



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

JANUARY 30 2013

Regulatory Division
SAS-2013-00067

JOINT PUBLIC NOTICE
Savannah District/State of Georgia

The Savannah 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 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344), as follows:

Application Number: SAS-2013-00067

Applicant: Mr. Brian Ruholt
Epic Midstream LLC
125 Town Park Drive, Suite 300
Kennesaw, Georgia 30144

Agent: Mr. Alton Brown
Resource and Land Consultants
41 Park of Commerce Way
Suite 303
Savannah, Georgia 31405

Location of Proposed Work: The project corridor extends from an active CSX rail line to the Epic East Terminal. This is located perpendicular to and west of Woodcock Road and crosses Woodcock Road and runs west and parallel to it, in Savannah, Chatham County, Georgia (Latitude 32.0741, Longitude -81.0459).

Description of Work Subject to the Jurisdiction of the U.S. Army Corps of Engineers: The applicant states that there are wetlands and tidal marsh within the proposed project boundaries that have not been verified by the U.S. Army Corps of Engineers. A jurisdictional determination will be verified prior to any permit issuance. The applicant proposes to impact 0.47 acre of tidal marsh for the construction of a rail spur extension. As mitigation for the impacts, the applicant proposes to purchase 3.8 credits from Ogeechee River Mitigation Bank.

For additional information, see the attached project description supplied by the applicant. The opinions, views and or conclusions that are expressed by the applicant in this project narrative do not necessarily reflect those of the U.S. Army Corps of Engineers.

BACKGROUND

This Joint Public Notice announces a request for authorizations from both the U.S. Army Corps of Engineers and the State of Georgia. The applicant's proposed work may also require local governmental approval.

STATE OF GEORGIA

Water Quality Certification: The Georgia Department of Natural Resources, Environmental Protection Division, intends to certify this project at the end of 30 days in accordance with the provisions of Section 401 of the Clean Water Act, which is required for a Federal Permit to conduct activity in, on, or adjacent to the waters of the State of Georgia. Copies of the application and supporting documents relative to a specific application will be available for review and copying at the office of the Georgia Department of Natural Resources, Environmental Protection Division, Water Protection Branch, 4220 International Parkway, Suite 101, Atlanta, Georgia 30354, during regular office hours. A copier machine is available for public use at a charge of 25 cents per page. Any person who desires to comment, object, or request a public hearing relative to State Water Quality Certification must do so within 30 days of the State's receipt of application in writing and state the reasons or basis of objections or request for a hearing. The application can be reviewed in the Savannah District, U.S. Army Corps of Engineers, Regulatory Division, 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640.

State-owned Property and Resources: The applicant may also require assent from the State of Georgia, which may be in the form of a license, easement, lease, permit or other appropriate instrument.

Marshland Protection: This notice also serves as notification of a request to alter coastal marshlands (under the provision of the Coastal Marshlands Protection Act, Georgia Laws, 1970, p. 939 and as amended), if required. Comments concerning this action should be submitted to the Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

Georgia Coastal Management Program: Prior to the Savannah District Corps of Engineers making a final permit decision on this application, the project must be certified by the Georgia Department of Natural Resources, Coastal Resources Division, to be consistent with applicable provisions of the State of Georgia Coastal Management Program (15 CFR 930). Anyone wishing to comment on Coastal Management Program certification of this project should submit comments in writing within 30 days of the date of this notice to the Federal Consistency Coordinator, Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, One Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

U.S. ARMY CORPS OF ENGINEERS

The Savannah District must consider the purpose and the impacts of the applicant's proposed work, prior to a decision on issuance of a Department of the Army Permit.

Cultural Resources Assessment: Review of the latest published version of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion are located at the site or in the area affected by the proposed work. Presently unknown archaeological, scientific, prehistorical or historical data may be located at the site and could be affected by the proposed work.

Essential Fish Habitat (EFH): This notice initiates the EFH consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Per the applicant, his proposal would result in the destruction or alteration of approximately 0.47 acre of EFH utilized by various life stages of species comprising the red drum, shrimp, bluefish or snapper grouper management complexes. Our initial determination is that the proposed action would not have an individual or cumulatively substantial adverse impact on EFH or federally managed fisheries in the Atlantic Ocean. Our final determination relative to project impacts to EFH and the need for mitigation measures are subject to review by and coordination with the NMFS and the South Atlantic Fisheries Management Council.

Endangered Species: Pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), we request information from the U.S. Department of the Interior, Fish and Wildlife Service, the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration, and the National Marine Fisheries Service; or, any other interested party, on whether any species listed or proposed for listing may be present in the area.

Public Interest Review: 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, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

Consideration of Public Comments: The U.S. Army Corps of Engineers is soliciting comments from the public; federal, state, and local agencies and officials; Native American 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 U.S. Army 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.

Application of Section 404(b)(1) Guidelines: The proposed activity involves the discharge of dredged or fill material into the waters of the United States. The Savannah District's evaluation of the impact of the activity on the public interest will include application of the guidelines promulgated by the Administrator, Environmental Protection Agency, under the authority of Section 404(b) of the Clean Water Act.

Public Hearing: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application for a Department of the Army Permit. Requests for public hearings shall state, with particularity, the reasons for requesting a public hearing. The decision whether to hold a public hearing is at the discretion of the District Engineer, or his designated appointee, based on the need for additional substantial information necessary in evaluating the proposed project.

Comment Period: Anyone wishing to comment on this application for a Department of the Army Permit should submit comments in writing to the Commander, U.S. Army Corps of Engineers, Savannah District, Attention: Ms. Sherelle Reinhardt, 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Ms. Sherelle Reinhardt, Regulatory Specialist, Permits Section, Coastal Branch at 912-652-5964.

5 Encls

1. Applicants Supplemental Documentation (Project Description, 8 pages)
2. Site Maps (Figure 1-6, 7 pages)
3. Wetlands Impact Exhibit (Sheets 1-9, 10 pages)
4. Construction Plans (Sheets 1-10, 10 pages)

Epic Midstream East Terminal Rail Spur Chatham County, Georgia

Epic Midstream, LLC

Project Description

January 2013

1.0 INTRODUCTION:

Epic Midstream, LLC is seeking authorization under Section 404 of the Clean Water Act and the Coastal Marshland Protection Act of 1970 to impact jurisdictional waters of the U.S. and coastal marshlands during rehabilitation of an existing rail spur. The proposed project will restore rail connectivity from the operating CSX rail line to the existing Epic Midstream East Terminal facility located on the Savannah River. The rehabilitation will include general spur improvements for compliance with current rail line industry standards. The project corridor consists of 3.40 acres extends from the existing CSX line north to the East Terminal. The project corridor is generally located northeast of East President Street and adjacent to Woodcock Road within Savannah, Chatham County, Georgia (32.076056°, -81.044698°; Hydrologic Unit Code: 03060109 Lower Savannah Watershed). Location maps and aerial photographs depicting the general project limits are provided in Appendix A of this document.

2.0 BACKGROUND AND PROJECT PURPOSE:

Epic Midstream provides petroleum products storage and logistics solutions in the United States and internationally. Epic engages in oil and gas facility operations, management, and strategic development. The company bridges the gap between supply and demand centers through logistics planning and management. Epic's portfolio of assets includes four jet fuel terminals (Bremen, GA, Macon, GA, Montgomery, AL and Moundville, AL) as well as the recently acquired water-based Savannah Terminal (acquired from NuStar in April 2012). In total, Epic's assets comprise 65 tanks and over 1.8 million barrels of active storage.

Epic's Savannah Terminal is comprised of two terminals including the East Terminal located off Woodcock Road and the West Terminal, located off Wahlstrom Road. The West Terminal was active at acquisition with rail access used to transport lube oils, chemicals, and fertilizer. The East Terminal is being reactivated to handle clean products (Ultra-low-sulfur diesel (ULSD), biodiesel, gas, etc.). While the East Terminal historically contained rail access, the spur was abandoned approximately 20 to 30 years ago. Epic Midstream is proposing to rehabilitate and reactivate the existing rail spur for delivery of products into and out of the terminal. The proposed spur rehabilitation will enable rail delivery of products directly into the East Terminal. Thus, the purpose of the project is to reactivate and restore rail access to the existing Epic Midstream East Terminal.

3.0 EXISTING SITE CONDITIONS:

The project area contains a total of 3.40 acres including 0.03 acre of freshwater wetlands, 1.88 acres of tidal marsh, and 1.69 acres of upland (primarily associated with the rail spur, rail line and Woodcock Road). The existing rail bed contains vegetation including Chinese tallow-tree (*Triadica sebifera*), live oak (*Quercus virginiana*), water oak (*Quercus nigra*) eastern red cedar (*Juniperus virginiana*), black berry (*Rubus spp.*) and wax myrtle (*Myrica cerifera*). The tidal marsh area is primarily composed of smooth cordgrass (*Spartina alterniflora*), big cordgrass (*Spartina cynosuroides*), eastern baccharis (*Baccharis halimifolia*) etc.

A jurisdictional determination is included in this package within Appendix B. Photographs depicting existing site conditions are provided in Appendix A.

4.0 PROPOSED PROJECT:

The proposed project includes the rehabilitation and reactivation of the existing rail spur from the CSX line approximately 2,226 linear feet north to the East Terminal. The reactivated spur will include a 24 foot wide rail bed with 4:1 slopes per rail industry standards and will maintain existing elevations of 5.0 to 5.4 throughout the corridor. Minor modification and increase of bed elevations will occur in several small areas. Estimated fill will total 285 cubic yards and will be composed of fill dirt and gravel. Table 1 provides a summary of the impacts associated with the proposed project. As indicated in Table 1 all 0.47 acre of proposed impact will occur within the tidal marsh. No freshwater wetland impacts are proposed.

TABLE 1.

Habitat	Total Acres	Total Impacted Acres
Freshwater Wetland	0.03	N/A
Tidal Marsh	1.68	0.47
Total	1.91	0.47



Detailed permit drawings depicting the site plan and typical cross-sections of the spur are provided in Appendix D.

4.1 Marshlands & Upland Component:

As defined by the GADNR, the marshlands component of a project means the part of the project in an estuarine area or any structure on or over an estuarine area requiring a permit under the Coastal Marshlands Protection Act. The upland component is defined as all those service areas, amenities, and recreational areas located inland of the Coastal Marshlands Protection Act jurisdiction line that serve or augment the function of the marshlands component of the project. For this project, both the marshland and upland component of the project the marshlands component of the project is comprised of the rail spur.

For CMPA projects, GADNR rules require that pervious surfaces must be maximized and total impervious area minimized in the project area when practicable, with a goal of no more than 15% effective impervious cover, taking into consideration existing structures and available land within the upland component of the project area. The entire rail bed will be comprised of pervious surface (fill dirt and gravel) and will therefore meet the goal established by the amended Coastal Marshlands Protection Act (CMPA).

5.0 ALTERNATIVES ANALYSIS/AVOIDANCE & MINIMIZATION:

Prior to submittal of this permit application, the applicant reviewed alternatives and opportunities to avoid and minimize impacts to the greatest extent practicable.

5.1 No Action Alternative:

The proposed project has been initiated to facilitate rehabilitation and reactivation of a rail spur to provide rail services from an existing CSX rail line to the Epic East Terminal. Without the proposed rail spur connection, the applicant would be required to deliver ethanol and other products used to blend into finished gasoline via rail to another terminal and transload for truck delivery to the East Terminal. This system is neither logistically or economically sustainable. The proposed project will allow for direct rail delivery of ethanol into the East Terminal. The "no-action alternative" does avoid impacts to wetland resources; however, this alternative does not satisfy the overall project purpose to restore rail access to an existing facility on the Savannah River.

5.2 Alternative Alignments:

The applicant reviewed alternative alignments in an effort to avoid and minimize impacts to wetlands. With the exception of Woodcock Street (a public road that provides access to Fort Jackson) and the existing rail spur (proposed for reactivation), all lands between the CSX rail line and the Epic East Terminal facility consists of tidal marsh. Any alternate route would require in excess of 1.3 acre of tidal marsh impact associated with construction of a new spur (Figure 6). As an example, installation of a new rail spur on the west side of Woodcock Street would require 2,295 linear feet (1.58 acre) of marsh impact. Similarly installation of a new rail spur east of Woodcock Street and the existing spur would require 1,896 linear feet (1.31 acre) of marsh impact. Consider the fixed terminus associated with the CSX rail line and East Terminal, the applicant was able to substantially reduce impacts to tidal marsh by proposing rehabilitation of the existing rail spur rather than construction of a new spur within an alternate location.

5.3 Impact Avoidance & Minimization:

The 3.40 acre project corridor contains 0.03 acre of freshwater wetland and 1.88 acres of tidal marsh. The proposed project avoids 1.41 acre of tidal marsh and does not require any impacts to the 0.03 acre freshwater wetland area. Avoidance of 1.44 acres of wetland was achieved through several design criteria. First, the applicant has proposed a rail bed width and design that meets the minimum bed width and slope standards of the rail industry. The existing spur varies in width from 15 to 20 feet. Current rail road industry standards require a minimum of 24 foot bed (12 feet each side of centerline) and a minimum 4:1 side slopes for a total width of 30 feet. To comply with current rail road standards, the rehabilitated rail spur will contain this minimum requirement and no additional impacts are proposed.

Second, the applicant was able to reduce the overall impact by maintaining the current bed elevation rather than raising the elevation of the rail line. By maintaining current bed elevations through the project corridor, the applicant was able to reduce the overall width of the project to 30 feet.

6.0 BUFFER VARIANCE:

The proposed project requires land disturbing activities within 25 feet of State Waters. The applicant will coordinate with the Local Issuing Authority to obtain a buffer determination and obtain a buffer variance from the Environmental Protection Division (EPD) if required.



7.0 PROJECT JUSTIFICATION:

The proposed project will provide rail access to and from an existing terminal on the Savannah River. The project is necessary for safe and economical transport of petroleum based products.

8.0 COMPENSATORY MITIGATION:

The proposed project requires 0.47 acres of tidal wetland impact during rehabilitation of the existing rail spur. As indicated in the attached SOP calculations, the 3.8 credits are required to off-set the proposed impacts. The applicant is proposing the purchase of 3.8 credits from Ogeechee River Mitigation Bank to satisfy the mitigation requirement.

9.0 ESSENTIAL FISH HABITAT:

The project area contains tidal marsh, which has been identified as essential fish habitat for the shrimp, crabs, and *Sciaenids* (drum). Rehabilitation of the rail spur will require a small area of marsh impact located immediately adjacent to the existing rail bed. The marsh within the project corridor has been altered by past industrial development activities which have occurred within this area of Savannah. While the marsh within the project corridor has been altered by the existing rail spur, Woodcock Street, Fort Jackson Road, Kemira Road, and existing industrial facilities along the Savannah River, any impacts to EFH associated with minor improvements to the rail spur will be off-set through the proposed compensatory mitigation plan.

10.0 THREATENED AND ENDANGERED SPECIES:

RLC conducted a threatened and endangered species survey to determine the potential occurrence of animal and plant species (or their preferred habitats) currently listed as threatened or endangered by state and federal regulations [Federal Endangered Species Act of 1973 (16 USC 1531-1543)]. The U.S. Fish and Wildlife Service (USFWS) lists the following plant and animal species as endangered or threatened in Chatham County, Georgia (Appendix E):

PLANTS

Pondberry (*Lindera melissifolia*)

MAMMALS

Humpback Whale (*Megaptera novaeanglie*)

Northern Atlantic Right Whale (*Eubalaena glacialis*)

Manatee (*Trichechus manatus*)

BIRDS

Bachman's Warbler (*Vermivora bachmanii*)

Piping Plover (*Charadrius melodus*)

Red-Cockaded Woodpecker (*Picoides borealis*)

Wood Stork (*Mycteria americana*)

REPTILES

Eastern Indigo Snake (*Drymarchon corais couperi*)

Green Sea Turtle (*Chelonia mydas*)

Hawksbill Sea Turtle (*Eretmochelys imbricate*)

Kemp's Ridley Sea Turtle (*Lepidochelys kempii*)

Leatherback Sea Turtle (*Dermochelys coriacea*)

Loggerhead Sea Turtle (*Caretta caretta*)

AMPHIBIAN

Flatwoods Salamander (*Ambystoma cingulatum*)

FISH

Shortnose Sturgeon (*Acipenser brevirostrum*)

Based on the location of the project site and current habitat conditions and because no individual or population of listed species were observed, the proposed rail spur rehabilitation project will not adversely affect any threatened or endangered species.

11.0 CULTURAL RESOURCES

The project includes rehabilitation of a rail spur connecting to an existing facility within an industrial development area along the Savannah River. As a result of the current site conditions and proposed activities, no impacts to cultural or archeological resources is anticipated. A copy of the NRHP information is provided in Appendix F.

12.0 COMMERCIAL BAIT SHRIMP, OYSTER, AND CRABBING AREAS

The proposed project is not located in a designated bait shrimp zone according to Georgia Department of Natural Resources *Commercial and Recreational Bait Shrimp Zones, Coastal Georgia* map. The project area is not listed on the *Georgia Harvester Reported Crabbing Areas* list, and the project area is not located in designated commercial or recreational oyster harvest areas.



13.0 IMPAIRED WATERS

The Savannah River is not listed on the U.S. Environmental Protection Agency (EPA) 303(d) list for impaired water bodies for the section of river abutting the subject property. A list of Georgia's EPA 303(d) listed streams for the Lower Savannah Watershed can be found in Appendix G.

14.0 SUPPLEMENTAL INFORMATION

This additional information is provided for compliance with Coastal Marshlands Protection Act of 1970 information requirements:

OCGA 12-5-286. Permits to fill, drain, etc., marshlands.

(b) Each application for such permit shall be, properly executed, filed with the department on forms as prescribed by the department, and shall include:

- (1) The name and address of the applicant-*
Epic Midstream, LLC
Attn: Mr. Brian Ruholt
125 Town Park Drive, Suite 300
Kennesaw, Georgia 30144
- (2) A plan or drawing showing the applicant's proposal and the manner or method by which such proposal shall be accomplished. Such plan shall identify the coastal marshlands affected-* Please refer to attached drawings produced by EMC Engineering (Appendix D).
- (3) A plat of the area in which the proposed work will take place-* See Appendix H.
- (4) A copy of the deed or other instrument under which the applicant claims title to the property or, if the applicant is not the owner, then a copy of the deed or other instrument under which the owner claims title together with written permission from the owner to carry out the project on his land. In lieu of a deed or other instrument referred to in this paragraph, the committee may accept some other reasonable evidence of ownership of the property in question or other lawful authority to make use of the property; The committee will not adjudicate title disputes concerning the property which is the subject of the application; provided, however, the committee may decline to process an application when submitted documents show conflicting deeds-* Deeds for subject property and referenced plat is included in Appendix H.
- (5) A list of all adjoining landowners together with such owners' addresses, provided that if the names or addresses of adjoining landowners cannot be determined, the applicant shall file in lieu thereof a sworn affidavit that a diligent search, including, without limitation, a search of the records for the county tax assessor's office, has been made but that the applicant was not able to ascertain the names or addresses, as the case may be, of adjoining landowners-* Adjacent landowner information is provided in Appendix I.
- (6) A letter from the local governing authority of the political subdivision in which the property is located, stating that the applicant's proposal is not in violation of any zoning law;* The proposed plans have been submitted to the City of Savannah Development Services Department and a copy of the submittal is included in Attachment I.
- (7) A non-refundable application fee to be set by the board in an amount necessary to defray the administrative cost of issuing such permit. Renewal fees shall be equal to application fees, which shall not exceed \$1,000.00 for any one proposal and shall be paid to the department.* Check for \$500.00 is attached.
- (8) A description from the applicant of alternative sites and why they are not feasible and a discussion of why the permit should be granted-* Please refer to Section 5.0 for alternative analysis.
- (9) A statement from the applicant that he has made inquiry to the appropriate authorities that the proposed project is not over a landfill or hazardous waste site and that the site is otherwise suitable for the proposed project-* A review of the Hazardous Site Index for Chatham County, Georgia indicates

that the subject property does not contain hazardous waste sites or landfills. A copy is provided in Appendix J.

- (10) *A copy of the water quality certification issued by the department if required for the proposed project-* A copy of this package was provided to EPD and a copy of the Water Quality Certification will be submitted to both the USACE and CRD if required.
- (11) *Certification by the applicant of adherence to soil and erosion control responsibilities if required for the proposed project-* The project will conform to all required building, land disturbing, and stormwater management regulations as required by the Chatham County, Georgia.
- (12) *Such additional information as is required by the committee to properly evaluate the application-* This application has been prepared with consideration for the interests of the general public of the State of Georgia as defined in OCGA 12-5-286(g): OCGA 12-5-286. Permits to fill, drain, etc. marshlands.
- (g) *In passing upon the application for permit, the committee shall consider the public interest, which, for purposes of this part shall be deemed to be the following considerations:*
- (1) *Whether or not unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will arise as a result of the proposal-* The proposed project will not alter natural flow of navigational waters or obstruct public navigation.
 - (2) *Whether or not unreasonably harmful or increased erosion shoaling of channels, or stagnant areas of water will be created-* The proposed rail spur rehabilitation will not increase erosion, shoaling of channels, or create stagnant areas of water.
 - (3) *Whether or not the granting of a permit and the completion of the applicant's proposal will unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, or wildlife, or other resources, including but not limited to water and oxygen supply-* The rehabilitated spur will not interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, or wildlife, or other resources, nor affect water and oxygen supply.

15.0 CONCLUSION

Epic Midstream is proposing the rehabilitation and reactivation of a rail spur to provide rail access and connectivity from a CSX rail line to the Epic East Terminal. The project requires 0.47 acre of impact to tidal wetlands located immediately adjacent to the existing spur. The proposed project was designed to impact the minimal amount of tidal marsh in order to reach the overall project goal. As compensatory mitigation, the application is proposing to purchase 3.8 credits from Ogeechee River Mitigation Bank which is a USACE approved tidal mitigation bank that currently services the project area.



Photograph 1. Tidal marsh east of rail spur/project corridor.



Photograph 2. Tidal marsh/ditch between project corridor and Woodcock Road.



Photograph 3. Tidal ditch between rail spur and Woodcock Road.



Photograph 4. Existing rail spur to be rehabilitated/reactivated.



Photograph 5. Existing rail spur to be rehabilitated and reactivated.



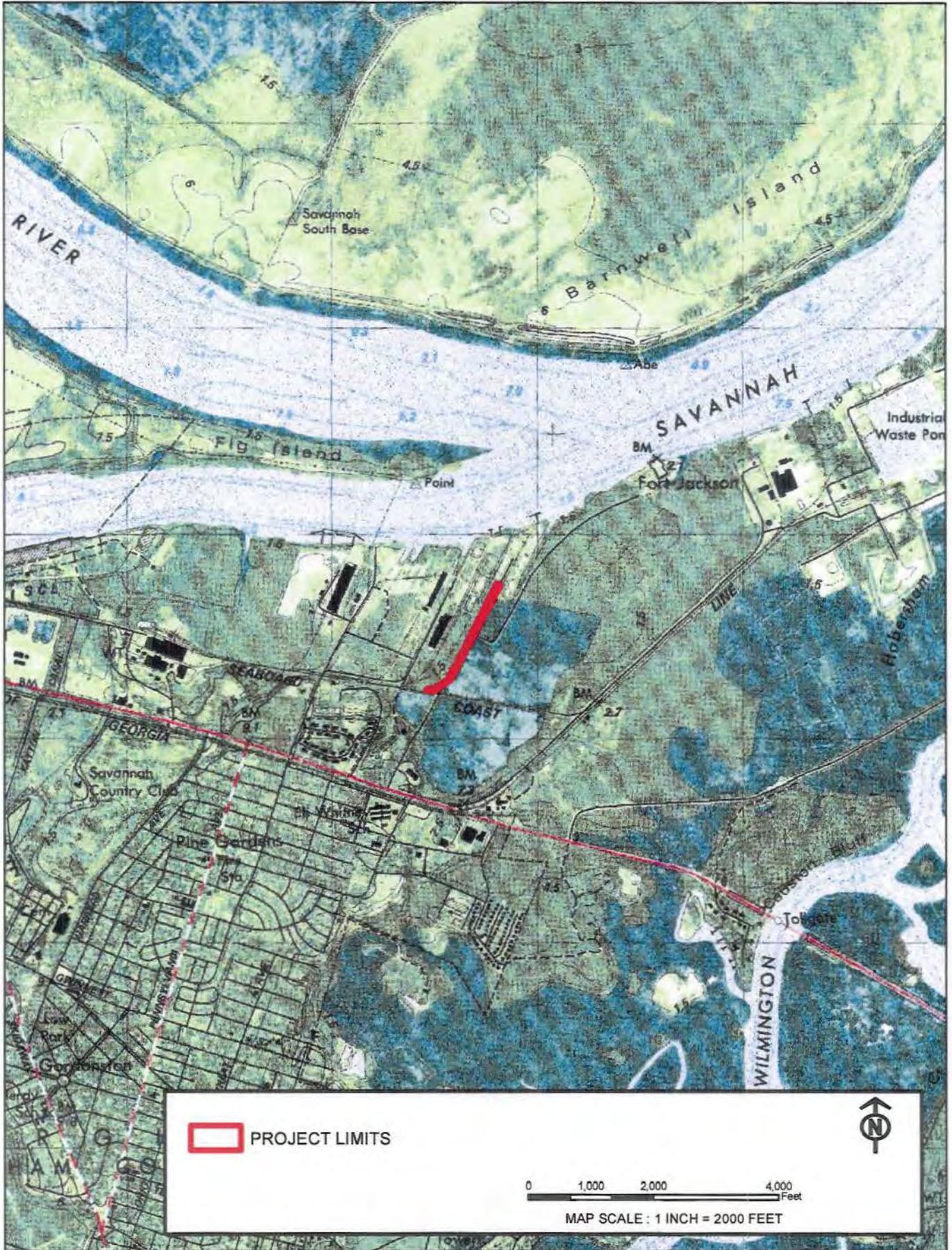


FIGURE 1. USGS TOPOGRAPHIC SURVEY; SAVANNAH QUADRANGLE

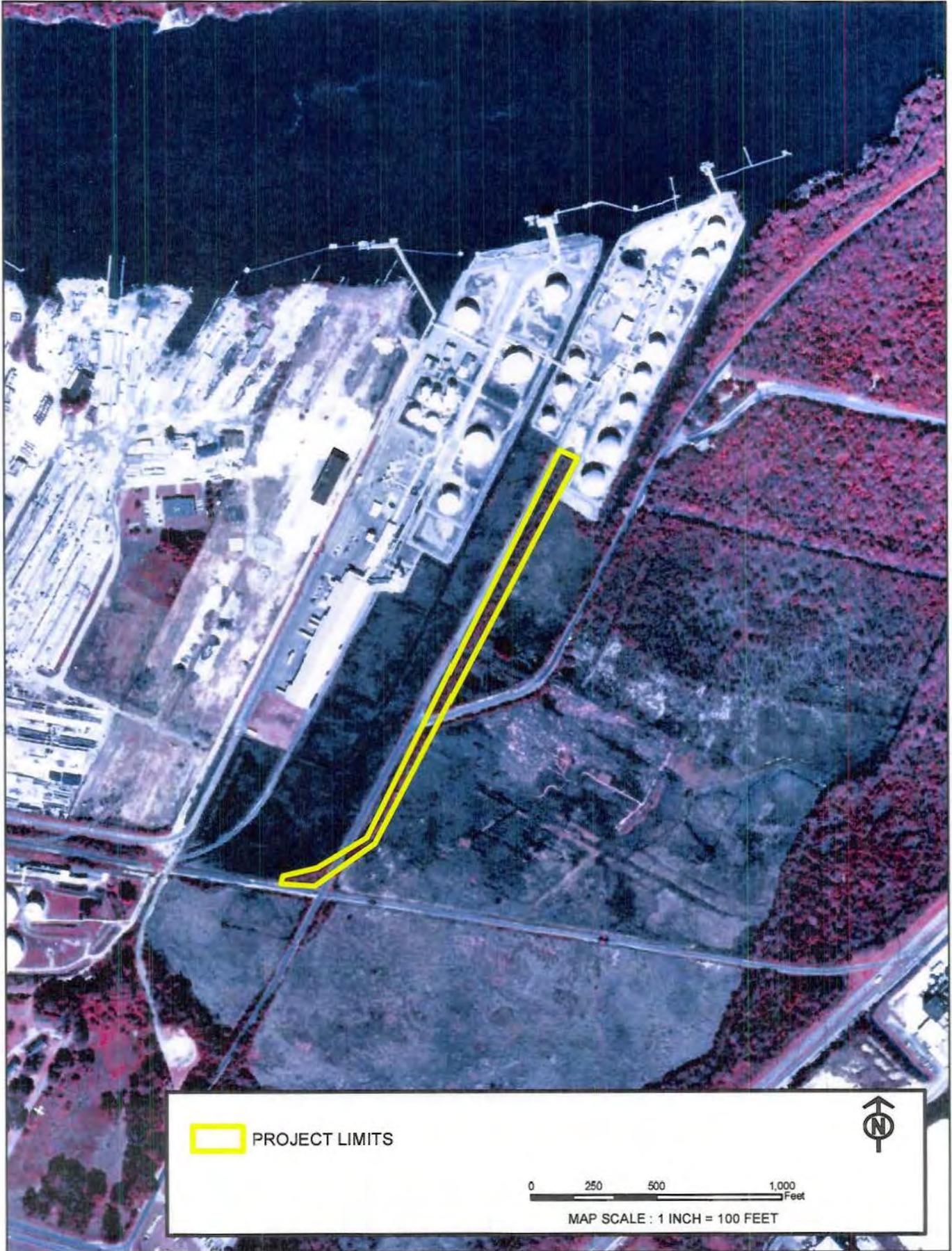


FIGURE 2. CIR PHOTOGRAPH; 1999 SAVANNAH QUADRANGLE



FIGURE 3. ORTHO PHOTOGRAPH; 2010 CHATHAM COUNTY, GEORGIA



FIGURE 3A. ORTHO PHOTOGRAPH; 2010 CHATHAM COUNTY, GEORGIA



FIGURE 4. USDA - NRCS SOIL SURVEY; CHATHAM COUNTY, GEORGIA

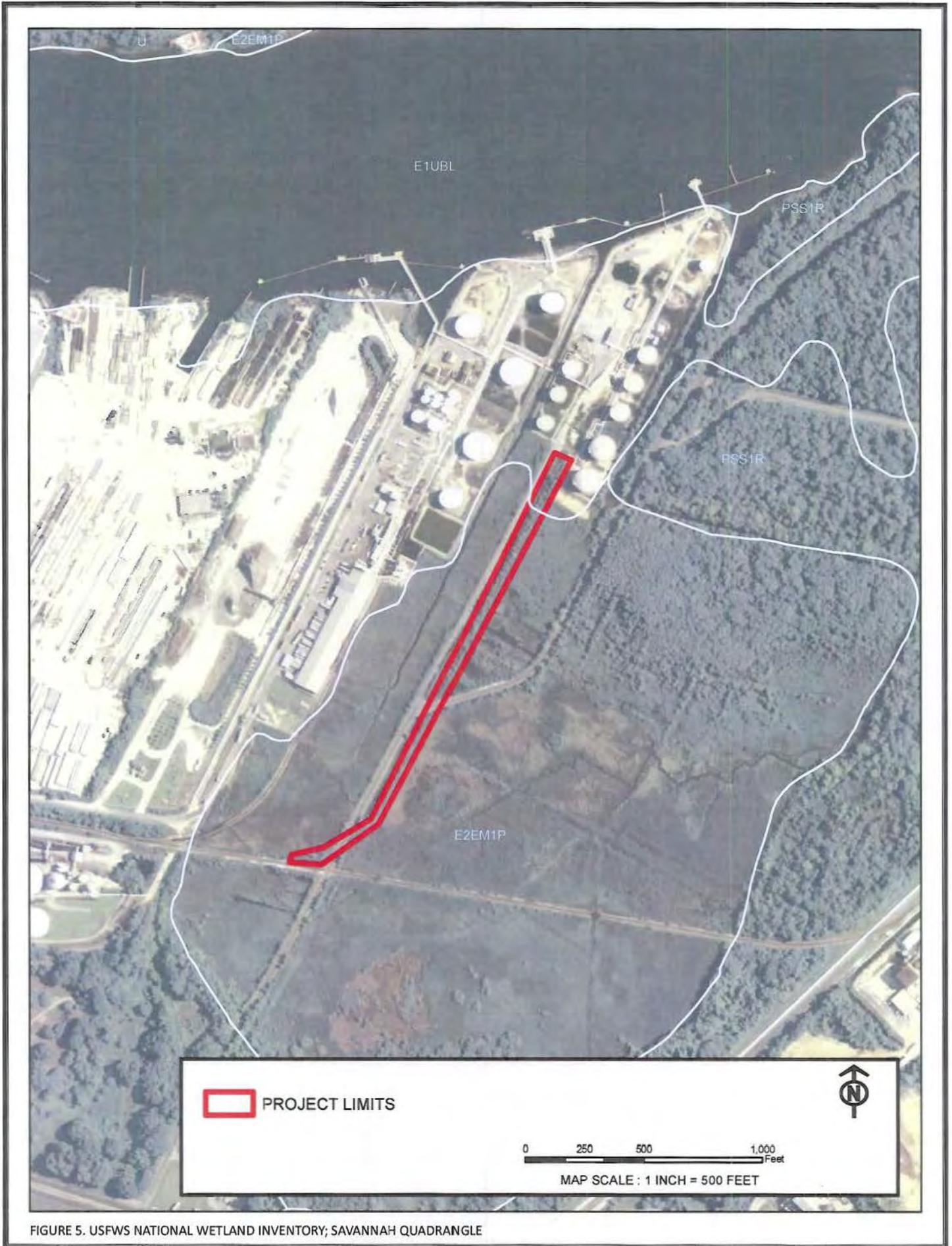


FIGURE 5. USFWS NATIONAL WETLAND INVENTORY; SAVANNAH QUADRANGLE

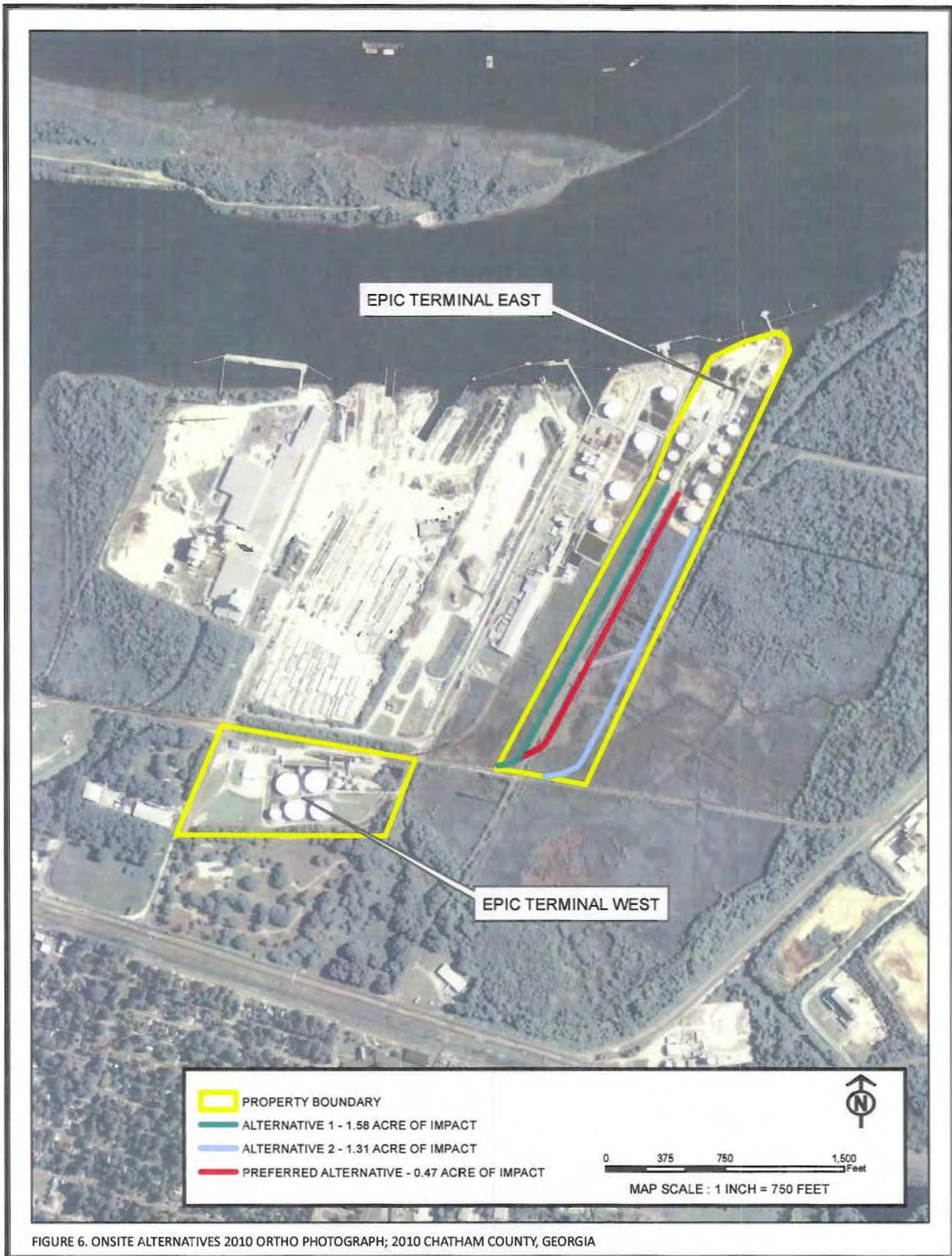


FIGURE 6. ONSITE ALTERNATIVES 2010 ORTHO PHOTOGRAPH; 2010 CHATHAM COUNTY, GEORGIA

NOTES:

1. ALL WETLANDS ARE UNDER THE JURISDICTION OF THE U.S. ARMY CORPS. OF ENGINEERS AND/OR THE STATE OF GEORGIA, DEPT. OF NATURAL RESOURCES. LOT OWNERS ARE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE PROTECTED AREAS WITHOUT PROPER PERMIT APPLICATION AND APPROVAL.
2. BASED ON MY OBSERVATION A PORTION OF THIS LOT IS LOCATED IN ZONE "AE", AND IS IN A SPECIAL FLOOD HAZARD WITH A BASE ELEVATION OF 11' PER FEMA MAP NUMBER 13051C0160F, MAP DATED SEPTEMBER 26, 2008.
3. HORIZONTAL DATUM IS GEORGIA STATE PLANE COORDINATE SYSTEM NAD 83 (ZONE: EAST)
4. WETLANDS DELINEATED BY RESOURCE & LAND CONSULTANTS OCTOBER 2012
5. BOUNDARY INFORMATION TAKEN FROM PB 17S-66 AND PB 9S-40.

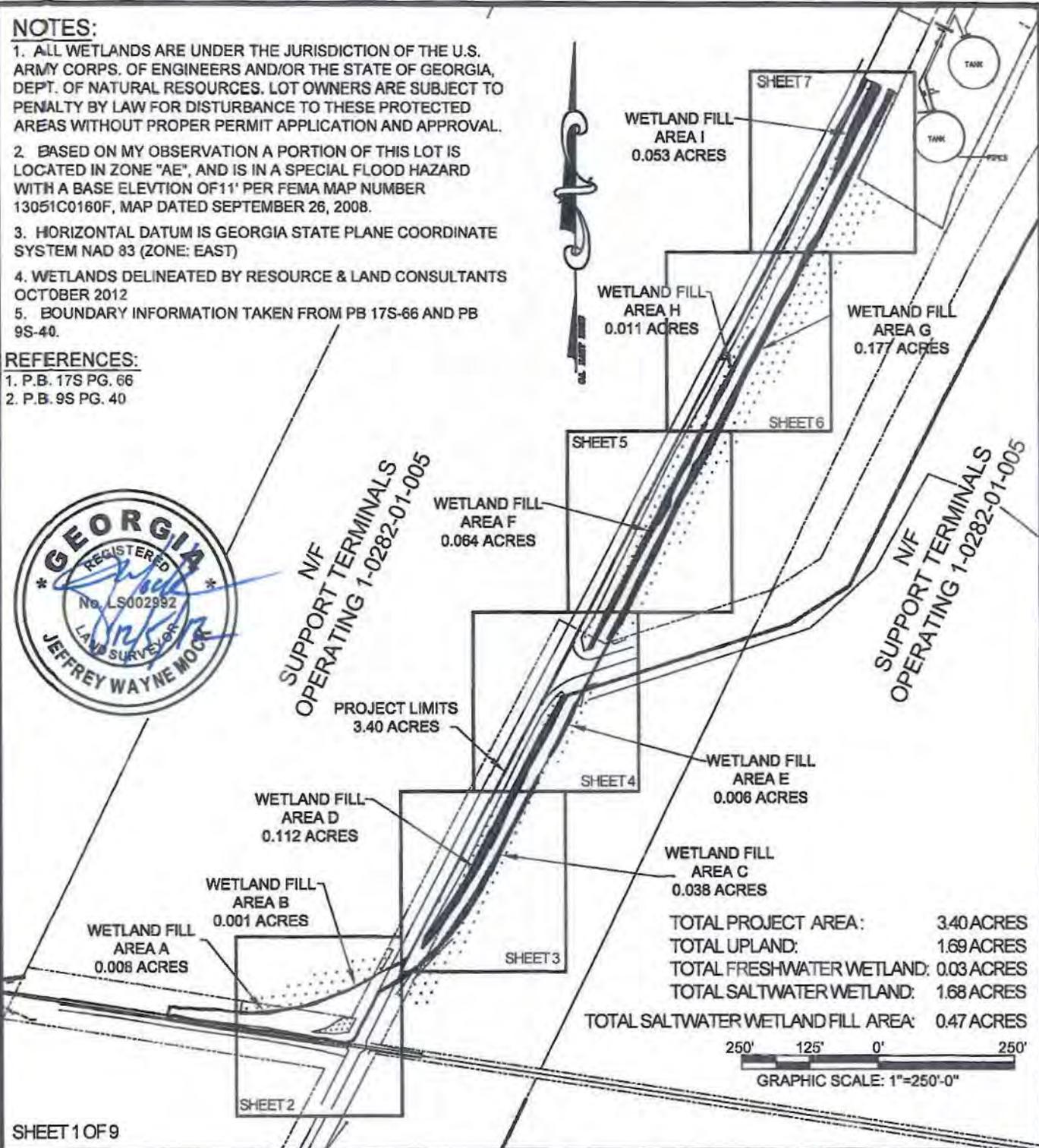
REFERENCES:

1. P.B. 17S PG. 66
2. P.B. 9S PG. 40



N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005



SHEET 1 OF 9

EMC ENGINEERING SERVICES, INC.

POST OFFICE BOX 8101
23 EAST CHARLTON STREET
SAVANNAH, GEORGIA 31412
PHONE: (912) 644-3200
FAX: (912) 233-4580
savannah@emc-eng.com

ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

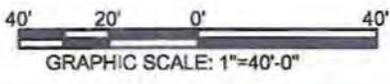
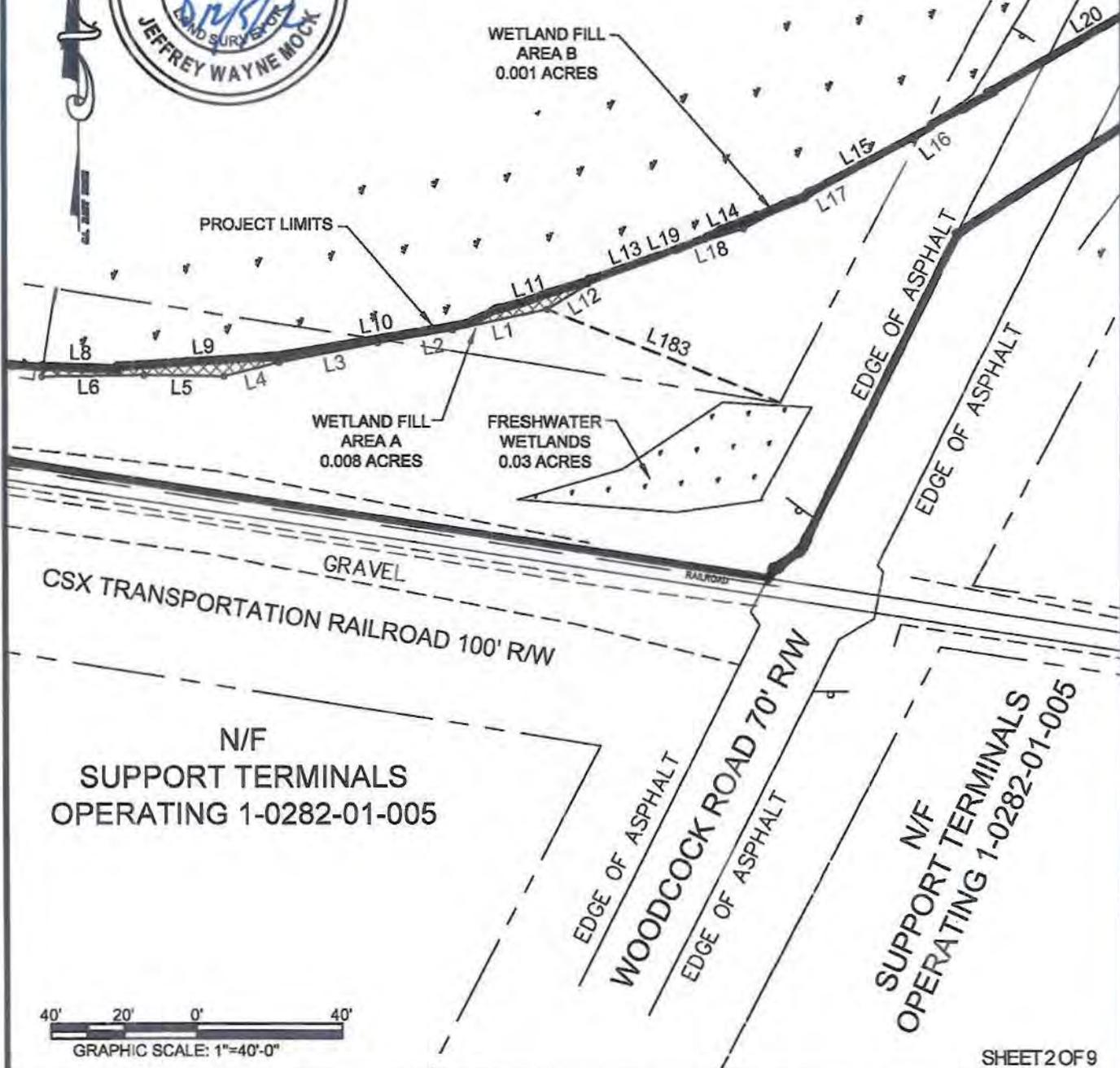
7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=250'
DATE:	12/05/2012



N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005



N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

SHEET 2 OF 9

EMC ENGINEERING SERVICES, INC.



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savannah@emc-eng.com

ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

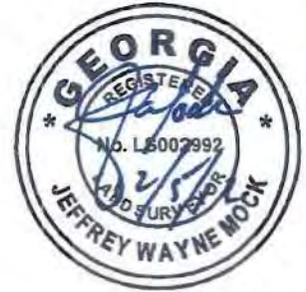
Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005



WETLAND FILL
AREA D
0.112 ACRES



WOODCOCK ROAD 70' R/W
EDGE OF ASPHALT

PROJECT LIMITS

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA C
0.038 ACRES



SHEET 3 OF 9

EMC ENGINEERING SERVICES, INC.



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FAX: (912) 333-4880
savannah@emc-eng.com

ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012



N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA F
0.064 ACRES

WETLAND FILL
AREA G
0.177 ACRES

PROJECT LIMITS

EDGE OF ASPHALT

FORT JACKSON ROAD 70' R/W
EDGE OF ASPHALT

WOODCOCK ROAD 70' R/W
EDGE OF ASPHALT

WETLAND FILL
AREA D
0.112 ACRES

WETLAND FILL
AREA E
0.006 ACRES

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA C
0.038 ACRES



40' 20' 0' 40'
GRAPHIC SCALE: 1"=40'-0"

SHEET 4 OF 9

**EMC ENGINEERING
SERVICES, INC.**



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FAX: (912) 233-4580
savannah@emc-eng.com

WETLANDS IMPACT EXHIBIT OF EPIC MIDSTREAM RAIL EXTENSION

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012

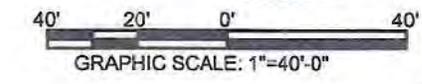
ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA



N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA F
0.064 ACRES

WETLAND FILL
AREA G
0.177 ACRES



SHEET 5 OF 9

EMC ENGINEERING SERVICES, INC.

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SAVANNAH, GEORGIA 31412
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FAX: (912) 233-4580
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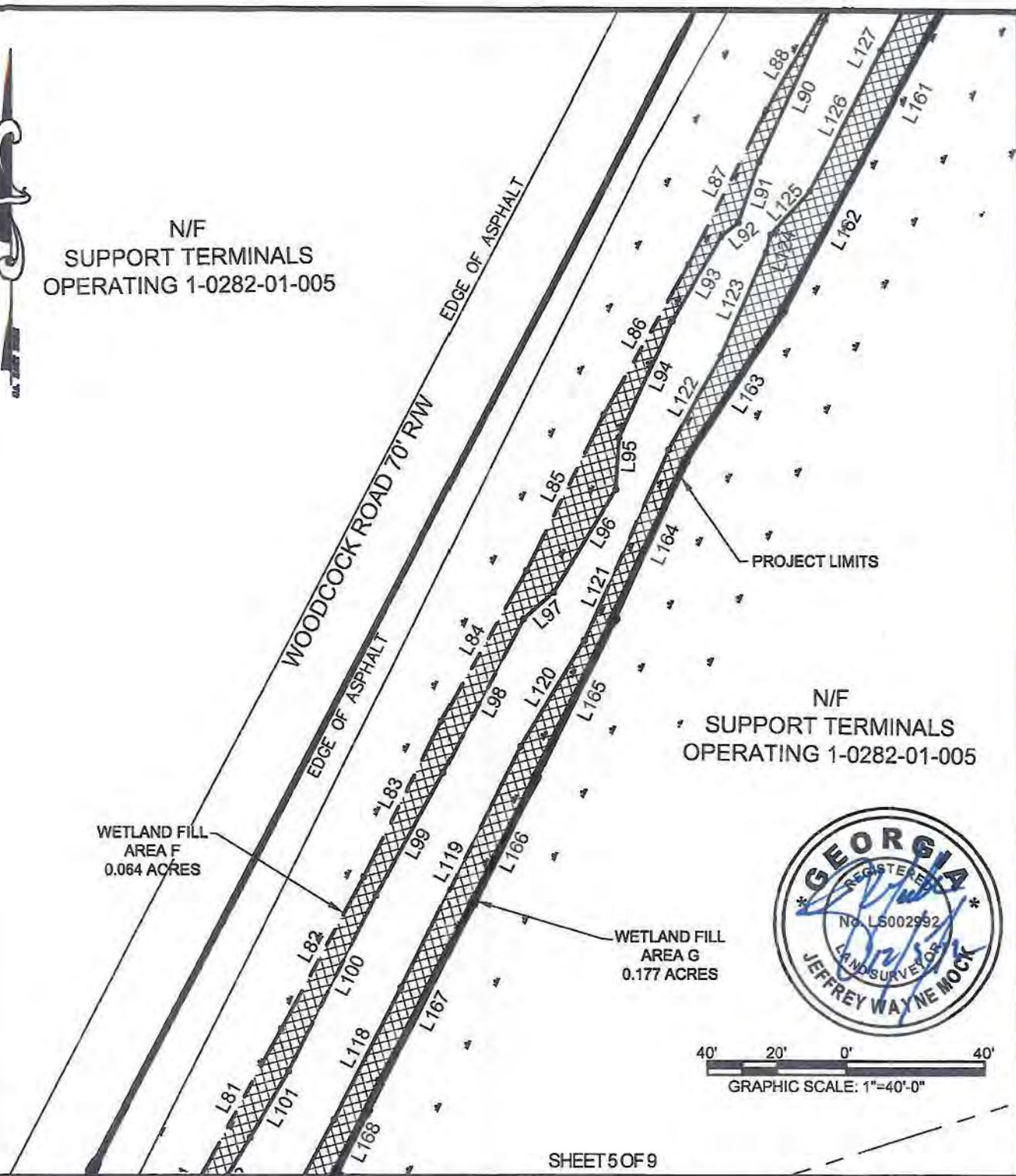
ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012





N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

EDGE OF ASPHALT
WOODCOCK ROAD 70' RW

PROJECT LIMITS

WETLAND FILL
AREA H
0.011 ACRES

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA G
0.177 ACRES

WETLAND FILL
AREA F
0.064 ACRES



40' 20' 0' 40'
GRAPHIC SCALE: 1"=40'-0"

SHEET 6 OF 9

EMC ENGINEERING SERVICES, INC.



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ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
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SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012

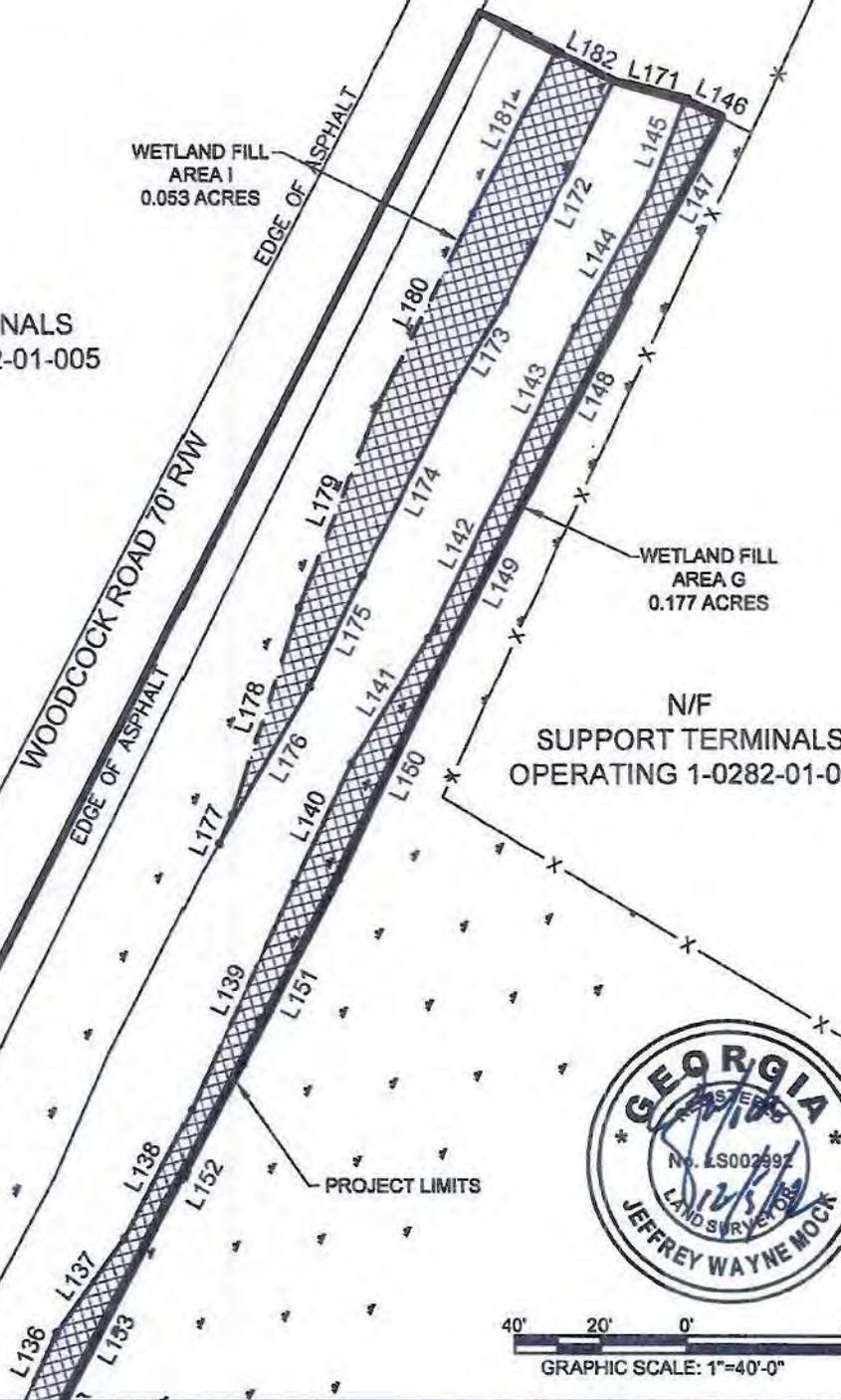


N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005

WETLAND FILL
AREA I
0.053 ACRES

WETLAND FILL
AREA G
0.177 ACRES

N/F
SUPPORT TERMINALS
OPERATING 1-0282-01-005



SHEET 7 OF 9

**EMC ENGINEERING
SERVICES, INC.**



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ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

WETLANDS IMPACT EXHIBIT OF EPIC MIDSTREAM RAIL EXTENSION

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	12/05/2012

LINE TABLE		
LINE	LENGTH	BEARING
L1	26.65	S77°42'48"W
L2	20.71	S80°16'31"W
L3	27.49	S78°48'10"W
L4	15.59	S76°05'35"W
L5	22.20	N89°12'49"W
L6	27.98	S89°05'08"W
L7	2.81	N08°51'29"E
L8	20.29	S88°39'49"E
L9	48.26	N85°18'55"E
L10	48.28	N79°50'09"E
L11	38.61	N71°26'22"E
L12	16.63	S58°38'31"W
L13	18.23	N69°53'44"E
L14	39.57	N68°10'04"E
L15	42.62	N61°03'02"E
L16	5.94	S52°53'26"W
L17	52.87	S62°21'11"W
L18	19.45	S72°23'38"W
L19	4.14	S71°02'21"W
L20	103.07	N59°39'17"E
L21	20.23	N16°37'49"E
L22	31.65	N40°22'21"E
L23	48.28	N35°53'52"E
L24	48.27	N32°43'05"E
L25	49.84	N27°06'29"E
L26	50.00	N27°33'11"E
L27	50.00	N27°44'52"E
L28	50.00	N28°11'41"E
L29	50.01	N26°47'07"E
L30	50.00	N28°19'56"E
L31	50.03	N29°53'23"E
L32	35.04	N31°31'27"E
L33	6.26	S37°32'09"E
L34	8.25	S36°11'28"W
L35	26.22	S26°53'33"W
L36	30.68	S24°45'55"W
L37	39.24	S29°29'38"W
L38	39.93	S29°51'12"W
L39	26.15	S23°31'42"W
L40	39.09	S29°04'47"W
L41	32.74	S25°50'39"W
L42	29.94	S23°13'11"W
L43	26.07	S28°07'06"W
L44	50.15	S28°47'54"W
L45	40.86	S32°09'33"W
L46	36.96	S31°52'34"W
L47	30.23	S38°04'33"W
L48	1.40	S74°21'16"E

L49	31.41	S35°41'37"W
L50	30.65	S41°35'07"W
L51	13.19	S41°47'41"W
L52	30.96	S09°34'37"W
L53	11.33	N42°04'59"E
L54	38.59	N49°23'34"E
L55	68.73	N35°07'50"E
L56	58.58	N33°29'17"E
L57	78.24	N29°14'35"E
L58	34.51	N27°58'58"E
L59	54.09	N28°07'54"E
L60	67.92	N28°33'26"E
L61	32.24	S24°07'13"W
L62	50.00	S28°13'03"W
L63	50.01	S28°54'18"W
L64	50.06	S25°01'22"W
L65	50.19	S27°21'17"W
L66	51.86	S31°59'13"W
L67	51.79	S38°36'24"W
L68	51.80	S42°01'17"W
L69	25.93	S55°51'30"W
L70	39.70	N28°58'10"E
L71	9.20	N28°58'50"E
L72	53.05	N27°08'59"E
L73	46.13	N24°51'17"E
L74	1.61	S61°24'23"E
L75	30.33	S21°40'31"W
L76	50.00	S27°16'41"W
L77	28.24	S32°54'50"W
L78	96.02	N27°51'11"E
L79	19.03	N26°06'35"E
L80	50.06	N25°02'44"E
L81	50.00	N28°30'56"E
L82	50.01	N28°38'30"E
L83	50.01	N26°48'30"E
L84	50.02	N29°35'32"E
L85	50.01	N26°42'19"E
L86	50.02	N29°35'32"E
L87	50.01	N26°52'37"E
L88	46.27	N30°23'35"E
L89	15.95	S24°31'46"W
L90	44.62	S25°09'14"W
L91	18.57	S19°01'17"W
L92	6.35	S50°55'22"W
L93	28.28	S30°06'25"W
L94	37.19	S24°53'39"W
L95	14.91	S03°25'22"W
L96	34.52	S31°38'34"W
L97	11.62	S48°30'04"W
L98	50.16	S27°38'07"W

SHEET 8 OF 9

EMC ENGINEERING SERVICES, INC.



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savannah@emc-eng.com

ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.: 12-0120
DRAWN BY: SCH
DESIGNED BY: -
SURVEYED BY: TW
SURVEY DATE: 10/15/2012
CHECKED BY: JWM
SCALE: 1"=40'
DATE: 11/28/2012

L99	40.22	S29°10'23"W
L100	56.84	S26°34'20"W
L101	22.06	S30°01'20"W
L102	27.78	S30°45'26"W
L103	35.97	S28°04'02"W
L104	19.14	S25°44'11"W
L105	5.41	S66°51'14"W
L106	34.81	N61°33'16"E
L107	11.54	N24°31'48"E
L108	42.50	N21°41'12"E
L109	50.04	N30°15'21"E
L110	50.00	N27°29'03"E
L111	40.40	N31°54'02"E
L112	24.69	S28°22'21"W
L113	36.74	S28°36'32"W
L114	55.52	S25°19'29"W
L115	49.35	S31°03'10"W
L116	16.41	N24°31'48"E
L117	69.67	N28°16'10"E
L118	42.93	N26°58'37"E
L119	77.54	N26°38'34"E
L120	35.75	N31°06'07"E
L121	59.96	N24°14'50"E
L122	31.16	N29°13'50"E
L123	32.66	N23°29'09"E
L124	5.28	N15°36'06"E
L125	17.00	N41°48'28"E
L126	44.96	N27°20'03"E
L127	55.78	N28°34'05"E
L128	43.02	N26°51'17"E
L129	35.70	N26°12'50"E
L130	31.55	N29°23'44"E
L131	40.40	N26°56'03"E
L132	24.51	N27°02'45"E
L133	39.09	N27°50'33"E
L134	33.56	N31°24'50"E
L135	40.48	N26°18'04"E
L136	50.15	N24°54'41"E
L137	27.29	N35°49'56"E
L138	33.82	N28°05'50"E
L139	58.03	N24°55'33"E
L140	30.82	N25°36'03"E
L141	34.12	N31°45'47"E
L142	45.39	N26°54'11"E
L143	34.62	N24°40'05"E
L144	35.67	N29°45'01"E
L145	23.08	N20°43'31"E
L146	9.50	S64°43'00"E
L147	46.74	S27°49'41"W
L148	50.00	S27°49'41"W
L149	50.00	S27°49'41"W

L150	50.03	S25°43'14"W
L151	50.00	S27°21'29"W
L152	50.00	S28°35'45"W
L153	50.00	S27°59'18"W
L154	50.02	S29°28'40"W
L155	50.00	S27°49'41"W
L156	50.00	S27°49'41"W
L157	50.00	S27°49'41"W
L158	50.00	S27°49'41"W
L159	50.12	S23°50'07"W
L160	50.03	S25°57'39"W
L161	50.00	S27°50'22"W
L162	50.00	S28°31'37"W
L163	50.20	S32°58'15"W
L164	50.05	S25°14'24"W
L165	50.03	S25°54'54"W
L166	50.00	S27°14'37"W
L167	50.00	S27°44'52"W
L168	50.01	S26°27'53"W
L169	37.18	S34°19'54"W
L170	3.84	N46°03'35"W
L171	17.16	N74°50'26"W
L172	57.16	S26°38'10"W
L173	24.10	S31°14'51"W
L174	47.79	S26°39'55"W
L175	28.51	S25°43'18"W
L176	42.42	S30°09'46"W
L177	7.31	N24°53'46"E
L178	50.72	N18°09'09"E
L179	50.28	N21°49'21"E
L180	50.01	N26°47'30"E
L181	42.22	N27°49'41"E
L182	15.03	S63°27'02"E
L183	68.53	N68°16'52"W

SHEET 9 OF 9

EMC ENGINEERING SERVICES, INC.



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23 EAST CHARLTON STREET
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savannah@emc-eng.com

ALBANY, ATLANTA, AUGUSTA,
BRUNSWICK, COLUMBUS, SAVANNAH,
STATESBORO & VALDOSTA

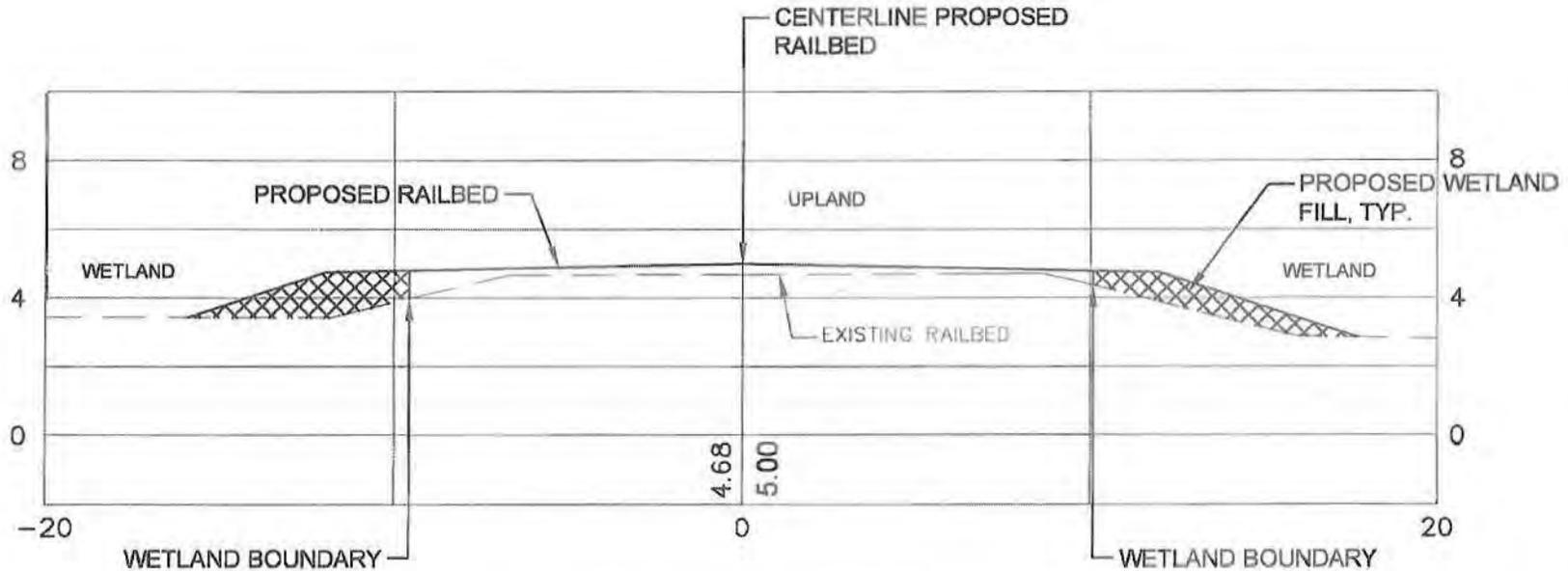
**WETLANDS IMPACT EXHIBIT OF
EPIC MIDSTREAM RAIL EXTENSION**

7TH G.M. DISTRICT
CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	SCH
DESIGNED BY:	-
SURVEYED BY:	TW
SURVEY DATE:	10/15/2012
CHECKED BY:	JWM
SCALE:	1"=40'
DATE:	11/28/2012

*TOTAL APPROXIMATE WETLAND FILL VOLUME: 285 CY



**TYPICAL SECTION
PROPOSED RAILBED - WETLAND FILL**
1"=5'

EMC ENGINEERING SERVICES, INC.

 POST OFFICE BOX 8101
 23 EAST CHARLTON STREET
 SAVANNAH, GEORGIA 31412
 CIVIL PHONE: (912) 544-3200
 MARINE FAX: (912) 233-4580
 ENVIRONMENTAL savannah@emc-eng.com

EPIC MIDSTREAM RAIL EXPANSION

CHATHAM COUNTY, GEORGIA

Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.:	12-0120
DRAWN BY:	MDM
DESIGNED BY:	MDM
SURVEYED BY:	-
SURVEY DATE:	-
CHECKED BY:	JMM
SCALE:	1"=5'
DATE:	12-04-12

CONSTRUCTION PLANS

FOR

EPIC MIDSTREAM RAIL EXPANSION

CHATHAM COUNTY, GEORGIA

EMC PROJECT NO. 12-0120

NOVEMBER 2012

DEVELOPER/RESPONSIBLE PARTY:
 EPIC MIDSTREAM, LLC
 125 TOWN PARK DRIVE, SUITE 300
 KENNESAW, GEORGIA 30144-5812
 770-420-8274

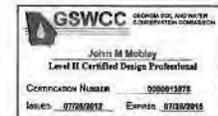
 **EMC ENGINEERING SERVICES, INC.**
 ENVIRONMENTAL - MARINE - CIVIL - SURVEY



VICINITY MAP
NOT TO SCALE

INDEX OF DRAWINGS

SHT NO.	DESCRIPTION
1	COVER
2	GENERAL NOTES AND TYPICAL SECTION
3-7	RAIL SPUR PLAN AND PROFILE
8-9	EROSION, SEDIMENTATION & POLLUTION CONTROL NOTES
10	EROSION, SEDIMENTATION & POLLUTION CONTROL DETAILS



Signature: _____

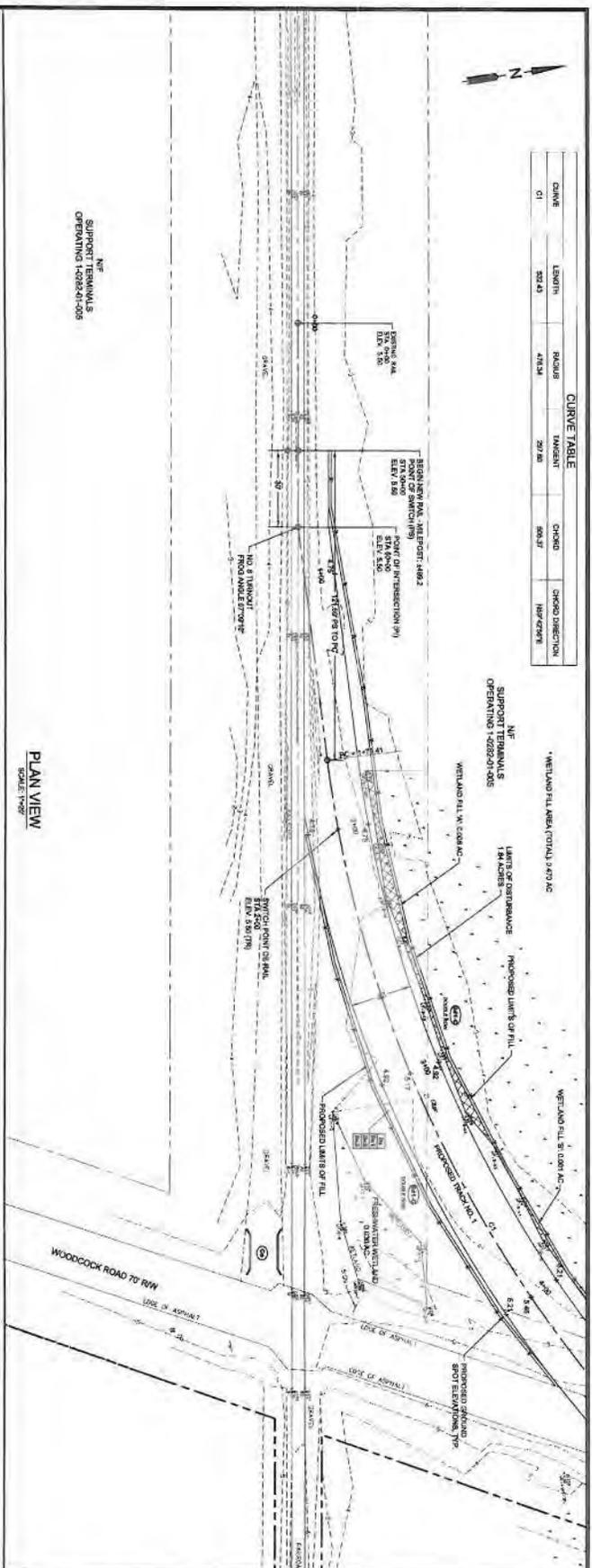
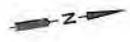
PROPOSED TRACK	TRACK LENGTH
TRACK NO. 1	2,581.26 LF
TRACK NO. 2	501.78 LF



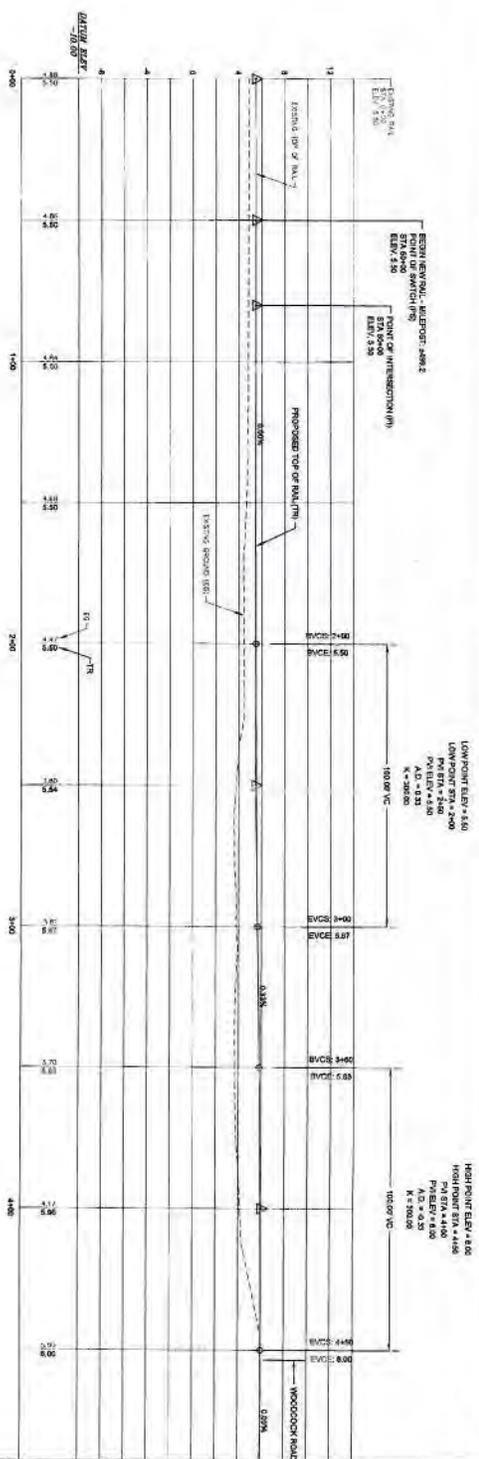
EMC ENGINEERING SERVICES, INC.
 POST OFFICE BOX 9101, SAVANNAH, GA 31412
 23 EAST CHARLTON STREET
 SAVANNAH, GEORGIA 31401
 PHONE: (912) 644-3200
 FAX: (912) 233-4060
 www.savannah@emc-eng.com

D:\2012\12-0120\12-0120-01.dwg, 12/10/2012, 4:45:10 PM, JML

CURVE TABLE			
CURVE	LENGTH	RAILS	CHORD
C1	823.43	4713.34	594.37



PLAN VIEW
SCALE: 1"=40'



PROFILE VIEW
SCALE: 1"=40'

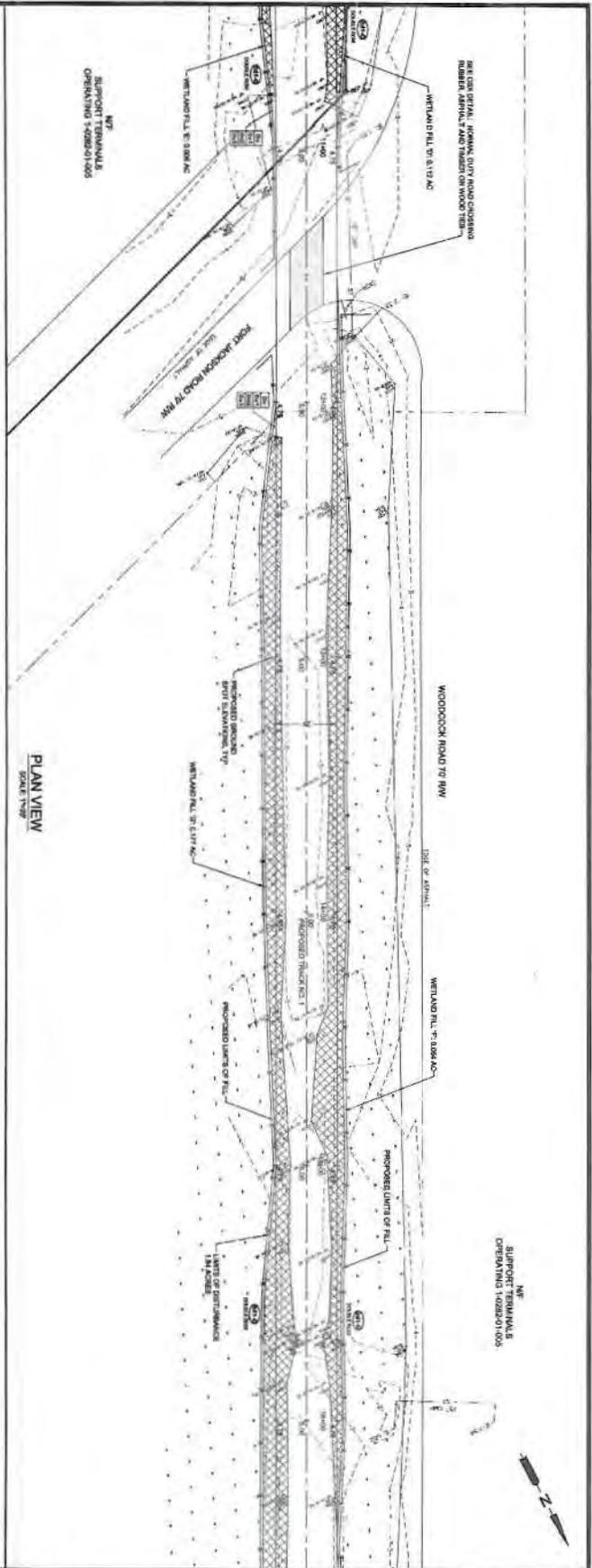
NO.	REVISION DESCRIPTION	BY	DATE



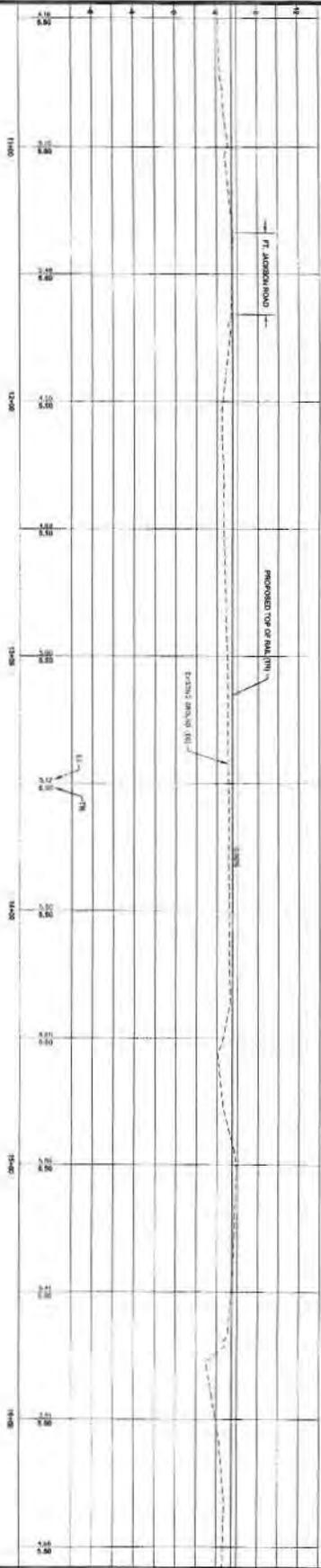
EMC ENGINEERING SERVICES, INC.
 23 EAST CHARLTON STREET
 SUMMERBROOK, GEORGIA 30422
 PHONE: (770) 344-3200
 FAX: (770) 233-4360
 emc@emc-engineering.com
 www.emc-engineering.com

RAIL SPUR PLAN AND PROFILE
EPIC MIDSTREAM RAIL EXPANSION
 CHATHAM COUNTY, GEORGIA
 Prepared for:
EPIC MIDSTREAM, LLC

PRODUCTION: TEG/DB
 CHECKED BY: KMM
 SUBMITTED BY: KMM
 START DATE: OCT 2014
 COMPLETE DATE: NOV 2014
 DRAWN BY: KMM
 DATE: 11/2/14



PLAN VIEW
SCALE: 1"=40'



PROFILE VIEW
SCALE: 1"=40'

NO.	REVISION DESCRIPTION	BY	DATE

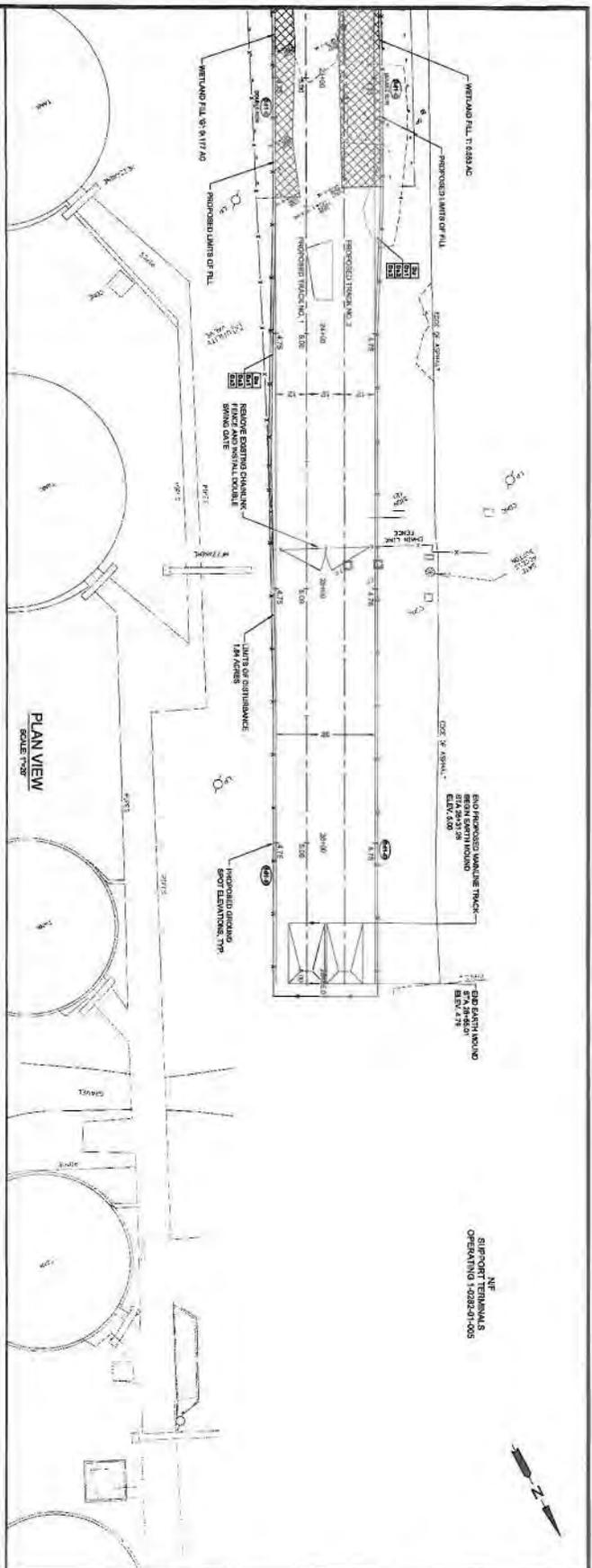


EMC ENGINEERING SERVICES, INC.
 CIVIL
 MAJOR ENVIRONMENTAL
 POST OFFICE BOX 8101
 22 EAST CHARLTON STREET
 SAVANNAH, GEORGIA 31402
 PHONE (912) 644-3700
 FAX (912) 333-4400
 www.emcservices.com

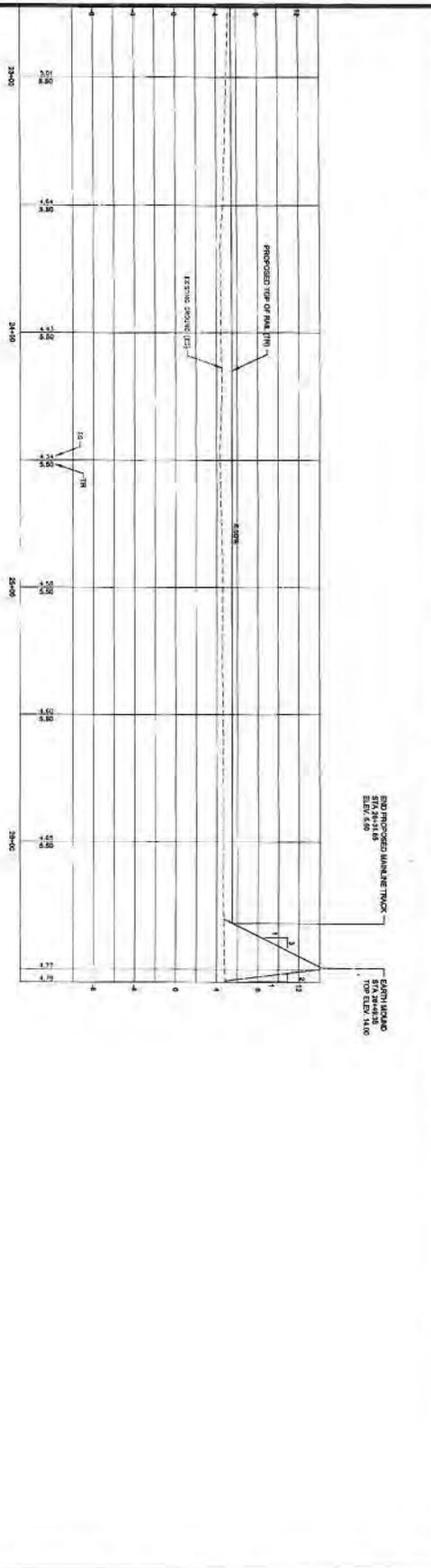
RAIL SPUR PLAN AND PROFILE
EPIC MIDSTREAM RAIL EXPANSION
 CHATHAM COUNTY, GEORGIA
 Prepared for:
EPIC MIDSTREAM, LLC

PROJECT NO.: 15-1258
 DRAWN BY: JRM
 CHECKED BY: JRM
 SUBMITTED BY: JRM
 SUBMITTAL DATE: 02/1/2017
 DATE: 11/1/16
 SCALE: 1"=40'

SHEET
5
 OF 10



PLAN VIEW
SCALE: 1"=20'



PROFILE VIEW
SCALE: 1"=20'

NE
SUPPORT TERMINALS
OPERATING 1-0282-0-005



PROJECT NO. 13-012 DRAWING NO. 13-012 SHEET NO. 7 DATE 11-13-14	RAIL SPUR PLAN AND PROFILE EPIC MIDSTREAM RAIL EXPANSION CHATHAM COUNTY, GEORGIA Prepared for: EPIC MIDSTREAM, LLC	 EMC ENGINEERING SERVICES, INC. 1007 SPRUCE BOW BLVD 23 EAST CHURCH STREET SAVANNAH, GEORGIA 31412 PHONE: (912) 444-1000 FAX: (912) 223-4800 WWW.EMCSERVICES.COM		<table border="1"> <thead> <tr> <th>NO.</th> <th>REVISION DESCRIPTION</th> <th>BY</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	NO.	REVISION DESCRIPTION	BY	DATE												
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SHEET 7 OF 10																				

SILT FENCE STORAGE CALCULATION

1. DISTURBED AREA = 126 AC
2. REQUIRED SEDIMENT STORAGE = 49 CU YD (1 TON/1000 GAL) AREA REQUIRED SEDIMENT STORAGE = 242 CU YD (4.18 CU YD/AC)
3. ASSUME REQUIRED DENSITY OF 1.40 TON/ CU YD (1.40 TON/ CU YD) = 1.40 TON/ CU YD
4. DRAIN REQUIRED SEDIMENT STORAGE (RESIDENT DRAIN) = 1.40 TON/ CU YD
5. DETERMINE IF ADEQUATE SEDIMENT STORAGE AREA ALONG SILT FENCE IS POSSIBLE (DEPTH OF SEDIMENT IS 2.0 FT)
 - a. 1.40 TON/ CU YD
 - b. 2.0 FT
 - c. 1.40 TON/ CU YD

NOTE: IF ADEQUATE SEDIMENT STORAGE IS AVAILABLE IN THE SILT FENCE

SEDIMENT STORAGE NOTE:

THE TOTAL DISTURBED AREA FOR THIS DEVELOPMENT IS APPROXIMATELY 126 AC. THE REQUIRED SEDIMENT STORAGE FOR THIS DEVELOPMENT IS 49 CU YD. THE TOTAL AVAILABLE SEDIMENT STORAGE IS 242 CU YD. THE AVAILABLE SEDIMENT STORAGE IS MORE THAN THE REQUIRED SEDIMENT STORAGE. THE SILT FENCE WILL TRAP 217 CU YD OF SEDIMENT. A VARIANCE STORAGE



MONTH	TEMPORARY COVER	PERMANENT COVER	PERCENT COVER
JANUARY	100%	100%	100%
FEBRUARY	100%	100%	100%
MARCH	100%	100%	100%
APRIL	100%	100%	100%
MAY	100%	100%	100%
JUNE	100%	100%	100%
JULY	100%	100%	100%
AUGUST	100%	100%	100%
SEPTEMBER	100%	100%	100%
OCTOBER	100%	100%	100%
NOVEMBER	100%	100%	100%
DECEMBER	100%	100%	100%

1. UNCOVERED
2. COVERED 50% OR MORE BY PERMANENT COVER ANYTIME EXCEPT JAN THROUGH OCTOBER
3. COVERED 100% BY PERMANENT COVER ANYTIME EXCEPT JAN THROUGH OCTOBER
4. ALL PERMANENT GRASS PLANTINGS SHALL BE MAINTAINED

VEGETATIVE MEASURES AND STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	DESCRIPTION
D01	SEDIMENT BARRIERS		INSTALL TO PREVENT EROSION AND SEDIMENTATION. USE OF SEDIMENT BARRIERS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS. SEDIMENT BARRIERS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.
D02	VEGETATIVE MEASURES		VEGETATIVE MEASURES SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENTATION. VEGETATIVE MEASURES SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.
D03	STABILIZATION		STABILIZATION SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENTATION. STABILIZATION SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.
D04	SOIL CONSERVATION		SOIL CONSERVATION SHALL BE INSTALLED TO PREVENT EROSION AND SEDIMENTATION. SOIL CONSERVATION SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

TEMPORARY ACTIVITY SCHEDULE

ACTIVITY	1/15/12	1/16/12	1/17/12	1/18/12	1/19/12	1/20/12	1/21/12	1/22/12	1/23/12	1/24/12	1/25/12	1/26/12	1/27/12	1/28/12	1/29/12	1/30/12	1/31/12
SEDIMENT BARRIERS (D01) AND (D02)																	
VEGETATIVE MEASURES (D02)																	
STABILIZATION (D03)																	
SOIL CONSERVATION (D04)																	

EROSION, SEDIMENTATION, & POLLUTION CONTROL PLAN CHECKLIST

PROJECT NO. _____

DATE _____

PROJECT LOCATION _____

PROJECT OWNER _____

PROJECT ENGINEER _____

PROJECT SURVEYOR _____

PROJECT DESIGNER _____

PROJECT CONTRACTOR _____

PROJECT INSPECTOR _____

PROJECT MONITOR _____

PROJECT MAINTENANCE _____

PROJECT REPAIR _____

PROJECT REMEDIATION _____

PROJECT RESTORATION _____

PROJECT RECONSTRUCTION _____

PROJECT REUSE _____

PROJECT RECYCLING _____

PROJECT REPAIR _____

PROJECT REMEDIATION _____

PROJECT RESTORATION _____

PROJECT RECONSTRUCTION _____

PROJECT REUSE _____

PROJECT RECYCLING _____

NRCS CHECKLIST

1. EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

2. SEDIMENT BARRIERS SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

3. VEGETATIVE MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

4. STABILIZATION SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

5. SOIL CONSERVATION SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

6. WATERWAY PROTECTION SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

7. POLLUTION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

8. AIR POLLUTION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

9. NOISE CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

10. VIBRATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

11. TRAFFIC CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

12. PUBLIC SAFETY MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

13. HISTORIC PRESERVATION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

14. CULTURAL RESOURCE PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

15. ARCHAEOPROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

16. PALEONTOLOGICAL RESOURCE PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

17. PLANT AND ANIMAL COMMUNITY PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

18. VISUAL QUALITY PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

19. SCENIC QUALITY PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

20. OPEN SPACE PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

21. RECREATION RESOURCE PROTECTION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

22. ENERGY CONSERVATION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

23. WATER CONSERVATION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

24. AIR QUALITY IMPROVEMENT MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

25. CLIMATE CHANGE MITIGATION MEASURES SHALL BE INSTALLED AND MAINTAINED THROUGHOUT CONSTRUCTION AND POST CONSTRUCTION PERIODS.

