.6%); 2 = 6-25% (16.5%); 3 = 26-50% (37.5); 4 = 51-75% (67.5%); 5 = >75% (87.5%)										
Woody Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10
<i>Acer rubrum</i>										
<i>Baccharis halimifolia</i>										
<i>Ilex vomitoria</i>										
<i>Ilex decidua</i>										
<i>Morella cerifera</i>										
<i>Iva frutescens</i>										
<i>Nyssa spp.</i>										
<i>Toxodum distichum</i>										
Estimate Proportion of Entire Site Occupied by Woody Vegetation							0			
FAC/FACU Species										
<i>Baccharis halimifolia</i>										
<i>Ilex vomitoria</i>										
<i>Morella cerifera</i>										
<i>Panicum virgatum</i>										
Total FAC Cover by Plot OR										
Estimate Proportion of Entire Site Occupied by FAC/FACU Species (Use whichever method results in the highest value for percent cover)							0			
Exotic or Invasive Species										
<i>Alternanthera philoxeroides</i>										
<i>Phragmites australis</i>										
<i>Cuscuta spp.</i>										
<i>Imperata cylindrica</i>										
<i>Panicum repens</i>										
<i>Triadica sebifera</i>										
<i>Typha latifolia</i>										
Total Exotic Cover by Plot OR										
Estimate Proportion of Entire Site Occupied by Exotics (Use whichever method results in the highest value for percent cover)							0			

Assessment Team: WS  
 Project: North Rail  
 Date: 02/25/01  
 Size of the Wetland Assessment Area (WAA): 0.15 (ha)

Sample variables 1-5 using aerial photos, digital ortho-photo quadrangle imagery, etc., at a scale of (1:4800) (1 inch = 400 feet) (color infrared or true color preferred), using GIS or other means.

1.  $V_{SIZE}$ : Wetland Patch Size (ha) 4  
 Calculate the area (in hectares) of the contiguous tidal fringe wetland within which the WAA is located. In some situations, the WAA may encompass the entire wetland patch and the WAA size and wetland patch size will be equal.
2.  $V_{LANDUSE}$ : Adjacent land use  
 Determine the proportion of the WAA perimeter (expressed as a percentage, rounded to the nearest 5 percent) that is bounded by each of the following land use types.

Land Use Category	Description	Proportion of WAA Perimeter
Undeveloped naturally vegetated areas or open water	a) Open water: Shoreline is at least 100 m from navigation channel, if present. b) Terrestrial: > 75% of total area is naturally vegetated forested or grassy uplands or wetlands.	✓
Mostly agricultural	More than 60% of the total area is occupied by cropland.	
Mostly developed	a) Open water: Harbors, ports, and marinas b) Terrestrial: More than 40% of the total area is developed (i.e., residential, commercial, or industrial areas; also includes point sources such as golf courses, wastewater treatment plant outfalls, feedlots, etc.)	
Mixed	a) Open water: areas where the shoreline is within 100 m of a navigation channel. b) Terrestrial: Does not fit any of the above categories, may include low-density rural residential, unpaved roads, etc.	

3.  $V_{WIDTH}$ : Mean Marsh Width 35 (m)  
 Establish the appropriate number of transects according to the baseline length and record the length of each transect (in meters) in the boxes below, then calculate the average.

T1 <u>35</u>	T2 <u>36</u>	T3 <u>32</u>	T4	T5
T6	T7	T8	T9	T10

Assessment Team: W5  
 Project: North Rail  
 Date: 5/25/21

4. **V<sub>EXPOSE</sub>** **Wave Energy Exposure**  
 Circle the exposure condition that most closely corresponds to the site condition described in the table below.  
 Note: Sites with no exposed shorelines are not assessed for this function.

Site Description	Exposure
<b>Geomorphic Setting: Low-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of protected coves or embayments (concave shoreline) OR along the edge of a small tidal creek not used by commercial boat traffic.	<u>Low</u>
<b>Geomorphic Setting: Moderate-Energy Interior Marsh</b> These sites have one or more shorelines located along the edges of large tidal creeks or rivers that are used by recreational and/or commercial boat traffic.	Moderate
<b>Geomorphic Setting: Open Bay or Estuary</b> These sites have one or more shorelines located directly along the edges of an estuary or bay (e.g., Mississippi Sound, Mobile Bay). Shoreline is generally linear, exposed to relatively high wind and wave energy, with long fetch distances, or adjacent to navigation channel that is frequently used by recreational or commercial boat traffic.	High
<b>Geomorphic Setting: Zero-Energy Interior Marsh</b> These sites have no shorelines exposed to wind or wave energy present.	None

5. **V<sub>EDGE</sub>** **Aquatic Edge**  
 Circle the qualitative or quantitative measure that most closely corresponds to the site condition described in the table below. See pictorial key in Appendix E (Figures E1-E11) for specific examples. *Note: Unvegetated shorelines (i.e. sandy beaches) are not included as edge.*

Site Description	Qualitative Measure	Quantitative Measure
1) Well-developed tidal drainage network present (Figures E-1 and E-2). OR 2) Very narrow fringe marsh that lacks tidal creeks. One lengthwise shoreline that represents at least 40% of the total perimeter is exposed to tidal waters (e.g., Daphne Bayfront Park). 3) Other geomorphic configuration with a large amount of shoreline relative to total area (i.e., small island or narrow peninsula) (Figures E-3 and E-4).	High	≥ 225 m/ha
Simple tidal drainage network (may consist of one or more small channels) that are well-distributed across the total WAA area (Figures E-5 and E-6).	<u>Moderate-High</u>	175-224 m/ha
Tidal creeks may be lacking, or if present, drain only a small proportion of the total WAA area (Figures E-7, E-8, and E-9).	Moderate-Low	100-175 m/ha
Shoreline is generally linear or smooth curvilinear without embayments or convolutions. Tidal creeks typically absent. The area of marsh is large relative to shoreline length (Figure E-10).	Low	1-100 m/ha
No vegetated marsh-water interface present in WAA (Figure E-11).	Absent	0 m/ha

Assessment Team: WS  
 Project: North Point  
 Date: 2/25/21

Sample variables 6-8 based on a walking reconnaissance of the WAA.

6. **VHYDRO** **Hydrologic regime**  
 Place a check in the box that most closely fits site conditions.

Site Description	VHYDRO
Site is open to free exchange of tidal waters. Lower edges of vegetated marsh surface are flooded on a regular basis as evidenced by wrack lines, watermarks, etc. No obvious hydrologic alteration, fill, or restrictions present.	<input checked="" type="checkbox"/>
Minor hydrologic alteration or restriction present (i.e., presence of low-elevation berm, which is frequently overtopped by high-tide events or has multiple breaches or large culverts; presence of some fill that raises a small portion (<20 percent of marsh area) of marsh surface above normal (tidal) flooding zone).	<input type="checkbox"/>
Moderate hydrologic alteration present (i.e., presence of high-elevation berm, which is infrequently overtopped by high-tide events or has a single opening, breach, or small culvert; greater extent of fill (>20 percent) that raises portions of marsh surface elevation above normal tidal flooding zone).	<input type="checkbox"/>
Severe hydrologic alteration; site receives tidal floodwaters only during extreme tide events (i.e., surface elevation of marsh is above normal tidal flooding zone; blocked culvert, etc.).	<input type="checkbox"/>
Site is isolated from tidal exchange. The principal source of flooding is water sources other than tidal action (i.e., precipitation or groundwater). <i>Note: If this condition exists, use of another wetland assessment model should be strongly considered unless the site was a tidal wetland prior to hydrologic modification.</i>	<input type="checkbox"/>

7. **VNID** **Nekton Habitat Diversity**

Check the habitats present within the WAA	
Low marsh (daily tidal flooding)	<input type="checkbox"/>
High marsh (irregular tidal flooding)	<input checked="" type="checkbox"/>
Subtidal channels	<input checked="" type="checkbox"/>
Intertidal channels (exposed at low tide)	<input checked="" type="checkbox"/>
Shallow (< 1 m) sand or mud flats	<input checked="" type="checkbox"/>
Ponds or depressions (temporary or permanent)	<input checked="" type="checkbox"/>
Check the habitats present within 30 m of WAA perimeter	
Submerged aquatic vegetation	<input type="checkbox"/>
Oyster reef	<input type="checkbox"/>
Total number of nekton habitat types present	<u>5</u>

Assessment Team: WS  
 Project: North Rail  
 Date: 2/25/21

8.  $V_{WHD}$  **Wildlife Habitat Diversity**  
 Check the habitats present within the WAA or adjacent to the WAA perimeter.

Wildlife Habitat Type	Check if present
Large patches of tall, robust herbaceous vegetation within the WAA that is at least irregularly flooded ( <i>S. alterniflora</i> , <i>J. roemerianus</i> , <i>Typha</i> spp., <i>Schoenoplectus</i> spp.) Does tall robust herbaceous vegetation occupy at least 50 percent of the total WAA area? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO If tall robust herbaceous vegetation occurs in a narrow fringe, is this fringe greater than 10 m wide? <input type="checkbox"/> YES <input type="checkbox"/> NO	✓
Short herbaceous vegetation within the WAA that is infrequently flooded ( <i>S. patens</i> , <i>Distichlis spicata</i> , <i>Borichia frutescens</i> , <i>Batis maritima</i> )	
Intertidal creeks and mudflats within the WAA that are exposed at low tide	✓
Naturally vegetated upland buffer adjacent to WAA with a minimum width of 30 m (forested, shrub-scrub, or dense herbaceous)	✓

Assessment Team: WS  
 Project: North Hill  
 Date: 2/25/21

Plant Community Field Data Sheet Page 1										
Record the BB cover class midpoint ( ) for each species.										
Braun-Blanquet Cover Indices: 1 = 1-5% (2.5%); 2 = 6-25% (15.5%); 3 = 26-50% (37.5%); 4 = 51-75% (67.5%); 5 = >75% (87.5%)										
Herbaceous Wetland Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10
<b>I. Tall, Robust Species<sup>1</sup></b>										
<i>Spartina alterniflora</i>										
<i>Spartina cynosuroides</i>										
<i>Juncus roemerianus</i>	1									
<i>Schoenoplectus americanus</i>										
<i>Schoenoplectus robustus</i>										
<i>Cladium jamaicense</i>	5									
<i>Typha angustifolia</i>	1									
<i>Zizaniopsis millicea</i>										
<i>Phragmites australis</i>										
<sup>1</sup> Height (cm) for each plot										
<b>II. Low-Growing Species</b>										
<i>Ballis maritima</i>										
<i>Crinum americanum</i>										
<i>Distichlis spicata</i>										
<i>Elaecharis</i> spp.										
<i>Ipomoea sagittata</i>										
<i>Pontederia cordata</i>										
<i>Sagittaria</i> spp.										
<i>Spartina patens</i>										
<i>Silicornia</i> spp.										
<i>Symphoricarpon tenuifolium</i>										
Total Cover by Plot	45									
<sup>1</sup> Height (cm) for each plot	190									
<sup>1</sup> Height is only measured for Group I species, if present.										
<sup>2</sup> Height is measured for species in Group II only if none of the species in Group I is present onsite.										

Assessment Team: WS  
 Project: Norfolk Rail  
 Date: 2/25/01

Plant Community Field Data Sheet Page 2											
Record the BB cover class midpoint ( ) for each species.											
Braun-Blanquet Cover Indices: 1 = 1-5% (2.5%); 2 = 6-25% (15.5%); 3 = 26-50% (37.5); 4 = 51-76% (67.5%); 5 = >76% (87.5%)											
Woody Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6	Plot 7	Plot 8	Plot 9	Plot 10	
<i>Acer rubrum</i>											
<i>Baccharis halimifolia</i>											
<i>Ilex vomitoria</i>											
<i>Ilex decidua</i>											
<i>Morella cerifera</i>											
<i>Iva frutescens</i>											
<i>Nyssa spp.</i>											
<i>Taxodium distichum</i>											
Estimate Proportion of Entire Site Occupied by Woody Vegetation											
FACIFACU Species											
<i>Baccharis halimifolia</i>											
<i>Ilex vomitoria</i>											
<i>Morella cerifera</i>											
<i>Panicum virgatum</i>											
Total FAC Cover by Plot OR											
Estimate Proportion of Entire Site Occupied by FACIFACU Species (Use whichever method results in the highest value for percent cover)											0
Exotic or Invasive Species											
<i>Alternanthera philoxeroides</i>											
<i>Phragmites australis</i>											
<i>Cuscuta spp.</i>											
<i>Imperata cylindrica</i>											
<i>Panicum repens</i>											
<i>Triadica sebifera</i>											
<i>Typha latifolia</i>											
Total Exotic Cover by Plot OR											
Estimate Proportion of Entire Site Occupied by Exotics (Use whichever method results in the highest value for percent cover)											0

**From:** [Lisa D. Morrison](#)  
**To:** [Villarreal, Rudolph C CIV USARMY CESAM \(USA\)](#)  
**Subject:** North Rail SAM-2018-01204-RCV  
**Date:** Monday, December 07, 2020 1:48:00 PM  
**Attachments:** [North Rail pkg for Corps .pdf](#)  
[image001.png](#)

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Rudy, please see the attached information requested in your email of November 25, 2020. You will find a drawing that shows the adjacent property owners, a drawing that shows the permitted footprint and the modified footprint, drawings C2.1, C2.2, and C2.3 that show the piling placement, a cut and fill report that shows where fill will be in wetlands (shown in red) and uplands (shown in yellow) and where the elevated portions will be, and an updated, signed Joint Application. We did have a pre-filing meeting with Cevion Spann of MDEQ on Friday, December 4, 2020. As a result of that meeting we will be providing MDEQ with updated project information including drainage and stormwater information.

Please let me know if you need anything else.

*Lisa D. Morrison, RPG*  
Senior Geologist



**COMPTON ENGINEERING, INC.**

156 Nixon Street, Biloxi, MS  
P: 228.432-2133 F: 228.432-8149 C:760-0643

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**Please consider the environment before printing this e-mail"**



# JOINT APPLICATION AND NOTIFICATION

U.S. ARMY CORPS OF ENGINEERS  
 MISSISSIPPI DEPARTMENT OF MARINE RESOURCES  
 MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY/OFFICE OF POLLUTION 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  
 December 7, 2020  
 \_\_\_\_\_  
 month day year

2. Applicant name, mailing address, phone number and email address:  
 Jackson County Port Authority  
 PO Box 70  
 Pascagoula, MS 39568  
 sfeathers@portofpascagoula.com

Agent name, mailing address, phone number and email address:  
 Compton Engineering  
 1969 Market Street  
 Pascagoula, MS 39568  
 lmorrison@comptonengineering.com

3. Official use only  
 COE \_\_\_\_\_  
 DMR \_\_\_\_\_  
 DEQ \_\_\_\_\_  
 A95 \_\_\_\_\_  
 DATE RECEIVED \_\_\_\_\_

4. Project location  
 Street Address N/A City/Community Moss Point  
 Name of Waterway Escatawpa River Latitude 30.415001 Longitude (if known) -88.513679  
 Geographic location: Section 19 Township 7S Range 5W County Jackson

5. Project description  
 New work  Maintenance work \_\_\_\_\_  
**Dredging**  
 \_\_\_ Channel length \_\_\_\_\_ width \_\_\_\_\_ existing depth \_\_\_\_\_ proposed depth \_\_\_\_\_  
 \_\_\_ 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 \_\_\_\_\_ Type of material \_\_\_\_\_  
 Location of spoil disposal area \_\_\_\_\_  
 Dimensions of spoil area \_\_\_\_\_ Method of excavation \_\_\_\_\_  
 How will excavated material be contained? \_\_\_\_\_

**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) Construction of new rail road track elevated on pilings and on fill

**Filling**  
 Dimensions of fill area 39,261 square feet (.90 acres)  
 Cubic yards of fill 2,649 Type of fill rip rap, crushed stone, sub ballast, ballast  
 Other regulated activities (i.e. Seismic exploration, burning or clearing of marsh) Explain.

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

Does project area contain any marsh vegetation? Yes  No

(If yes, explain) \_\_\_\_\_

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

(If yes, explain) \_\_\_\_\_

Month and year activity took place \_\_\_\_\_

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 September 2021 Proposed completion date November 2021

Expected completion date (or development timetable) for any projects dependent on the activity described herein. \_\_\_\_\_

**8. Estimated cost of the project \$15 million**

**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.** The purpose of the project is to connect existing MSE rail line south of the Escatawpa River with an interchange located in the Moss Point Industrial and Technology Park. The project is also expected to allow closure of the main MSE line through downtown Moss Point and Pascagoula and allow closure of up to 21 crossings.

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.**

Improved traffic congestion, improved air quality and livability in Moss Point and Pascagoula.

**11. Narrative Project Description:**

The Jackson County Port Authority (JCPA) received authorization from the U.S. Army Corps of Engineers, and the Mississippi Department of Marine Resources and Water Quality Certification from the Mississippi Department of Environmental Quality to construct a railroad connector between the existing MSE rail over the Escatawpa River and an exchange yard located in the Moss Point Industrial and Technology Center (MPITC). The permitted rail was to be constructed on fill within a footprint that crosses over marsh and forested wetlands and forested uplands. The footprint crossed over 3,576 linear feet of emergent marsh vegetation and 1,115 feet of forested wetlands. A permit to construct the North Rail Connector was received by JCPA on October 14, 2020.

Ongoing evaluation of geotechnical borings conducted within the proposed rail footprint through the marsh indicate that it would require several layers of fill within a footprint that would be much wider than proposed and result in a much more expensive project. The original cost estimate for a rail line on fill as initially estimated was approximately \$8 million. Based on the recent geotechnical evaluation, the construction cost is estimated at approximately \$30 million. In an effort to reduce construction costs, the JCPA has evaluated other construction methods and rail line footprints. The evaluation has resulted in proposed use of an elevated rail crossing over a shorter section of marsh, crossing over a longer section of forested uplands and joining to existing rail at a different location. The cost estimate for this revised layout and construction method is approximately \$15.5 million.

The modified footprint crosses over approximately 2,852 feet of marsh wetlands and 807 feet of uplands. By using elevated construction methods, the impact to the marsh wetland is greatly reduced with fill going in only at the abutments to the elevated sections and a short section of marsh (approximately 413 linear feet). The total impact for the revised footprint is approximately 39,261 square feet (0.90 acres) and will require approximately 2,649 net cubic yards of fill.

The approximate center point of the proposed new rail line is located at 30.415001 degrees latitude and -88.513679 degrees longitude. The new rail begins at approximately 30.251207/-88.310005 on the north, and extends to 30.413307/-88.508639 on the east.

The subject property is located in Section 19, Township 7 South, and Range 5 West of Jackson County, MS. A Site Location Map is included in the attached drawings.

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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

2.

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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.

<u>Agency</u>	<u>Type Approval</u>	<u>Application Date</u>	<u>Approval Date</u>
Dept. of Environmental Quality	WQC	this application	
Dept. of Marine Resources	Coastal Zone Consist	this application	
Army Corps of Engineers	Section 404	this application	
City/County _____			
Other _____			

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**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.

*Lisa D. Morrison*

Signature of Applicant or Agent

*December 7, 2020*

Date

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**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.

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**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

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**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.

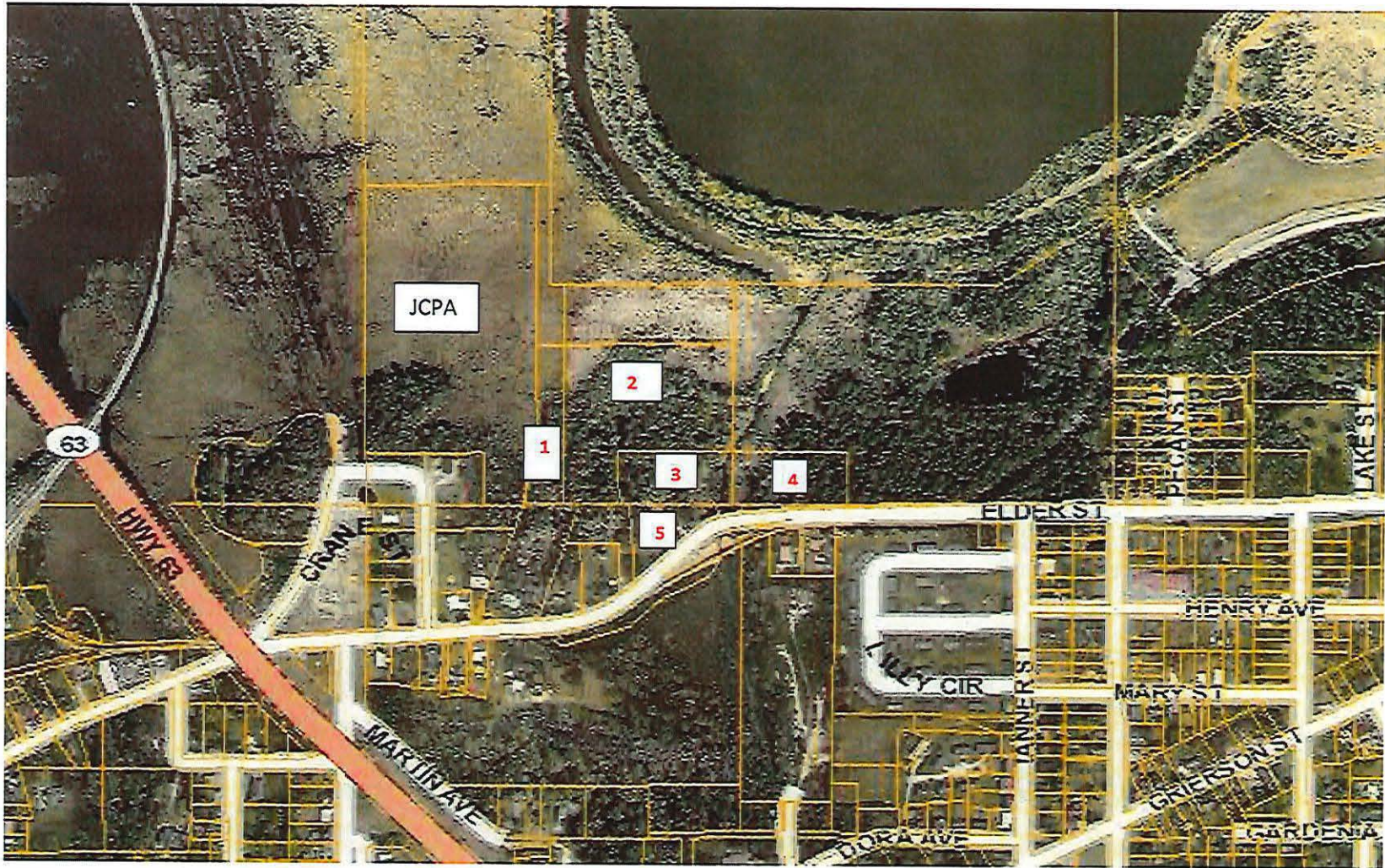
***Attachment "C" Environmental Assessment (Coastal Area Only)***

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)***

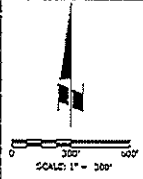
If the applicant is requesting a variance to the guidelines in Section 2, Part III or a revision to the Coastal Wetlands Use Plan in Section 2, Part IV of the Rules, Regulations, Guidelines and Procedures of the Mississippi Coastal Program, a request and justification must be provided.

## Attachment "A" Drawings



- 1 – Warren A. Powell – 5831 Elder Street, Moss Point, MS 39563
- 2 – Juanita Brondum, C/O Lamar Delmas, PO Box 267, Escatawpa, MS 39553
- 3 – Raymond Lamar Delmas, PO box 267, Escatawpa, MS 39553
- 4 – James Edward Bullock – 13116 Highway 613, Moss Point, MS 39563
- 5 – Angela Hawthorne & Gwenethe Parsen, 5836 Elder Street, Moss Point MS 39563

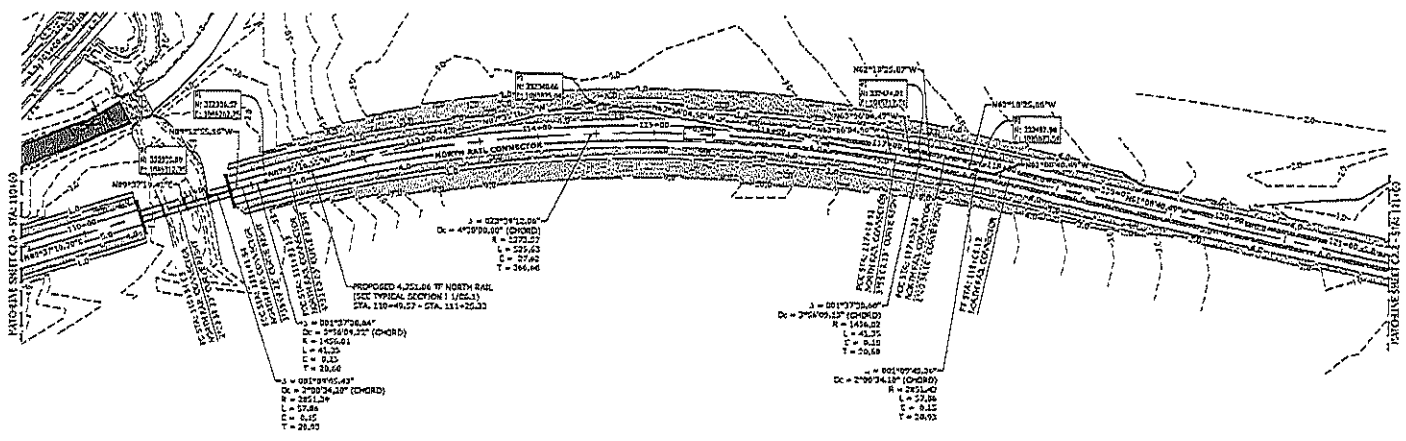
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10000000 RADIUS  
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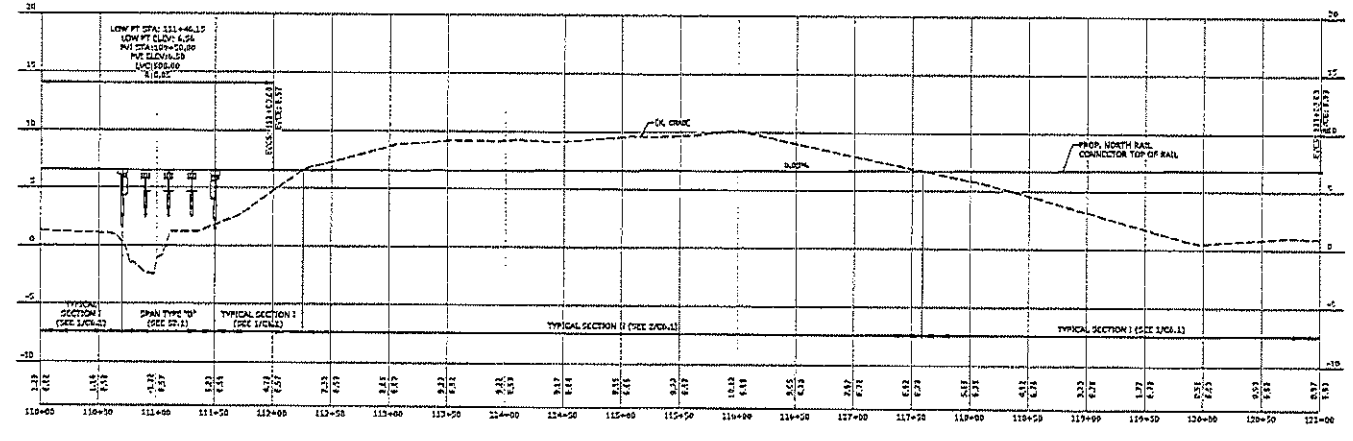
**CE** **COMPTON ENGINEERING, INC.**  
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PASADENA • BILDCO • BAY ST. LOUIS  
336-763-7979 336-432-0120 336-432-7779  
www.comptonengineering.com



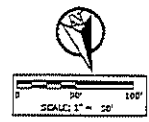
S:\Projects\181818-091\_CDA - North Rail Connection\01 Planning Ass'n\181818-091\_CDA - C2.1.dwg, C2.1, 4/7/2020 8:31:30 AM, 6/14/20



1 PROPOSED PLAN  
C2.1 SCALE: 1" = 50'



2 PROFILE  
C2.1 SCALE: H: 1" = 50' V: 1" = 5'



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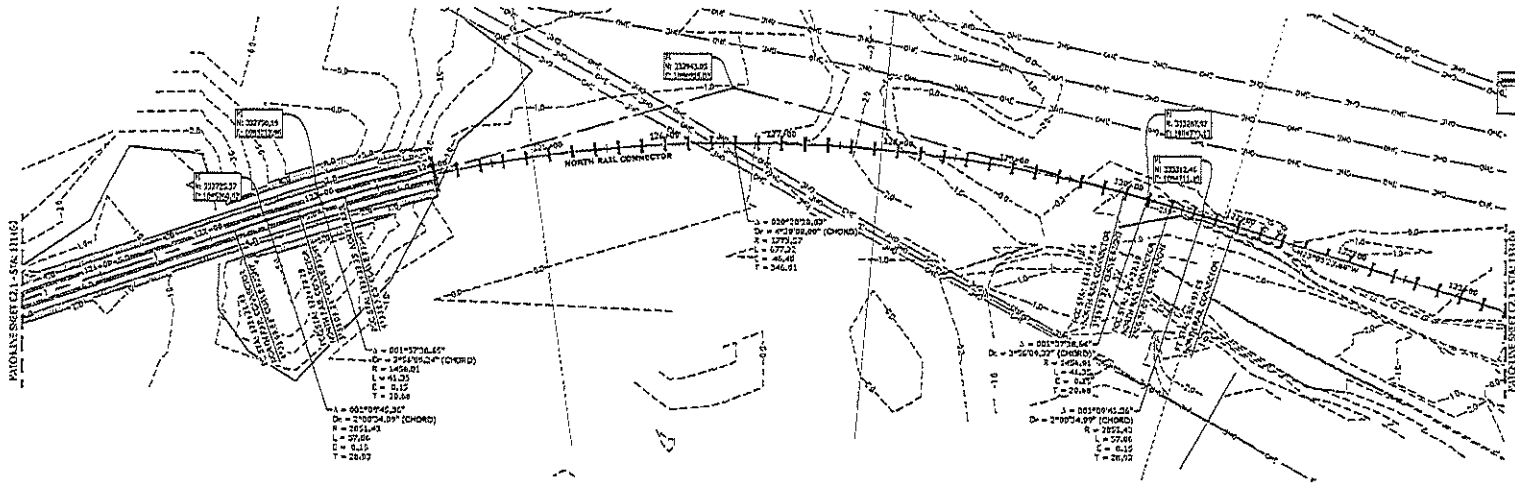
**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
**NORTH RAIL CONNECTOR - PLAN & PROFILE**  
STA: 110+00 - STA: 121+00

SCALE: AS NOTED

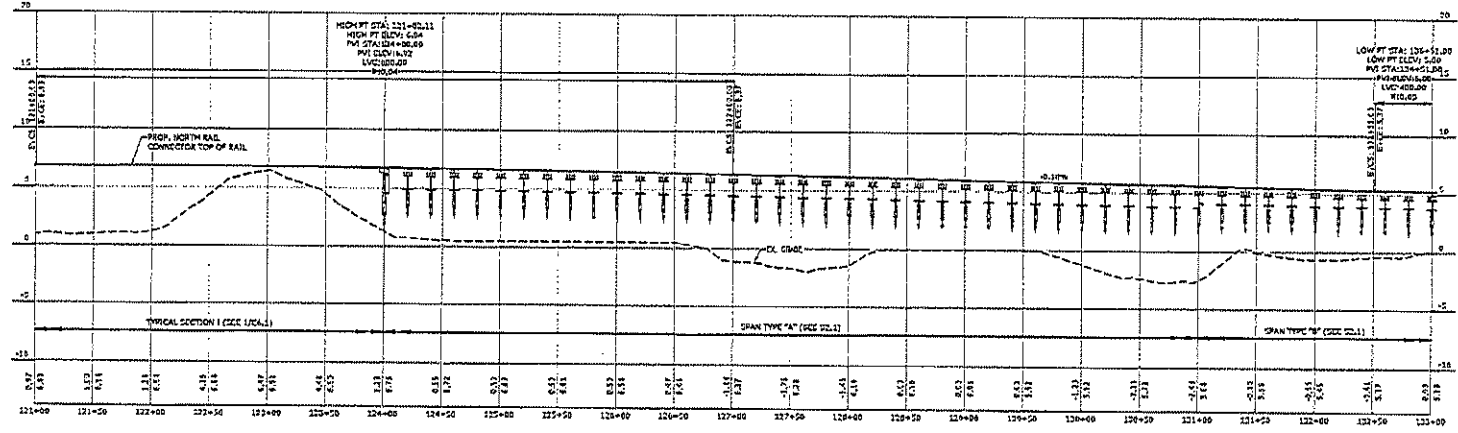
DESIGNER	DATE
PROJECT	11-2-09
DRAWN	1-13-09
CHECKED	1-13-09
DATE	1-13-09
BY	B. LADNER
DATE	
BY	
DATE	

C2.1

S:\Projects\101818-091 JCA - North Rail Connector\101818-091 JCA - North Rail Connector\101818-091 JCA - C2.2.dwg, C2.2, 4/30/2010 8:35:50 AM, 1/1



1 PROPOSED PLAN  
C2.2 SCALE: 1" = 50'



2 PROFILE  
C2.2 SCALE: H: 1" = 50' V: 2" = 5'



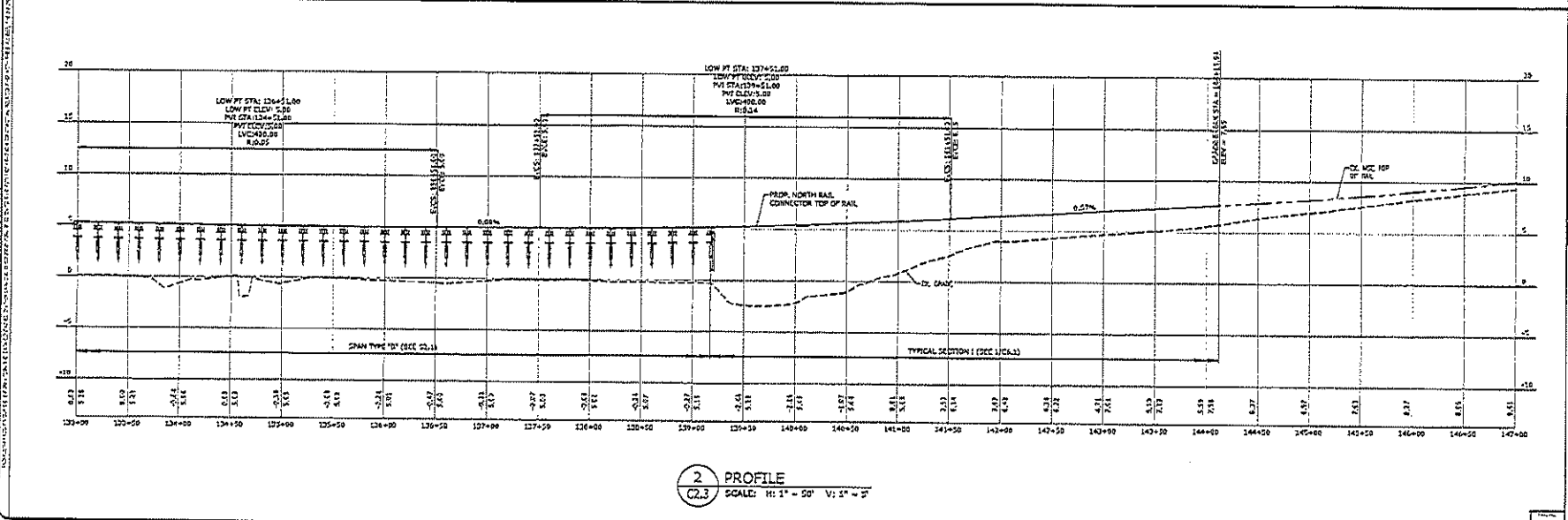
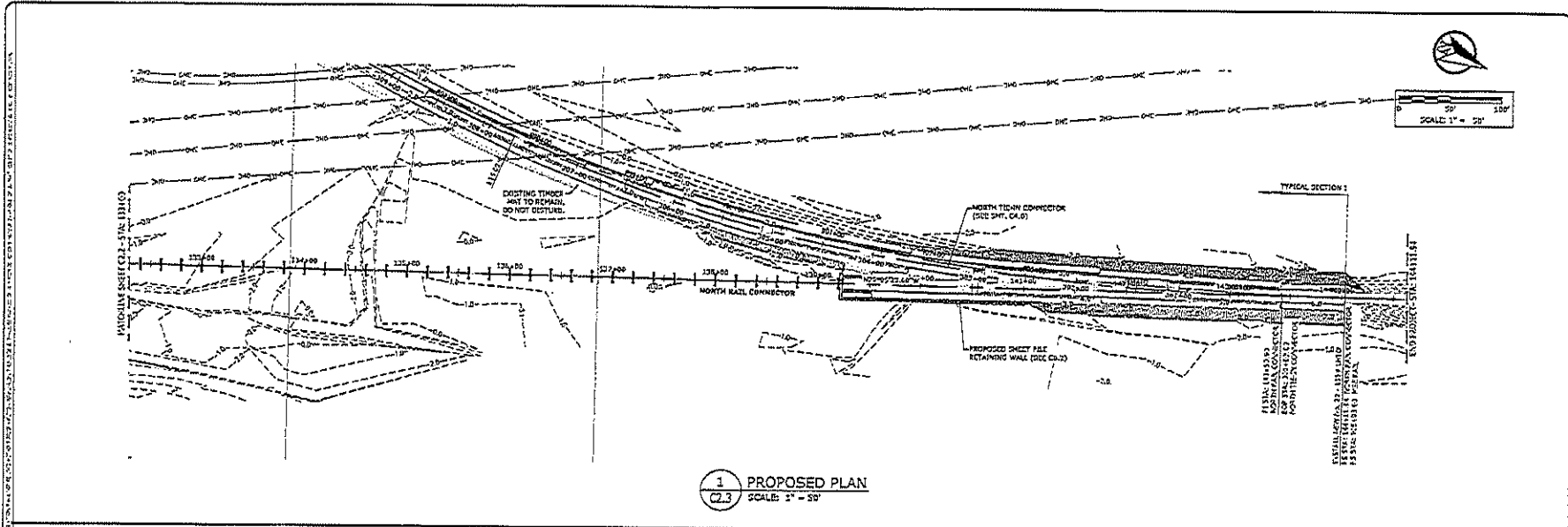
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**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
**NORTH RAIL CONNECTOR - PLAN & PROFILE**  
STA: 121+00 - STA: 133+00

SCALE:	AS NOTED
DATE:	214-051
DESIGNER:	J. SHERMAN
CHECKER:	B. LAMAR
DATE:	
PROJECT:	

C2.2



REVISIONS
DATE
BY
APP'D
DESCRIPTION

1	4/20/08	h14d		ISSUED FOR PERM REVIEW
2	4/20/08	h14d		ISSUED FROM PERM REVIEW
3	4/20/08	h14d		ISSUED FOR CONSTRUCTION
4	4/20/08	h14d		PRELIM. ENG. DMS3 - NOT FOR CONSTRUCTION

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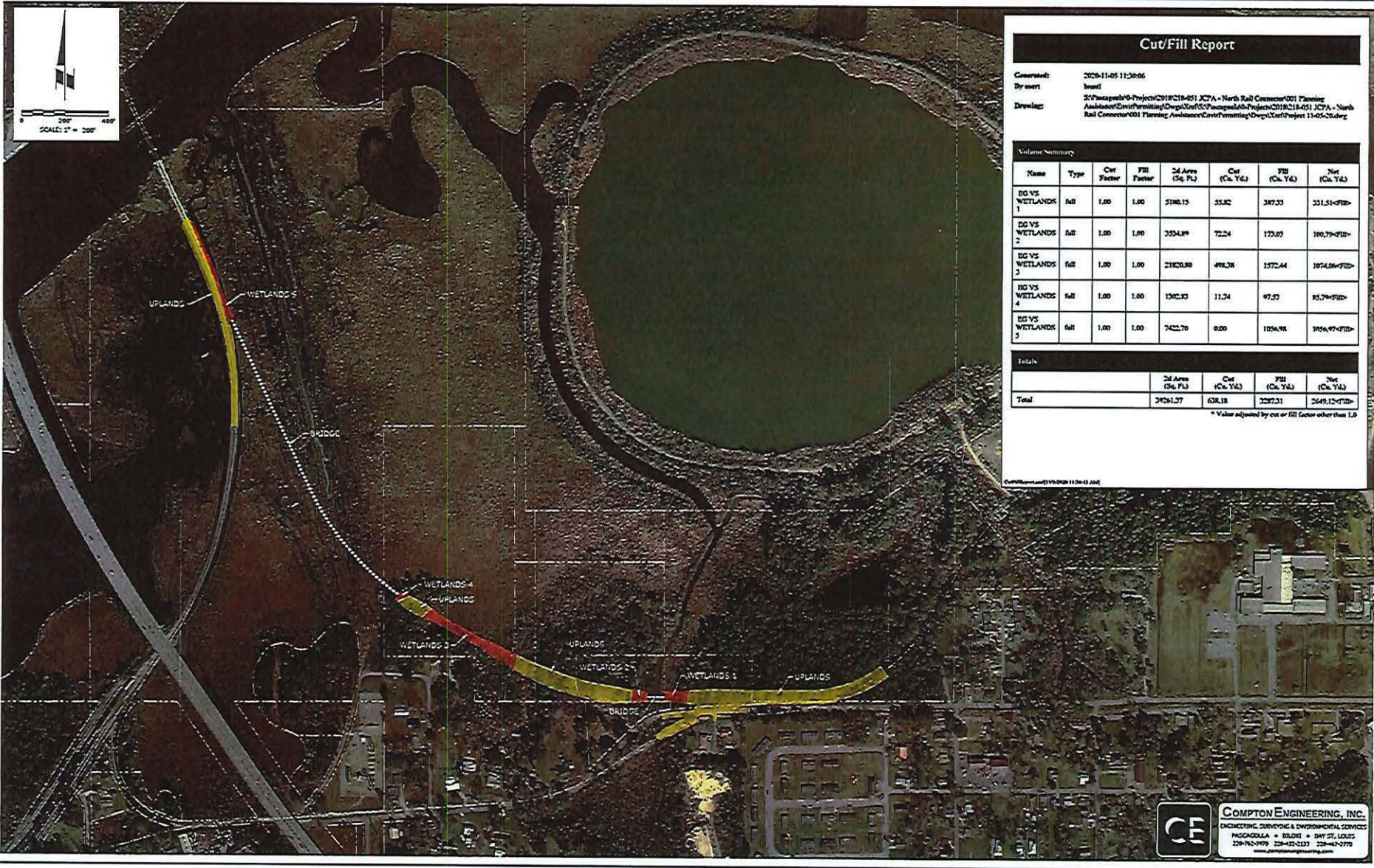
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**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
**NORTH RAIL CONNECTOR - PLAN & PROFILE**  
STA: 133+00 - STA: 144+11.94

**SCALE: AS NOTED**

DATE:	2/18/08
DRAWN:	J. SUBRSTIE
CHECKED:	B. LAUNER
DATE:	2/18/08

**C2.3**



### Cut/Fill Report

**Generated:** 2020-11-05 11:09:06  
**By user:** jwatt  
**Drawing:** S:\Projects\18181318-651 JCPA - North Rail Connector\001 Fluvial Analysis\Envr\From\GIS\Drawings\Wetlands Rail Areas and Volume.dwg - Project\2018181318-651 JCPA - North Rail Connector\001 Fluvial Analysis\Envr\From\GIS\Drawings\Wetlands Rail Areas and Volume.dwg

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
EG VS WETLANDS 1	fill	1.00	1.00	5180.15	35.82	387.33	331.51*(-)
EG VS WETLANDS 2	fill	1.00	1.00	3534.89	72.24	173.83	107.59*(-)
EG VS WETLANDS 3	fill	1.00	1.00	21820.80	498.26	1572.44	1074.18*(-)
EG VS WETLANDS 4	fill	1.00	1.00	1302.83	11.24	97.53	86.29*(-)
EG VS WETLANDS 5	fill	1.00	1.00	7422.70	0.00	1056.96	1056.97*(-)

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	37261.37	638.18	3287.31	2649.12*(-)

\* Value adjusted by cut or fill factor other than 1.0

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December 14, 2020

Mr. Cevion Spann  
Mississippi Department of Environmental Quality  
Office of Pollution Control  
P.O. Box 2261  
Jackson, MS 39225-2261

Re: Jackson County Port Authority  
North Rail Connector Planning Project  
(C.E. Job No. 218-051.001)

Dear Mr. Spann:

In response to the Water Quality Certification Pre-filing Meeting held with MDEQ and Compton Engineering on December 4, 2020 on behalf of the Jackson County Port Authority we submit the following information:

1. Applicant Request:

Jackson County Port Authority is requesting Water Quality Certification for a modification to the footprint of the previously permitted North Rail Connector Project. The project was permitted by the Mobile District U.S. Army Corps of Engineers by permit number SAM-2018-00124-RCV, by the Mississippi Department of Marine Resources DMR-190178, and MDEQ WQC WQC2019028.

2. The Applicant is:

Jackson County Port Authority  
3033 Pascagoula Street  
Pascagoula, MS 39568  
Attn: Mr. Mark McAndrews, Port Director

3. The project description is as follows:

The modified footprint crosses over approximately 2,852 feet of marsh wetlands and 807 feet of uplands. By using elevated construction methods, the impact to the marsh wetland is greatly reduced with fill going in only at the abutments to the elevated sections and a short section of marsh (approximately 413 linear feet). The total impact for the revised footprint is approximately 39,261 square feet (0.90 acres) and will require approximately 2,649 net cubic yards of fill. Please see the attached letter and drawings that were submitted to the Mobile District U.S. Army Corps of Engineers and the Mississippi Department of Marine Resources providing information on the need for the modification and a table showing the permitted projects impacts and the proposed modified footprint. A drawing showing the permitted and proposed modified footprint is also attached. A drawing showing the adjacent property owners is also attached.

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#### 4. Stormwater Management


A SWPPP was prepared for the original project footprint and has been modified for the revised project footprint. The disturbed area has been reduced from approximately five acres to less than five acres so the LCNOI has been replaced with an SCNOI. Copies of the SWPPP and SCNOI are attached.

Post construction, stormwater will mainly fall on marsh wetlands for the elevated portion of the rail and on pervious surfaces and ditches that will border the rail constructed on fill. The stormwater management plan was designed in accordance with the CSX STANDARD SPECIFICATIONS FOR THE DESIGN AND CONSTRUCTION OF PRIVATE SIDETRACKS (attached).

If you need any additional information, please do not hesitate to call me at (228) 432-2133 or email me at [lmorrison@comptonengineering.com](mailto:lmorrison@comptonengineering.com).

Sincerely,

COMPTON ENGINEERING, INC.



Lisa D. Morrison, R.P.G.

LDM/kl

Attachments: Letter requesting modification dated November 11, 2020  
Drawing Permitted and Modified Footprint  
Drawing/Table Adjacent Property Owners  
Modified SWPPP and SCNOI  
Page from CXS Standard Specifications

# Permit Modification Request

November 10, 2020



# COMPTON ENGINEERING, INC.

ENGINEERING, SURVEYING & ENVIRONMENTAL SERVICES

156 Nixon Street  
Biloxi, MS 39530

Phone: 228.432.2133  
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comptonengineering.com

November 10, 2020

Mr. Rudolph Villareal  
Department of the Army  
Mobile District, Corps of Engineers  
P.O. Box 2288  
Mobile, AL 36628-0001

Mr. Greg Christodoulou  
Mississippi Department of Marine Resources  
1141 Bayview Avenue, Suite 101  
Biloxi, MS 39530

Re: Modification – SAM-2018-01204-RCV, DMR190178  
Jackson County Port Authority – North Rail Connector Rail Line, Moss Point, MS

Dear Mr. Villareal and Mr. Christodoulou:

The Jackson County Port Authority (JCPA) received authorization from the U.S. Army Corps of Engineers, and the Mississippi Department of Marine Resources and Water Quality Certification from the Mississippi Department of Environmental Quality to construct a railroad connector between the existing MSE rail over the Escatawpa River and an exchange yard located in the Moss Point Industrial and Technology Center (MPITC). The permitted rail was to be constructed on fill within a footprint that crosses over marsh and forested wetlands and forested uplands. The footprint crossed over 3,576 linear feet of emergent marsh vegetation and 1,115 feet of forested wetlands. The initial cost estimate for a railroad on fill versus an elevated rail line indicated that the fill construction method would be the most cost effective. A permit to construct the North Rail Connector was received by JCPA on October 14, 2020.

Ongoing evaluation of geotechnical borings conducted within the proposed rail footprint through the marsh indicate that it would require several layers of fill within a footprint that would be much wider than proposed and result in a much more expensive project. The original cost estimate for a rail line on fill as initially estimated was approximately \$8 million. Based on the recent geotechnical evaluation, the construction cost is estimated at approximately \$30 million. In an effort to reduce construction costs, the JCPA has evaluated other construction methods and rail line footprints. The evaluation has resulted in proposed use of an elevated rail crossing over a shorter section of marsh, crossing over a longer section of forested uplands and joining to existing rail at a different location. The cost estimate for this revised layout and construction method is approximately \$15.5 million.

The modified footprint crosses over approximately 2,852 feet of marsh wetlands and 807 feet of uplands. By using elevated construction methods, the impact to the marsh wetland is greatly reduced with fill going in only at the abutments to the elevated sections and a short section of marsh (approximately 413 linear feet). The total impact for the revised footprint is approximately 39,261 square feet (0.90 acres) and will require approximately 2,649 net cubic yards of fill.

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COMPARISON OF PERMITTED AND PROPOSED MODIFICATION

	Linear Feet of Marsh	Linear Feet of Forested Wetlands	Uplands	Square Feet of Impact to Wetlands	Acres of Impact to Wetlands	Cubic Yards of Fill in Wetlands
Permitted	3,576	1,115	107	113,440	4.89	20,589
Proposed Modification	2,852	0	807	39,261	0.90	2,649

The JCPA is submitting a request for a permit modification based on constructability and cost. Attached please find drawings that show the proposed modified layout and an Environmental Assessment for the new proposed footprint.

Please review and let me know if you have any questions.

Sincerely,

COMPTON ENGINEERING, INC.



Lisa D. Morrison, R.P.G.

LDM/cf

Attachments

# **ENVIRONMENTAL ASSESSMENT**

for

## **NORTH RAIL CONNECTOR MODIFIED FOOTPRINT**

On behalf of

**Jackson County Port Authority  
P.O. Box 70  
Pascagoula, MS 39568-0070**

by



**COMPTON ENGINEERING, INC.**  
Engineering, Surveying, and Environmental Services

**156 Nixon Street  
Biloxi, MS 39530  
(228) 432-2133**

**NOVEMBER 2020**

# TABLE OF CONTENTS

<b>1.0</b>	<b>PROJECT DESCRIPTION.....</b>	<b>1</b>
<b>2.0</b>	<b>PROJECT PURPOSE AND NEED .....</b>	<b>1</b>
<b>3.0</b>	<b>PROJECT AREA DESCRIPTION AND PROJECT IMPACTS.....</b>	<b>2</b>
<b>3.1</b>	<b>Impacts to the Human Environment</b>	
3.1.1	Air Quality.....	3
3.1.2	Noise.....	4
3.1.3	Traffic Congestion.....	4
3.1.4	Traffic Safety.....	4
3.1.5	Economic.....	5
3.1.6	Livability .....	6
3.1.7	Cultural Resources.....	6
<b>3.2</b>	<b>Impacts to the Natural Environment</b>	
3.2.1	Essential Fish Habitat .....	7
3.2.2	Shellfish.....	7
3.2.3	Submerged Aquatic Vegetation.....	7
3.2.4	Threatened and Endangered Species .....	7
3.2.5	Wetlands .....	9
3.2.6	Water Quality .....	9
3.2.7	Floodplain.....	9
<b>3.3</b>	<b>Indirect and Cumulative Impacts</b>	
<b>4.0</b>	<b>PROJECT ALTERNATIVES.....</b>	<b>11</b>
4.1	Other Alignments	
4.2	Construction Methods	
4.3	No Action	
<b>5.0</b>	<b>MITIGATION .....</b>	<b>12</b>

## FIGURES

- |                 |   |
|-----------------|---|
| <b>Figure 1</b> | <b>Project Location</b>                       |
| <b>Figure 2</b> | <b>Modified Alignment</b>                     |
| <b>Figure 3</b> | <b>Cut/Fill Report for Modified Alignment</b> |

# APPENDICES

## A Wetland Delineation for Modified Footprint

**Environmental Assessment**  
***Jackson County Port Authority North Rail Connector***  
**Modified Footprint**  
**Moss Point, Mississippi**  
**November 2020**

**1.0 Project Description**

The Jackson County Port Authority has received a permit to construct a North Rail Connector in Moss Point, Mississippi. The permitted project includes construction of a rail line on fill, similar to the existing Mississippi Export Railroad structures that cross nearby marsh and to which the North Rail Connector will extend from. This permitted footprint requires filling 3.73 acres of coastal tidal wetlands, 1.16 acres of non-tidal wetlands with mitigation by creation of 3.8 acres of emergent tidal wetlands and purchase of 3.48 mitigation credits. The cost estimate for construction of the rail was based on constructing the rail on fill similar to the MSE rail line. Ongoing geotechnical evaluation indicates that using fill would require at least two levels of fill with a much wider footprint than originally designed. Using this method, there is no guarantee that the line would not subside over time requiring expensive repairs. Therefore, the JCPA has modified the footprint in order to cross over a shorter section of marsh so that it is economically feasible to construct an elevated rail that will not require fill. The modified footprint extends further south than the original permitted footprint, uses straighter curves and ties into existing rail near Orange Grove Road. This layout requires JCPA to purchase privately owned parcels of land. The approximate center point of the proposed modified rail is at 30.415546 degrees latitude and -88.514452 degrees longitude. The new rail begins at approximately 30.251207/-88.310005 on the north and extends to 30.413308/-88.508269 where it joins existing rail.

JCPA has evaluated the impacts associated with the revised footprint and determined that the revised footprint impacts 0.90 acres of marsh wetland and 0.27 acres (807 linear feet by 15 feet wide) of uplands.

The subject property is located in Section 19, Township 7 South, and Range 5 West of Jackson County, MS. A map showing the permitted project footprint and the proposed modified project footprint is shown on Figure 1.

**2.0 Project Purpose and Need**

There are no changes to the project's purpose and need associated with this footprint modification.

**3.0 Project Area Description and Project Impacts**

The permitted project footprint is situated partially in an upland area and partially in estuarine and forested wetlands. The length of the permitted rail line through estuarine wetlands is approximately 3,576 linear feet and through forested wetlands is approximately 1,115 linear feet. The modified footprint crosses over 2,852 feet of estuarine wetlands and 807 feet of uplands. No forested wetlands are within the modified footprint. Since the modified footprint will be

constructed using rail constructed on elevated pilings, the impacts are associated with fill at the abutments and one section of marsh (21,820 square feet) and the total acreage of impact is 0.90 acres. A layout map for the modified footprint is shown on Figure 2.

The estuarine vegetation in the modified footprint is similar to that in the permitted footprint and consists mainly of black needle rush (*Juncus roemerianus*) and sawgrass (*Caladium jamaicense*).

The upland forested areas in the modified footprint are dominated by pines, oaks and magnolia. The entire forested area is heavily infested with exotic invasive plant species including Chinese tallow (*Triadica sebifera*) and Chinese privet (*Ligustrum sinense*). This footprint eliminates impacts to forested wetlands.

The permitted footprint required approximately 20,589 cubic yards of fill material to be used during construction of the rail through the estuarine wetlands and forested wetlands. The modified footprint will require approximately 2,649 cubic yards of fill.

The estuarine wetland area is already crossed by high power electrical transmission lines and an existing rail line operated by Mississippi Export Railroad. The area is downstream from the former International Paper Mill facility (now the MPITC) and west of the former Aeration Stabilization Basin which previously discharged to the Escatawpa River.

### **3.1 Impacts to the Human Environment**

The impacts to the human environment associated with the modified footprint are similar to those of the permitted footprint. The information below is reproduced from the Environmental Assessment for the permitted footprint.

#### **3.1.1 Air Quality**

The project will result in improvements to air quality in and around Moss Point and Pascagoula. Various data sources indicate that freight transport by rail and water vessels generate significantly less environmental impacts and costs than truck transport. Based on the ton-mile, rail and water transportation are significantly more efficient than truck transportation. As reported in the Mississippi State Rail Plan produced by the Mississippi Department of Transportation, 2011, the fine particle matter (PM2.5) impact per million ton-miles of rail and water transport is approximately one-tenth of truck transport (0.0158 and 0.0128 versus 0.1126, respectively). Similarly, the nitrogen oxide (NOX) emission tons per ton-mile traveled for rail and water transport are approximately one fifth of truck transport (0.5954 and 0.5171 versus 2.8549, respectively).

Combined, PM2.5 and NOX emissions generate environmental damages per million ton-miles of \$41,480 for truck transport, which is several times greater than rail (\$6,710) or water (\$5,610) transport damages. Further manmade greenhouse gases include CO2 (the dominant emission), methane, nitrous oxide and fluorinated gases. Similar to the PM2.5 and NOX emissions, the impact of both rail and water freight transport for these gases is a fraction of truck transport. According to the Association of American Railroads (AAR) white paper, *PUTTING*

*TECHNOLOGY TO WORK HOW FREIGHT RAIL DELIVERS THE 21ST CENTURY, May 2018, moving freight by rail instead of truck reduces greenhouse gas emissions by 75%.*

The AAR also stated that one gallon of diesel fuel moved a ton of freight by rail 479 miles – four times the efficiency of trucks. The U.S. Environmental Protection Agency estimates that for every ton-mile, a typical truck emits three times more nitrogen oxides and particulates than a train. Related studies suggest that trucks emit six to 12 times more pollutants per ton-mile than railroads, depending on the pollutant measured.

The American Society of Mechanical Engineers found that 2.5 million fewer tons of carbon dioxide would be emitted into the air annually if 10 percent of intercity freight now moving by highway were shifted to rail. If 10 percent of truck traffic went by rail – via intermodal movements involving both railroads and trucks – the cumulative estimated GHG reductions from 2017 to 2030 would be 210 million tons.

Rail traffic through areas of vehicular traffic congestion increases vehicle idling time. An hour of automobile idling burns approximately one-fifth of a gallon of gas and releases nearly 4 pounds of CO<sub>2</sub> into the air. Excessive amounts of CO<sub>2</sub> in the atmosphere can contribute to diminished air quality. Relocation of the main line to a less populated and congested location will reduce congestion and idling time and thereby reduce emissions of CO<sub>2</sub> and NO<sub>x</sub> into the atmosphere.

### **3.1.2 Noise**

The project will result in reduced train noise in Moss Point and Pascagoula. Noise from train horns and general train traffic can have a significant effect on the livability of a community. Communities can establish quiet zones but must implement rail crossing upgrades in order to reduce horn noise. Relocating the main line will eliminate much downtown train horn noise and the need for crossing upgrades.

### **3.1.3 Traffic Congestion**

The project will result in a reduction in traffic congestion, idling time and backups at the rail crossings. Local rail traffic is expected to increase due to anticipated construction of new industry in northern Jackson and George Counties. Some of the trains, known as unit trains, may be up to a mile long including 65-75 freight cars each. These unit trains must travel at reduced speeds to maneuver through sharp turns and through communities. By relocating the main line to the proposed route, the number of railroad crossings will be reduced from 22 to seven, thereby reducing traffic congestion at rail road crossings significantly. Rail speeds can be maintained on the proposed new rail line, which will also help in reducing congestion and idling time.

### **3.1.4 Traffic Safety**

The project will result in improved traffic safety. The rail mode is one of the safest transportation modes. According to the MSRP each year more 30,000 deaths and 2 million injuries from highway collisions are reported by the National Highway Traffic Safety Administration. In 2008 more than 700 highway-related deaths were recorded in Mississippi. The economic cost of these

collisions to the U.S. economy is more than \$200 billion – more than 2 percent of the U.S. gross domestic product. Much of this cost is borne by the public at large either through public expenditures (law enforcement, medical, disability payments, etc.) or insurance premiums.

Freight rail transportation is also very safe and, as reported by the Federal Railroad Administration, the multi-year trend is positive with all reportable accidents (derailments, fatalities, injuries, etc., on the national rail system) declining by almost 32% between 2007 and 2017.

The rail safety area most visible to the general public and for which the public is most exposed to potential harm is grade crossings. There are 4,209 highway-rail crossings in Mississippi, with 2,282 located on public roadways, 1,911 crossings on private roads, and 16 pedestrian crossings. Reducing rail crossings will reduce the potential for accidents and injuries at these crossings.

### 3.1.5 Economic

The project will result in reduced operation and maintenance costs for the local communities. It will also provide communities with the ability to increase jobs by providing manufactures that may locate along the rail line the ability to efficiently transport goods for shipment.

According to the MSRP freight rail plays a prominent role in the livability and sustainability of a community. The ability to efficiently transport goods and create access to economic centers is critical to the overall success of a region's economy. Time wasted due to transportation inefficiency and congestion has significant impacts on profitability and the ability to attract new business to a region.

The efficiency of rail freight is especially important in rural areas where agriculture, local industries and communities rely on freight shipping. Many communities have seen a loss or reduction in rail freight services in recent years. Improving, expanding and preserving the rail network can improve the competitive stature of local industries, agriculture and communities. A revitalized rail line can lower shipping costs, provide pricing power for local industries and agriculture vis-à-vis trucking, provide redundancy in the transportation network, and shield local industries and agriculture from predicted increases in the cost of fossil fuel.

The freight transport unit costs per ton multiplied by the large shipment volumes result in huge cost savings compared to truck. For example, it takes 70 large truck semi-trailers to carry the same amount of dry cargo as 16 rail cars (approximately 4.5 trucks per rail car),

The Port of Pascagoula conducted a cost/benefit evaluation for planned improvements to the Port and MSE rail system that provides rail access to the Port. The following is a brief summary of the savings projected for each cost category:

*Track Maintenance* – The new track would actually reduce the rail route distance from Lucedale to the Port of Pascagoula by four miles and result in annual maintenance savings of more than \$46,000.



*Crossing Maintenance* – Reducing the number of railroad-highway grade crossings on the route by 16 would lower crossing maintenance costs by nearly \$6,000 per year.

*Highway Maintenance* – Shifting product transport from trucks to trains would eliminate the potential damage that would otherwise be done to state highways by \$37,000 in the first year and by more than \$50,000 in the fifth and subsequent years.

*Transportation Operations* – Shifting from trucks to trains would lower operating costs for shipping products from Lucedale to the Port of Pascagoula by almost \$4.7 million in the first year and by more \$7.0 million in the sixth and subsequent years.

*Emissions* – The shift from trucks to trains would reduce the estimated value of mobile-source pollutants emitted by vehicles transporting goods from \$73,000 to \$86,000 per year.

*Carbon Output* – The shipping mode shift would reduce the discounted (at three percent per annum) social cost of carbon output by vehicles transporting goods by \$25,000 to \$73,000 per year.

*Discounted Net Benefits* would peak at \$4.873 million in the sixth year and then fall off little by little to \$1.405 million in the last year of the 25-year cycle. The aggregate value of savings over 25 years would be \$79.622 million.

**State of Good Repair.** The US Department of Transportations' National Rail Plan states that, "the performance of the freight system can be greatly improved by enhancing the connections between individual modes of transportation in order to make the best use of the inherent efficiency of each mode." By more efficiently connecting rail to the Port of Pascagoula, connections between these modes are significantly strengthened and thus creating an efficient and reliable transportation network.

### **3.1.6 Livability**

The project will result in improved livability in the area. The removal of trains from the most densely developed sections of the Pascagoula-Moss Point Urbanized Area will significantly enhance opportunities for upgrading public infrastructure in both residential and commercial areas to accommodate pedestrians, bicyclists and residents or visitors engaged in recreational pursuits. Relocation of train operations to the eastern periphery of both cities will make it possible to create cleaner, safer, quieter and more aesthetically pleasing central business districts and to improve the visual character and appeal of nearby residential neighborhoods in less affluent sections of Pascagoula and Moss Point

### **3.1.7 Cultural Resources**

The project is to be conducted within estuarine and forested wetlands and on uplands. Construction will include using fill material to build up the rail line base to an appropriate elevation for construction. Cultural resources are not likely to exist in the marsh and other wetland areas. The upland area was part of the former International Paper Company mill and was

prior impacted with industrial development. As such, historical architectural, archeological or Native American resources are not expected to be encountered during the construction process. During development of the permit for the permitted rail layout, the JCPA requested input from the Mississippi Department of Archives and History (MDAH) in a letter dated November 8, 2018. MDAH responded in a letter dated November 21, 2018 that they had no objections to the project but would like to review the location of the placement of fill material and the source of the fill material. A map showing the modified layout of the rail line will be provided to MDAH.

Requests for comments on the project were provided to the Choctaw Indian Tribe of Oklahoma and the Mississippi Band of Choctaw Indians. As of this date, neither has responded.

## 3.2 Impacts to the Natural Environment

The impacts to the natural environment associated with the modified footprint are similar to those of the permitted footprint. The information below is reproduced from the Environmental Assessment for the permitted footprint and modified where appropriate.

### 3.2.1 Essential Fish Habitat

The project is located within an area identified as essential fish habitat. The National Marine Fisheries Service provided input on the project and worked with JCPA to develop a mitigation plan for impacts to the estuarine habitat. The modified footprint and elevated rail reduces the impacts to the environment. JCPA will request input from NMFS regarding the modified footprint.

### 3.2.2 Shellfish

The area is not identified as a commercial oyster fishery and no known oyster beds are reported in the area.

### 3.2.3 Submerged Aquatic Vegetation

The project area is dominated by estuarine and forested wetlands. Submerged aquatic vegetation requires shallow open water with low turbidity. Since the area is densely vegetated and no open water areas are found within the project footprint, SAV is not present.

### 3.2.4 Endangered Species

Federally listed threatened or endangered species thought to occur within Jackson County are:

Group	Scientific Name	Common Name	Federal Status
Amphibians	<i>Lithobates sevosa</i>	dusky gopher frog	endangered
Birds	<i>Ammodramus maritimus</i>	Seaside Sparrow	imperiled
Birds	<i>Ammodramus nelson</i>	Nelson's sharp tailed sparrow	imperiled
Birds	<i>Charadrius melodus</i>	piping plover	endangered
Birds	<i>Grus canadensis pulla</i>	Mississippi sandhill crane	endangered
Birds	<i>Haliaeetus leucocephalus</i>	Bald Eagle	imperiled
Birds	<i>Picoides borealis</i>	Red-cockaded woodpecker	endangered
Ferns and Allies	<i>Isoetes louisianensis</i>	Louisiana quillwort	endangered
Fishes	<i>Acipenser oxyrinchus desotoi</i>	gulf sturgeon	threatened
Fishes	<i>Percina aurora</i>	pearl darter	candidate
Fishes	<i>Atractosteus spatula</i>	Alligator Gar	imperiled
Mammals	<i>Trichechus manatus</i>	West Indian manatee	endangered
Mammals	<i>Ursus americanus luteolus</i>	Louisiana black bear	threatened
Reptiles	<i>Chelonia mydas</i>	green sea turtle	threatened
Reptiles	<i>Dermochelys coriacea</i>	leatherback sea turtle	endangered
Reptiles	<i>Eretmochelys imbricata</i>	hawksbill sea turtle	endangered
Reptiles	<i>Gopherus polyphemus</i>	gopher tortoise	threatened
Reptiles	<i>Graptemys flavimaculata</i>	yellow-blotched map turtle	threatened
Reptiles	<i>Lepidochelys kempii</i>	Kemp's ridley sea turtle	endangered

Reptiles	<i>Pituophis melanoleucus lodingi</i>	black pine snake	candidate
Reptiles	<i>Pseudemys alabamensis</i>	Alabama red-belly turtle	endangered

Endangered species that may occur in the area include several terrestrial and aquatic species. The terrestrial species are identified as the Red cockaded woodpecker, the Mississippi sandhill crane, the piping plover, two sparrows, the Louisiana black bear, the black pine snake, and the gopher tortoise. The Red-cockaded woodpecker and Mississippi sandhill crane are not known to nest in the area and can avoid the area during construction activities. The optimal habitat of the seaside sparrow is found in unaltered marshes with expanses of medium-high cordgrass with a turf of clumped, residual stems. Especially suitable are spots not subject to extreme flooding that have open muddy areas for feeding. Dense vegetation such as salt meadow grass is little used and high marshes provide marginal sparrow habitat. Therefore, it does not appear that the project area is suitable for the seaside sparrow. The Louisiana black bear is not likely to be present due to the separation of the construction area by water bodies.

The gopher tortoise digs its burrow in dry habitats. Based on the proximity to the estuary and the Escatawpa River, it is not likely that the gopher tortoise is present in the area.

The black pine snake lives in upland, open longleaf pine forests with sandy, well-drained soils and dense grassy or herbaceous groundcover. These snakes may also be found within stream or river corridors and in or near pitcher plant bogs located within or adjacent to longleaf pine forests. They require large tracts of undisturbed land, from 135 to 385 acres, to conduct seasonal and daily activities such as eating, mating and hibernation. Based on the habitat requirements of the black pine snake it is not likely to be found in the project area.

A letter was sent to the US Fish and Wildlife Service (USFWS) and the Mississippi Department of Wildlife Fisheries and Parks (MDWFP) for comment on the potential effects of the project on endangered species. The USFWS responded that the Alabama red bellied turtle (*Pseudemys alabamensis*) and the wood stork (*Mycteria Americana*) could potentially be present in the project area. The USFWS requested that a biological survey be conducted to identify the presence of these species and to evaluate the effect, if any, the project would have on these species. A visual survey of the project area was conducted for indications of the Alabama red-bellied turtles and the wood stork. There are no areas of deep open water that is the preference of the turtles during the winter months. The survey was conducted on warm sunny days and no turtles were observed in potential basking areas *USFWS was concerned about the culverts being constructed beneath the rail line to allow passage of tidal flow to the east and west sides of the rail. USFWS was concerned that there be enough free board in the culverts so that the turtles would not drown when crossing through these culverts. The modified layout includes an elevated rail that will not require culverts, therefore, the requirement involving the culverts does not apply to the modified footprint.* No wood storks have been identified in the project area. The MDWFP indicated that best management practices should be implemented, monitored and maintained for compliance, in particular measures that will prevent suspended silt and contaminants from affecting water quality and habitat conditions in nearby streams and waterbodies. Best management practices will be implemented during construction. The practices will be identified in a Stormwater Pollution Prevention Plan.

The remaining species that may be present are aquatic. The Gulf Sturgeon, West Indian Manatee and the Leatherback, Hawksbill, Kemps Ridley and Green sea turtles are not likely to be found in

the project area due to the dense vegetation, water quality, and water depth. The area is not mapped as Gulf Sturgeon critical habitat. It is not likely that gulf sturgeon would be found in the project area since it is entirely shallow estuarine and forested wetlands with no open water areas. The sea turtles would also not likely be found in the project area based on the dense marsh vegetation and water quality considerations.

### 3.2.5 Wetlands

A wetland delineation was completed in the modified project area to identify the types and amount of wetlands that are present in the modified project area. Approximately 3.5 acres (based on a width of 45 feet) of tidally influenced estuarine wetlands are present in the proposed project area. An additional 3.0 acres of uplands are present within the project footprint and approximately 0.27 acres of upland will be impacted by construction of the rail. A copy of the wetland delineation is included in Appendix B. Marsh habitats can provide habitat for fish nurseries, amphibians, aquatic reptiles, wading birds, waterfowl, and song birds. Riparian woodland can provide foraging, roosting, and nesting habitat for a variety of birds and provide cover and refuge sites for small mammals, amphibians, and reptiles. These wetlands will be impacted by construction activities associated with driving the pilings for the rail line. Temporary impacts will occur from construction activities that may require a barge to access portion of the rail line. A Permittee Responsible Mitigation Plan was prepared and approved by the National Marine Fisheries Service, DMR and the US Corps of Engineers. JCPA will work with these agencies to evaluate potentially reducing the size of the PRM marsh creation area. In addition, the JCPA has already purchased credits for impacts to forested wetlands and these impacts are reduced or eliminated from the project.

### 3.2.6 Water Quality

The project location is located adjacent to the Escatawpa River Segment 3 which is described as the river from Interstate 10 to the mouth of the Pascagoula River. The Escatawpa River Segment 3 has been listed as an impaired water body since 1996. Total maximum daily loads (TMDLs) were established for biological oxygen demand (BOD), chlorine, fecal coliform, pH and toxicity in 2001. The water quality standards for other listed contaminants (mercury, nutrients, priority organic compounds, suspended solids and turbidity) were attained in 2005 based on monitoring data or lack of numeric criteria for the category. The fill material used to build the rail line will be from a clean source of material that will be free of pollutants, and is not expected to adversely impact the TMDLs in the Escatawpa River or the surrounding environment. Best management practices will be implemented to prevent sediment from leaving the construction area and to prevent increases in turbidity outside of the construction zone.

The modified footprint rail line will be elevated by construction on piling and will allow continued tidal flushing of the area.

Stormwater best management practices (bmp's) will be used during construction to protect all waters downstream and down gradient of work areas. Erosion and sedimentation will be minimized by limiting the size of the work area, installing sediment control structures, and stabilizing disturbed soils (in upland areas) as soon as installation is complete by seeding and covering with erosion control blankets. A Small Construction Notice of Intent will be prepared and a stormwater pollution prevention plan (SWPPP) will be completed and utilized to ensure that adjacent waterbodies are protected.

### 3.2.7 Floodplain

The project area is located within the floodplain. A letter was sent to the Mississippi Emergency Management Agency (MEMA) for comment on potential impacts to the floodplain. MEMA responded that the project was in a Special Flood Hazard Area as shown on the Flood Insurance Rate Map (FIRM) 28059C0342G dated March 16, 2009.

### 3.3 Indirect and Cumulative Impacts

The JCPA evaluated indirect and cumulative impacts associated with the project. Indirect effects are caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect impacts were identified as:

- Construction of the rail line will have ongoing impacts to the tidal marsh and forested wetlands. Water circulation patterns could be altered which could result in changes to the areas adjacent to the rail line footprint. The fill portion of the rail line is modified to be elevated and cross over a shorter section of tidal marsh, therefore that will be minimal impacts to tidal flow in the area.
- The project will cross over .98 acres of tidal marsh habitat. The marsh habitats can provide habitat for fish nurseries, amphibians, aquatic reptiles, wading birds, waterfowl, and song birds. Riparian woodland can provide foraging, roosting, and nesting habitat for a variety of birds and provide cover and refuge sites for small mammals, amphibians, and reptiles. Because the rail will be elevated, minimal impact to this habitat will occur.
- Removal of the invasive species within the rail line footprint will remove inferior habitat and help to prevent spread of the species into nearby areas.
- Improvements to rail transportation in Jackson County supports improvements to the MSE in George County where new manufacturing facilities are planned or underway. This supports new jobs, improvements to other infrastructure and economic development in general. Having direct rail access to the Port of Pascagoula is an incentive for businesses to locate along the rail footprint.

Cumulative impacts are impacts on the environment that result from the incremental impact of an action when added to other past, present and reasonably foreseeable future actions. If a project would not result in a direct or indirect impact on a resource, then it will not contribute to a cumulative impact on that resource. The impact used in the cumulative impact analysis is the net impact (i.e., chosen alternative impact minus proposed minimization and/or mitigation measures). For resource areas where the impact would be fully offset by the proposed minimization and/or mitigation measures, there is no contribution to cumulative impacts from the project. The environmental analysis conducted for the project has determined that the project would not result in a net impact on any resource, with the exception of wetlands.

Cumulative impacts were identified as:

- The filling of the estuarine and forested wetlands can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of

migration corridors, changes in water quality, and introduction or promotion of predators. The impacts from fill are reduced with the modified footprint. These impacts will be mitigated by replacement or preservation of similar habitat within the same watershed.

- The project can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, air quality and employment. The community impacts associated with the project are positive.
- JCPA researched past, present, and reasonably foreseeable future projects and actions that could result in impacts that would coincide in time and space with impacts from the proposed rail line. JCPA determined that the relevant projects included 1) railroad improvements at the Port of Pascagoula with wetland impacts, 2) construction of a manufacturing facility and addition of rail line in George County that connects to the Mississippi Export Railroad rail line. The impacts at the Port of Pascagoula have been permitted by the USCOE and mitigated for by purchase of mitigation credits. The development projects that are ongoing in George County will also require USCOE permits and mitigation if there are any wetland impacts. The development in George County is expected to provide up to 200 jobs and will be a positive impact on the community.

#### **4.0 Project Alternatives Considered**

##### **4.1 Other Alignments**

Other alignments for the new rail line were considered.

- 1) An alignment was considered that would cross south of the proposed alignment. This alignment was several hundred feet longer, crossed a larger area of forested wetland and would require purchase of private residentially developed property. Therefore, this alignment was not chosen. The alternative alignments are shown in Appendix D.
- 2) Utilizing the existing rail line that crosses under Highway 63 and joins the main line at the rail yard also includes a tight curve that would not be safe for unit trains to travel. Use of this section of rail has been discontinued due to safety considerations. The planned rail traffic will need to travel at approximately 20-25 miles per hour in order to make rail use economically advantageous.
- 3) Two alternate alignments were considered that established an acceptable radius that would allow the trains to maintain the optimal speed. This alignment required the rail to be added south of the existing MSE rail line and impacted several single family residential properties. In addition, this alignment would pass under a portion of the Highway 63 bridge which would not provide enough vertical clearance for the trains to pass underneath. An acceptable vertical clearance for a main line rail is 22 feet. The two alignments considered only provided 21'7" and 20'7" of clearance. The layout of these alternatives are shown in Appendix D.



- 4) The permitted alignment includes approximately 3,576 linear feet and through forested wetlands is approximately 1,115 linear feet. The rail will cross over 107 feet of uplands.
- 5) The proposed modified alignment includes approximately 2,852 linear feet of elevated rail line over marsh (0.90 acres if impact from fill at the abutments and a small marsh area) and 807 feet of rail on uplands.

## 4.2 Construction Methods

Based on constructability and cost, JCPA looked at elevated the rail rather than construction on fill.

- 1) Construction of a railroad bridge was considered. This alternative would reduce the amount of fill discharged into the alignment but would require that a sidewalk be constructed attached to the rail line for maintenance purposes. This would result in an approximately 15 foot wide footprint. This width of shaded area would prevent continued growth of the estuarine and forested wetland vegetation resulting in a similar reduction in wetland habitat. In addition, the method for building a rail road bridge would require construction from barges adjacent to the rail road alignment resulting in additional destruction of the wetland habitat. The area was previously impacted by construction of power lines that cross the area and continues to be impacted by power line maintenance activities and it does not appear that the marsh vegetation has recovered. Estimated costs for rail road bridge construction were estimated to be \$33 million.
- 2) An alternative construction method utilizing sheet pile was considered. This would involve driving sheet pile along the layout, filling in between the sheet pile and constructing the rail line on top of the fill. This allows a narrower footprint, however, it is a more expensive than filling and involves additional heavy equipment to drive the sheet piles that would damage additional wetlands outside of the rail footprint. Based on the cost and damage from heavy equipment, this option was not selected.
- 3) The construction method for the permitted rail line was to fill the alignment from the south end working towards the north and using the previously filled area to access further along the alignment, so the areas outside of the fill area will not be impacted. Silt fence will be placed along the project footprint to prevent fill from moving outside of the project area. This resulted in a total impact of 4.89 acres of tidal and non-tidal wetlands. Ongoing geotechnical evaluation indicates that constructing the rail on fill is not technically sound and would likely result in a rail that needed ongoing repairs.
- 4) Combination of elevated rail line, fill, and a modified footprint resulted in an estimated cost of approximately \$15.5 million.

### **4.3 No Action**

With the No Action alternative, the main rail line would not be relocated and rail traffic would continue through downtown Pascagoula and Moss Point. Traffic congestion would increase as the expected rail traffic increases and the train length increases to as much as 60 to 70 cars for some trains. Air quality would continue to be negatively impacted by idling cars.

### **5.0 Mitigation**

JCPA has already purchased 3.48 credits from Wetland Solutions mitigation bank for mitigation for impacts to forested non-tidal wetlands (1.16 acres) associated with the permitted alignment. JCPA would like to use these credits for a future project.

Impacts associated with the permitted footprint included impacts to tidal estuarine wetlands (3.73 acres). A Permittee Responsible Mitigation plan that included creation of tidal wetlands by grading an upland forested area within the MPITC to restore/create tidal flow and planting appropriate marsh vegetation species. The PRM plan was approved and JCPA purchased a Performance Bond for \$50,000 to be used if the PRM failed to achieve success within five years. The JCPA proposes to work with the agencies to evaluate reduction in the area to be created or to be able to use the excess created wetlands for mitigation for future projects.

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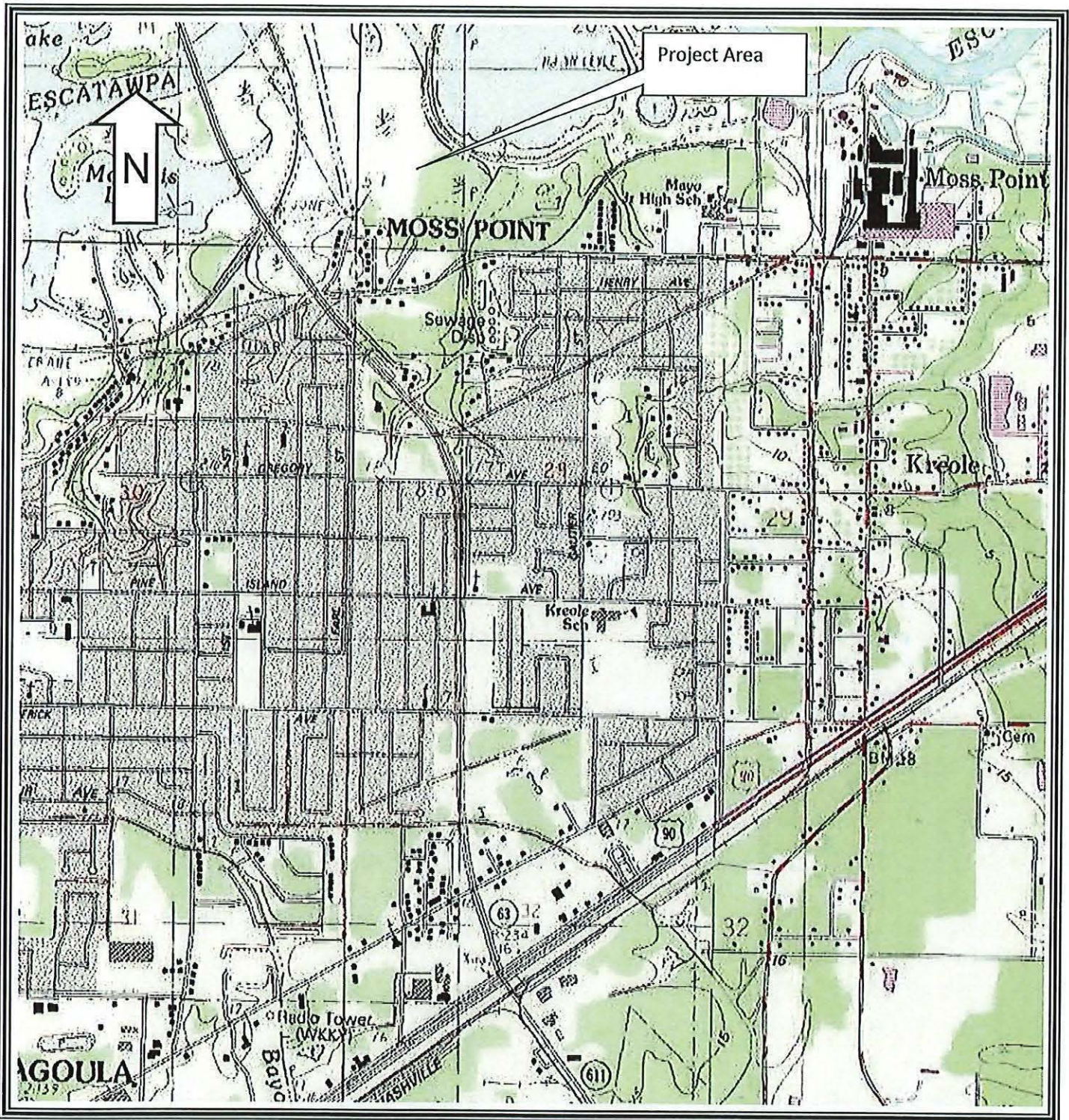
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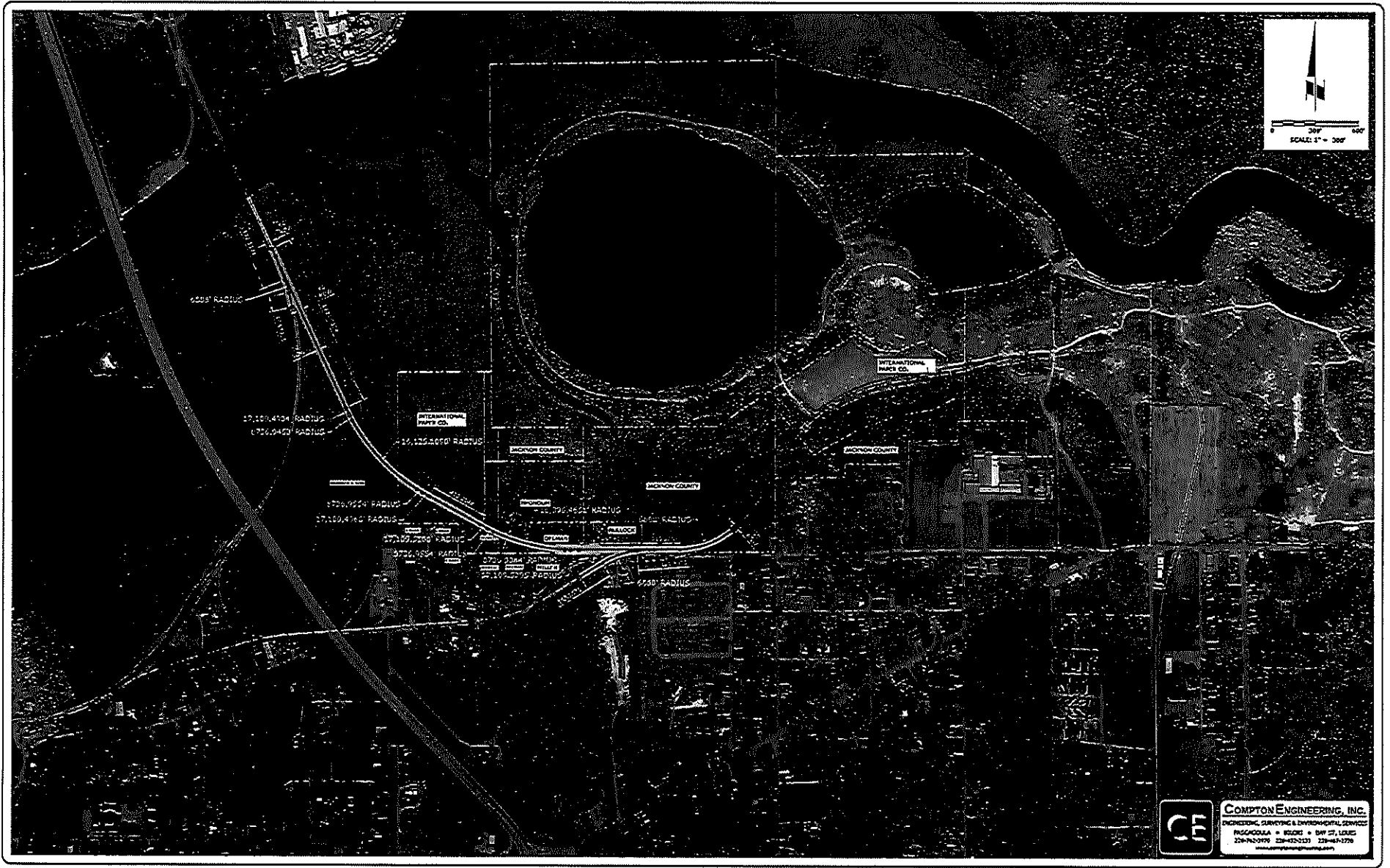


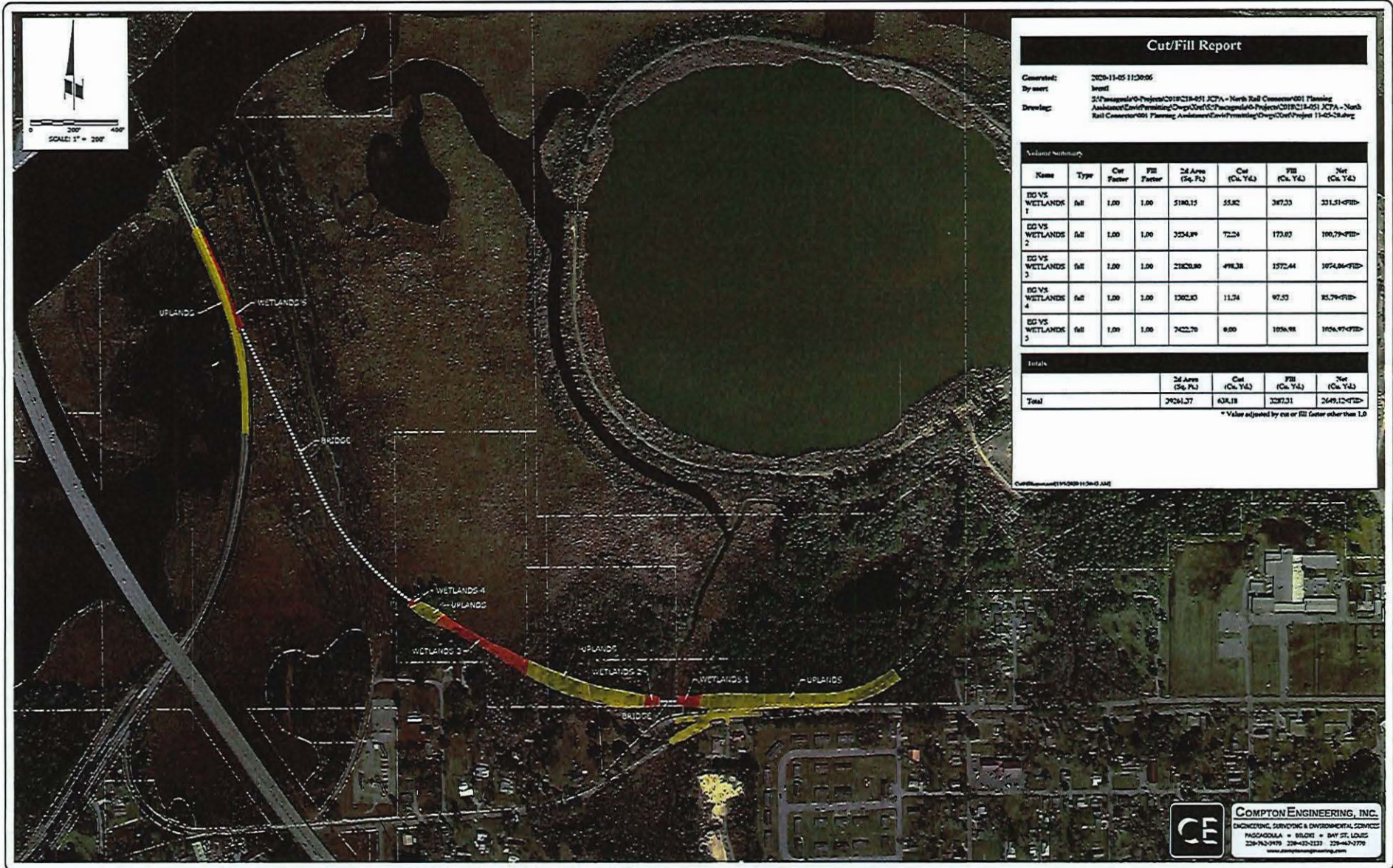
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Site: North Rail Connector - Project Area  
 Moss Point, Jackson County, MS

Figure Title: **Topographic Map – Project Area** (Map Source: MyTopo Map Pass. USGS  
 7.5 Minute Series, Pascagoula North Quadrangle, 1982)

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### Cut/Fill Report

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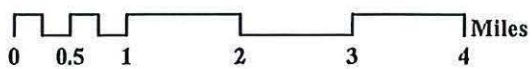
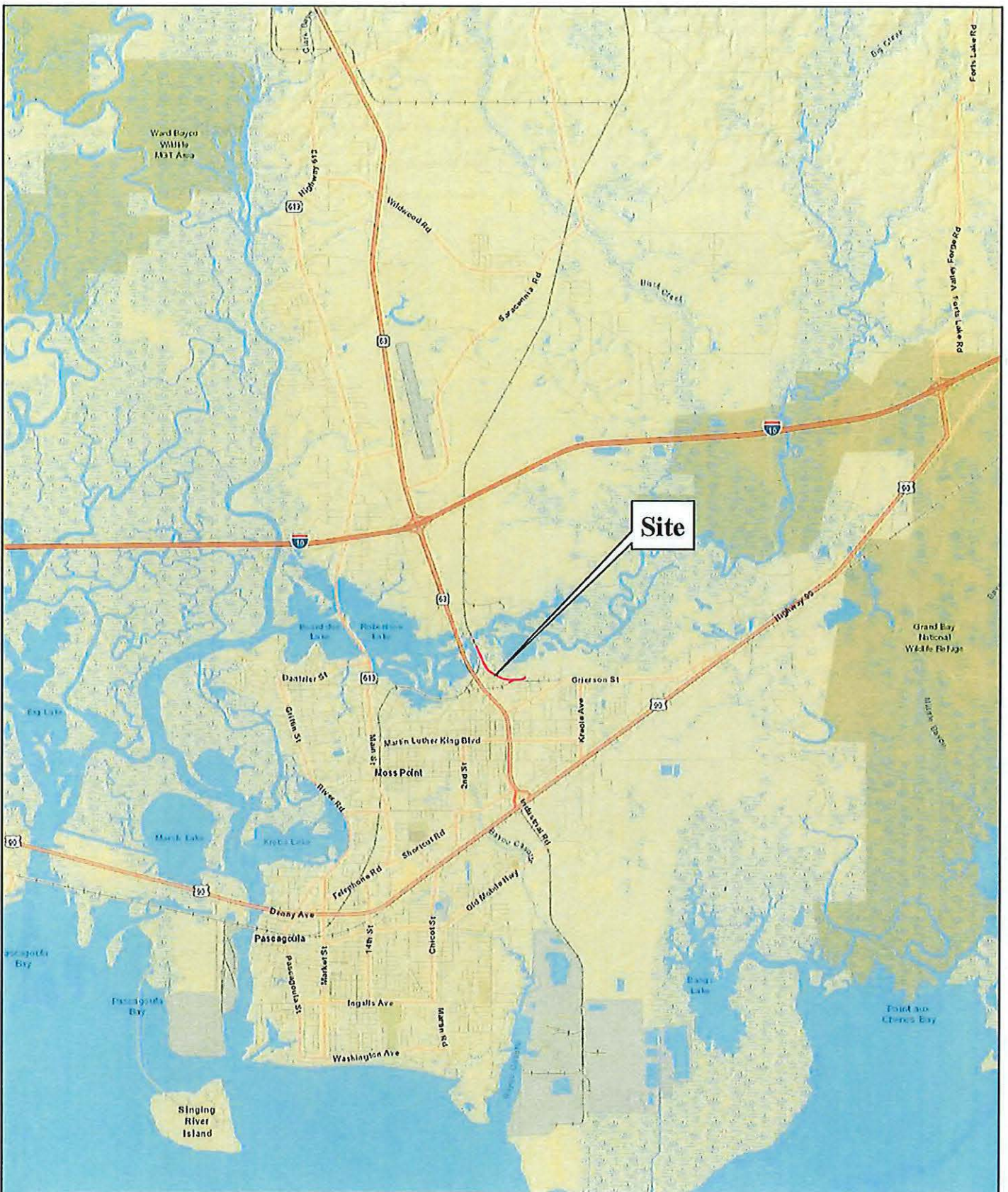
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\* Value adjusted by cut or fill factor other than 1.0

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## A Wetland Delineation



Moss Point, Mississippi

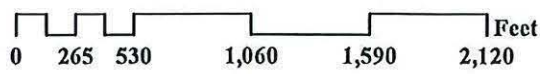
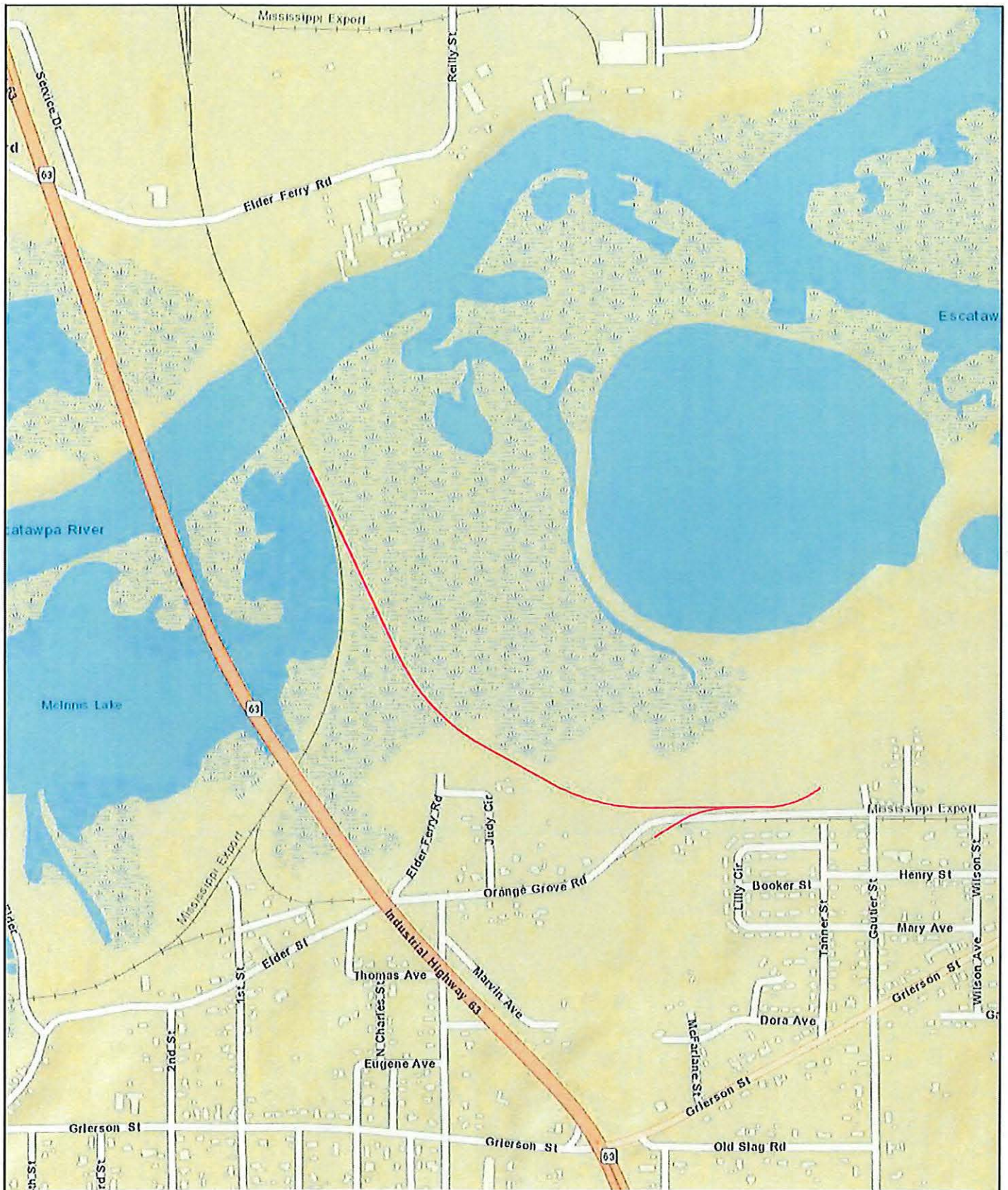
**Wildlife Solutions, Inc.**

Phone: 251-591-2682

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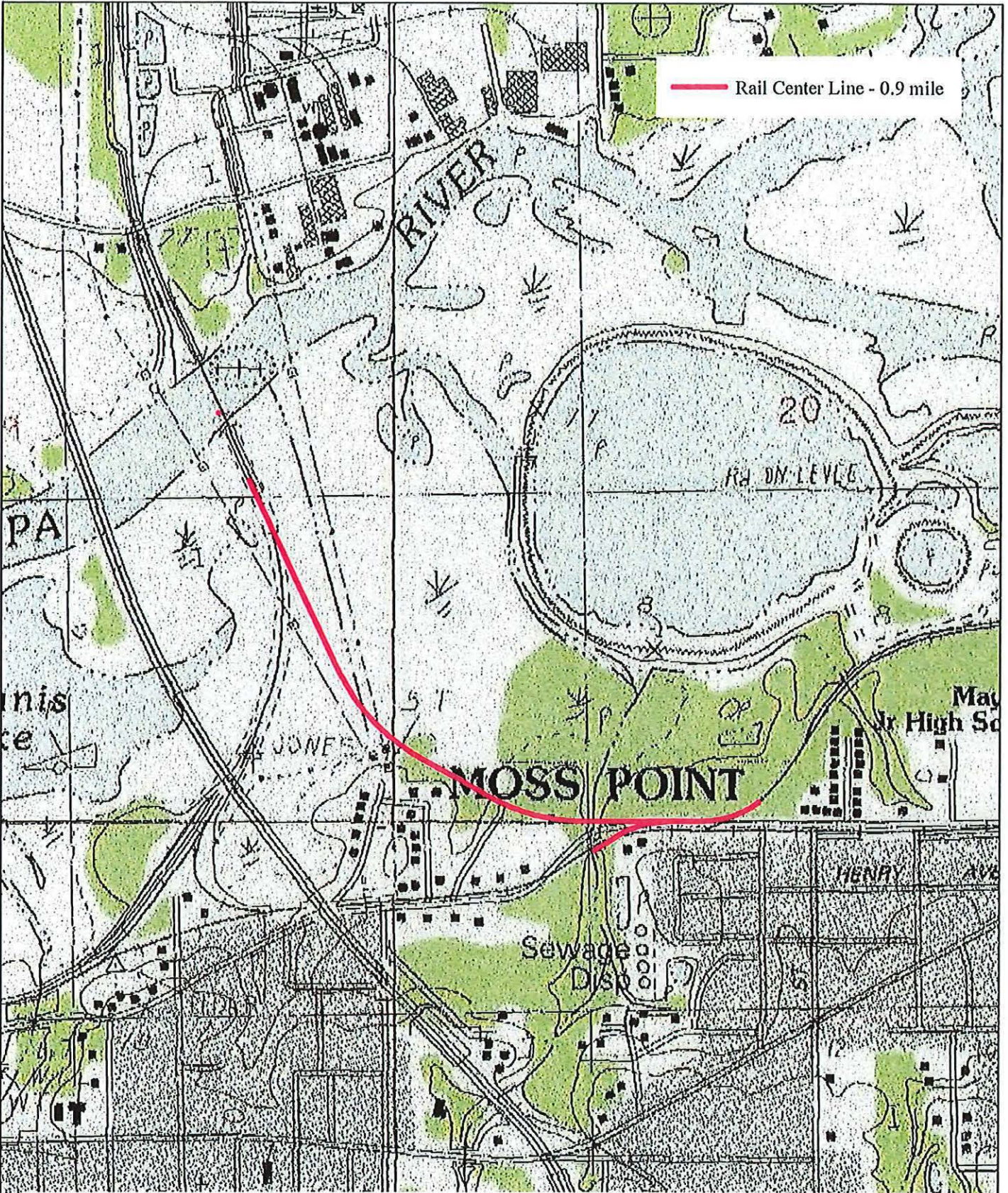
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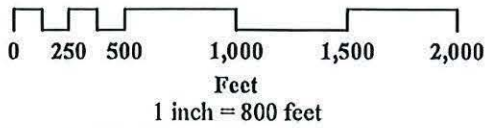
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— Rail Center Line - 0.9 mile






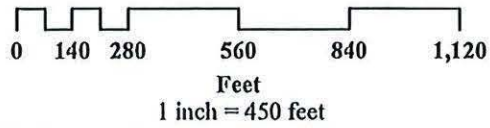
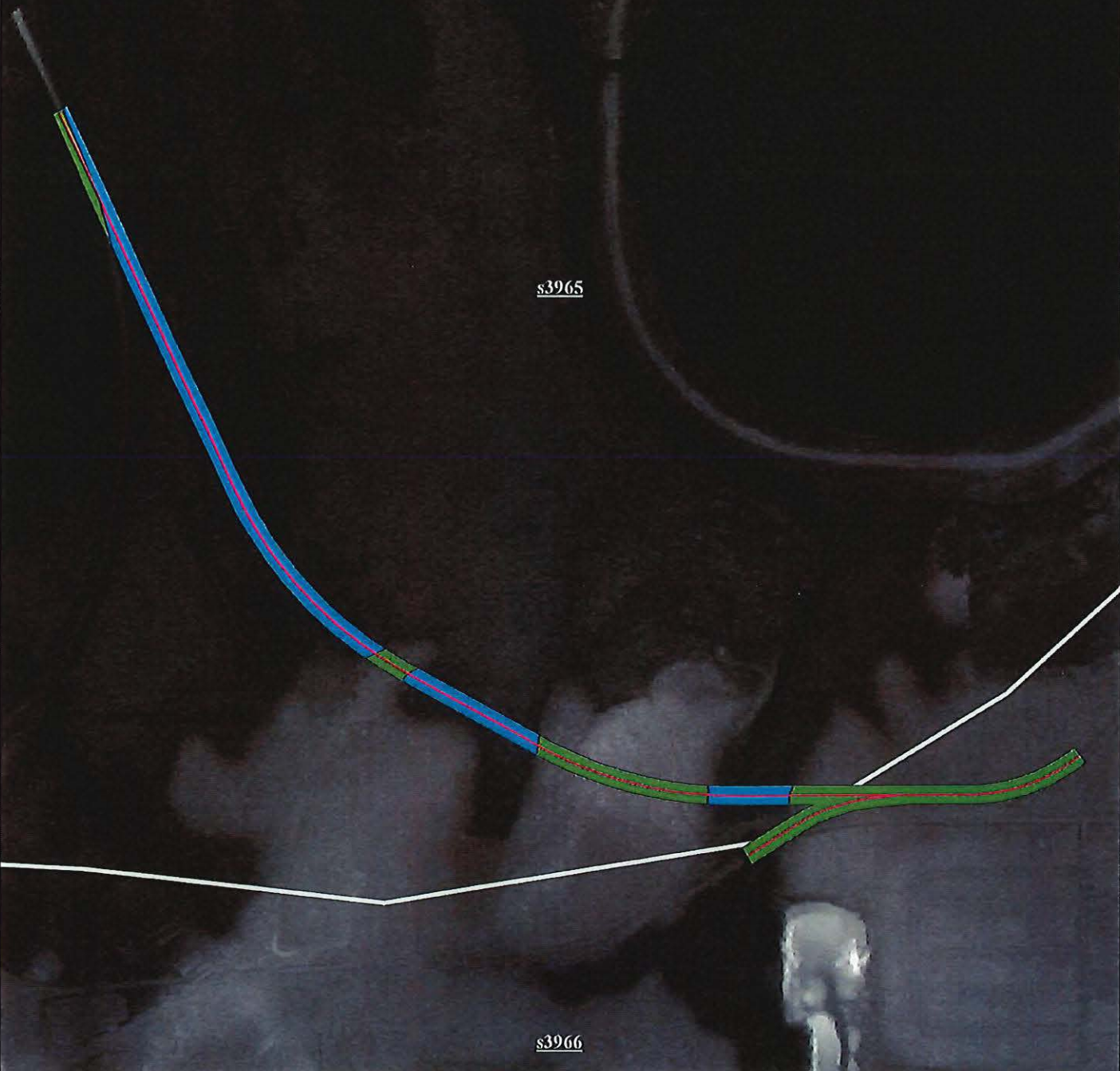
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Phone: 251-591-2682

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-  Wetlands - 3.5 ac
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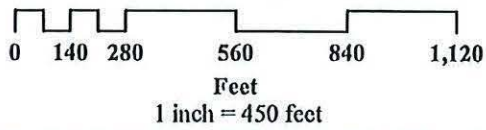


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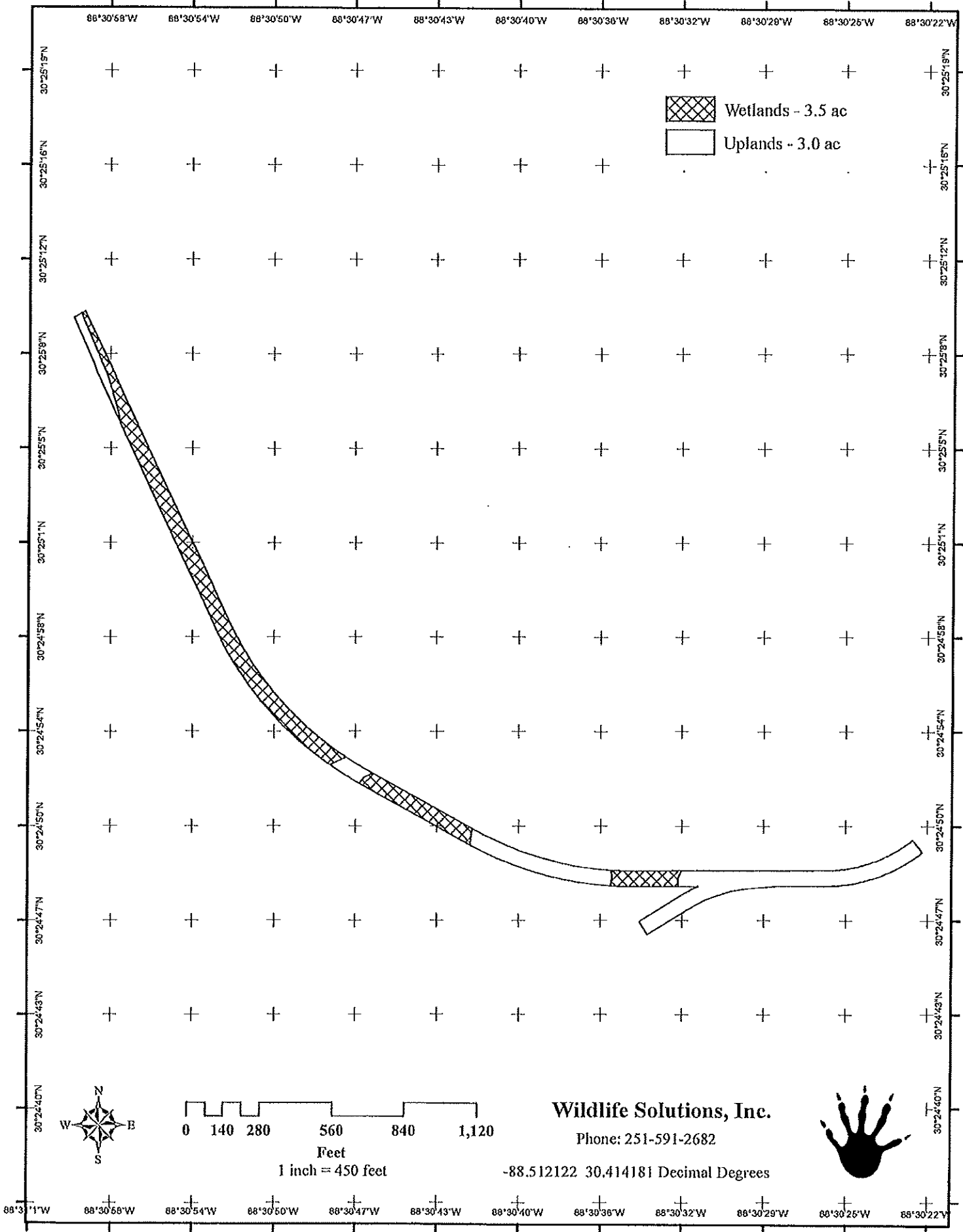


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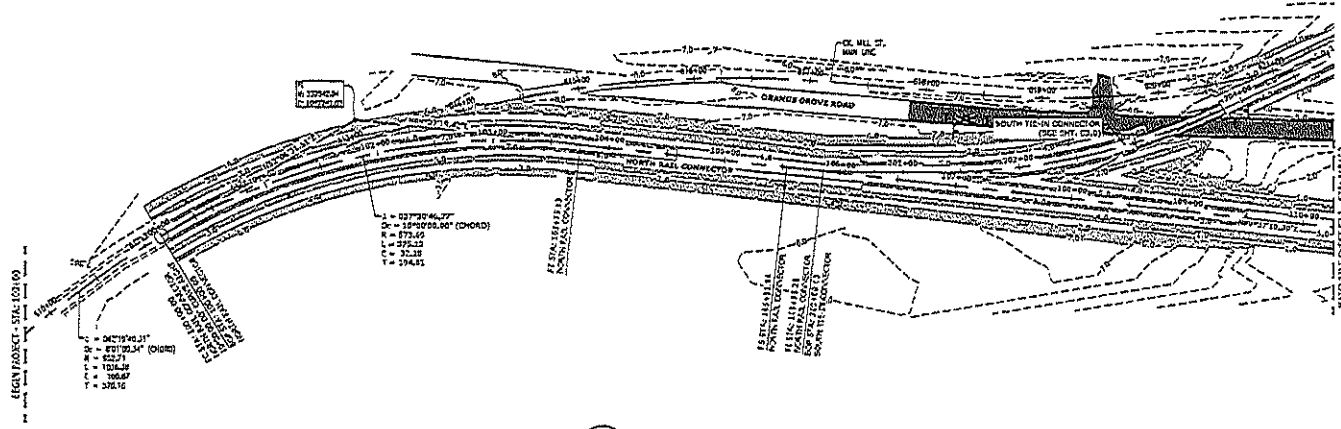
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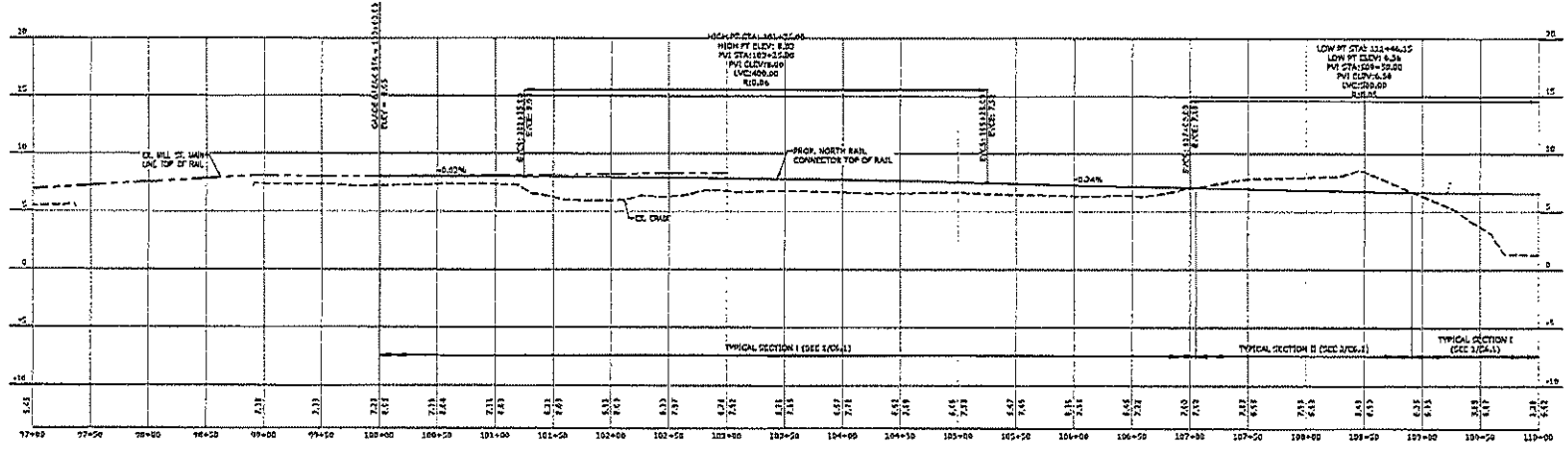
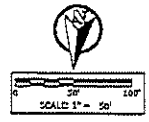




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2 PROFILE  
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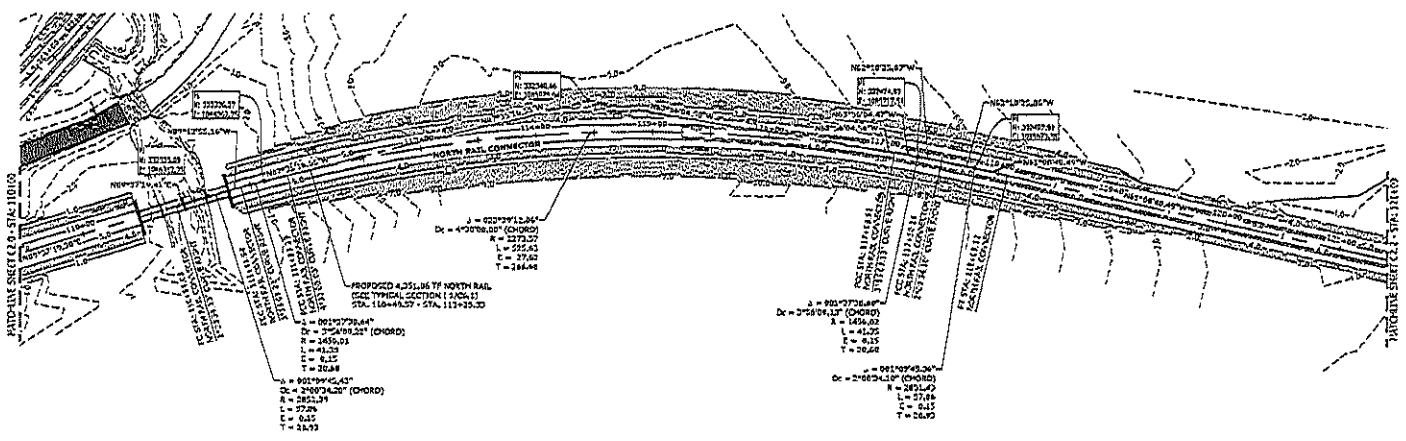


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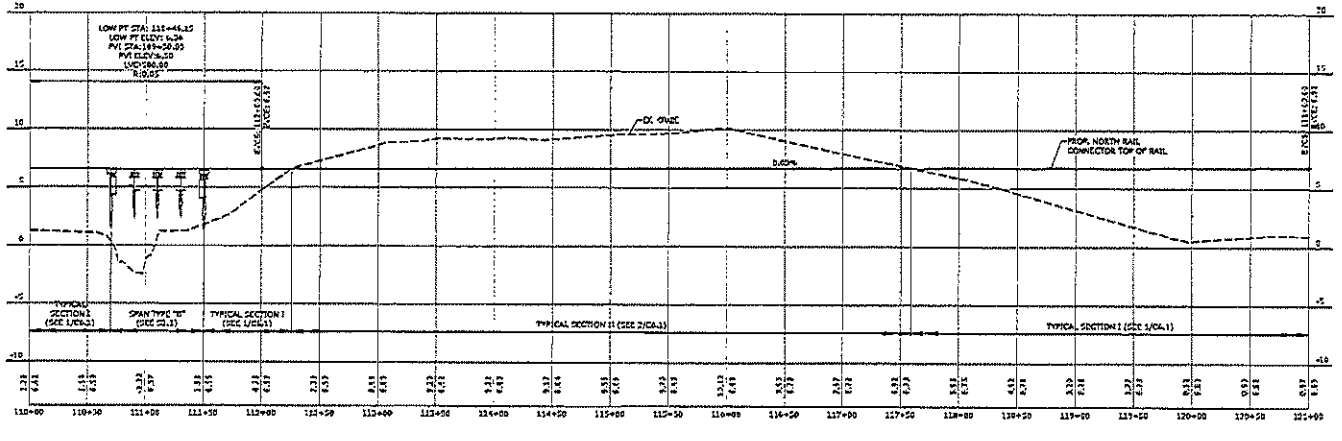
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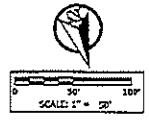
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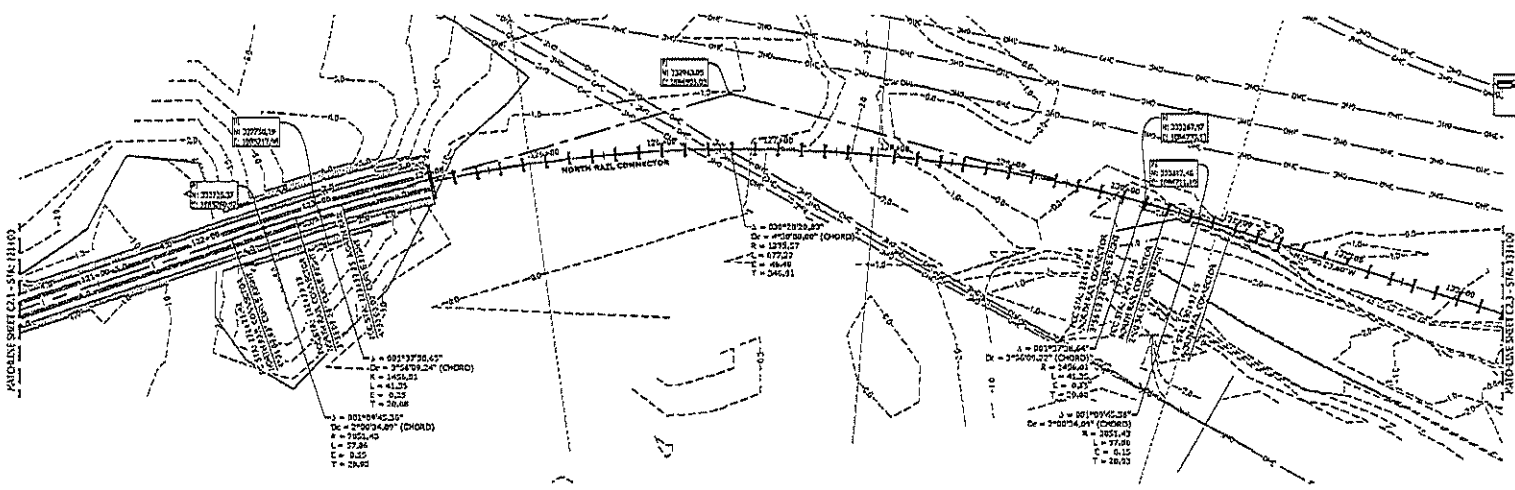


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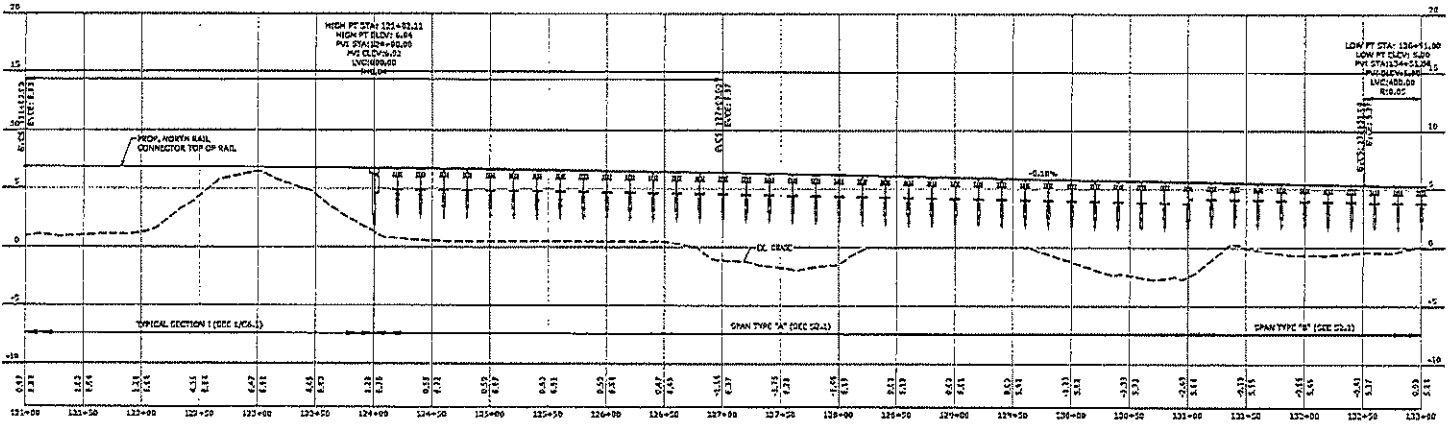
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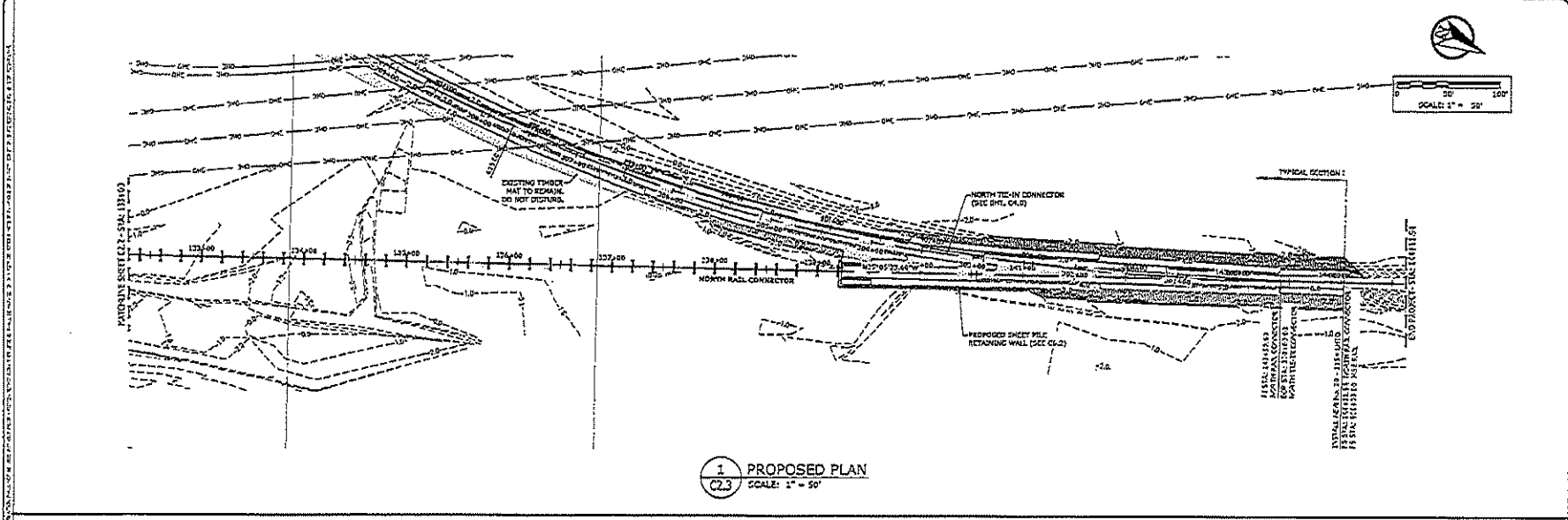
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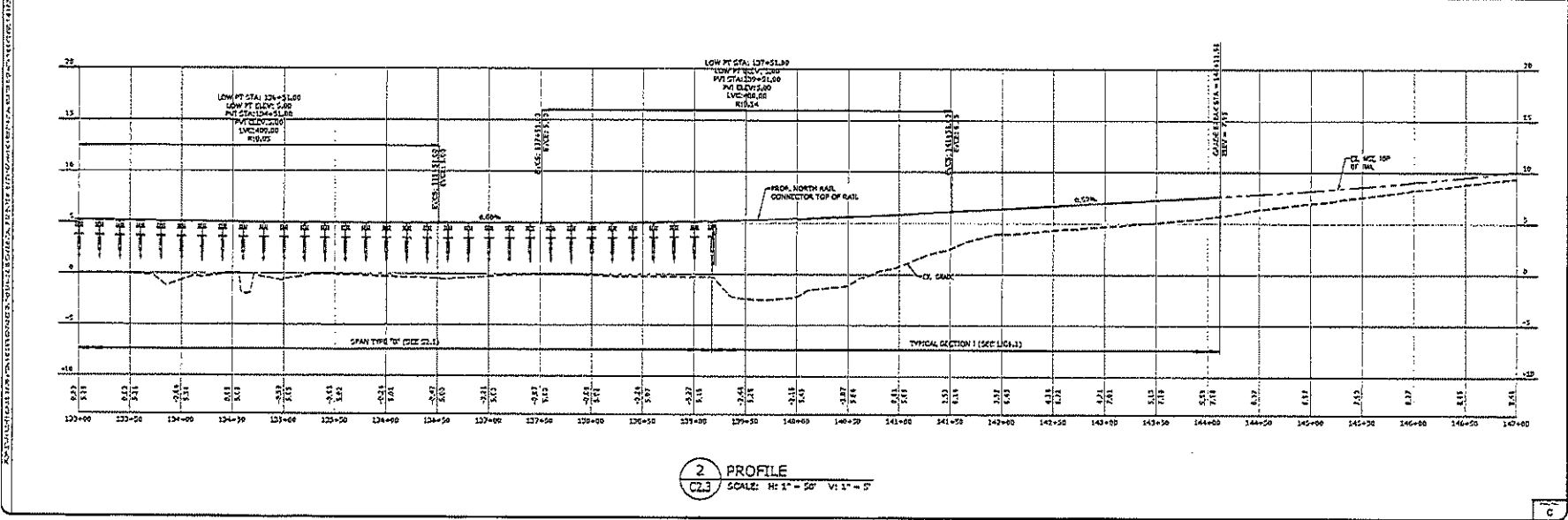
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2 PROFILE C2.3 SCALE: H: 1" = 50' V: 1" = 5'

2008-2010 ISSUED FOR CONSTRUCTION 1" 0" 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12" 13" 14" 15" 16" 17" 18" 19" 20" 21" 22" 23" 24" 25" 26" 27" 28" 29" 30" 31" 32" 33" 34" 35" 36" 37" 38" 39" 40" 41" 42" 43" 44" 45" 46" 47" 48" 49" 50" 51" 52" 53" 54" 55" 56" 57" 58" 59" 60" 61" 62" 63" 64" 65" 66" 67" 68" 69" 70" 71" 72" 73" 74" 75" 76" 77" 78" 79" 80" 81" 82" 83" 84" 85" 86" 87" 88" 89" 90" 91" 92" 93" 94" 95" 96" 97" 98" 99" 100" 101" 102" 103" 104" 105" 106" 107" 108" 109" 110" 111" 112" 113" 114" 115" 116" 117" 118" 119" 120" 121" 122" 123" 124" 125" 126" 127" 128" 129" 130" 131" 132" 133" 134" 135" 136" 137" 138" 139" 140" 141" 142" 143" 144" 145" 146" 147" 148" 149" 150" 151" 152" 153" 154" 155" 156" 157" 158" 159" 160" 161" 162" 163" 164" 165" 166" 167" 168" 169" 170" 171" 172" 173" 174" 175" 176" 177" 178" 179" 180" 181" 182" 183" 184" 185" 186" 187" 188" 189" 190" 191" 192" 193" 194" 195" 196" 197" 198" 199" 200" 201" 202" 203" 204" 205" 206" 207" 208" 209" 210" 211" 212" 213" 214" 215" 216" 217" 218" 219" 220" 221" 222" 223" 224" 225" 226" 227" 228" 229" 230" 231" 232" 233" 234" 235" 236" 237" 238" 239" 240" 241" 242" 243" 244" 245" 246" 247" 248" 249" 250" 251" 252" 253" 254" 255" 256" 257" 258" 259" 260" 261" 262" 263" 264" 265" 266" 267" 268" 269" 270" 271" 272" 273" 274" 275" 276" 277" 278" 279" 280" 281" 282" 283" 284" 285" 286" 287" 288" 289" 290" 291" 292" 293" 294" 295" 296" 297" 298" 299" 300" 301" 302" 303" 304" 305" 306" 307" 308" 309" 310" 311" 312" 313" 314" 315" 316" 317" 318" 319" 320" 321" 322" 323" 324" 325" 326" 327" 328" 329" 330" 331" 332" 333" 334" 335" 336" 337" 338" 339" 340" 341" 342" 343" 344" 345" 346" 347" 348" 349" 350" 351" 352" 353" 354" 355" 356" 357" 358" 359" 360" 361" 362" 363" 364" 365" 366" 367" 368" 369" 370" 371" 372" 373" 374" 375" 376" 377" 378" 379" 380" 381" 382" 383" 384" 385" 386" 387" 388" 389" 390" 391" 392" 393" 394" 395" 396" 397" 398" 399" 400" 401" 402" 403" 404" 405" 406" 407" 408" 409" 410" 411" 412" 413" 414" 415" 416" 417" 418" 419" 420" 421" 422" 423" 424" 425" 426" 427" 428" 429" 430" 431" 432" 433" 434" 435" 436" 437" 438" 439" 440" 441" 442" 443" 444" 445" 446" 447" 448" 449" 450" 451" 452" 453" 454" 455" 456" 457" 458" 459" 460" 461" 462" 463" 464" 465" 466" 467" 468" 469" 470" 471" 472" 473" 474" 475" 476" 477" 478" 479" 480" 481" 482" 483" 484" 485" 486" 487" 488" 489" 490" 491" 492" 493" 494" 495" 496" 497" 498" 499" 500" 501" 502" 503" 504" 505" 506" 507" 508" 509" 510" 511" 512" 513" 514" 515" 516" 517" 518" 519" 520" 521" 522" 523" 524" 525" 526" 527" 528" 529" 530" 531" 532" 533" 534" 535" 536" 537" 538" 539" 540" 541" 542" 543" 544" 545" 546" 547" 548" 549" 550" 551" 552" 553" 554" 555" 556" 557" 558" 559" 560" 561" 562" 563" 564" 565" 566" 567" 568" 569" 570" 571" 572" 573" 574" 575" 576" 577" 578" 579" 580" 581" 582" 583" 584" 585" 586" 587" 588" 589" 590" 591" 592" 593" 594" 595" 596" 597" 598" 599" 600" 601" 602" 603" 604" 605" 606" 607" 608" 609" 610" 611" 612" 613" 614" 615" 616" 617" 618" 619" 620" 621" 622" 623" 624" 625" 626" 627" 628" 629" 630" 631" 632" 633" 634" 635" 636" 637" 638" 639" 640" 641" 642" 643" 644" 645" 646" 647" 648" 649" 650" 651" 652" 653" 654" 655" 656" 657" 658" 659" 660" 661" 662" 663" 664" 665" 666" 667" 668" 669" 670" 671" 672" 673" 674" 675" 676" 677" 678" 679" 680" 681" 682" 683" 684" 685" 686" 687" 688" 689" 690" 691" 692" 693" 694" 695" 696" 697" 698" 699" 700" 701" 702" 703" 704" 705" 706" 707" 708" 709" 710" 711" 712" 713" 714" 715" 716" 717" 718" 719" 720" 721" 722" 723" 724" 725" 726" 727" 728" 729" 730" 731" 732" 733" 734" 735" 736" 737" 738" 739" 740" 741" 742" 743" 744" 745" 746" 747" 748" 749" 750" 751" 752" 753" 754" 755" 756" 757" 758" 759" 760" 761" 762" 763" 764" 765" 766" 767" 768" 769" 770" 771" 772" 773" 774" 775" 776" 777" 778" 779" 780" 781" 782" 783" 784" 785" 786" 787" 788" 789" 790" 791" 792" 793" 794" 795" 796" 797" 798" 799" 800" 801" 802" 803" 804" 805" 806" 807" 808" 809" 810" 811" 812" 813" 814" 815" 816" 817" 818" 819" 820" 821" 822" 823" 824" 825" 826" 827" 828" 829" 830" 831" 832" 833" 834" 835" 836" 837" 838" 839" 840" 841" 842" 843" 844" 845" 846" 847" 848" 849" 850" 851" 852" 853" 854" 855" 856" 857" 858" 859" 860" 861" 862" 863" 864" 865" 866" 867" 868" 869" 870" 871" 872" 873" 874" 875" 876" 877" 878" 879" 880" 881" 882" 883" 884" 885" 886" 887" 888" 889" 890" 891" 892" 893" 894" 895" 896" 897" 898" 899" 900" 901" 902" 903" 904" 905" 906" 907" 908" 909" 910" 911" 912" 913" 914" 915" 916" 917" 918" 919" 920" 921" 922" 923" 924" 925" 926" 927" 928" 929" 930" 931" 932" 933" 934" 935" 936" 937" 938" 939" 940" 941" 942" 943" 944" 945" 946" 947" 948" 949" 950" 951" 952" 953" 954" 955" 956" 957" 958" 959" 960" 961" 962" 963" 964" 965" 966" 967" 968" 969" 970" 971" 972" 973" 974" 975" 976" 977" 978" 979" 980" 981" 982" 983" 984" 985" 986" 987" 988" 989" 990" 991" 992" 993" 994" 995" 996" 997" 998" 999" 1000

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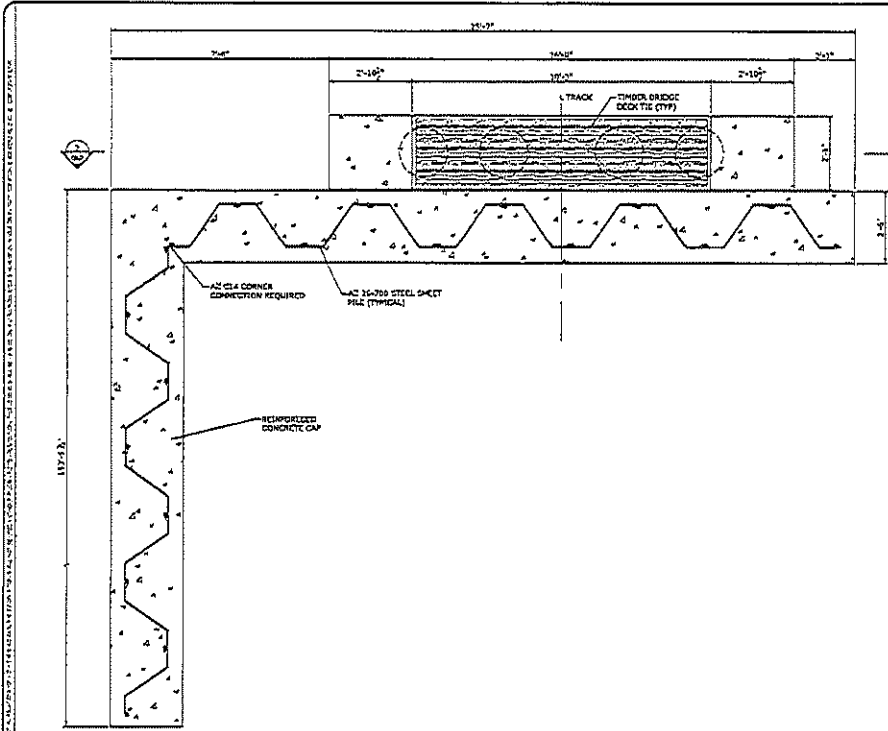
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SCALE: AS NOTED JOB NO.: 214-0511 DESIGNER: J. STUBBS CHECKER: B. JARVIS DATE: 4/30/10

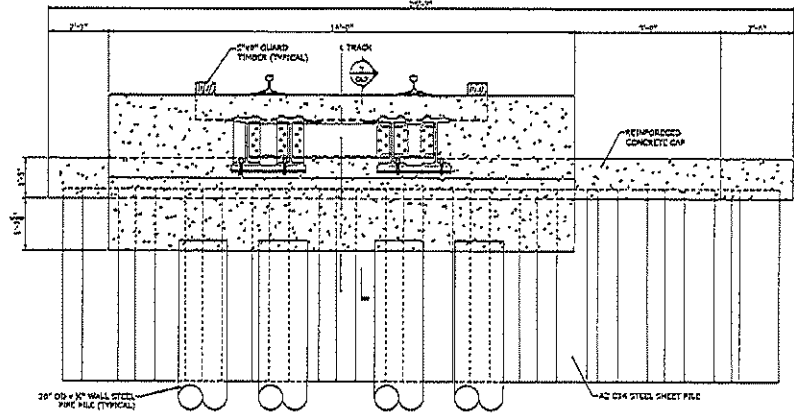
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C2.3

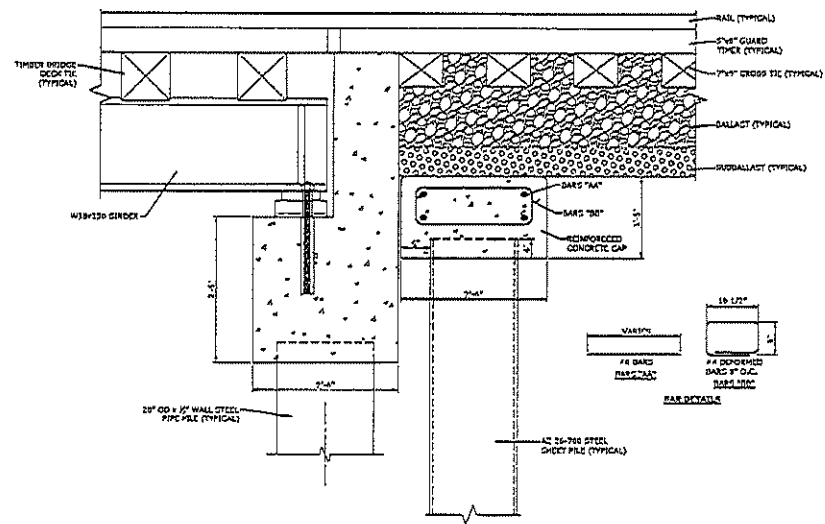
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1 SHEETPILE ABUTMENT - PLAN  
 C6.2 SCALE: 1/2" = 1'-0"



2 SHEETPILE ABUTMENT - SECTION  
 C6.2 SCALE: 1/2" = 1'-0"



3 SHEETPILE ABUTMENT - SECTION  
 C6.2 SCALE: 1/2" = 1'-0"

DESIGNED BY: [Signature]	CHECKED BY: [Signature]	DATE: [Date]	SCALE: [Scale]	PROJECT: [Project Name]	SHEET: [Sheet Number]	TOTAL SHEETS: [Total Sheets]	DATE PLOTTED: [Date]	SCALE: [Scale]	PROJECT: [Project Name]	SHEET: [Sheet Number]	TOTAL SHEETS: [Total Sheets]
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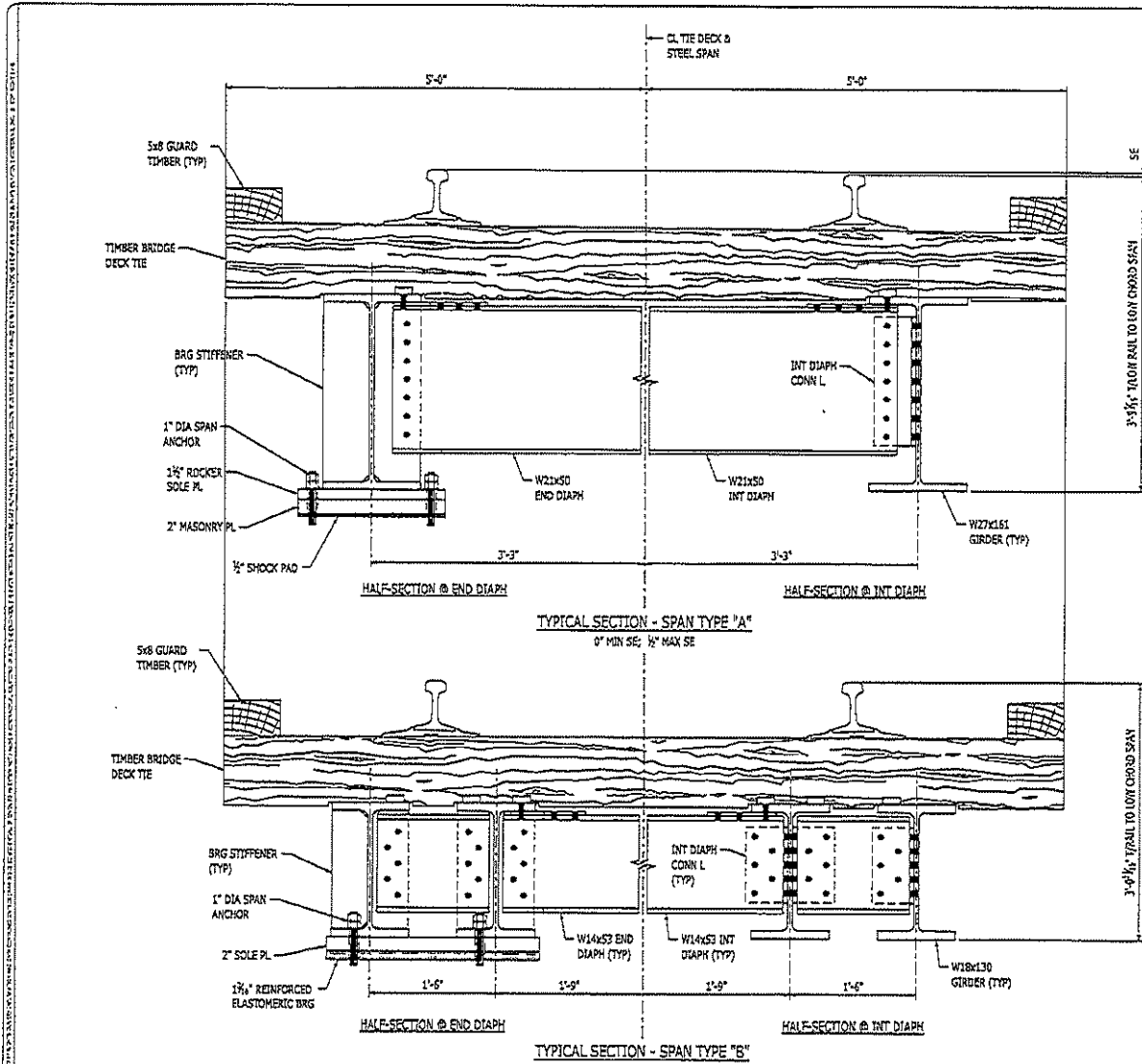
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 215-312-3120 248-622-0311 218-487-7175  
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**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
 SHEETPILE ABUTMENT PLAN & SECTIONS

SCALE: AS NOTED	DATE: 2/18/2018
DESIGNED BY: [Signature]	CHECKED BY: [Signature]
DATE: [Date]	SCALE: [Scale]
PROJECT: [Project Name]	SHEET: [Sheet Number]
TOTAL SHEETS: [Total Sheets]	DATE PLOTTED: [Date]

C6.2



**DESIGN DATA:**

- DEAD LOAD: PER AREMA MANUAL
- LIVE LOAD: COOPER E-80 OR ALTERNATE LIVE LOAD ON 4 AXLES, PER AREMA MANUAL
- IMPACT LOAD: PER AREMA MANUAL
- CENTRIFUGAL FORCE: PER AREMA MANUAL, BASED ON: DESIGN SPEED = 25 MPH CURVATURE = 4°30' (CHORD DEF)
- TRACK ECCENTRICITY: 1 1/2" MAX.
- OTHER LOADS: PER AREMA MANUAL, AS APPLICABLE.
- DEFLECTIONS: LIMITING LIVE LOAD DEFLECTION OF 1/640 PER AREMA MANUAL

**NOTE:**

TENSION ZONES OF GIRDERS SHALL CONFORM TO "FC" REQUIREMENTS OF THE AREMA MANUAL

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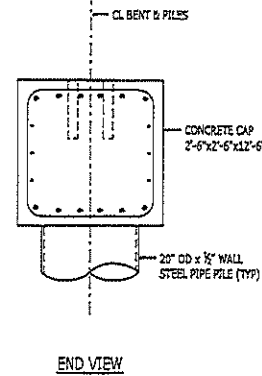
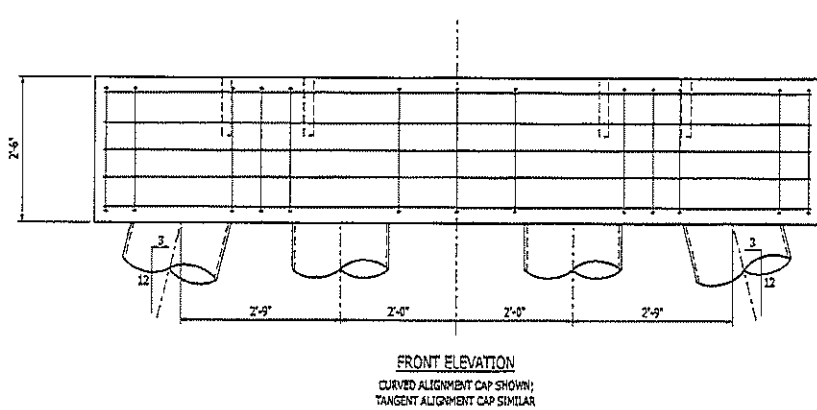
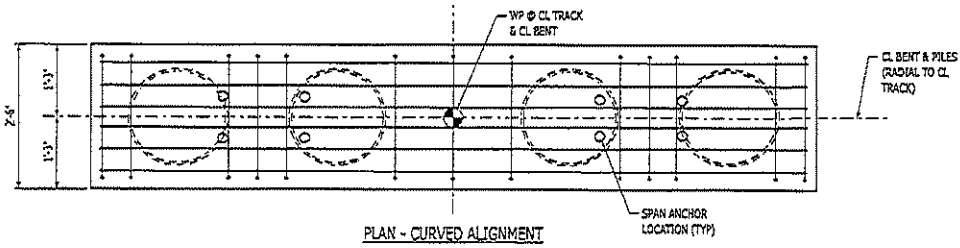
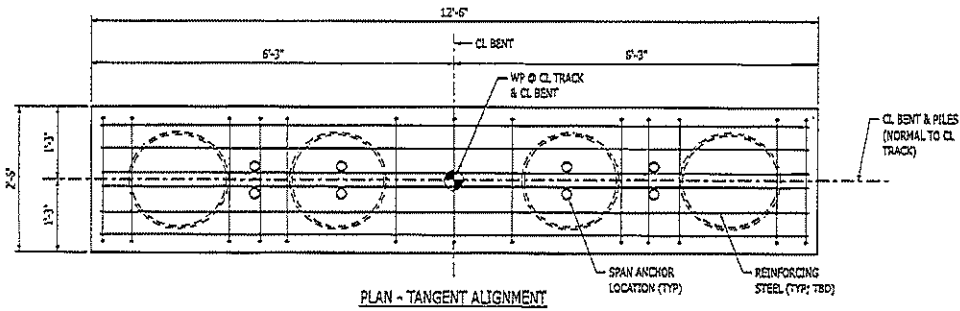
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**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
 BRIDGE DESIGN DATA & TYPICAL SECTIONS

SCALE:	3/4" = 1'-0"
DATE:	2/18/2011
BY:	06/25/2010
CHECKED:	06/25/2010
DESIGNED:	06/25/2010
APP'D:	06/25/2010

REVISIONS

S2.1

**G&A CONSULTING ENGINEERS PLLC**  
 2325 OLD BREHARD DRIVE  
 MARIETTA, GA 30068  
 PH (678) 634-8919  
 MS CDA NO.: 25549



**G&A** CONSULTING ENGINEERS PLLC  
 2335 OLD ORCHARD DRIVE  
 MARIETTA, GA 30058  
 PH 10701 634-8912  
 MS COA No.: 25549

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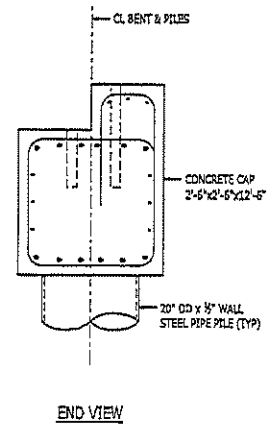
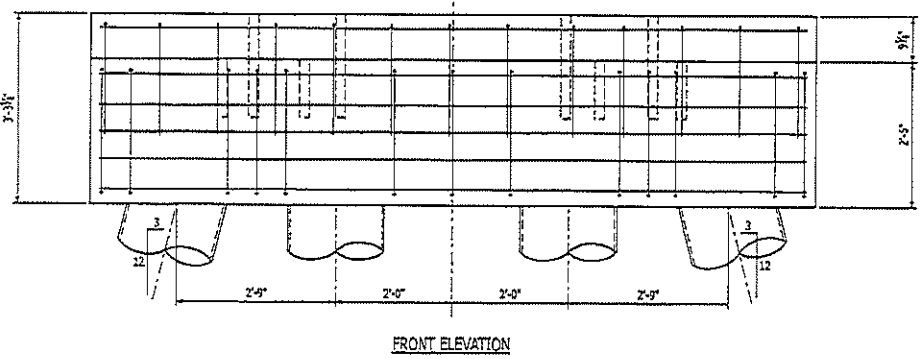
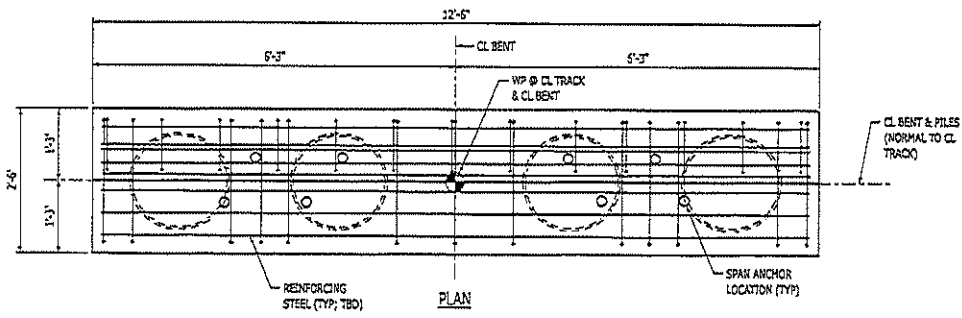
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 TYPICAL TREESTILE BENT DETAILS

Scale: 1/2" = 1'-0"  
 DATE: 06/29/10  
 DRAWN BY: J. STUBBS  
 CHECKED BY: J. STUBBS  
 APPROVED BY: J. STUBBS

PROJECT NO.: 10701-0001  
 SHEET NO.: 25549-020

S2.9

10-20-20 PULLIN, DWG, QWSS - NOT FOR CONSTRUCTION (NO PT)



**G&A** CONSULTING ENGINEERS PLLC  
 2325 OLD ORCHARD DRIVE  
 MARIETTA, GA 30068  
 PH (678) 634-0912  
 MS COA NO.: 25549

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**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
**TRESTLE TRANSITION BENT DETAILS**

SCALE:	1/2" = 1'-0"
DESIGNED BY:	218-051
DATE:	06-30-20
DRAWN BY:	J. STODOLITZ
CHECKED BY:	J. STODOLITZ
APPROVED BY:	

S2.10

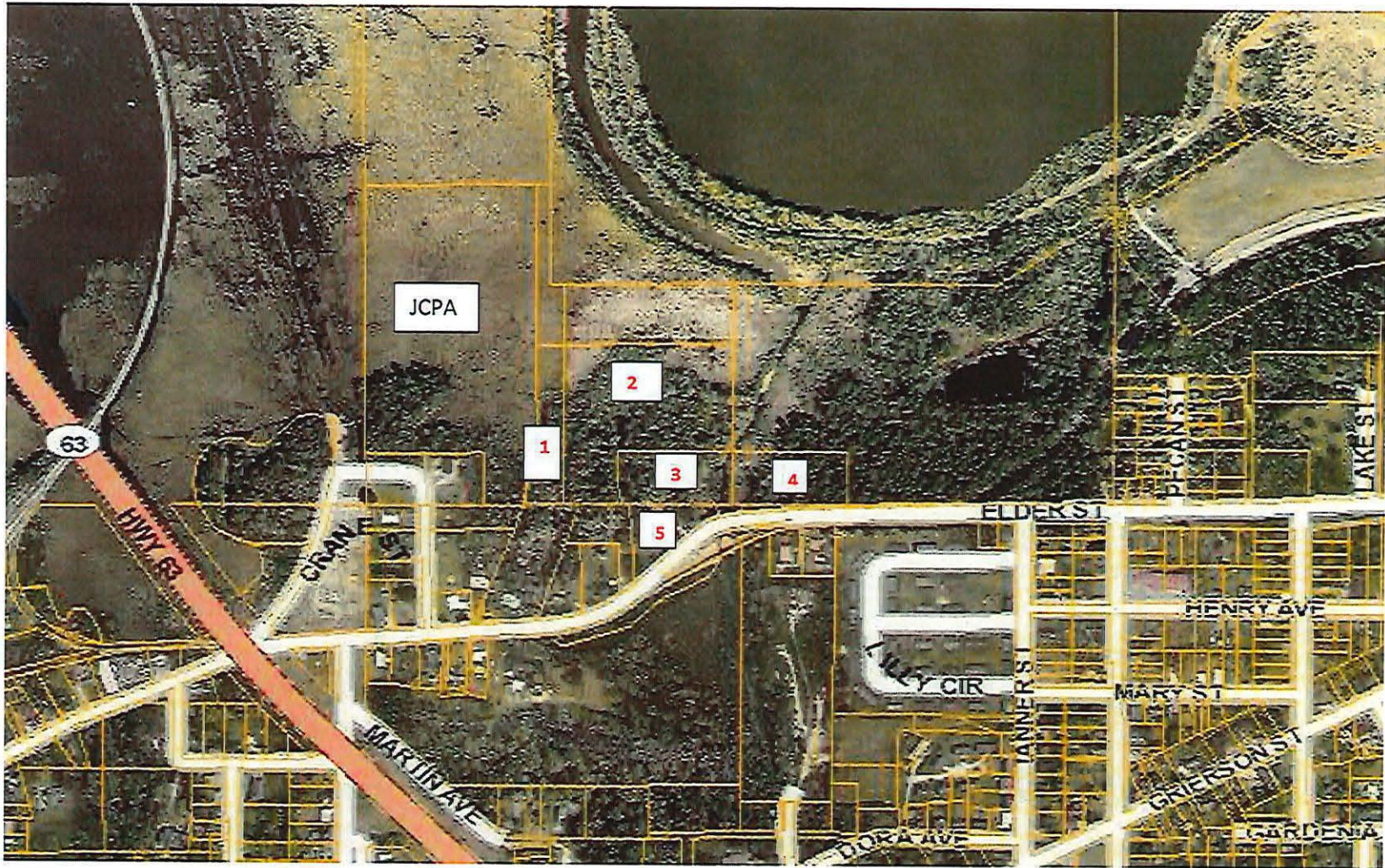


## Permitted and Modified Footprint



## Adjacent Property Owners





- 1 – Warren A. Powell – 5831 Elder Street, Moss Point, MS 39563
- 2 – Juanita Brondum, C/O Lamar Delmas, PO Box 267, Escatawpa, MS 39553
- 3 – Raymond Lamar Delmas, PO box 267, Escatawpa, MS 39553
- 4 – James Edward Bullock – 13116 Highway 613, Moss Point, MS 39563
- 5 – Angela Hawthorne & Gwenethe Parsen, 5836 Elder Street, Moss Point MS 39563

## Modified SWPPP and SCNOI

# **STORM WATER POLLUTION PREVENTION PLAN**

for

## **NORTH RAIL CONNECTOR PROJECT MOSS POINT, MISSISSIPPI**

On behalf of

**Jackson County Port Authority  
Pascagoula, MS 39568**

by



**COMPTON ENGINEERING, INC.**  
Engineering, Surveying, and Environmental Services

**1969 Market Street  
Pascagoula, MS 39568  
(228) 762-3970**

**NOVEMBER 2019**  
Updated December 2020

# TABLE OF CONTENTS

## 1. Mississippi DEQ Small Construction Notice of Intent (SCNOI)

## 2. Narrative

### 2.1. Project and Site Description

#### 2.1.1. Prior to Construction

#### 2.1.2. Following Construction

#### 2.1.3. Soils

#### 2.1.4. Adjacent Properties

## 3. Planned Erosion, Sediment and Stormwater Controls

### 3.1. Vegetative Controls

### 3.2. Structural Controls

#### 3.2.1 General Construction Activities

#### 3.2.2 Sediment Basin

#### 3.2.3 Temporary Silt Fence

### 3.3. Post Clearing Erosion Control

### 3.4 Housekeeping Practices

#### 3.4.1 Temporary Storage and Laydown Areas

#### 3.4.2 Above Ground Storage Tanks/ Fuel Handling Areas

#### 3.4.3 Spill Kit

#### 3.4.4 Non-Stormwater Discharge Management

### 3.5 Post Construction Control Measures

## 4. Implementation Sequence

## 5. Maintenance Plan

## 6. Sanitary Wastewater

## Attachments

Figure 1 – Site Location

Figure 2 – Topographic Map

Appendix A NRCS Soil Report

1. MISSISSIPPI DEQ SMALL CONSTRUCTION NOTICE OF INTENT (SCNOI)

# Submit only upon request from MDEQ



## SMALL CONSTRUCTION NOTICE OF INTENT (SCNOI)

GENERAL NPDES PERMIT MSR15 \_\_\_\_\_ (Number to be assigned by MDEQ if submitted)

Prior to the commencement of small construction activity (see Small Construction General Permit ACT11, T-27), the owner or operator of a small construction project must complete this form and develop a Storm Water Pollution Prevention Plan (SWPPP) as required by ACT5 of Mississippi's Small Construction General Permit. This SCNOI and SWPPP shall be submitted to the Mississippi Department of Environmental Quality (MDEQ) **only upon request from MDEQ**; however, the SCNOI and SWPPP must be maintained at the permitted site or locally available in case inspector review is necessary. Attachments with this SCNOI must include: a USGS quad map or copy showing site location (only if required to be submitted to MDEQ) and a Storm Water Pollution Prevention Plan (SWPPP). All questions must be answered – answer "NA" if the question is not applicable.

### PROJECT INFORMATION

<b>OWNER CONTACT PERSON:</b> <u>Mark McAndrews, Port Director</u> <b>OWNER COMPANY NAME:</b> <u>Jackson County Port Authority</u> <b>OWNER STREET (P.O. BOX):</b> <u>PO Box 70</u> <b>OWNER CITY:</b> <u>Pascagoula</u> <b>STATE:</b> <u>MS</u> <b>ZIP:</b> <u>39568</u> <b>OWNER PHONE # (INCLUDE AREA CODE):</b> <u>228-762-4041</u>	<b>OPERATOR (if different from owner) CONTACT PERSON:</b> _____ <b>OPERATOR COMPANY:</b> _____ <b>OPERATOR STREET (P.O. BOX):</b> _____ <b>OPERATOR CITY:</b> _____ <b>STATE:</b> _____ <b>ZIP:</b> _____ <b>OPERATOR PHONE # (INCLUDE AREA CODE):</b> _____
--	--

**PROJECT NAME:** North Rail Connector  
**DESCRIPTION OF CONSTRUCTION ACTIVITY:** Construction of elevated rail and rail on fill  
**ACREAGE DISTURBED (to be covered by this permit, area must be less than five (5) acres):** 0.90  
**PHYSICAL SITE ADDRESS (if not available, indicate the nearest named road. For linear projects, indicate the beginning of the project and identify all counties the project traverses.):**  
**STREET:** north of Elder Street  
**CITY:** Moss Point **COUNTY:** Jackson **ZIP:** 39567  
**NEAREST NAMED RECEIVING STREAM:** Escatawpa River

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Signature:**  **Date Signed:** 12/11/2020  
**Printed Name:** Mark L. McAndrews **Title:** Port Director

\*This application shall be signed according to the Small Construction General Permit, ACT10, T-4, T-5.

If requested, please submit this form to:

Chief, Environmental Permits Division  
MDEQ, Office of Pollution Control  
P.O. Box 2261  
Jackson, Mississippi 39225

## 2. NARRATIVE

### 2.1 Project and Site Description

The Jackson County Port Authority (JCPA) is proposing to construct a new rail line that will extend on the northwest from the existing MSE main line just east of Highway 63 in Moss Point, Mississippi, will cross over estuarine and forested wetlands and will join on the east with existing MSE line that provides access to the Port of Pascagoula east bank facility at Bayou Casotte. The rail is needed to allow MSE to abandon numerous rail crossings in Moss Point and Pascagoula and to transport a product manufactured in Jackson and George Counties to the Port of Pascagoula for shipment.

The length of the rail line through estuarine wetlands is approximately 3,659 total linear feet with approximately 2,952 feet through marsh wetlands, and 807 through uplands. The width of the proposed fill area is approximately 45.5 feet resulting in 39,261 square feet (0.90 acres) of estuarine impacts. There will be approximately 2,649 cubic yards of fill. For construction a laydown yard will be established within the MPITC in an area that was recently used for the same purpose. The laydown yard will be approximately 1 acres in size and is not located within a wetland.

The approximate center point of the proposed new rail line is located at 30.415001 degrees latitude and -88.513679 degrees longitude. The proposed new rail line is located within JCPA owned land and several parcels are currently being assessed for purchase.

The subject property is located in Section 19, Township 7 South, and Range 5 West of Jackson County, MS. A Site Location Map is shown on Figure 1. A topographic map showing the project location is shown on Figure 2.

The total project area is currently unimproved land and marsh. The intent of the control measures prepared herein are to prevent sediment-laden storm water runoff from occurring, to prevent sediment from leaving the site and erosion from taking place on the property.

TMDLs have been established for the Escatawpa River near the proposed project area. These TMDLs are for pH, Toxicity, Biological Oxygen Demand (BOD), fecal coliform and Chlorine. The project involves construction of a railroad partially elevated on piles and partially on a rock fill foundation. No materials will be used that would cause a discharge that would have an impact on the established TMDLs. Best Management Practices (silt fence, turbidity curtains) will be in place to prevent any sediment or run-off from leaving the construction site. A TMDL for mercury is applicable to upstream segments of the Escatawpa River which will not be impacted by the project.

#### 2.1.1 Prior to Construction

The proposed project site includes estuarine wetland, forested wetland and forested uplands. The area is flat with little change in relief across the proposed rail footprint.

### **2.1.2 Following Construction**

The project includes construction of approximately 3,659 linear feet of rail partially on an elevated rail and on approximately 45.5 feet wide rail bed construction on rip rap, geotextile fabric and metal rails.

### **2.1.3 Soils**

The web soil survey identifies the area as Axis mucky sandy clay loam, frequently flooded, the Smithton loam, and the Daleville silt loam. The Axis series consists of deep, very poorly drained, moderately permeable soils that formed in thick loamy marine sediments. These soils are on narrow to broad, level coastal marshes. The water table fluctuates with the tide. Slope is less than 2 percent. The Smithton series consists of very deep, poorly drained, moderately slowly permeable soils that formed in loamy alluvial sediments. These level to nearly level soils are on Pleistocene and younger stream terraces of the Western and Southern Coastal Plains. Slopes are dominantly less than 1 percent, but range to 3 percent. The Daleville series consists of poorly drained soils that formed in loamy marine or fluvial sediment. Permeability is slow. These nearly level soils are on uplands and terraces of the Southern Coastal Plain. They are saturated late in winter and early in spring. Water runs off the surface very slowly. Slopes range from 0 to 2 percent. A copy of the NRCS soil survey map is included in Appendix A.

### **2.1.4 Adjacent Properties**

The surrounding area consists of undeveloped marsh and wetlands to the north and west, upland residential and existing railroad to the south and wooded areas and existing rail line within the Moss Point Industrial and Technology Center (MPITC) to the east.

## **3.0 PLANNED EROSION, SEDIMENT, AND STORMWATER CONTROLS**

### **3.1 Vegetative Controls**

The construction method will include constructing a temporary road and driving piles from heavy equipment for the elevated portion of the project. The fill portion of the project will be constructed by building rail bed from the upland (south) end of the project, filling the rail footprint from already constructed portions of the rail and proceeding along in a fill and construct manner or filling from adjacent uplands. Vegetation will be removed from the upland forested and fresh water forested portion of the rail footprint. Any disturbed areas outside of the rail footprint will be seeded with grass as soon as practicable after grading and construction. If exposed soils are to be left undisturbed for 14 days or more, those soils will be seeded immediately with grass (interpreted to mean one working day). A 50 foot undisturbed vegetated buffer will be maintained around waters of the United States where possible. Where not feasible, structural controls will be used to prevent discharge to



undisturbed areas.

### **3.2 Structural Controls**

Structural controls will be described for specific areas and for specific types of construction activities at the site. A drawing showing the location of sedimentation and erosion controls is included in Appendix B.

#### **3.2.1 General Construction Activities**

A gravel paved road adjacent to the existing rail line in MPTIC will be used as a construction access road to the new rail footprint construction area. A construction entrance and equipment turnaround will be created at the end of the existing gravel access road to prevent damage from the heavy trucks and equipment in the area. This will help to remove sediment from construction vehicles and prevent sediment from leaving the property and onto public roadways. Details of the construction entrance are shown on the attached site plan and detail sheet in Appendix B. A laydown yard will be established in a prior cleared area within the MPITC. Soil compaction and preservation of top soil will be accomplished by keeping heavy equipment to construction areas and not travelling over non-construction areas. Top soil will be stockpiled to be used in areas to be revegetated after construction. Steep slopes and storm drains are not present on site.

#### **3.2.2 Sediment Basin**

Since this project is a linear project with a fill width of approximately 45.5 feet and length of 3,600 feet, a sediment basin is not required. Most of the project is constructed on pilings.

#### **3.2.3 Temporary Silt Fence**

Temporary silt fence will be placed around the perimeter of the disturbed area to prevent sediment from leaving the site. The fence will be installed and maintained in accordance with specifications set forth in the Mississippi Department of Environmental Quality, "Handbook for Erosion Control, Sediment Control and Stormwater Management on Construction Sites and Urban Areas, Volume 1, Erosion and Sediment Control Manual, Volume 2, Volume 2 Stormwater Runoff Management Manual, and Volume 3, Appendices: Developing Plans & Designing Best Management Practices published 2011. Silt fence details are shown in Appendix B.

Accumulated sediment will be removed when it has reached 1/3 to 1/2 the height of the control.

Floating turbidity curtains will be used where needed in the areas of the elevated railway construction.

### **3.3 Post Clearing Erosion Control**

If exposed soils are to be left undisturbed for 14 days or more, those soils will be seeded temporarily with grass immediately, interpreted to mean within one working day.

### **3.4 Housekeeping Practices**

Scheduled equipment maintenance or repair will not be conducted on site. Should unforeseen equipment maintenance or repair be required, and fluids are accidentally released, they will be soaked up and visibly stained soils will be removed and properly disposed. No lubricant or fuel containers will be stored on site. Paints, solvents, fertilizers, chemicals or any other potentially toxic materials will not be stored on site. Waste receptacles will be supplied and regularly maintained at convenient locations throughout the duration of construction. Temporary restroom facilities will be supplied and maintained throughout the construction process. Dust suppression activities will be conducted on a regular basis/as needed on the roads, work areas and construction entrance to prevent windblown dirt/dust from leaving the site.

#### **3.4.1 Temporary Storage and Laydown Yards**

Equipment will be temporarily stored in a temporary construction laydown yard within the MPITC during construction activities. Inspections will be made daily for leaks or spills from heavy equipment. Drip pans will be used when leaks occur and any impacted soil will be cleaned up immediately. Oil stained soil will be placed in appropriate containers and disposed of properly.

#### **3.4.2 Above Ground Storage Tanks/ Fuel Handling Areas**

Fuel storage tanks may be stored on site for heavy equipment use. The AST's will be double walled or will be placed within a bermed area, on visqueen or on concrete to avoid release to the environment.

#### **3.4.3 Spill Kit**

A spill kit will be available on site to address any leaks or spills from heavy equipment or from any fuel storage tanks. The spill kit will also be available to protect from spills that approach storm drains, ditches or inlets.

#### **3.4.4 Non- Stormwater Discharge Management**

There will be no non-stormwater discharges allowed on site during construction activities other than dust control discharges. If necessary during construction, the contractor will spray clean water available from nearby fire hydrants or water trucks, as a dust control measure. The amount sprayed will be managed to prevent any run-off from occurring.

### **3.5 Post Construction Control Measures**

Final stabilization will include seeding any non-paved areas within 7 days of construction completion. Silt fences will be left in place until vegetation is 90 percent established.

### **4. IMPLEMENTATION SEQUENCE**

1. Obtain plan approval, and all applicable permits.
2. Mark off areas of disturbance and sensitive areas (marsh and other wetlands will be flagged)
3. Hold pre-construction meeting with contractor to review schedule and implementation of erosion control procedures.
4. Build construction entrance.
5. Install silt fencing or sediment traps where necessary.
6. Clear upland and forested wetland footprint of vegetation
7. If construction activities are not to begin within 14 days, cleared areas will be seeded immediately or within the next working day.
8. Construction activities begin.
9. Landscaping and final stabilization.

### **5. MAINTENANCE PLAN**

1. All erosion and sediment controls and outfall discharge points will be checked for stability and operation at least once per week (for a minimum of four times per month) and following every runoff-producing rainfall. Any needed repairs will be made "immediately", interpreted to mean within the next working day.
2. Excessive sediment will be removed from in front of the structural BMPs when sediment has reached 1/3 to 1/2 the height of the control. The silt fencing will be replaced or re-seated as necessary.
3. All seeded areas will be fertilized and reseeded as necessary to maintain vigorous, dense vegetation. Where a disturbed area will be left undisturbed for 14 days or longer, vegetative controls will be implemented "immediately", interpreted to mean no later than the next work day.
4. New or additional employees will be acquainted with the plan as necessary.
5. All permanent measures will be monitored at least annually, and maintenance or modification made as needed.
6. Any necessary repair, replacement or supplementation of controls will be completed within 24 hours of noticed failure or as soon as field conditions allow.
7. The weekly inspection forms (Small Construction Forms Package) will be filled out and maintained in accordance with the permit.

### **6. SANITARY WASTEWATER**

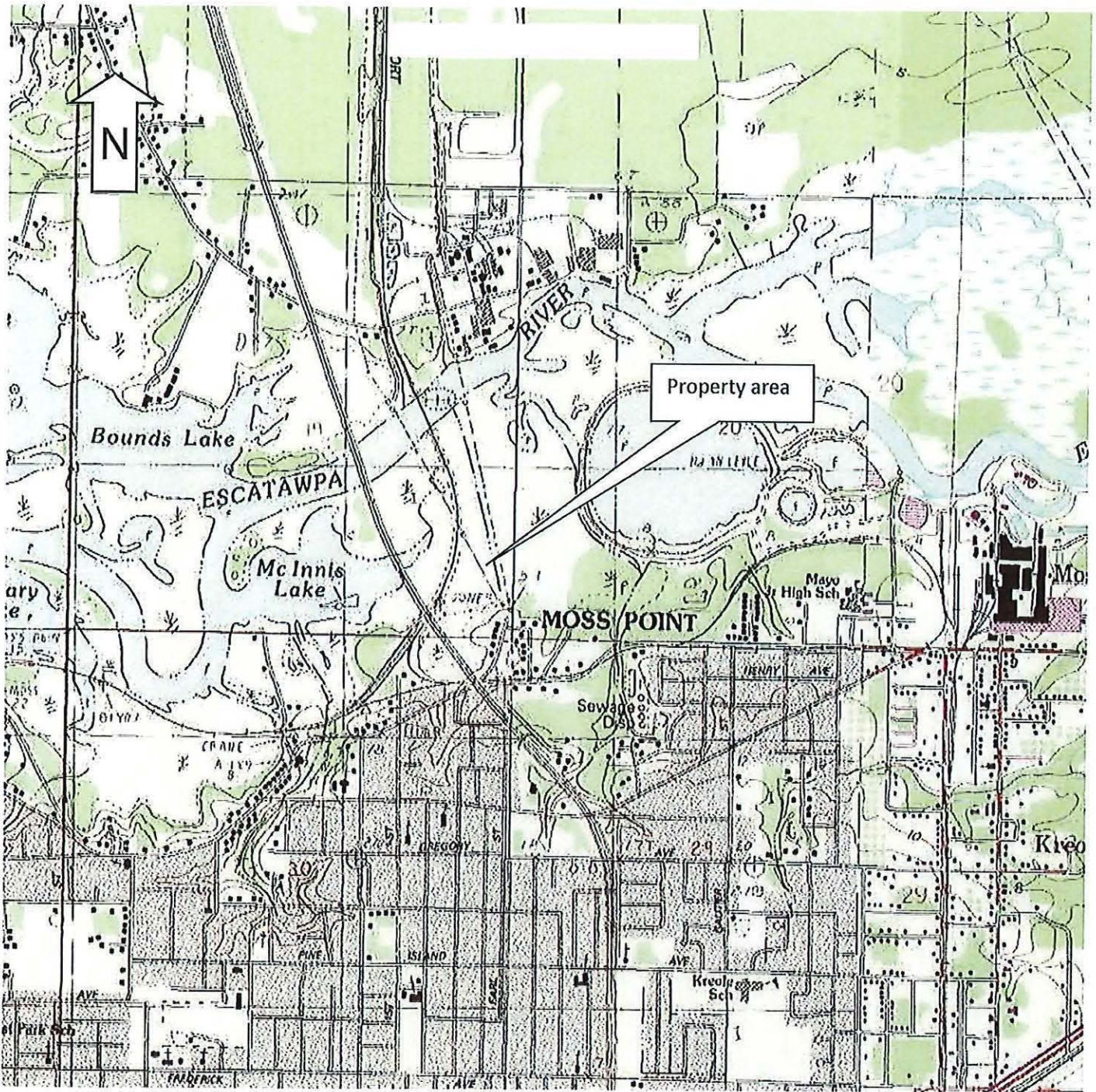
The facility will not have any sanitary sewer discharges. A portable toilet with a holding tank will be used during construction activities.

# FIGURES

# Project Location Map

## Topographic Map







**COMPTON ENGINEERING, INC.**  
 Engineering, Surveying, and Environmental Services  
 156 Nixon Street  
 Biloxi, Mississippi 39530  
 Phone: (228) 432-2133 Fax: (228) 432-8149  
 E-mail: compton@comptonengineering.com

Site: North Rail Project Area  
 Moss Point, Jackson County, MS

Figure Title: **Topographic Map** (Map Source: USGS, 2012)

Appendix ID:  
 A

**APPENDIX A**

**NRCS Soil Survey Map**






































Soil Map—Jackson County, Mississippi  
(IP Property)



Soil Map—Jackson County, Mississippi  
(IP Property)

### MAP LEGEND

<b>Area of Interest (AOI)</b>		Area of Interest (AOI)		Spoil Area
<b>Soils</b>		Soil Map Unit Polygons		Stony Spot
	Soil Map Unit Lines		Very Stony Spot	
	Soil Map Unit Points		Wet Spot	
<b>Special Point Features</b>		Blowout		Other
	Borrow Pit		Special Line Features	
	Clay Spot	<b>Water Features</b>		
	Closed Depression		Streams and Canals	
	Gravel Pit	<b>Transportation</b>		
	Gravelly Spot		Rails	
	Landfill		Interstate Highways	
	Lava Flow		US Routes	
	Marsh or swamp		Major Roads	
	Mine or Quarry		Local Roads	
	Miscellaneous Water	<b>Background</b>		
	Perennial Water		Aerial Photography	
	Rock Outcrop			
	Saline Spot			
	Sandy Spot			
	Severely Eroded Spot			
	Sinkhole			
	Slide or Slip			
	Sodic Spot			

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Mississippi  
Survey Area Data: Version 15, Sep 17, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Mar 21, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
13	Daleville silt loam, 0 to 1 percent slopes	1.8	1.7%
26	Smithton loam, 0 to 1 percent slopes, occasionally flooded	7.3	6.9%
63	Stough loam, 0 to 2 percent slopes	11.7	11.0%
92	Water (>40 acres)	13.1	12.2%
95	Axis mucky sandy clay loam, frequently flooded	72.9	68.1%
226	Bayou sandy loam, 0 to 1 percent slopes	0.2	0.2%
<b>Totals for Area of Interest</b>		<b>107.0</b>	<b>100.0%</b>

# **APPENDIX B**

## **Sediment and Erosion Controls Construction Entrance Details Silt Fence Details**

Appendix B Erosion and Sedimentation Controls, Construction Entrance Details, Silt Fence Details

S:\Projects\10-Project\2018\116-051\_NDA - North Rail\Comaster\031 Final\Drawings\031\Current\Drawings\CO.0 - C1.0.dwg, 12/17/2010 11:09:41 AM, hrmrta, DWG To PDF.ctb



**1**  
**CO.0** OVERALL EXISTING SITE / EROSION CONTROL PLAN  
 SCALE: 1" = 200'

CO.0
ISSUED FOR JPA REVIEW
REV. 01
ISSUED FOR JPA REVIEW
REV. 02
REVISED PRELIM. ENCL. CHGS. + NOT FOR CONSTRUCTION
REV. 03

**COMPTON ENGINEERING, INC.**  
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**PORT OF PASCAGOULA RESTORE PROJECT**  
**NORTH RAIL CONNECTOR PLANNING ASSISTANCE**  
 OVERALL EXISTING SITE / EROSION CONTROL PLAN

SCALE:	AS NOTED
DESIGNER:	J. HIGSON
CHECKER:	L. STUBBS/RELL
DATE:	11/17/10
DRAWN BY:	R. LARSEN
APP'D BY:	J. HIGSON

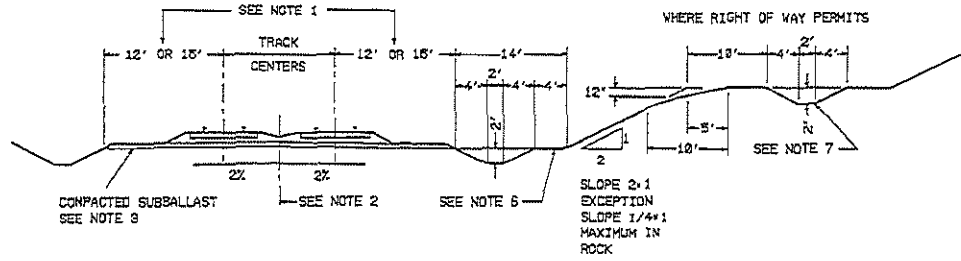
**CO.0**



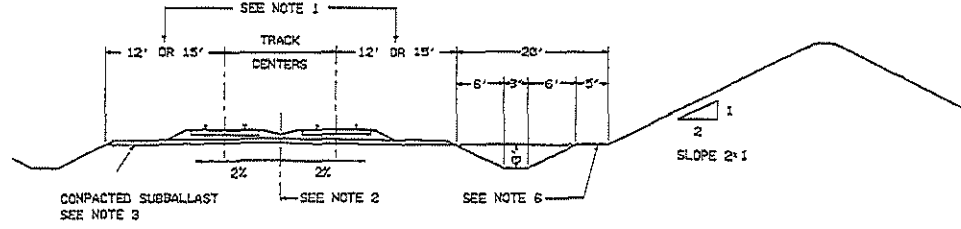
# CSX Standard Specification for Rail Design



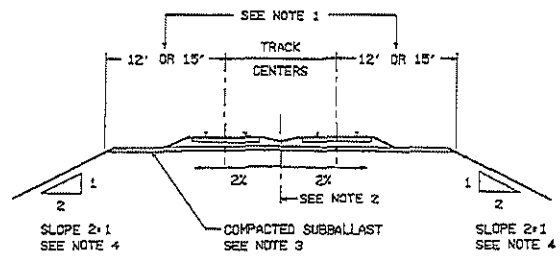
2601



TYPICAL CUT SECTION



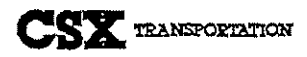
TYPICAL WET CUT SECTION



TYPICAL FILL SECTION

NOTES:

1. ROADBED WIDTHS AT TOP OF SUBGRADE:
  - A. SINGLE MAIN TRACKS, SIDINGS, AND HEAVY TONNAGE TRACKS. 15'-0" FROM CENTERLINE OF TRACK, 30'-0" TOTAL
  - B. SINGLE YARD, INDUSTRY, AND OTHER TRACK. 12'-0" FROM CENTERLINE OF TRACK, 24'-0" TOTAL
  - C. MULTIPLE PARALLEL TRACKS. 12'-0" OR 15'-0" FROM CENTERLINE OF TRACK DEPENDING ON THE TYPE OF TRACKS PLUS DISTANCE BETWEEN TRACK CENTERLINES.
2. LOCATION OF GRADE POINT:
  - A. SINGLE MAIN OR OTHER TRACK IS THE CENTERLINE OF TRACK.
  - B. DOUBLE MAIN TRACKS IS THE CENTERLINE BETWEEN TRACKS.
  - C. GRADE POINT FOR MAIN TRACK AND SIDING IS CENTERLINE OF MAIN TRACK.
3. DEPTH OF SUBBALLAST:
  - A. SUBBALLAST ON MAIN TRACKS, SIDINGS AND HEAVY TONNAGE TRACKS IS 6" OVER THE 30' ROADBED WIDTH.
  - B. SUBBALLAST ON YARD, INDUSTRIAL AND OTHER TRACKS IS 4" OVER THE 24' ROADBED WIDTH.
4. THE STANDARD SLOPE ON FILL SECTIONS MAY BE INCREASED TO A MAXIMUM OF 1:1 AT LOCATIONS WHERE THE BEARING CAPACITY OF THE NATURAL BED HAS BEEN VERIFIED BY FIELD TESTS AND THE STABILITY OF THE FILL MATERIAL VERIFIED BY LABORATORY TESTS.
5. INSTRUCTIONS FOR THE USE AND INSTALLATION OF GEOTEXTILES AND GEOTEXTILES ARE INCLUDED IN MWI-1023.
6. OMIT BENCH WHERE EXCAVATION IS 5 FEET OR LESS.
7. OMIT BERM DITCH WHEN NATURAL GROUND SLOPES AWAY FROM THE EXCAVATION.



ROADBED SECTIONS

*R.R. Jones*  
 REVIEWED -  
 DIRECTOR,  
 STANDARDS AND TESTING

*A.C. [Signature]*  
 APPROVED -  
 ASSISTANT VICE PRESIDENT,  
 EQUIPMENT AND TRACK  
 SYSTEMS ENGINEERING

ISSUED: JANUARY 27, 1997

REVISED: INITIAL ISSUE