14 June 2018

U.S. Army Corps of Engineers
Savannah District
Attn: Mr. Bill Rutlin
100 West Oglethorpe Ave
Savannah, GA 31402-0889

RE: Bryan County OEM Site **RLC#: 14-225.1**
Bryan County, Georgia
USACE Project No. SAS-2015-00235

Dear Mr. Rutlin:

On behalf of Savannah-Harbor Interstate 16 Corridor Joint Development Authority, please find attached a Section 404 Individual Permit Application requesting authorization to impact 93.22 acres of jurisdictional wetland, 17.56 acres of non-jurisdictional wetland, and 833 linear feet of stream to facilitate construction of an Original Equipment Manufacturing (OEM) site. The project area totals approximately 1,944.00 acres located adjacent to and east of Highway 280 and adjacent to and south of Interstate 16 within Bryan County, Georgia (32.164165°, -81.450411°).

For your review and use, the attached information includes the following information:

- CESAS Form 19
- Project Description
- Figures/Site Maps
- USACE Jurisdictional Determination
- Site Photographs
- Permit Drawings
- Off-Site Alternatives
- On-Site Configurations
- Threatened & Endangered Species Information & Report of Findings
- Cultural Resources Information
- Compensatory Mitigation Calculations
- Adjacent Land Owner Information

Please note that this application package contains information prepared for U.S. Army Corps of Engineers use only and these sections have been marked CONFIDENTIAL. We greatly appreciate your assistance with this project. If you have any questions or require additional information, please do not hesitate to contact us at (912) 443-5896.

Sincerely,

Alton Brown, Jr.
Principal
Resource & Land Consultants

Enclosures

cc: Mr. Trip Tollison - I16 Savannah Harbor Joint Development Authority
Ms. Anna Chafin - I16 Savannah Harbor Joint Development Authority
Mr. Ralph Forbes – Thomas & Hutton

BRYAN COUNTY OEM SITE

SECTION 404 INDIVIDUAL PERMIT APPLICATION

RLC RESOURCE+LAND CONSULTANTS

BRYAN COUNTY OEM SITE

SECTION 404 INDIVIDUAL PERMIT APPLICATION
JUNE 2018

APPLICANT: SAVANNAH HARBOR INTERSTATE 16 CORRIDOR
JOINT DEVELOPMENT AUTHORITY

ENGINEER: THOMAS & HUTTON ENGINEERING

AGENT: RESOURCE & LAND CONSULTANTS

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting

RESOURCE+LAND
CONSULTANTS

APPENDIX A:

CESAS Form 19

JOINT APPLICATION
FOR
A DEPARTMENT OF THE ARMY, CORPS OF ENGINEERS PERMIT,
STATE OF GEORGIA MARSHLAND PROTECTION PERMIT,
REVOCABLE LICENSE AGREEMENT
AND REQUEST FOR
WATER QUALITY CERTIFICATION
AS APPLICABLE

INSTRUCTIONS FOR SUBMITTING APPLICATION:

Every Applicant is Responsible to Complete The Permit Application and Submit as Follows: One copy each of application, location map, drawings, copy of deed and any other supporting information to addresses 1, 2, and 3 below. If water quality certification is required, send only application, location map and drawing to address No. 4.

1. For Department of the Army Permit, mail to: Commander, U.S. Army Engineer District, Savannah ATTN: CESAS-OP-F, P.O. Box 889, Savannah, Georgia 31402-0889. Phone (912)652-5347 and/or toll free, Nationwide 1-800-448-2402.

2. For State Permit - State of Georgia (six coastal counties only) mail to: Habitat Management Program, Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523. Phone (912) 264-7218.

3. For Revocable License - State of Georgia (six coastal counties plus Effingham, Long, Wayne, Brantley and Charlton counties only) - Request must have State of Georgia's assent or a waiver authorizing the use of State owned lands. All applications for dock permits in the coastal counties, or for docks located in tidally influenced waters in the counties listed above need to be submitted to Real Estate Unit. In addition to instructions above, you must send two signed form letters regarding revocable license agreement to: Ecological Services Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523. Phone (912) 264-7218.

4. For Water Quality Certification State of Georgia, mail to: Water Protection Branch, Environmental Protection Division, Georgia Department of Natural Resources, 4220 International Parkway, Suite 101, Atlanta, Georgia 30354 (404) 675-1631.

The application must be signed by the person authorized to undertake the proposed activity. The applicant must be the owner of the property or be the lessee or have the authority to perform the activity requested. Evidence of the above may be furnished by copy of the deed or other instrument as may be appropriate. The application may be signed by a duly authorized agent if accompanied by a statement from the applicant designating the agent. See item 6, page 2.

1. Application No. _____

2. Date

3. For Official Use Only_____

4. Name and address of applicant.
Savannah Harbor Interstate 16 Corridor Joint Development Authority
Attn: Mr. Trip Tollison
131 Hutchinson Island Road, 4th Floor
Savannah, Georgia 31412
912.447.8450

5. Location where the proposed activity exists or will occur.

Lat.32.164165º Long.-81.450411º

Bryan		
County	**Military District**	**In City or Town**
Black Creek		
Near City or Town	**Subdivision**	**Lot No.**
		Georgia
Lot Size	**Approximate Elevation of Lot**	**State**
	Black Creek	
Name of Waterway	**Name of Nearest Creek, River, Sound, Bay or Hammock**	

CESAS Form 19

6. Name, address, and title of applicant's authorized agent for permit application coordination.

Resource & Land Consultants
41 Park of Commerce Drive, Suite 303
Savannah, Georgia 31405

Attn: Alton Brown, Jr.
(912) 443-5896

Statement of Authorization: I Hereby designate and authorize the above named person to act in my behalf as my agent in the processing of this permit application and to furnish, upon request, supplemental information in support of this application.

Signature of Applicant

14 June 2018
Date

7. Describe the proposed activity, its purpose and intended use, including a description of the type of structures, if any to be erected on fills, piles, of float-supported platforms, and the type, composition and quantity of materials to be discharged or dumped and means of conveyance. If more space is needed, use remarks section on page 4 or add a supplemental sheet. (See Part III of the Guide for additional information required for certain activities.)

See Attached Project Description

8. Proposed use: Private _____ Public_____ Commercial X___ Other ___

9. Names and addresses of adjoining property owners whose property also adjoins the waterway.
See attached

10. Date activity is proposed to commence. Upon receipt of authorization to proceed.

Date activity is expected to be completed. Within 20 years of authorization to proceed.

11. Is any portion of the activity for which authorization is sought now complete __Y __X__N

A. If answer is "Yes", give reasons in the remarks in the remarks section.
Indicate the existing work on the drawings.

B. If the fill or work is existing, indicate date of commencement and completion.

C. If not completed, indicate percentage completed.

12. List of approvals or certifications required by other Federal, State or local agencies for any structures, construction discharges, deposits or other activities described in this application. Please show zoning approval or status of zoning for this project.

Issuing Agency	Type Approval	Identification No.	Date/Application	Date/Approval
GADNR-EPD	401 Certification		Concurrent	Under Review

13. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein? ___Yes __X__NO (If "yes", explain).

CESAS Form 19

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Resource & Land Consultants **Attn: Alton Brown, Jr.**
41 Park of Commerce Drive, Suite 303 **(912) 443-5896**
Savannah, Georgia 31405

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Signature of Applicant **Date**

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A. If answer is "Yes", give reasons in the remarks in the remarks section. Indicate the existing work on the drawings.

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Issuing Agency	Type Approval	Identification No.	Date/Application	Date/Approval
GADNR-EPD	401 Certification		Concurrent	Under Review

13. Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein? ___Yes _X__NO (If "yes", explain).

Note: Items 14 and 15 are to be completed if you want to bulkhead, dredge or fill.

14. Description of operation: (If feasible, this information should be shown on the drawing).

A. Purpose of excavation or fill To facilitate construction of an OEM site

1. Access channel : length_____ depth_____ width_____

2. Boat basin : length_____ depth_____ width_____

3. Fill area : see attached length_____ depth_____ width_____

4. Other:Excavation Area: length_____ depth_____ width_____

B. 1.If bulkhead, give dimensions N/A

2.Type of bulkhead construction (material) N/A

Backfill required: Yes _____ **No** _____ **Cubic yards** _____

Where obtained _____

C. Excavated material :

1.Cubic yards _____

2.Type of material _____

15.Type of construction equipment to be used Mechanized earth-moving/construction equipment

A. Does the area to be excavated include any wetland? Yes _____ **No** X

B. Does the disposal area contain any wetland? Yes _____ **No** X

C. Location of disposal area N/A

C. Maintenance dredging, estimated amounts, frequency, and disposal sites to be utilized: N/A

E. Will dredged material be entrapped or encased? N/A

F. Will wetlands be crossed in transporting equipment to project site? N/A

G. Present rate of shoreline erosion (if known) N/A

16. WATER QUALITY CERTIFICATION: In some cases, Federal law requires that a Water Quality Certification from the State of Georgia be obtained prior to issuance of a Federal license or permit. Applicability of this requirement to any specific project is determined by the permitting Federal agency. The information requested below is generally sufficient for the Georgia Environmental Protection Division to issue such a certification if required. Any item which is not applicable to a specific project should be so marked. Additional information will be requested if needed.

A. Please submit the following:

1. A plan showing the location and size of any facility, existing or proposed, for handling any sanitary or industrial waste waters generally on your property.

2. A plan of the existing or proposed project and your adjacent property for which permits are being requested.

3. A plan showing the location of all points where petro-chemical products (gasoline, oils, cleaners) used and stored. Any above-ground storage areas must be diked, and there should be no storm drain catch basins within the diked areas. All valving arrangements on any petro-chemical transfer lines should be shown.

4. A contingency plan delineating action to be taken by you in the event of spillage of petro-chemical products or other materials from your operation.

5. Plan and profile drawings showing limits of areas to be dredged, areas to be used for placement of spoil, locations of any dikes to be constructed showing locations of any weir(s), and typical cross sections of the dikes.

B. Please provide the following statements:

1. A statement that all activities will be performed in a manner to minimize turbidity in the stream.

2. A statement that there will be no oils or other pollutants released from the proposed activities which will reach the stream.

3. A statement that all work performed during construction will be done in a manner to prevent interference with any legitimate water uses.

17. Application is hereby made for a permit or permits to authorize the activities described herein, Water Quality Certification from the Georgia Environmental Protection Division is also requested if needed. I certify that I am familiar with 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 posses the authority to under take the proposed activities.

Signature of Applicant

18. U.S.C. Section 1001 provides that: Whoever, in any matter within the jurisdiction of any department or agency of the United States, knowingly and willfully 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 false writing or document knowing same to contain any false, fictitious or fraudulent statement or entry, shall be fined no more than $10,000 or imprisoned not more than 5 years or both.

PRIVACY ACT NOTICE

The Department of the Army permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act and Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary, however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

SUPPORTING REMARKS:

See Attached.

APPENDIX B:

Project Description

Original Equipment Manufacturing Site
Bryan County, Georgia
Project Description
5 June 2016

1.0 INTRODUCTION:

Savannah Harbor-Interstate 16 Corridor Joint Development Authority (JDA) is proposing the development of an Original Equipment Manufacturing (OEM) site on 1,944.00 acres located adjacent to and east of Highway 280 and adjacent to and south of Interstate 16 within Bryan County, Georgia (32.164165°, -81.450411°).

2.0 BACKGROUND:

In late 2014, the Georgia Department of Economic Development (GDED) received a request for information regarding potential tracts within Georgia that would qualify for an OEM facility. The proposed manufacturing plant/facility included up to a $1 billion private capital investment, would have created 2,000 jobs with the potential to create up to 4,000 jobs within ten years after the start of production. Recognizing the regional impact of the project created the Savannah-Harbor Interstate 16 Corridor Joint Development Authority (JDA) including Chatham, Bryan, Effingham, and Bulloch Counties was formed. The purpose of this JDA was to deliver a pad ready site for this specific prospect and future prospects considering construction by January 2016.

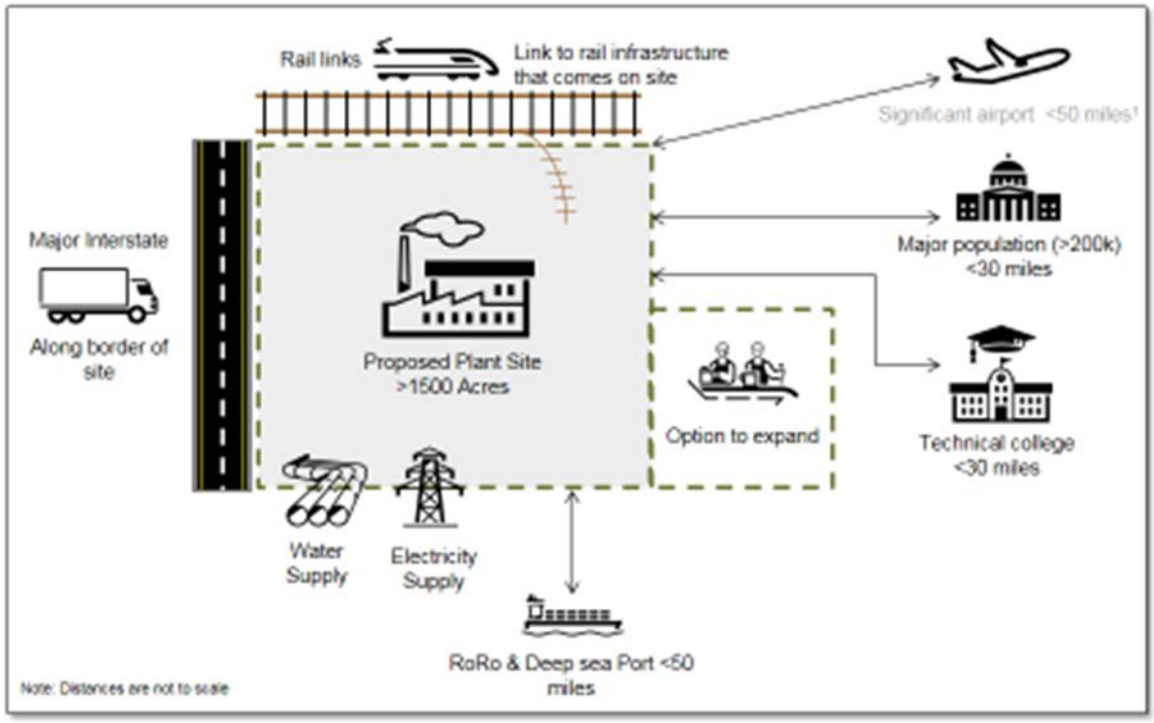
GEDA and the JDA quickly initiated all site entitlement work including land procurement, preparation of water extension design plans, site grading design plans, sewer treatment design plans, entrance road design plans, property survey, topo survey, etc. Specific to 404, the JDA completed a wetland delineation, completed a wetland survey, completed a threatened & endangered species survey, completed a cultural and archeological resources phase I survey, developed a site plan, prepared permit drawings, prepared and submitted a 404 permit application, prepared a phase I cultural resources survey report of findings, and coordinated with the state and federal agencies. Following expiration of the U.S. Army Corps of Engineers 30 day public notice and in a letter dated 2 July 2015, the USACE stated that because the prospect had selected another site in a neighboring state, the purpose and need for the project was "unrealistically speculative". During a subsequent meeting at the Savannah District, the USACE indicated that they would not continue processing the application because there was no specific need nor user identified at that time. As such, over $1 million of capital investment was immediately lost. Since that time two additional prospects have considered the subject site however, the site was eliminated each time because entitlements were not in place and the site readiness criteria was not met.

Over the past three years, the JDA has listened to comments received by prospects regarding reasons for elimination. In response to those comments, the JDA has determined that entitlement of an OEM site is required for our community to compete for these projects of regional significance. Many factors play a role in site selection but nine criteria are associated with almost all OEM projects. The following summary and Figure 1 provide a brief description of criteria.

- Plant site must be greater than 1000 acres to accommodate all elements of operation and to allow for future expansion beyond the initial investment.
- Expansion opportunities in the general vicinity must be available to support suppliers and other operations.
- Plant site must be adjacent to a major interstate for ease of access to inbound and outbound logistics and to provide visibility to facility.
- Plant site must be rail served for ease of access to outbound logistics and freight links to seaport.
- A Roll-on/Roll-off (RoRo) and Deep-Sea Port must be within 50 miles for fast access to freight export services to the international market place (i.e. Europe and Asia).
- A significant airport must be within 50 miles of the plant for quick access to airfreight and corporate executives.
- Water and electricity services must be suitable to support manufacturing operations.
- The site must be within 30 miles of a major population (200,000+) to meet the workforce requirements.
- A technical college must be within 30 miles for continued availability of skilled workforce.

RLC

Figure 1. OEM Site Criteria:



3.0 BASIC & OVERALL PROJECT PURPOSE:

The basic purpose of the proposed project is to obtain a permit to facilitate the construction and development of an OEM site. The overall project purpose is to provide a pad ready OEM site which complies with all nine site criteria discussed above and can support a +/- 1944 acre manufacturing facility.

4.0 EXISTING SITE CONDITIONS:

The subject site is uniquely suited for construction of an OEM facility when considering location, topography, and existing habitat conditions. The proposed site is located in the southeast quadrant of the Interstate 16 and Highway 280 intersection and was created by assembling only three parcels. Creating a similar sized parcel along any other intersection adjacent to Interstate 16 or Interstate 95 would require assembling many more parcels and in some cases more than 50. The topography ranges from elevation 20 within the preservation area along Black Creek to almost 90 feet within the development area near Interstate 16. These elevations and topographic changes are not common for properties within the lower Coastal Plain of Georgia. While wetlands and waters of the U.S. typically make up 30 percent or more of any large tract within the Coastal Plain of Georgia, only 16 percent of the proposed project area consists of wetlands and/or waters of the U.S. Lastly, the site has been intensively managed for timber production and while this is not uncommon for the Coast of Georgia, the project could not have been timed any better when considering the age of the timber within the site. Much of the timber within the upland has been harvested within the past five years and portions continue to be harvested today.

A jurisdictional determination has been obtained for the majority of the project site. A jurisdictional determination request for the one parcel that has not been verified by the USACE has been included in this application. Based on this information, the 1944.0 acre project area contains 292.72 acres of jurisdictional wetland, 17.56 acres of isolated non-jurisdictional wetland and 2,631 linear feet of stream. As documented and recorded during the field surveys, dominate habitats includes managed pine plantation (both upland and wetland), forested wetlands, scrub-shrub wetlands, isolated forested wetlands, isolated scrub-shrub wetlands, intermittent streams and man-made ditches. The general location of each habitat is depicted on Figure 2, Appendix A. The following summary provides a brief description of each habitat.

- Managed Pine Plantation Upland: The majority of the property consists of planted pine plantation that has been cut within the last year and replanted. Smaller areas of mature pines are located at the northern and southern portions of the study area. The recently clear cut areas contain only herbaceous and scattered shrub species mixed with the pine seedlings. Areas cut several years ago were sprayed with herbicide to kill remaining hardwoods (water oaks, live oaks) and replanted in pines. The shrub and herbaceous layer within these areas is much denser than the recently cut areas.

Recently Clear Cut Areas

Overstory:	Understory:
Live oak (*Quercus grandiflora*) (few)	Slash pine seedlings (*Pinus elleottii*) Loblolly pine seedlings (*Pinus taeda*) Blackberry (*Rubus argutus*) Broomsedge (*Andropogon virginicus*)

Previously Clear Cut Areas

Overstory:	Understory:
N/A (sprayed)	Slash pine seedlings Loblolly pine seedlings Blackberry Broomsedge Saw palmetto (*Serenoa repens*) Bracken fern (*Pteridium aquilinum*) Yellow jessamine (*Gelsenium sempervirens*)

Mature Pine Plantation

Overstory:	Understory:
Slash pine Red maple (*Acer rubrum*) Sweetgum (*Liquidambar styraciflua*) Water oak (*Quercus nigra*)	Broomsedge Yellow jessamine Saw palmetto Bracken fern Wax myrtle (*Myrica cerifera*)

- Managed Pine Plantation Wetland: These areas are generally located in the southeastern portion of the property within the proposed rail spur and also along the upper fringe of portions of the forested wetland areas that are subject to more frequent hydrologic saturation and inundation.

Overstory:	Understory:	
Slash pine Red Maple Sweetgum Red bay (Persea borbonia)	Wax Myrtle Swamp Titi (*Cyrilla racemiflora*) Greenbrier (Smilax laurifolia) Blackberry Gaint Cane (*Arundinaria gigantean*)	Sweetgum Water Oak Red Maple Yellow jessamine Black-stem Chainfern (*Woodwardia virginica*)

RLC

- Forested Wetlands: Forested wetlands are dispersed across the study area. Those located immediately north of Tar City Road, south of Tar City Road, and at the southeastern study area limits drain into Black Creek. The majority of these wetlands have mature hardwood species in the center portions of the drain and a dense scrub-shrub layer of swamp titi along their perimeter, varying in width between twenty-five feet and fifty feet on average. Intermittent streams are present within the interior of several of these drainages. Species composition and distribution is as follows:

Overstory:	Understory:	
Water Oak	Wax Myrtle	Fetterbush (*Lyonia lucida*)
Red Maple	Swamp titi	Greenbrier
Red bay	Sphagnum moss (*Sphagnum spp.*)	Blackberry
Sweetgum	Poison Ivy (*Toxicodendron radicans*)	Netted chainfern (*Woodwardia areolata*)
Black Gum (*Nyssa biflora*)	Blackstem Chainfern	
Bald Cypress (*Taxodium distichum*)		

- Scrub-Shrub Wetlands: Hardwoods were harvested in some portions of the wetland areas on the study area, primarily along the perimeter of the forested wetland systems. These areas now have a dense understory. Species composition and distribution is as follows:

Overstory:	Understory:	
N/A	Wax Myrtle	Sweetgum
	Swamp titi	Red Maple
	Sphagnum moss	Sweet Bay
	Greenbrier	Slash Pine
	Blackberry	Blackstem Chainfern

- Isolated Forested Wetlands: The study area contains numerous isolated forested wetlands. These areas are depressional wetlands with mature overstory and varying degrees of shrub and herbaceous cover:

Overstory:	Understory:	
Water Oak	Wax Myrtle	Fetterbush
Red Maple	Swamp titi	Greenbrier
Red bay	Sphagnum moss	Blackberry
Sweetgum	Poison Ivy	Netted chainfern
Black Gum	Blackstem Chainfern	
Bald Cypress		

- Isolated Scrub-shrub Wetlands: The study area also contains numerous isolated scrub-shrub wetlands. These areas are depressional wetlands with shrub layers that are dominated by small pines:

Overstory:	Understory:
N/A	Slash pine
	Broomsedge
	Sphagnum moss
	Blackstem Chainfern
	Yellow jessamine

- Intermittent Streams: The project area contains numerous intermittent streams located in the central portions of the forested wetland systems. These streams average approximately three feet in width and twelve inches in depth. The streams lack vegetation and consist of sand and mud bed and banks of varying heights.

- Man-Made Ditches: Approximately 0.62 acre of man-made ditch is present within the property. This habitat is defined by bed and bank of the feature with little to no vegetation present. The ditches were presumably constructed for silvicultural purposes and extend through several of the historically isolated wetlands.

Soil types as mapped by the USDA Natural Resource Conservation Service, soil types found within the study area includes Albany, Lakeland, Leon, Olustee, Chipley, Stilson, Ellabelle, Mascotte, Angelina and Bibb, and Fuquay series. Soils are depicted on the attached NRCS soils survey (Figure 4). Characteristics and acreages of each soil type are described in Table 1.

Table 1. NRCS Soil Series Descriptions

Series Name	Acreage	Percent of Project Area	Label	Drainage Class	Landform	Down-slope shape	Parent Material	Slope (%)	Frequency of Flooding	Frequency of Ponding	Depth to Water Table (in)	Typical Profile
Albany	50	2.6	As	Somewhat poorly drained	Flats	Linear	Marine deposits	0-2	None	None	12-30	H1 - 0 to 48 inches: fine sand H2 - 48 to 56 inches: sandy loam H3 - 56 to 88 inches: sandy clay loam
Angelina and Bibb	156	8.2	AB	Poorly Drained	Flood Plains	Linear	Alluvium	0-2	Frequent	None	0-12	H1 - 0 to 12 inches: loam H2 - 12 to 60 inches: loam
Chipley	470.3	24.6	Cm	Moderately well drained	Flats	Linear	Marine deposits	0-5	None	None	24-36	H1 - 0 to 6 inches: fine sand H2 - 6 to 77 inches: fine sand
Ellabelle	192.6	10.1	El	Very poorly drained	Depressions, drainageways	Concave, Linear	Marine deposits	0-2	Frequent	None	0-6	H1 - 0 to 27 inches: loamy sand H2 - 27 to 64 inches: sandy clay loam H3 - 64 to 72 inches: sandy clay loam
Fuquay	2	0.1	Fs	Well drained	Interfluves	Convex	Marine deposits	0-5	None	None	48-72	H1 - 0 to 34 inches: loamy sand H2 - 34 to 45 inches: sandy clay loam H3 - 45 to 96 inches: sandy clay loam
Lakeland	750.2	39.3	Lp	Excessively drained	Rises	Linear	Marine Deposits	0-5	None	None	>80	H1 - 0 to 43 inches: sand H2 - 43 to 80 inches: sand
Leon	58.5	3.1	Lr	Poorly drained	Flats	Linear	Marine deposits	0-2	None	None	6-18	H1 - 0 to 3 inches: fine sand H2 - 3 to 15 inches: fine sand H3 - 15 to 30 inches: fine sand H4 - 30 to 80 inches: fine sand
Mascotte	5	0.3	Mn	Poorly drained	Flats	Linear	Marine Deposits	0-2	None	None	6-18	H1 - 0 to 3 inches: sand H2 - 3 to 16 inches: sand H3 - 16 to 28 inches: sand H4 - 28 to 34 inches: sand H5 - 34 to 60 inches: sandy clay loam H6 - 60 to 80 inches: sand
Olustee	185	9.7	Ol	Somewhat poorly drained	Flats	Linear	Marine deposits	0-2	None	None	18-30	H1 - 0 to 7 inches: fine sand H2 - 7 to 15 inches: sand H3 - 15 to 38 inches: sand H4 - 38 to 80 inches: sandy clay loam
Stilson	37	1.9	Se	Moderately well drained	Rises	Linear	Marine deposits	0-2	None	None	30-36	H1 - 0 to 24 inches: loamy sand H2 - 24 to 43 inches: sandy clay loam H3 - 43 to 72 inches: sandy clay loam
Water	1.5	0.1	W									

As noted above, the topography within the site ranges from elevation 20 within the preservation area along Black Creek to almost 90 feet within the development area near Interstate 16. Lidar elevation data is depicted on Figure 5, Appendix C.

5.0 PROPOSED PROJECT & DEVELOPMENT PLAN:

The proposed facility and site plan have been developed to include various components required to support and sustain a typical OEM plant operation. The site will be accessed from Highway 280 through the western portion of the property. This access corridor has been designed to accommodate both employee and truck traffic. Approximately 180 acres located between Highway 280 and manufacturing plant site will encompass the commercial component of the project. This area will be comprised of corporate offices, a visitor's center, a customer experience center, a training center, etc. Immediately south of Interstate 16, west of the commercial component and within approximately 1,000 acres, the manufacturing component will be constructed. A wide variety of operations will occur within this portion of the project site. The manufacturing elements will generally include the press building, fabrication building, paint building, product completion building and special products building. The distribution elements will include the train yard, truck yard, and completed product yard. The employee services component will include a cafeteria, medical center, employee parking, training center, and the central office. The storage component will include the central storage building and liquid storage building. The quality facilities will include a product testing area, testing station and other

miscellaneous buildings required for quality assurance support. The final components generally include waste facilities, security facilities such as the guard house and fire house, the utility facilities including gas, electric and water, and supplier facilities.

As depicted in the attached permit drawings, this proposed site plan requires 92.6 acres of jurisdictional wetland impact, 0.62 acre of ditch impact, 17.56 acres of non-jurisdictional wetland impact and 833 linear feet of stream impact. Exhibits depicting the proposed development plan and associated jurisdictional area impacts are provided in Appendix E.

6.0 ALTERNATIVES ANALYSIS:

As part of the overall project, the applicant completed a thorough alternatives analysis. A review of the 404(b)(1) guidelines indicates that "(a) Except as provided under section 404(b)(2), no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences." The guidelines define practicable alternatives as "(q) The term *practicable* means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes."

The guidelines outline further consideration of practicable alternatives: "(1) For the purpose of this requirement, practicable alternatives include, but are not limited to: (i) Activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters; (ii) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters; (2) An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed to fulfill the basic purpose of the proposed activity may be considered."

Considering the guidelines above, the applicant evaluated a No Action Alternative, nine alternative sites including the applicants preferred site, and four on-site configurations including the applicants preferred on-site configuration. As noted above, the permit drawings depicting the proposed site plan are provided in Appendix E. Mapping information for off-site alternatives is provided in Appendix F and on-site configuration alternatives are provided in Appendix G. As part of this alternative evaluation, the following "Practicability/ Reasonability Screening Selection Criteria" were applied to each alternative to confirm whether the particular alternative and/or on-site configuration was practicable.

Practicability/ Reasonability Screening Selection Criteria:

- Capable of being done considering cost (Is the cost reasonable considering scope and type of project considering total cost, funding source, profit margin, etc.)
- Capable of being done considering logistics (Must consider existing infrastructure, traffic patterns, topography.)
- Property can be reasonably obtained (Must consider availability, ability to condemn, liens, etc.)
- Property can be reasonably expanded (Must consider ability to acquire adjacent lands for expansion)
- Property can be reasonably managed (Must consider restrictions on management of the site)
- Meets basic project purpose
- Meets overall project purpose

The following provides a summary of the alternative analysis and a description of each alternative evaluated as part of this permit application package.

6.1 No Action Alternative:

A "no action" alternative must be considered, and complete avoidance of wetlands was the first alternative considered for this project. Due to the location of wetlands and the size of the facility (development area near 2,000 acres with a 1,000 + acre footprint for the manufacturing plant alone), it was quickly determined that complete avoidance of wetland impacts was not feasible. Unlike many development activities (i.e. residential, recreational, or light commercial), little flexibility in plant design is afforded. The overall productivity of large manufacturing plants is tied directly to facility layout and design. Everything from general logistics, traffic management, building size, and safety, to how far an employee must travel for a break or to exit the plant must be

evaluated and considered in the site design. For these reasons, major modifications to the manufacturing facility footprint are not feasible. The presence of wetlands and/or streams is not unique to the project site and impacts to these resources would be required regardless of site location. Because the "no-action" alternative and complete avoidance of impacts prohibits construction of an OEM manufacturing facility, this alternative was determined to be unreasonable and not practicable.

6.2 Off-Site Alternatives: In addition to the seven general Practicability/ Reasonability Screening Selection Criteria evaluated, specific criteria including geographic location, size, zoning, utilities, access, and availability were considered. The following provides a brief summary of each criterion.

- Geographic Location. As with all manufacturing facilities, this project will require import and export of product, supplies, parts, etc. Thus, the primary location consideration for the project was proximity to the Port of Savannah and logistic requirements for the project restricted the geographic location to a maximum of 50 miles from the Port.

- Size. Due to the size of the manufacturing facility, the minimum tract size needed to support the proposed project was approximately 1,500 acres of contiguous land.

- Zoning. Land use restrictions associated with current zoning are a major consideration in all industrial projects. Truck traffic, equipment operation, adjoining land use, buffers, etc. make the location of the project and the current zoning a critical component. For this site screening criterion, tracts that are currently zoned for the intended use or that could be reasonably re-zoned to accommodate the proposed project were considered.

- Utilities. With any development project, utility services or access to utility services (water, sewer, electrical, gas, phone, cable, etc.) are required. For this reason, location of existing utilities and cost associated with servicing the project site if those utilities were not already available was a consideration in the site screening criteria.

- Access. Access to a manufacturing facility of this size requires continual operation of large trucks and trailers. For this project, three access criteria were established. First, the site must provide suitable access to a major interstate. Suitable access to a major interstate would be defined as direct access to the site from a paved road suitable to support heavy truck traffic (semi-trailer truck) associated with the proposed manufacturing facility. Second, the site must be located adjacent to or within two miles of an Interstate interchange. For this project, alternative sites were limited to major interchanges along Interstate 95 or Interstate 16. Lastly, rail must be present within the site, adjacent to the site or could be reasonably extended to the site.

- Availability. Sites listed for sale and known to be available for purchase were considered as part of the alternatives analysis. In addition, the number of parcels required to create a 1,500 acre development area was a consideration (acquiring one or two parcels is far more likely than assembling 70 parcels to create the same size development area).

6.2.1 Applicant's Preferred Site: The applicant's preferred alternative totals 1,944.00 acres generally located adjacent to and east of Highway 280 and adjacent to and south of Interstate 16 within Bryan County, Georgia. The following provides a summary of each criterion reviewed for the applicants preferred site:

- This alternative is capable of being done when considering cost and logistics, the property can be reasonably obtained, expanded and managed, and the project site meets the basic and overall project purpose.
- The site is located approximately 20 miles from the Port of Savannah and falls within the 50 mile geographic location.
- The site totals 1944.00 acres which meets the minimum size criteria for the project.
- The site contains interstate frontage/visibility which is not a primary consideration but is preferred.
- The site is not currently zoned for manufacturing but can be rezoned.
- The site is located immediately south of the existing Pembroke/Bryan County Industrial Park and required utilities can be easily extended under Interstate 16 to service the proposed project.

- Suitable access to Interstate 16 is currently afforded. In addition, an existing railroad line is located immediately adjacent to and east of the site and can be easily extended into the property to provide the needed rail service.
- The project site consists of three parcels and these parcels can be purchased to satisfy the project needs.

In summary, the applicants preferred site meets all the site screening criteria and is therefore a practicable alternative.

6.2.2 Off-Site Alternative 1: This tract is known as the Chatham County Economic Development Site. The site is in the northeast quadrant of Interstate 16 and Interstate 95 near Savannah within Chatham County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and logistics, the property can be reasonably obtained, expanded and managed, and the project site meets the basic and overall project purpose.
- The site is located approximately 5 miles from the Port of Savannah and therefore falls within the 50 mile geographic location.
- The site, with acquisition of additional parcels would meet the minimum size criteria for the project.
- The site contains interstate frontage/visibility which is not a primary consideration but is preferred.
- The majority of the tract is currently zoned for industrial/manufacturing use and the additional parcels that would require acquisition could likely be rezoned.
- This site has been developed as a regional OEM-site and currently contains all utilities required to service the proposed project.
- Suitable access to Interstate 16 is currently afforded via Dean Forest Road. In addition, an existing railroad line is located immediately adjacent to the site and a rail spur has already been extended into the tract.
- This alternative would require the purchase of an additional +/- 33 parcels. However, it is assumed that the additional parcels (considering overall project cost) could be purchased to create the area/acreage required to facilitate the proposed project.

In summary, Off-Site Alternative 1 meets all the site screening criteria and is therefore a practicable alternative.

6.2.3 Off-Site Alternative 2: This tract totals 4,055 acres and is located west of Interstate 95, southeast of Highway 17 and south of Highway 84 within Liberty County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and logistics, the property can be reasonably obtained, expanded and managed, and the project site meets the basic and overall project purpose.
- The site is located approximately 35 miles from the Port of Savannah and therefore falls within the 50 mile geographic location.
- The site totals 4,055 acres which meets the minimum size criteria for the project.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- The majority of the tract is currently zoned for industrial/manufacturing use and the additional parcels that would require acquisition could likely be rezoned
- This site has been developed as a regional OEM-site and currently contains all utilities required to service the proposed project.
- Suitable access to Interstate 95 is currently afforded via Highway 84 and construction of a new interchange is not required. In addition, an existing railroad line extends through the property.

- This alternative would require the purchase of an additional +/- 5 parcels. However, it is assumed that the additional parcels (considering overall project cost) could be purchased to create the area/acreage required to facilitate the proposed project.

In summary, Off-Site Alternative 2 meets all the site screening criteria and is therefore a practicable alternative.

6.2.4 Off-Site Alternative 3: This tract totals 2,603 acres and is located east of Hodgeville Road, south of Blandford Road and west of Highway 21 near Rincon, Effingham County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and the property can be reasonably obtained, expanded and managed. However, this property does not meet the basic and overall project purpose when considering access and logistics.
- The site is located approximately 15 miles from the Port of Savannah and falls within the 50 mile geographic location.
- The site totals 2,603 acres which meets the minimum size criteria for the project.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- The tract is currently zoned for industrial use and no rezoning is required.
- This site is located within 3 miles of Rincon and existing utilities which could reasonably be extended to the site to service the proposed project.
- Rail is located immediately adjacent to and east of the site and could be easily extended into the tract. However, the site does not contain suitable access to a major interstate and/or interchange. Hodgeville Road to the west and Blandford Road to the east are both rural two lane roads. Miles of major roadway improvements would be required to manage semi-trailer truck traffic servicing the manufacturing facility. In addition, the only reasonable access point to Highway 21 is located east of the project site and within the primary retail commercial area of Rincon. This site access point cannot accommodate the increase in truck traffic associated with the proposed manufacturing facility.
- The project site could be purchased and would not require acquisition of additional parcels.

Off-Site Alternative 3 satisfies many of the site selection criteria. However, accessibility to a major interstate and traffic management/public safety issues associated with site access prohibits use of this site. Thus, Off-Site Alternative 3 was not a reasonable or practicable alternative.

6.2.5 Off Site Alternative 4: This tract totals 3,588 acres located approximately 1 mile north of Interstate 16 and adjacent to and west of Arcola Road within Bulloch County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and logistics, the property can be reasonably obtained, expanded and managed, and the project site meets the basic and overall project purpose.
- The site is located approximately 32 miles from the Port of Savannah and falls within the 50 mile geographic location.
- The site totals 3,588 acres which meets the minimum size criteria for the project.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- This property is not currently zoned for the intended use, but it is likely that the property could be rezoned.
- Utilities necessary to support the proposed project are not present at or within the site. However, extension of required utilities would be both physically and economically feasible.
- Access to Interstate 16/existing interchange is available via Arcola Road. While improvements to approximately 2 miles of road would be required, these improvements would be economically feasible.

- The project site could be purchased and would not require acquisition of additional parcels.

In summary, Off-Site Alternative 4 meets all the site screening criteria and is therefore a practicable alternative.

6.2.6 Off Site Alternative 5: This tract totals approximately 3,200 acres located adjacent to and west of Highway 67, approximately 4 miles south of the Highway 67/Interstate 16 Interchange in Bulloch County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and logistics, the property can be reasonably obtained, expanded and managed, and the project site meets the basic and overall project purpose.
- The site is located approximately 40 miles from the Port of Savannah and falls within the 50 mile geographic location.
- The site totals 3,200 acres which meets the minimum size criteria for the project.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- This property is not currently zoned for the intended use and currently contains a NRCS easement which prohibits industrial development.
- Utilities necessary to support the proposed project are not present at or within the site. However, extension of required utilities would be both physically and economically feasible.
- Access to Interstate 16/existing interchange is available via Highway 67. While improvements to approximately 4 miles of road would be required, these improvements would be economically feasible.
- The project site could be purchased and would not require acquisition of additional parcels.

In summary, Off-Site Alternative 5 does not meet all the site screening criteria and is therefore not a practicable alternative.

6.2.7 Off Site Alternative 6: This tract totals 6,450 acres generally located east of Highway 17, south of Harris Neck Road and northeast of Minton Road in McIntosh County, Georgia. The following provides a summary of each criterion reviewed for this off-site alternative:

- This alternative is capable of being done when considering cost and the property can be reasonably obtained, expanded and managed. However, this property does not meet the basic and overall project purpose when considering access, logistics, and utilities.
- The site is located approximately 39 miles from the Port of Savannah and falls within the 50 mile geographic location.
- The site totals 6,450 acres and while the entire tract would not be purchased, the minimum size requirement for the project and acquisition of 2,000 acres could be achieved.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- This property is not currently zoned for the intended use, but it is likely that the property could be rezoned.
- Due to the rural location of the project, major utility infrastructure improvements including water, sewer, electrical, etc. would be required. For this site, wells would need to be installed, a wastewater treatment facility would need to be constructed, and power, gas and data/telecom would need to be extended to the site. In addition, commitments from a municipality for future operation and maintenance of the infrastructure would be required. Practically and economically, these requirements could not be met for this site at this time.
- Access to Interstate 95 and an existing interchange is available via Harris Neck Road. While improvements to approximately 2 miles of road would be required, these improvements would be economically feasible. However, rail is not available at the site and is not available in McIntosh County. McIntosh County is one of the few counties in Georgia that no longer has an active railroad.

The most recent active rail line was the Seaboard Coast Line Railroad which ran north to south along the western part of the county. However, the last active tract was removed by CSX in the late 1980s, leaving McIntosh County without any railroad track. Extension of an active line to the site for required rail access would be cost prohibitive.

- The project site could be purchased and would not require acquisition of additional parcels.

While Off-Site Alternative 6 meets many of the site selection criteria, lack of suitable utility services and absence of rail prohibits the use of this site. Thus, this alternative was not reasonable or practicable.

6.2.8 Off Site Alternative 7: This tract totals 3,175 acres located north of Interstate 16 and east of GA Highway 199 in East Dublin, Laurens County, Georgia. The following provides a summary of each criterion for the applicants preferred site:

- This alternative is capable of being done when considering cost and the property can be reasonably obtained, expanded, and managed. However, this property does not meet the basic and overall project purpose when considering geographic location.
- The site is located over 100 miles from the Port of Savannah and falls far outside the 50 mile geographic location requirement.
- The site totals 3,175 acres which meets the minimum size criteria for the project.
- The site contains interstate frontage/visibility which is not a primary consideration but is preferred.
- This property is not currently zoned for the intended use, but it is likely that the property could be rezoned
- Utilities necessary to support the proposed project are not present at or within the site. However, the extension of required utilities from the nearby City of Dublin would be both physically and economically feasible.
- Access to Interstate 16/existing interchange is available via Old River Road. Since the site is located immediately adjacent to the interchange, only a minimal amount of improvements would be required and these improvements would be economically feasible.
- The project site could be purchased and would not require acquisition of additional parcels.

While Off-Site Alternative 7 meets the majority of the criteria, the site is not within 50 miles of a major port and does not meet the geographic location requirement. Thus, this alternative is not practicable.

5.2.9 Off Site Alternative 8: This tract totals approximately 887 acres located north of Glynn Street and south of Highway 212 within Baldwin County, Georgia. The following provides a summary of each criterion for the applicants preferred site:

- This alternative is capable of being done when considering cost and the property can be reasonably obtained, expanded and managed. However, this property does not meet the basic and overall project purpose when considering geographic location, size and major interstate access.
- The site is located over 160 miles from the Port of Savannah and falls far outside the 50 mile geographic location requirement.
- The site consists of the Milledgeville Baldwin County Development Authority Tract totaling approximately 887 acres and does not meet the minimal size criteria for the project.
- The site does not contain interstate frontage/visibility which is not a primary consideration but is preferred.
- This property is currently zoned for the intended use.
- Utilities necessary to support the proposed project are located at the site.
- This site does not meet the requirement for major Interstate access as the closest interstate (I16/I75) is over 29 miles from the site.
- The project site could be purchased and would not require acquisition of additional parcels.

Because Off-Site Alternative 8 does not meet the size criteria, does not contain suitable access to a major interstate, and because the site does not meet the geographic location requirements, this alternative is not practicable.

6.3 On-Site Configurations: In addition to considering off-site alternatives, the applicant considered on-site alternatives. The description of various components required to support and sustain the overall plant operation provided in Section 5.0 above are applicable to all on-site configurations. Since each of these components must exist for the facility to operate, omitting the paint building or the fabrication building (as an example) to reduce the overall facility footprint is not feasible. However, the applicant was able to complete a detailed review of the proposed site plan and shift, redesign, and/or downsize certain features of the facility. Specifically, four on-site configurations were drafted and studied in an effort to avoid or minimize impacts to wetlands and waters identified within the property. The following provides a summary of each alternative considered during the design review process.

6.3.1 On-Site Configuration 1 (Applicant's Preferred): The applicant's preferred alternative includes a commercial component footprint totaling approximately 200 acres and a manufacturing component footprint totaling 1,000 acres. This plan includes vehicle access from Highway 280 west of the site approximately 1 mile south of the Interstate 16/Highway 280 interchange. The plan includes rail access from an existing rail line located on the southeastern boundary of the site. The facility is generally oriented with buildings on the north and south and product handling (i.e. rail yard, truck yard, completed product yard, etc.) within the center of the tract. Because On-Site Configuration 1 contains all the required components of the project, this alternative met the site screening criteria and is therefore a practicable alternative.

6.3.2 On-Site Configuration 2: The applicant's preferred alternative includes a commercial component footprint totaling approximately 180 acres and a manufacturing component footprint totaling 1,100 acres. This plan includes vehicle access from Highway 280 west of the site and rail access from an existing rail line located on the southeastern boundary of the site. The facility is generally oriented with buildings on the north and south and product handling (i.e. rail yard, truck yard, completed product yard, etc.) within the center of the tract. Because On-Site Configuration 2 contains all the required components of the project, this alternative met the site screening criteria and is therefore a practicable alternative.

6.3.3 Onsite Configuration 3: This alternative includes a commercial component footprint totaling approximately 200 acres and a manufacturing component footprint totaling 1,100 acres. With an additional 100 acres available for facility development, this alternative would be preferred if jurisdictional area impacts were not a consideration. This plan includes vehicle access from Highway 280 west of the site and rail access from an existing rail line located on the southeastern boundary of the site. The facility is generally oriented with buildings on the west and south and product handling (i.e. rail yard, truck yard, completed product yard, etc.) extending from near Interstate 16 south through the site. Because On-Site Configuration 3 contains all the required components of the project, this alternative met the site screening criteria and is therefore a practicable alternative.

6.3.4 Onsite Configuration 4: On-site Configuration 4 was the original design proposed for the project. This plan includes a commercial component footprint totaling approximately 180 acres and a manufacturing component footprint totaling 1,300 acres. This plan incorporates a larger manufacturing component footprint when compared to On-Site Configuration 1 and On-Site Configuration 2 and maximizes use of the property. This plan includes vehicle access from Highway 280 west of the site and rail access from an existing rail line located on the southeastern boundary of the site. The facility is generally oriented with buildings on the north and south and product handling (i.e. rail yard, truck yard, completed product yard, etc.) within the center of the tract. Because On-Site Configuration 4 contains all the required components of the project, this alternative met the site screening criteria and is therefore a practicable alternative.

6.4 Alternatives Not Practicable or Reasonable: Following review of both off site alternatives and onsite configurations, the applicant completed a comparison of alternatives to practicability and reasonability screening criteria. Table 2 below summarizes a comparison of each alternative discussed above to the screening criteria for practicability and reasonableness.

Table 2. Summary Table for Practicability and Reasonableness Screening Selection Criteria

Practicability/ Reasonability Screening Selection Criteria	Applicant's Preferred	Alt 1	Alt2	Alt 3	Alt 4	Alt 5	Alt6	Alt 7	Alt 8	On-Site Configuration Alt 1 (Applicant's Preferred)	On-Site Configuration Alt 2	On-Site Configuration Alt 3	On-Site Configuration Alt 4	No Action
Capable of being done considering cost	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Capable of being done considering logistics	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No
Property can be reasonably obtained	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Property can be reasonably expanded	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Property can be reasonably managed	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Meets basic project purpose	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No
Meets overall project purpose	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No
Practicable Site (Y or N)	Yes	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes	No

6.5 Review of Practicable Alternatives: Following a determination of practicable alternatives using the "Practicability/Reasonability Screening Selection Criteria", the applicant completed an analysis of practicable alternatives to identify the least environmentally damaging practicable alternative pursuant to 40 CFR 230.7(b)(1). The purpose of the below analysis is to ensure that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem". The applicant evaluated potential environmental impacts that would result from construction of the proposed facility. This evaluation was completed by considering environmental factors which could impact development of the site. The environmental factors included:

Environmental Factors:

- Stream Impacts (quantitative). The estimated linear footage of potential stream impact was evaluated for each practicable alternative.

- Stream Impacts (qualitative). The functional value of potential stream impact areas was evaluated for each practicable alternative. A low, medium, or high value was assigned based on current structure and hydrologic conditions. Examples of high value would be stable geomorphology and diverse biological community. Examples of low value would be evidence of full impairment such as extensive culverting, piping, or impoundment within the stream.

- Wetland Impacts (quantitative). The estimated acreage of potential wetland impact was evaluated for each practicable alternative.

- Wetland Function (qualitative). The functional value of potential wetland impact areas was evaluated for each practicable alternative. A low, medium, or high value was assigned based on current vegetative structure and hydrologic conditions. Examples of high value would be mature canopy, no evidence of ditching, rare habitats, etc. Examples of low value would be evidence of habitat manipulation through ditching, clear cutting, diking, fragmentation, etc.

- Impacts to Other Waters (quantitative). The acreage of open water impact for each site was considered during review of each practicable alternative.

- Other Waters Functions (qualitative). The functional value of any open water impact areas was evaluated for each practicable alternative. A low, medium, or high value was assigned based on habitat type and condition. Examples of high value would be lakes, impoundments, and/or features occurring naturally. Examples of low value would be man-made features which have not naturalized and provide little to no biological support (i.e. borrow pit).

- Federally Listed Threatened or Endangered Species. A preliminary assessment of each practicable alternative was conducted to determine the potential occurrence of animal and plants 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) Information, Planning, and Conservation System (IPaC) database at http://ecos.fws.gov/ipac/ database was reviewed to determine plant and animal species as endangered or threatened for each alternative.

- Cultural Resources. A preliminary assessment of cultural resources was conducted for each site by reviewing available State Historic Preservation Office information at http://www.nr.nps.gov/. Potential impacts to sites listed or eligible for listing on the National Register of Historic Places was noted for each alternative.

- Stream Buffer Impact. The estimated linear footage of potential stream buffer impact was evaluated for each practicable alternative.

- Flood Plain Impacts: The estimated acreage of flood plain impact was evaluated for each practicable alternative.

Considering the assessment criteria above, the applicant evaluated nine alternatives include five alternative sites (including the applicants preferred site) and four alternative on-site configurations (including the applicants preferred on-site configuration). The following provides a summary of each practicable alternative and associated environmental impacts.

6.5.1 Proposed Action or Applicant's Preferred Alternative/On-site Configuration: As discussed above, this proposal includes construction of the facility adjacent to Highway 280 and Interstate 16. The site design includes approximately 180 acres of commercial area footprint and 1,100 acres of manufacturing area footprint. As depicted on the plan, this design shifts the manufacturing facility to the western boundary and substantially reduces jurisdictional area impacts to the large wetland system on the eastern portion of the property. Additional reduction in overall impacts were achieved by downsizing building footprints, proposing vertical design rather than horizontal design on some buildings, reducing and relocating parking areas, reducing the distance between buildings and redesigning the distribution yard. Considering the site plan, a summary of environmental impacts is provided below.

- Stream Impacts (quantitative). The proposed project will require 833 linear feet of stream impact.

- Stream Impacts (qualitative). As noted above, the project site has been managed for intensive timber production for many years. While evidence of historic impacts within these tributaries was observed (historic rutting, installation of road crossings, and channelization) these tributaries remain functional with a relatively intact buffer and canopy. Thus, a high qualitative value was assigned.

- Wetland Impacts (quantitative). 92.6 acres of jurisdictional wetland impact and 17.56 acres of non-jurisdictional wetland impact would be required for the preferred alternative site and on-site configuration.

- Wetland Function (qualitative). Field review of existing site conditions documented that the historic limits of the wetlands have been impacted by past land management practices including installation of roads, installation of drainage ditches, and timber harvesting. The vast majority of wetland area proposed for impact has been timbered within the past 30 years and portions have been timbered as recent as one year ago. The functional value of the wetland areas proposed for impact was assigned a medium value. It should be noted that Black Creek and adjacent wetlands remain intact with a relatively mature overstory with a high function and value. For this reason, the project area developed for the manufacturing facility was designed specifically to avoid these areas.

- Impacts to Other Waters (quantitative). This alternative requires impacts 0.62 acres of man-made ditch.

- Other Waters Functions (qualitative). The functions and values of the ditches are low.

- Federally Listed Threatened or Endangered Species. An intensive threatened and endangered species survey has been completed within the project site. A completed copy of the report of findings is attached to this permit application package and no impacts to federally listed threatened or endangered species are anticipated (Appendix H).

- Cultural Resources. Brockington & Associates has completed a field survey for cultural resources and archeology and a draft report is currently being prepared for submittal to and review by the USACE and GADNR-HPD. Upon completion, a copy will be provided to the USACE for agency review (Appendix I).

- Stream Buffer Impact. The proposed project will require impacts to state waters and stream buffers. A stream buffer variance will be obtained from the GADNR-EPD prior to initiation of buffer impacts.

- Floodplain Impacts: Approximately 25 acres flood plain impacts will be required for construction of the access roads, commercial component and manufacturing facility and the rail access will require an estimated 28 acres of floodplain impact.

6.5.2 Off-Site Alternative Site 1: This alternative totals 1,594 acres and is known as the Chatham County Economic Development Site. The site is in the northeast quadrant of Interstate 16 and Interstate 95 near Savannah. Through several permit actions from 2002 to 2014, the USACE issued 404 Permit authorizing impacts to jurisdictional waters necessary for development of this OEM industrial site. Due to the size of the proposed manufacturing facility, acquisition of an additional +/- 33 parcels and additional wetland impact would be required to create suitable contiguous development area for the proposed project. The following provides a further review of this alternative.

- Stream Impacts (quantitative). No stream impacts are associated with this alternative.
- Stream Impacts (qualitative). No stream impacts are associated with this alternative.
- Wetland Impacts (quantitative). Previously authorized wetland impacts for this site total 185.54 acres. In addition to the previously authorized impacts to an estimated 229 acres of additional wetland impact (including impacts to preserved wetlands associated with the USACE permit action) would be required to facilitate development of the proposed project. In total, this project would require an estimated 414 acres of wetland impact.
- Wetland Function (qualitative). Because the preserved wetlands are protected with a restrictive covenant and consist of both mature forested wetland habitat and restored wetland associated with the previous permit action compensatory mitigation plan, these areas would have the highest level of functional value. The other non-preserved jurisdictional wetland consists of mature forested hardwood wetland with a relatively high function and value.
- Impacts to Other Waters (quantitative). Previously authorized impacts to other waters included approximately 36 acres of open water pond. Additional impacts associated with this project would include an estimated 1.9 acres of stormwater canal impact, approximately 4.3 acres of the Savannah-Ogeechee Canal (S&O) impact, and approximately 4.6 acres of additional pond impact. Total other waters impact for this project would be 46.8 acres.
- Other Waters Functions (qualitative). The other waters within the site have been created through historical mining of sand and borrow material. Because these waters are man-made borrow pits, the value of these other waters would be low. In addition, both the S&O Canal and the stormwater canal within the property provide minimal open water functions and would therefore be assigned a relatively low value.
- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither listed species nor habitat typically associated with these species are present within Off-Site Alternative Site 1. Thus, no adverse impacts to federally listed threatened and endangered species would be expected.
- Cultural Resources. A cultural resource survey was completed for the project site and would be required for the additional parcels. At a minimum, significant impacts to the S&O Canal, a documented historic site, would be required.
- Stream Buffer Impact. No stream buffer impacts are associated with this alternative.
- Floodplain Impacts: This alternative would require an estimated 682 acres of floodplain impacts (including both permitted and proposed) to facilitate development of the proposed industrial site.

6.5.3 Off-Site Alternative 2: This tract consists of approximately 4,055 acres and is located west of Interstate 95, southeast of Highway 17 and south of Highway 84 within Liberty County, Georgia. Based on review of available information the tract consists of forested upland, forested wetland, and tidal wetland/waters. The tract has been historically managed for timber production. The following provides a further review of this alternative.

- Stream Impacts (quantitative). The project area contains several tidal tributaries. The project would require an estimated 2,858 linear feet of tidal tributary impact.

- Stream Impacts (qualitative). Because these tributaries are tidal, a high functional value would be assigned.

- Wetland Impacts (quantitative). This alternative would require an estimated 295 acres of wetland impact including 19 acres of tidal saltwater wetland, 34 acres of tidal brackish/freshwater wetland and 242 acres of non-tidal freshwater wetland.

- Wetland Function (qualitative). The functional value of the tidal wetland areas would be high while historic land management practices and silvicultural activities would result in a medium functional value score for the non-tidal wetlands.

- Impacts to Other Waters (quantitative). Several small borrow pits totaling an estimated 3 acres would be impacted by the proposed project.

- Other Waters Functions (qualitative). Other waters present within the Off-Site Alternative Site 2 are man-made open water ponds/former borrow pits whose functions are low.

- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither listed species nor habitat typically associated with these species are present within this alternative site. Therefore, no adverse impacts to federally listed threatened and endangered species would be expected.

- Cultural Resources. Cultural resources survey information is not available for the site, the landscape position and presence of historic roadways through the tract would suggest impacts to cultural and/or archeological sites are a likely possibility.

- Stream Buffer Impact. Since the project would require impacts to a tidal tributary, stream buffer impacts would be associated with this alternative.

- Floodplain Impacts: This alternative would require an estimated 351 acres of floodplain impacts to facilitate development of the proposed industrial site.

6.5.4 Off-Site Alternative 4: This tract totals 3,588 acres located approximately 1 mile north of Interstate 16 and adjacent to and west of Arcola Road within Bulloch County, Georgia. Based on review of available information, the tract consists of intensively managed timberland. Within the past 4 years, the timber within majority of the property has harvested with portions of the wetland areas remaining intact. The following provides a further review of this alternative.

- Stream Impacts (quantitative). No stream impacts are associated with this alternative.

- Stream Impacts (qualitative). No stream impacts are associated with this alternative.

- Wetland Impacts (quantitative). Based on available photography, Lidar, NWI etc., this alternative would require an estimated 195 acres of wetland impact.

- Wetland Function (qualitative). Due to the timber management/silvicultural activities associated with this site, it is assumed that ditching, rutting, bedding, etc. has occurred within the wetlands. For these areas and as with the other sites, a medium functional value would be assigned. However, this alternative would also require wetland impacts adjacent to both Upper and Lower Black Creek. In addition, this alternative is located adjacent to and immediately upstream of Black Creek Mitigation Bank. Because the on-site tributaries and adjacent wetlands remain intact with a relatively mature overstory and because the adjoining property consists of restored, enhanced and preserved wetlands associated with a mitigation bank, the function and value of these areas would be relatively high.

- Impacts to Other Waters (quantitative). Based on review of aerial photography, ditches appear to be present within the project: however, the acreage is not known

- Other Waters Functions (qualitative). Because other waters would likely consist of man-made ditches, the functional value of these areas would be low.

- Federally Listed Threatened or Endangered Species. Based on location of the tract and current site conditions, neither listed species nor habitat typically associated with these species are present within this alternative site. Therefore, no adverse impacts to federally listed threatened and endangered species would be expected.

- Cultural Resources. Cultural resources survey information is not available for the site, the landscape position of the project area immediately adjacent to Black Creek through the tract would suggest impacts to cultural and/or archeological sites is a likely possibility.

- Stream Buffer Impact. No stream buffer impacts would be required for this alternative.

- Floodplain Impacts: This alternative would require an estimated 34 acres of floodplain impacts to facilitate development of the proposed industrial site.

6.5.6 On-Site Configuration 2: This proposal includes construction of the facility adjacent to Highway 280 and Interstate 16 with site access immediately south of the existing interchange. The site design includes approximately 180 acres of commercial area footprint and 1,100 acres of manufacturing area footprint. As depicted on the plan, this design shifts the manufacturing facility to the western boundary and substantially reduces jurisdictional area impacts to the large wetland system on the eastern portion of the property. Additional reduction in overall impacts were achieved by downsizing building footprints, proposing vertical design rather than horizontal design on some buildings, reducing and relocating parking areas, reducing the distance between buildings and redesigning the distribution yard. Considering the site plan, a summary of environmental impacts is provided below.

- Stream Impacts (quantitative). The proposed project will require 2,631 linear feet of stream impact.

- Stream Impacts (qualitative). The project site has been managed for intensive timber production for many years. While evidence of historic impacts within these tributaries was observed (historic rutting, installation of road crossings, and channelization) these tributaries remain functional with a relatively intact buffer and canopy. Thus, a medium to high qualitative value was assigned.

- Wetland Impacts (quantitative). 124.51 acres of jurisdictional wetland impact and 17.56 acres of non-jurisdictional wetland impact would be required for the preferred alternative site and on-site configuration.

- Wetland Function (qualitative). Field review of existing site conditions documented that the historic limits of the wetlands have been impacted by past land management practices including installation of roads, installation of drainage ditches, and timber harvesting. The vast majority of wetland area proposed for impact has been timbered within the past 20 years and much of the overstory canopy within the wetlands was harvested within the past 1 to 5 years. The functional value of the wetland areas proposed for impact was assigned a medium value. It should be noted that Black Creek and adjacent wetlands remain intact with a relatively mature overstory with a high function and value. For this reason, the project area developed for the manufacturing facility was designed specifically to avoid these areas.

- Impacts to Other Waters (quantitative). This alternative requires impacts 0.62 acres of man-made ditch.

- Other Waters Functions (qualitative). The functions and values of the ditches are low.

- Federally Listed Threatened or Endangered Species. An intensive threatened and endangered species survey has been completed within the project site. A completed copy of the report of findings is attached to this permit application package and no impacts to federally listed threatened or endangered species are anticipated.

- Cultural Resources. Brockington & Associates has completed a field survey for cultural resources and archeology and a draft report is currently being prepared for submittal to and review by the USACE and GADNR-HPD. Upon completion, a copy will be provided to the USACE for agency review.

- Stream Buffer Impact. The proposed project will require impacts to state waters and stream buffers. A stream buffer variance will be obtained from the GADNR-EPD prior to initiation of buffer impacts.

- Floodplain Impacts: Approximately 31 acres of flood plain impacts will be required for construction of the access roads, commercial components, and manufacturing facility and the rail access will require an estimated 22 acres of floodplain impact.

6.5.7 On-Site Configuration 3: This proposal includes construction of the facility adjacent to Highway 280 and Interstate 16. This design includes approximately 200 acres of commercial area footprint and 1,000 acres of manufacturing area footprint with the primary access approximately 1 mile of the Interstate 16/Highway 280 intersection. The layout rotates the facility in a north/south direction. The vertical rather than horizontal layout requires centering the development area, shifting the overall layout east and substantially increasing the impacts to wetlands both west and south.

- Stream Impacts (quantitative). The proposed project will require 580 linear feet of stream impact.

- Stream Impacts (qualitative). As noted above, the project site has been managed for intensive timber production for many years. While evidence of historic impacts within these tributaries was observed (historic rutting, installation of road crossings, and channelization) these tributaries remain functional with a relatively intact buffer and canopy. Thus, a medium to high qualitative value was assigned.

- Wetland Impacts (quantitative). 150.44 acres of jurisdictional wetland impact and 17.56 acres of non-jurisdictional wetland impact would be required for the preferred alternative site and on-site configuration.

- Wetland Function (qualitative). Field review of existing site conditions documented that the historic limits of the wetlands have been impacted by past land management practices including installation of roads, installation of drainage ditches, and timber harvesting. The vast majority of wetland area proposed for impact has been timbered within the past 20 years and much of the overstory canopy within the wetlands was harvested within the past 1 to 5 years. The functional value of the wetland areas proposed for impact was assigned a medium value. It should be noted that Black Creek and adjacent wetlands remain intact with a relatively mature overstory with a high function and value. For this reason, the project area developed for the manufacturing facility was designed specifically to avoid these areas.

- Impacts to Other Waters (quantitative). This alternative requires impacts 0.62 acres of man-made ditch.

- Other Waters Functions (qualitative). The functions and values of the ditches are low.

- Federally Listed Threatened or Endangered Species. An intensive threatened and endangered species survey has been completed within the project site. A completed copy of the report of findings is attached to this permit application package and no impacts to federally listed threatened or endangered species are anticipated.

- Cultural Resources. Brockington & Associates has completed a field survey for cultural resources and archeology and a draft report is currently being prepared for submittal to and review by the USACE and GADNR-HPD. Upon completion, a copy will be provided to the USACE for agency review.

- Stream Buffer Impact. The proposed project will require impacts to state waters and stream buffers. A stream buffer variance will be obtained from the GADNR-EPD prior to initiation of buffer impacts.

- Floodplain Impacts: Approximately 31 acres flood plain impacts will be required for construction of the access roads, commercial component and manufacturing facility and the rail access will require an estimated 22 acres of floodplain impact.

6.5.8 On-Site Configuration 4: This alternative includes construction of the facility adjacent to Highway 280 and Interstate 16. The site design includes approximately 180 acres of commercial area footprint and 1,300 acres of manufacturing area footprint. Unlike all previous On-Site Configurations, , this alternative maximizes the footprint of the manufacturing component and provides increased flexibility in overall operations and the only difference is manufacturing footprint orientation. At approximately 8,000 linear feet wide (east/west) by 7,000 linear feet long (north/south), this site plan represents the original design for the project. While this would be the preferred on-site consideration when accounting for overall site design alone, the results of the environmental studies and surveys required evaluation of additional designs. As documented above and summarized below, this alternative was not able to avoid and minimize environmental impacts to the greatest extent practicable.

- Stream Impacts (quantitative). The proposed project will require 2,646 linear feet of stream impact.

- Stream Impacts (qualitative). As noted above, the project site has been managed for intensive timber production for many years. While evidence of historic impacts within these tributaries was observed (historic rutting, installation of road crossings, and channelization) these tributaries remain functional with a relatively intact buffer and canopy. Thus a medium to high qualitative value was assigned.

- Wetland Impacts (quantitative). 209.28 acres of jurisdictional wetland impact and 17.56 acres of non-jurisdictional wetland impact would be required for the preferred alternative site and on-site configuration.

- Wetland Function (qualitative). Field review of existing site conditions documented that the historic limits of the wetlands have been impacted by past land management practices including installation of roads, installation of drainage ditches, and timber harvesting. The vast majority of wetland area proposed for impact has been timbered within the past 20 years and much of the overstory canopy within the wetlands was harvested within the past 1 to 5 years. The functional value of the wetland areas proposed for impact was assigned a medium value. It should be noted that Black Creek and adjacent wetlands remain intact with a relatively mature overstory with a high function and value. For this reason, the project area developed for the manufacturing facility was designed specifically to avoid these areas.

- Impacts to Other Waters (quantitative). This alternative requires impacts 0.62 acres of man-made ditch.

- Other Waters Functions (qualitative). The functions and values of the ditches are low.

- Federally Listed Threatened or Endangered Species. An intensive threatened and endangered species survey has been completed within the project site. A completed copy of the report of findings is attached to this permit application package and no impacts to federally listed threatened or endangered species are anticipated.

- Cultural Resources. Brockington & Associates has completed a field survey for cultural resources and archeology and a draft report is currently being prepared for submittal to and review by the USACE and GADNR-HPD. Upon completion, a copy will be provided to the USACE for agency review.

- Stream Buffer Impact. The proposed project will require impacts to state waters and stream buffers. A stream buffer variance will be obtained from the GADNR-EPD prior to initiation of buffer impacts.

- Floodplain Impacts: Approximately 31 acres flood plain impacts will be required for construction of the access roads, commercial component and manufacturing facility and the rail access will require an estimated 22 acres of floodplain impact.

6.6 Summary of Alternatives Analysis: When comparing the practicable alternatives, the Applicant's Preferred Alternative requires less wetlands, open water, floodplain impact than alternative sites and when considering environmental impacts, the Applicant's Preferred Alternative represents the least environmentally damaging. Table 3 provides a summary of the practicable alternatives and the values for each factor.

Table 3. Summary of Least Environmentally Damaging Practicable Alternative Assessment

FACTORS Environmental Factors	Preferred Alternative & Configuration	Off-Site Alt 1	Off-Site Alt 2	Off-Site Alt 4	On-Site Conf 2	On-Site Conf 3	On-Site Conf 4
Stream Impacts (Linear Feet)	833 lf	None	2,858 lf	None	2,631 lf	580 lf	2,646 lf
Functional Value of Impacted Stream	Medium to High	None	High	None	Medium to High	Medium to High	Medium to High
Wetland Impacts (Acres)	110.78 ac	414 ac	53 tidal& 242 non-tidal ac	195ac	142.07 ac	168.00 ac	226.84ac
Functional Value of Impacted Wetland	Medium	High	Medium & High	Medium	Medium	Medium	Medium
Impacts to Other Waters (Acres)	0.62	46.8	3 ac	Yes (Unknown ac.)	0.62 ac	0.62	0.62
Functional Value of Impacted Other Waters	Low	Low	Low	Low	Low	Low	Low
Federal Endangered Species Impact	No	No	No	No	No	No	No
Cultural Resources Impact	No	Yes	Likely	Likely	No	No	No
Stream Buffer Impact	Yes	No	No	No	Yes	Yes	Yes
Floodplain Impact	53 ac	682 ac	351 ac	34 ac	53 ac	53 ac	53 ac
LEDPA	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**

In summary, the applicant and design team considered a variety of alternatives which would avoid and minimize impacts to wetlands to the greatest extent practicable while satisfying the overall project purpose. Through a comprehensive analysis of both off-site alternatives and on-site configurations, the applicant has been able to reduce the overall environmental impacts and demonstrate that the proposed site and design is the least environmentally damaging practicable alternative.

7.0 THREATENED AND ENDANGERED SPECIES:

RLC completed a threatened and endangered species assessment for the majority of the project area in 2015. A copy of all reports from 2015 are provided in Appendix H. In addition, RLC completed a survey for any new property not included in the 2015 project area. As documented in 2015 and based on recent surveys, no federally listed threatened or endangered species were observed during the survey. It was determined that marginal habitat was present on the study area that could potentially harbor Flatwoods salamanders, striped newts, indigo snakes, and gopher tortoise. Site-specific studies were conducted for these species and only gopher tortoises are known to inhabit the study area. The applicant will coordinate with state agencies to undertake voluntary relocation of all gopher tortoises. This effort and the fact that no federal protected species were observed in 2015 or during recent surveys in 2018 documents that the proposed project will not affect any federally listed threatened, endangered, or as a candidate species.

8.0 CULTURAL RESOURCES:

Brockington & Associates has completed a field survey for cultural resources and archeology and a draft report is currently being prepared for submittal to and review by the USACE and GADNR-HPD. In the interim, a management summary documenting the status of the project is provided in Appendix I.

9.0 STORM WATER MANAGEMENT

A preliminary stormwater management plan has been designed by Thomas & Hutton (consulting engineer), and although this plan has not yet been finalized, preliminary plan includes construction of stormwater ponds designed to accommodate the stormwater volume associated with development of the site. The final plan will meet any and all stormwater management requirements of the local authorities. It should be noted that construction of stormwater management facilities will occur within uplands only and impacts to jurisdictional waters of the U.S. and/or wetlands will not be required.

10.0 COMPENSATORY MITIGATION

The proposed project requires impacts to 92.6 acres jurisdictional wetland, 0.62 acre of ditch, 17.56 acres of non-jurisdictional wetland, and 833 linear feet of stream. As documented in the attached mitigation credit calculations (Appendix J), the project will require 580.96 wetland mitigation credits to off-set jurisdictional wetland impacts, 140.56 wetland credits to off-set non-jurisdictional impacts, and 5997.6 stream credits to off-set stream impacts. As compensatory mitigation, the applicant is proposing to purchase available mitigation credits from approved mitigation banks that service the Lower Ogeechee watershed (HUC 03060202). Per the Corps Regulatory In lieu fee Bank Information Tracking System (RIBITS) database on 2 June 2018, the banks in the primary service area with available credits include Black Creek, Margin Bay, Old Thorn Pond, Yam Grandy, Ogeechee River Bank and Wilhelmina Morgan. The following provides a summary of credit availability:

Table 4 Mitigation Bank Summary

Bank	Bank HUC Location	Watershed	Distance From Impact Site	Available Credits	
				Wetland	Stream
Black Creek	3060202	Ogeechee	8 mi	71.74	N/A
Margin Bay	3060202	Ogeechee	3 mi	244.59	N/A
Ogeechee River	3060204	Ogeechee	17 mi	N/A	N/A
Old Thorn Pond	3060202	Ogeechee	12 mi	58.19	N/A
Yam Grandy	3070107	Ohoopee	65 mi	120.98	17,285.9
Salt Creek	3060204	Ogeechee	16 mi	N/A	N/A
Wilhelmina Morgan	3060204	Ogeechee	12 mi	171.08	N/A

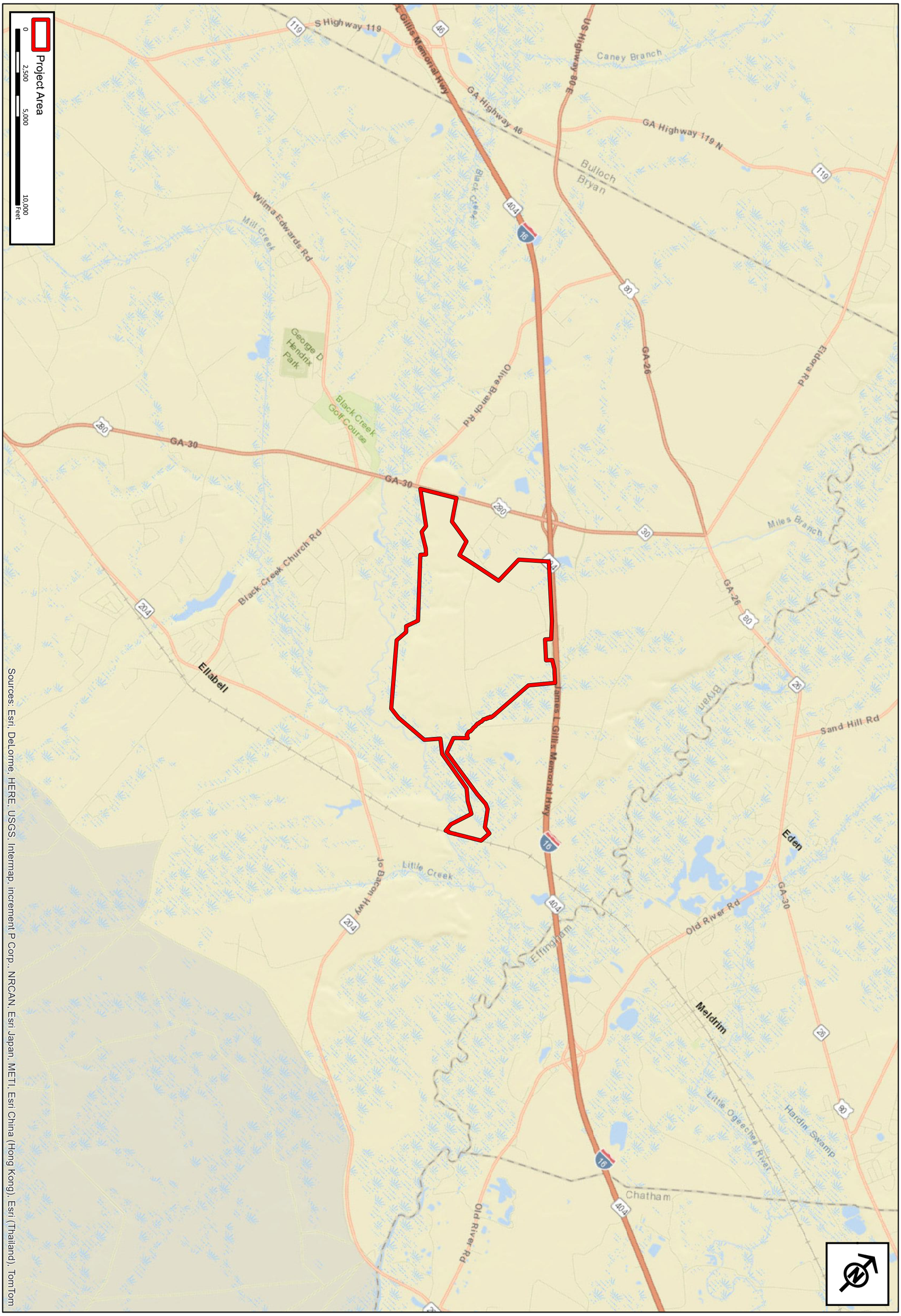
A total of 721.52 wetland credit (for jurisdictional and non-jurisdictional impacts) and 5997.6 stream credits are required for project related impacts. Approximately 17,285.9 of stream credits and 666.58 wetland credits are currently available within the service area. Depending on the number of wetland and stream credits available at the time of purchase, the applicant is requesting approval to purchase all or any remaining wetland and/or stream credits through the Georgia Land Trust In-Lieu Fee Program.

11.0 CONCLUSION

Savannah Harbor Interstate 16 Corridor Joint Development Authority is proposing the development of an OEM site adjacent to Interstate 16 within Bryan County, Georgia. The proposed project is required to promote regional participation in the OEM sector and to avoid elimination due to entitlement delays. The proposed project requires 92.6 acres of jurisdictional wetland, 0.62 acre of ditch impact, 17.56 acres of non-jurisdictional wetland impact and 833 linear feet of stream impact. However, this project has been determined to be the least environmentally damaging practicable alternative and unavoidable wetland and stream impacts will be off-set through purchase of mitigation credits.

APPENDIX C:

Figures/Site Maps



RLC Project No.:	14-225.1
Figure No.:	1
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 5,000 feet

Bryan County OEM Site

Bryan County, Georgia

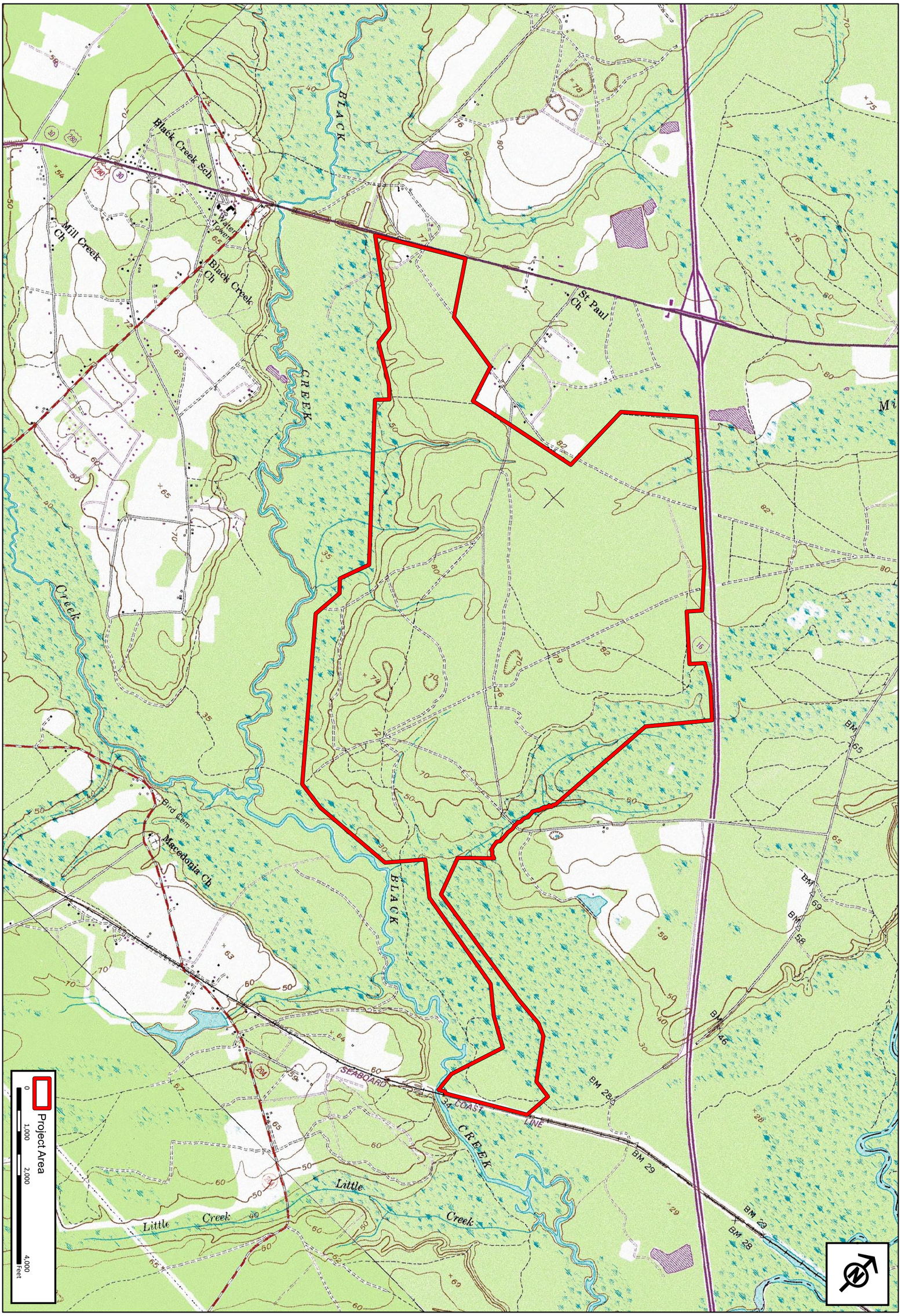
Project Location Map

Prepared For: SHJDA

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): Esri Basemap, World Street Map



RLC Project No.:	14-225.1
Figure No.:	2
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 2,000 feet

Bryan County OEM Site

Bryan County, Georgia

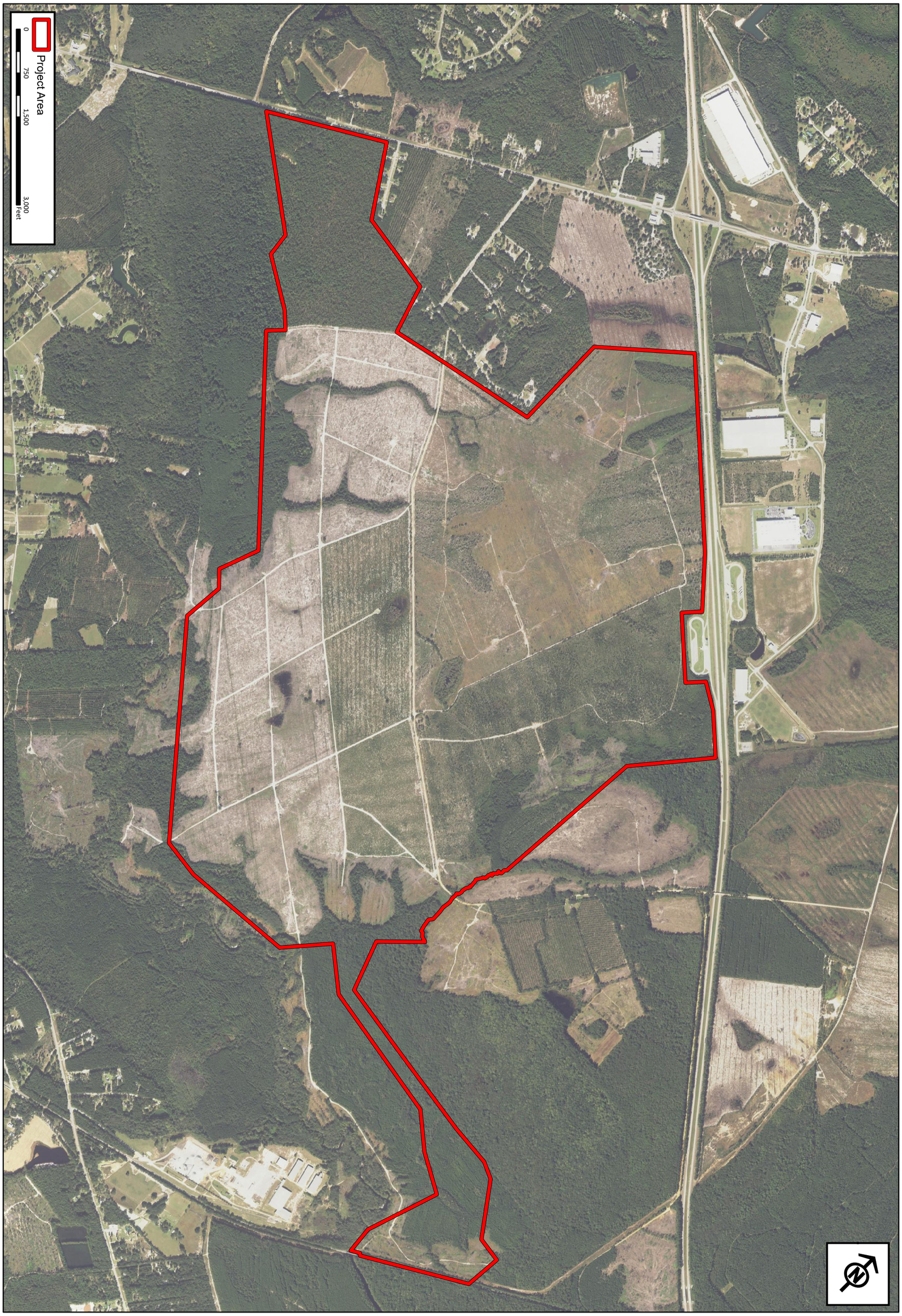
USGS Topographic Survey

Prepared For: SHJDA

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): USGS Topographic Survey



RLC Project No.:	14-225.1
Figure No.:	3
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,500 feet

Bryan County OEM Site

Bryan County, Georgia

2015 Ortho Aerial Imagery

Prepared For: SHJDA

RLC

RESOURCE+LAND CONSULTANTS

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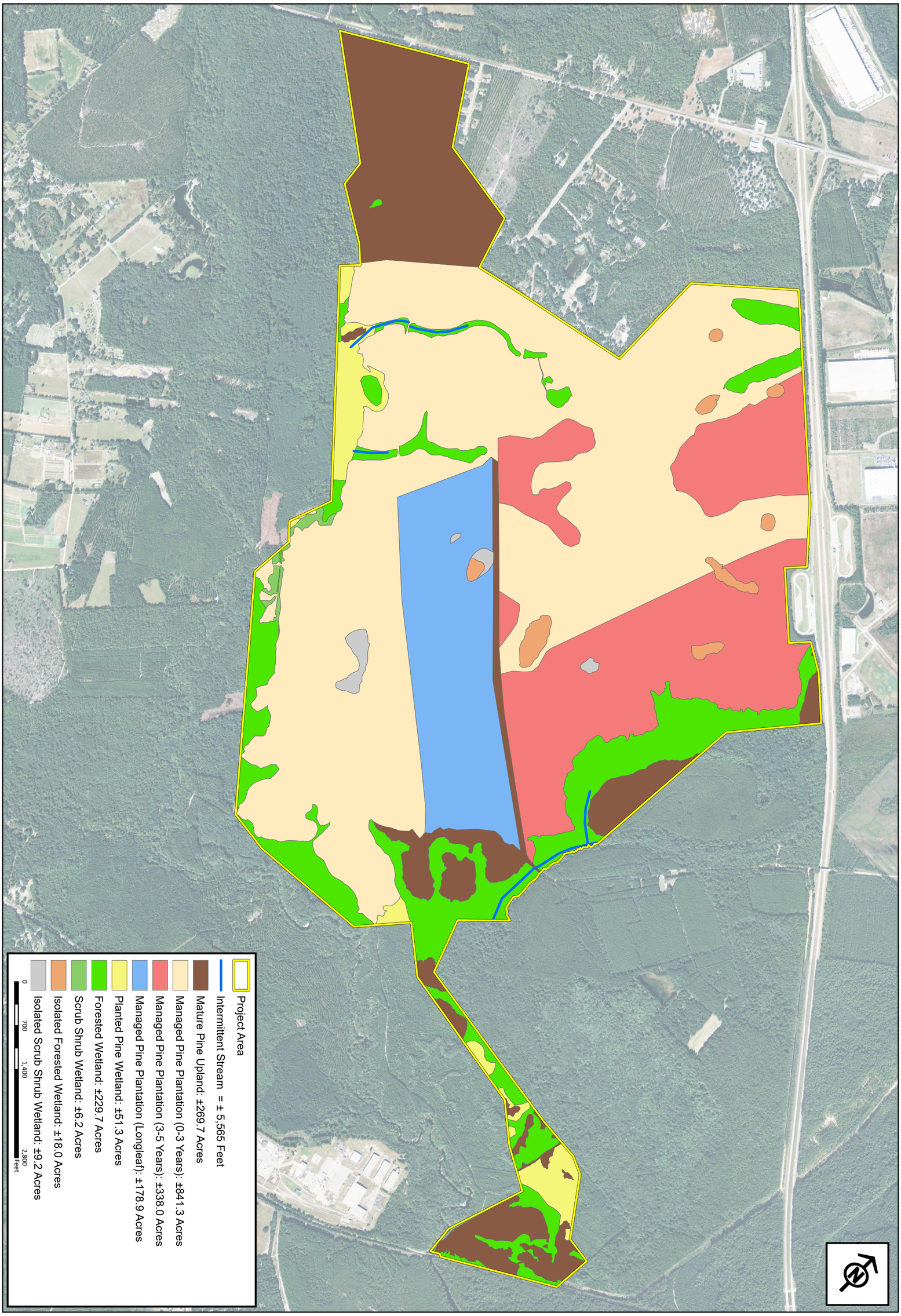
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): Esri Basemap, World Street Map



RLC Project No.:	14-225.1
Figure No.:	4
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,400 feet

Bryan County OEM Site

Bryan County, Georgia

Habitat Map

Prepared For: SHJDA

RLC

RESOURCE+LAND CONSULTANTS

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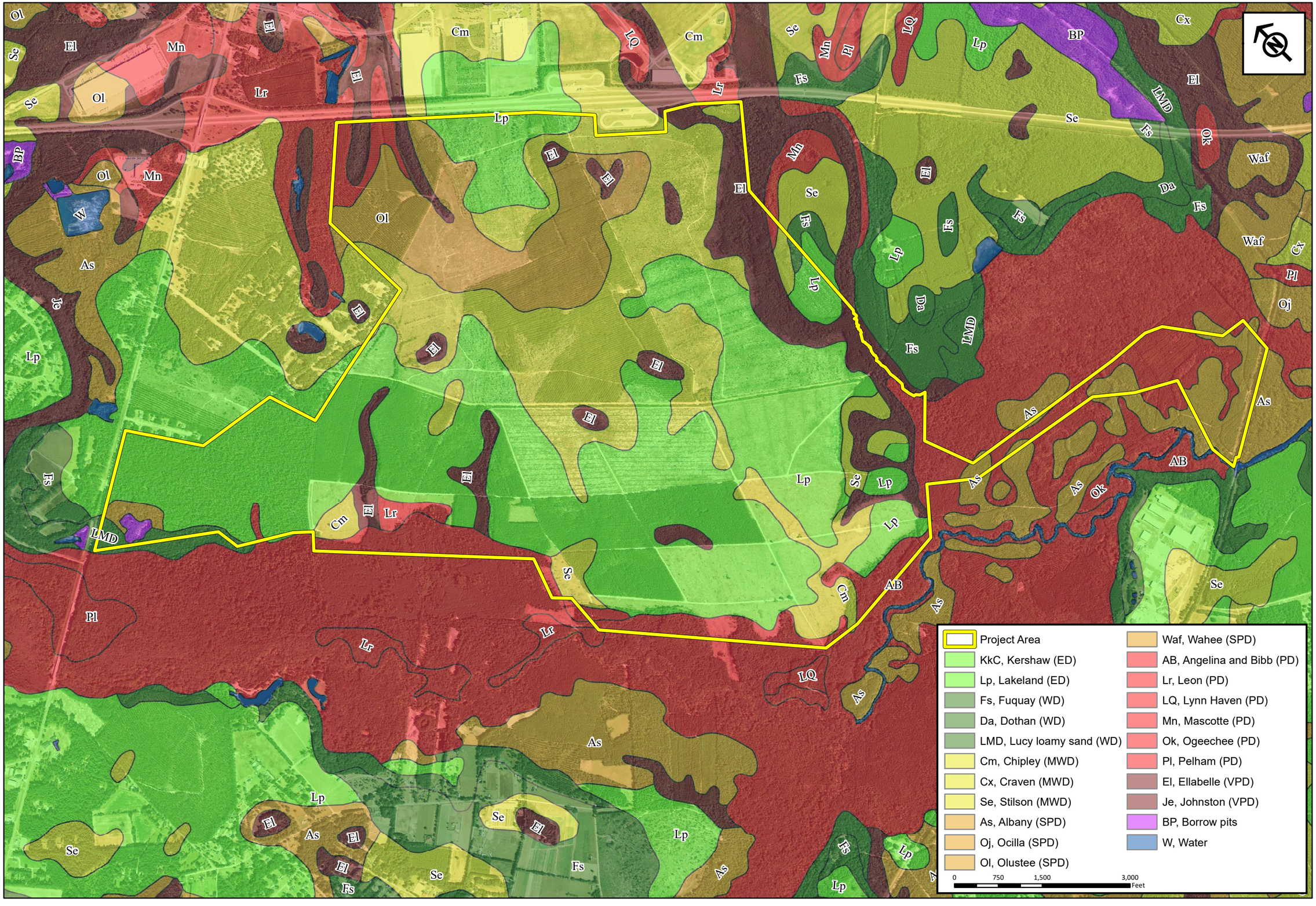
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): T&H DWGs 2013 NAIP Ortho Aerial, Bryan County



RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

RLC

Source(s): 2013 NAIP Ortho Aerial, Bryan County; USDA NRCS Soils Survey

USDA NRCS Soils

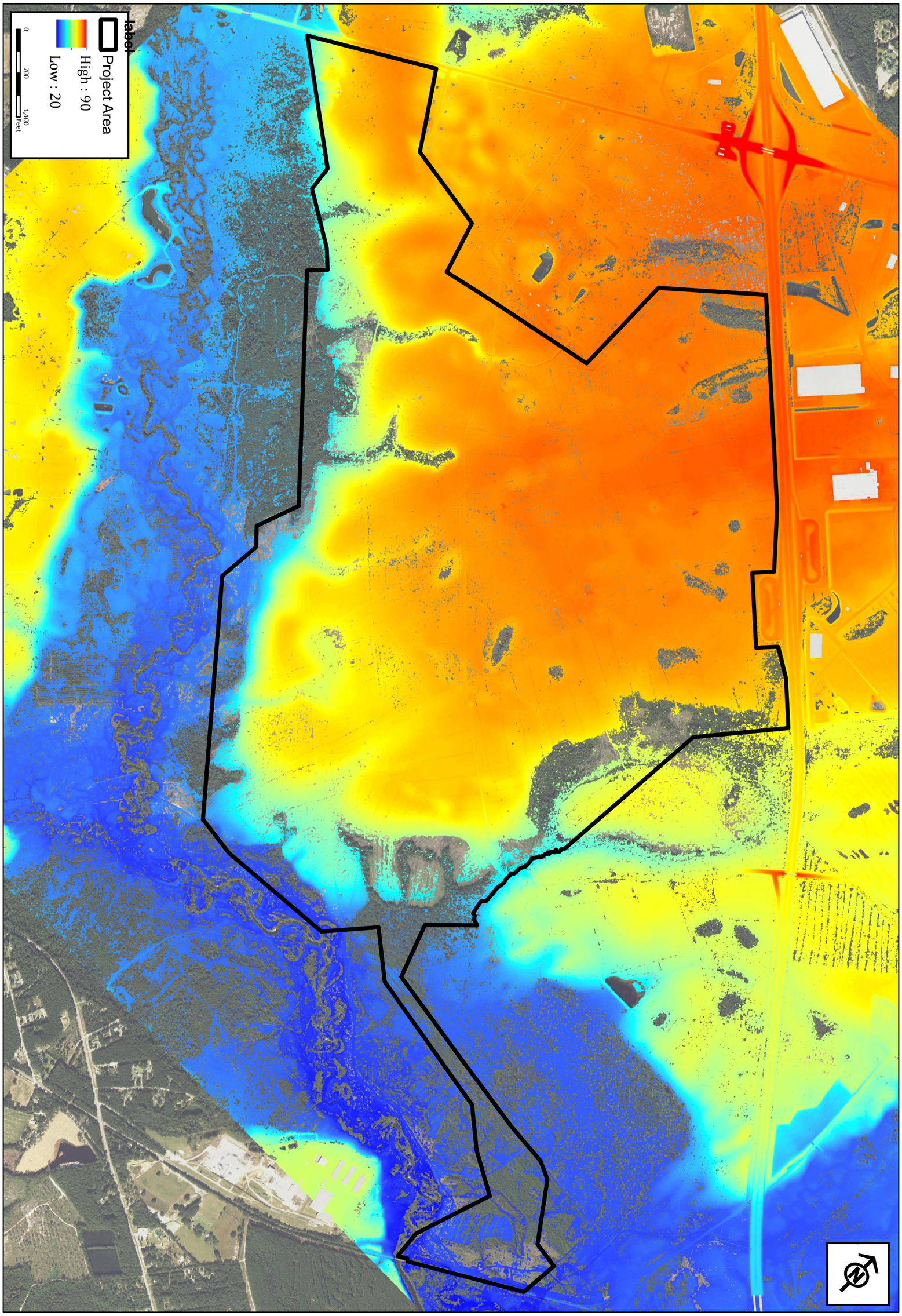
Prepared For: SHJDA

Bryan County OEM Site

Bryan County, Georgia

RLC Project No.:	14-225.1
Figure No.:	5
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,500 feet

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map



RLC Project No.:	14-225.1
Figure No.:	6
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,400 feet

Bryan County OEM Site

Bryan County, Georgia

Lidar Elevation Data

Prepared For: SHJDA

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): 2010 Coastal Lidar Elevation Data; 2015 NAIP Ortho Aerial, Bryan County

APPENDIX D:

USACE Jurisdictional Determinations &
Jurisdictional Determination Request

June 5, 2018

US Army Corps of Engineers
Savannah District / Regulatory Division
Attention: CESAS-RD (Mr. William Rutlin)
100 West Oglethorpe Avenue
Savannah, Georgia 31401

Subject: **Request for Approved Jurisdictional Determination (AJD)** **RLC# 16-267**
Drawdy Tract
Bryan County, Georgia

Dear Mr. Rutlin:

Resource & Land Consultants (RLC), on behalf of Butler Tract, LLC is submitting the attached information requesting an Approved Jurisdictional Determination for the subject site located at 9724 Hwy 280 in Ellabell, Bryan County, Georgia (32.171910°, -81.477862°). The delineation was conducted in accordance with the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region Version 2, and 33 CFR Part 328 & 329. Based on our site assessment and delineation, it is our opinion that the ± 153-acre project area is comprised of 152.64 acres of upland and 0.39 acres of isolated wetland.

The attached information includes the following:

- Request for Jurisdictional Determination
- Approved Jurisdictional Determination Form
- RLC Prepared Figures (Figures 1-6)
- GPS Data Sheet
- Two Atlantic and Gulf Coastal Plain Region Wetland Determination Data Forms
- DFIRM Map

We greatly appreciate your assistance with this project. If you have any questions or require a site inspection, please contact us at (912) 443-5896.

Sincerely,

Zach Marsh
Project Manager
Resource & Land Consultants

cc: Butler Tract, LLC – Mr. Dan Bradley

US Army Corps
of Engineers
Savannah District

SAS APPENDIX 1: Request for Corps of Engineers Jurisdictional Determination (JD) and/or Delineation Review

I. Reason for request: (check as many as applicable)

☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.

☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.

☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.

☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.

☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 1O list and/or is subject to the ebb and flow of the tide.

☐ A Corps JD is required in order to obtain my local/state authorization.

☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.

☐ I believe that the site may be comprised entirely of dry land.

☑ Other: _____

II. I am requesting that the U.S. Army Corps of Engineers, Savannah District, provide me with the following:

☐ **Delineation Review of Aquatic Resources** - Concurrence with an aquatic resource delineation is a written notification from the Corps concurring, not concurring, or commenting on the aquatic resource boundaries, or limits, delineated on a property.

☐ **Preliminary Jurisdictional Determination** - (PJD). A PJD is defined in Corps regulations at 33 CFR 331.2, as "written indications that there may be waters of the United States on a parcel". When the Corps provides a PJD, the Corps is making no legally binding determination of any type regarding whether jurisdiction exists over the particular aquatic resource in question.

☑ **Approved Jurisdictional Determination** - (AJD) An AJD is defined in Corps regulations at 33 CFR 331.2. A definitive, official determination that there are, or that there are not, jurisdictional aquatic resources on a parcel.

☐ I am unclear as to what I would like to request and require additional information to inform my decision.

III. Property/Owner Information. Please complete **ALL** of the following information for the property under review:

SECTION 1

Parcel Number of Property: 030-012

Lat. 32.171910 Long. - 81.477862 (in decimal degrees)

Parcel Address: 9724 Hwy 280

Parcel City : Ellabell Parcel County: Bryan Zip: 31308

Size of Review Area: ±153 Acre(s) Linear feet

SECTION 2

LANDOWNER NAME	AUTHORIZED AGENT'S NAME
First: Dan	First: Zach
Last: Bradley	Last: Marsh
Company: Butler tract, LLC	Company: Resource & Land Consultants, LLC
Email Address: dbsavannah38@gmail.com	Email Address: Zmarsh@rlandc.com
Address: 204 Old West Lathrop Avenue	Address: 41 Park of Commerce Way
City: Savannah	City: Savannah
State: GA Zip: 31415	State: GA Zip: 31405
Phone:	Phone: 912-443-5896

PROPERTY ACCESS PERMISSION, AKNOWLEDGEMENT OF 18 U.S.C. SECTION 10001 AND STATEMENT OF AGENT AUTHORIZATION

Initial ONLY One:

____ By signing below, I certify that I am the owner of record of the property referenced in III, Section 1 above, and I hereby authorize representatives of the U.S. Army Corps of Engineers, Savannah District, to enter the property for purposes of conducting on-site inspections, and issuing an aquatic resource delineation concurrence and/or a jurisdictional determination. My signature shall also be an affirmation that I possess the requisite property rights to request a delineation review and/or a jurisdictional determination on the property referenced in III - Section 1. Further, I authorize the agent in III - Section 2, to act on my behalf in the processing of this request and to furnish supplemental information in support of this request.

__✓__ By signing below, I certify that I am acting as the duly authorized agent of the owner of record of the property referenced in III, Section 1 above, and have been given the authority to: 1) request a delineation review and/or a jurisdictional determination (JD) on the property referenced in III - Section 1, and 2) authorize representatives of the U.S. Army Corps of Engineers, Savannah District, to enter the property for purposes of conducting on-site inspections, and issuing an aquatic resource delineation concurrence and/or a jurisdictional determination. I understand that I may be required to provide documentary evidence of my authority to request a delineation review and/or JD, and/or to grant Corps of Engineers personnel access to the property.

Please Print Name Legibly: Zachary D. Marsh

Signature _____ Date: 6/4/18

● Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Savannah District; Drawdy Tract

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Georgia County/parish/borough: Bryan City: Ellabell
Center coordinates of site (lat/long in degree decimal format): Lat. 32.171910° **N**, Long. -81.477862° **W**.
Universal Transverse Mercator: 17S 455072 3559645
Name of nearest waterbody: Black Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Ogeechee River
Name of watershed or Hydrologic Unit Code (HUC): Lower Ogeechee 03060202

☐ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply): [1]

☐ TNWs, including territorial seas
☐ Wetlands adjacent to TNWs
☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
☐ Non-RPWs that flow directly or indirectly into TNWs
☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
☐ Impoundments of jurisdictional waters
☒ Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or acres.
Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: **Pick List**
Elevation of established OHWM (if known): unknown.

2. Non-regulated waters/wetlands (check if applicable):[3]

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
Explain: **The site contains a depressional isolated wetland.**.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: **n/a**.

Summarize rationale supporting determination: n/a.

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": n/a.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **acres**
Drainage area: **acres**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: no.

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: unknown, the stream was not folowing during site visitu.

Identify specific pollutants, if known: Water quality appeared good during visual inspections of the stream. The water was brown in color with no no oily film.

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): mature forrest >50 ft.
- ☐ Wetland fringe. Characteristics: mature and immature wetland species.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: Provides aquatic habitat not found in surrounding wetlands .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☐ Ecological connection. Explain: .
☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain:mature vegetation,.
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: n/a.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: n/a.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: n/a.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

[8]See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Identify water body and summarize rationale supporting determination: n/a.

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

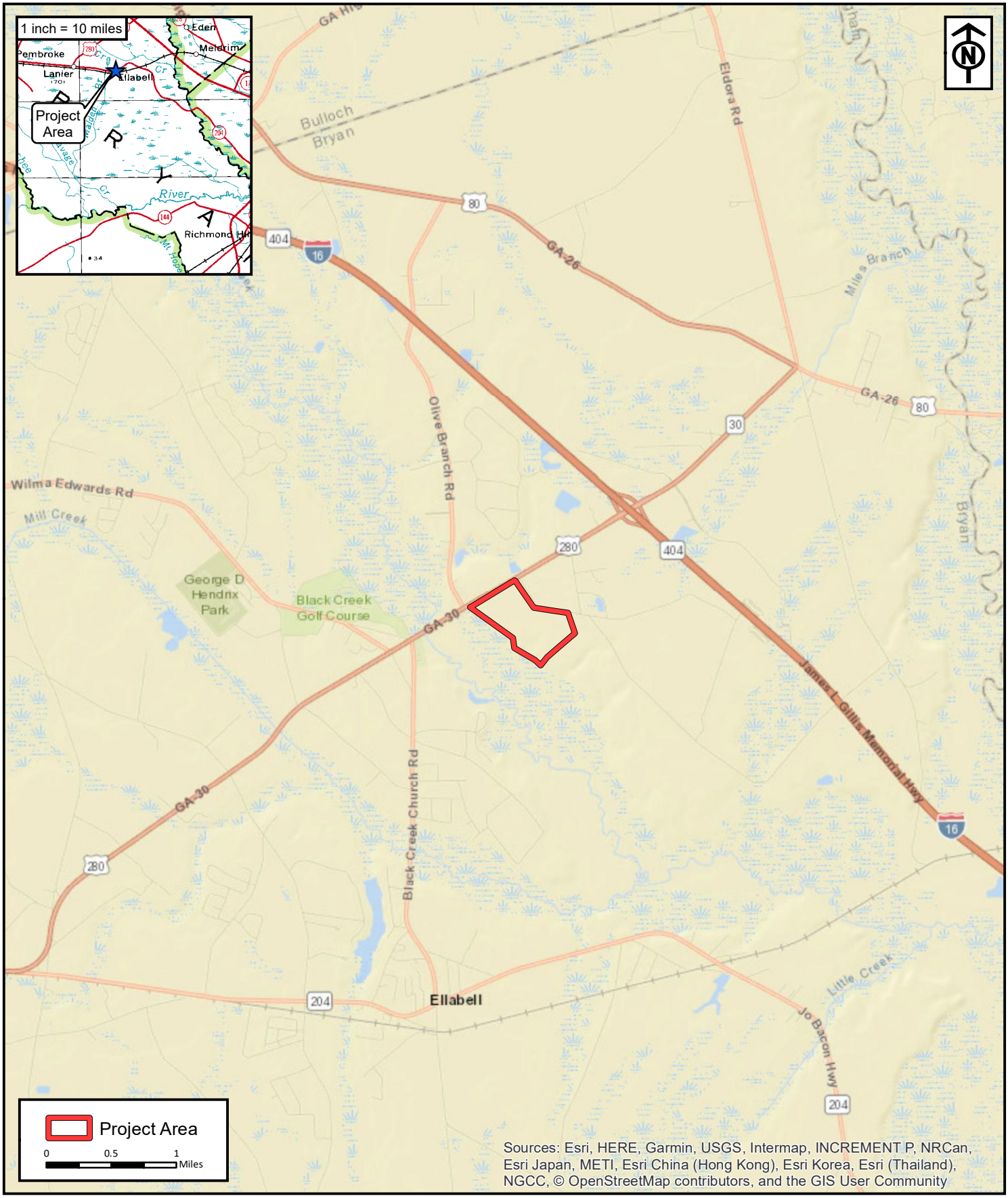
Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 0.39 acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 5 Wetland Exhibit prepared by RLC.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☐ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: 03060202 .
☐ USGS NHD data.
☒ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:Bryan County GA Quad.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Bryan County, GA.
☒ National wetlands inventory map(s). Cite name: Bryan County GA Quad.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: Panel ID:13029C0090D .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):1999 and 2015 aerial Photograph.
or ☐ Other (Name & Date): .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: The subject area contains a depressional isolated wetland. The surrounding soils are sandy and no connections are readily apparent. There are no surface or subsurface hydrologic connections between the non-jurisdictional isolated wetlands and any jurisdictional waters. The perimeter of the isolated wetlands were investigated for the presence of ditches, swales, or other types of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of all isolated wetland.



RLC Project No.:	16-267
Figure No.:	1
Prepared By:	ZM
Sketch Date:	6/4/2018
Map Scale :	1 inch = 1 miles

Drawdy Tract

Bryan County, Georgia

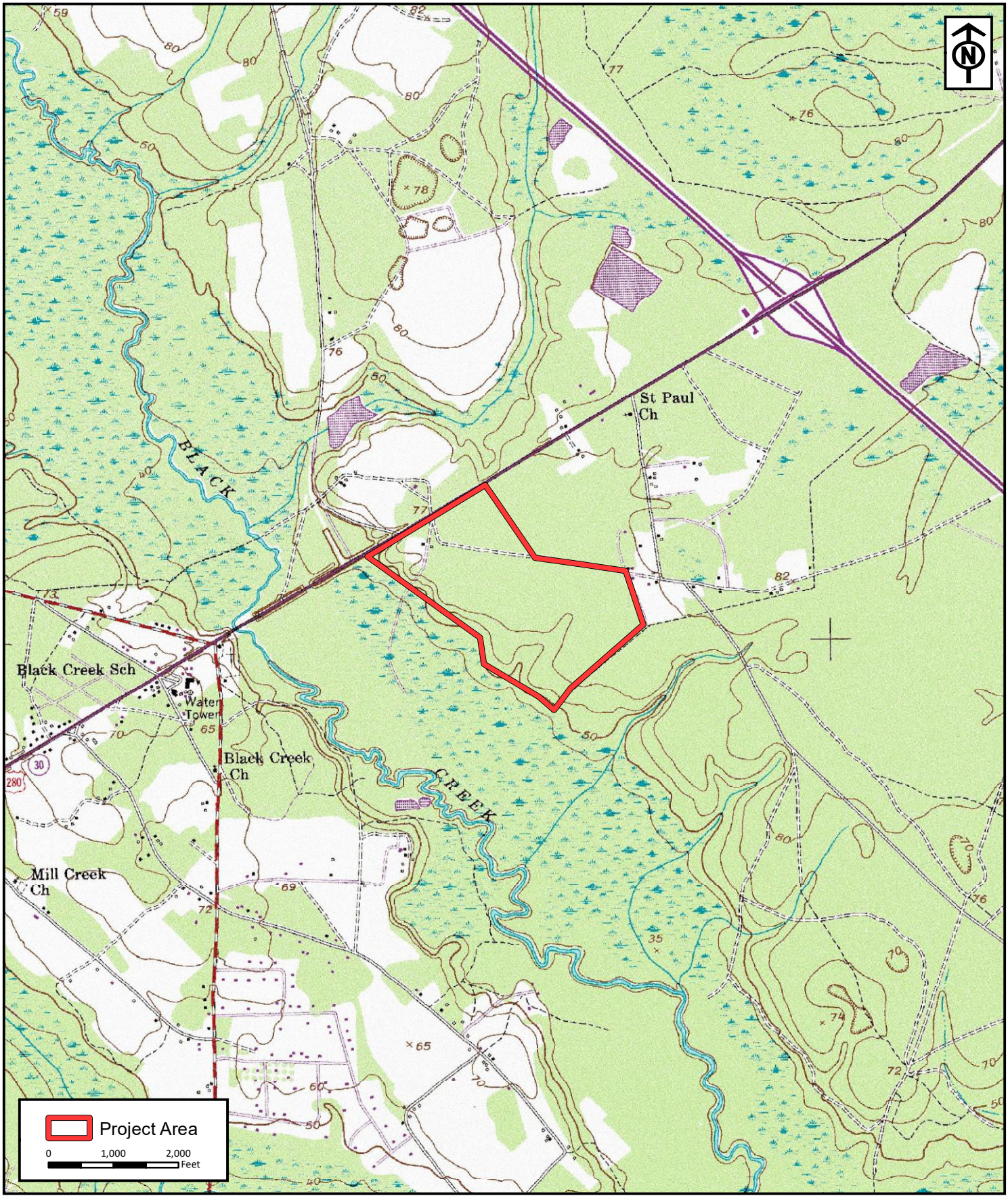
Project Location Map

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5696 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR1_Location.mxd

Source(s): ESRI Basemap, World_Street_Map



RLC Project No.:	16-267
Figure No.:	2
Prepared By:	ZM
Sketch Date:	6/4/2018
Map Scale :	1 inch = 2,000 feet

Drawdy Tract

Bryan County, Georgia

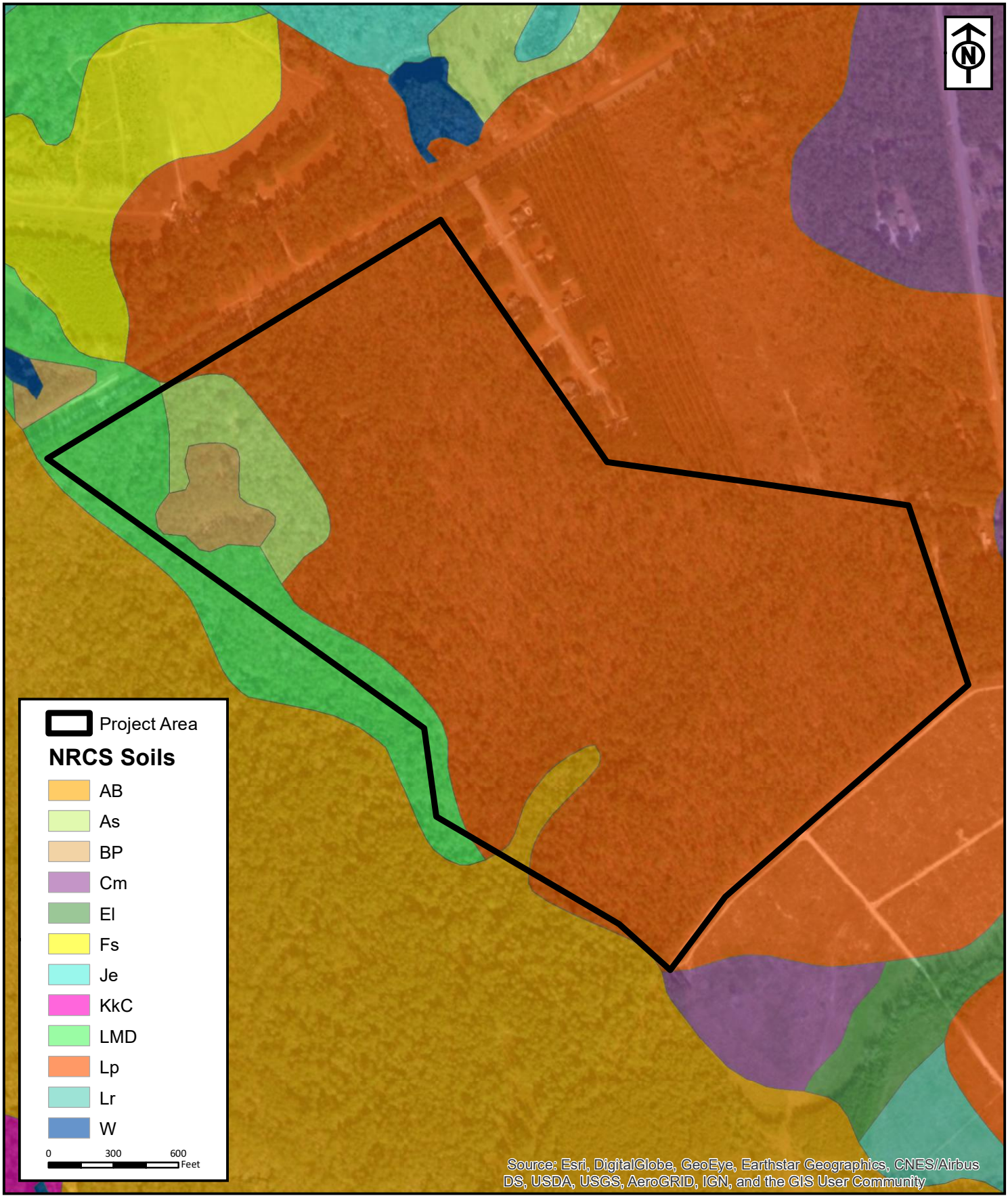
USGS Topographic Map

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR2_Topo.mxd

Source(s): USGS Topographic Survey BryanCounty GA Quadrangle



RLC Project No.:	16-267
Figure No.:	3
Prepared By:	ZM
Sketch Date:	6/4/2018
Map Scale :	1 inch = 600 feet

Drawdy Tract

Bryan County, Georgia

NRCS Soil Map

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR3_Soils.mxd

Source(s): USDA Soil Survey of Bryan County GA; 2015 NAIP Ortho Aerial

RLC Project No.:	16-267
Figure No.:	4
Prepared By:	ZM
Sketch Date:	6/4/2018
Map Scale :	1 inch = 600 feet

Drawdy Tract

Bryan County, Georgia

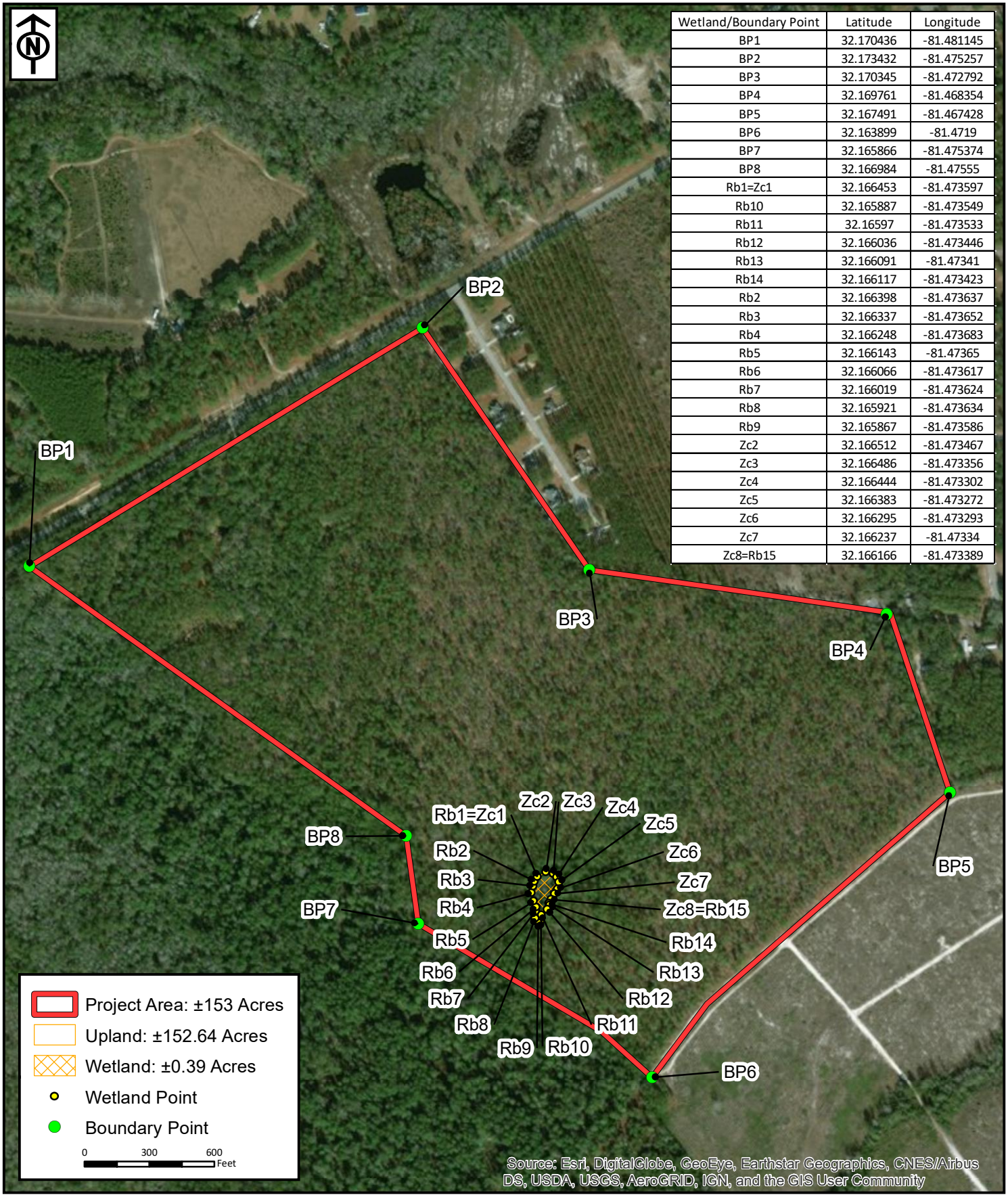
National Wetlands Inventory

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5696 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR4_NWI.mxd

Source(s): USDA Soil Survey of Bryan County GA; 2015 NAIP Ortho Aerial



Wetland/Boundary Point	Latitude	Longitude
BP1	32.170436	-81.481145
BP2	32.173432	-81.475257
BP3	32.170345	-81.472792
BP4	32.169761	-81.468354
BP5	32.167491	-81.467428
BP6	32.163899	-81.4719
BP7	32.165866	-81.475374
BP8	32.166984	-81.47555
Rb1=Zc1	32.166453	-81.473597
Rb10	32.165887	-81.473549
Rb11	32.16597	-81.473533
Rb12	32.166036	-81.473446
Rb13	32.166091	-81.47341
Rb14	32.166117	-81.473423
Rb2	32.166398	-81.473637
Rb3	32.166337	-81.473652
Rb4	32.166248	-81.473683
Rb5	32.166143	-81.47365
Rb6	32.166066	-81.473617
Rb7	32.166019	-81.473624
Rb8	32.165921	-81.473634
Rb9	32.165867	-81.473586
Zc2	32.166512	-81.473467
Zc3	32.166486	-81.473356
Zc4	32.166444	-81.473302
Zc5	32.166383	-81.473272
Zc6	32.166295	-81.473293
Zc7	32.166237	-81.47334
Zc8=Rb15	32.166166	-81.473389

RLC Project No.:	16-267
Figure No.:	5
Prepared By:	ZM
Sketch Date:	6/5/2018
Map Scale :	1 inch = 600 feet

Drawdy Tract

Bryan County, Georgia

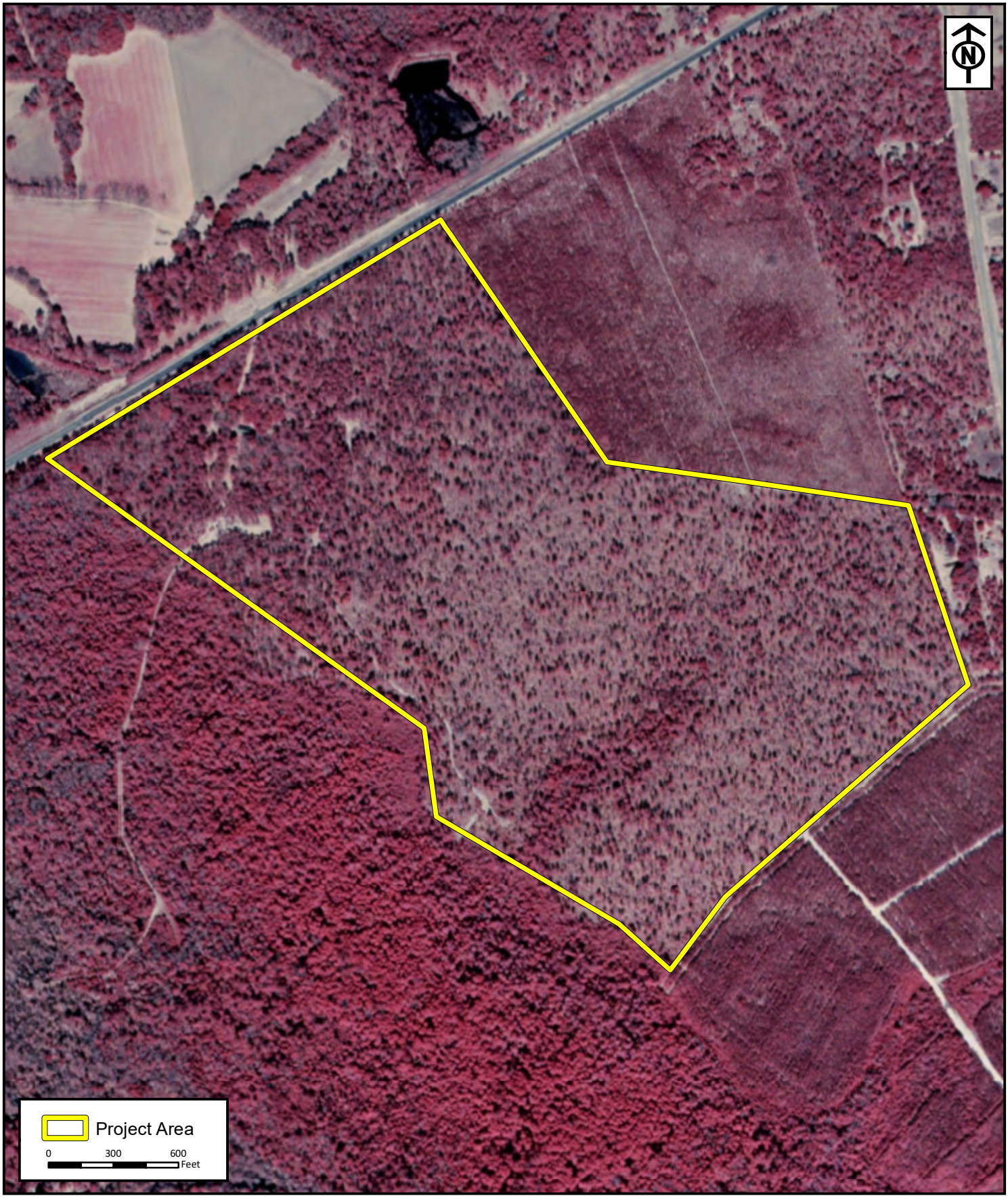
Wetland Exhibit

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5696 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR5_Wetland_Exhibit.mxd

Source(s): 2015 Ortho Aerial



RLC Project No.:	16-267
Figure No.:	6
Prepared By:	ZM
Sketch Date:	6/4/2018
Map Scale :	1 inch = 600 feet

Drawdy Tract

Bryan County, Georgia

1999 Color-Infrared Imagery

Prepared For: Butler Tract, LLC

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5696 www.rlandc.com

Y:\2016 Projects\16-267 Dan Bradley Drawdy Tract\graphics\JDR6_CIR.mxd

Source(s): 1999 Color-Infrared Statewide Imagery of GA

U.S. Army Corps of Engineers
Savannah District, Regulatory Division
Global Positioning Systems (GPS) Datasheet
Delineation of Wetlands, Streams and Other Waters
Within the State of Georgia

USACE File Number

Date of Delineation May 21, 2018

Name of Delineator Present

Resource & Land Consultants; Zach Marsh

Make and Model of GPS Device Used (must be capable of sub-meter accuracy)

EOS Arrow 100

Geographic Coordinate System Used

WGS84

Name of Continually Operated Reference Station Used for Post-processing

SBAS realtime correction

Date Post-processing Performed

May 21, 2018

Percent Dilution of Position (PDOP) (6 or less is required)

1 meter minimum required accuracy

Name and Coordinates of Known Property Corner and/or Monument

n/a

GPS Reading of Known Property Corner and/or Monument

n/a

Frequency of Waypoints Taken During Survey

1 second

Note: GPS data must be provided, if requested. If GPS data and/or GPS delineation is determined unacceptable by the Savannah District, a survey sealed by a surveyor licensed in Georgia will be required.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Drawdy Tract City/County: Bryan Sampling Date: 5/21/18

Applicant/Owner: Butler Tract, LLC State: GA Sampling Point: Upland

Investigator(s): RLC (Zach Marsh & Russell Parr) Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Backslope Local relief (concave, convex, none): CONVEX Slope (%): 0-1

Subregion (LRR or MLRA): LRR T, MLRA 153A Lat: 32.166319 Long: -81.474548 Datum: NAD 83

Soil Map Unit Name: Lakeland NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: Upland

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	40	Yes	FAC
2. *Quercus nigra*	10	No	FAC
3. *Quercus lyrata*	20	Yes	OBL
4. *Magnolia virginiana*	15	No	FACW
5.			
6.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling Stratum (Plot size: 30)			
1. *Quercus nigra*	10	Yes	FAC
2. *Magnolia virginiana*	12	Yes	FACW
3. *Ilex opaca*	15	Yes	FAC
4.			
5.			
6.			
	37	=Total Cover	
50% of total cover: 19		20% of total cover:	8
Shrub Stratum (Plot size: 30)			
1. *Myrica cerifera*	15	Yes	FAC
2. *Ilex glabra*	10	Yes	FACW
3. *Serenoa repens*	10	Yes	FACU
4.			
5.			
6.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Herb Stratum (Plot size: 30)			
1. *Myrica cerifera*	5	Yes	FAC
2. *Pteridium aquilinum*	5	Yes	FACU
3. *Serenoa repens*	8	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	18	=Total Cover	
50% of total cover: 9		20% of total cover:	4
Woody Vine Stratum (Plot size: 30)			
1. *Vitus rotundifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	40					Sandy	60% uncoated sand grains
8-16	10YR 4/1	50					Sandy	50% uncoated sand grains

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Drawdy Tract City/County: Bryan Sampling Date: 5/21/18

Applicant/Owner: Butler Tract, LLC State: GA Sampling Point: Wetland

Investigator(s): RLC (Zach Marsh & Russell Parr) Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2-3

Subregion (LRR or MLRA): LRR T, MLRA 153A Lat: 32.166242 Long: -81.473546 Datum: NAD 83

Soil Map Unit Name: Angelina and Bibb soils NWI classification: PFO3/4B

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- X Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants.

Sampling Point: Wetland

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	10	No	FAC
2. *Quercus nigra*	15	Yes	FAC
3. *Gordonia lasianthus*	20	Yes	OBL
4. *Magnolia virginiana*	15	Yes	FACW
5. *Nyssa biflora*	15	Yes	OBL
6.			
	75	=Total Cover	
50% of total cover: 38		20% of total cover:	15
Sapling Stratum (Plot size: 30)			
1. *Quercus nigra*	10	Yes	FAC
2. *Magnolia virginiana*	5	Yes	FACW
3. *Ilex opaca*	10	Yes	OBL
4.			
5.			
6.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Shrub Stratum (Plot size: 30)			
1. *Myrica cerifera*	15	Yes	FAC
2. *Ilex glabra*	20	Yes	FACW
3.			
4.			
5.			
6.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Herb Stratum (Plot size: 30)			
1. *Woodwardia virginica*	5	Yes	OBL
2. *Woodwardia areolata*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Woody Vine Stratum (Plot size: 30)			
1. *Vitus rotundifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 12 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody Vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	100					Mucky Loam/Clay	
6-18	10YR 6/1	100					Mucky Loam/Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- X 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ? Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

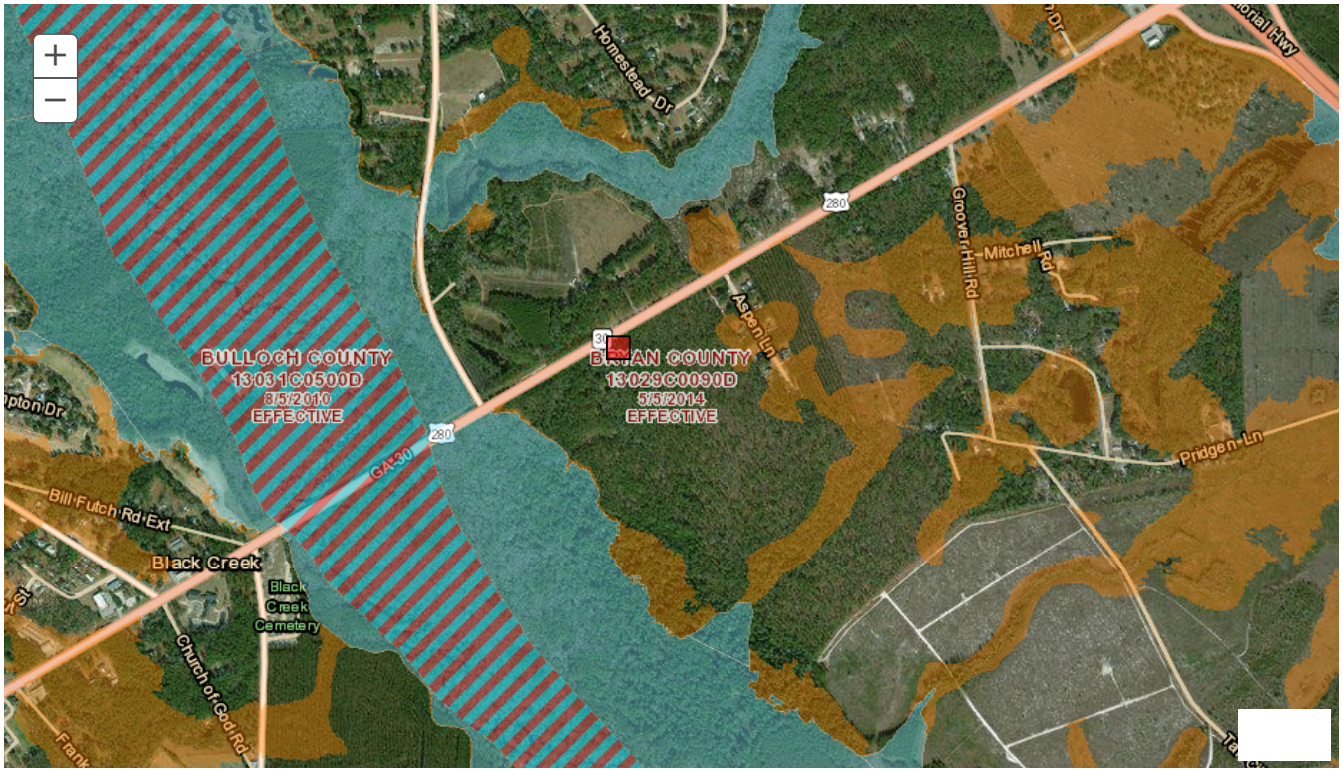
Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

Lat/Long: 32.171910, -81.477862

GEORGIA FLOOD MAP PROGRAM



Low Risk

Current Flood Zone:	X	
*Probability of Flooding: (30-Year Period)	Not Available	Not Available
Base Flood Elevation:	Not Available	Not Available
Lowest Adj Grade:	Not Available	
Preliminary Flood Zone:	Not Available	Not Available
Flood Zone Change Type:	Not Available	

Location Information

Panel:	**13029C0090D**
Watershed:	**Lower Ogeechee**
County:	**BRYAN**
Community ID:	**13029C**
Map Status:	**PRELIMINARY**

* Flood Depths shown on this report are derived from FEMA RiskMAP products and are rounded to the nearest tenth of a foot. These depths are calculated from HEC-RAS modeling and represent the best available data. Only areas within a RiskMAP studied watershed will have this data available. Please check back if your area is not currently available. For more information, please visit the FEMA Map Service Center at https://msc.fema.gov/portal/resources/faq

Nature Doesn't Read Flood Maps

Many people don't understand just how risky the floodplain can be. There is a greater than 26% chance that a non-elevated home in the SFHA will be flooded during a 30-year mortgage period.

The chance that a major fire will occur during the same period is less than 10%!

FOR MORE INFORMATION VISIT, PLEASE VISIT: FloodSmart.gov The official site of the NFIP

Legend with Flood Zone Designations

- Flood Control Structures
- Base Flood Elevations
- Cross Sections
- Coastal Transects
- FIRM Panel Index
- 1% Flood - Floodway (High Risk)
- 1% Flood - Zone AE (High Risk)
- 1% Flood - Zone A, AH, or AO (HighRisk)
- 0.2% Flood - X-Shaded (Moderate Risk)
- Area of Undertermined Flood Hazard
- 1% Flood - Zone VE (HighRisk)
- Area Not Included
- Letters of Map Revision
- Coastal Barrier Resource Area
- Floodway Decrease
- Floodway Increase
- 100-Year Flood Zone Decrease
- 100-Year Flood Zone Increase
- Zone Change

Disclaimer: This data is not to be used to determine any base flood elevations or flood zone designations for NFIP (National Flood Insurance Program) purposes. For NFIP flood insurance and regulation purposes, please refer to the published effective FIRM (Flood Rate Insurance Map) for your area of concern. Values displayed for Current Flood Zone, Preliminary Flood Zone, Flood Zone Change Type, and Probability of Flooding over a 30-year period based on center of dot location, not extent of structure(s).

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

REPLY TO
ATTENTION OF:

MAY 12 2015

Regulatory Division
SAS-2015-00235

Mr. W. Waldo Bradley
Mr. Dan H. Bradley
Butler Tract, LLC
204 Old W Lathrop Avenue
Savannah, Georgia 31415

Dear Gentlemen:

I refer to a letter dated March 26, 2015, submitted on your behalf by Mr. Russell Parr of Resource and Land Consultants, requesting a Jurisdictional Determination (JD) for your 276.8 acre site located in the southeast quadrant of the intersection of Georgia Highway 280 and Interstate 16, bisected by Tar City Road, in Ellabelle, Bryan County, Georgia (Latitude 32.1545, Longitude -81.4582). This project has been assigned number SAS-2015-00235 and it is important that you refer to this number in all communication concerning this matter.

The wetlands "Iso-Wetland 6", "Iso-Wetland 7", and "Iso-Wetland 8", as identified on the exhibit entitled "Wetland Survey, A Portion of Bradley Tract Isolated Wetlands, 1380TH G.M.D., Bryan County, Georgia, Prepared For Savannah Harbor-Interstate 16 Corridor Joint Development Authority, Sheet 1 of 3 through Sheet 3 of 3" dated March 26, 2015, were determined to be isolated, non-jurisdictional, and Department of the Army (DA) authorization, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), is not required for dredge and/or fill activities in these areas. Please note: this approved JD and the approved survey, can be used for the purpose of supporting a future permit application for this project site. I have enclosed a "JD Check Sheet" that summarizes the JD, delineation verification and appeals process.

If you intend to sell property that is part of a project that requires DA authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the

development of this property. If the information you have submitted, and on which the Corps has based its determination is later found to be in error, this decision may be revoked.

A copy of this letter is being provided to the following party: Mr. Russell Parr, Resource and Land Consultants, 41 Park of Commerce Way, Suite 303, Savannah, Georgia 31405.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office.

If you have any questions, please call me at 912-652-5086.

Sincerely,

Shaun Blocker
Project Manager, Coastal Branch

Enclosures

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

REPLY TO
ATTENTION OF:

JURISDICTION DELINEATION CHECK SHEET
CORPS FILE NUMBER: SAS-2015-00235
DATE: May 11, 2015

1. SECTION 1 - PRELIMINARY JURISDICTIONAL DETERMINATIONS

a. JURISDICTIONAL DETERMINATION (JD). A "preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the U.S. Army Corps of Engineers. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within Rivers and Harbors Act (RHA) jurisdiction present.

_____ There may be waters of the United States within Clean Water Act (CWA) jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ Drawings submitted with a Pre-Construction Notification (or other application) depict the approximate location/boundaries of all potentially jurisdictional waters on the project site. The Corps has verified the accuracy of the depicted boundaries of potentially jurisdictional waters in only the immediate vicinity of waters to be impacted. A complete jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

_____ The drawing entitled "_____," dated _____ is an acceptable sketch of the approximate location/boundaries of all the potentially jurisdictional waters in the project area. This sketch can be used for initial real estate planning; projects with temporary impacts to waters; projects involving minor amounts of fill in waters; or work only subject to our jurisdiction pursuant to Section 10 of the RHA of 1899. A complete

jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

c. APPEALS OF PRELIMINARY JDs: The preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. Preliminary JDs are advisory in nature and may not be appealed (See 33 Code of Federal Regulations (CFR) 331.2)." If you are not in agreement with this preliminary JD, then you may request an approved JD for your project site or review area.

2. SECTION - EXPANDED PRELIMINARY JDs:

a. EXPANDED PRELIMINARY JD. An "expanded preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within RHA jurisdiction present.

_____ There may be waters of the United States within CWA jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5-years unless new information warrants revision prior to that date.

c. APPEALS OF PRELIMINARY JDs: The expanded preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. expanded preliminary JDs are advisory in nature and may not be appealed (See 33 CFR. 331.2)." If you are not in agreement with this expanded preliminary JD, then you may request an approved JD for your project site or review area.

3. SECTION 3 - APPROVED JDs: As defined in Regulatory Guidance Letter 08-02, an approved JD is an official Savannah District determination that jurisdictional "waters of the United States" or "navigable waters of the United States," or both, are either present or absent on a particular site. An approved JD precisely identifies the limits of those waters on the project site determined to be jurisdictional under the CWA and/or the RHA.

a. APPROVED JD. An "approved JD" form was completed for the site pursuant to the June 5, 2007, "US Army Corps of Engineers JD Form Instructional Guidebook." The form details whether streams, wetlands and/or other waters present on the site are subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There are navigable waters of the United States within RHA jurisdiction present.

_____ There are waters of the United States within CWA jurisdiction present.

__X__ There are non-jurisdictional waters of the United States located in the project area.

_____ There are no jurisdictional waters of the United States located in the project area.

b. APPROVED DETERMINATION - ISOLATED, NON-JURISDICTIONAL WATERS. If Appendix E of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation

Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of isolated, non-jurisdictional waters located at the project site or within the review area. The completed Appendix E form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This isolated, non-JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

__X__ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

__X__ There are isolated non-jurisdictional waters present that are not subject to CWA jurisdiction. Specifically, wetland(s) "Iso-Wetland 6", "Iso-Wetland 7", and "Iso-Wetland 8", as identified on the exhibit entitled "Wetland Survey, A Portion of Bradley Tract Isolated Wetlands, 1380TH G.M.D., Bryan County, Georgia, Prepared For Savannah Harbor-Interstate 16 Corridor Joint Development Authority, Sheet 1 of 3 through Sheet 3 of 3" dated March 26, 2015, and signed by Registered Land Surveyor Robert K. Morgan, III, Registration Number 3087, is/are isolated, non-jurisdictional wetlands. Department of the Army authorization, pursuant to Section 404 of the Clean Water Act (33 United States Code 1344), is not required for dredge and/or fill activities in these areas.

c. APPROVED DETERMINATION. (other than isolated, non-jurisdictional waters): If Appendix B of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of jurisdictional waters located at the project site or within the review area. The completed Appendix B form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

d. APPEALS FOR APPROVED JDs: You may request an administrative appeal for any approved geographic JD under the Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) Form.

If you request to appeal this/these determination(s) you must submit a completed RFA form to the South Atlantic Division Office at the following address:

U.S. Army Corps of Engineers, South Atlantic Division
Attention: CESAD-PDS-O, Administrative Appeal Review Officer
60 Forsyth Street, Room 10M15
Atlanta, Georgia 30303-8801

In order for a RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR, part 331.5, and that it has been received by the Division Office within 60 days of the date of this form. It is not necessary to submit an RFA form to the Division Office if you do not object to this JD.

4. SECTION 4 - APPLIES TO ALL OF THE ABOVE.

- U.S. DEPARTMENT OF AGRICULTURE (USDA) PROGRAM PARTICIPANTS. This delineation/determination has been conducted to identify the limits of the Corps

CWA jurisdiction for this site. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Attachments:

__X__ Verified Survey of Non-Jurisdictional, Isolated Wetlands

_____ Verified GPS Delineation of Jurisdictional Streams, Wetlands and/or Other Waters

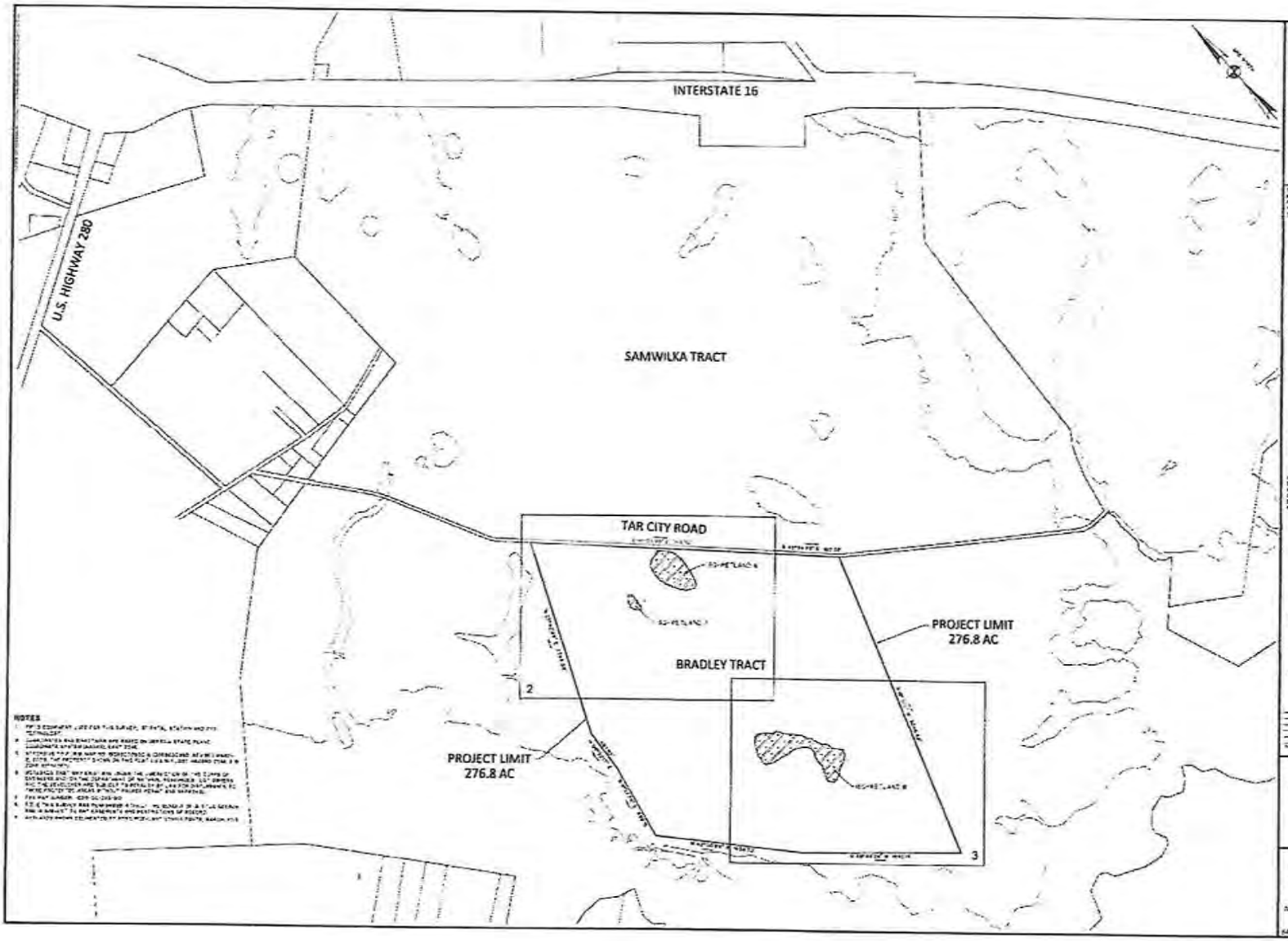
_____ Drawing of Approximate Location of Streams, Wetlands and/or Other Waters

__X__ Approved JD Form(s)

__X__ NAP and RFA Form

Shaun L. Blocker
Project Manager, Coastal Branch

5/12/15
DATE



ACREAGE SCHEDULE

ISOLATED WETLAND 6	3.54 AC.
ISOLATED WETLAND 7	0.38 AC.
ISOLATED WETLAND 8	5.79 AC.
TOTAL WETLANDS	9.71 AC.

WETLAND SURVEY

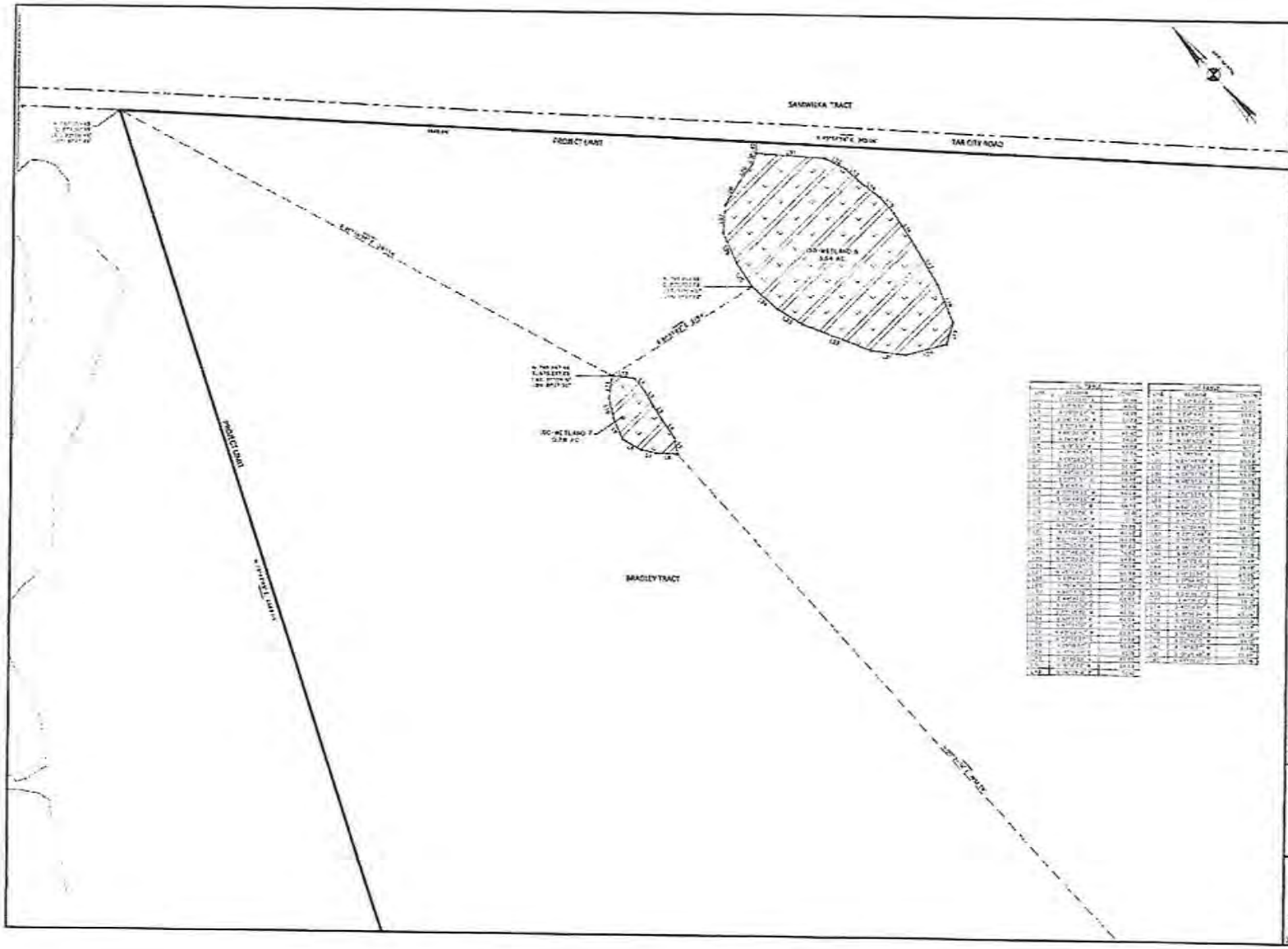
A PORTION OF BRADLEY TRACT ISOLATED WETLANDS

LOCATED IN
EFFINGHAM COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
P 912.234.5300 F 912.234.3950

SHEET 1 OF 3



VICINITY MAP

WETLAND SURVEY

A PORTION OF BRADLEY TRACT ISOLATED WETLANDS

BRYAN COUNTY, GEORGIA

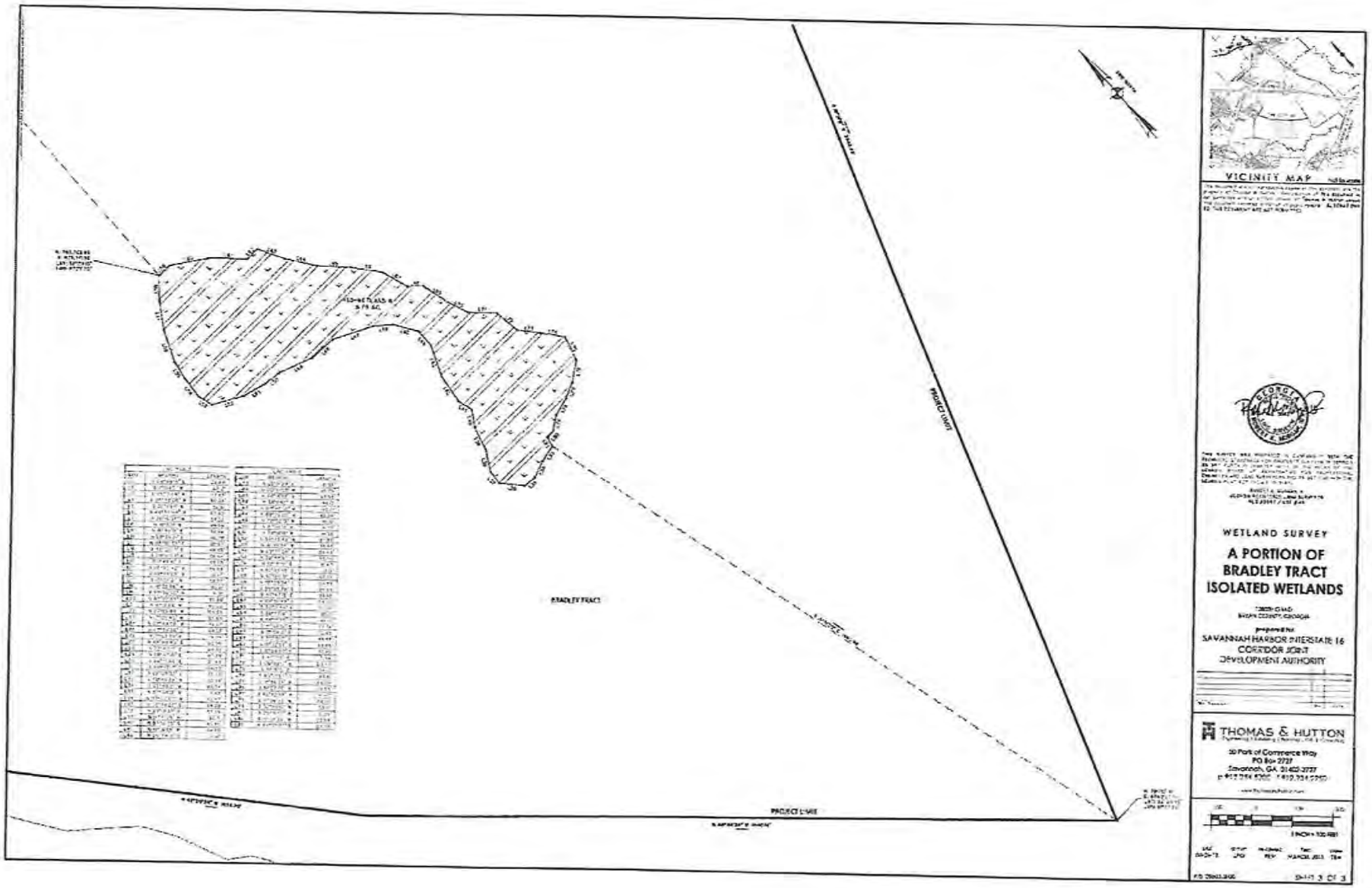
prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 2 OF 3



VICINITY MAP

WETLAND SURVEY

A PORTION OF BRADLEY TRACT ISOLATED WETLANDS

prepared for:
SAVANNAH HARBOR INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON
20 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.354.4626 f 912.354.0300

1 INCH = 100 FEET

SHT 3 OF 3

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Waldo Bradley and Dan H. Bradley – Butler Tract, LLC.	File Number: SAS-2015-00235	Date: May 11, 2015

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. The division engineer must receive this form within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Shaun Blocker U.S. Army Corps of Engineers, Savannah District 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640 912-652-5086	If you only have questions regarding the appeal process you may also contact: Administrative Appeal Review Officer CESAD-PDS-O U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Savannah District; Bradley Tract Isolated Wetlands

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Georgia County/parish/borough: Bryan City: Black Creek
Center coordinates of site (lat/long in degree decimal format): Lat. 32.154345° N, Long. -81.458134° W.
Universal Transverse Mercator:
Name of nearest waterbody: Black Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Black Creek
Name of watershed or Hydrologic Unit Code (HUC): Lower Ogeechee 03060202
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): March 17,2015

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are no *"navigable waters of the U.S."* within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There Are no *"waters of the U.S."* within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: N/A linear feet: N/A width (ft) and/or N/A acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: 1987 Delineation Manual
      Elevation of established OHWM (if known): unknown.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Isolated (Iso) wetlands 6-8 within the Bradley Tract are surrounded completely by uplands and do not contain surface or subsurface connections with jurisdictional waters or wetlands and are therefore isolated non-jurisdictional.**

---

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: **n/a.**

   Summarize rationale supporting determination: n/a.

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": n/a.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: acres
   Drainage area: acres
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through Pick List tributaries before entering TNW.

   Project waters are Pick List river miles from TNW.
   Project waters are Pick List river miles from RPW.
   Project waters are Pick List aerial (straight) miles from TNW.
   Project waters are Pick List aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: no.

   Identify flow route to TNW[5]: .
   Tributary stream order, if known: .

   (b) General Tributary Characteristics (check all that apply):
   Tributary is: ☐ Natural

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: Pick List.

Primary tributary substrate composition (check all that apply):
☐ Silts ☐ Sands ☐ Concrete
☐ Cobbles ☐ Gravel ☐ Muck
☐ Bedrock ☐ Vegetation. Type/% cover:
☐ Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Relatively stable, little bank failure / erosion was noted during the site visit.
Presence of run/riffle/pool complexes. Explain: Weak riffle pool complexes were noted during the site visits.
Tributary geometry: Pick List
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: Pick List
Estimate average number of flow events in review area/year: Pick List
Describe flow regime: seasonal & stormwater flow.
Other information on duration and volume: The stream has esign of bank scouring, and weak riffle pool sequences.

Surface flow is: Pick List. Characteristics: continues bed and bank.

Subsurface flow: Pick List. Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):
☐ clear, natural line impressed on the bank ☐ the presence of litter and debris
☐ changes in the character of soil ☐ destruction of terrestrial vegetation
☐ shelving ☐ the presence of wrack line
☐ vegetation matted down, bent, or absent ☐ sediment sorting
☐ leaf litter disturbed or washed away ☐ scour
☐ sediment deposition ☐ multiple observed or predicted flow events
☐ water staining ☐ abrupt change in plant community
☐ other (list):
☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
☐ High Tide Line indicated by: ☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects ☐ survey to available datum;
☐ fine shell or debris deposits (foreshore) ☐ physical markings;
☐ physical markings/characteristics ☐ vegetation lines/changes in vegetation types.
☐ tidal gauges
☐ other (list):

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:
Identify specific pollutants, if known:

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[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**
- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: Pick List. Explain:

Surface flow is: Pick List

Characteristics:

Subsurface flow: Pick List. Explain findings:

- ☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain:
  - ☐ Ecological connection. Explain:
  - ☐ Separated by berm/barrier. Explain: culverted road crossings separate some features.

(d) Proximity (Relationship) to TNW

Project wetlands are Pick List river miles from TNW.

Project waters are Pick List aerial (straight) miles from TNW.

Flow is from: Pick List.

Estimate approximate location of wetland as within the Pick List floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: water is clear.

Identify specific pollutants, if known: unknown.

(iii) **Biological Characteristics. Wetland supports (check all that apply):**
- ☐ Riparian buffer. Characteristics (type, average width):
- ☐ Vegetation type/percent cover. Explain:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: Pick List

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: n/a.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: N/A.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: N/A.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **n/a** acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]**
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: n/a.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. **NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 9.71 acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. **SUPPORTING DATA. Data reviewed for JD (check all that apply** - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Plat by: Thomas& Hutton Engineering dated 03-26-2015.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: Lower Ogeechee 03060202.
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:1"=3000'; Eden GA Quadrangle.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: 1"=2000' Bryan County, GA.
☒ National wetlands inventory map(s). Cite name:1"=2000' Eden GA Quadrangle.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:FEMA FIRM Map 13031C0500D.
☒ 100-year Floodplain Elevation is:Shaded Zone X(National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):2013 Color Aerial Photograph and 1999 CIR Aerial Photograph.
or ☒ Other (Name & Date):Digital Color Photographs .
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

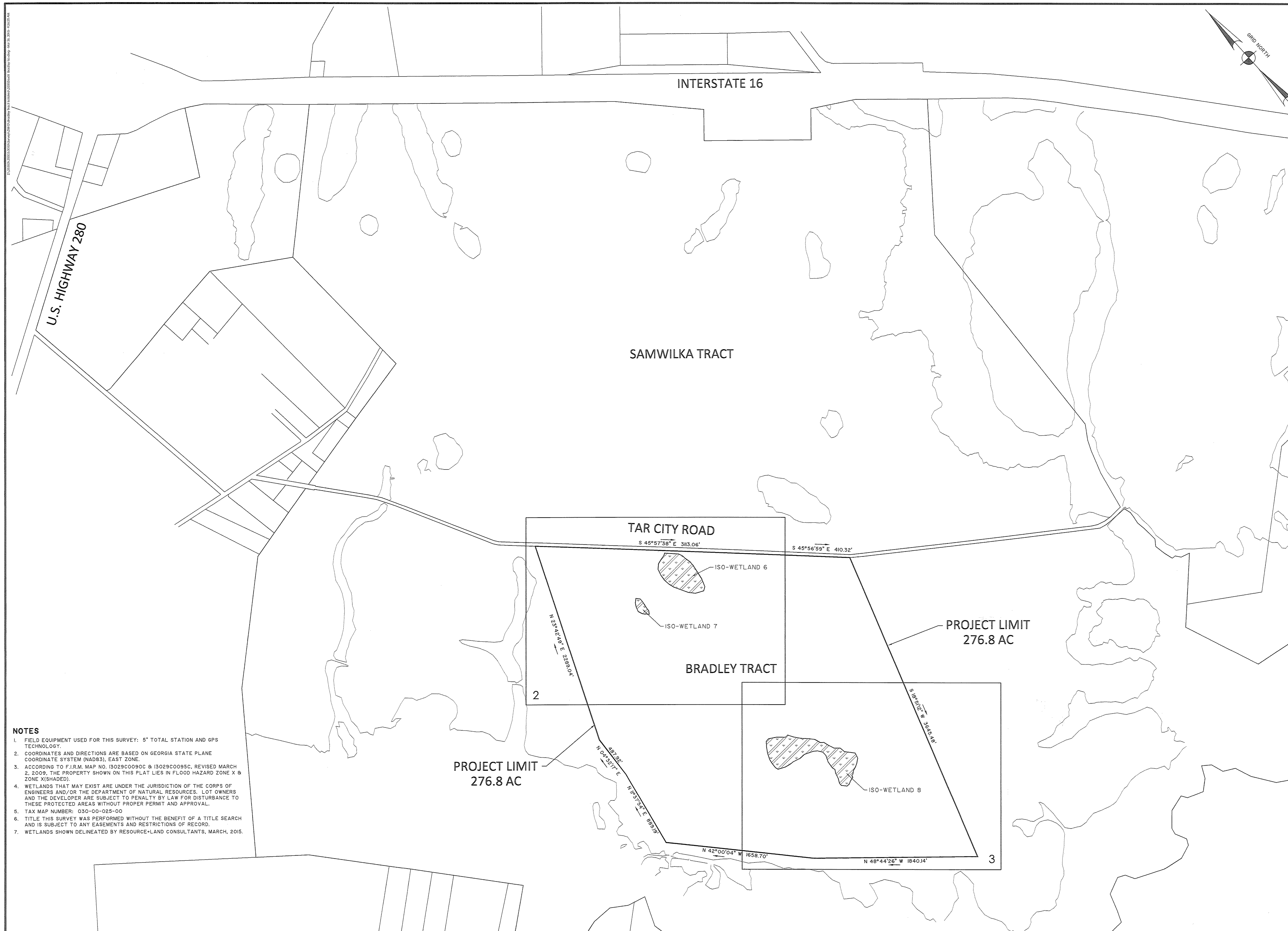
B. **ADDITIONAL COMMENTS TO SUPPORT JD:**
Wetland 6 (3.54 acres): Lat: 32.158339 Long:- 81.456551. There are no surface or subsurface hydrologic connections between the 3.54 acre non-jurisdictional isolated Wetland 6 and other jurisdictional waters. Wetland 6 is not located within the 100-year floodplain, is located

approximately 1,126 linear feet from the nearest jurisdictional water (1,370 from the nearest downhill jurisdictional wetland) and is approximately 0.7 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 6 are greater than 2 feet higher in elevation than the average surface elevation within Wetland 6. Soils within the wetland are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetland 6 are mapped as Chipley fine sand. This soil type is described as being moderately well drained. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 6. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 6 was reviewed in the field on 17 March 2015 with USACE project managers. The perimeter of Wetland 6 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 6. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 6 to other jurisdictional waters of the U.S., it is our opinion that Wetland 6 is an isolated depression within an area managed for silviculture.

Wetland 7 (0.38 acres): Lat: 32.158390 Long:- 81.458412. There are no surface or subsurface hydrologic connections between the 0.38 acre non-jurisdictional isolated Wetland 7 and other jurisdictional waters. Wetland 7 is not located within the 100-year floodplain, is located approximately 1,127 linear feet from the nearest jurisdictional water and is approximately 0.6 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 7 are greater than 1 foot higher in elevation than the average surface elevation within Wetland 7. Soils within the wetland are mapped as Chipley fine sand; however, the soils more closely resemble Ellabelle loamy sand and which are characterized as being poorly drained. The soils in the uplands surrounding Wetland 7 are mapped as Chipley fine sand. This soil type is described as being moderately well drained. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 7. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 7 was reviewed in the field on 19 March 2015. The perimeter of Wetland 7 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 7. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 7 to other jurisdictional waters of the U.S., it is our opinion that Wetland 7 is an isolated depression within an area managed for silviculture.

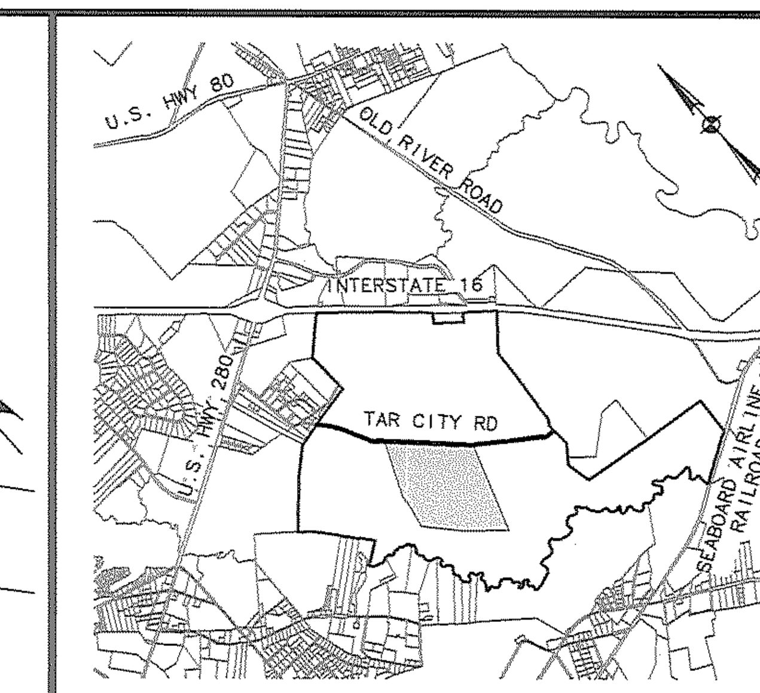
Wetland 8 (5.79 acres): Lat: 32.151500 Long:- 81.457494. There are no surface or subsurface hydrologic connections between the 5.79 acre non-jurisdictional isolated Wetland 8 and other jurisdictional waters. Wetland 8 is not located within the 100-year floodplain, is located approximately 1,137 linear feet from the nearest jurisdictional water and is approximately 0.4 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 8 are greater than 3 feet higher in elevation than the average surface elevation within Wetland 8. Soils within the wetland are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetland 8 are mapped as Lakeland sand. This soil type is described as being excessively drained. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 8. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 8 was reviewed in the field on 17 March 2015 with USACE project managers. The perimeter of Wetland 8 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. It should be noted that the LiDAR data suggests a connection between Iso-Wetland 8 and the wetlands associated with Black Creek; however, no such connection exists and a substantial elevation increase and distance between features is present. Photo 1 contained within this package depicts the topographic differences. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 8. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 8 to other jurisdictional waters of the U.S., it is our opinion that Wetland 8 is an isolated depression within an area managed for silviculture.

Waters Name	Linear Feet	Acreage	Jurisdictional Status	Cowadin Code	Latitude	Longitude	Local Waters	HGM Code	Waters Type
Wetland 6	N/A	3.54	Isolated Wetland	PFOI	32.158339	-81.456551	Black Creek	Depressional	ISOLATE
Wetland 7	N/A	0.38	Isolated Wetland	PSS	32.158390	-81.458412	Black Creek	Depressional	ISOLATE
Wetland 8	N/A	5.79	Isolated Wetland	PEM	32.151500	-81.457494	Black Creek	Depressional	ISOLATE



NOTES

1. FIELD EQUIPMENT USED FOR THIS SURVEY: 5" TOTAL STATION AND GPS TECHNOLOGY.
2. COORDINATES AND DIRECTIONS ARE BASED ON GEORGIA STATE PLANE COORDINATE SYSTEM (NAD83), EAST ZONE.
3. ACCORDING TO F.I.R.M. MAP NO. 13029C0090C & 13029C0095C, REVISED MARCH 2, 2009, THE PROPERTY SHOWN ON THIS PLAT LIES IN FLOOD HAZARD ZONE X & ZONE X(SHADED).
4. WETLANDS THAT MAY EXIST ARE UNDER THE JURISDICTION OF THE CORPS OF ENGINEERS AND/OR THE DEPARTMENT OF NATURAL RESOURCES. LOT OWNERS AND THE DEVELOPER ARE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE PROTECTED AREAS WITHOUT PROPER PERMIT AND APPROVAL.
5. TAX MAP NUMBER: 030-00-025-00
6. TITLE THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE SEARCH AND IS SUBJECT TO ANY EASEMENTS AND RESTRICTIONS OF RECORD.
7. WETLANDS SHOWN DELINEATED BY RESOURCE+LAND CONSULTANTS, MARCH, 2015.



VICINITY MAP not to scale

ACREAGE SCHEDULE

ISOLATED WETLAND 6	3.54 AC.
ISOLATED WETLAND 7	0.38 AC.
ISOLATED WETLAND 8	5.79 AC.
TOTAL WETLANDS	9.71 AC.

GEORGIA REGISTERED No. 3087 LAND SURVEYOR ROBERT K. MORGAN, III

THIS SURVEY WAS PREPARED IN CONFORMITY WITH THE TECHNICAL STANDARDS FOR PROPERTY SURVEYS IN GEORGIA AS SET FORTH IN CHAPTER 180-7 OF THE RULES OF THE GEORGIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND AS SET FORTH IN THE GEORGIA PLAT ACT (O.C.G.A. 15-6-67).

ROBERT K. MORGAN, III
GEORGIA REGISTERED LAND SURVEYOR
RLS #3087 / LSF #145

WETLAND SURVEY

A PORTION OF BRADLEY TRACT ISOLATED WETLANDS

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

No.	Revision	By	Date

THOMAS & HUTTON
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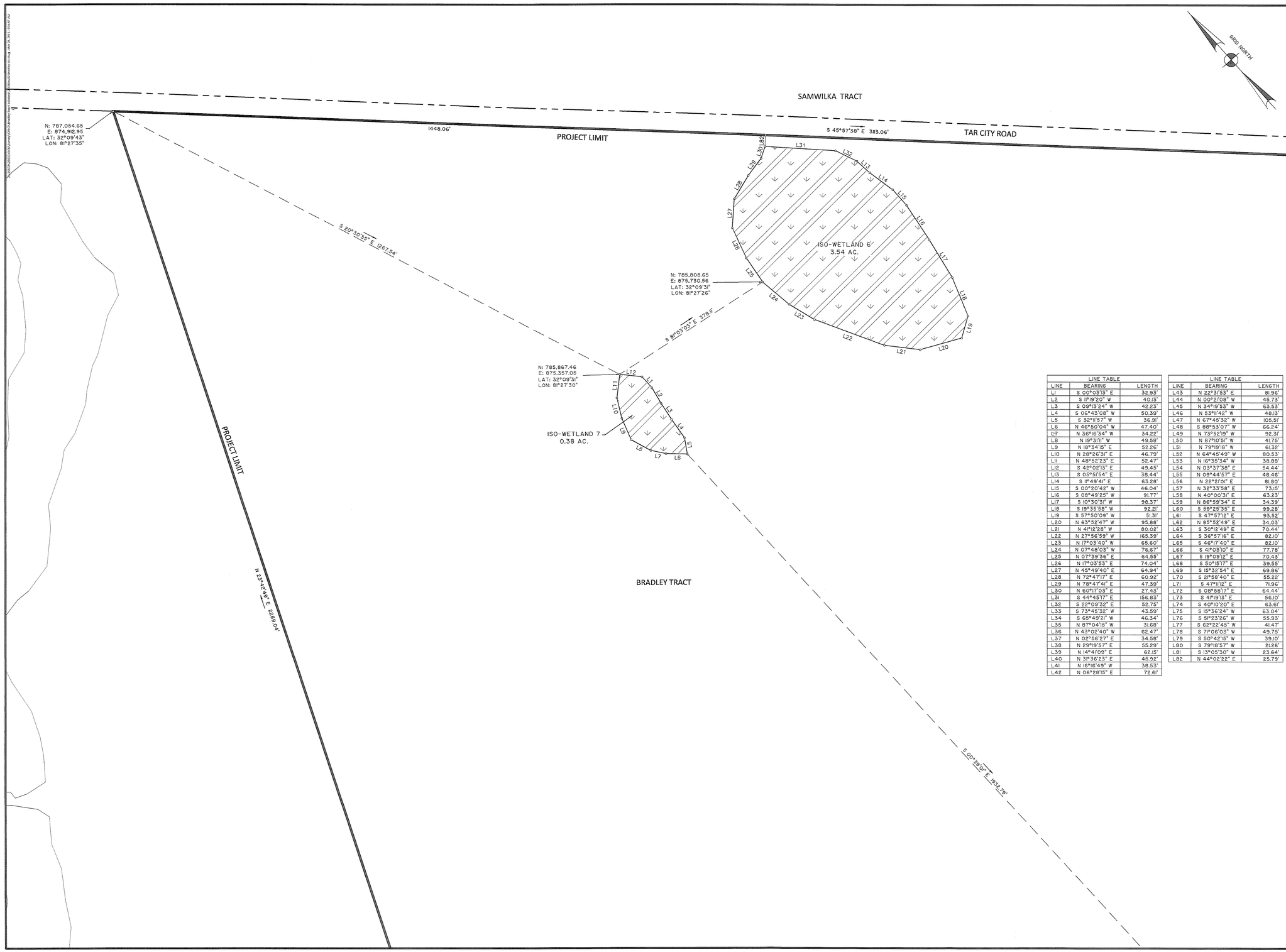
500 0 500 1000
1 INCH = 500 FEET

plat	drawn	reviewed	field	crew
03-26-15	LPO	RKM	MARCH, 2015	T&H

job 25503.0000



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°03'13" E	32.93'
L2	S 11°19'20" W	40.13'
L3	S 09°13'24" W	42.23'
L4	S 06°43'08" W	50.39'
L5	S 32°17'57" W	36.91'
L6	N 46°50'04" W	47.40'
L7	N 36°16'34" W	34.22'
L8	N 19°31'11" W	49.58'
L9	N 18°34'15" E	52.26'
L10	N 28°26'31" E	46.79'
L11	N 48°52'23" E	52.47'
L12	S 42°02'13" E	49.45'
L13	S 05°51'54" E	38.44'
L14	S 11°49'41" E	63.28'
L15	S 00°20'42" W	46.04'
L16	S 08°49'25" W	91.77'
L17	S 10°30'31" W	98.37'
L18	S 19°35'58" W	92.21'
L19	S 57°50'09" W	51.31'
L20	N 63°52'47" W	95.88'
L21	N 41°12'28" W	80.02'
L22	N 27°56'59" W	165.39'
L23	N 17°03'40" W	65.60'
L24	N 07°48'03" W	76.67'
L25	N 07°39'36" E	64.55'
L26	N 17°03'53" E	74.04'
L27	N 45°49'40" E	64.94'
L28	N 72°47'17" E	60.92'
L29	N 78°47'41" E	47.39'
L30	N 60°17'03" E	27.43'
L31	S 44°45'17" E	156.83'
L32	S 22°09'32" E	52.75'
L33	S 73°45'32" W	43.59'
L34	S 65°49'21" W	46.34'
L35	N 87°04'15" W	31.68'
L36	N 43°02'40" W	62.47'
L37	N 02°56'27" E	34.58'
L38	N 29°19'57" E	55.29'
L39	N 14°41'09" E	62.15'
L40	N 31°36'23" E	45.92'
L41	N 16°16'49" W	38.53'
L42	N 06°28'15" E	72.61'

LINE TABLE		
LINE	BEARING	LENGTH
L43	N 22°31'53" E	81.96'
L44	N 00°21'08" W	45.73'
L45	N 34°19'53" W	63.53'
L46	N 53°11'42" W	48.13'
L47	N 67°45'32" W	105.51'
L48	S 88°53'07" W	66.24'
L49	N 73°52'19" W	92.31'
L50	N 87°10'51" W	41.75'
L51	N 79°19'18" W	61.32'
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L53	N 16°35'34" W	38.88'
L54	N 03°37'38" E	54.44'
L55	N 09°44'57" E	48.46'
L56	N 22°21'01" E	81.80'
L57	N 32°33'58" E	73.15'
L58	N 40°00'31" E	63.23'
L59	N 86°59'34" E	34.39'
L60	S 59°25'35" E	99.28'
L61	S 47°57'12" E	93.52'
L62	N 85°52'49" E	34.03'
L63	S 30°12'49" E	70.44'
L64	S 36°57'16" E	82.10'
L65	S 46°17'40" E	82.10'
L66	S 41°03'10" E	77.78'
L67	S 19°09'12" E	70.43'
L68	S 50°15'17" E	39.55'
L69	S 15°32'54" E	69.86'
L70	S 21°58'40" E	55.22'
L71	S 47°11'12" E	71.96'
L72	S 08°58'17" E	64.44'
L73	S 41°18'13" E	56.10'
L74	S 40°10'20" E	63.61'
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L76	S 51°23'26" W	55.93'
L77	S 62°22'45" W	41.47'
L78	S 71°06'03" W	49.75'
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L80	S 79°18'57" W	21.26'
L81	S 13°05'30" W	23.64'
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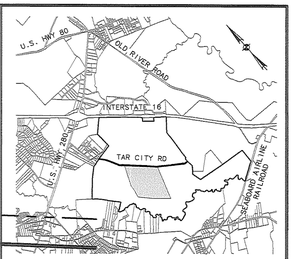


VICINITY MAP not to scale

GEORGIA REGISTERED No. 3087 LAND SURVEYOR ROBERT K. MORGAN, III

THIS SURVEY WAS PREPARED IN CONFORMITY WITH THE TECHNICAL STANDARDS FOR PROPERTY SURVEYS IN GEORGIA AS SET FORTH IN CHAPTER 180-7 OF THE RULES OF THE GEORGIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND AS SET FORTH IN THE GEORGIA PLAT ACT (O.C.G.A. 15-6-67).

ROBERT K. MORGAN, III
GEORGIA REGISTERED LAND SURVEYOR
RLS #3087 / LSF #145

WETLAND SURVEY

A PORTION OF BRADLEY TRACT ISOLATED WETLANDS

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

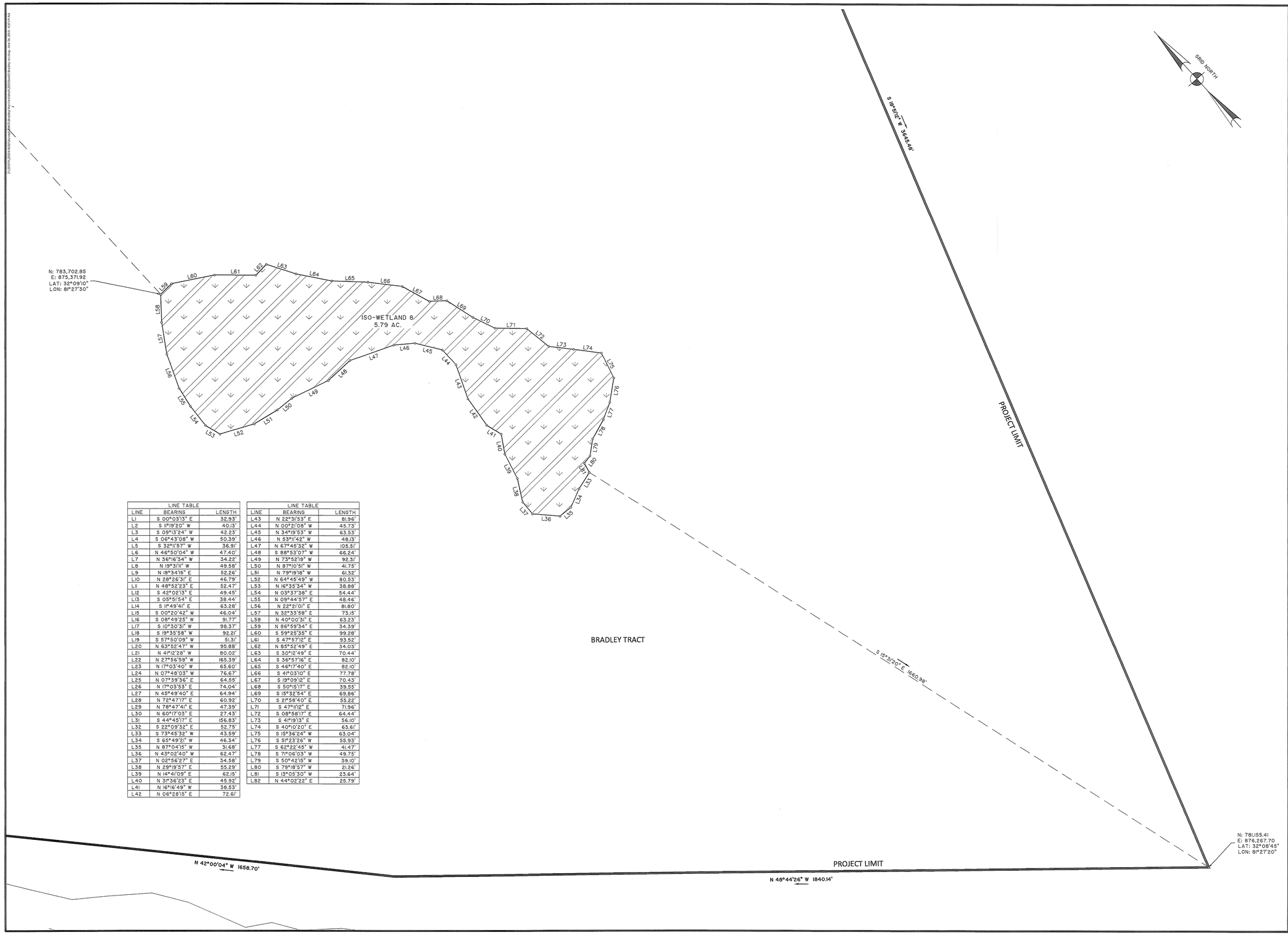
No.	Revision	By	Date

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950
www.thomasandhutton.com

100 0 100 200
1 INCH = 100 FEET

plat	drawn	reviewed	field	crew
03-26-15	LPO	RKM	MARCH, 2015	T&H

job 25503.0000



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°03'13" E	32.93'
L2	S 11°19'20" W	40.13'
L3	S 09°13'24" W	42.23'
L4	S 06°43'08" W	50.39'
L5	S 32°11'57" W	36.91'
L6	N 46°50'04" W	47.40'
L7	N 36°16'34" W	34.22'
L8	N 19°31'11" W	49.58'
L9	N 18°34'15" E	52.26'
L10	N 28°26'31" E	46.79'
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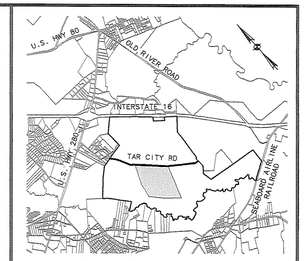

VICINITY MAP not to scale

GEORGIA REGISTERED LAND SURVEYOR ROBERT K. MORGAN, III No. 3087

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ROBERT K. MORGAN, III
GEORGIA REGISTERED LAND SURVEYOR
RLS #3087 / LSF #145

WETLAND SURVEY

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1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

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plat	drawn	reviewed	field	crew
03-26-15	LPO	RKM	MARCH, 2015	T&H

job 25503.0000

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

REPLY TO
ATTENTION OF:

MAY 22 2015

Regulatory Division
SAS-2015-00235

Mr. Hugh "Trip" Tollison
Savannah Harbor - Interstate 16 Corridor Joint Development Authority
131 Hutchinson Island Road, 4th Floor
Savannah, Georgia 31421

Dear Mr. Tollison:

I refer to a letter dated April 10, 2015, submitted on your behalf by Mr. Troy N. Smith of Resource and Land Consultants, requesting a Jurisdictional Determination (JD) for your 1,402.92 acre site located at in the southeast quadrant of the intersection of Georgia Highway 280 and Interstate 16, bisected by Tar City Road, in Ellabelle, Bryan County, Georgia (Latitude 32.1584, Longitude -81.4533). This project has been assigned number SAS-2015-00235 and it is important that you refer to this number in all communication concerning this matter.

By letter dated May 12, 2015, we completed an approved JD for a 276.8 acre project site (i.e., Butler Tract, LLC) verifying 3 isolated wetlands (i.e., "Iso-Wetland 6", "Iso-Wetland 7", and "Iso-Wetland 8") under this same project number SAS-2015-00235. By letter dated May 12, 2015, we also completed an approved JD for a 224.8 acre project site (i.e., Samwilka, Inc.) verifying 5 isolated wetlands (i.e., "Iso-Wetland 1", "Iso-Wetland 2", "Iso-Wetland 3", "Iso-Wetland 4", and "Iso-Wetland 5") under project number SAS-2005-01381. These two areas are identified as excluded on the enclosed survey for this JD request.

We have completed an expanded preliminary JD for the 1,402.92 acre site pursuant to the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." I have enclosed a "JD Check Sheet" that summarizes the JD, delineation verification and appeals process.

The wetlands/other waters on the subject property may be waters of the United States within the jurisdiction of Section 404 of the Clean Water Act (33 United States Code 1344). The placement of dredged or fill material into any waterways and/or their adjacent wetlands or mechanized land clearing of those wetlands would require prior Department of the Army authorization pursuant to Section 404.

If you intend to sell property that is part of a project that requires Department of the Army Authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the development of this property. If the information you have submitted, and on which the U.S. Army Corps of Engineers has based its determination is later found to be in error, this decision may be revoked.

A copy of this letter is being provided to the following party: Mr. Troy N. Smith, Resource and Land Consultants, 41 Park of Commerce Way, Suite 303, Savannah, Georgia 31405.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you have interaction with our office.

If you have any questions, please call me at 912-652-5086.

Sincerely,

Shaun Blocker
Project Manager, Coastal Branch

Enclosures

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

REPLY TO
ATTENTION OF:

JURISDICTION DELINEATION CHECK SHEET
CORPS FILE NUMBER: SAS-2015-00235
DATE: May 21, 2015

1. SECTION 1 - PRELIMINARY JURISDICTIONAL DETERMINATIONS

a. JURISDICTIONAL DETERMINATION (JD). A "preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the U.S. Army Corps of Engineers. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within Rivers and Harbors Act (RHA) jurisdiction present.

_____ There may be waters of the United States within Clean Water Act (CWA) jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ Drawings submitted with a Pre-Construction Notification (or other application) depict the approximate location/boundaries of all potentially jurisdictional waters on the project site. The Corps has verified the accuracy of the depicted boundaries of potentially jurisdictional waters in only the immediate vicinity of waters to be impacted. A complete jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

_____ The drawing entitled "_____," dated _____ is an acceptable sketch of the approximate location/boundaries of all the potentially jurisdictional waters in the project area. This sketch can be used for initial real estate planning; projects with temporary impacts to waters; projects involving minor amounts of fill in waters; or work only subject to our jurisdiction pursuant to Section 10 of the RHA of 1899. A complete

jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

c. APPEALS OF PRELIMINARY JDs: The preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. Preliminary JDs are advisory in nature and may not be appealed (See 33 Code of Federal Regulations (CFR) 331.2)." If you are not in agreement with this preliminary JD, then you may request an approved JD for your project site or review area.

2. SECTION - EXPANDED PRELIMINARY JDs:

a. EXPANDED PRELIMINARY JD. An "expanded preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within RHA jurisdiction present.

__X__ There may be waters of the United States within CWA jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

__X__ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

__X___ The survey entitled "Wetland Survey, Bryan County Mega Site, 1380TH G.M.D., Bryan County, Georgia, Prepared for Savannah Harbor-Interstate 16 Corridor Joint Development Authority, Sheet 1 of 25 through Sheet 25 of 25", dated March 31, 2015, and signed by Registered Land Surveyor Robert K. Morgan, III, Registration Number 3087, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5-years unless new information warrants revision prior to that date.

c. APPEALS OF PRELIMINARY JDs: The expanded preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. expanded preliminary JDs are advisory in nature and may not be appealed (See 33 CFR. 331.2)." If you are not in agreement with this expanded preliminary JD, then you may request an approved JD for your project site or review area.

3. SECTION 3 - APPROVED JDs: As defined in Regulatory Guidance Letter 08-02, an approved JD is an official Savannah District determination that jurisdictional "waters of the United States" or "navigable waters of the United States," or both, are either present or absent on a particular site. An approved JD precisely identifies the limits of those waters on the project site determined to be jurisdictional under the CWA and/or the RHA.

a. APPROVED JD. An "approved JD" form was completed for the site pursuant to the June 5, 2007, "US Army Corps of Engineers JD Form Instructional Guidebook." The form details whether streams, wetlands and/or other waters present on the site are subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There are navigable waters of the United States within RHA jurisdiction present.

_____ There are waters of the United States within CWA jurisdiction present.

_____ There are non-jurisdictional waters of the United States located in the project area.

_____ There are no jurisdictional waters of the United States located in the project area.

b. APPROVED DETERMINATION - ISOLATED, NON-JURISDICTIONAL WATERS. If Appendix E of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of isolated, non-jurisdictional waters located at the project site or within the review area. The completed Appendix E form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This isolated, non-JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ There are isolated non-jurisdictional waters present that are not subject to CWA jurisdiction. Specifically, wetland(s) [letter of wetlands here], as identified on the exhibit entitled "_____" is/are isolated, non-jurisdictional wetlands. Department of the Army authorization, pursuant to Section 404 of the Clean Water Act (33 United States Code 1344), is not required for dredge and/or fill activities in these areas.

c. APPROVED DETERMINATION. (other than isolated, non-jurisdictional waters): If Appendix B of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of jurisdictional waters located at the project site or within the review area. The completed Appendix B form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on

this delineation to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN CORPS FILE NUMBER SAS-2015-00235. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

d. APPEALS FOR APPROVED JDs: You may request an administrative appeal for any approved geographic JD under the Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) Form.

If you request to appeal this/these determination(s) you must submit a completed RFA form to the South Atlantic Division Office at the following address:

U.S. Army Corps of Engineers, South Atlantic Division
Attention: CESAD-PDS-O, Administrative Appeal Review Officer
60 Forsyth Street, Room 10M15
Atlanta, Georgia 30303-8801

In order for a RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR, part 331.5, and that it has been received by the Division Office within 60 days of the date of this form. It is not necessary to submit an RFA form to the Division Office if you do not object to this JD.

4. SECTION 4 - APPLIES TO ALL OF THE ABOVE.

- U.S. DEPARTMENT OF AGRICULTURE (USDA) PROGRAM PARTICIPANTS. This delineation/determination has been conducted to identify the limits of the Corps CWA jurisdiction for this site. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA

programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Attachments:

__X__ Verified Survey of Jurisdictional Streams, Wetlands and/or Other Waters

_____ Verified GPS Delineation of Jurisdictional Streams, Wetlands and/or Other Waters

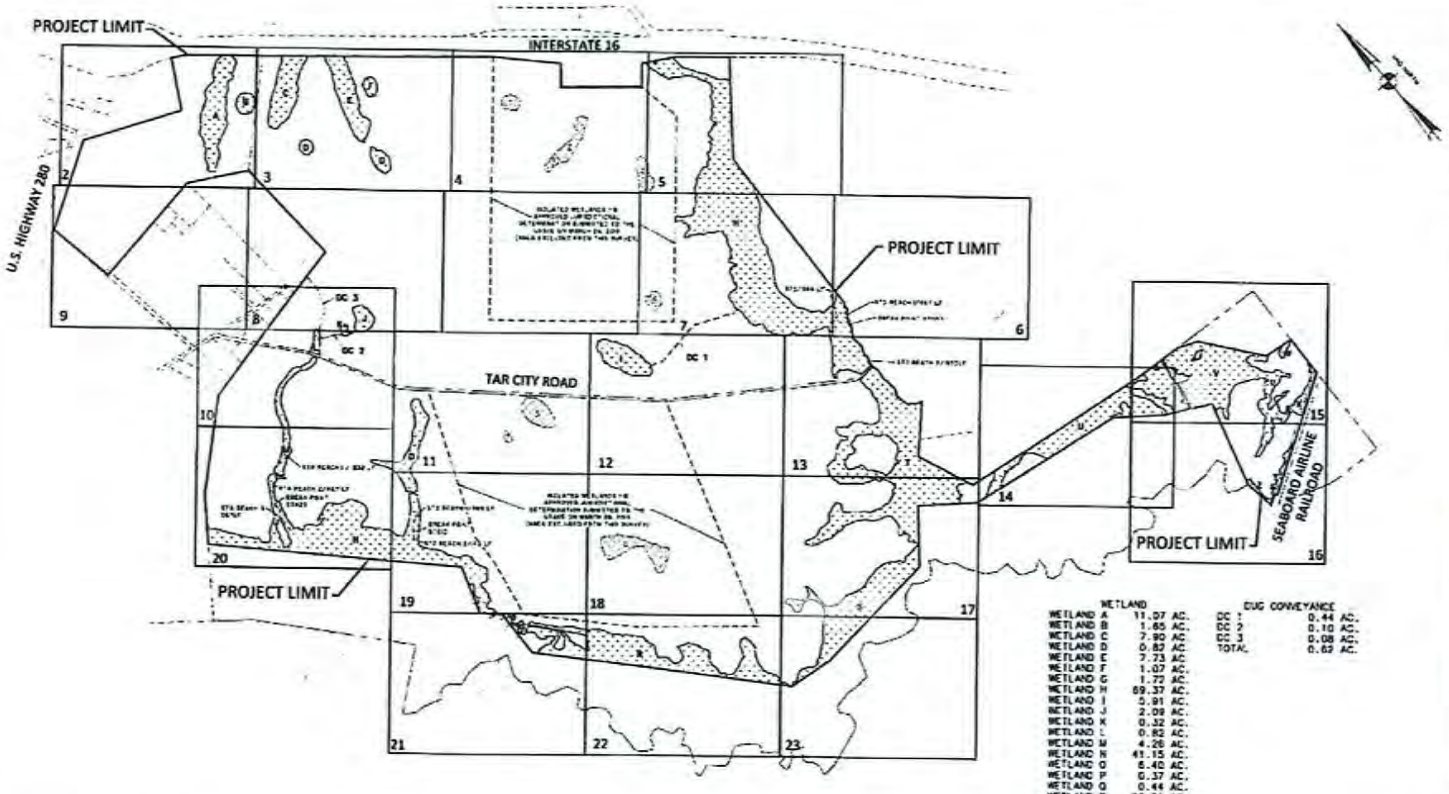
_____ Drawing of Approximate Location of Streams, Wetlands and/or Other Waters

_____ Approved JD Form(s)

__X__ NAP and RFA Form

Shaun Blocker
Project Manager, Coastal Branch

5/21/2015
DATE



WETLAND		DUG CONVEYANCE	
WETLAND A	11.07 AC.	DC 1	0.44 AC.
WETLAND B	1.65 AC.	DC 2	0.10 AC.
WETLAND C	7.90 AC.	DC 3	0.08 AC.
WETLAND D	0.82 AC.	TOTAL	0.62 AC.
WETLAND E	7.73 AC.		
WETLAND F	1.07 AC.		
WETLAND G	1.72 AC.		
WETLAND H	69.37 AC.		
WETLAND I	5.91 AC.		
WETLAND J	2.09 AC.		
WETLAND K	0.32 AC.		
WETLAND L	0.82 AC.		
WETLAND M	4.26 AC.		
WETLAND N	41.15 AC.		
WETLAND O	6.40 AC.		
WETLAND P	0.37 AC.		
WETLAND Q	0.44 AC.		
WETLAND R	28.51 AC.		
WETLAND S	21.59 AC.		
WETLAND T	45.76 AC.		
WETLAND U	22.03 AC.		
WETLAND V	38.31 AC.		
WETLAND W	0.47 AC.		
WETLAND X	1.88 AC.		
WETLAND Y	1.16 AC.		
WETLAND Z	0.59 AC.		
*OTAL	309.39 AC.		

TOTAL ACREAGE

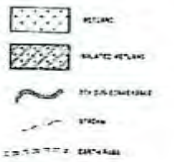
UPLAND	1092.91 ACRES
WETLAND	309.39 ACRES
DUG CONVEYANCES	0.62 ACRES
*OTALS	1402.92 ACRES

STREAM DESIGNATION

EPHEMERAL		INTERMITTENT		PERENNIAL	
STA REACH 3	557 LF	STA REACH 1	832 LF	STD REACH 2	1830 LF
STC REACH 2	149 LF	STA REACH 2	467 LF		
STE	344 LF	STC REACH 1	399 LF		
		STD REACH 1	457 LF		

NOTES

WETLANDS



WETLAND SURVEY

BRYAN COUNTY MEGA SITE

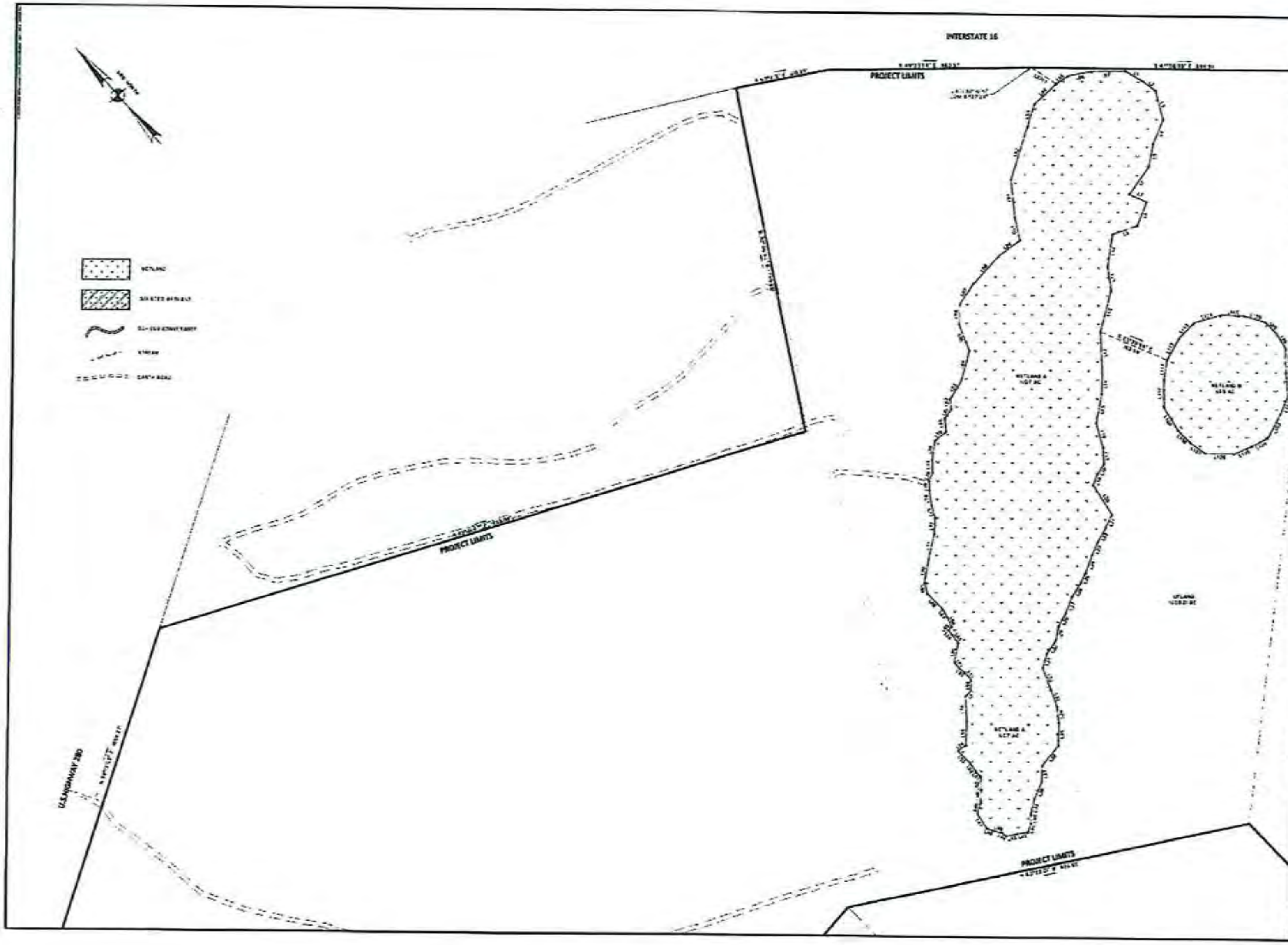
prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 800 FEET

SHEET 1 OF 25



VICINITY MAP

NOT TO SCALE

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

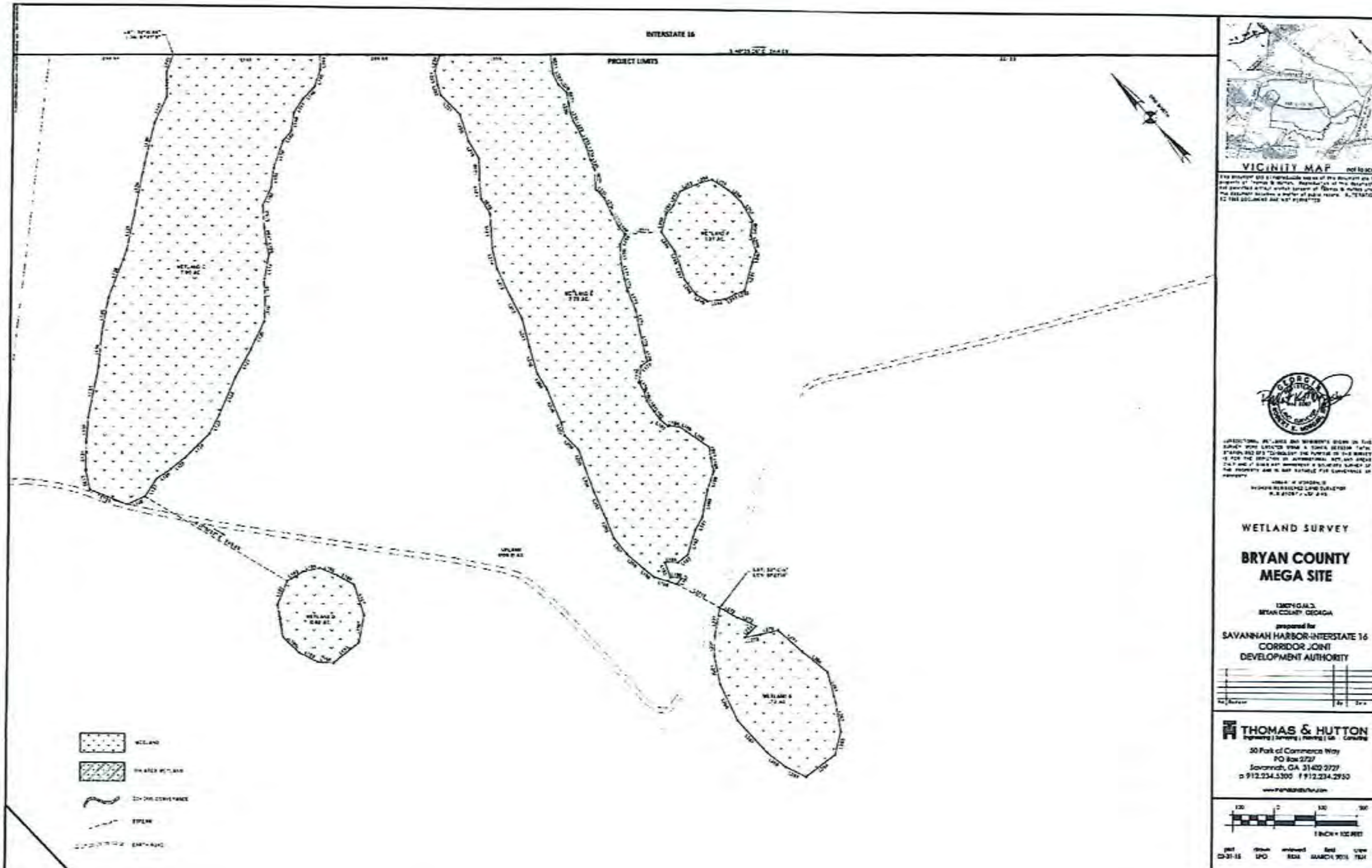
THOMAS & HUTTON

50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

MARCH, 2015

SHEET 2 OF 25



WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON

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PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

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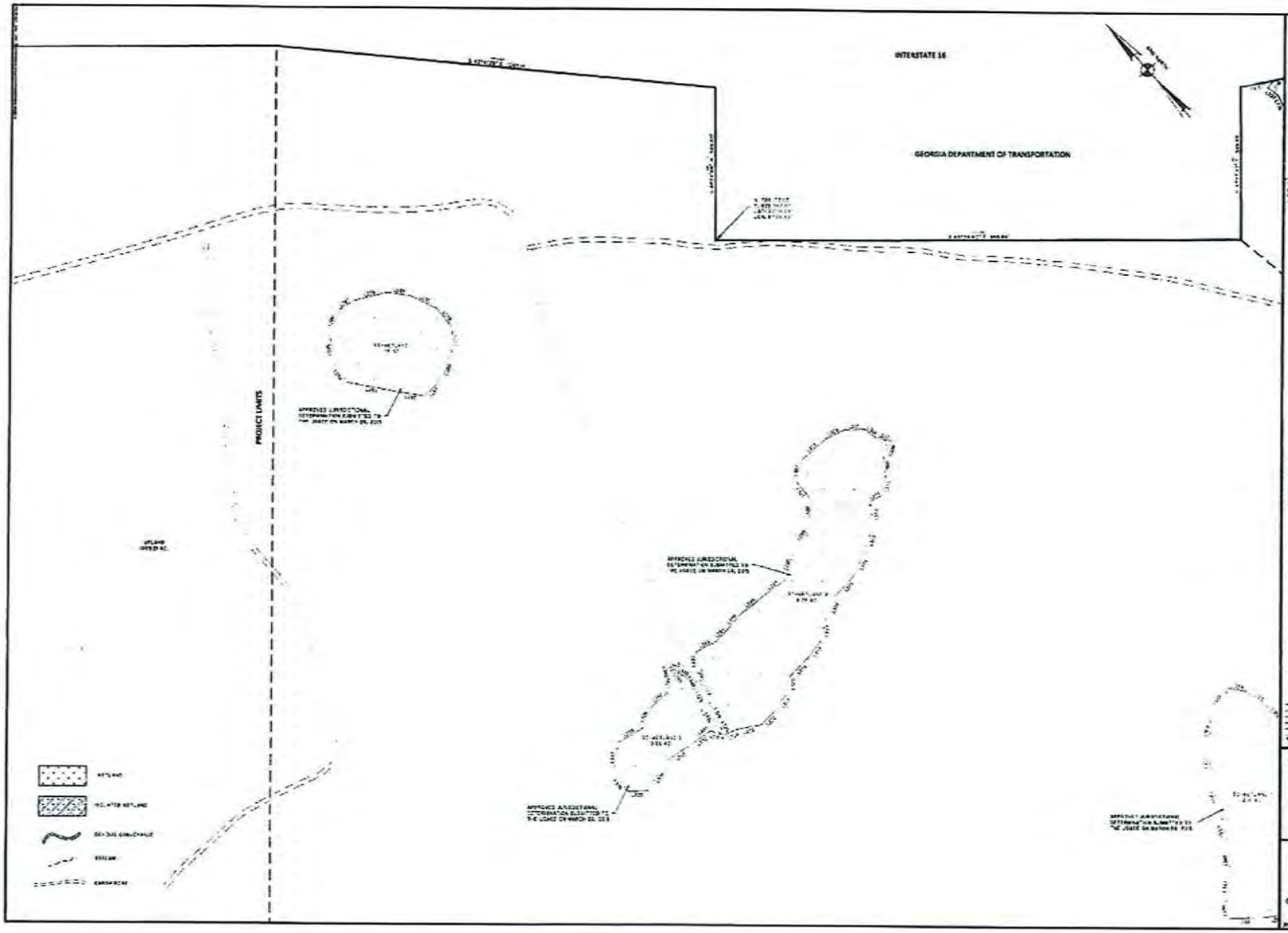
03-31-15	LPO		MARCH 2015	

SHEET 3 OF 25



VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

338TH G.M.D.
BRYAN COUNTY, GEORGIA

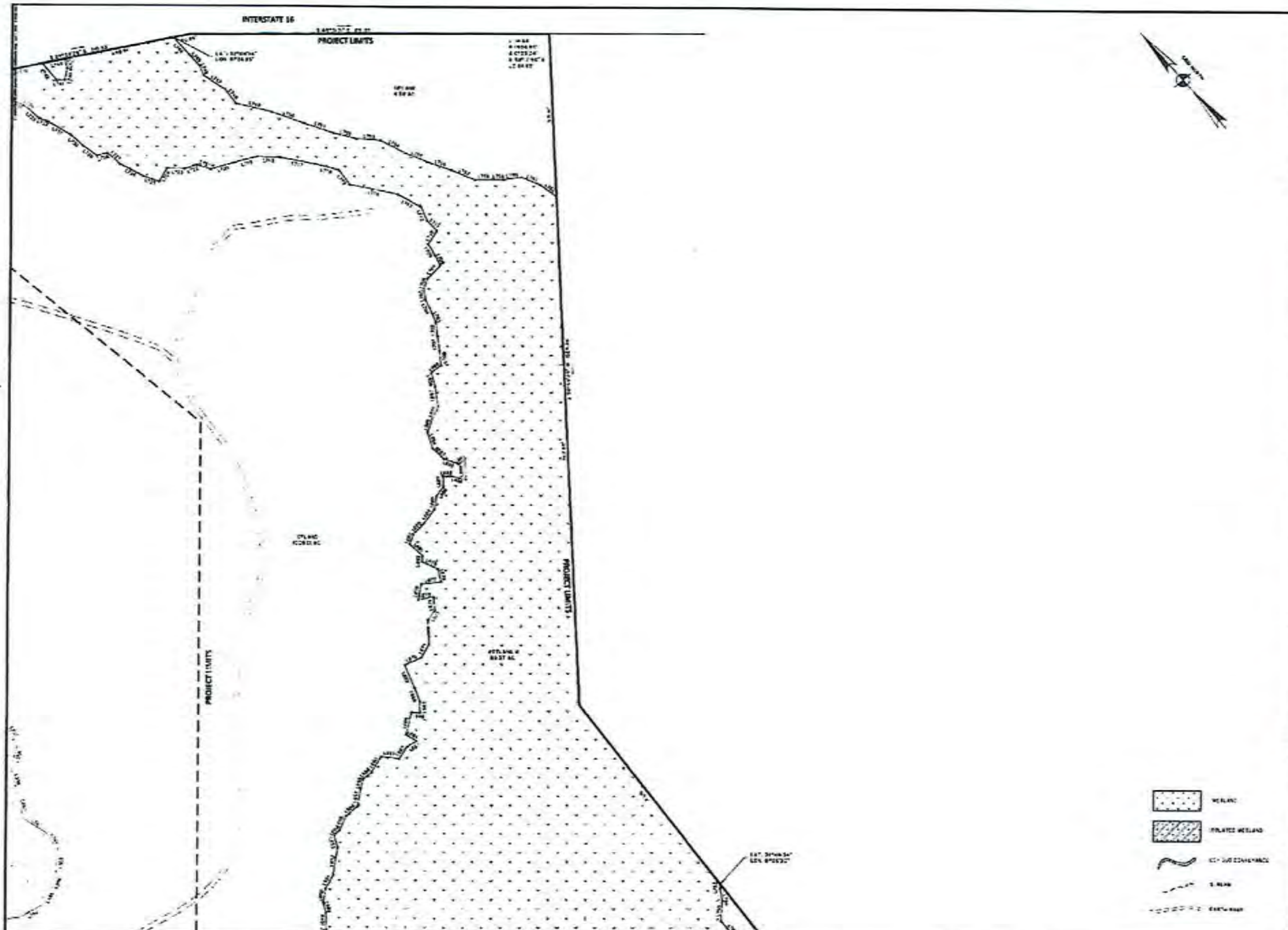
prepared for
SAVANNAH HARBOR INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

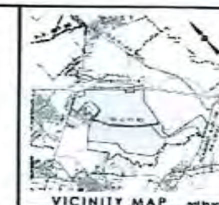
THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950
www.thomasandhutton.com

1 INCH = 100 FEET

plot	drawn	reviewed	date	chief
03.27.15	LPO	BEM	MARCH 2015	BEM

job 36403-0010





VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY
MEGA SITE

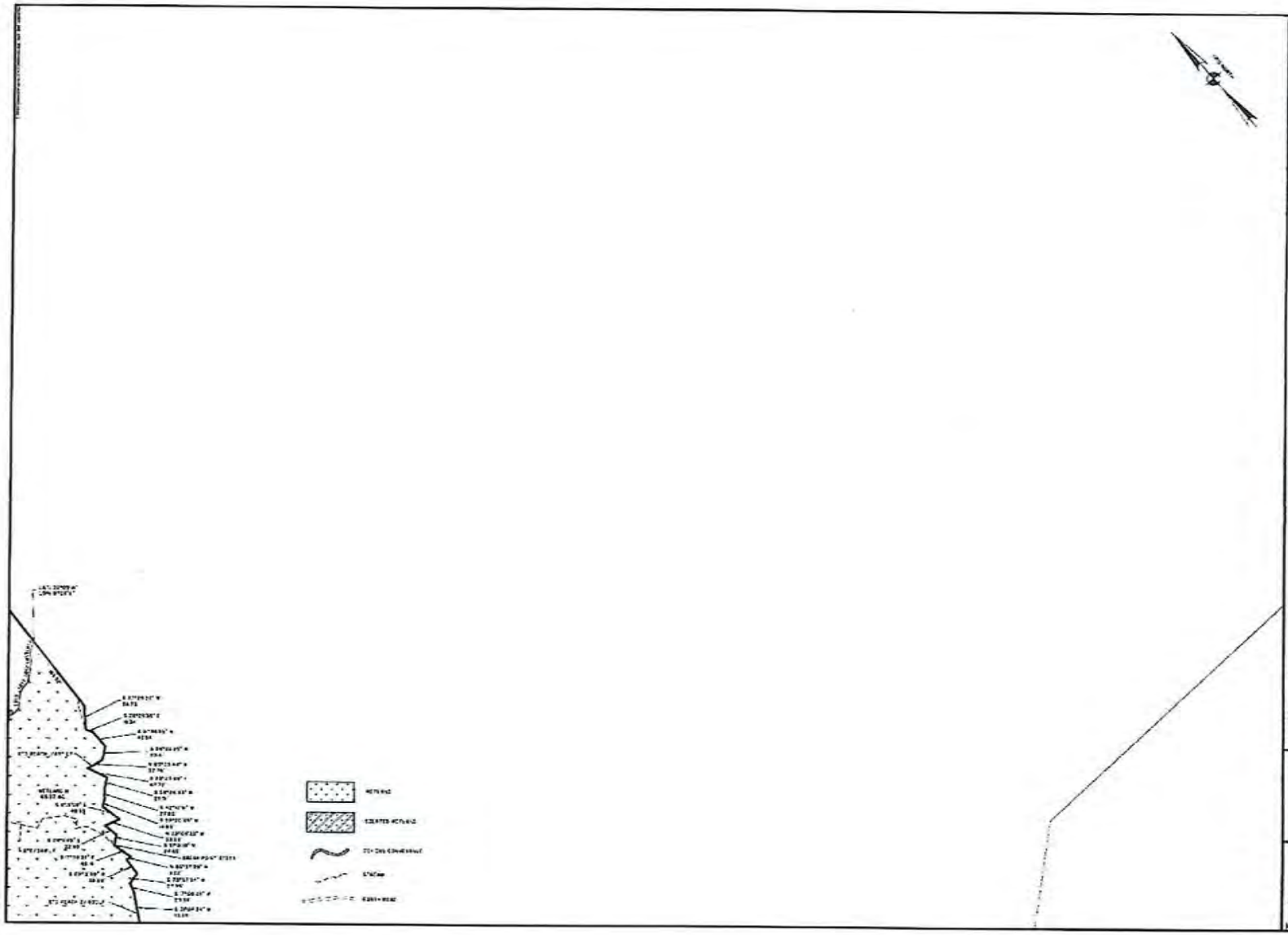
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 5 OF 25



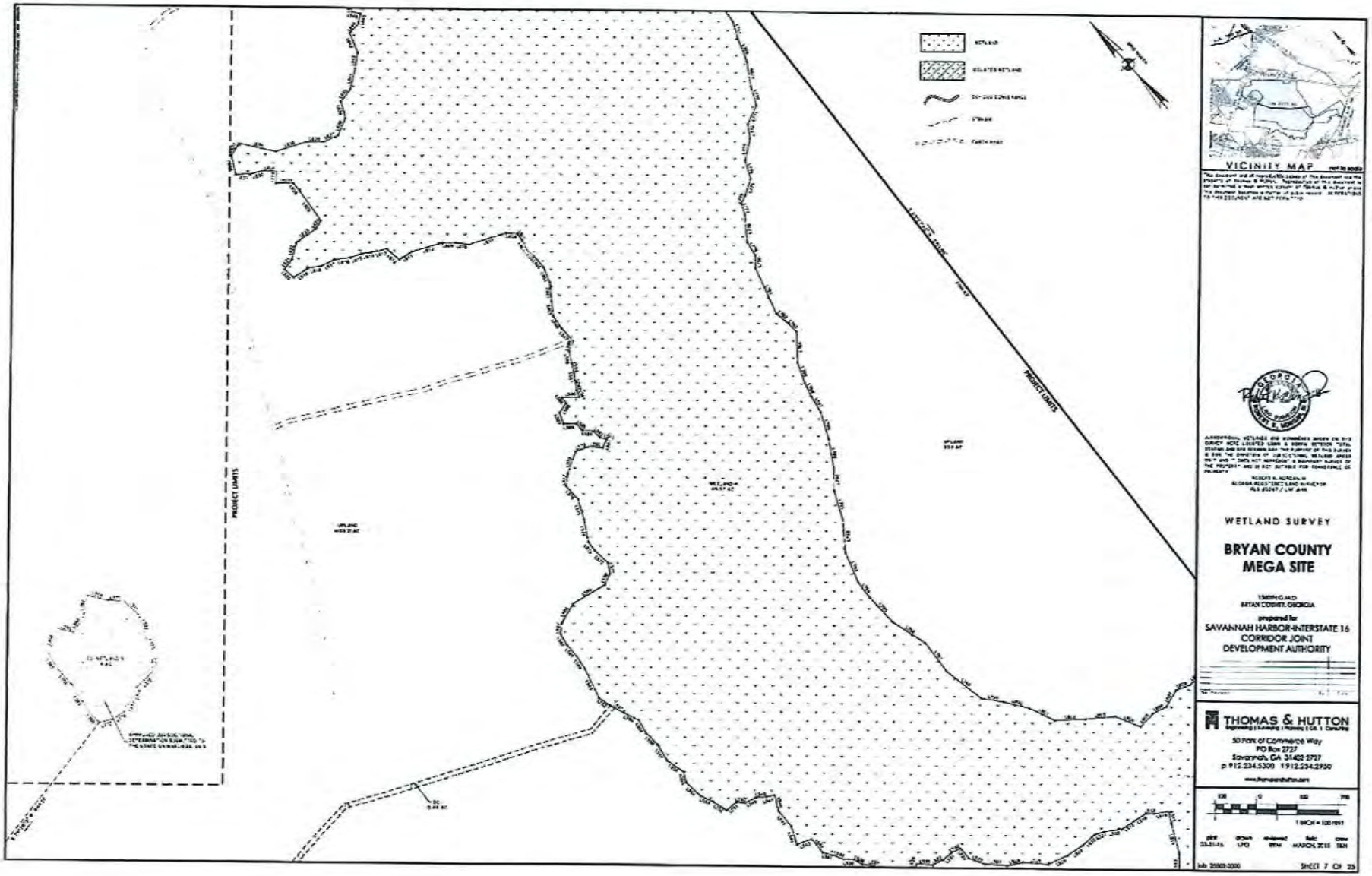
VICINITY MAP

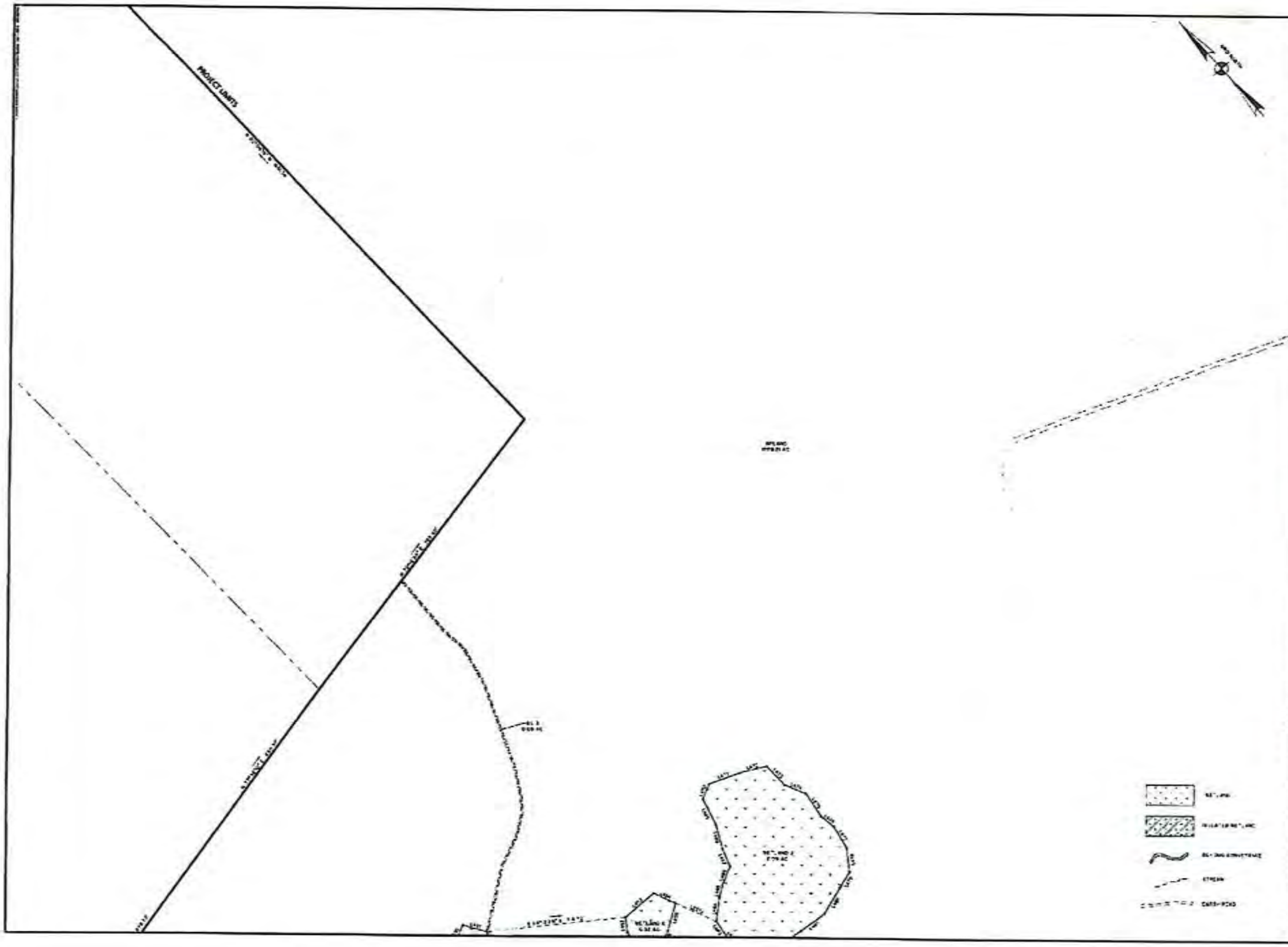
WETLAND SURVEY

BRYAN COUNTY MEGA SITE

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
30 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950


PROJECT LIMITS
PROJECT LIMITS
VICINITY MAP
WETLAND SURVEY
BRYAN COUNTY
MEGA SITE
prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY
THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950
1 INCH = 100 FEET
SHEET 7 OF 23



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

1380th G.M.D.
BRYAN COUNTY, GEORGIA

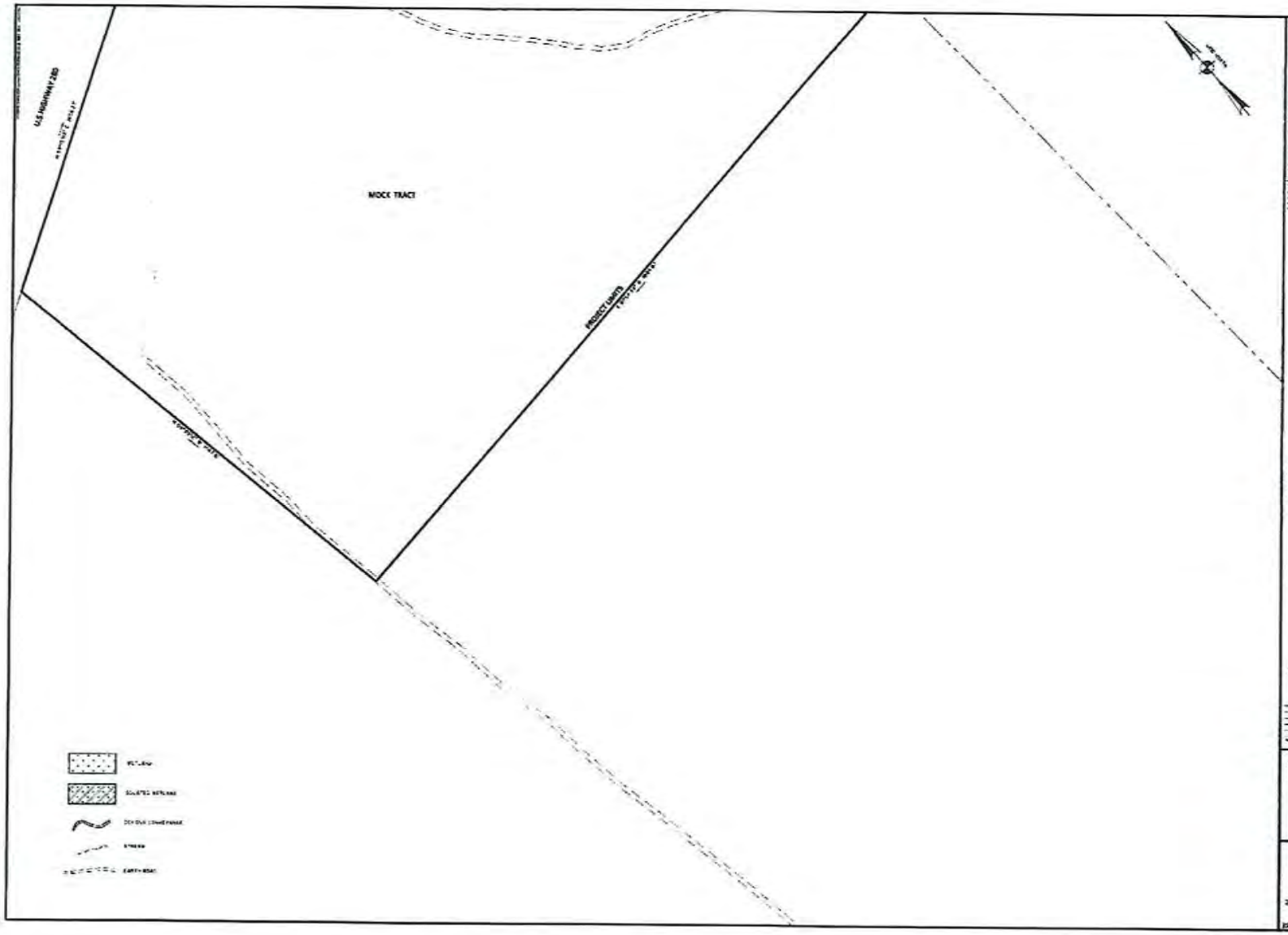
prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

date: MARCH 2013

Job 22803.0000 SHEET 8 OF 25



VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

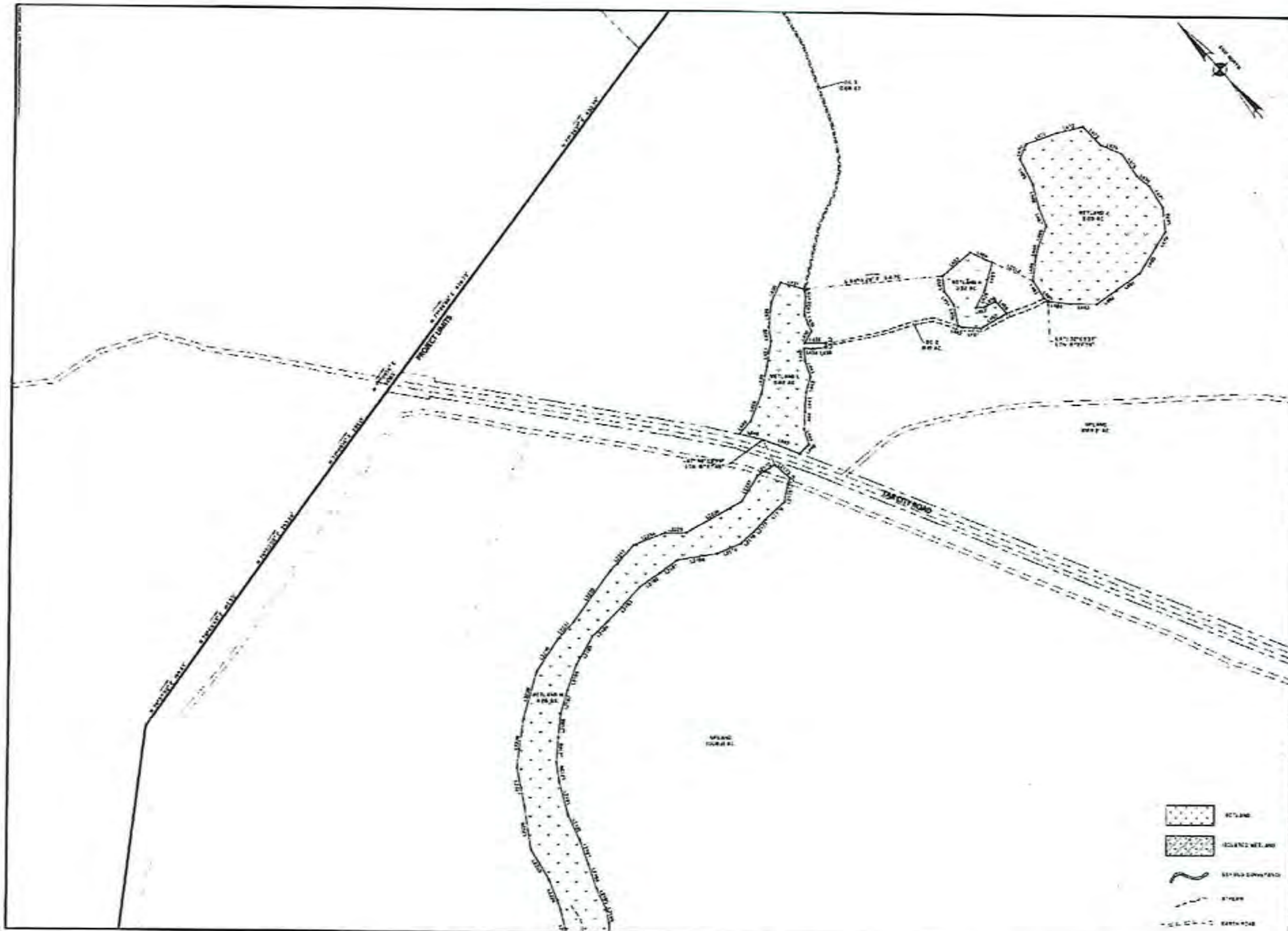
13000 G.M.D.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2930

1 INCH = 100 FEET

SHEET 9 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY
MEGA SITE

1300TH G.M.D.
BRYAN COUNTY, GEORGIA

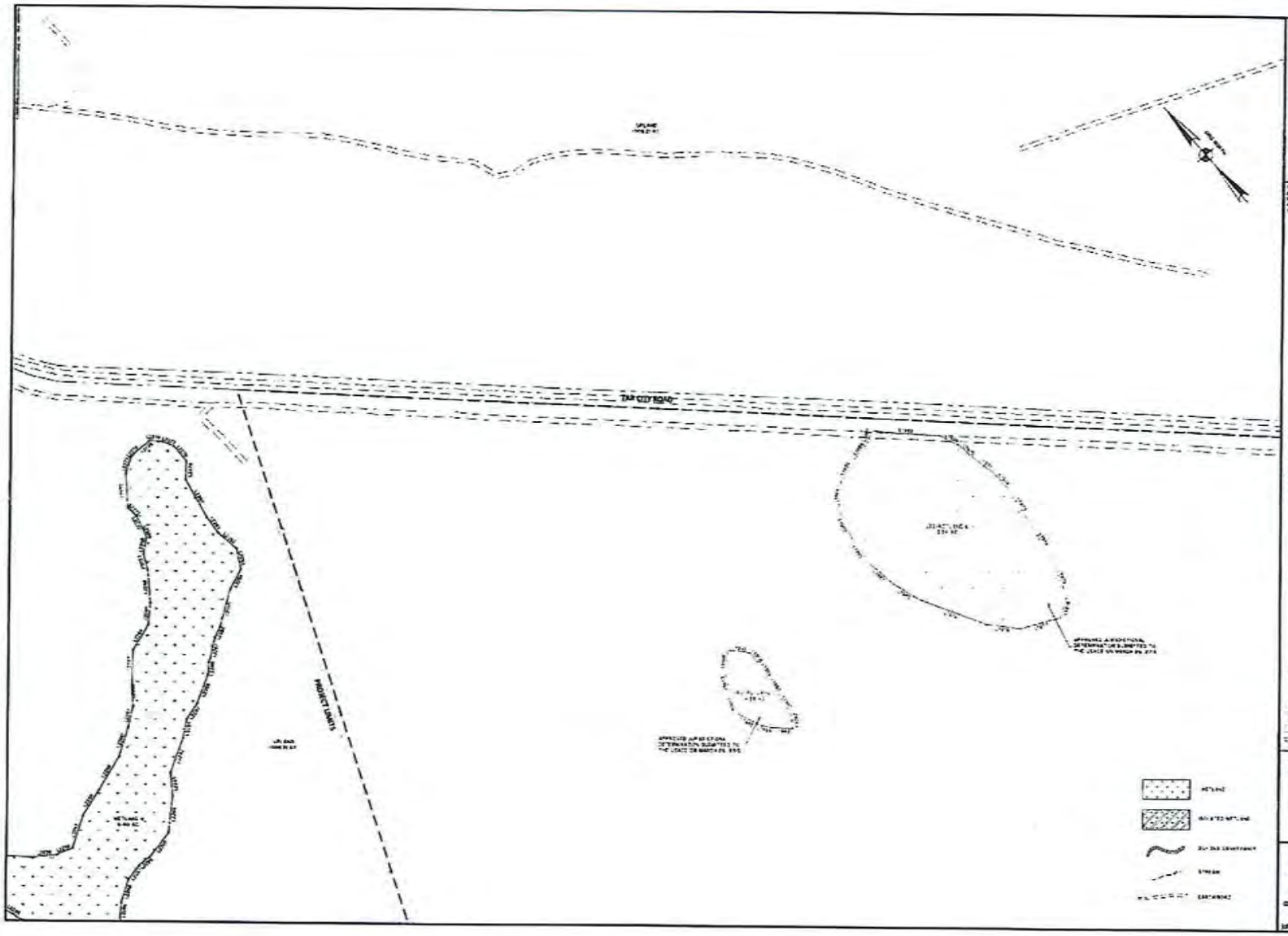
prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

date	drawn	reviewed	field	crew
23-01-15	LPO	RCM	MARCH 2015	TEP

SHEET 10 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
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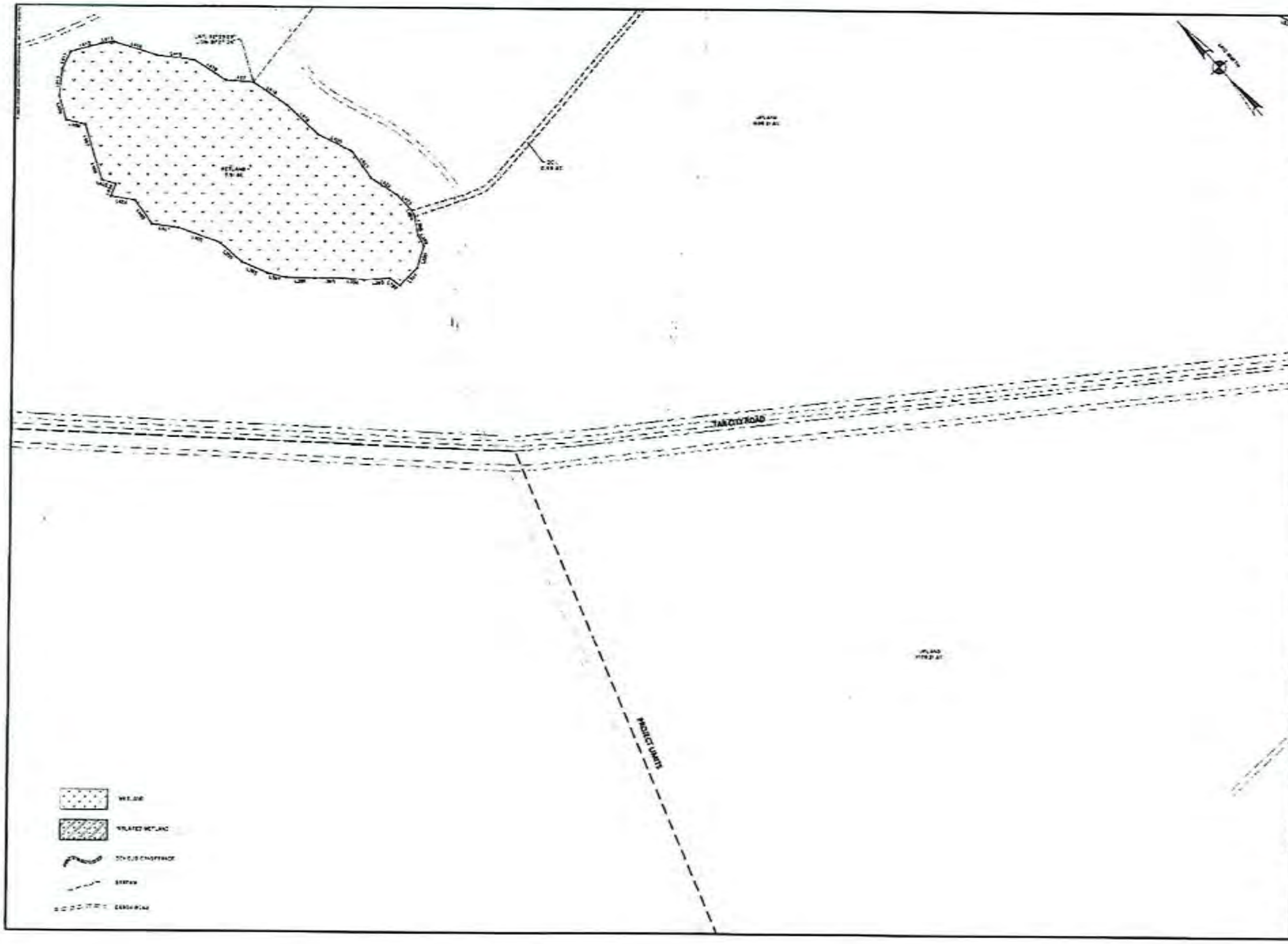
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 120 FEET

MARCH, 2015

SHEET 11 OF 25



VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

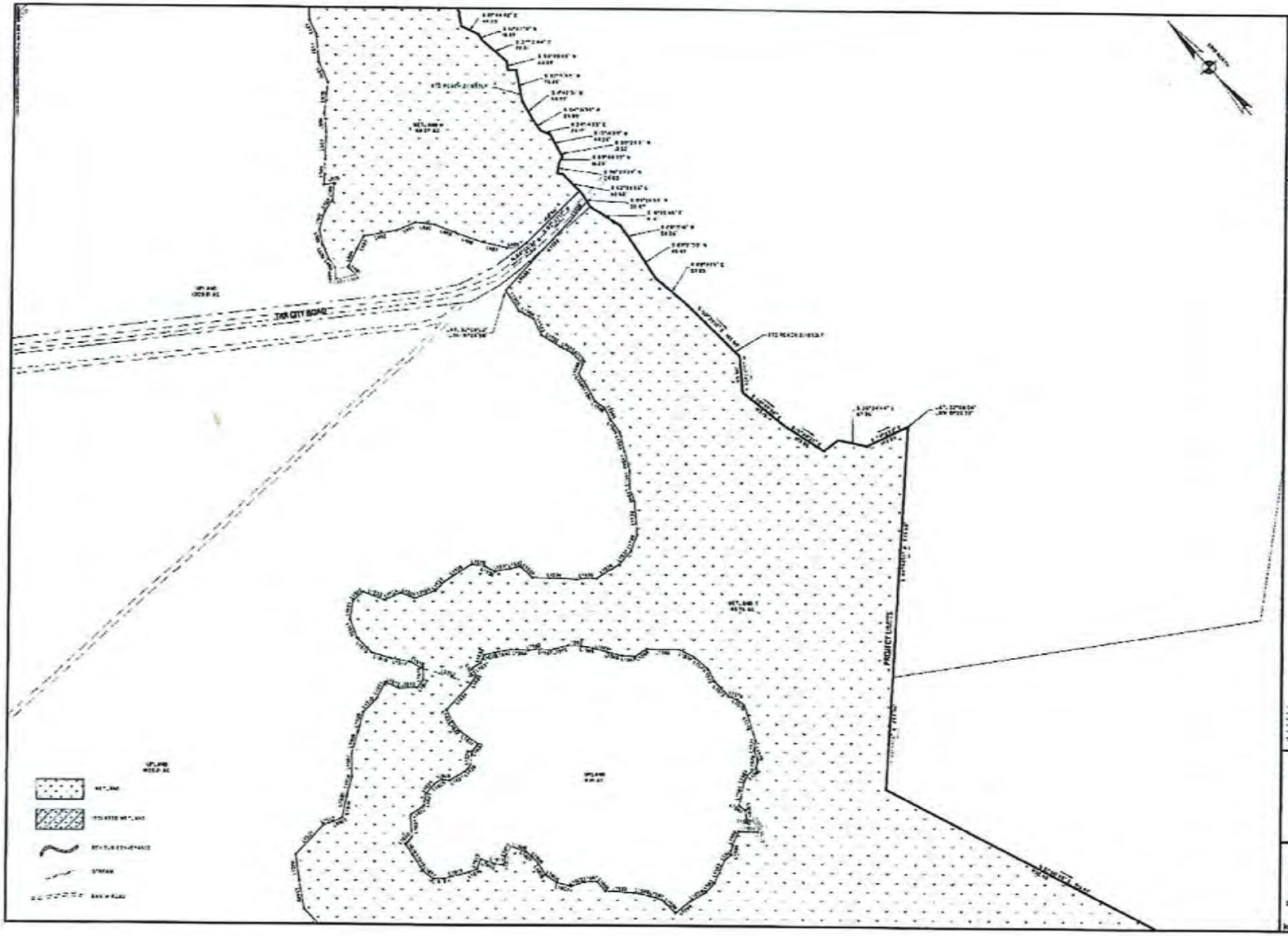
prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

date	drawn	reviewed	field	crew
03-31-15	LPO	RKM	MARCH 2015	TEH

SHEET 12 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
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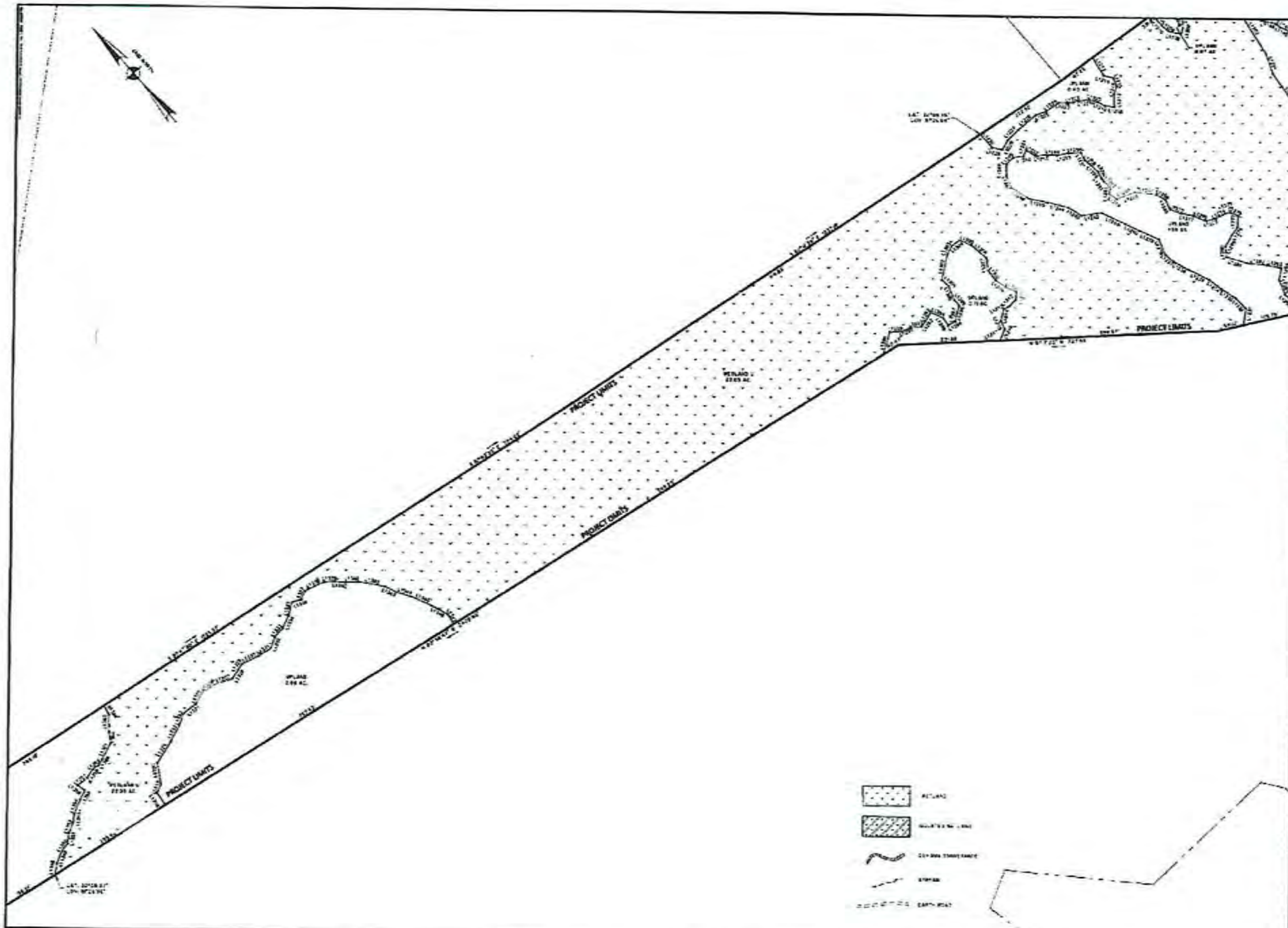
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 13 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY
MEGA SITE

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

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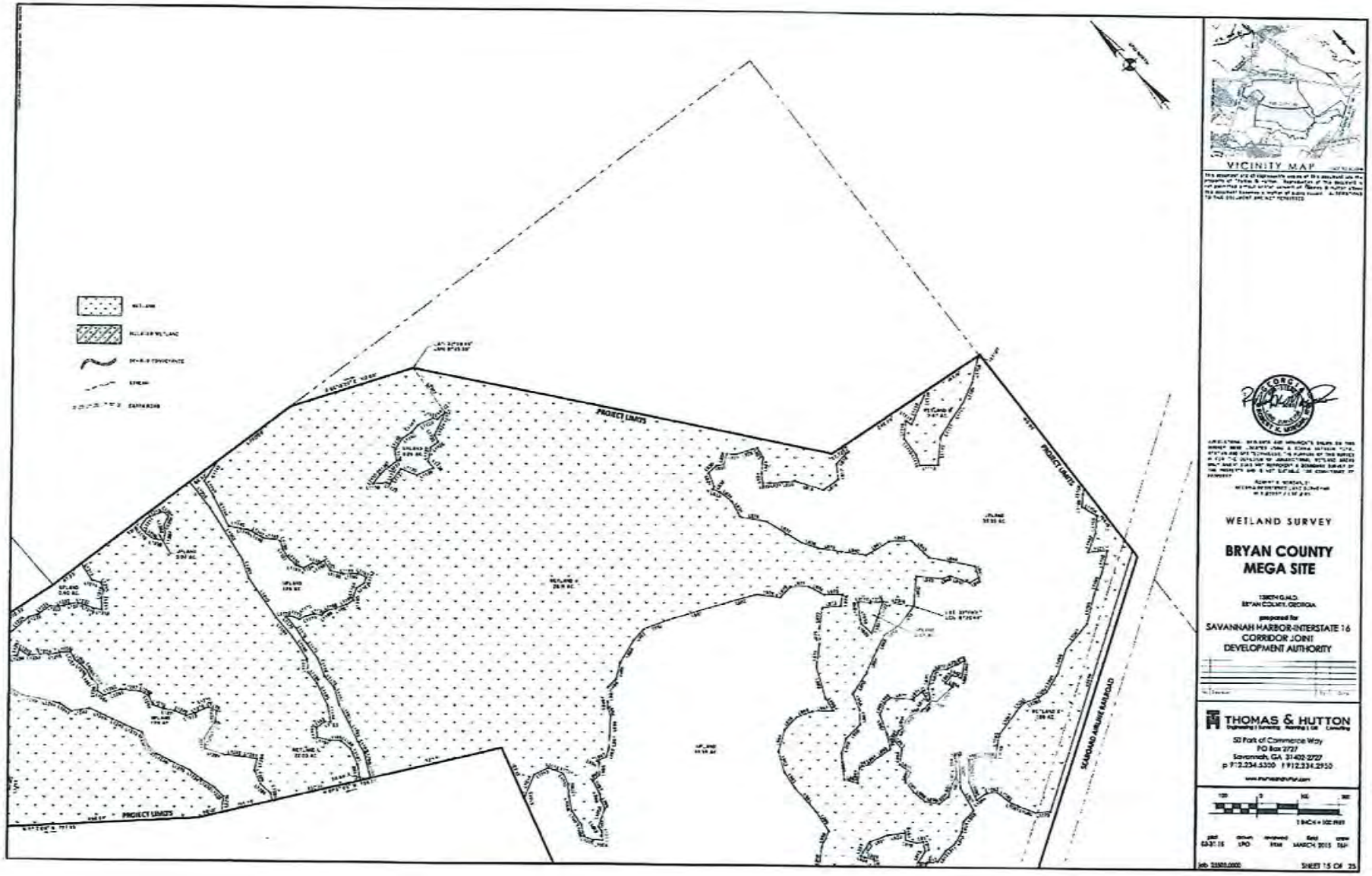
Savannah, GA 31402 2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SURV	DRAWN	REVIEWED	DATE	CREW
05-31-15	JPO	BDM	MARCH, 2016	T&H

SHEET 14 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

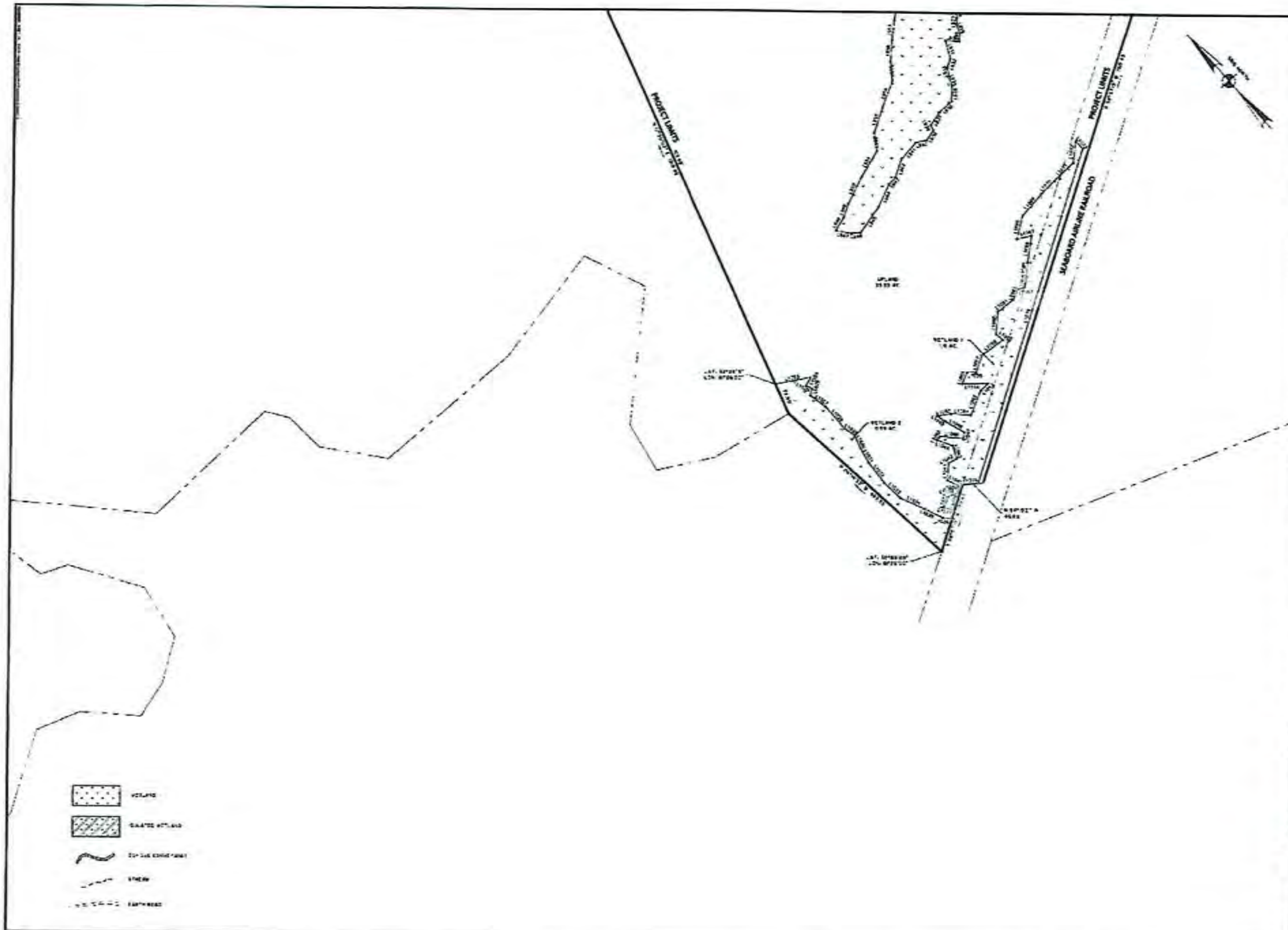
prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 15 OF 25




VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

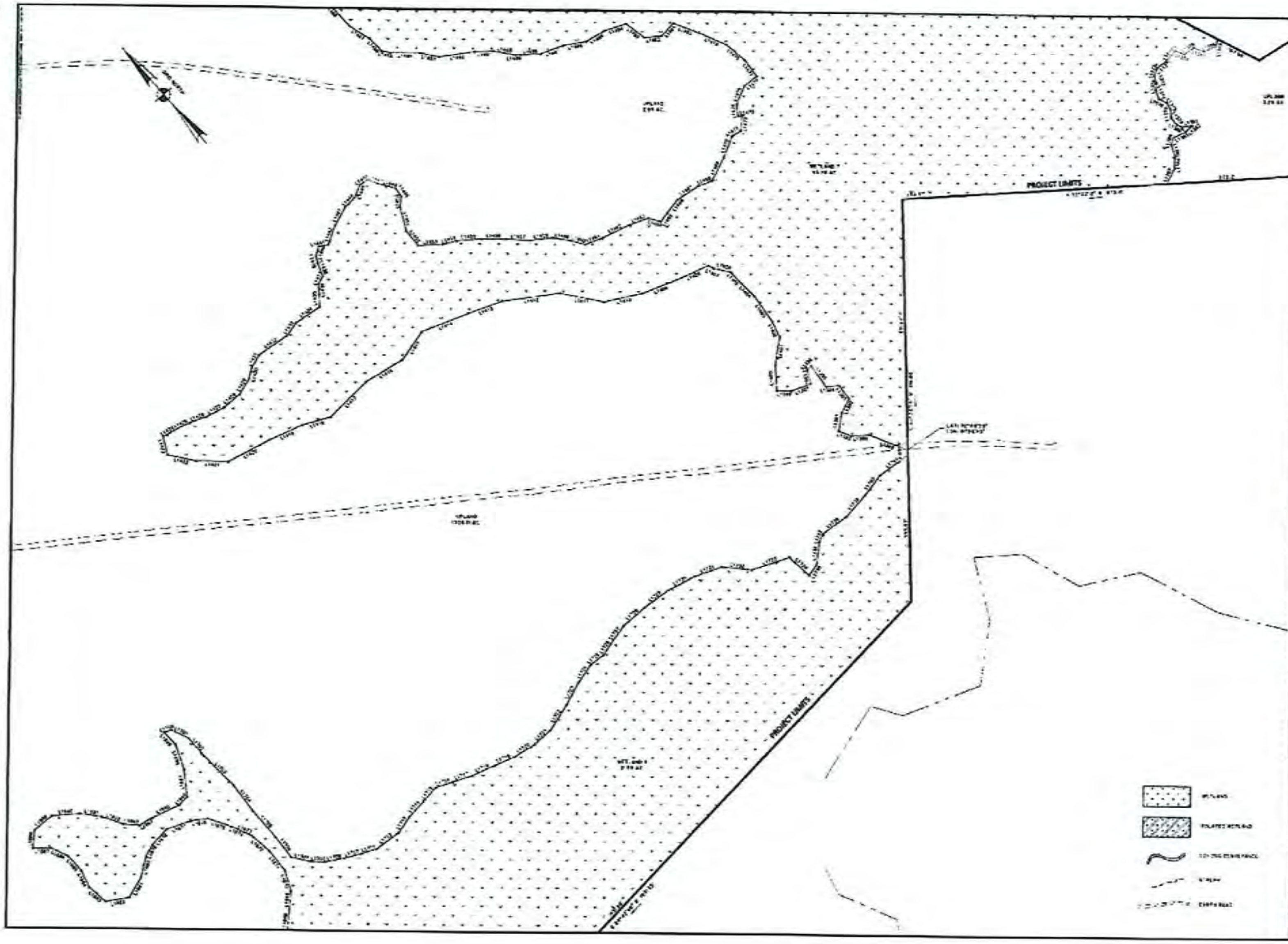
prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON

50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727

MARCH 2015

SHEET 14 OF 25



VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON

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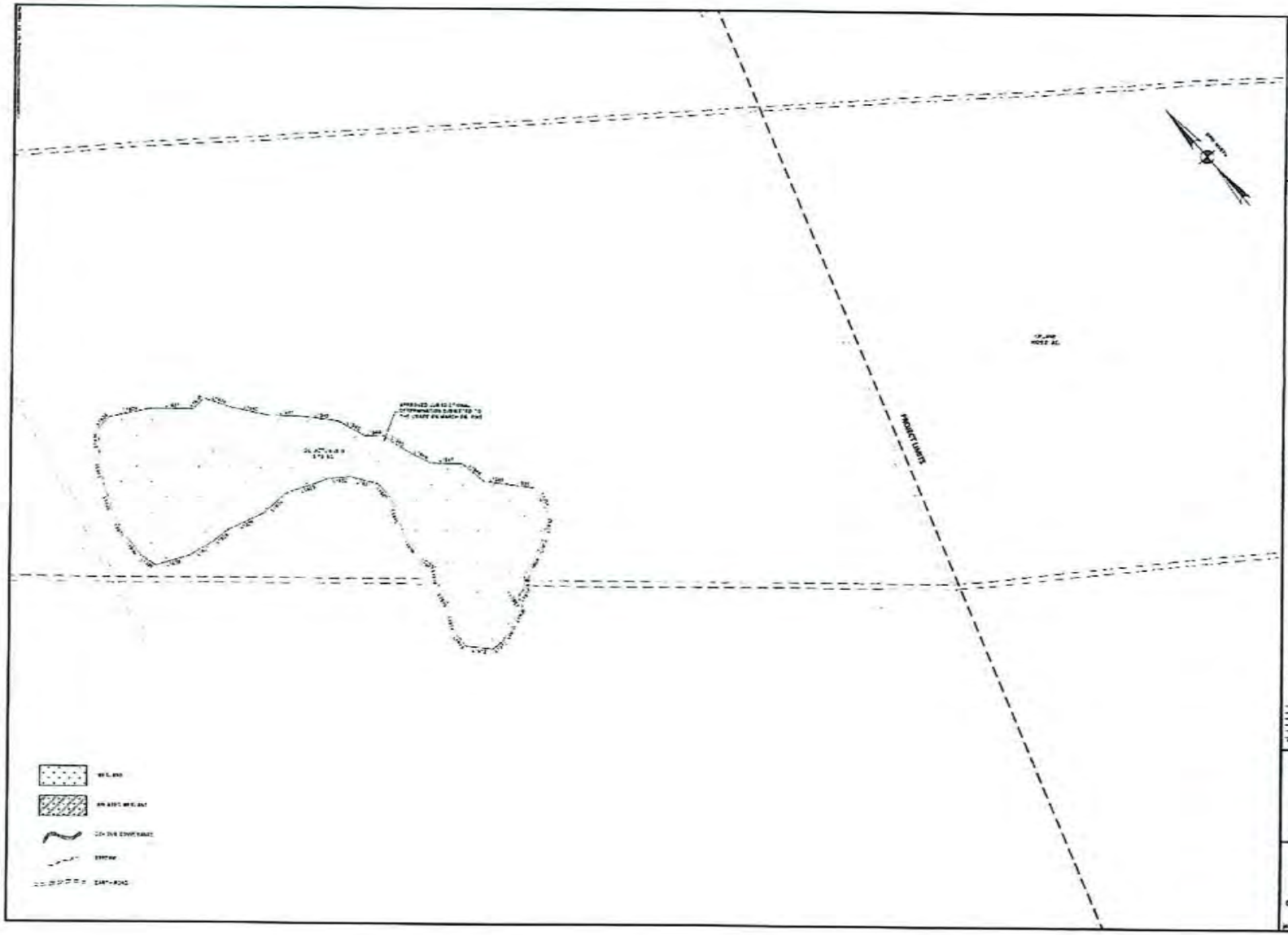
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

MARCH 2015

SHEET 17 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

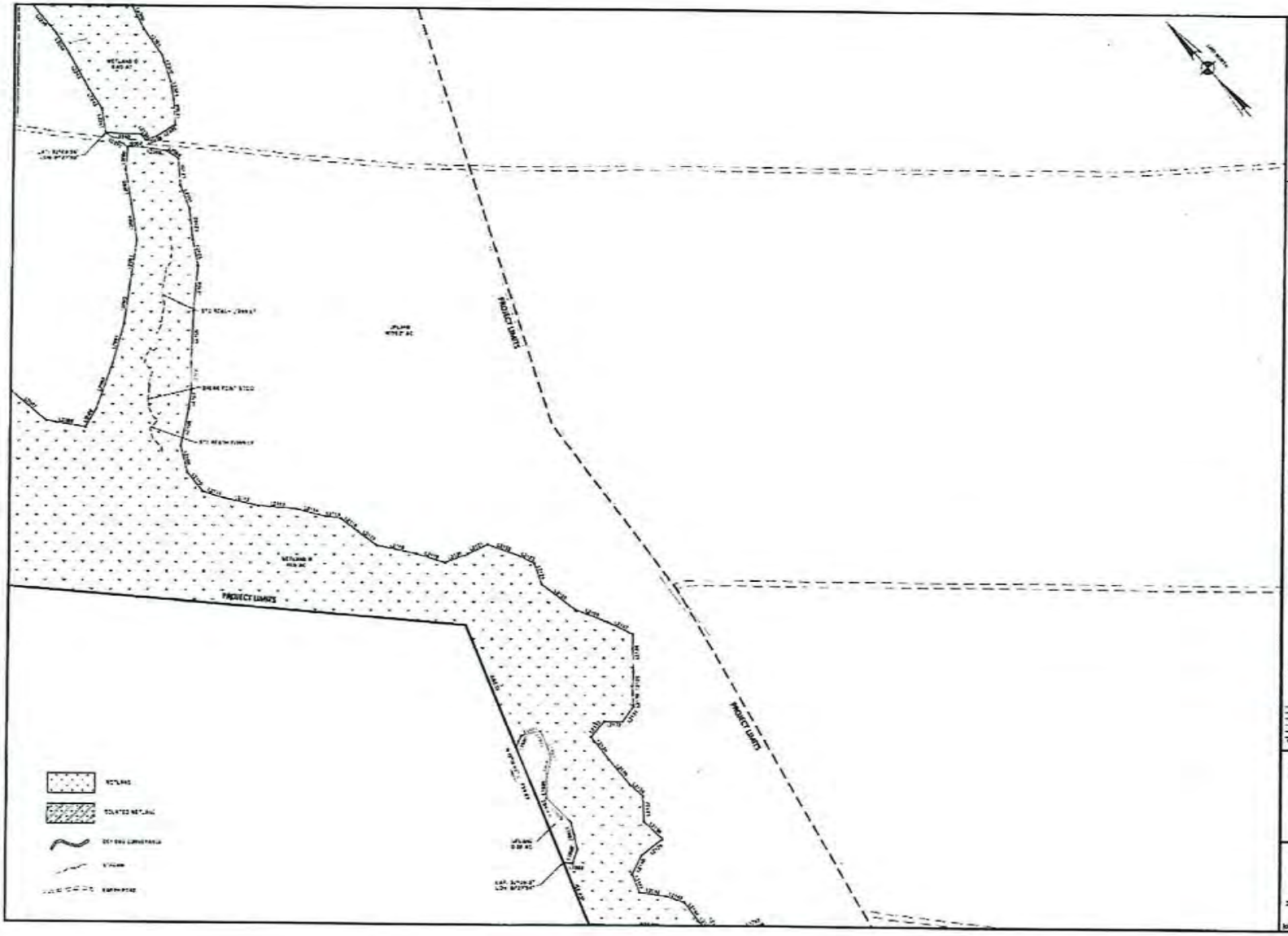
EBENEZER CHURCH RD.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
30 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 18 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for

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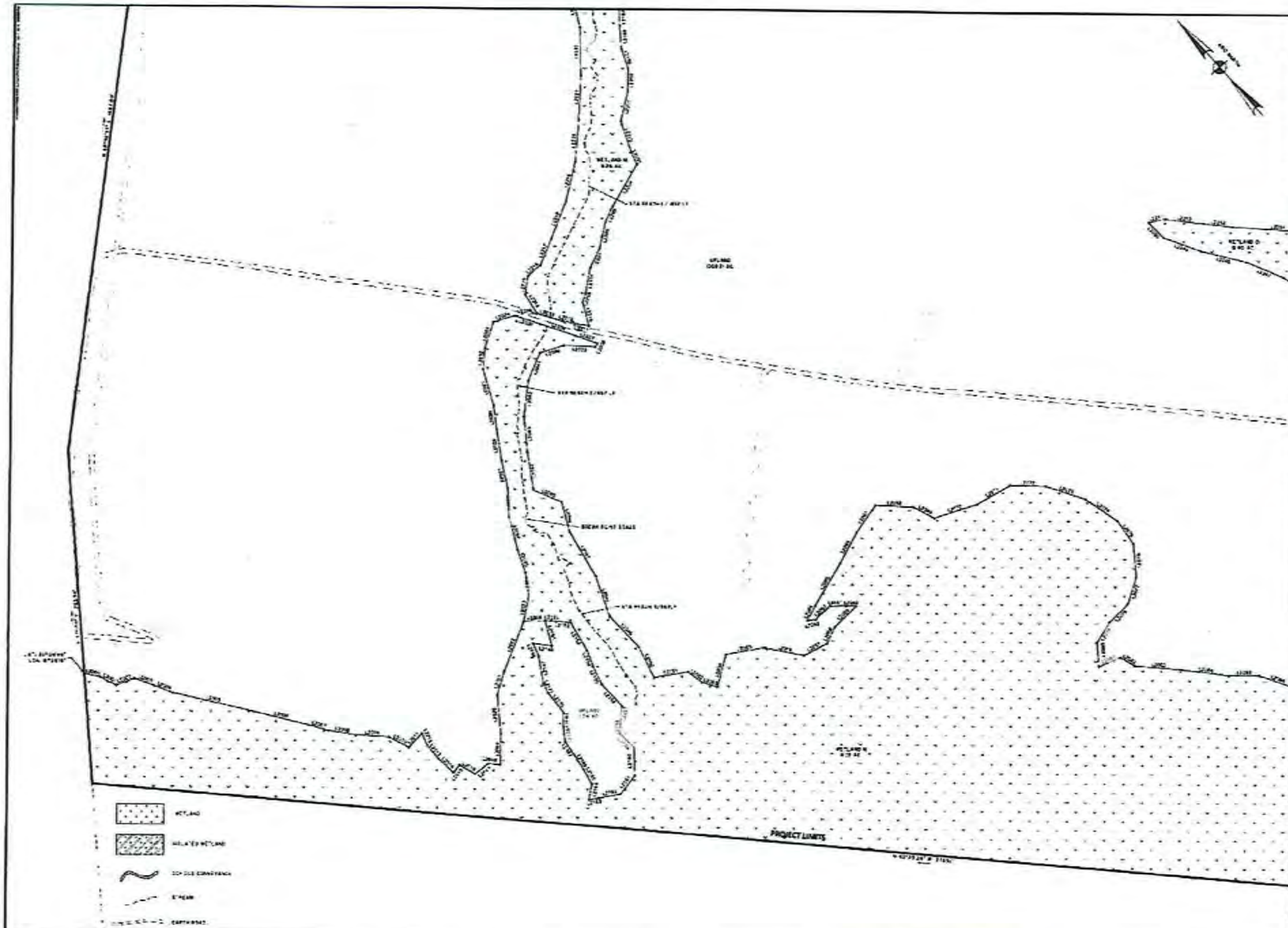
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950
www.thomasandhutton.com

1 INCH = 100 FEET

SHEET 19 OF 25



WETLAND SURVEY

BRYAN COUNTY
MEGA SITE

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SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON

30 Park of Commerce Way
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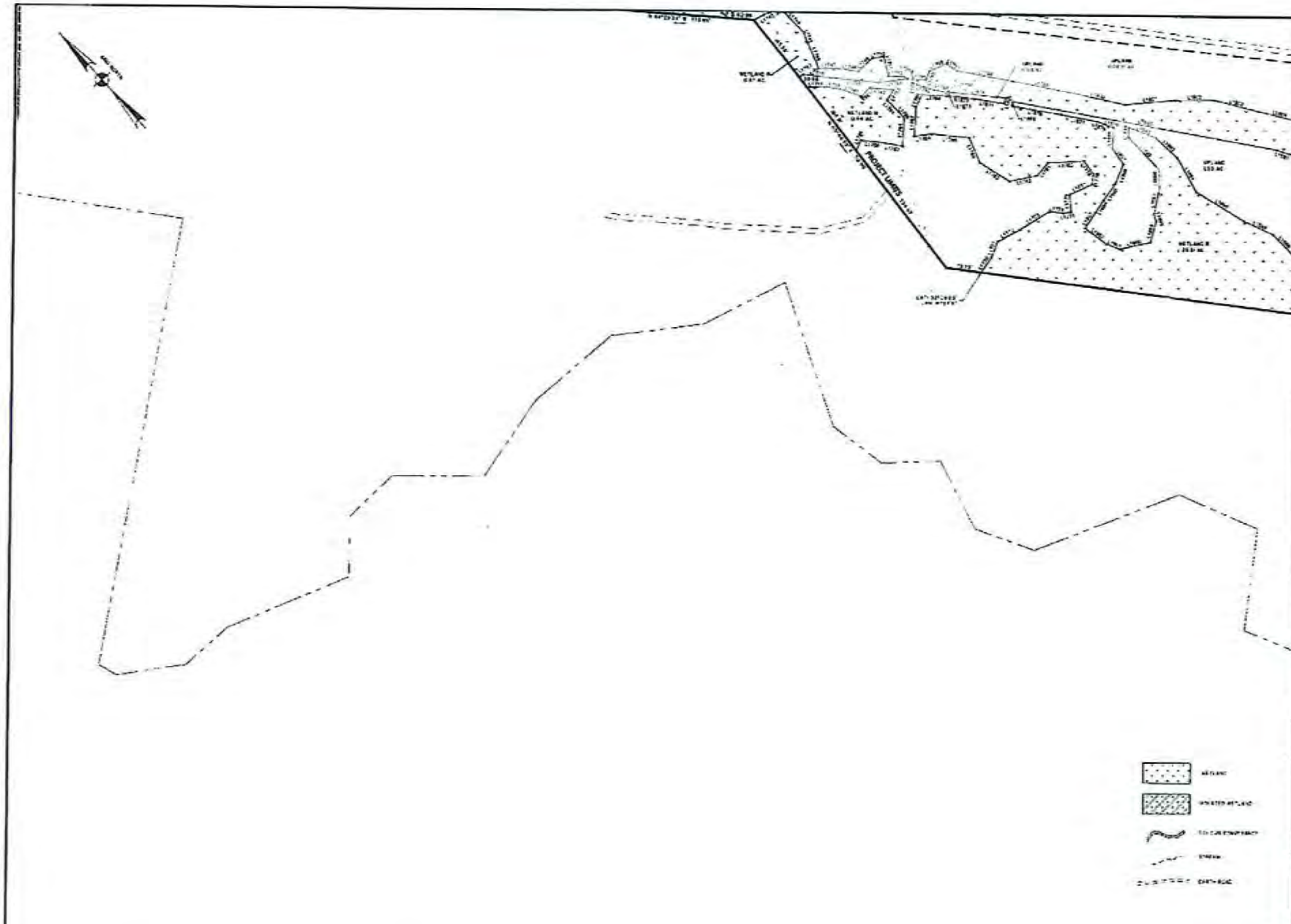
Savannah, GA 31402-2727

1 INCH = 100 FEET

MARCH, 2015

SHEET 20 OF 25



VICINITY MAP not to scale

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

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CORRIDOR JOINT
DEVELOPMENT AUTHORITY

THOMAS & HUTTON

50 Park of Commerce Way
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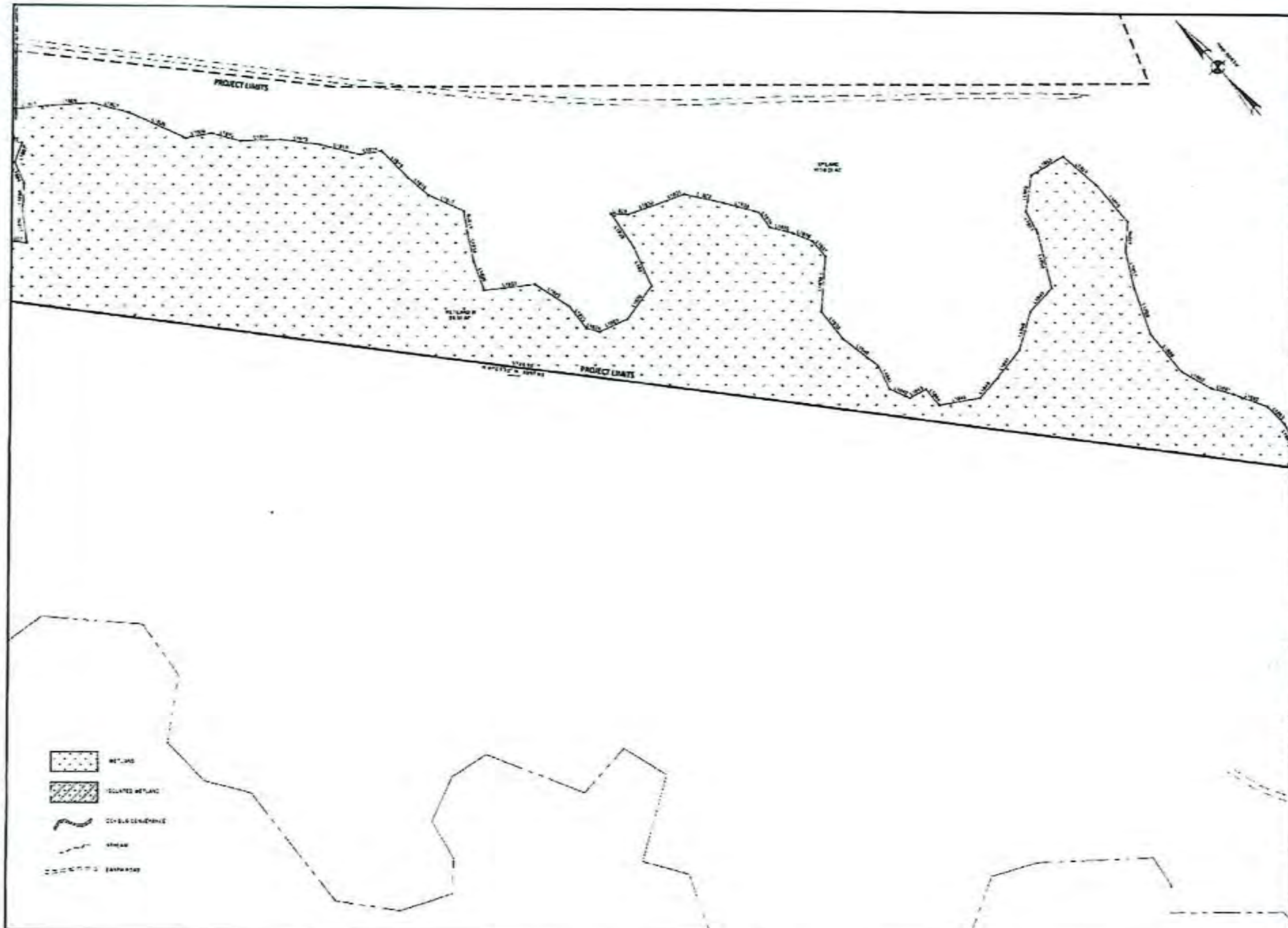
Savannah, GA 31402-2727

1 INCH = 100 FEET

MARCH 2015

SHEET 21 OF 25



WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON

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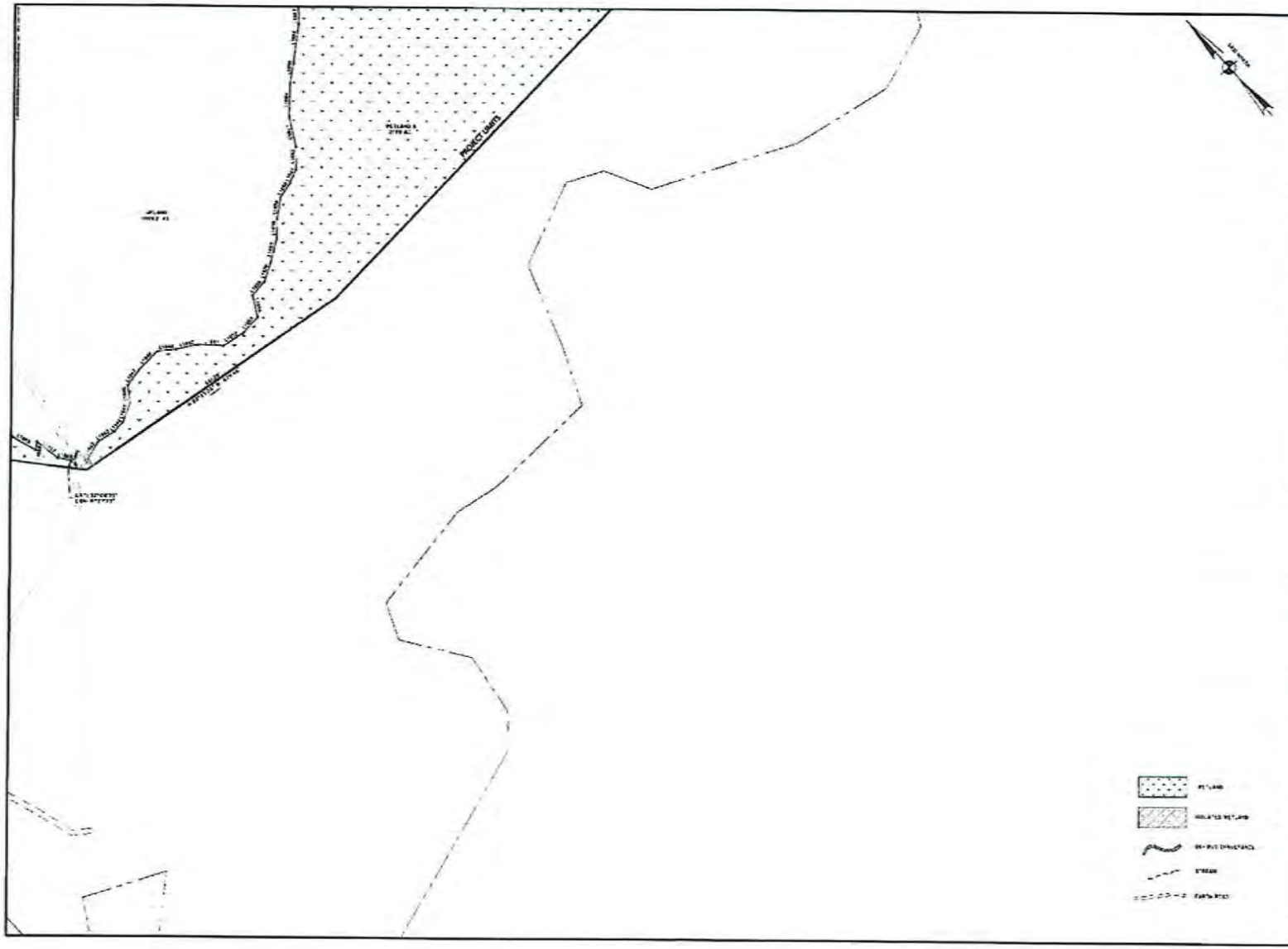
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

MARCH, 2015

SHEET 22 OF 25



VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON

50 Park of Commerce Way
PO Box 2727
Savannah, GA 31409-2727
p 912.234.5300 f 912.234.7910

1 INCH = 100 FEET

SHEET 23 OF 35

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LINE TABLE		
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VICINITY MAP

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

BRYAN COUNTY, GEORGIA

prepared for

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

No.	Revision	By	Date

THOMAS & HUTTON

50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

SHEET 24 OF 25

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LINE TABLE		
LINE	BEARING	LENGTH
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VICINITY MAP NOT TO SCALE

WETLAND SURVEY

BRYAN COUNTY MEGA SITE

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

date	drawn	reviewed	field	crew
03-21-13	LPO	BLM	MARCH 2013	T&H

job 25053.0000

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Mr. Hugh "Trip" Tollison – Savannah Harbor – Interstate 16 Joint Dev. Authority	File Number: SAS-2015-00235	Date: May 21, 2015

	Attached is:	See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
	APPROVED JURISDICTIONAL DETERMINATION	D
X	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. The division engineer must receive this form within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Shaun Blocker U.S. Army Corps of Engineers, Savannah District 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640 912-652-5086	If you only have questions regarding the appeal process you may also contact: Administrative Appeal Review Officer CESAD-PDS-O U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

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

REPLY TO
ATTENTION OF:

MAY 12 2015

Regulatory Division
SAS-2005-01381

Mr. G.P. Morgan III, CPA
Samwilka, Inc.
1 Oglethorpe Professional Building, Suite 105
Savannah, Georgia 31408

Dear Mr. Morgan:

I refer to a letter dated March 26, 2015, submitted on your behalf by Mr. Russell Parr of Resource and Land Consultants, requesting a Jurisdictional Determination (JD) for your 224.8 acre site located in the southeast quadrant of the intersection of Georgia Highway 280 and Interstate 16, bisected by Tar City Road, in Ellabelle, Bryan County, Georgia (Latitude 32.1652, Longitude -81.4486). This project has been assigned number SAS-2005-01381 and it is important that you refer to this number in all communication concerning this matter.

The wetlands "Iso-Wetland 1", "Iso-Wetland 2", "Iso-Wetland 3", "Iso-Wetland 4", and "Iso-Wetland 5", as identified on the exhibit entitled "Wetland Survey, A Portion of Samwilka Tract Isolated Wetlands, 1380TH G.M.D., Bryan County, Georgia, Prepared For Savannah Harbor-Interstate 16 Corridor Joint Development Authority, Sheet 1 of 3 through Sheet 3 of 3" dated March 26, 2015, were determined to be isolated, non-jurisdictional, and Department of the Army (DA) authorization, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), is not required for dredge and/or fill activities in these areas. Please note: this approved JD and the approved survey, can be used for the purpose of supporting a future permit application for this project site. I have enclosed a "JD Check Sheet" that summarizes the JD, delineation verification and appeals process.

If you intend to sell property that is part of a project that requires DA authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It does not obviate your requirement to obtain state or local assent required by law for the

development of this property. If the information you have submitted, and on which the Corps has based its determination is later found to be in error, this decision may be revoked.

A copy of this letter is being provided to the following party: Mr. Russell Parr, Resource and Land Consultants, 41 Park of Commerce Way, Suite 303, Savannah, Georgia 31405.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office.

If you have any questions, please call me at 912-652-5086.

Sincerely,

Shaun Blocker
Project Manager, Coastal Branch

Enclosures

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

REPLY TO
ATTENTION OF:

JURISDICTION DELINEATION CHECK SHEET
CORPS FILE NUMBER: SAS-2005-01381
DATE: May 11, 2015

1. SECTION 1 - PRELIMINARY JURISDICTIONAL DETERMINATIONS

a. JURISDICTIONAL DETERMINATION (JD). A "preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the U.S. Army Corps of Engineers. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within Rivers and Harbors Act (RHA) jurisdiction present.

_____ There may be waters of the United States within Clean Water Act (CWA) jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ Drawings submitted with a Pre-Construction Notification (or other application) depict the approximate location/boundaries of all potentially jurisdictional waters on the project site. The Corps has verified the accuracy of the depicted boundaries of potentially jurisdictional waters in only the immediate vicinity of waters to be impacted. A complete jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

_____ The drawing entitled "_____," dated _____ is an acceptable sketch of the approximate location/boundaries of all the potentially jurisdictional waters in the project area. This sketch can be used for initial real estate planning; projects with temporary impacts to waters; projects involving minor amounts of fill in waters; or work only subject to our jurisdiction pursuant to Section 10 of the RHA of 1899. A complete

jurisdictional delineation request, including a jurisdictional waters survey, would be required in order for the Corps to consider final verification of all other jurisdictional boundaries on the project site.

c. APPEALS OF PRELIMINARY JDs: The preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. Preliminary JDs are advisory in nature and may not be appealed (See 33 Code of Federal Regulations (CFR) 331.2)." If you are not in agreement with this preliminary JD, then you may request an approved JD for your project site or review area.

2. SECTION - EXPANDED PRELIMINARY JDs:

a. EXPANDED PRELIMINARY JD. An "expanded preliminary JD" form was completed for the site in accordance with the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers." The form details whether streams, wetlands and/or other waters present on the site may be subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There may be navigable waters of the United States within RHA jurisdiction present.

_____ There may be waters of the United States within CWA jurisdiction present.

b. DELINEATION VERIFICATION. With regard to the location and extent of potentially jurisdictional areas present on the site, the Corps has made the following determinations:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2005-01381. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of the location/boundaries of all the potentially jurisdictional waters on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE POTENTIALLY UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2005-01381. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE WATERS WITHOUT PROPER AUTHORIZATION."** This delineation will remain valid for a period of 5-years unless new information warrants revision prior to that date.

c. APPEALS OF PRELIMINARY JDs: The expanded preliminary JD is a "non-binding" written indication that there may be waters of the United States on a parcel. expanded preliminary JDs are advisory in nature and may not be appealed (See 33 CFR. 331.2)." If you are not in agreement with this expanded preliminary JD, then you may request an approved JD for your project site or review area.

3. SECTION 3 - APPROVED JDs: As defined in Regulatory Guidance Letter 08-02, an approved JD is an official Savannah District determination that jurisdictional "waters of the United States" or "navigable waters of the United States," or both, are either present or absent on a particular site. An approved JD precisely identifies the limits of those waters on the project site determined to be jurisdictional under the CWA and/or the RHA.

a. APPROVED JD. An "approved JD" form was completed for the site pursuant to the June 5, 2007, "US Army Corps of Engineers JD Form Instructional Guidebook." The form details whether streams, wetlands and/or other waters present on the site are subject to the jurisdiction of the Corps. In summary, the Corps has determined the following with regard to waters present on the site:

_____ There are navigable waters of the United States within RHA jurisdiction present.

_____ There are waters of the United States within CWA jurisdiction present.

__X__ There are non-jurisdictional waters of the United States located in the project area.

_____ There are no jurisdictional waters of the United States located in the project area.

b. APPROVED DETERMINATION - ISOLATED, NON-JURISDICTIONAL WATERS. If Appendix E of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation

Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of isolated, non-jurisdictional waters located at the project site or within the review area. The completed Appendix E form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This isolated, non-JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

__X__ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

__X__ There are isolated non-jurisdictional waters present that are not subject to CWA jurisdiction. Specifically, wetland(s) "Iso-Wetland 1", "Iso-Wetland 2", "Iso-Wetland 3", "Iso-Wetland 4", and "Iso-Wetland 5", as identified on the exhibit entitled "Wetland Survey, A Portion of Samwilka Tract Isolated Wetlands, 1380TH G.M.D., Bryan County, Georgia, Prepared For Savannah Harbor-Interstate 16 Corridor Joint Development Authority, Sheet 1 of 3 through Sheet 3 of 3" dated March 26, 2015, and signed by Registered Land Surveyor Robert K. Morgan, III, Registration Number 3087, is/are isolated, non-jurisdictional wetlands. Department of the Army authorization, pursuant to Section 404 of the Clean Water Act (33 United States Code 1344), is not required for dredge and/or fill activities in these areas.

c. APPROVED DETERMINATION. (other than isolated, non-jurisdictional waters): If Appendix B of the March 4, 2009, Public Notice entitled, "Characterization of Jurisdictional Determinations: Purpose, Application and Documentation Requirements as Defined by the Savannah District, US Army Corps of Engineers" was submitted, you have requested that the Corps verify the presence of jurisdictional waters located at the project site or within the review area. The completed Appendix B form is available at http://www.sas.usace.army.mil/Missions/Regulatory/JurisdictionalDetermination/PostedApprovedJDs.aspx, under the above listed file number. You may also request that a printed copy of the form be mailed to you. This JD will remain valid for a period of 5-years unless new information warrants revision prior to that date. In summary, the Corps has determined the following with regard to isolated, non-jurisdictional waters that are present on the site:

_____ Wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual.

_____ The Global Positioning System (GPS) delineation entitled "_____", dated _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on this delineation to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN THE CORPS FILE NUMBER SAS-2005-01381. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

_____ The survey entitled "_____", dated _____, and signed by Registered Land Surveyor _____, is an accurate delineation of all the jurisdictional boundaries on the site. If you have not already done so, I recommend that you place a statement on the final surveyed property plat to the effect that, **"JURISDICTIONAL WETLANDS AND OTHER WATERS SHOWN ON THIS DRAWING ARE UNDER THE JURISDICTION OF THE CORPS AS SHOWN IN CORPS FILE NUMBER SAS-2005-01381. OWNERS MAY BE SUBJECT TO PENALTY BY LAW FOR DISTURBANCE TO THESE JURISDICTIONAL AREAS WITHOUT PROPER AUTHORIZATION."** This approved JD will remain valid for a period of 5-years unless new information warrants revision prior to that date.

d. APPEALS FOR APPROVED JDs: You may request an administrative appeal for any approved geographic JD under the Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Administrative Appeal Options and Process (NAP) and Request for Appeal (RFA) Form.

If you request to appeal this/these determination(s) you must submit a completed RFA form to the South Atlantic Division Office at the following address:

U.S. Army Corps of Engineers, South Atlantic Division
Attention: CESAD-PDS-O, Administrative Appeal Review Officer
60 Forsyth Street, Room 10M15
Atlanta, Georgia 30303-8801

In order for a RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR, part 331.5, and that it has been received by the Division Office within 60 days of the date of this form. It is not necessary to submit an RFA form to the Division Office if you do not object to this JD.

4. SECTION 4 - APPLIES TO ALL OF THE ABOVE.

- U.S. DEPARTMENT OF AGRICULTURE (USDA) PROGRAM PARTICIPANTS. This delineation/determination has been conducted to identify the limits of the Corps

CWA jurisdiction for this site. This delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Attachments:

__X__ Verified Survey of Non-Jurisdictional, Isolated Wetlands

_____ Verified GPS Delineation of Jurisdictional Streams, Wetlands and/or Other Waters

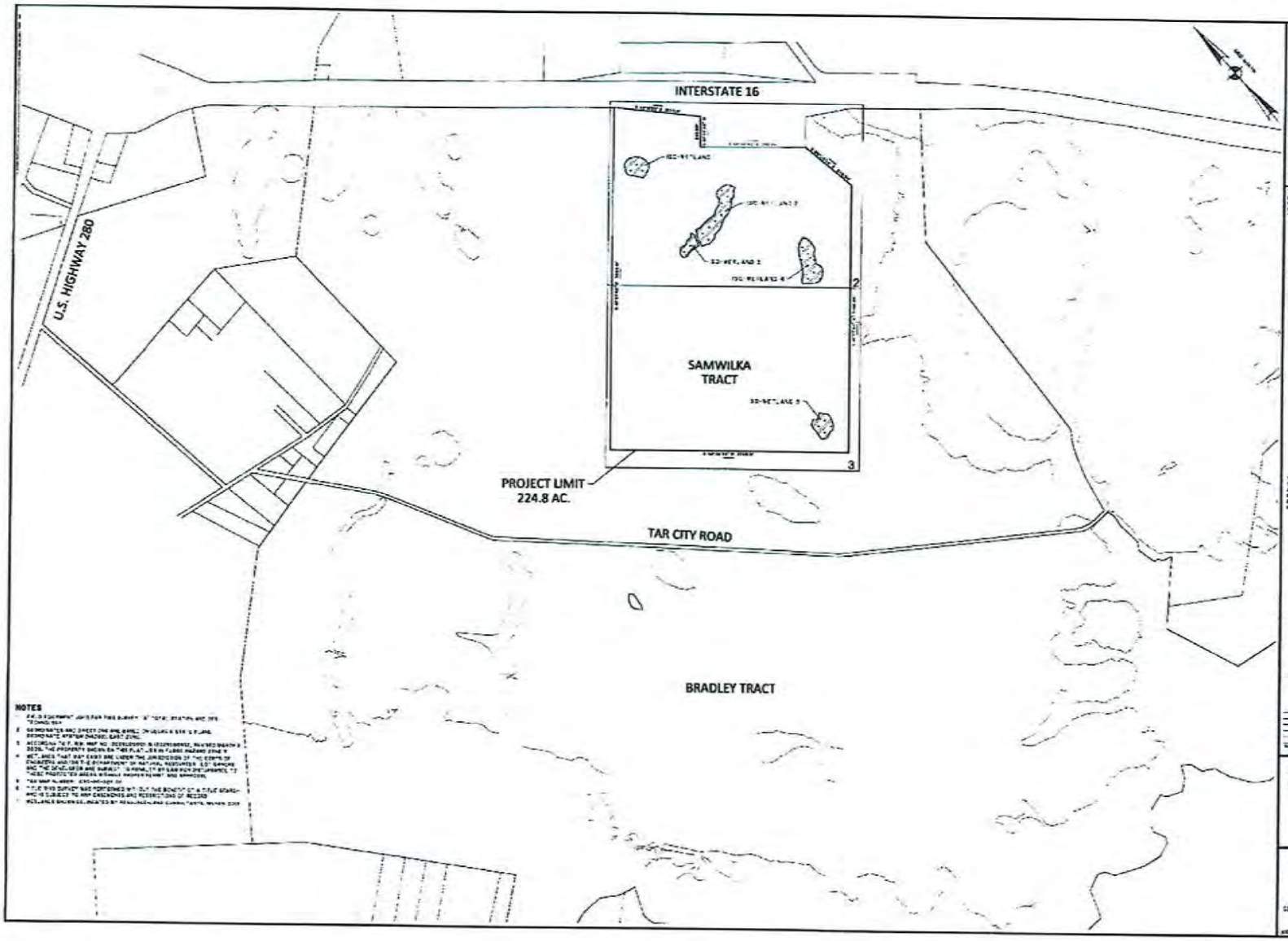
_____ Drawing of Approximate Location of Streams, Wetlands and/or Other Waters

__X__ Approved JD Form(s)

__X__ NAP and RFA Form

Shaun L. Blocker
Project Manager, Coastal Branch

5/12/15
DATE



NOTES

VICINITY MAP

ACREAGE SCHEDULE

ISOLATED WETLAND 1	1.18 AC.
ISOLATED WETLAND 2	2.73 AC.
ISOLATED WETLAND 3	0.65 AC.
ISOLATED WETLAND 4	2.14 AC.
ISOLATED WETLAND 5	1.14 AC.
TOTAL WETLANDS	7.85 AC.

WETLAND SURVEY

A PORTION OF SAMWILKA TRACT ISOLATED WETLANDS

LOCATED IN
BRYAN COUNTY, GEORGIA

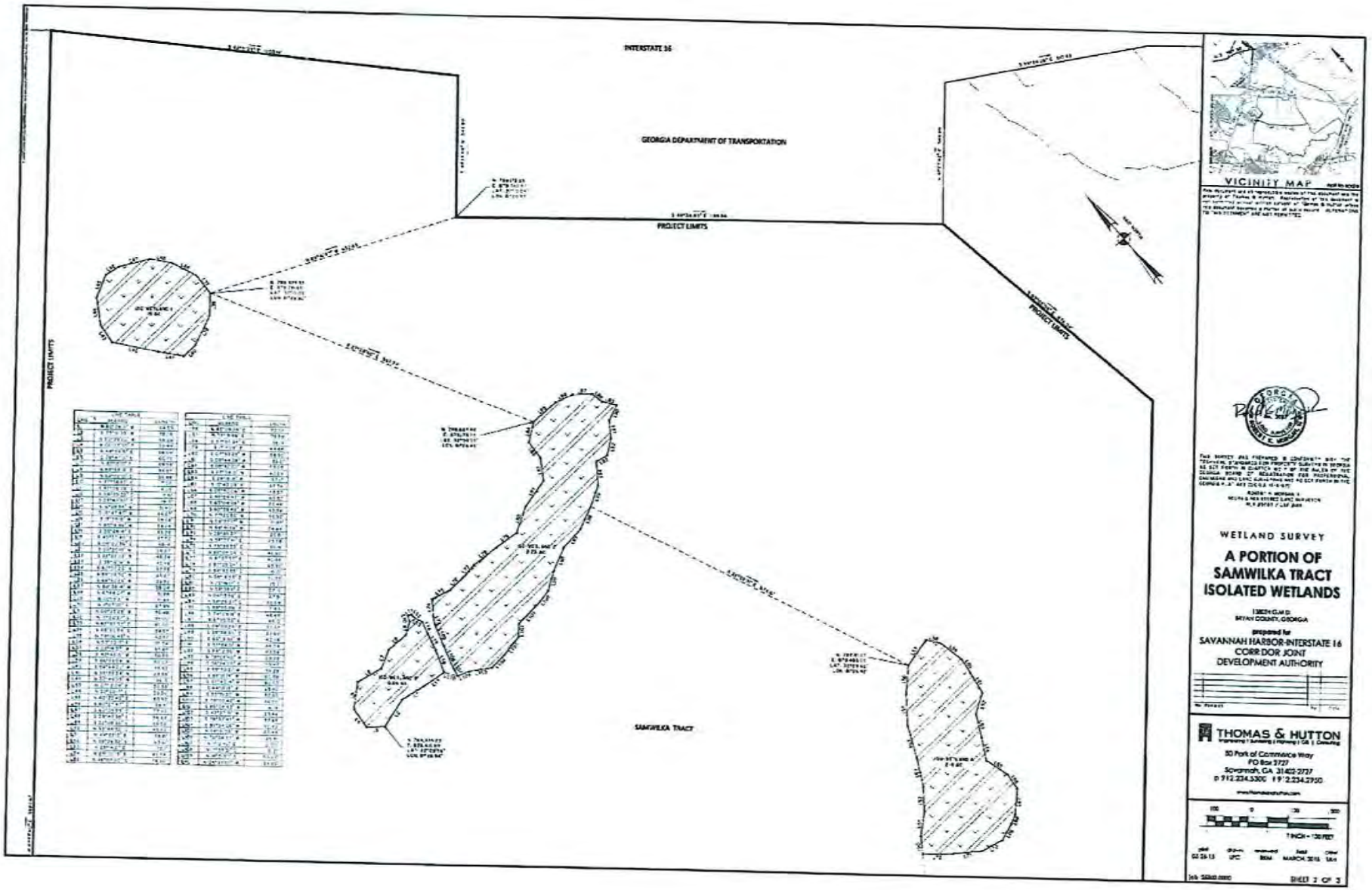
prepared for
SAVANNAH-HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY

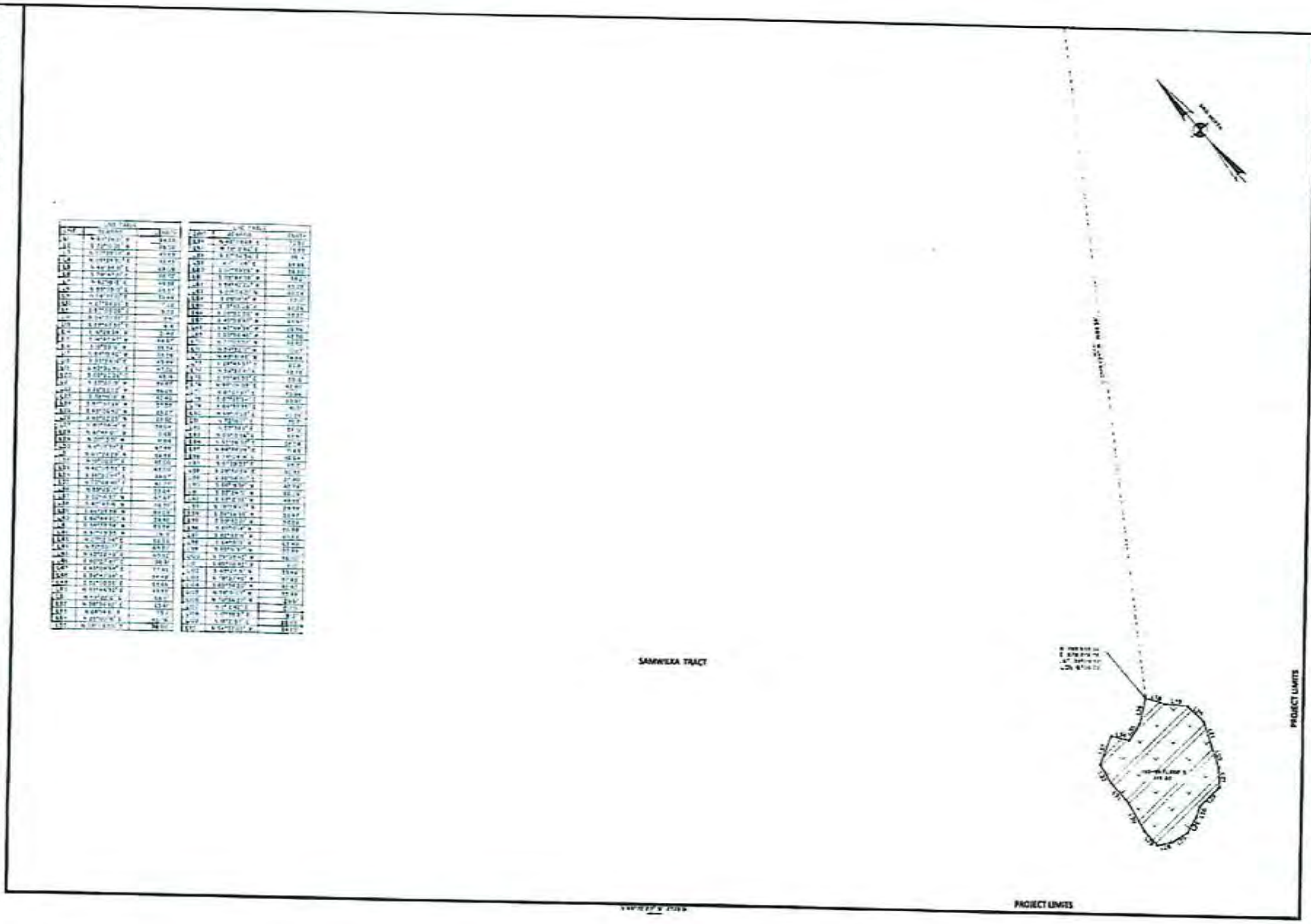
THOMAS & HUTTON
Engineering | Surveying | Planning | GIS | Consulting
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2959

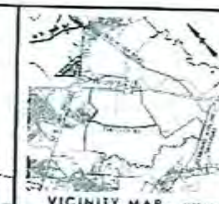
1 INCH = 500 FEET

MARCH, 2015

SHEET 1 OF 3


INTERSTATE 16
GEORGIA DEPARTMENT OF TRANSPORTATION
PROJECT LIMITS
PROJECT LIMITS
PROJECT LIMITS
SAMWILKA TRACT
VICINITY MAP
WETLAND SURVEY
A PORTION OF
SAMWILKA TRACT
ISOLATED WETLANDS
BRYAN COUNTY, GEORGIA
prepared for
SAVANNAH HARBOR-INTERSTATE 16
CORRIDOR JOINT
DEVELOPMENT AUTHORITY
THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
1 INCH = 100 FEET
MARCH 2016
SHEET 2 OF 3





VICINITY MAP

WETLAND SURVEY

A PORTION OF SAMWILKA TRACT ISOLATED WETLANDS

1380TH G.M.D.
BRYAN COUNTY, GEORGIA

prepared for
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

THOMAS & HUTTON
50 Park of Commerce Way
PO Box 2727
Savannah, GA 31402-2727
p 912.234.5300 f 912.234.2950

1 INCH = 100 FEET

MARCH 2018

SHEET 3 OF 3

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: G.P. Morgan, III – Samwilka, Inc.	File Number: SAS-2005-01381	Date: May 11, 2015
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

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APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

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ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. The division engineer must receive this form within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: Shaun Blocker U.S. Army Corps of Engineers, Savannah District 100 W. Oglethorpe Avenue Savannah, Georgia 31401-3640 912-652-5086	If you only have questions regarding the appeal process you may also contact: Administrative Appeal Review Officer CESAD-PDS-O U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Savannah District; SAS-2005-01381 Samwilka Tract Isolated Wetlands

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Georgia County/parish/borough: Bryan City: Black Creek
Center coordinates of site (lat/long in degree decimal format): Lat. 32.163134° N, Long. -81.448657° W.
Universal Transverse Mercator:
Name of nearest waterbody: Black Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Black Creek
Name of watershed or Hydrologic Unit Code (HUC): Lower Ogeechee 03060202
☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): March 17, 2015

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There Are no "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There Are no "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: N/A linear feet: N/A width (ft) and/or N/A acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
      Elevation of established OHWM (if known): unknown.

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Isolated wetlands 1-5 within the Samwilka Tract are surrounded completely by uplands and do not contain surface or subsurface connections with jurisdictional waters or wetlands and are therefore isolated non-jurisdictional.**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: **n/a.**

   Summarize rationale supporting determination: n/a.

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": n/a.

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) **General Area Conditions:**
   Watershed size: acres
   Drainage area: acres
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) **Physical Characteristics:**
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through Pick List tributaries before entering TNW.

   Project waters are Pick List river miles from TNW.
   Project waters are Pick List river miles from RPW.
   Project waters are Pick List aerial (straight) miles from TNW.
   Project waters are Pick List aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: no.

   Identify flow route to TNW[5]:
   Tributary stream order, if known:

   (b) General Tributary Characteristics (check all that apply):
   Tributary is: ☐ Natural

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Relatively stable, little bank failure / erosion was noted during the site visit.
Presence of run/riffle/pool complexes. Explain: Weak riffle pool complexes were noted during the site visits.
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: seasonal & stormwater flow.
Other information on duration and volume: The stream has esign of bank scouring, and weak riffle pool sequences.

Surface flow is: **Pick List.** Characteristics: continues bed and bank.

Subsurface flow: **Pick List.** Explain findings:
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain:
Identify specific pollutants, if known:

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[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width):
- ☐ Wetland fringe. Characteristics:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

- ☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain:
  - ☐ Ecological connection. Explain:
  - ☐ Separated by berm/barrier. Explain: culverted road crossings separate some features.

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: water is clear.

Identify specific pollutants, if known: unknown.

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width):
- ☐ Vegetation type/percent cover. Explain:
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings:
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: n/a.

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: N/A.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: N/A.

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **n/a** acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: n/a.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. **NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):**
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☒ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☒ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 7.85acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. **SUPPORTING DATA. Data reviewed for JD (check all that apply** - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Plat by: Thomas& Hutton Engineering dated 03-26-2015.
☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
☒ Office concurs with data sheets/delineation report.
☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☒ U.S. Geological Survey Hydrologic Atlas: Lower Ogeechee 03060202.
☐ USGS NHD data.
☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:1"=3000'; Eden GA Quadrangle.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: 1"=2200' Bryan County, GA.
☒ National wetlands inventory map(s). Cite name:1"=2200' Eden GA Quadrangle.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:FEMA FIRM Map 13031C0500D.
☒ 100-year Floodplain Elevation is:Shaded Zone X(National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):2013 Color Aerial Photograph and 1999 CIR Aerial Photograph.
or ☒ Other (Name & Date):Digital Color Photographs .
☒ Previous determination(s). File no. and date of response letter:SAS-2005-01381 dated June 13, 2008.
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. **ADDITIONAL COMMENTS TO SUPPORT JD:**
Wetland 1 (1.18 acres): Lat: 32.168596 Long:- 81.447619. There are no surface or subsurface hydrologic connections between the 1.18 acre non-jurisdictional isolated Wetland 1 and other jurisdictional waters. Wetland 1 is not located within the 100-year floodplain, is located

approximately 1,883 linear feet from the nearest jurisdictional water and is approximately 1.6 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 1 are greater than 1 foot higher in elevation than the average surface elevation within Wetland 1. Soils within the wetland are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetland 1 are mapped as Chipley fine sand and Olustee fine sand. These soil types are described as being somewhat poorly drained and moderately well drained respectively. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 1. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 1 was reviewed in the field on 17 March 2015 with USACE project managers. The perimeter of Wetland 1 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 1. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 1 to other jurisdictional waters of the U.S., it is our opinion that Wetland 1 is an isolated depression within an area managed for silviculture.

Wetland 2 (2.73 acres): Lat: 32.165756 Long:- 81.446589 and Wetland 3 (0.66 acres): Lat: 32.165630 Long:- 81.448093. Wetlands 2 and 3 are part of the same isolated system which has been fragmented by a silviculture road. There are no surface or subsurface hydrologic connections between the 3.39 acre non-jurisdictional isolated Wetlands 2 and 3 and other jurisdictional waters. Wetlands 2 and 3 are not located within the 100-year floodplain, are located 1,259 linear feet from the nearest jurisdictional water and are approximately 1.4 miles from the nearest TNW, Black Creek. The uplands surrounding Wetlands 2 and 3 are greater than 1 foot higher in elevation than the average surface elevation of Wetlands 2 and 3. Soils within the wetlands are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetlands 2 and 3 are mapped as Olustee fine sand. These soil types are described as being moderately poorly drained. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland soils comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetlands 2 and 3. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetlands 2 and 3 were reviewed in the field on 17 March 2015 with USACE project managers. The perimeters of the wetlands were walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeters of Wetlands 2 and 3. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetlands 2 and 3 to other jurisdictional waters of the U.S., it is our opinion that Wetlands 2 and 3 are isolated depressions within an area managed for silviculture.

Wetland 4 (2.14 acres): Lat: 32.162743 Long:- 81.445183. There are no surface or subsurface hydrologic connections between the 2.14 acre non-jurisdictional isolated Wetland 4 and other jurisdictional waters. Wetland 4 is not located within the 100-year floodplain, is located approximately 669 linear feet from the nearest jurisdictional water and is approximately 1.3 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 4 are greater than 1 foot higher in elevation than the average surface elevation within Wetland 4. Soils within the wetland are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetland 4 are mapped as Chipley fine sand which is described as being moderately well drained. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 4. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 4 was reviewed in the field on 17 March 2015 with USACE project managers. The perimeter of Wetland 4 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 4. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 4 to other jurisdictional waters of the U.S., it is our opinion that Wetland 4 is an isolated depression within an area managed for silviculture.

Wetland 5 (1.14 acres): Lat: 32.158621 Long:- 81.448818. There are no surface or subsurface hydrologic connections between the 1.14 acre non-jurisdictional isolated Wetland 5 and other jurisdictional waters. Wetland 5 is not located within the 100-year floodplain and is located approximately 634 linear feet from the nearest jurisdictional water and is approximately 1.0 miles from the nearest TNW, Black Creek. The uplands surrounding Wetland 5 are greater than 1 foot higher in elevation than the average surface elevation within Wetland 5. Soils within the wetland are mapped as Ellabelle loamy sand and are characterized as being poorly drained. The soils in the uplands surrounding Wetland 5 are mapped as Chipley fine sand and Lakeland sand. These soil types are described as being somewhat poorly drained and excessively well drained respectively. The soils within the wetland contain substantially greater organic matter and loam content than the surrounding upland comprised of sandy textured soils. Soils transition from a loam within the wetland to a loamy sand to sand within the upland. Upland soils lack any evidence of hydric soil indicators outside the perimeter of Wetland 5. As a result of the upland soil composition and texture, the upland soils drain more quickly than those contained within the wetland and are not likely to hold surface water or remain saturated for extended periods of time. Wetland 5 was reviewed in the field on 17 March 2015 with USACE project managers. The perimeter of Wetland 5 was walked to investigate for the presence of ditches, swales, or other type of hydrologic connection to jurisdictional wetlands. No such hydrologic connections were observed. A distinct and obvious transition to upland vegetative species was observed along the entire perimeter of Wetland 1. Based on the surrounding soils, lack of hydrologic connection, and the proximity of Wetland 5 to other jurisdictional waters of the U.S., it is our opinion that Wetland 5 is an isolated depression within an area managed for silviculture.

Waters Name	Linear Feet	Acreage	Jurisdictional Status	Cowadin Code	Latitude	Longitude	Local Waters	HGM Code	Waters Type
Wetland 1	N/A	1.18	Isolated Wetland	PFO1	32.168596	-81.447619	Black Creek	Depressional	ISOLATE
Wetland 2	N/A	2.73	Isolated Wetland	PFO1	32.165756	-81.446589	Black Creek	Depressional	ISOLATE
Wetland 3	N/A	0.66	Isolated Wetland	PFO1	32.165630	-81.448093	Black Creek	Depressional	ISOLATE
Wetland 4	N/A	2.14	Isolated Wetland	PFO1	32.162743	-81.445183	Black Creek	Depressional	ISOLATE
Wetland 5	N/A	1.14	Isolated Wetland	PFO1	32.158621	-81.448818	Black Creek	Depressional	ISOLATE

APPENDIX E:

Permit Drawings

LEGEND
ACREAGE SUMMARY TABLE
TOTAL PROJECT ACREAGE 1,944.00 AC
TOTAL JURISDICTIONAL WETLAND AREA 292.72 AC.
TOTAL NON-JURISDICTIONAL WETLAND AREA 17.56 AC.
TOTAL UPLAND AREA 1,633.72 AC.
WETLAND IMPACTS
JURISDICTIONAL WETLANDS IMPACTS
RAILROAD IMPACT 27.29 AC.
SITE IMPACT 65.31 AC.
DUG CONVEYANCE IMPACT 0.62 AC.
TOTAL JURISDICTIONAL WETLAND IMPACTS 93.22 AC.
STREAM IMPACT 833 LF.
NON-JURISDICTIONAL WETLANDS IMPACTS
SITE IMPACT 17.56 AC.
TOTAL NON-JURISDICTIONAL WETLAND IMPACTS 17.56 AC.
EXIT 143
WEIGH STATION
INTERSTATE 16
TAR CITY RD.
HWY 280
EXISTING RAILROAD
JURISDICTIONAL SITE IMPACT "A" - 7.90 ACRES
JURISDICTIONAL SITE IMPACT "C" - 7.73 ACRES
JURISDICTIONAL SITE IMPACT "D" - 1.07 ACRES
NON-JURISDICTIONAL SITE IMPACT "1" - 1.18 ACRES
NON-JURISDICTIONAL SITE IMPACT "2" - 2.73 ACRES
NON-JURISDICTIONAL SITE IMPACT "3" - 0.66 ACRES
JURISDICTIONAL SITE IMPACT "F" - 25.89 ACRES
JURISDICTIONAL SITE IMPACT "B" - 0.82 ACRES
JURISDICTIONAL SITE IMPACT "E" - 1.72 ACRES
NON-JURISDICTIONAL SITE IMPACT "4" - 2.14 ACRES
NON-JURISDICTIONAL SITE IMPACT "5" - 1.14 ACRES
DUG CONVEYANCE IMPACT "1" - 0.08 ACRES
JURISDICTIONAL SITE IMPACT "I" - 0.32 ACRES
JURISDICTIONAL SITE IMPACT "H" - 2.09 ACRES
DUG CONVEYANCE IMPACT "2" - 0.10 ACRES
JURISDICTIONAL SITE IMPACT "J" - 0.83 ACRES
DUG CONVEYANCE IMPACT "3" - 0.44 ACRES
JURISDICTIONAL SITE IMPACT "K" - 4.26 ACRES
JURISDICTIONAL SITE IMPACT "G" - 5.91 ACRES
JURISDICTIONAL SITE IMPACT "M" - 6.40 ACRES
NON-JURISDICTIONAL SITE IMPACT "6" - 3.54 ACRES
NON-JURISDICTIONAL SITE IMPACT "7" - 0.38 ACRES
STREAM IMPACT #1 833 LF
JURISDICTIONAL SITE IMPACT "N" - 0.39 ACRES
NON-JURISDICTIONAL SITE IMPACT "8" - 5.79 ACRES
PROJECT AREA BOUNDARY
JURISDICTIONAL RAIL IMPACT "R" - 0.29 ACRES
JURISDICTIONAL RAIL IMPACT "S" - 0.69 ACRES
JURISDICTIONAL RAIL IMPACT "Q" - 0.52 ACRES
JURISDICTIONAL RAIL IMPACT "P" - 5.31 ACRES
JURISDICTIONAL RAIL IMPACT "N" - 8.45 ACRES
JURISDICTIONAL RAIL IMPACT "T" - 0.19 ACRES
JURISDICTIONAL RAIL IMPACT "U" - 0.22 ACRES
JURISDICTIONAL RAIL IMPACT "O" - 11.61 ACRES
N
E
S
W
0 450' 700' 1400'
1" = 700'

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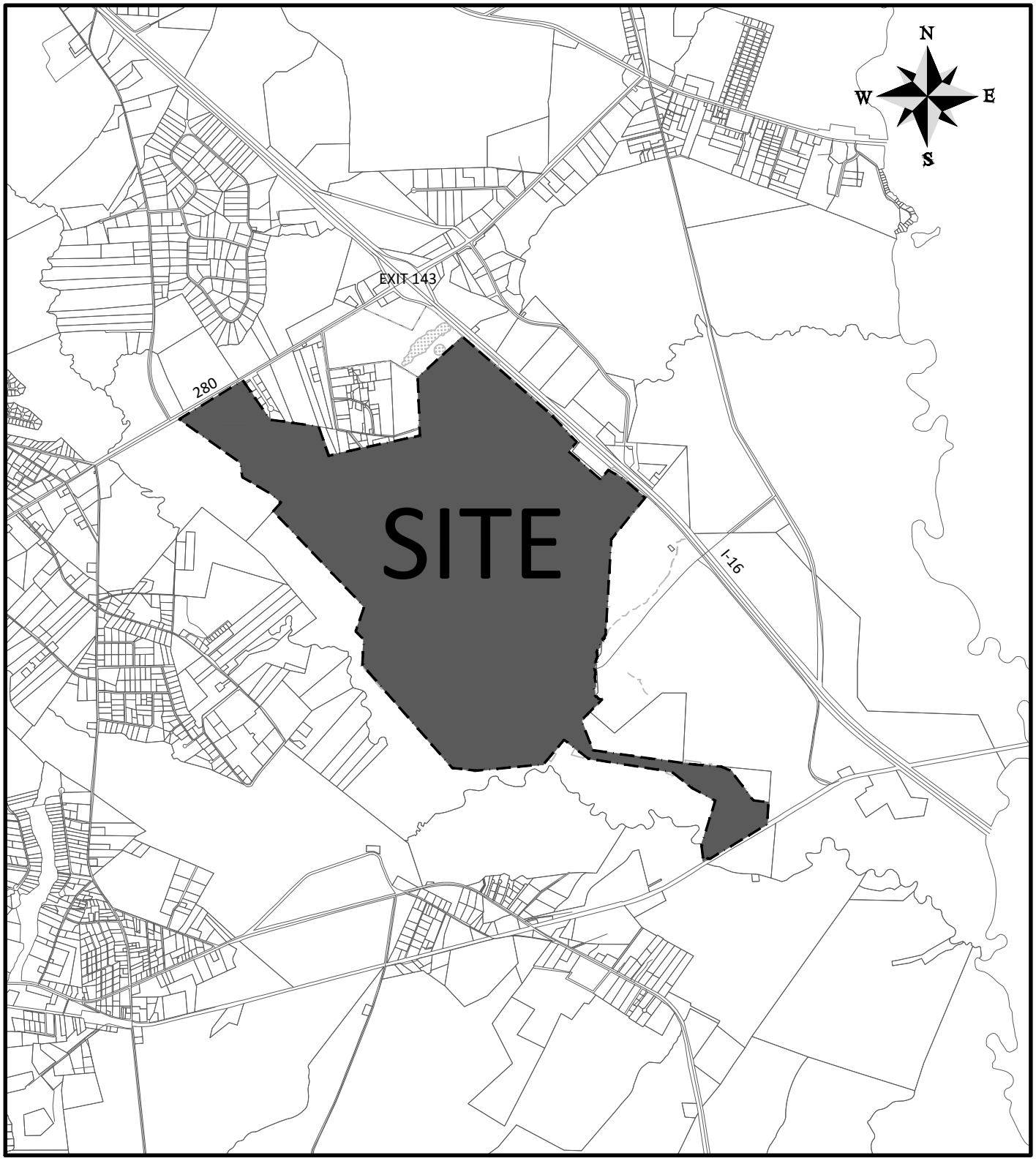
APPLICANTS PREFERRED SITE □ON-SITE CONFIGURATION □1
BRYAN COUNTY, GEORGIA
JUNE 6, 2018

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM

Z:\25503\25503.0000\Engineering\Drawings\Wetland Permit\Weland Permit Drawings\25503 - Wetland Impacts Cover and Map.dwg - Mar 31, 2015 - 12:33:15 PM



BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:

LOCATION MAP

CLIENT:

SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA

DATE: JUNE 6, 2018

JOB NUMBER: J - 25503

SHEET: 1 OF 14

SCALE: 1" = 4000'

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Savannah, GA 31405 • 912.234.5300

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LEGEND

ACREAGE SUMMARY TABLE

	TOTAL PROJECT ACREAGE	1,944.00 AC
	TOTAL JURISDICTIONAL WETLAND AREA	292.72 AC.
	TOTAL NON-JURISDICTIONAL WETLAND AREA	17.56 AC.
	TOTAL UPLAND AREA	1,633.72 AC.

WETLAND IMPACTS

JURISDICTIONAL WETLANDS IMPACTS

	RAIL ROAD IMPACT	27.29 AC.
	SITE IMPACT	65.31 AC.
	DUG CONVEYANCE IMPACT	0.62 AC.
	TOTAL JURISDICTIONAL WETLAND IMPACTS	93.22 AC.
	STREAM IMPACT	833 LF

NON-JURISDICTIONAL WETLANDS IMPACTS

	SITE IMPACT	17.56 AC.
	TOTAL NON-JURISDICTIONAL WETLAND IMPACTS	17.56 AC.

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
LEGEND

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 2 OF 14
SCALE: N.T.S.

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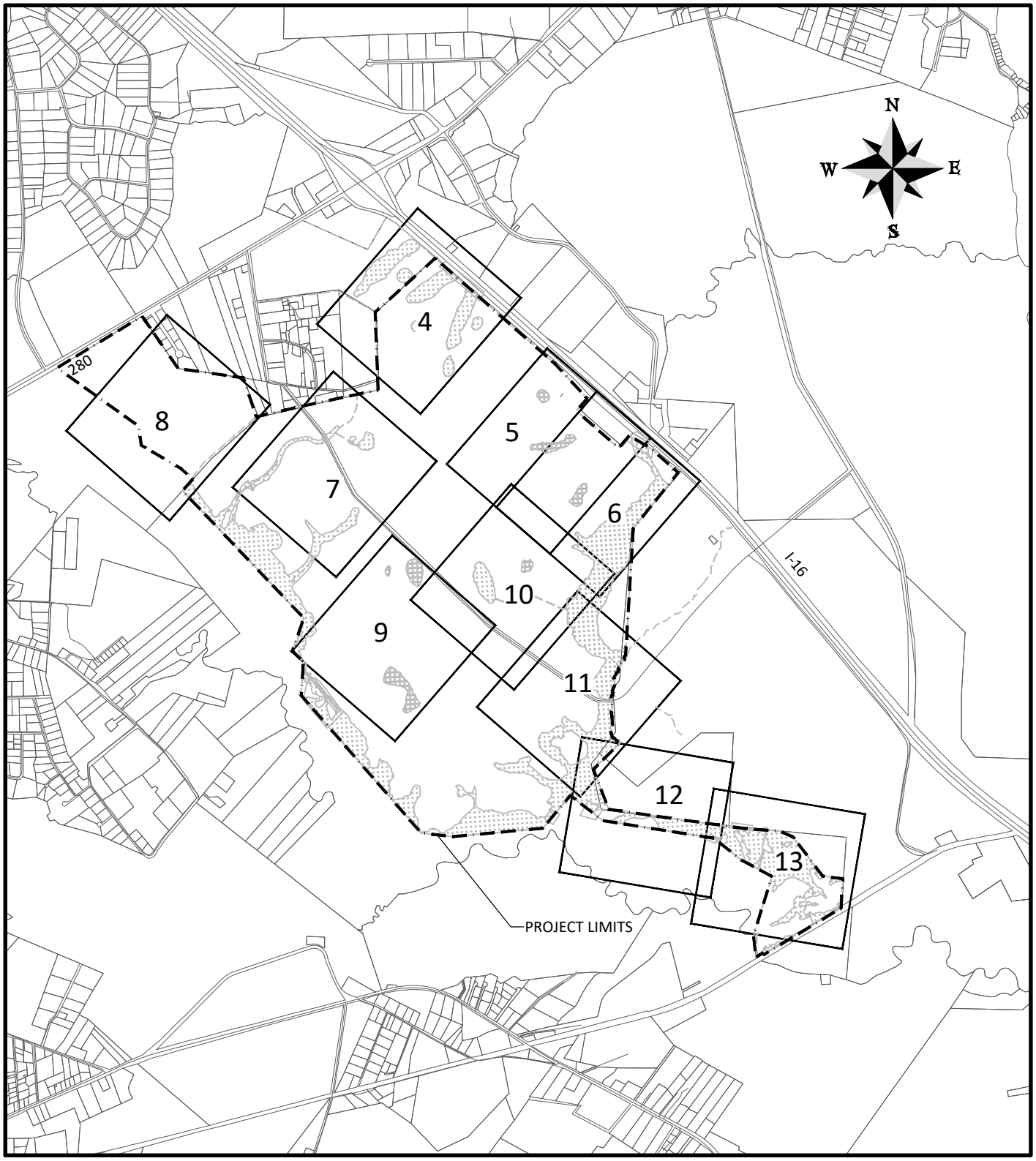

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
SHEET INDEX

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503

SHEET: 3 OF 14
SCALE: 1" = 3000'

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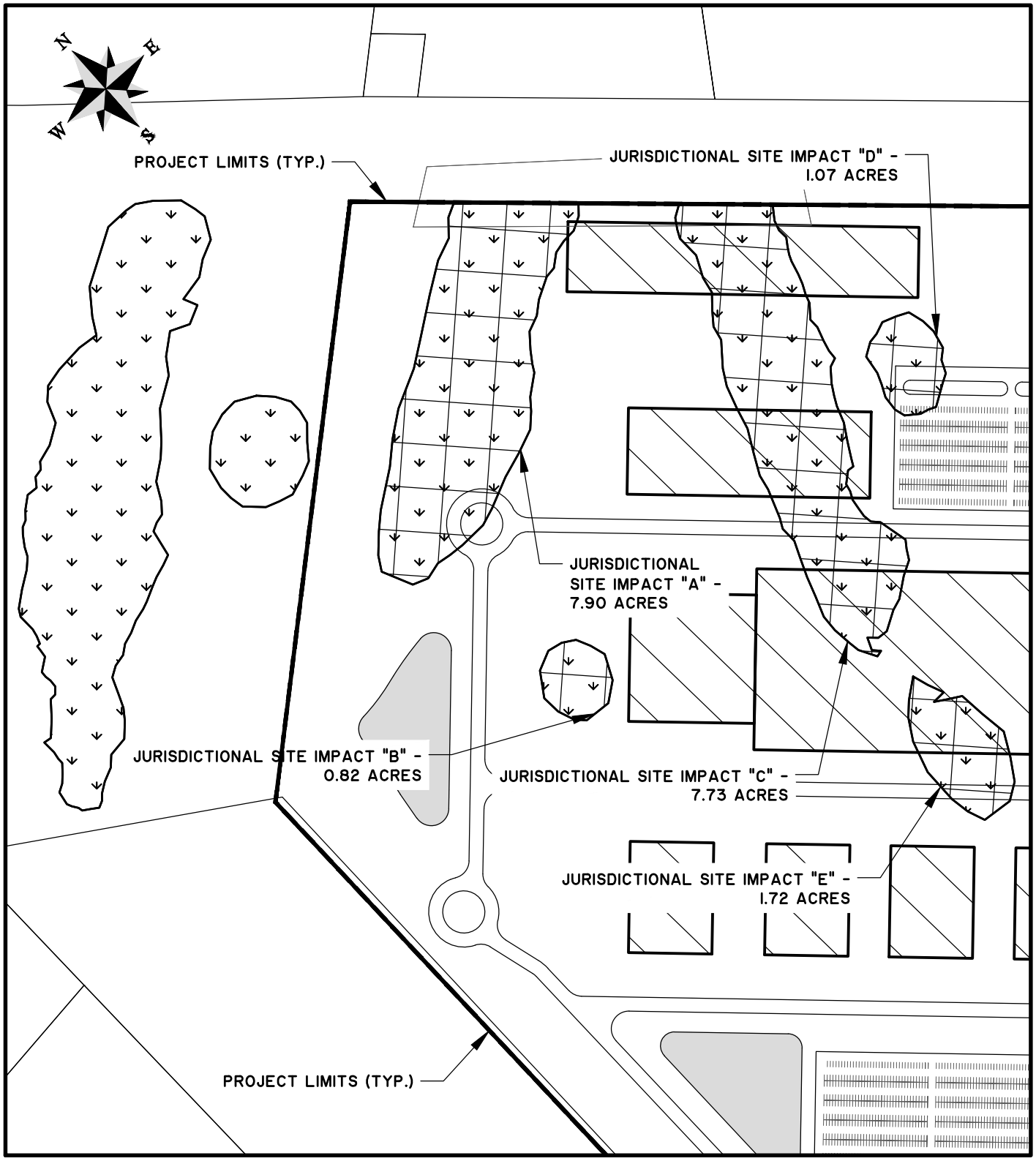

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 4 OF 14
SCALE: 1" = 400'

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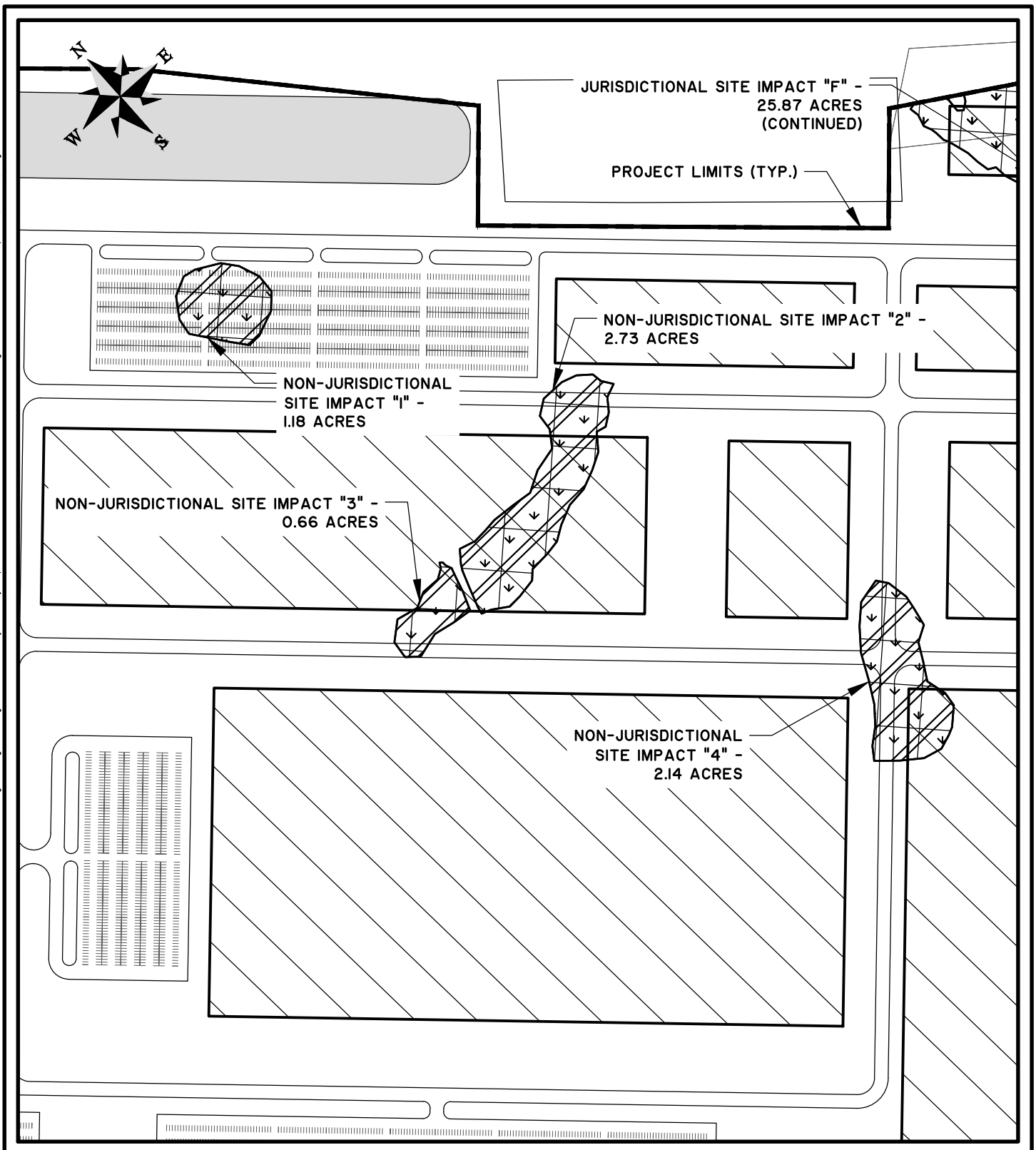

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 5 OF 14
SCALE: 1" = 400'

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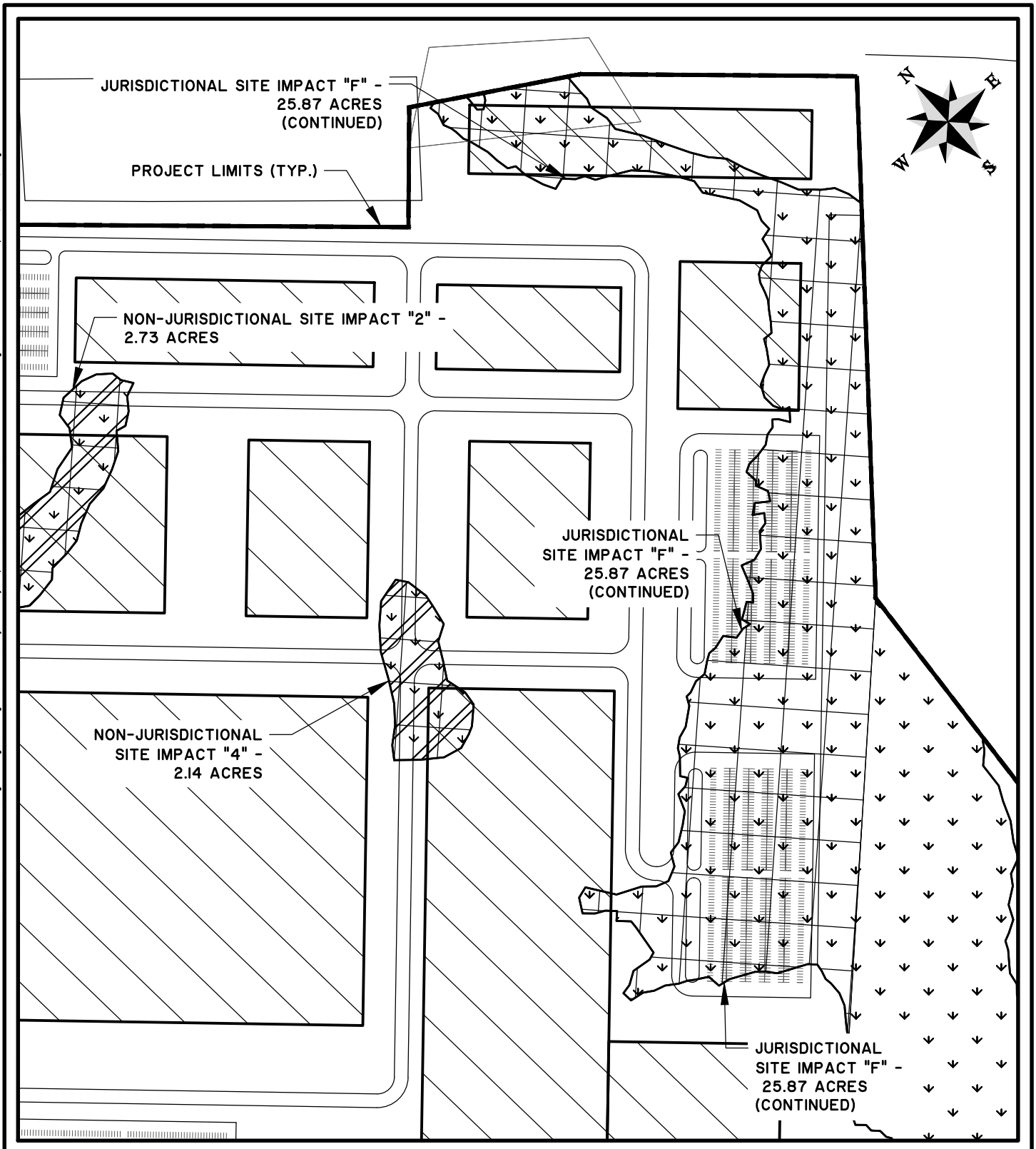

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 6 OF 14
SCALE: 1" = 400'

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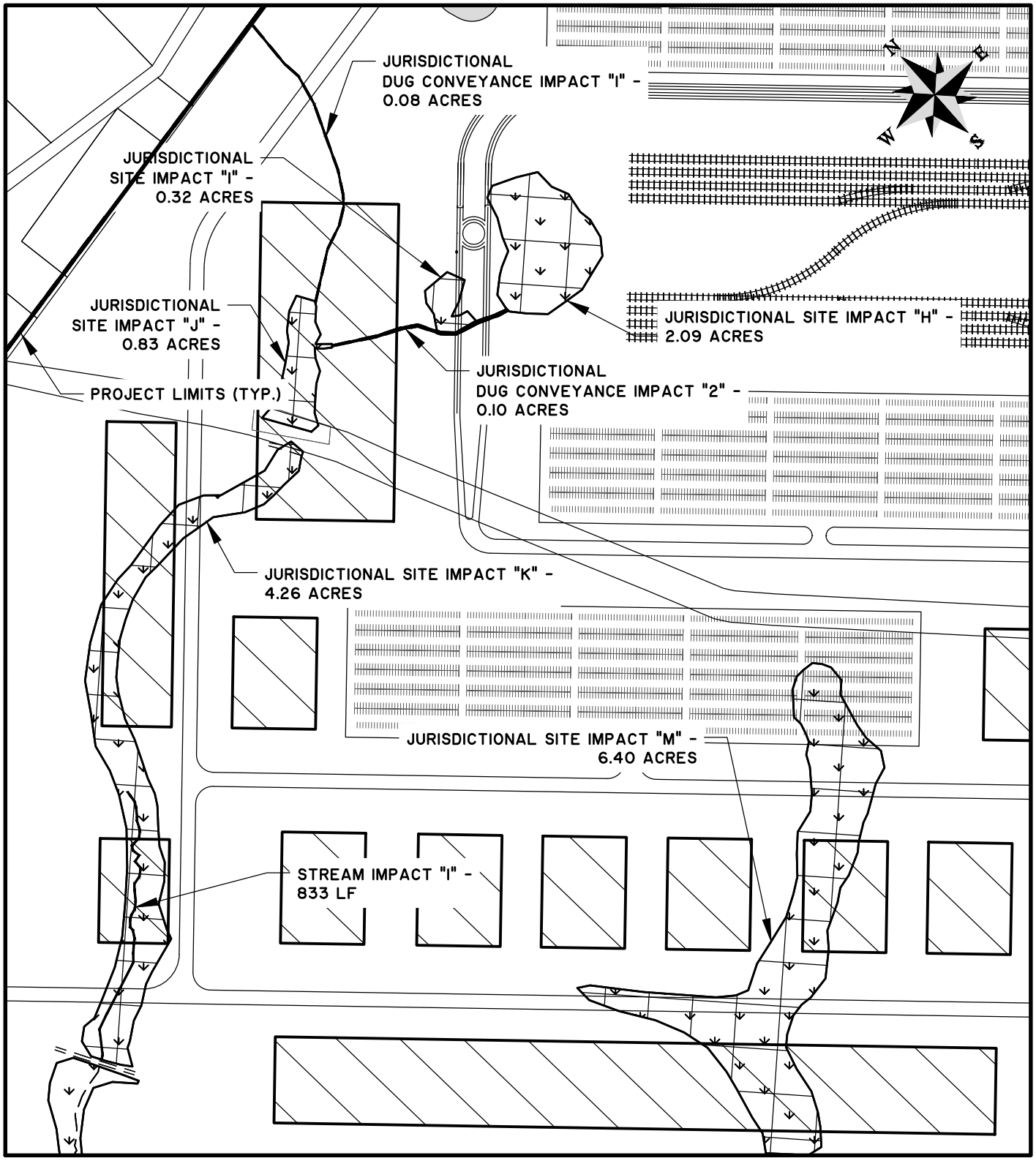

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 7 OF 14
SCALE: 1" = 400'

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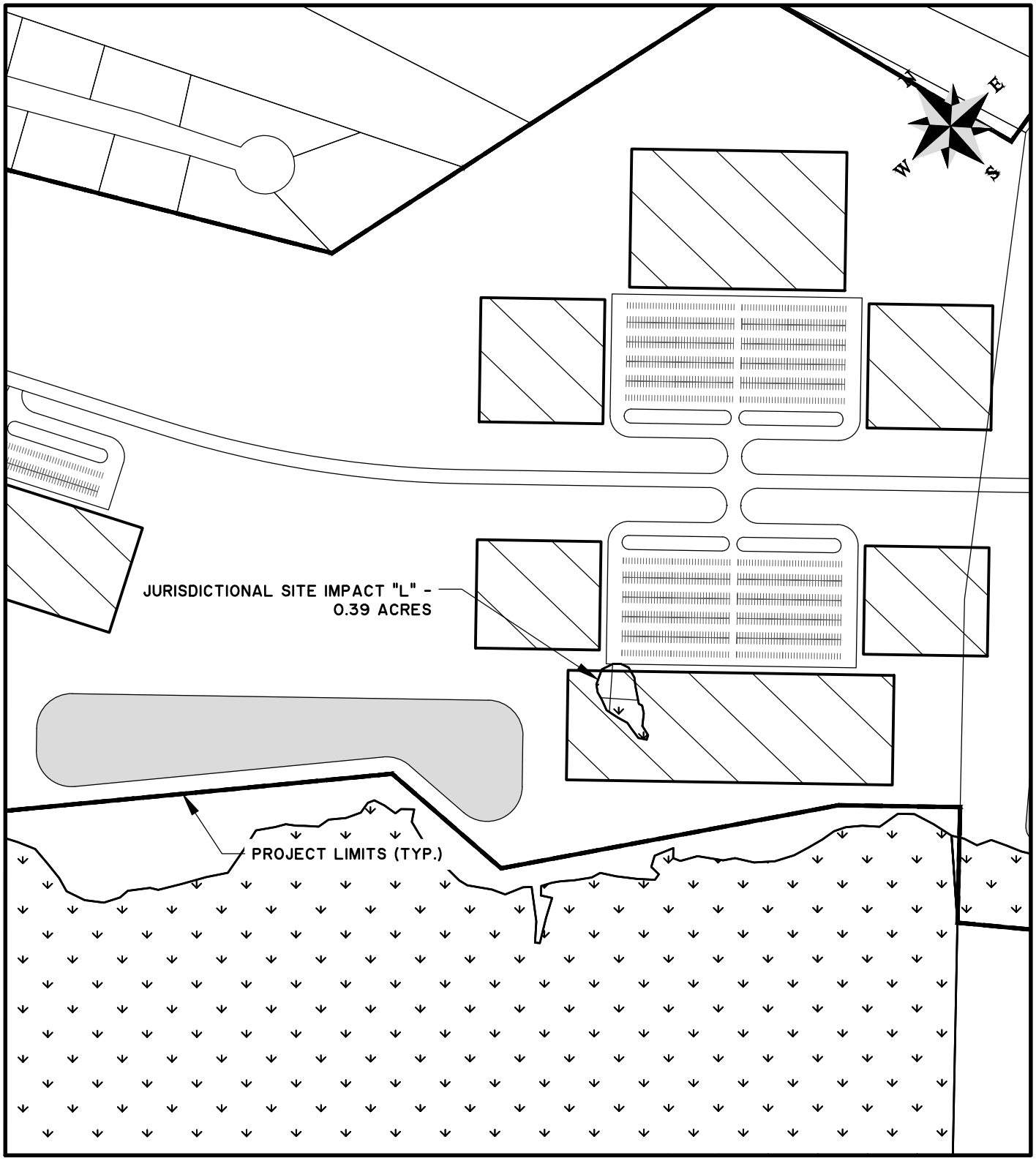

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 8 OF 14
SCALE: 1" = 400'

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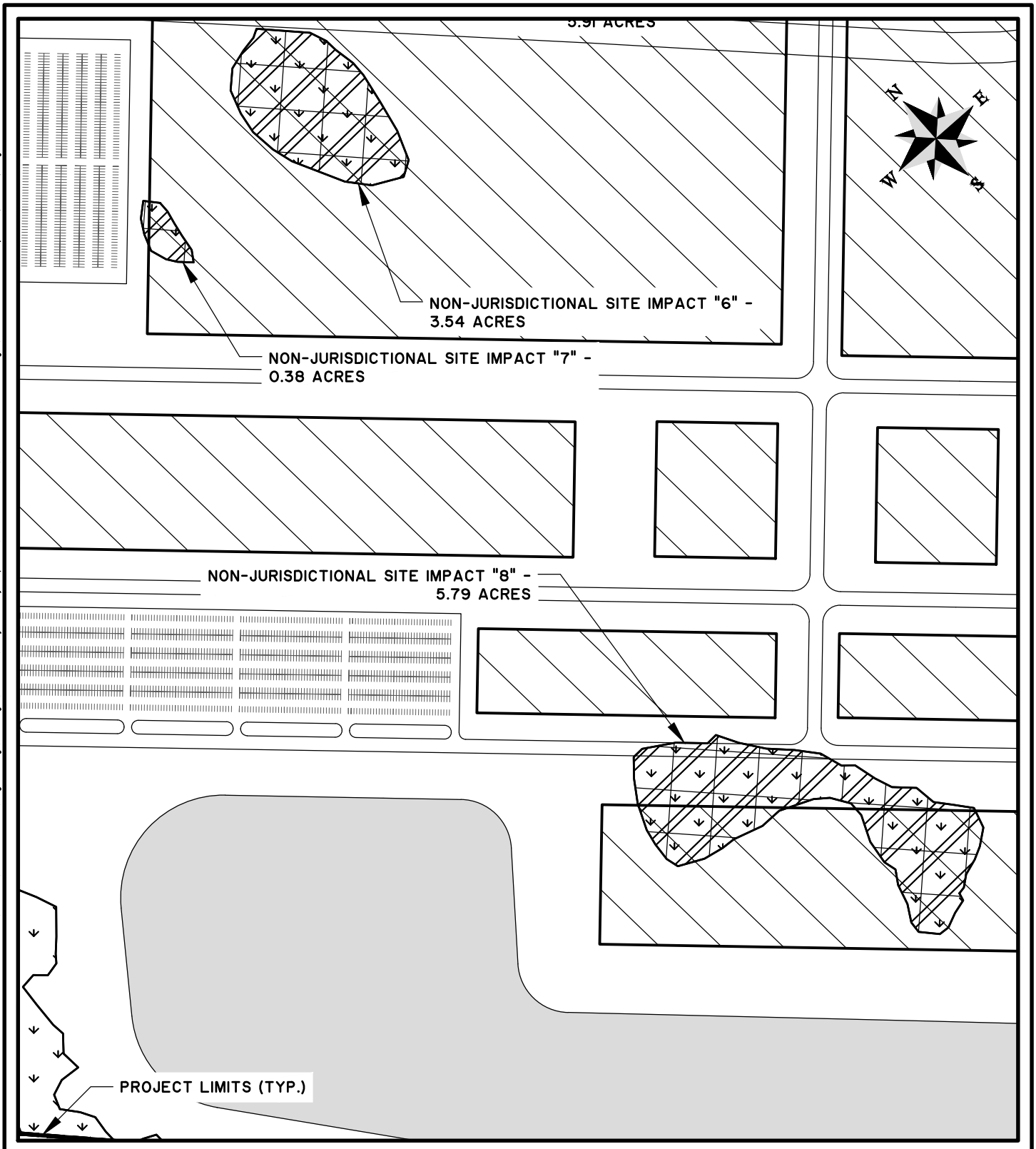

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 9 OF 14
SCALE: 1" = 400'

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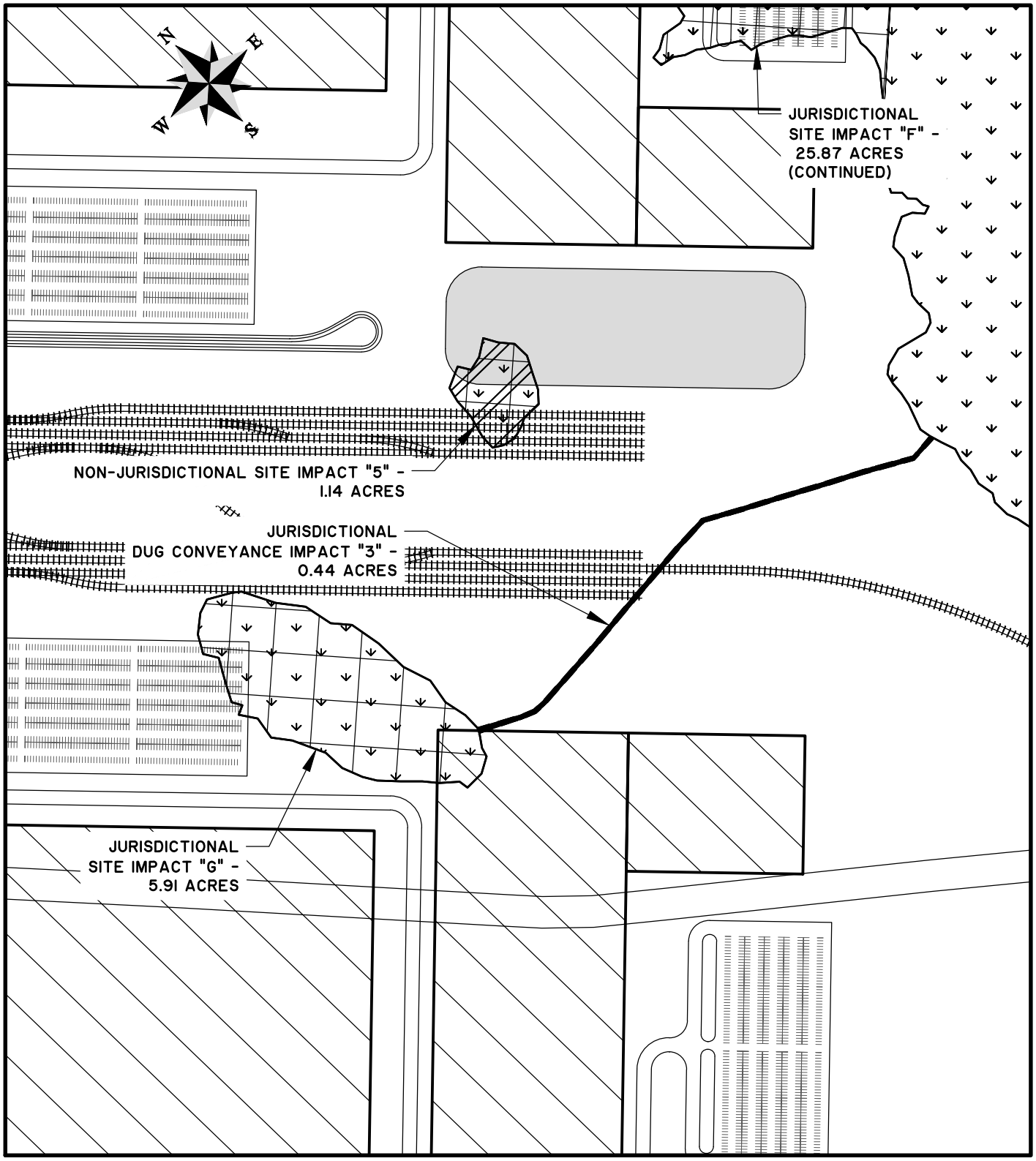

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 10 OF 14
SCALE: 1" = 400'

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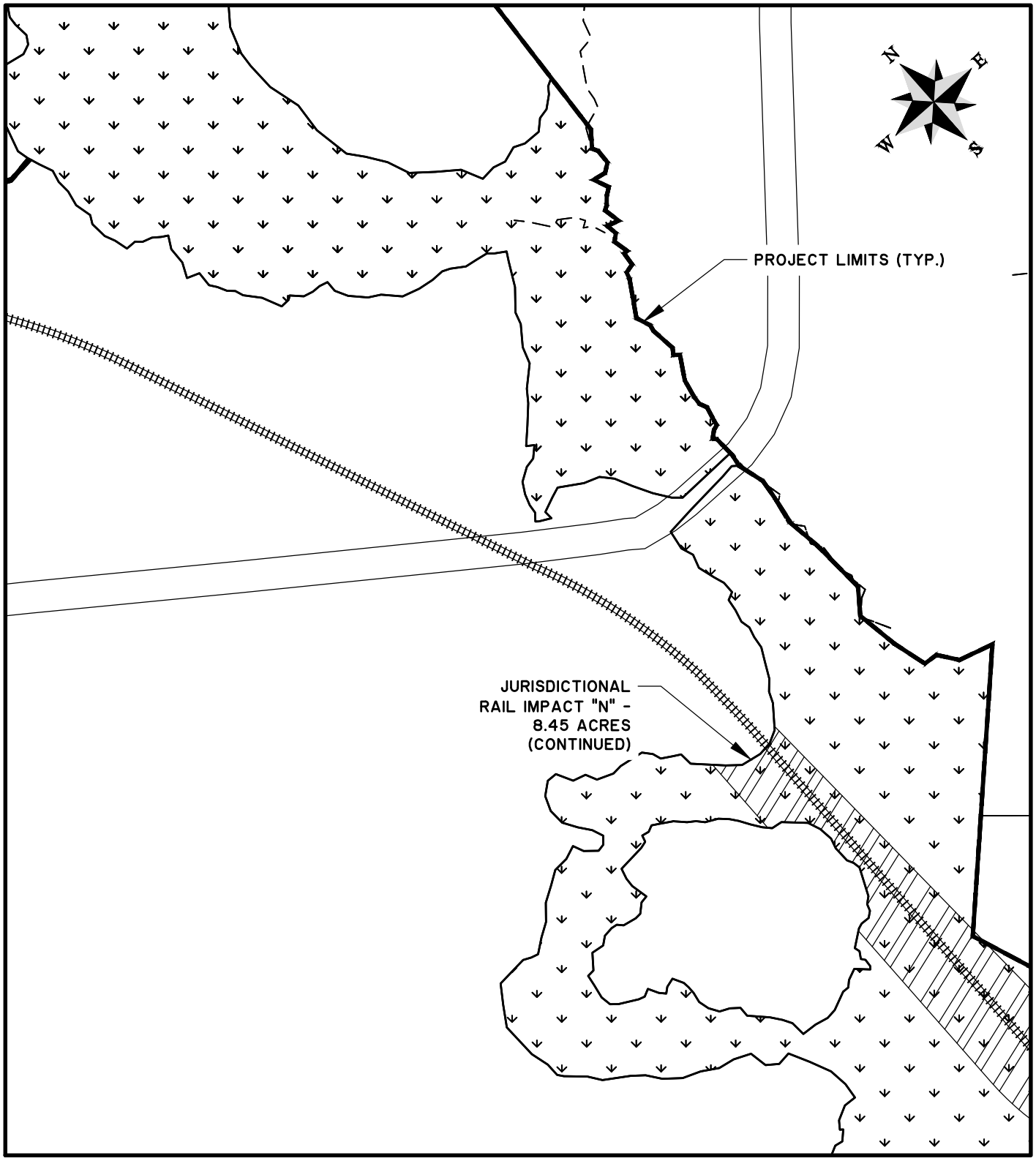

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 11 OF 14
SCALE: 1" = 400'

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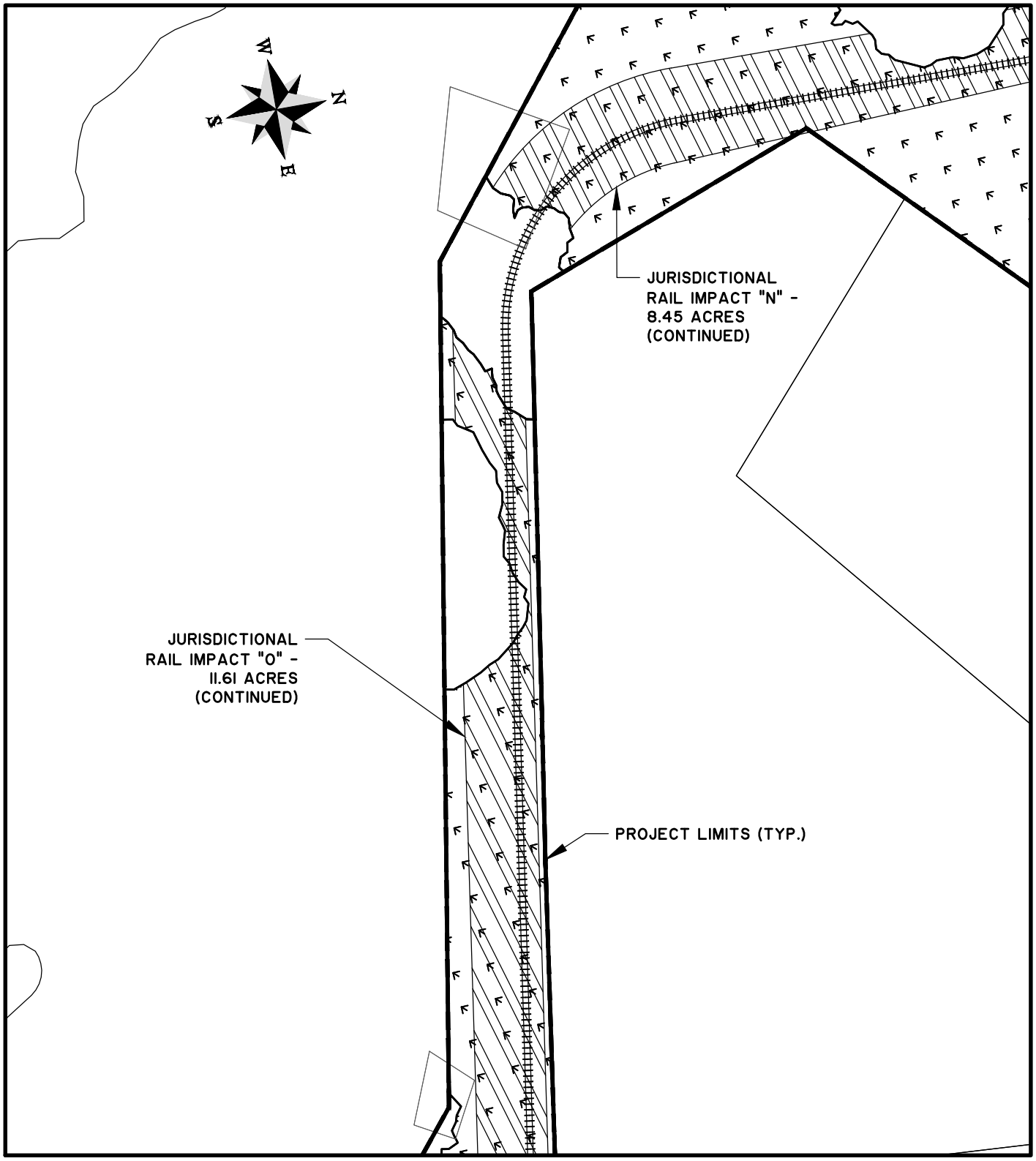

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 12 OF 14
SCALE: 1" = 400'

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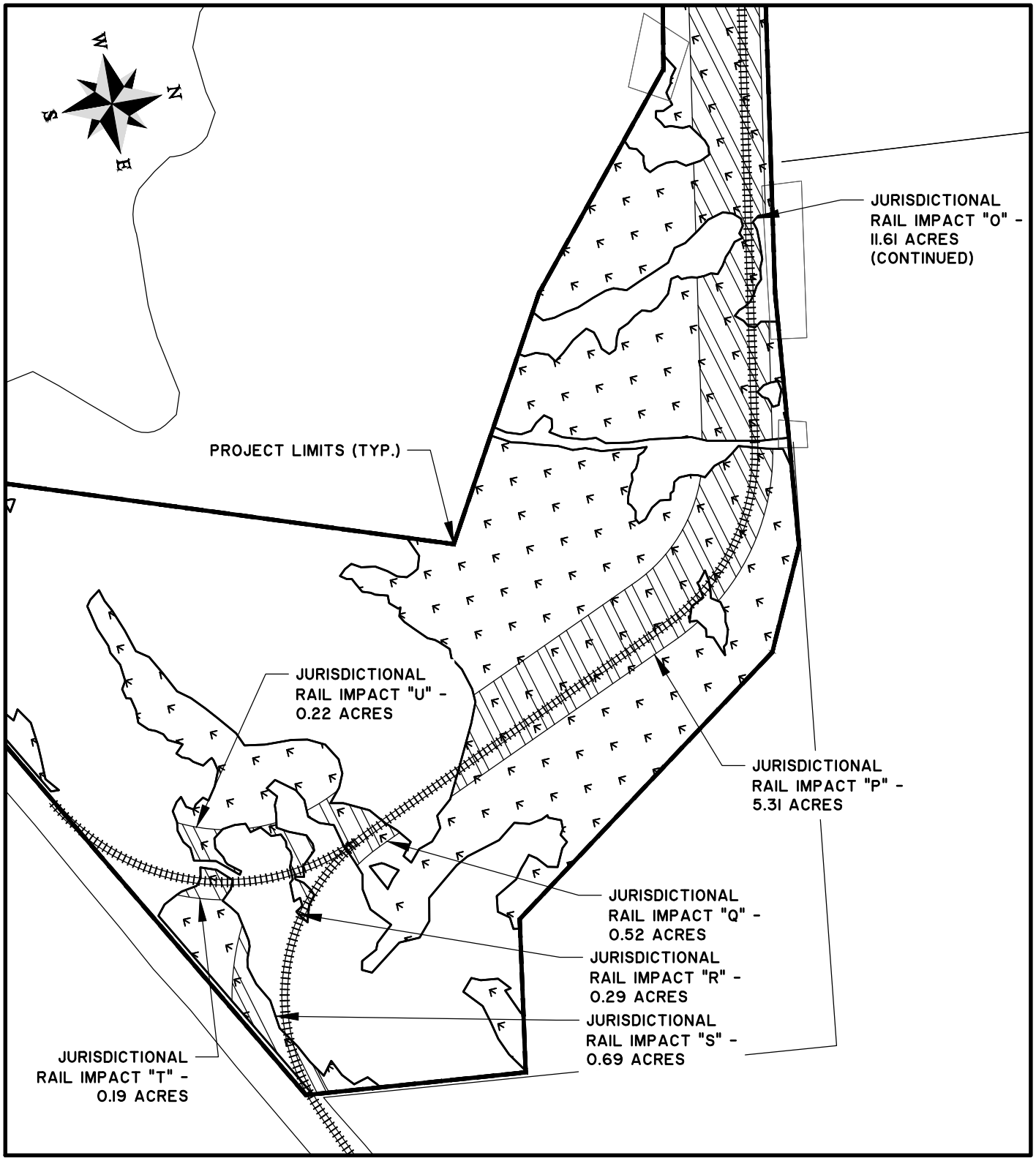

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 13 OF 14
SCALE: 1" = 400'

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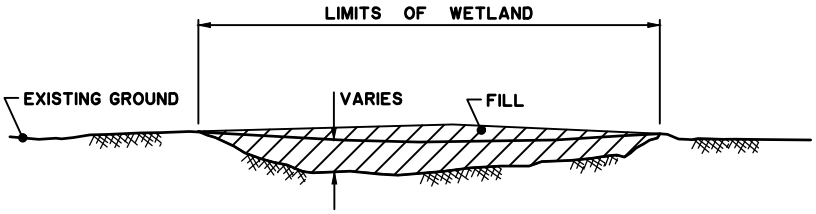
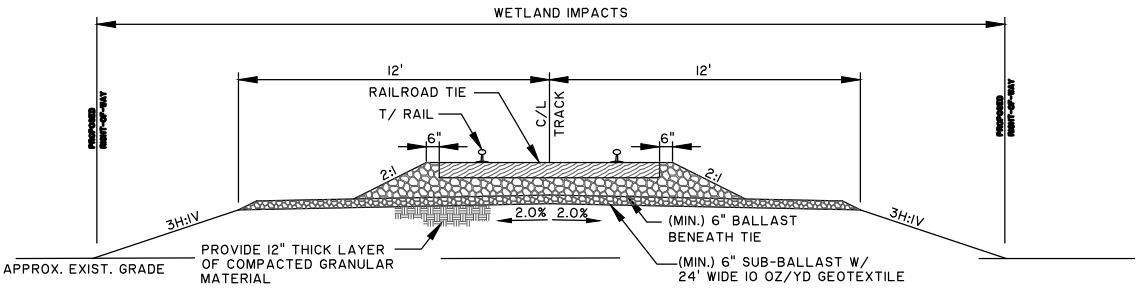


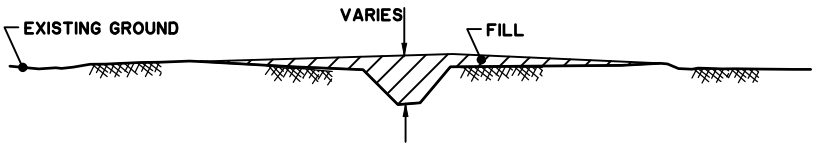
WETLAND FILL SECTION

NOT TO SCALE



TYPICAL SECTION THRU RAIL SPUR

SCALE: NTS



STREAM/DUG CONVEYANCE FILL SECTION

NOT TO SCALE

BRYAN COUNTY OEM SITE

PROPOSED ACTIVITY:
WETLAND PERMIT

CLIENT:
SAVANNAH HARBOR-INTERSTATE 16 CORRIDOR JOINT DEVELOPMENT AUTHORITY

LOCATION: BRYAN COUNTY, GEORGIA
DATE: JUNE 6, 2018
JOB NUMBER: J - 25503
SHEET: 14 OF 14
SCALE: N.T.S.

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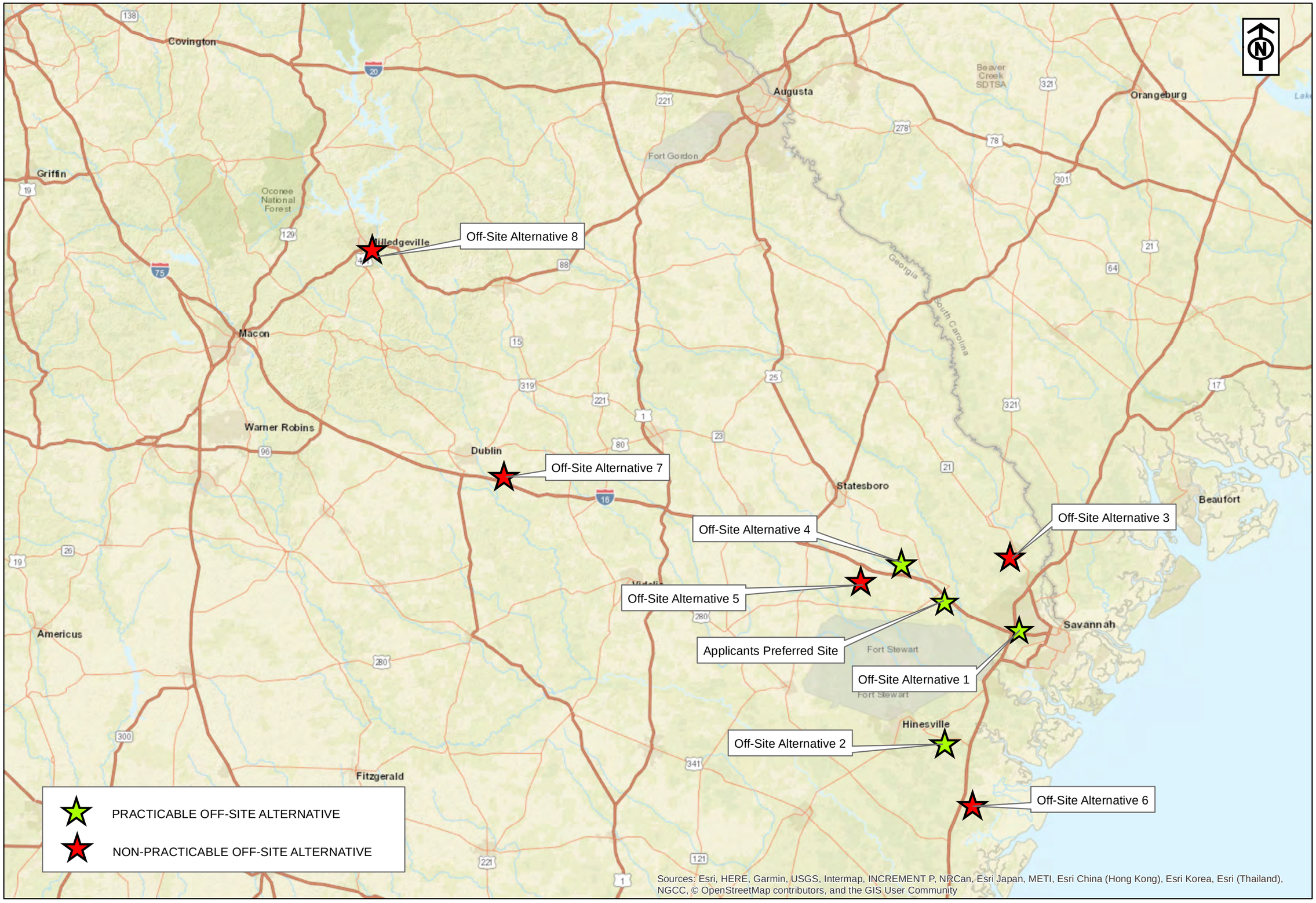
APPENDIX F:

Off-Site Alternatives



RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

RLC

OFF-SITE ALTERNATIVE LOCATION MAP

Prepared For: SHJDA

Bryan County OEM Site

Bryan County, Georgia

RLC Project No.:	14-225.1
Figure No.:	N/A
Sketch Date:	May 2018
Prepared By:	RP
Map Scale :	1 inch = 8 Miles

Source(s): ESRI Street Map

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\JP_Off Site Location

EXISTING RAIL LINES

EXISTING RAIL BRIDGE

SAVANNAH-OGEECHEE CANAL

SAVANNAH-OGEECHEE CANAL

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING POND

EXISTING MITSUBISHI HITACHI POWER SYSTEMS

SITE BOUNDARY

EXISTING PROPERTY LIMITS

PINE MEADOW ROAD

INTERSTATE 16

N

W E

S

0 300' 600' 1200'

1" = 600'

SITE TOTALS -

- **OVERALL SITE ACREAGE - ± 1,060 AC.**
- **PROPERTY PURCHASE AREA - ± 340 AC.**
- **IMPACTED WETLAND AREA - ± 289 AC.**

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Alternate Site #1 Exhibit
CHATHAM COUNTY, GEORGIA

MARCH 23, 2015

Savannah Harbor-Interstate 16 Corridor Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM

HWY 17

PEACOCK CREEK

POWERLINE EASEMENT

EXISTING PROPERTY LIMITS

E OGLETHORPE HWY

HWY 17

RAILROAD RIGHT-OF-WAY

CAY CREEK

PEACOCK CREEK

SITE BOUNDARY

CAY CREEK ROAD

N

E

W

S

0 300' 600' 1200'
1" = 600'

SITE TOTALS -

- OVERALL SITE ACREAGE - ± 1,060 AC.
- PROPERTY PURCHASE AREA - ± 53 AC.
- IMPACTED WETLAND AREA - ± 295 AC.

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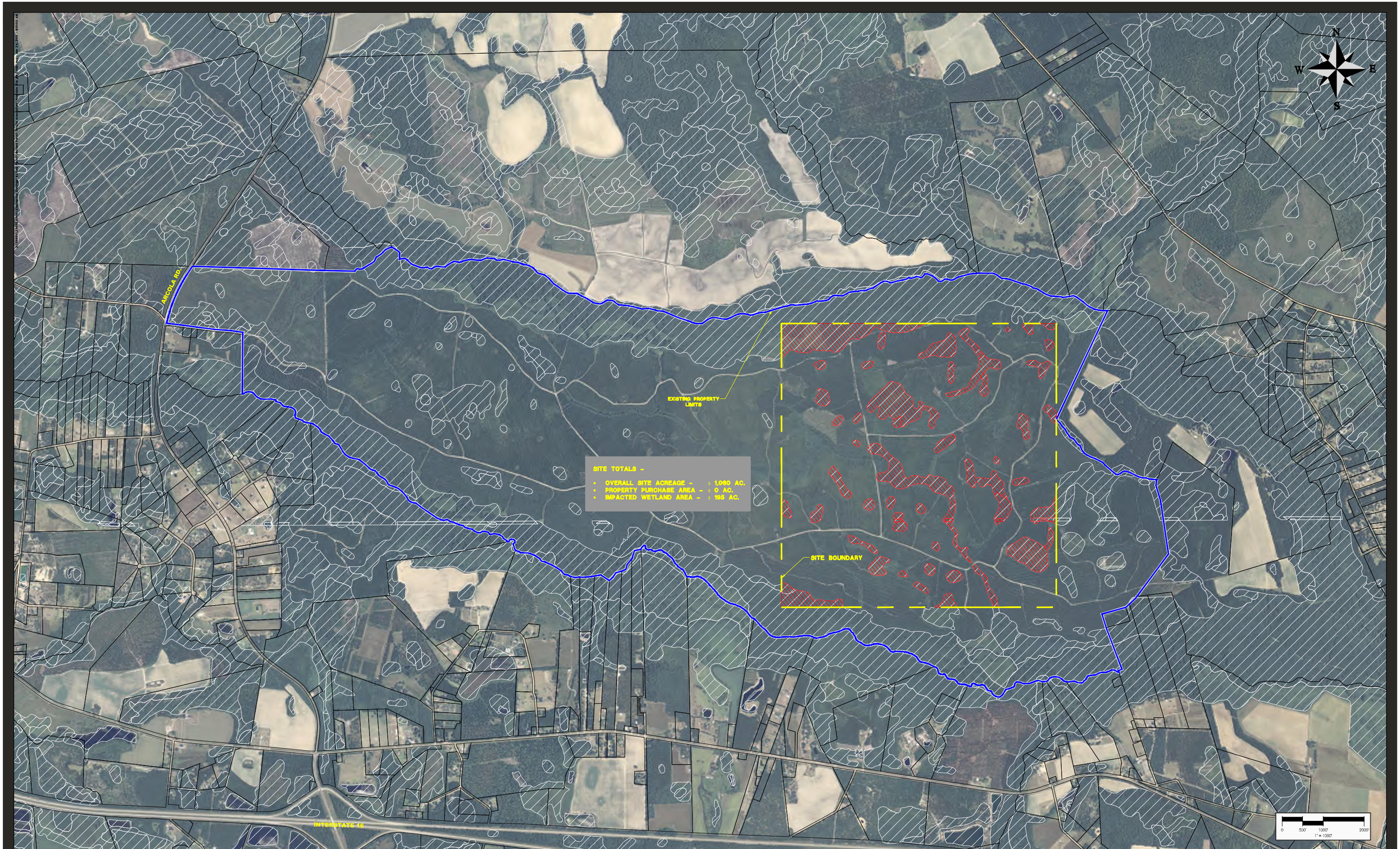
Alternate Site #2 Exhibit
LIBERTY COUNTY, GEORGIA
FEBRUARY 27, 2015

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM



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Alternate Site #4
BULLOCH COUNTY, GEORGIA
MARCH 23, 2015

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM

ATTACHMENT G:

On-Site Configurations


LEGEND
ACREAGE SUMMARY TABLE
TOTAL PROJECT ACREAGE 1,944.00 AC
TOTAL JURISDICTIONAL WETLAND AREA 292.72 AC.
TOTAL NON-JURISDICTIONAL WETLAND AREA 17.56 AC.
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SITE IMPACT 65.31 AC.
DUG CONVEYANCE IMPACT 0.62 AC.
TOTAL JURISDICTIONAL WETLAND IMPACTS 93.22 AC.
STREAM IMPACT 833 LF.
NON-JURISDICTIONAL WETLANDS IMPACTS
SITE IMPACT 17.56 AC.
TOTAL NON-JURISDICTIONAL WETLAND IMPACTS 17.56 AC.
N
E
S
W
EXIT 143
INTERSTATE 16
WEIGH STATION
TAR CITY RD.
HWY 280
EXISTING RAILROAD
PROJECT AREA BOUNDARY
JURISDICTIONAL SITE IMPACT "A" - 7.90 ACRES
JURISDICTIONAL SITE IMPACT "C" - 7.73 ACRES
JURISDICTIONAL SITE IMPACT "D" - 1.07 ACRES
NON-JURISDICTIONAL SITE IMPACT "2" - 2.73 ACRES
NON-JURISDICTIONAL SITE IMPACT "1" - 1.18 ACRES
NON-JURISDICTIONAL SITE IMPACT "3" - 0.66 ACRES
JURISDICTIONAL SITE IMPACT "F" - 25.89 ACRES
JURISDICTIONAL SITE IMPACT "B" - 0.82 ACRES
JURISDICTIONAL SITE IMPACT "E" - 1.72 ACRES
NON-JURISDICTIONAL SITE IMPACT "4" - 2.14 ACRES
NON-JURISDICTIONAL SITE IMPACT "5" - 1.14 ACRES
DUG CONVEYANCE IMPACT "1" - 0.08 ACRES
JURISDICTIONAL SITE IMPACT "I" - 0.32 ACRES
JURISDICTIONAL SITE IMPACT "H" - 2.09 ACRES
DUG CONVEYANCE IMPACT "2" - 0.10 ACRES
JURISDICTIONAL SITE IMPACT "J" - 0.83 ACRES
DUG CONVEYANCE IMPACT "3" - 0.44 ACRES
JURISDICTIONAL SITE IMPACT "K" - 4.26 ACRES
JURISDICTIONAL SITE IMPACT "G" - 5.91 ACRES
JURISDICTIONAL SITE IMPACT "M" - 6.40 ACRES
NON-JURISDICTIONAL SITE IMPACT "6" - 3.54 ACRES
NON-JURISDICTIONAL SITE IMPACT "7" - 0.38 ACRES
STREAM IMPACT #1 833 LF
JURISDICTIONAL SITE IMPACT "N" - 0.39 ACRES
NON-JURISDICTIONAL SITE IMPACT "8" - 5.79 ACRES
JURISDICTIONAL RAIL IMPACT "R" - 0.29 ACRES
JURISDICTIONAL RAIL IMPACT "S" - 0.69 ACRES
JURISDICTIONAL RAIL IMPACT "Q" - 0.52 ACRES
JURISDICTIONAL RAIL IMPACT "P" - 5.31 ACRES
JURISDICTIONAL RAIL IMPACT "N" - 8.45 ACRES
JURISDICTIONAL RAIL IMPACT "T" - 0.19 ACRES
JURISDICTIONAL RAIL IMPACT "U" - 0.22 ACRES
JURISDICTIONAL RAIL IMPACT "O" - 11.61 ACRES
0 450' 700' 1400'
1" = 700'

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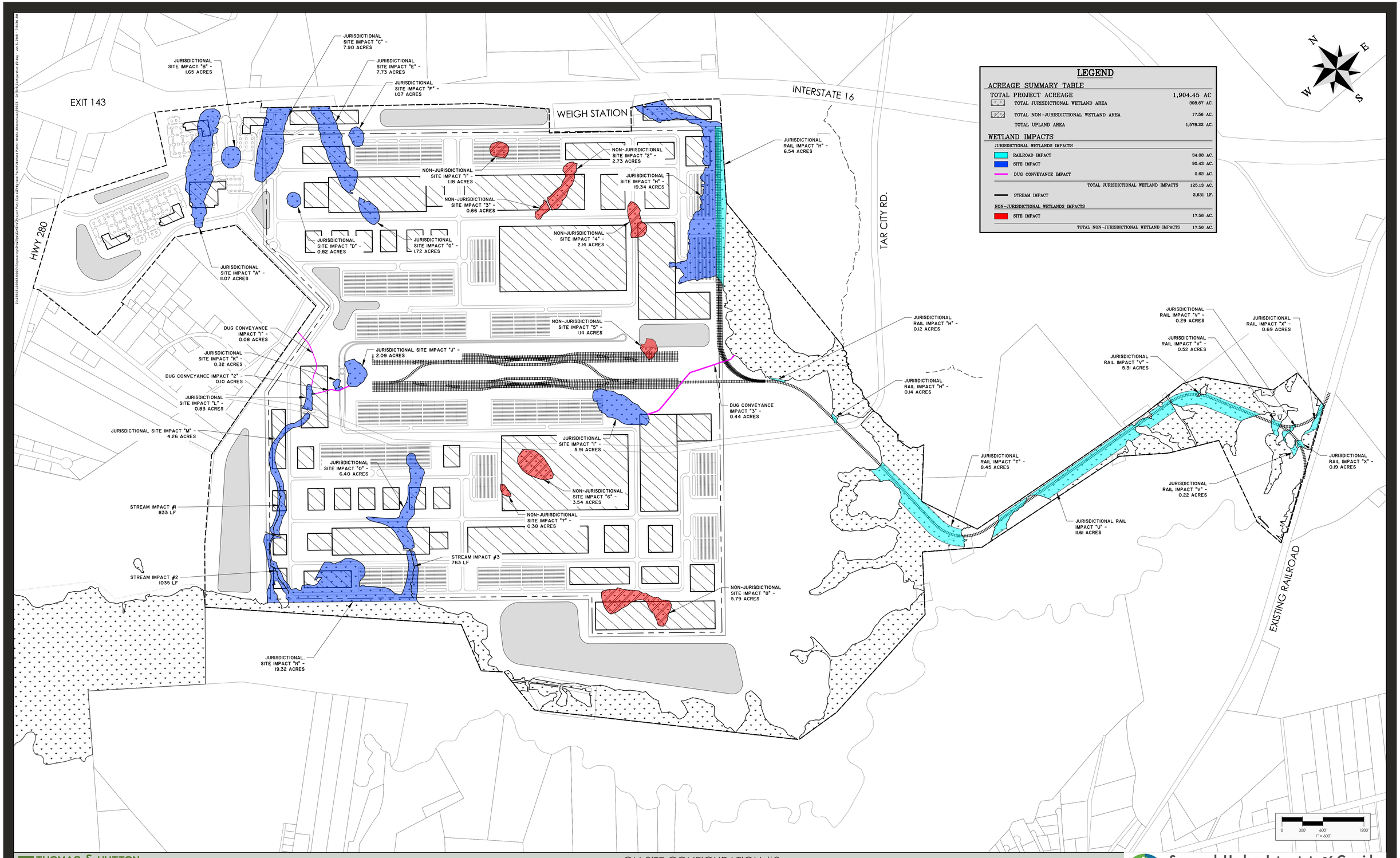
APPLICANTS PREFERRED SITE / ON-SITE CONFIGURATION #1
BRYAN COUNTY, GEORGIA

JUNE 6, 2018

Savannah Harbor-Interstate 16 Corridor Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM



LEGEND

ACREAGE SUMMARY TABLE

TOTAL PROJECT ACREAGE		1,904.45 AC
	TOTAL JURISDICTIONAL WETLAND AREA	308.67 AC.
	TOTAL NON-JURISDICTIONAL WETLAND AREA	17.56 AC.
	TOTAL UPLAND AREA	1,578.22 AC.

WETLAND IMPACTS

JURISDICTIONAL WETLANDS IMPACTS		
	RAILROAD IMPACT	34.08 AC.
	SITE IMPACT	90.43 AC.
	DUG CONVEYANCE IMPACT	0.62 AC.
	TOTAL JURISDICTIONAL WETLAND IMPACTS	125.13 AC.
	STREAM IMPACT	2,631 LF.
NON-JURISDICTIONAL WETLANDS IMPACTS		
	SITE IMPACT	17.56 AC.
	TOTAL NON-JURISDICTIONAL WETLAND IMPACTS	17.56 AC.

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ON-SITE CONFIGURATION #2
BRYAN COUNTY, GEORGIA

JUNE 6, 2018

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
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ON-SITE CONFIGURATION #3
BRYAN COUNTY, GEORGIA

JUNE 6, 2018

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN • BULLOCH • CHATHAM • EFFINGHAM

EXIT 143

WEIGH STATION

INTERSTATE 16

HWY 280

TAR CITY RD.

EXISTING RAILROAD

ON SITE CONFIGURATION #3

- NON-JURISDICTIONAL WETLAND IMPACT – ± 17.56 AC.
- JURISDICTION WETLAND IMPACTS – ± 209.28 AC.
- TOTAL WETLAND IMPACTS – ± 226.84 AC.

- STREAM IMPACTS – ± 2,646 LF.

0 300' 600' 1200'
1" = 600'

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ON-SITE CONFIGURATION #4
BRYAN COUNTY, GEORGIA

JUNE 6, 2018

Savannah Harbor-Interstate 16 Corridor Joint Development Authority
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ATTACHMENT H:

Threatened & Endangered Species Information

Supplement Report to Habitat Assessment and Threatened & Endangered Species Survey of the Bryan County OEM Site
Bryan County, Georgia

Prepared by:
Resource & Land Consultants
41 Park of Commerce Way, Suite 303
Savannah, GA 31405

May 2018

A. Introduction

A protected species assessment was completed in 2015 for the ±1,904 acre located south of Interstate 16, east of GA Highway 280, near Black Creek in Bryan County, Georgia (32.159357°, -81.456570). RLC conducted the assessment to determine the potential for the occurrence of animal and plant species currently listed as threatened or endangered in Bryan County by federal regulations. Following review of the report findings, the U.S. Fish & Wildlife Service (USFWS) provided concurrence that the project site did not support any federally listed threatened or endangered species. Since no changes in site conditions have occurred that would warrant a new survey within the 1,904 acre area, this supplement was prepared to address an additional 153 acres within the current project area that was not included in the original survey. Figure 1 depicts the 2015 survey area and the additional acreage surveyed in 2018.

B. Survey Methodology

Prior to conducting the field survey, RLC reviewed available state and federal records to determine if any listed species were known to occur within and/or in the general vicinity of the project area. Available resources such as aerial photographs, U.S. Geological Survey topographic maps, National Wetlands Inventory Maps, and Natural Resource Conservation Service Soil Survey were examined in an effort to complete a preliminary determination of existing habitats prior to the field visit. Once this information was assessed, RLC conducted a pedestrian review of the project site to determine the available habitats on site and the potential for listed species to inhabit them. The age and species composition of existing habitats were recorded, photographs were taken to document the current condition of the site and vegetative community and habitat types were identified.

A review of the USFWS Information, Planning, and Conservation System (IPaC, Appendix A) and Georgia Department of Natural Resources, Wildlife Resource Division's (GA-DNR) Known Rare Species and Natural Community Element Occurrences within Bryan County was conducted to identify species that are known to occur in Bryan County. During preliminary review of available data and pedestrian surveys within the project area, the study area contains habitats suitable for the eastern indigo snake (*Drymarchon corais couperi),* frosted flatwoods salamander (*Ambystoma cingulatum*), striped newt (*Notophthalmus perstriatus*), and gopher tortoise (*Gopherus polyphemus*).

C. Habitats and Land Use Areas

The 2018 survey area totals approximately 153 acres located adjacent to Highway 280 and south of Aspen Lane. The subject property has been managed for timber production and contains managed pine plantation upland totaling approximately 152.6 acres and one small isolated wetland totaling approximately 0.39 acre. Habitat types are depicted in Figure 2. The following summary provides a brief description of each habitat, photographs depicting typical conditions of each habitat are displayed at Figures 8 & 9.

- **Mature Mixed Pine & Hardwood Upland:** The majority of the property consists of mature pine and hardwood upland that appears to have been largely intact for over 25 years. More dense growth is present near GA Highway 280. The bulk of the track is comprised of moderately

- Areas cut several years ago were sprayed with herbicide to kill remaining hardwoods (water oaks, live oaks) and replanted in pines. The shrub and herbaceous layer within these areas is much more dense than the recently cut areas.

Mature Mixed Pine & Hardwood Upland

Overstory:	Understory:
Loblolly pine (*Pinus taeda*)	Broomsedge (*Andropogon virginicus*)
Longleaf Pine (*Pinus palustris*)	Yellow jessamine (Gelsemium sempervirens)
Turkey Oak (*Quercus laevis*)	Saw palmetto (Serenoa repens)
Red maple (Acer rubrum)	Bracken fern (Pteridium aquilinum)
Sweetgum (Liquidambar styraciflua)	Wax myrtle (*Myrica cerifera*)
Water oak (Quercus nigra)	Wiregrass (*Aristida stricta*)
Live Oak (*Quercus virginiana*)	

- **Isolated Forested Wetlands:** The study area contains one isolated forested wetland. This area is a depressional wetland with mature overstory and varying degrees of shrub and herbaceous cover:

Overstory:	Understory:	
Water Oak	Wax Myrtle	Fetterbush
Black Gum	Swamp titi	Greenbrier
Red bay	Sphagnum moss	Blackberry
Sweetgum	Poison Ivy	Netted chainfern
	Blackstem Chainfern	

The majority of the soil type for the 153 acre additional area is identified by the USDA Natural Resource Conservation Service as Lakeland.

II. FEDERALLY PROTECTED RESOURCES

The project area was assessed in consideration of the Endangered Species Act of 1973. Pedestrian surveys were conducted to identify protected individuals and/or potential habitat for protected individuals within the study area on numerous occasions during May 2018. Species-specific surveys were conducted for those species that prefer habitats similar to those found in the study area. Table 2 depicts federally protected species listed in the study area that have potential ranges within Bryan County, Georgia. This table also provides a general habitat description for each species and a biological determination as to the effects that a potential industrial development would have on each of these species. Section II A provides a detailed description of those listed species that have habitat preferences that are found in the study area.

Table 2- Known Occurrences and Biological Determination for Protected Species Listed in Bryan County

Class	Scientific Name	Common Name	IPaC Trust Resources List	Legal Status*		Habitat Present	Species Present	Biological Determination
				Federal	State			
Amphibians	Ambystoma cingulatum	Frosted flatwoods salamander	Yes	T	T	Yes	No	No Impact
	Striped Newt	Notophthalmus perstriatus	Yes	C	T	Yes	No	No Impact
Birds	Picoides borealis	Red-cockaded Woodpecker	Yes	E	E	None	No	No impact
	Calidris canutus rufa	Red Knot	Yes	T	T	None	No	No impact
	Mycteria americana	Wood Stock	Yes	T	T	Non-preferred	No	No impact
Fishes	Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	Yes	E	E	None	No	No impact
	Moxostoma robustum	Shortnose Sturgeon	No	E	E	None	No	No impact
Mammals	Eubalaena glacialis	North Atlantic Right Whale	Yes	E	E	None	No	No impact
	Tricheclus manatus	West Indian Manatee	Yes	E	E	None	No	No impact
Reptiles	Drymarchon couperi	Eastern Indigo Snake	Yes	T	T	Preferred	None observed	Little to no impact
	Gopherus polyphemus	Gopher Tortoise	Yes	C	T	Preferred	Yes	Little to no impact
	Chelonia mydas	Green Sea Turtle	Yes	T	T	None	No	No impact
	Dermochelys coriacea	Leatherback Sea Turtle	Yes	E	T	None	No	No impact
	Caretta caretta	Loggerhead Sea Turtle	Yes	T	T	None	No	No impact

A. Federally Threatened and Endangered Species

The following provides detailed information for federally listed species within Bryan County, Georgia that have potential habitat within the study area:

Red-Cockaded Woodpecker (RCW) (*Piciodes borealis*):
The red-cockaded woodpecker has a black back with broken white horizontal stripes ("ladder-back" pattern). The head is black except for a large white cheek patch on each side. The chest is dull white with small black spots, and the total length is about 8 in. Adult males have a tiny patch of red feathers (cockade) behind the eye, but the cockade is not displayed unless the bird is excited. The juvenile male has a red spot on top of his head.

This small woodpecker needs large expanses of mature, open pine forest, particularly longleaf, slash, or loblolly pine. Nest and roost cavities are excavated only in old living pines, and the process may take several years to complete. Trees selected for cavities are usually infected with red heart fungus, which softens the heartwood, making excavation

easier. The habitat that probably supported the largest populations historically was the fire-maintained longleaf pine forest of the Coastal Plain.

The property does contain scattered mature pines located primarily along Black Creek and the wetland fringes. However, the vegetation in these areas contain a dense understory and are not preferred by the RCW. No individuals or colonies of the RCW were observed during the field survey and no nesting or foresting habitat was noted. Due to the lack of suitable habitat within the project area, the proposed project will have no effect on this species.

Eastern indigo snake *(Drymarchon corais couperi*):
Average adult size is 60-74 in; the record is 103.5 in. Adults are large and thick bodied. The body is glossy black and in sunlight has iridescent blue highlights. The chin and throat is reddish or white, and the color may extend down the body. The belly is cloudy orange and blue-gray. The scales on its back are smooth, but some individuals may possess some scales that are partially keeled. There are 17 dorsal scale rows at midbody. The pupil is round. Juveniles are black-bodied with narrow whitish blue bands.

Eastern indigo snakes primarily occur in sandhill habitats in northern Florida and southern Georgia. Preferred habitat includes pine and scrubby flatwoods, pine rocklands, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats. They need a mosaic of habitats to complete their annual life cycle. In the northern range of their territory they require sheltered retreats from winter cold and desiccating conditions and often coexist with gopher tortoises inside their burrows. In wetter habitats that lack gopher tortoises, they may take shelter in hollowed root channels, hollow logs, or the burrows of rodents, armadillo, or land crabs.

The project area does contain sandhill habitat typically associated with the indigo snake and active and abandoned gopher tortoise burrows were observed. During this study, no active, 3 inactive, and 6 non-gopher tortoise burrows were located. An exhibit depicting the location and status of burrows located on the study area are depicted on Exhibit 4. According to USFWS, the nearest documented occurrence of this species was approximately 1 mile to the northeast (+/-25 years ago), and approximately 5 miles to the southeast, presumably on Fort Stewart. The pedestrian surveys were conducted to look for individual specimens, tracks within burrows and aprons, and shed skins near gopher tortoise burrows. No evidence of the presence of indigo snakes was observed during this study.

Considering the past survey efforts which have occurred immediately adjacent to and within the vicinity of the project area, impacts and because no evidence or sightings of the indigo snake were recorded during these survey, impacts to this protected species are not anticipated. While the wetland on the study area have the potential to be used by the indigo snake during warmer portions of the year, and the presence of a remnant population of gopher tortoise could provide winter refuge, the past and present use of the property for industrial timber production and the lack of previous occurrences likely precludes their existence on the study area. Thus, the proposed project will have little to no effect on the eastern indigo snake.

Frosted Flatwoods Salamander *(Ambystoma cingulatum)*
The frosted flatwoods salamander is a small (up to 76mm snout-vent length, 135 total length; Palis unpublished data), black salamander with gray to grayish dorsal markings that forms a netted pattern. Flatwoods salamanders prefer mesic longleaf pine flatwoods/wiregrass terrestrial habitats with open understory. Breeding ponds consist of isolated ephemeral wetlands that range in size from 0.2 to 9.5 ha and 0.5 m deep or less (Palis, unpublished data). Adult flatwoods move to breeding ponds in between October and January and deposit eggs in leaf litter along the margins of the wetlands. Water levels typically rise during the winter months, thus inundating the eggs. As larvae hatch, they hide among the vegetation within the wetland margins during the day and may suspend in open water during the night (J. Palis, pers. Obs.)

The subject property contains one isolated wetland that could be suitable for breeding purposes. However, the study area has been subject to intensive industrial forestry activities for many decades, and the terrestrial habitat is not conducive to the species. Based upon the results of studies completed in 2015 on adjacent properties and the current condition of the 0.39 acre depressional wetland within the 153 acre study area, the presence of the flatwoods salamander within he project site is not likely and therefore the proposed development will not affect this species.

B. Federal Candidate Species

Gopher tortoise (*Gopherus polyphemus*):
The official state reptile of Georgia, the gopher tortoise, is a relatively large terrestrial turtle, obtaining a maximum carapace length of 15 inches, though averaging 9-11 inches. Its oblong carapace is unkeeled and domed, somewhat flattened, and brown or gray in color. Distinctive growth annuli are evident in juveniles and young adults, usually becoming obscured later in life. The yellowish plastron is hingeless and has conspicuous elongated gular scutes (especially long on males). With the exception of the yellowish limb sockets, the scaly skin of adults is typically dark gray. Perhaps the most characteristic features of gopher tortoises are the elephantine hind limbs and the flattened, shovel-like forelimbs. The head is wide and rounded, with a pair of seasonally swollen mental glands on the chin. Hatchlings have yellowish skin, as well as yellow-centered scutes, both of which gradually darken with age. Males have slightly concave plastrons.

Along with sandy soil for burrowing, sunlight availability, and abundant herbaceous vegetation are the key habitat requirements for this reptile. Gopher tortoises are a characteristic species of the rapidly disappearing longleaf pine and wiregrass community, which includes sandhills, dry flatwoods, and turkey oak scrub. Historically, this community was represented by an open-canopied forest that allowed abundant sunlight penetration and conditions favorable for a rich growth of herbaceous vegetation. Unfortunately, very little of this naturally occurring habitat still exists; therefore, many tortoises have been forced into artificial habitats, such as roadsides and old fields, that retain the three key requirements.

Habitat conducive to the gopher tortoise is present within the site; however, the subject property has been fire suppressed for quite some time and the understory is more dense than the preferred habitat of the gopher tortoise. During the May 2018 survey of the 153 acre additional area, no active burrows, three (3) non-active burrows, and six (6) non-gopher tortoise burrows were identified (Figure 4).

C. Critical Habitat

No Critical Habitats exist within the study area.

D. Bald and Golden Eagles

The Bald and Golden Eagle Protection Act of 1940 provides protection for the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. Adult bald eagles are easily recognized by their familiar dark brown body and contrasting white head and tail. The bill, eyes, legs, and feet are yellow. Immature birds vary slightly in appearance depending on their age. They are generally dark brown with varying light patches, and the eyes and bill are dark. Full adult plumage is not attained until sexual maturity at about 5 years of age. The total length ranges from 30-43 in, the wingspread from 72-98 in, and weigh from 8-12 lbs. Females are noticeably larger than males and the average size of both sexes increases with latitude such that birds nesting in the northern states and Canada are significantly larger than birds nesting in southern states. Although there appears to be a continuous size gradient and no real genetic differences nor distinct breeding ranges, southern eagles are considered to be of the subspecies H. l. leucocephalus.

Juvenile bald eagles and non-nesting adults can be seen throughout Georgia, but known nesting activity is concentrated mostly along the coast and near major rivers, wetlands, and reservoirs in the southern and central parts of the state. Bald eagles almost always nest near open water. The coastal area, including the barrier islands, marsh islands, and nearby mainland, has always provided good eagle nesting habitat historically and still supports the greatest population density. However, construction of reservoirs such as Seminole, Walter F. George, Oconee, Allatoona, Carters, Clarks Hill, Nottley and West Point, has increased suitable inland nesting habitat. Bald eagles prefer isolated sites for nesting but are adapting to the presence of human disturbance in some areas. The nest is usually in a large, open-topped pine near open water, often on high ground if available. Occasionally cypress trees are used.

USFWS removed the bald eagle as threatened under the Endangered Species Act on August 8, 2007 and in May 2007 published the National Bald Eagle Management Guidelines to assist the public in understanding protections afforded to and prohibitions related to the bald eagle under the act, the Migratory Bird Treaty Act, and the Lacey Act. The Eagle Guidelines prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Eagle Guidelines defines “take” as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The Eagle Guidelines define "disturb" as: to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment. In addition to immediate impacts, this definition also covers impacts that result

from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Based on annual nest survey data collected by the GADNR-WRD, the study area does not contain an eagle nests, and no individuals or nests were observed within the survey area during the field investigation. The proposed project would not result in a "take," as defined under the Bald and Golden Eagle Protection Act.

E. Migratory Birds

The Migratory Bird Treaty Act and the Executive Order 13186 on the Responsibility of Federal Agencies to Protect Migratory Birds require the protection of migratory birds and their habitats. As directed under Executive Order 13186, in furtherance of the Migratory Bird Treaty Act, actions must be taken to avoid or minimize impacts to migratory bird resources and to prevent or abate the detrimental alteration of the environment for the benefit of migratory birds, as practicable. The Migratory Bird Treaty Act protects over 1,500 migratory bird species in the U.S and its territories. Notable exclusions include house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, dove, and wild turkey. The Migratory Bird Treaty Act decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected.

No unique habitat or extraordinary resources will be affected by any proposed development within the project area. Therefore, the project will have little to no impact on migratory birds or their habitats.

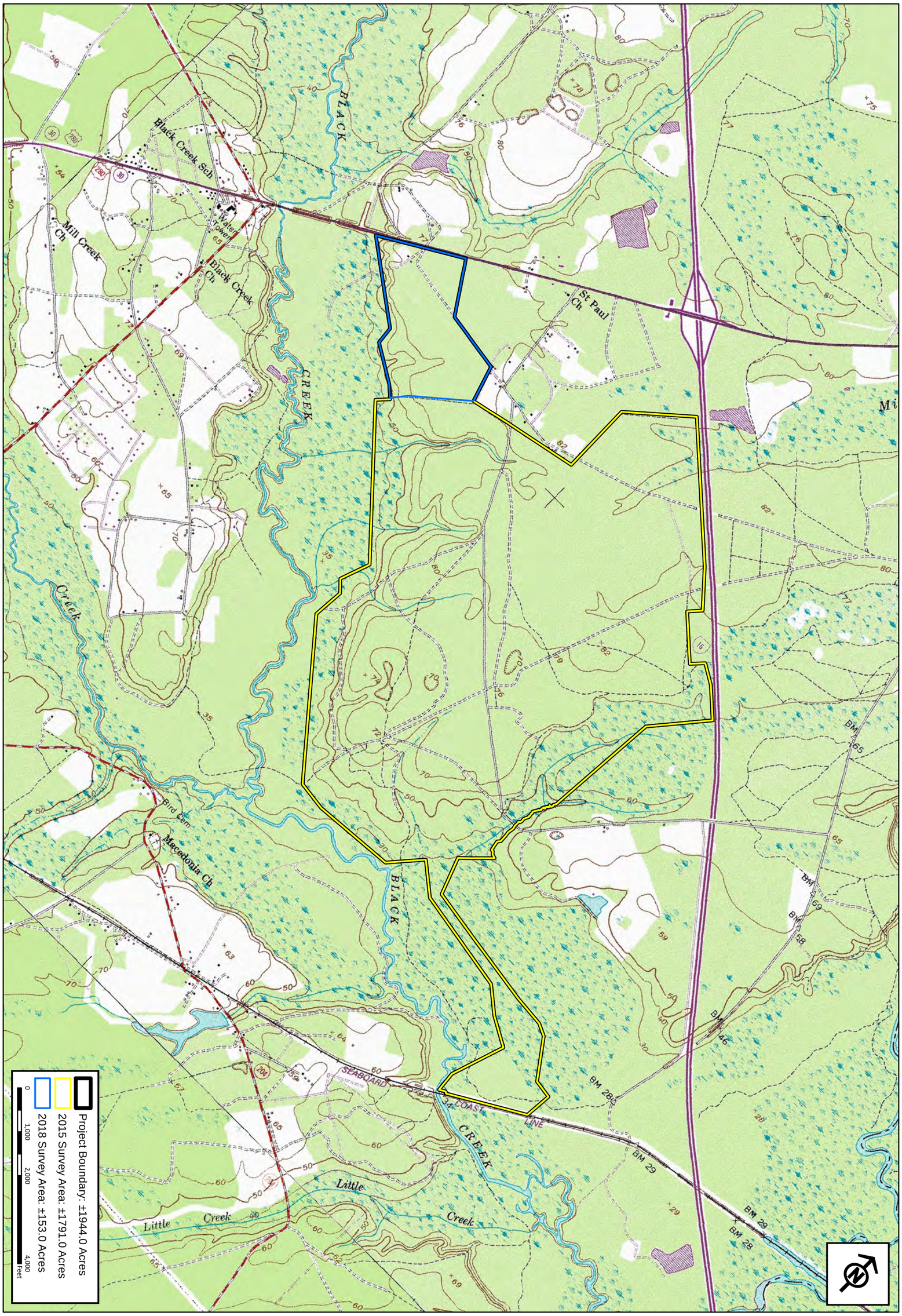
F. Essential Fish Habitat

The Magnuson-Stevens Fishery Conservation and Management Act of 1996 mandates the identification of Essential Fish Habitat for managed species, as well as measures to conserve and enhance fish habitat. The Magnuson-Stevens Act requires cooperation among the National Marine Fisheries, fishing participants, and federal and state agencies. Essential fish habitat for federally managed fish species are defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Magnuson-Stevens Act established Regional Fishery Management Councils to identify essential fish habitat. Federal agencies must consult with the appropriate council on any action that may adversely impact a designated essential fish habitat. In Georgia, essential fish habitat can be found in the following counties: Camden, Glynn, McIntosh, Liberty, Bryan, and Chatham.

No habitat areas of particular concern and no essential fish habitat areas protected under the Magnuson-Stevens Act were identified within the study area.

III. Conclusion

In May of 2018, RLC completed a Threatened and Endangered Species Assessment for the ±153 acre portion of the OEM site located in Bryan County, Georgia. At no time during the survey was a species listed as threatened or endangered by current federal regulations observed. Thus, the proposed development within this study area will not adversely affect any species listed as federally threatened or endangered for listing in Bryan County, Georgia.



RLC Project No.:	14-225.1
Figure No.:	1
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 2,000 feet

Bryan County OEM Site

Bryan County, Georgia

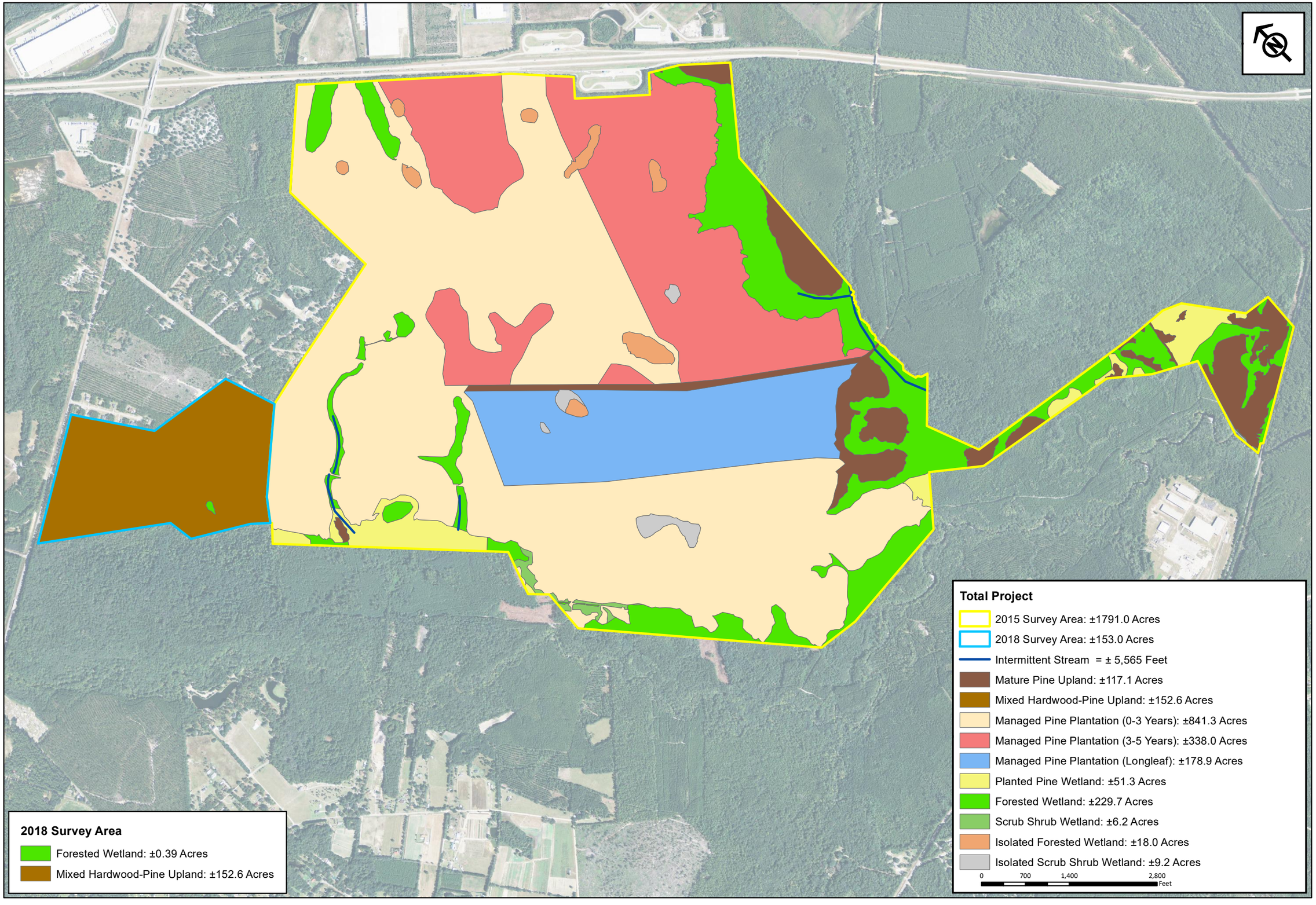
USGS Topographic Survey

Prepared For: SHJDA

RLC
RESOURCE+LAND CONSULTANTS
41 Park of Commerce Way, Ste. 303
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_2_Habitat_Map

Source(s): USGS Topographic Survey



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912.443.5896 www.rlandc.com

RLC

Threatened & Endangered Species Habitat Map

Prepared For: SHJDA

Bryan County OEM Site

Bryan County, Georgia

RLC Project No.:	14-225.1
Figure No.:	2
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,400 feet

Source(s): T&H DWGs 2013 NAIP Ortho Aerial), Bryan County

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RLC

USDA NRCS Soils

Prepared For: SHJDA

Bryan County OEM Site

Bryan County, Georgia

RLC Project No.:	14-225.1
Figure No.:	3
Sketch Date:	6-1-2018
Prepared By:	MG
Map Scale :	1 inch = 1,500 feet

Source(s): 2013 NAIP Ortho Aerial, Bryan County; USDA NRCS Soils Survey

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Habitat Assessment of the Bryan County Mega Site, Bryan County, Georgia for Amphibians of Conservation Concern and the Eastern Indigo Snake

Prepared by:

John G. Palis

Consulting Biologist

P.O. Box 387

Jonesboro, IL 62952

Prepared for:

Resource & Land Consultants

41 Park of Commerce Way, Suite 303

Savannah, GA 31405

April 2015

Introduction

The Bryan County Mega Site is located within a 2304-acre parcel of land in northern Bryan County, Georgia south of the community of Blitchton. It is bordered on the north by Interstate 16, on the west by US Route 280 and timber land, on the south by the floodplain of Black Creek, and on the east by a tributary stream of Black Creek.

Underlying upland soil types include excessively-drained Lakeland and moderately well-drained Chipley, and poorly-drained Olustee and Leon. Lakeland and Chipley are the preponderant soils. Numerous isolated wetlands occur across the property, many of which are underlain by very poorly-drained Ellabelle soil.

The excessively to moderately well-drained uplands historically would have supported longleaf pine-wiregrass sandhill, and the poorly-drained uplands would have supported longleaf pine-wiregrass-gallberry flatwoods. Historically, the wetlands would have had a canopy dominated by pond cypress and/or blackgum. The groundcover of the wetlands and the wetland-upland ecotone would have been dominated by graminaceous (grass and grass-like) vegetation.

Prior to site disturbance, the site may have provided habitat for three regional amphibians of conservation concern: frosted flatwoods salamander (*Ambystoma cingulatum*), striped newt (*Notophthalmus perstriatus*), and gopher frog (*Rana capito*). The frosted flatwoods salamander is federally and state-listed as Threatened, the striped newt is state-listed as Threatened, and the gopher frog is state-listed as Rare. The xeric uplands are currently occupied by gopher tortoises (*Gopherus polyphemus*), state-listed as Threatened, and may have historically provided suitable habitat for eastern indigo snakes (*Drymarchon cooperi*), a federally and state-listed Threatened species.

The tract has been used for row-crop timber production for decades. The soils appear to have been mechanically disturbed by activities such as roller-chopping and bedding associated with tree planting, and rutting and compaction associated with tree harvest. The site has further been ecologically degraded by fire suppression and widespread herbicide application. Wiregrass, a disturbance-intolerant bunchgrass, has been nearly extirpated from the property. Shallow wetlands and ecotonal areas of larger wetlands have also been used for timber production; they have been bedded and planted to loblolly pine.

Wetland Assessment and Survey for Amphibians of Conservation Concern

A total of 17 water bodies – including 16 natural wetlands and 1 small naturalized borrow pit – dispersed across the property—were assessed and sampled for frosted flatwoods salamanders, striped newts, and gopher frogs from 23 to 28 March 2015

(Figure 1). Wetlands were ranked as follows for their potential suitability as breeding sites for the three aforementioned amphibians:

Potential: site that shows potential for frosted flatwoods salamanders, striped newts, and/or gopher frogs. Potential sites have characteristics typical of breeding sites of these three amphibian species including lack of trees or having an open canopy, and having a graminaceous groundcover (dominated by disturbance-intolerant species) over all or much of the basin and in the ecotone between wetland and upland.

Unlikely: site has very low potential for flatwoods salamander, striped newts, and/or gopher frogs. Such sites may have a closed canopy, shrubby understory, little or no graminaceous groundcover or a preponderance of disturbance-tolerant graminaceous species, relatively short hydroperiod, lack of a graminaceous ecotone or one dominated by disturbance-tolerant species, or a combination of these characteristics.

Unsuitable: site has none of the characteristics of a flatwoods salamander, striped newt, and/or gopher frog breeding site. Such sites may be too ephemeral, too shaded, and/or have little or no graminaceous groundcover.

Water bodies were sampled during the day using 4-mm mesh dipnets and over-night with 4-mm mesh white-plastic minnow traps. Sampling effort within each wetland was focused on areas having inundated grasses and grass-like vegetation, whenever present. Total sampling effort included 29.5 person-hours of dipnetting and 9450 trap-hours (Table 1).

Presence of water varied considerably among wetlands, from being limited to shallow pools to occurring throughout the wetland basin (Table 2). Although most wetlands were isolated, two wetlands in the northwestern portion of the tract would historically have been the head of north-flowing drainages. Water flow in these two drainage-ways has been blocked by Interstate 16 and they now function more like isolated wetlands. These two sites would never have provided suitable habitat for flatwoods salamanders, striped newts, or gopher frogs. Six other wetlands were deemed unsuitable due to lack of graminaceous groundcover in the basin and/or in the ecotone, preponderance of shrubs, and/or closed canopy.

The remaining nine wetlands were deemed unlikely because they were too ephemeral to reliably provide water for the 3+ month larval period of frosted flatwoods salamanders, striped newts, and/or gopher frogs, or were too greatly impacted by silvicultural activities which reduced/eliminated disturbance-intolerant graminaceous groundcover in the wetland basin and/or in the ecotone. One wetland that was ranked unlikely was created by soil removal (i.e., a borrow pit).

Overall, the greatest factor influencing wetland suitability rank was habitat alteration resulting from silvicultural activities. The entire site, including shallow wetland basins and wetland edges, has been under silvicultural management for decades and the uplands and/or wetlands have been degraded by mechanical soil disturbance and compaction, herbicide application, drainage, and fire suppression. Frosted flatwoods salamanders, striped nets, and gopher frogs are habitat specialists and typically disappear from such highly disturbed sites.

A total of 12 amphibian species was encountered during sampling, including 10 frogs and 2 salamanders (Table 1). All species observed are habitat generalists and are generally tolerant of habitat disturbance.

Upland Habitat Evaluation for Eastern Indigo Snakes

I evaluated the Bryan County Mega Site for the potential to harbor a resident population of the eastern indigo snake. Given the preponderance of xeric soils and the presence of gopher tortoises, it is probable that eastern indigo snakes inhabited the site historically. However, the likelihood that a resident population of eastern indigo snakes currently occupies the property is extremely low.

In the northern portion of their range, eastern indigo snakes are reliant on burrows of gopher tortoises for over-wintering. Large numbers of gopher tortoises were previously removed from the Morgan ownership of the Bryan County Mega Site and relatively few tortoises currently occupy the tract. Eastern indigo snakes have large home ranges and travel long distances during their active season. Snakes travelling to/from the north or the west would have to cross such well-travelled roads as I-16 and US route 280. The chance of an eastern indigo snake successfully traversing these major thoroughfares is very low. Snakes travelling in other directions would encounter other roads, residential and business development, and row-crop pine silviculture. Although the possibility of a waif eastern indigo snake passing through the property cannot be ruled out, the likelihood of a population of eastern indigo snakes inhabiting the fragmented and altered landscape that surrounds and includes the Bryan County Mega Site is low.

Summary

Due to decades of on-site pine silviculture, development on surrounding properties, and the proximity of well-traversed roads, the Bryan County Mega Site is currently very unlikely to be inhabited by populations of frosted flatwoods salamanders, striped newts, gopher frogs, or eastern indigo snakes.

Table 1. Bryan County Mega Site development site wetland location, amphibian species detected, and survey effort.

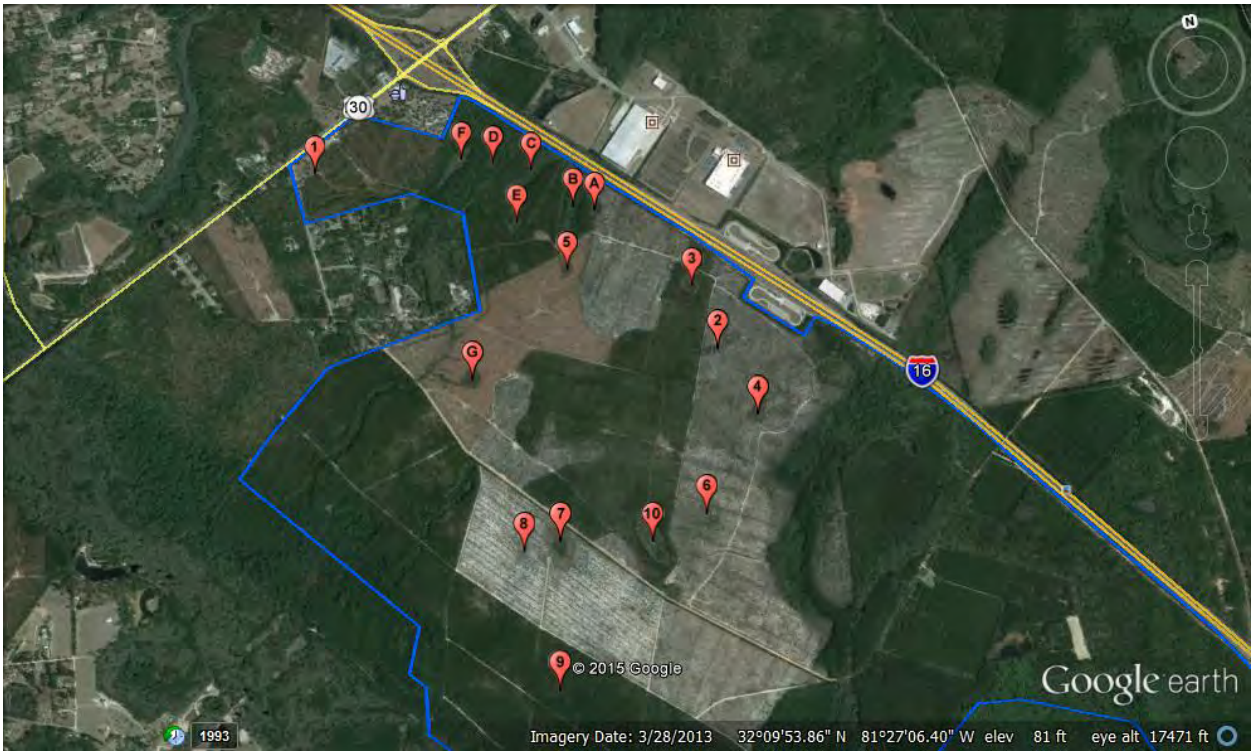
Pond			Amphibian	Amphibian	dipnet	trap
#	Latitude	Longitude	Common Name	Scientific Name	hours	hours
1	32°10'35.8"N	81°28'00.5"W	cricket frog	Acris gryllus	1.25	0
			chorus frog	Pseudacris nigrita		
			spadefoot toad	Scaphiopus holbrookii		
2	32°09'56.3"N	81°26'48.7"W	spring peeper	Pseudacris crucifer	1.25	1100
			little grass frog	Pseudacris ocularis		
3	32°10'07.16"N	81°26'51.6"W	mole salamander	Ambystoma talpoideum	0.5	500
			little grass frog	Pseudacris ocularis		
4	32°09'44.9"N	81°26'23.2"W	dwarf salamander	Eurycea quadridigitata	2	1075
			little grass frog	Pseudacris ocularis		
			leopard frog	Rana sphenocephala		
			spadefoot toad	Scaphiopus holbrookii		
5	32°10'13.0"N	81°27'14.6"W	cricket frog	Acris gryllus	3.5	550
			southern toad	Bufo terrestris		
			chorus frog	Pseudacris nigrita		
			little grass frog	Pseudacris ocularis		
			leopard frog	Rana sphenocephala		
6	32°09'30.6"N	81°26'55.9"W	chorus frog	Pseudacris nigrita	2	900
			little grass frog	Pseudacris ocularis		
			leopard frog	Rana sphenocephala		
7	32°09'29.9"N	81°27'23.5"W	leopard frog	Rana sphenocephala	3.5	537.5
8	32°09'29.2"N	81°27'30.2"W	cricket frog	Acris gryllus	2	925
			little grass frog	Pseudacris ocularis		
			bronze frog	Rana clamitans		
			leopard frog	Rana sphenocephala		
			spadefoot toad	Scaphiopus holbrookii		
9	32°09'07.5"N	81°27'27.4"W	cricket frog	Acris gryllus	3	562.5
			southern toad	Bufo terrestris		
			chorus frog	Pseudacris nigrita		
			leopard frog	Rana sphenocephala		
10	32°09'27.6"N	81°27'06.6"W	pine woods treefrog	Hyla femoralis	3	537.5
			little grass frog	Pseudacris ocularis		
			bullfrog	Rana catesbeiana		
			leopard frog	Rana sphenocephala		
			spadefoot toad	Scaphiopus holbrookii		
A	32°10'22.1"N	81°27'07.7"W	none	none	0.5	0

B	32°10'23.4"N	81°27'11.7"W	cricket frog	Acris gryllus	1.5	550
C	32°10'30.5"N	81°27'18.6"W	cricket frog	Acris gryllus	1	550
D	32°10'32.5"N	81°27'25.8"W	bullfrog	Rana catesbeiana	0.75	562.5
E	32°10'22.0"N	81°27'22.9"W	none	none	0.25	0
F	32°10'34.1"N	81°27'31.8"W	cricket frog	Acris gryllus	3	1100
			pine woods treefrog	Hyla femoralis		
			little grass frog	Pseudacris ocularis		
			leopard frog	Rana sphenocephala		
G	32°10'34.1"N		cricket frog	Acris gryllus	0.5	0
Total				12 species	29.5	
Total				total trap hours		9450

Table 2. Bryan County Mega Site development site wetlands: amount of water in basin, vegetative characteristics, and suitability assessment for frosted flatwoods salamanders, striped newts, and gopher frogs.

pond #	Fill Level	Canopy	Floor	assessment	Notes
1	nearly full	none	graminaceous	unlikely	borrow pit
2	approx 1/2 full	open	graminaceous/leaf litter	unlikely	mechanically disturbed
3	approx 2/3 full	closed	leaf litter/peat	unsuitable	
4	approx 3/4 full	open	graminaceous/leaf litter	unlikely	mechanically disturbed
5	nearly full	open	graminaceous/leaf litter	unlikely	mechanically disturbed
6	basin full	none	graminaceous	unlikely	ephemeral/disturbed
7	basin full	closed & open	graminaceous/leaf litter	unlikely	mechanically disturbed
8	basin full	open	graminaceous	unlikely	ephemeral/disturbed
9	basin full	open	graminaceous/bare	unlikely	ephemeral/disturbed
10	basin full	open & closed	graminaceous/leaf litter	unlikely	
A	pools	open	leaf litter/peat	unsuitable	extremely shrubby
B	approx 1/2 full	closed	leaf litter/peat	unsuitable	former drainageway
C	approx 1/2 full	closed	leaf litter/peat	unsuitable	former drainageway
D	approx 1/2 full	open	leaf litter/peat	unsuitable	shrubby
E	pools	open	leaf litter/peat	unsuitable	
F	basin full	open & closed	graminaceous/leaf litter	unsuitable	
G	pools	closed	leaf litter/peat	unsuitable	ditched

Figure 1. Bryan County Mega Site development site wetlands evaluated and/or sampled for amphibians.



BRYAN COUNTY MEGA SITE

PROTECTED SPECIES SURVEY REPORT

MARCH 2015

SAVANNAH HARBOR INTERSTATE 16 CORRIDOR
JOINT DEVELOPMENT AUTHORITY

Savannah Harbor-Interstate 16 Corridor
Joint Development Authority
BRYAN · BULLOCH · CHATHAM · EFFINGHAM

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I. PROJECT OVERVIEW

A. Introduction

A protected species assessment for the ±1,904 acre Bryan County Mega Site was completed by Resource & Land Consultants (RLC) between February and March of 2015. The project site is located south of Interstate 16, east of GA Highway 280, near Black Creek, in Bryan County, Georgia (32.159357°, -81.456570); (Figure 1). RLC conducted the assessment to determine the potential for the occurrence of animal and plant species currently listed as threatened or endangered in Bryan County by federal regulations.

B. Need and Purpose

The Savannah Harbor / Interstate 16 Corridor Joint Development Authority (SHJDA) identified the subject property as a potential site for construction of a large-scale manufacturing facility. The size of the proposed facility would necessitate impacts to waters of the U.S., thus requiring Department of the Army authorization to fill and/or dredge waters of the U.S. regulated under Section 404 of the Clean Water Act. Subsequently, coordination with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act will be required.

C. Project Description

The study area is currently managed for timber production by various private landowners. As of the date of this report no areas within the project boundary have been developed. The threatened and endangered species assessment was done in conjunction with and in addition to a formal wetland delineation in order to provide SHJDA with the ecological information necessary to make informed decisions about future development of the property.

D. Survey Methodology

Prior to conducting the field survey, RLC reviewed available state and federal records to determine if any listed species were known to occur within and/or in the general vicinity of the project area. Available resources such as aerial photographs, U.S. Geological Survey topographic maps, National Wetlands Inventory Maps, and Natural Resource Conservation Service Soil Survey were examined in an effort to complete a preliminary determination of existing habitats prior to the field visit. Once this information was assessed, RLC conducted a pedestrian review of the project site to determine the available habitats on site and the potential for listed species to inhabit them. The age and species composition of existing habitats were recorded, photographs were taken to document the current condition of the site and vegetative community and habitat types were identified.

A review of the U.S. Fish and Wildlife Service's (US-FWS) Information, Planning, and Conservation System (IPaC, Appendix A) and Georgia Department of Natural Resources, Wildlife Resource Division's (GA-DNR) Known Rare Species and Natural Community Element Occurrences within Bryan County (Appendix B) was conducted to identify species that are known to occur in Bryan County. A formal request for species known to occur within the project area was submitted to GA-DNR, and verbal and email coordination was initiated with USFWS. Copies of correspondence with these agencies are located in Appendices C and D respectively. In addition, interviews with current landowners were also conducted to determine if they possess any knowledge of the presence of listed species within the study area.

During preliminary review of available data and pedestrian surveys within the project area, the site the study area contains habitats suitable for the eastern indigo snake (*Drymarchon corais couperi)*, frosted flatwoods salamander (*Ambystoma cingulatum*), striped newt (*Notophthalmus perstriatus*), and gopher tortoise (*Gopherus polyphemus*). Following this determination, the SHJDA contracted consulting herpetologist Mr. John Palis to conduct species specific surveys for the above referenced amphibians and reptiles.

E. Habitats and Land Use Areas

The subject property has been intensively managed for timber production. It contains wetland and upland habitats typical for Bryan County and the coastal plain of Georgia. Based on our field observations, the project area contains the following habitat types:

- managed pine plantation uplands (various age class)
- managed pine plantation wetlands (various age class)
- forested wetlands

- scrub-shrub wetlands
- isolated forested wetlands
- isolated scrub-shrub wetlands
- intermittent streams

The dominant habitat types are depicted in Figure 2. The following summary provides a brief description of each habitat, photographs depicting typical conditions of each habitat are displayed at Figures 8 & 9.

- **Managed Pine Plantation Upland:** The majority of the property consists of planted pine plantation that has been cut and replanted within the last year. Smaller areas of mature pines are located at the northern and southern portions of the study area. The recently clear cut areas contain only herbaceous and scattered shrub species mixed with the pine seedlings. Areas cut several years ago were sprayed with herbicide to kill remaining hardwoods (water oaks, live oaks) and replanted in pines. The shrub and herbaceous layer within these areas is much more dense than the recently cut areas.

Recently Clear Cut Areas

Overstory:	Understory:
Live oak (*Quercus grandiflora*) (few/scattered)	Slash pine seedlings (*Pinus elliottii*) Loblolly pine seedlings (*Pinus taeda*) Blackberry (*Rubus argutus*) Broomsedge (*Andropogon virginicus*)

Previously Clear Cut Areas

Overstory:	Understory:
N/A (sprayed)	Slash pine seedlings Loblolly pine seedlings Longleaf pine seedlings (*Pinus palustrus*) Blackberry Broomsedge Saw palmetto (*Serenoa repens*) Bracken fern (*Pteridium aquilinum*) Yellow jessamine (*Gelsenium sempervirens*)

Mature Pine Plantation

Overstory:	Understory:
Loblolly pine Slash pine Red maple (*Acer rubrum*) Sweetgum (*Liquidambar styraciflua*) Water oak (*Quercus nigra*)	Broomsedge Yellow jessamine Saw palmetto Bracken fern Wax myrtle (*Myrica cerifera*)

- **Managed Pine Plantation Wetland:** These areas are generally located in the southeastern portion of the property within the proposed rail spur, and also along the upper fringes of portions of the forested wetland areas that are subject to more frequent hydrologic saturation and inundation.

Overstory:	Understory:	
Slash pine Red Maple Sweetgum Red bay (Persea borbonia)	Wax Myrtle Swamp Titi (*Cyrilla racemiflora*) Greenbrier (*Smilax laurifolia*) Blackberry Gaint Cane (*Arundinaria gigantean*)	Sweetgum Water Oak Red Maple Yellow jessamine Black-stem Chainfern (*Woodwardia virginica*)

- **Forested Wetlands:** Forested wetlands are dispersed across the study area. Those located immediately north of Tar City Road, south of Tar City Road, and at the southeastern study area limits drain into Black Creek. The majority of these wetlands have mature hardwood species in the center portions of the drain, and a dense scrub-shrub layer of swamp titi along their perimeter, varying in width between twenty-five feet and fifty feet on average. Intermittent streams are present within the interior of several of these drainages. Species composition and distribution is as follows:

Overstory:	Understory:	
Water Oak	Wax Myrtle	Fetterbush (*Lyonia lucida*)
Red Maple	Swamp titi	Greenbrier
Red bay	Sphagnum moss (*Sphagnum spp.*)	Blackberry
Sweetgum	Poison Ivy (*Toxicodendron radicans*)	Netted chainfern (*Woodwardia areolata*)
Black Gum (*Nyssa biflora*)	Blackstem Chainfern	
Bald Cypress (*Taxodium distichum*)		

- **Scrub-Shrub Wetlands:** Hardwoods were harvested in some portions of the wetland areas on the study area, mainly along the perimeter of the forested wetland systems. These areas now have a dense understory. Species composition and distribution is as follows:

Overstory:	Understory:	
N/A	Wax Myrtle	Sweetgum
	Swamp titi	Red Maple
	Sphagnum moss	Sweet Bay
	Greenbrier	Slash Pine
	Blackberry	Blackstem Chainfern

- **Isolated Forested Wetlands:** The study area contains numerous isolated forested wetlands. These areas are depressional wetlands with mature overstory and varying degrees of shrub and herbaceous cover:

Overstory:	Understory:	
Water Oak	Wax Myrtle	Fetterbush
Red Maple	Swamp titi	Greenbrier
Red bay	Sphagnum moss	Blackberry
Sweetgum	Poison Ivy	Netted chainfern
Black Gum	Blackstem Chainfern	
Bald Cypress		

- **Isolated Scrub-shrub Wetlands:** The study area also contains numerous isolated scrub-shrub wetlands. These areas are depressional wetlands with shrub layers that are dominated by small pines:

Overstory:	Understory:
N/A	Slash pine
	broomsedge
	Sphagnum moss
	Blackstem Chainfern
	Yellow jessamine

- **Intermittent Streams:** The study contains numerous intermittent streams located in the central portions of the forested wetland systems. These streams average approximately three-feet in width and twelve inches in depth. The streams lack vegetation and consist of sand and mud bed and banks of varying heights.

- **Man-Made Ditches:** Approximately 0.62 acre of man-made ditch is present within the property. This habitat is defined by bed and bank of the feature with little to no vegetation present. The ditches were presumably constructed for silvicultural purposes and extend through several of the historically isolated wetlands.

Soil types as mapped by the USDA Natural Resource Conservation Service, soil types found within the study area includes Albany, Lakeland, Leon, Olustee, Chipley, Stilson, Ellabelle, Mascotte, Angelina and Bibb, and Fuquay series. Soils are depicted on the attached NRCS soils survey (Figure 3). Characteristics and acreages of each soil type are described in Table 1.

Table 1- NRCS Soil Series Descriptions

Series Name	Acreage	Percent of Project Area	Label	Drainage Class	Landform	Down-slope shape	Parent Material	Slope (%)	Frequency of Flooding	Frequency of Ponding	Depth to Water Table (in)	Typical Profile
Albany	50	2.6	As	Somewhat poorly drained	Flats	Linear	Marine deposits	0-2	None	None	12-30	H1 - 0 to 48 inches: fine sand H2 - 48 to 56 inches: sandy loam H3 - 56 to 88 inches: sandy clay loam
Angelina and Bibb	156	8.2	AB	Poorly Drained	Flood Plains	Linear	Alluvium	0-2	Frequent	None	0-12	H1 - 0 to 12 inches: loam H2 - 12 to 60 inches: loam
Chipley	470.3	24.6	Cm	Moderately well drained	Flats	Linear	Marine deposits	0-5	None	None	24-36	H1 - 0 to 6 inches: fine sand H2 - 6 to 77 inches: fine sand
Ellabelle	192.6	10.1	El	Very poorly drained	Depressions, drainageways	Concave, Linear	Marine deposits	0-2	Frequent	None	0-6	H1 - 0 to 27 inches: loamy sand H2 - 27 to 64 inches: sandy clay loam H3 - 64 to 72 inches: sandy clay loam
Fuquay	2	0.1	Fs	Well drained	Interfluves	Convex	Marine deposits	0-5	None	None	48-72	H1 - 0 to 34 inches: loamy sand H2 - 34 to 45 inches: sandy clay loam H3 - 45 to 96 inches: sandy clay loam
Lakeland	750.2	39.3	Lp	Excessively drained	Rises	Linear	Marine Deposits	0-5	None	None	>80	H1 - 0 to 43 inches: sand H2 - 43 to 80 inches: sand
Leon	58.5	3.1	Lr	Poorly drained	Flats	Linear	Marine deposits	0-2	None	None	6-18	H1 - 0 to 3 inches: fine sand H2 - 3 to 15 inches: fine sand H3 - 15 to 30 inches: fine sand H4 - 30 to 80 inches: fine sand
Mascotte	5	0.3	Mn	Poorly drained	Flats	Linear	Marine Deposits	0-2	None	None	6-18	H1 - 0 to 3 inches: sand H2 - 3 to 16 inches: sand H3 - 16 to 28 inches: sand H4 - 28 to 34 inches: sand H5 - 34 to 60 inches: sandy clay loam H6 - 60 to 80 inches: sand
Olustee	185	9.7	Ol	Somewhat poorly drained	Flats	Linear	Marine deposits	0-2	None	None	18-30	H1 - 0 to 7 inches: fine sand H2 - 7 to 15 inches: sand H3 - 15 to 38 inches: sand H4 - 38 to 80 inches: sandy clay loam
Stilson	37	1.9	Se	Moderately well drained	Rises	Linear	Marine deposits	0-2	None	None	30-36	H1 - 0 to 24 inches: loamy sand H2 - 24 to 43 inches: sandy clay loam H3 - 43 to 72 inches: sandy clay loam
Water	1.5	0.1	W									

II. FEDERALLY PROTECTED RESOURCES

The project area was assessed in consideration of the Endangered Species Act of 1973. Pedestrian surveys were conducted to identify protected individuals and/or potential habitat for protected individuals within the study area on numerous occasions during February and March 2015. Species-specific surveys were conducted for those species that prefer habitats similar to those found in the study area. Table 2 depicts federally protected species listed in the study area that have potential ranges within Bryan County, Georgia. This table also provides a general habitat description for each species and a biological determination as to the effects that a potential industrial development would have on each of these species. Section II A provides a detailed description of those listed species that have habitat preferences that are found in the study area.

Table 2- Known Occurrences and Biological Determination for Protected Species Listed in Bryan County

Class	Scientific Name	Common Name	IPaC Trust Resources List	Legal Status*		Habitat Present	Species Present	Biological Determination
				Federal	State			
Amphibians	Ambystoma cingulatum	Frosted flatwoods salamander	Yes	T	T	Yes	No	No Impact
	Striped Newt	Notophthalmus perstriatus	Yes	C	T	Yes	No	No Impact
Birds	Picoides borealis	Red-cockaded Woodpecker	Yes	E	E	None	No	No impact
	Calidris canutus rufa	Red Knot	Yes	T	T	None	No	No impact
	Mycteria americana	Wood Stock	Yes	T	T	Non-preferred	No	No impact
Fishes	Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	Yes	E	E	None	No	No impact
	Moxostoma robustum	Shortnose Sturgeon	No	E	E	None	No	No impact
Mammals	Eubalaena glacialis	North Atlantic Right Whale	Yes	E	E	None	No	No impact
	Tricheclus manatus	West Indian Manatee	Yes	E	E	None	No	No impact
Reptiles	Drymarchon couperi	Eastern Indigo Snake	Yes	T	T	Preferred	None observed	Little to no impact
	Gopherus polyphemus	Gopher Tortoise	Yes	C	T	Preferred	Yes	Little to no impact
	Chelonia mydas	Green Sea Turtle	Yes	T	T	None	No	No impact
	Dermochelys coriacea	Leatherback Sea Turtle	Yes	E	T	None	No	No impact
	Caretta caretta	Loggerhead Sea Turtle	Yes	T	T	None	No	No impact

A. Federally Threatened and Endangered Species

The following provides detailed information for federally listed species within Bryan County, Georgia that have potential habitat within the study area:

Red-Cockaded Woodpecker (RCW) (*Piciodes borealis*):

The red-cockaded woodpecker has a black back with broken white horizontal stripes ("ladder-back" pattern). The head is black except for a large white cheek patch on each side. The chest is dull white with small black spots, and the total length is about 8 in. Adult males have a tiny patch of red feathers (cockade) behind the eye, but the cockade is not displayed unless the bird is excited. The juvenile male has a red spot on top of his head.

This small woodpecker needs large expanses of mature, open pine forest, particularly longleaf, slash, or loblolly pine. Nest and roost cavities are excavated only in old living pines, and the process may take several years to complete. Trees selected for cavities are usually infected with red heart fungus, which softens the heartwood, making excavation easier. The habitat that probably supported the largest populations historically was the fire-maintained longleaf pine forest of the Coastal Plain.

The property does contain scattered mature pines located primarily along Black Creek and the wetland fringes. However, the vegetation in these areas contain a dense understory and are not preferred by the RCW. No individuals or colonies of the RCW were observed during the field survey and no nesting or foresting habitat was noted. Due to the lack of suitable habitat within the project area, the proposed project will have no effect on this species.

Eastern indigo snake *(Drymarchon corais couperi*):

Average adult size is 60-74 in; the record is 103.5 in. Adults are large and thick bodied. The body is glossy black and in sunlight has iridescent blue highlights. The chin and throat is reddish or white, and the color may extend down the body. The belly is cloudy orange and blue-gray. The scales on its back are smooth, but some individuals may possess some scales that are partially keeled. There are 17 dorsal scale rows at midbody. The pupil is round. Juveniles are black-bodied with narrow whitish blue bands.

Eastern indigo snakes primarily occur in sandhill habitats in northern Florida and southern Georgia. Preferred habitat includes pine and scrubby flatwoods, pine rocklands, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats. They need a mosaic of habitats to complete their annual life cycle. In the northern range of their territory they require sheltered retreats from winter cold and desiccating conditions and often coexist with gopher tortoises inside their burrows. In wetter habitats that lack gopher tortoises, they may take shelter in hollowed root channels, hollow logs, or the burrows of rodents, armadillo, or land crabs.

The project area does contain sandhill habitat typically associated with the indigo snake and active and abandoned gopher tortoise burrows were observed. During this study, 21 active, 62 inactive, and 31 non-gopher tortoise burrows were located. An exhibit depicting the location and status of burrows located on the study area are depicted

on Exhibit 4. Personal interviews with landowners revealed that there were no known sightings during the period of their ownership. According to USFWS, the nearest documented occurrence of this species was approximately 1 mile to the northeast (+/-25 years ago), and approximately 5 miles to the southeast, presumably on Fort Stewart. Surveys for indigo snakes were conducted on February 23, 2015, and March 12th, 13th, 18th, 19th, 20th, and 26th. Temperatures were ideal for the initial survey in February, with preceding nighttime temperatures in the 20's followed by daytime temperatures in the mid to upper 60's and mid 70's. The pedestrian surveys were conducted to look for individual specimens, tracks within burrows and aprons, and shed skins near gopher tortoise burrows. No evidence of the presence of indigo snakes was observed during this study.

Additionally, indigo snakes surveys and USFWS concurrence was completed in the late 1990's/early 2000's during 404 Permit development of the Pembroke Bryan County Industrial Park and in the mid 2000's for the northern portion of this study area (north of Tar City Road) also known as the Samwilka Tract. The Pembroke Bryan County Industrial Park study noted the presence of over 50 burrows but neither evidence of nor any sightings of the indigo snake were documented. USFWS provided a "no effect" concurrence for that project and development of the site proceeded. During the study for the Samwilka Tract, it was reported that 1506 observations of 142 gopher tortoise burrows in various states of activity failed to yield any evidence of the presence of indigo snakes. Subsequently, via letter of May 20, 2008 (USFWS #08-FA-0973), it was determined that the presence of indigo snakes on the subject property was unlikely, and acknowledged the relocation of the existing gopher tortoises north of Tar City Road to Fort Stewart Army Base.

Considering the past survey efforts which have occurred immediately adjacent to and within the vicinity of the project area, impacts and because no evidence or sightings of the indigo snake were recorded during these survey, impacts to this protected species are not anticipated. While the wetlands on the study area have the potential to be used by the indigo snake during warmer portions of the year, and the presence of a remnant population of gopher tortoise could provide winter refuge, the past and present use of the property for industrial timber production and the lack of previous occurrences likely precludes their existence on the study area. Thus, the proposed project will have little to no effect on the eastern indigo snake.

Frosted Flatwoods Salamander *(Ambystoma cingulatum)*
The frosted flatwoods salamander is a small (up to 76mm snout-vent length, 135 total length; Palis unpublished data), black salamander with gray to grayish dorsal markings that forms a netted pattern. Flatwoods salamanders prefer mesic longleaf pine flatwoods/wiregrass terrestrial habitats with open understory. Breeding ponds consist of isolated ephemeral wetlands that range in size from 0.2 to 9.5 ha and 0.5 m deep or less (Palis, unpublished data). Adult flatwoods move to breeding ponds in between October and January and deposit eggs in leaf litter along the margins of the wetlands. Water levels typically rise during the winter months, thus inundating the eggs. As larvae hatch, they hide among the vegetation within the wetland margins during the day and may suspend in open water during the night (J. Palis, pers. Obs.)

The subject property contains numerous isolated ephemeral wetlands that could be suitable for breeding purposes. However, the study area has been subject to intensive industrial forestry activities for many decades, and the terrestrial habitat is not conducive to the species. Nevertheless, the SHJDA employed John Palis to conduct an intensive survey of the study area between March 23 and March 28, 2015. Mr. Palis employed trapping and dip-netting techniques in suitable breeding ponds during this time, and did not encounter any individuals. A detailed report documenting the study will be provided by Mr. Palis in the near future. Based upon the results of this study, the presence of the flatwoods salamander within he project site is not likely and therefore the proposed development will not affect this species.

B. Federal Candidate Species

Gopher tortoise (*Gopherus polyphemus*):
The official state reptile of Georgia, the gopher tortoise, is a relatively large terrestrial turtle, obtaining a maximum carapace length of 15 inches, though averaging 9-11 inches. Its oblong carapace is unkeeled and domed, somewhat flattened, and brown or gray in color. Distinctive growth annuli are evident in juveniles and young adults, usually becoming obscured later in life. The yellowish plastron is hingeless and has conspicuous elongated gular scutes (especially long on males). With the exception of the yellowish limb sockets, the scaly skin of adults is typically dark gray. Perhaps the most characteristic features of gopher tortoises are the elephantine hind limbs and the flattened, shovel-like forelimbs. The head is wide and rounded, with a pair of seasonally swollen mental glands on

the chin. Hatchlings have yellowish skin, as well as yellow-centered scutes, both of which gradually darken with age. Males have slightly concave plastrons.

Along with sandy soil for burrowing, sunlight availability, and abundant herbaceous vegetation are the key habitat requirements for this reptile. Gopher tortoises are a characteristic species of the rapidly disappearing longleaf pine and wiregrass community, which includes sandhills, dry flatwoods, and turkey oak scrub. Historically, this community was represented by an open-canopied forest that allowed abundant sunlight penetration and conditions favorable for a rich growth of herbaceous vegetation. Unfortunately, very little of this naturally occurring habitat still exists; therefore, many tortoises have been forced into artificial habitats, such as roadsides and old fields, that retain the three key requirements.

The study area has been managed for industrial pine production for many decades, and as a result the existing vegetation has been manipulated for row pines. Within the last year, pines from a large portion of the study area have been harvested, and as a result these areas are open and generally devoid of vegetation except for pine seedlings. Older age classes of pines remaining on site exhibit a dense understory devoid of significant sunlight and associated herbaceous vegetation.

In 2008, the portion of the study area north of Tar City Road was the subject of a tortoise relocation effort that was coordinated with the USFWS. Prior to the relocation, a survey was conducted for indigo snakes, the results of which yielded no evidence of their existence on site. The tortoises were subsequently relocated to Fort Stewart. During the February / March 2015 study, nine (9) active burrows, seventeen (17) non-active burrows, and six (6) non-gopher tortoise burrows were found north of Tar City Road in the area where the tortoises were previously relocated. South of Tar City Road, twelve (12) active burrows, forty-five (45) inactive burrows, and twenty-five (25) non-gopher tortoise burrows were located (Figure 4). The burrows were surveyed for the presence of indigo snakes as stated in Section II (A). No evidence of the presence of indigo snakes was found. It is the applicant's intention to voluntarily relocate the remaining tortoises in the study area to a suitable alternate site to be determined through consultation with the Georgia Department of Natural Resources.

Striped Newt (*Notophthalmus perstriatus*)
The striped newt is another small salamander with a typical length of 5.1 to 10.5 cm. The striped newt is generally olive green to dark brown with yellow venter, and red dorsolateral stripes (Conant and Collins, 1991). Striped newts prefer habitats that include sandhills, scrub flatwoods, mesic flatwoods, and isolated ephemeral wetlands located within these habitats. Breeding occurs during late winter to spring (November through March) as adults migrate to ponds during heavy rainfall.

A site-specific survey for this species was conducted by Mr. Palis, who employed trapping and dip-netting techniques in suitable breeding ponds during the period of March 23 through March 28. No individuals were encountered. A detailed report documenting the study will be provided by Mr. Palis in the near future. Based upon the results of this study, it is unlikely that Striped newt exist on site and therefore the proposed development will not affect this species.

C. Critical Habitat

No Critical Habitats exist within the study area.

D. Bald and Golden Eagles

The Bald and Golden Eagle Protection Act of 1940 provides protection for the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds. Adult bald eagles are easily recognized by their familiar dark brown body and contrasting white head and tail. The bill, eyes, legs, and feet are yellow. Immature birds vary slightly in appearance depending on their age. They are generally dark brown with varying light patches, and the eyes and bill are dark. Full adult plumage is not attained until sexual maturity at about 5 years of age. The total length ranges from 30-43 in, the wingspread from 72-98 in, and weigh from 8-12 lbs. Females are noticeably larger than males and the average size of both sexes increases with latitude such that birds nesting in the northern states and Canada are significantly larger than birds nesting in southern states. Although there appears to be a continuous size gradient and no real genetic differences nor distinct breeding ranges, southern eagles are considered to be of the subspecies H. l. leucocephalus.

Juvenile bald eagles and non-nesting adults can be seen throughout Georgia, but known nesting activity is concentrated mostly along the coast and near major rivers, wetlands, and reservoirs in the southern and central parts of the state. Bald eagles almost always nest near open water. The coastal area, including the barrier islands, marsh islands, and nearby mainland, has always provided good eagle nesting habitat historically and still supports the greatest population density. However, construction of reservoirs such as Seminole, Walter F. George, Oconee, Allatoona, Carters, Clarks Hill, Nottley and West Point, has increased suitable inland nesting habitat. Bald eagles prefer isolated sites for nesting but are adapting to the presence of human disturbance in some areas. The nest is usually in a large, open-topped pine near open water, often on high ground if available. Occasionally cypress trees are used.

USFWS removed the bald eagle as threatened under the Endangered Species Act on August 8, 2007 and in May 2007 published the National Bald Eagle Management Guidelines to assist the public in understanding protections afforded to and prohibitions related to the bald eagle under the act, the Migratory Bird Treaty Act, and the Lacey Act. The Eagle Guidelines prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Eagle Guidelines defines “take” as pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. The Eagle Guidelines define "disturb" as: to agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment. In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Based on annual nest survey data collected by the GADNR-WRD, the study area does not contain an eagle nests, and no individuals or nests were observed within the survey area during the field investigation. The proposed project would not result in a “take,” as defined under the Bald and Golden Eagle Protection Act.

E. Migratory Birds

The Migratory Bird Treaty Act and the Executive Order 13186 on the Responsibility of Federal Agencies to Protect Migratory Birds require the protection of migratory birds and their habitats. As directed under Executive Order 13186, in furtherance of the Migratory Bird Treaty Act, actions must be taken to avoid or minimize impacts to migratory bird resources and to prevent or abate the detrimental alteration of the environment for the benefit of migratory birds, as practicable. The Migratory Bird Treaty Act protects over 1,500 migratory bird species in the U.S and its territories. Notable exclusions include house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, dove, and wild turkey. The Migratory Bird Treaty Act decrees that all migratory birds and their parts (including eggs, nests, and feathers) are fully protected.

No unique habitat or extraordinary resources will be affected by any proposed development within the project area. Therefore, the project will have little to no impact on migratory birds or their habitats.

F. Essential Fish Habitat

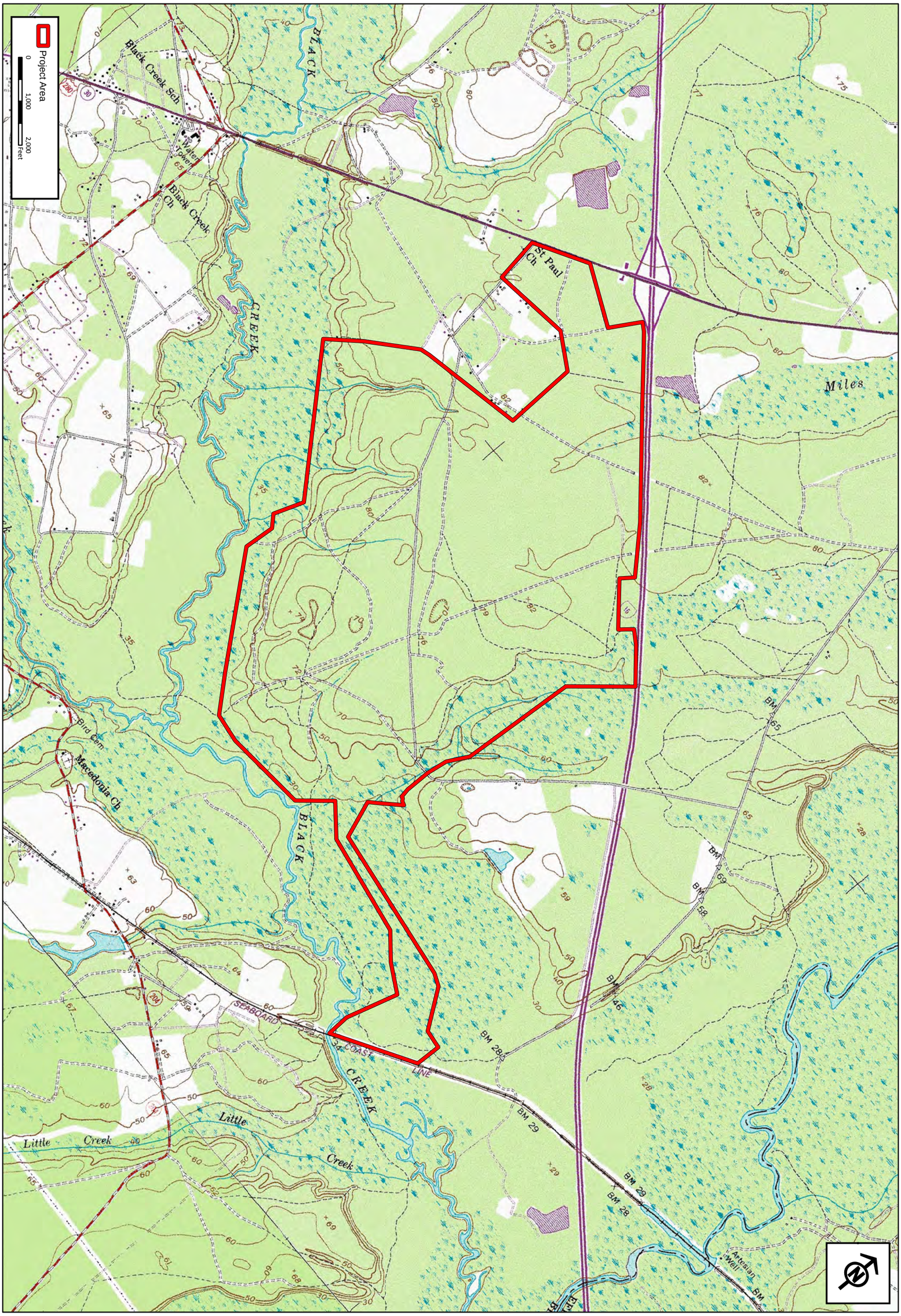
The Magnuson-Stevens Fishery Conservation and Management Act of 1996 mandates the identification of Essential Fish Habitat for managed species, as well as measures to conserve and enhance fish habitat. The Magnuson-Stevens Act requires cooperation among the National Marine Fisheries, fishing participants, and federal and state agencies. Essential fish habitat for federally managed fish species are defined as those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity. The Magnuson-Stevens Act established Regional Fishery Management Councils to identify essential fish habitat. Federal agencies must consult with the appropriate council on any action that may adversely impact a designated essential fish habitat. In Georgia, essential fish habitat can be found in the following counties: Camden, Glynn, McIntosh, Liberty, Bryan, and Chatham.

No habitat areas of particular concern and no essential fish habitat areas protected under the Magnuson-Stevens Act were identified within the study area.

III. Conclusion

In February and March 2015, RLC completed a Threatened and Endangered Species Assessment for the ±1,904.45 acre mega site study area located in Bryan County, Georgia. At no time during the survey was a species listed as

threatened or endangered by current federal regulations observed. It was determined that marginal habitat was present on the study area that could potential harbor Flatwoods salamanders, striped newts, indigo snakes, and gopher tortoise. Site-specific studies were conducted for these species, and only gopher tortoises are known to inhabit the study area. The applicant intends to undertake voluntary relocation efforts for remaining gopher tortoises in conjunction with state and federal agencies prior to development. Thus, the proposed development within this study area will not adversely affect any species listed as federally threatened, endangered, or as a candidate for listing in Bryan County, Georgia.



RLC Project No.:	14-225
Figure No.:	1
Sketch Date:	18 March 2015
Prepared By:	RP
Map Scale :	1 inch = 2,000 feet

Bryan County Mega-Site

Bryan County, Georgia

USGS Topographic Survey

Prepared For: SHJDA

RLC

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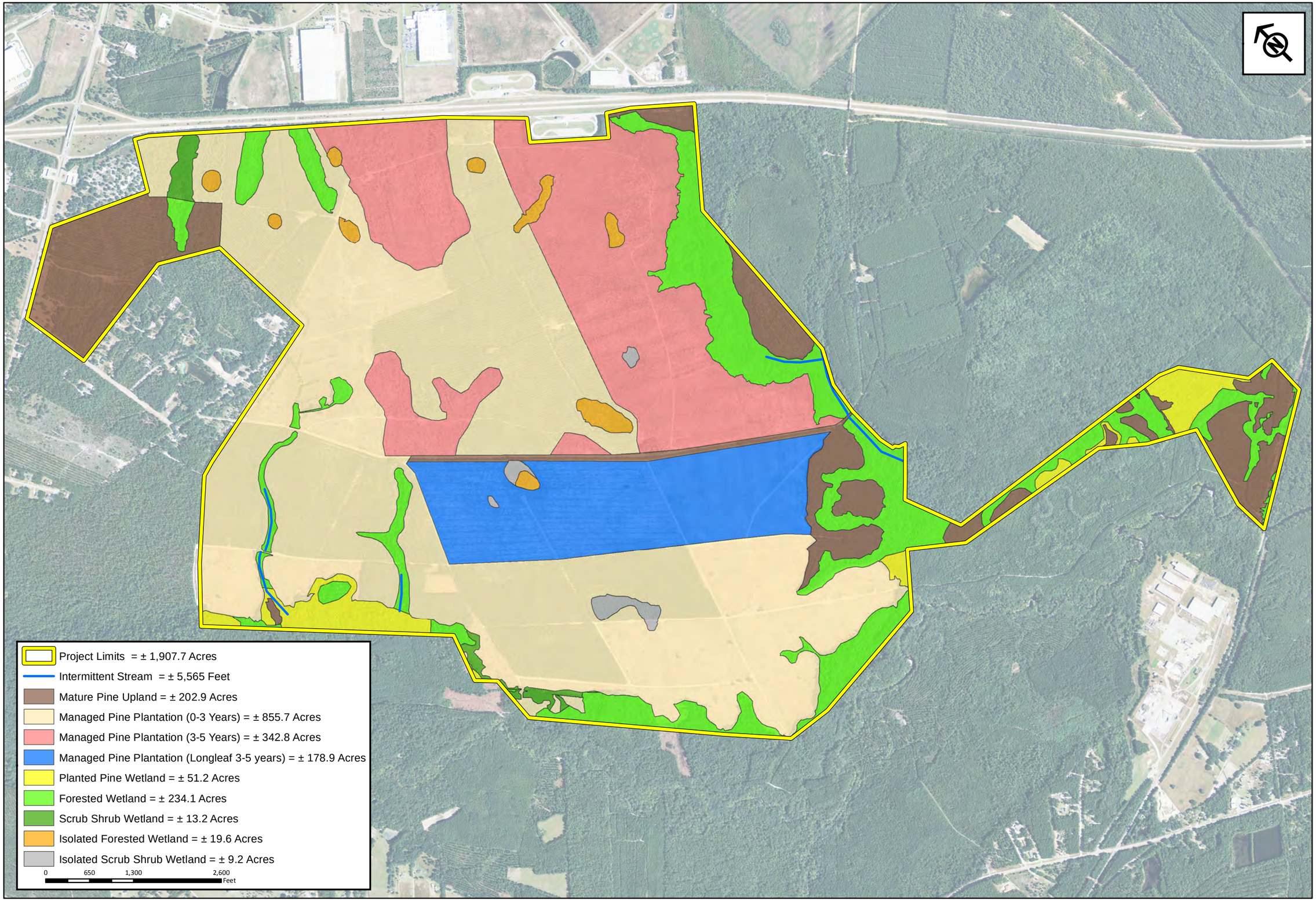
Savannah, Georgia 31405
912.443.5896 www.rlandc.com

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_1_Topo

Source(s): USGS Topographic Survey



Threatened & Endangered Species Habitat Map

Prepared For: SHJDA

Bryan County Mega-Site

Bryan County, Georgia

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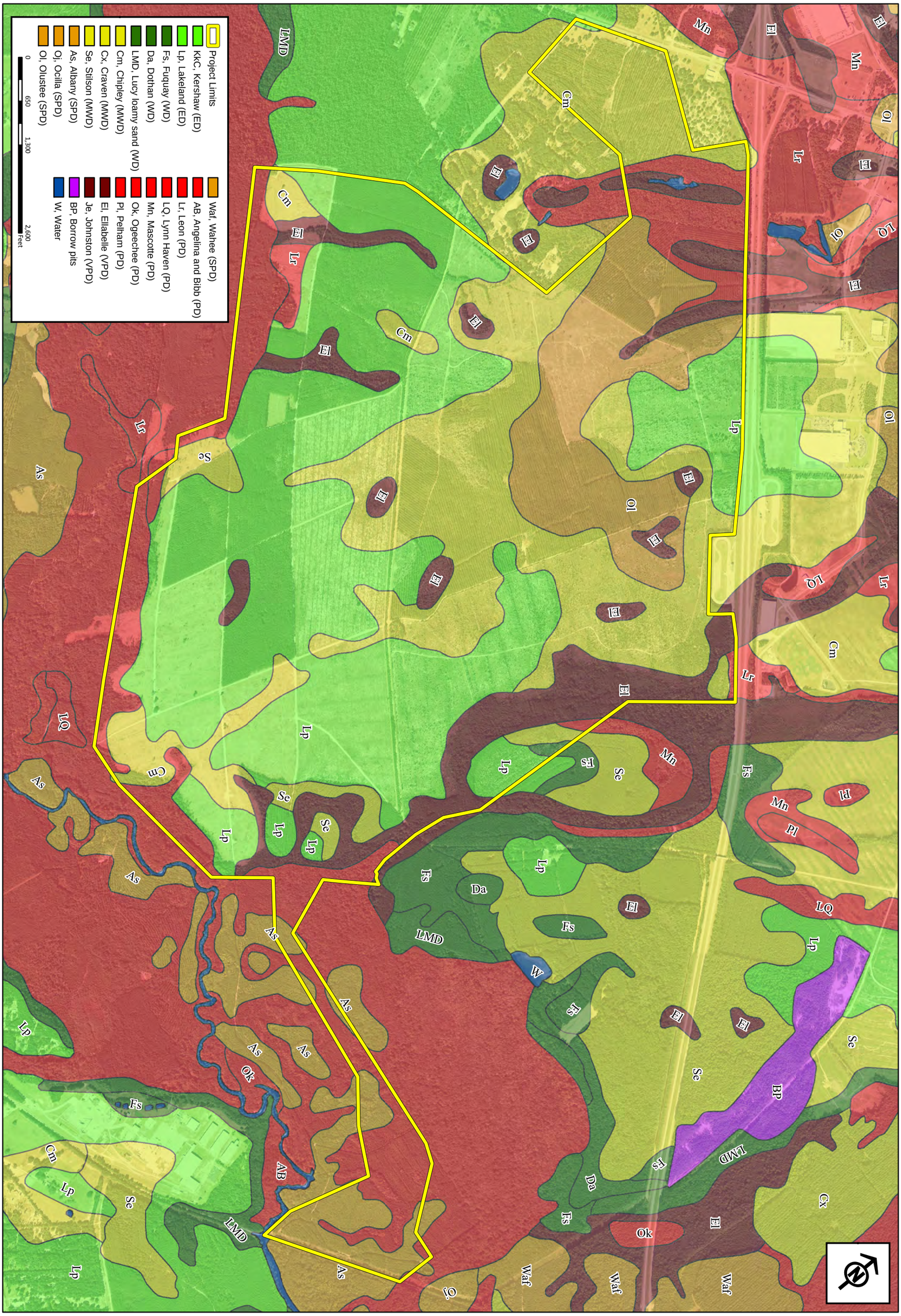
RLC

RLC Project No.:	14-225
Figure No.:	2
Sketch Date:	26 March 2015
Prepared By:	RP
Map Scale :	1 inch = 1,300 feet

Source(s): T&H DWGs 2013 NAIP Ortho Aerial, Bryan County

Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\Figures\T&E_Figure_2_Habitat_Map



RLC Project No.:	14-225
Figure No.:	3
Sketch Date:	18 March 2015
Prepared By:	ZM
Map Scale :	1 inch = 1,300 feet

Bryan County Mega-Site

Bryan County, Georgia

USDA NRCS Soils Survey

Prepared For: SHJDA

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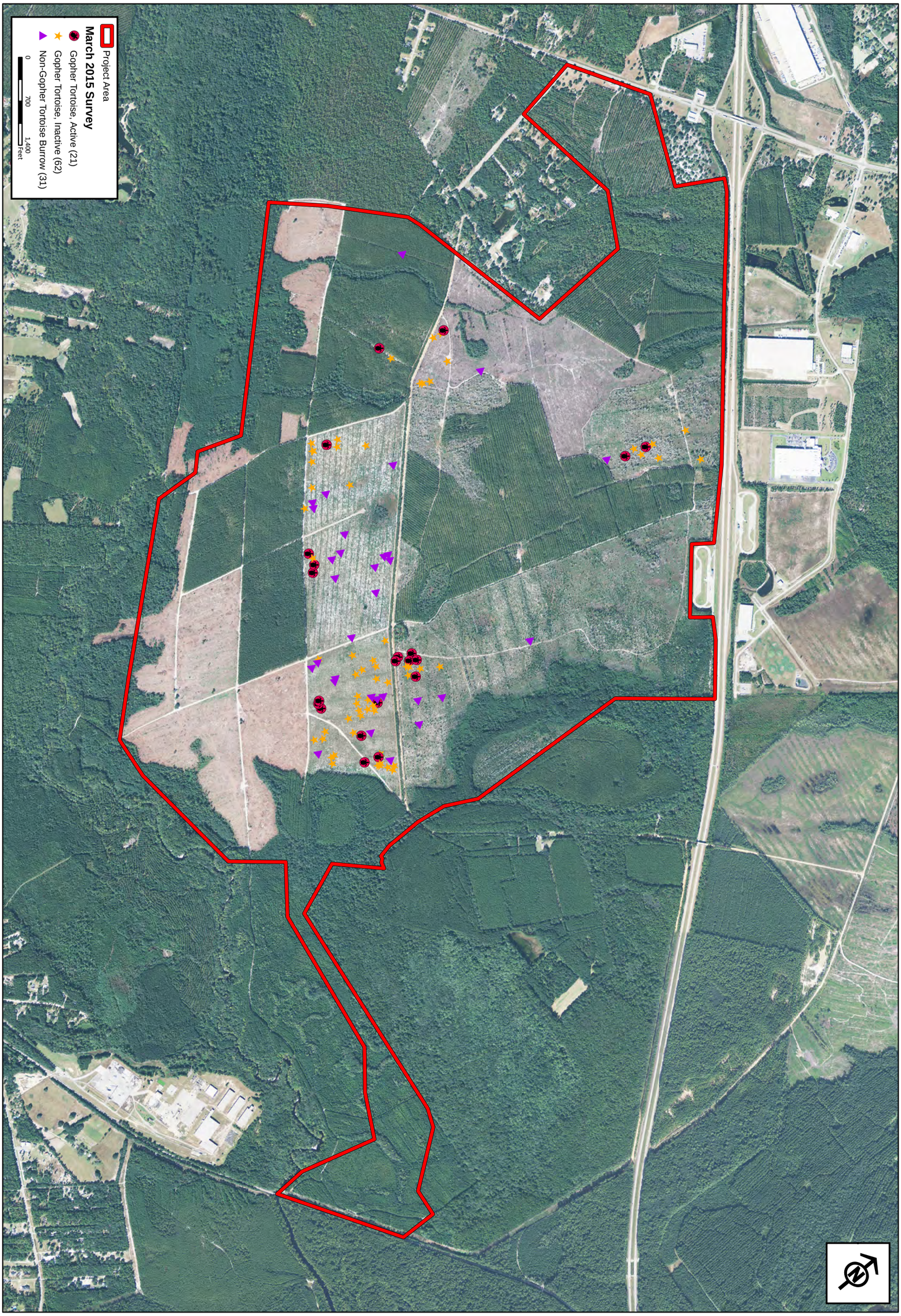
Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_3_Soils

Source(s): 2013 NAIP Ortho Aerial, Bryan County;USDA NRCS Soils Survey



RLC Project No.:	14-225
Figure No.:	4
Sketch Date:	18 March 2015
Prepared By:	TS
Map Scale :	1 inch = 1,400 feet

Bryan County Mega-Site

Bryan County, Georgia

March 2015 Gopher Tortoise / Indigo Snake Survey

Prepared For: SHJDA

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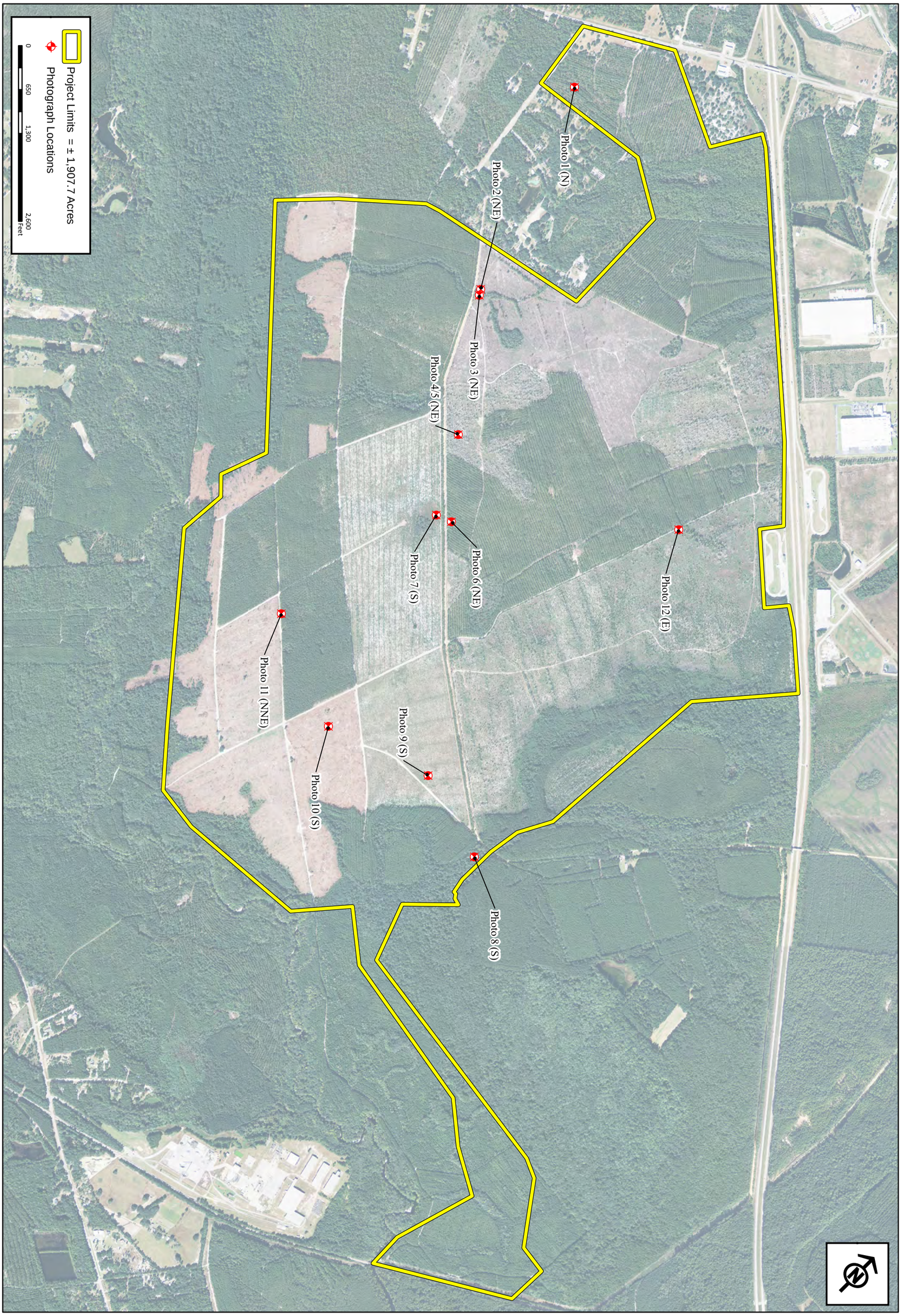
Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_4 GT_Burrow_Map

Source(s): T&H DWGs 2013 NAIP Ortho Aerial, Bryan County



RLC Project No.:	14-225
Figure No.:	5
Sketch Date:	26 March 2015
Prepared By:	RP
Map Scale :	1 inch = 1,300 feet

Bryan County Mega-Site

Bryan County, Georgia

Photograph Location Map

Prepared For: SHJDA

RLC

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Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_5_Photograph_Map

Source(s): T&H DWGs 2013 NAIP Ortho Aerial, Bryan County

Photo 1: Mature pine upland facing north.

Photo 2: Managed pine plantation (0-3 years) facing northeast.

Photo 3: Forested wetland facing northeast.

Photo 4: Managed pine plantation facing northeast.

RLC Project No.:	14-225
Figure No.:	6
Exhibit Date:	27 March 2015
Prepared By:	RP
Photo Date:	24 March 2015

Bryan County Mega-Site

Bryan County, Georgia

Site Photographs

Prepared For: SHJDA

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Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_6_Site Photographs

Source(s): RLC Site Photographs

Photo 5: Managed pine plantation facing northeast.

Photo 6: Managed pine plantation (0-3 years) facing northeast.

Photo 7: Scrub shrub isolated wetland facing south.

Photo 8: Intermittent stream within the forested wetland facing south.

RLC Project No.:	14-225
Figure No.:	7
Exhibit Date:	27 March 2015
Prepared By:	RP
Photo Date:	24 March 2015

Bryan County Mega-Site

Bryan County, Georgia

Site Photographs

Prepared For: SHJDA

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Y:\2014 Projects\14-225 Ralph Forbes Bryan County Mega Site\graphics\figures\T&E_Figure_7_Site Photographs

Source(s): RLC Site Photographs

Photo 9: Managed pine plantation (Longleaf 3-5 years)

Photo 10: Managed pine plantation (0-3 years) facing south.

Photo 11: Isolated scrub shrub wetland facing north northeast.

Photo 12: Isolated forested wetland facing east.

RLC Project No.:	14-225
Figure No.:	8
Exhibit Date:	27 March 2015
Prepared By:	RP
Photo Date:	24 March 2015

Bryan County Mega-Site

Bryan County, Georgia

Site Photographs

Prepared For: SHJDA

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Source(s): RLC Site Photographs

APPENDIX A:

IPaC Trust Resources List &
GADNR County/Quadrangle Species Information

U.S. Fish and Wildlife Service

Trust Resources List

This resource list is to be used for planning purposes only — it is not an official species list.

Endangered Species Act species list information for your project is available online and listed below for the following FWS Field Offices:

Georgia Ecological Services Field Office
105 WESTPARK DRIVE
WESTPARK CENTER SUITE D
ATHENS, GA 30606
(706) 613-9493

Project Name:

Peach

U.S. Fish and Wildlife Service

Trust Resources List

Project Location Map:

Project Counties:

Bryan, GA

U.S. Fish and Wildlife Service

Trust Resources List

Geographic coordinates (Open Geospatial Consortium Well-Known Text, NAD83):

MULTIPOLYGON (((-81.4676435 32.1771365, -81.4641116 32.1788837, -81.4594767 32.1771402, -81.4582751 32.1791053, -81.4569877 32.178377, -81.451752 32.174385, -81.4467738 32.1704618, -81.444628 32.1683548, -81.4452288 32.1677009, -81.4424396 32.1655893, -81.4418195 32.1662559, -81.4404223 32.1655939, -81.4381536 32.164053, -81.4412806 32.1609438, -81.441973 32.1532391, -81.4428256 32.149826, -81.4427398 32.1492447, -81.4423964 32.1481546, -81.441624 32.1473552, -81.4441855 32.1460439, -81.4430831 32.1441576, -81.4307143 32.1428626, -81.4285777 32.1403058, -81.4271481 32.1402117, -81.4271459 32.1389126, -81.4328692 32.1357998, -81.4330409 32.1367446, -81.4321826 32.1406674, -81.433109 32.14138, -81.4338407 32.1418397, -81.4436839 32.1429204, -81.4462588 32.1445919, -81.4474213 32.1433895, -81.4540453 32.1429679, -81.4560322 32.1429534, -81.4649114 32.1505385, -81.4643496 32.1532432, -81.4650834 32.1538972, -81.4642423 32.1555595, -81.4727376 32.1629003, -81.4699824 32.1657122, -81.4672859 32.1673395, -81.4589646 32.1689342, -81.4590504 32.1736566, -81.4623978 32.1748917, -81.4672859 32.1743868, -81.4676435 32.1771365)))

Project Type:

Development

Endangered Species Act Species List (USFWS Endangered Species Program).

There are a total of **14** threatened, endangered, or candidate species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fishes may appear on the species list because a project could cause downstream effects on the species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section below for critical habitat that lies within your project area. Please contact the designated FWS office if you have questions.

Species that should be considered in an effects analysis for your project:

Amphibians	Status		Has Critical Habitat	Contact
frosted flatwoods salamander (*Ambystoma cingulatum*) Population: Entire	Threatened	species info	Final designated critical habitat	Georgia Ecological Services Field Office
Striped newt (*Notophthalmus perstriatus*) Population:	Candidate	species info		Georgia Ecological Services Field Office
Birds				

Trust Resources List

Red Knot (*Calidris canutus rufa*) Population:	Threatened	species info		Georgia Ecological Services Field Office
Red-Cockaded woodpecker (*Picoides borealis*) Population: Entire	Endangered	species info		Georgia Ecological Services Field Office
Wood stork (*Mycteria americana*) Population: AL, FL, GA, MS, NC, SC	Threatened	species info		Georgia Ecological Services Field Office
Fishes				
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) Population: South Atlantic DPS	Endangered	species info		Georgia Ecological Services Field Office
Shortnose sturgeon (*Acipenser brevirostrum*) Population: Entire	Endangered	species info		Georgia Ecological Services Field Office
Mammals				
North Atlantic right Whale (*Eubalaena glacialis*) Population: Entire	Endangered	species info	Final designated critical habitat Final designated critical habitat	Georgia Ecological Services Field Office
West Indian Manatee (*Trichechus manatus*) Population: Entire	Endangered	species info	Final designated critical habitat	Georgia Ecological Services Field Office
Reptiles				
Eastern Indigo snake (*Drymarchon corais couperi*) Population: Entire	Threatened	species info		Georgia Ecological Services Field Office
Gopher tortoise (*Gopherus polyphemus*) Population: eastern	Candidate	species info		Georgia Ecological Services Field Office
Green sea turtle (*Chelonia mydas*) Population: Except where endangered	Threatened	species info	Final designated critical habitat	Georgia Ecological Services Field Office

Trust Resources List

Leatherback sea turtle (*Dermochelys coriacea*) Population: Entire	Endangered	species info	Final designated critical habitat	Georgia Ecological Services Field Office
Loggerhead sea turtle (*Caretta caretta*) Population: Northwest Atlantic Ocean DPS	Threatened	species info	Final designated critical habitat	Georgia Ecological Services Field Office

Critical habitats within your project area:

There are no critical habitats within your project area.

FWS National Wildlife Refuges (USFWS National Wildlife Refuges Program).

There are no refuges found within the vicinity of your project.

FWS Migratory Birds (USFWS Migratory Bird Program).

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. For more information regarding these Acts see: http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

All project proponents are responsible for complying with the appropriate regulations protecting birds when planning and developing a project. To meet these conservation obligations, proponents should identify potential or existing project-related impacts to migratory birds and their habitat and develop and implement conservation measures that avoid, minimize, or compensate for these impacts. The Service's Birds of Conservation Concern (2008) report identifies species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become listed under the Endangered Species Act as amended (16 U.S.C 1531 et seq.).

For information about Birds of Conservation Concern, go to:
http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html.

U.S. Fish and Wildlife Service

Trust Resources List

To search and view summaries of year-round bird occurrence data within your project area, go to the Avian Knowledge Network Histogram Tool links in the Bird Conservation Tools section at: http://www.fws.gov/migratorybirds/CCMB2.htm.

For information about conservation measures that help avoid or minimize impacts to birds, please visit: http://www.fws.gov/migratorybirds/CCMB2.htm.

Migratory birds of concern that may be affected by your project:
There are **34** birds on your Migratory birds of concern list. The underlying data layers used to generate the migratory bird list of concern will continue to be updated regularly as new and better information is obtained. User feedback is one method of identifying any needed improvements. Therefore, users are encouraged to submit comments about any questions regarding species ranges (e.g., a bird on the USFWS BCC list you know does not occur in the specified location appears on the list, or a BCC species that you know does occur there is not appearing on the list). Comments should be sent to the ECOS Help Desk.

Species Name	Bird of Conservation Concern (BCC)	Species Profile	Seasonal Occurrence in Project Area
American Kestrel (*Falco sparverius ssp. paulus*)	Yes	species info	Year-round
American Oystercatcher (*Haematopus palliatus*)	Yes	species info	Year-round
American bittern (*Botaurus lentiginosus*)	Yes	species info	Wintering
Bachman's sparrow (*Aimophila aestivalis*)	Yes	species info	Year-round
Bald eagle (*Haliaeetus leucocephalus*)	Yes	species info	Year-round
Black rail (*Laterallus jamaicensis*)	Yes	species info	Breeding
Brown-headed Nuthatch (*Sitta pusilla*)	Yes	species info	Year-round
Chuck-will's-widow (*Caprimulgus carolinensis*)	Yes	species info	Breeding
Common Ground-Dove (*Columbina passerina ssp. exigua*)	Yes	species info	Year-round
Fox Sparrow (*Passerella liaca*)	Yes	species info	Wintering
Henslow's sparrow (*Ammodramus henslowii*)	Yes	species info	Wintering

Trust Resources List

Le Conte's Sparrow (*Ammodramus leconteii*)	Yes	species info	Wintering
Least Bittern (*Ixobrychus exilis*)	Yes	species info	Breeding
Lesser Yellowlegs (*Tringa flavipes*)	Yes	species info	Wintering
Loggerhead Shrike (*Lanius ludovicianus*)	Yes	species info	Year-round
Marbled Godwit (*Limosa fedoa*)	Yes	species info	Wintering
Mississippi Kite (*Ictinia mississippiensis*)	Yes	species info	Breeding
Painted Bunting (*Passerina ciris*)	Yes	species info	Breeding
Peregrine Falcon (*Falco peregrinus*)	Yes	species info	Wintering
Prairie Warbler (*Dendroica discolor*)	Yes	species info	Breeding
Prothonotary Warbler (*Protonotaria citrea*)	Yes	species info	Breeding
Red Knot (*Calidris canutus rufa*)	Yes	species info	Wintering
Red-headed Woodpecker (*Melanerpes erythrocephalus*)	Yes	species info	Year-round
Rusty Blackbird (*Euphagus carolinus*)	Yes	species info	Wintering
Saltmarsh Sparrow (*Ammodramus caudacutus*)	Yes	species info	Wintering
Seaside Sparrow (*Ammodramus maritimus*)	Yes	species info	Year-round
Sedge Wren (*Cistothorus platensis*)	Yes	species info	Wintering
Short-billed Dowitcher (*Limnodromus griseus*)	Yes	species info	Wintering
Swainson's Warbler (*Limnothlypis swainsonii*)	Yes	species info	Breeding
Swallow-Tailed Kite (*Elanoides forficatus*)	Yes	species info	Breeding
Whimbrel (*Numenius phaeopus*)	Yes	species info	Wintering

Wood Thrush (*Hylocichla mustelina*)	Yes	species info	Breeding
Worm eating Warbler (*Helmitheros vermivorum*)	Yes	species info	Migrating
Yellow Rail (*Coturnicops noveboracensis*)	Yes	species info	Wintering

NWI Wetlands (USFWS National Wetlands Inventory).

The U.S. Fish and Wildlife Service is the principal Federal agency that provides information on the extent and status of wetlands in the U.S., via the National Wetlands Inventory Program (NWI). In addition to impacts to wetlands within your immediate project area, wetlands outside of your project area may need to be considered in any evaluation of project impacts, due to the hydrologic nature of wetlands (for example, project activities may affect local hydrology within, and outside of, your immediate project area). It may be helpful to refer to the USFWS National Wetland Inventory website. The designated FWS office can also assist you. Impacts to wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes. Project Proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

Data Limitations, Exclusions and Precautions
The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery and/or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Exclusions - Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include

seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Precautions - Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

The following wetland types intersect your project area in one or more locations:

Wetland Types	NWI Classification Code	Total Acres
Freshwater Emergent Wetland	PEM1B	244.7218
Freshwater Forested/Shrub Wetland	PFO3/1B	17.0808
Freshwater Forested/Shrub Wetland	PFO1B	5.0297
Freshwater Forested/Shrub Wetland	PSS1B	3.2062
Freshwater Forested/Shrub Wetland	PFO1/3C	221.2848
Freshwater Forested/Shrub Wetland	PFO1C	41.535
Freshwater Forested/Shrub Wetland	PFO3/4B	430.7142
Freshwater Forested/Shrub Wetland	PFO1/4B	415.4337
Freshwater Forested/Shrub Wetland	PSS3/4B	18.4905

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
WILDLIFE RESOURCES DIVISION

MARK WILLIAMS
COMMISSIONER

DAN FORSTER
DIRECTOR

April 24, 2015

Alton Brown, Jr.
Principal
Resource & Land Consultants
41 Park of Commerce Way
Suite 303
Savannah, GA 31405

Subject: Known occurrences of natural communities, plants and animals of highest priority conservation status on or near 3020 Acre Tract Industrial Development, Bryan County, Georgia

Dear Mr. Brown:

This is in response to your request of March 5, 2015. According to our records, within a three-mile radius of the project site, there are the following Natural Heritage Database occurrences:

Point 1 (-81.46840, 32.17674; NAD27):

US *Drymarchon couperi* (Eastern Indigo Snake) less than 0.1 mi. NW of site
Pseudobranchus striatus striatus (Broad-striped Dwarf Siren) approx. 0.5 mi. NE of site
Stereochilus marginatus (Many-lined Salamander) approx. 2.5 mi. SW of site

GA *Stewartia malacodendron* (Silky Camellia) approx. 2.5 mi. SW of site
Betula nigra - Quercus laurifolia - Taxodium (distichum, ascendens) / Crataegus aestivalis Forest (Atlantic Coastal Plain Blackwater Levee/Bar Forest) approx. 1.0 mi. W of site
***Gordonia lasianthus - Magnolia virginiana - Persea palustris / Sphagnum spp. Forest* (Loblolly-bay Forest) on site**
Nyssa biflora - Acer rubrum var. trilobum - Liriodendron tulipifera / Ilex coriacea - Lyonia lucida Forest (Sandhills Swamp Blackgum Hillside Seepage Forest) approx. 1.0 mi. SW of site
Pinus palustris / Quercus incana - Quercus stellata / Aristida beyrichiana - Sporobolus junceus - Nolina georgiana Woodland less than 0.1 mi. W of site
Quercus falcata - Quercus stellata - Carya alba / Vaccinium spp. Coastal Plain Forest (Dry Acid Eastern Coastal Plain Oak - Hickory Forest) approx. 1.5 mi. SW of site
Quercus virginiana / Serenoa repens Forest (Florida Xeric Live Oak Hammock) approx. 0.5 mi. W of site

NONGAME CONSERVATION SECTION
2065 U.S. HIGHWAY 278 S.E. | SOCIAL CIRCLE, GEORGIA 30025-4743
770.918.6411 | FAX 706.557.3033 | WWW.GEORGIAWILDLIFE.COM

Point 2 (-81.42099, 32.14182; NAD27):

US *Acipenser brevirostrum* (Shortnose Sturgeon) approx. 3.0 mi. SE of site in the Ogeechee River

GA *Clemmys guttata* (Spotted Turtle) approx. 2.0 mi. E of site

Crotalus adamanteus (Eastern Diamond-backed Rattlesnake) approx. 1.5 mi. SW of site

GA *Elanoides forficatus* (Swallow-tailed Kite) 0.4 mi. S of site

GA *Epidendrum magnoliae* (Greenfly Orchid) less than 0.1 mi. NE of site

Farancia erytrogramma erytrogramma (Common Rainbow Snake) in an unknown location near the project site

US *Gopherus polyphemus* (Gopher Tortoise) approx. 2.0 mi. S of site

GA *Heterodon simus* (Southern Hognose Snake) 0.2 mi. N of site

GA *Lithobates capito* (Gopher Frog) approx. 3.0 mi. E of site

Lithobates virgatipes (Carpenter Frog) approx. 2.5 mi. N of site

GA *Moxostoma robustum* (Robust Redhorse) approx. 3.0 mi. SE of site in the Ogeechee River

Necturus punctatus (Dwarf Waterdog) approx. 1.0 mi. NE of site in an unnamed branch off the Ogeechee River

US *Notophthalmus perstriatus* (Striped Newt) approx. 1.0 mi. S of site

Nyctanassa violacea (Yellow-crowned Night-heron) approx. 1.0 mi. E of site

Pseudacris brimleyi (Brimley's Chorus Frog) approx. 1.0 mi. E of site

Sporobolus teretifolius (Wire-leaf Dropseed) approx. 2.0 mi. S of site

Stereochilus marginatus (Many-lined Salamander) approx. 1.5 mi. SW of site in Little Creek

Gordonia lasianthus - Magnolia virginiana - Persea palustris / Sphagnum spp. Forest (Loblolly-bay Forest) approx. 2.5 mi. W of site

Nyssa biflora - Acer rubrum var. trilobum - Liriodendron tulipifera / Ilex coriacea - Lyonia lucida Forest (Sandhills Swamp Blackgum Hillside Seepage Forest) approx. 2.5 mi. W of site

Pinus palustris / Quercus laevis - Quercus incana - Quercus margarettiae / Licania michauxii / Aristida beyrichiana Woodland approx. 2.5 mi. W of site

Pinus serotina - Pinus elliottii var. elliottii / Cliftonia monophylla - Cyrilla racemiflora Woodland (Pond Pine - Titi Swamp) approx. 2.5 mi. W of site

Quercus falcata - Quercus stellata - Carya alba / Vaccinium spp. Coastal Plain Forest (Dry Acid Eastern Coastal Plain Oak - Hickory Forest) approx. 2.5 mi. W of site

Quercus virginiana / Serenoa repens Forest (Florida Xeric Live Oak Hammock) approx. 2.5 mi. W of site

Ogeechee River [High Priority Stream] approx. 0.5 mi. E of site

* Entries above proceeded by "US" indicates species with federal status in Georgia (Protected or Candidate). Species that are federally protected in Georgia are also state protected; "GA" indicates Georgia protected species.

Recommendations:

We have no records of high priority species within the project area. However, we do have documentation of two federally listed species, *Drymarchon couperi* (Eastern Indigo Snake) and *Acipenser brevirostrum* (Shortnose Sturgeon) as well as two candidates for federal listing,

Gopherus polyphemus (Gopher Tortoise) and *Notophthalmus perstriatus* (Striped Newt), within three miles of the proposed project. To minimize potential impacts to this or other federally listed species, we recommend consultation with the United States Fish and Wildlife Service. For southeast Georgia, please contact Strant Colwell (912) 832-8739 ext 1 or Strant_Colwell@fws.gov). Surveys for species of conservation concern should be conducted prior to commencement of construction.

Should your surveys identify gopher tortoises on site, please contact John Jensen (John.Jensen@dnr.ga.gov). He is available to assist with relocation permits and planning.

Please be aware that we also have several records of additional state protected species in close proximity to the site. For information about these species, including survey recommendations, please visit our webpage at http://www.georgiawildlife.org/rare_species_profiles.

This project occurs near the Ogeechee River, a high priority stream. As part of an effort to develop a comprehensive wildlife conservation strategy for the state of Georgia, the Wildlife Resources division developed and mapped a list of streams that are important to the protection or restoration of rare aquatic species and aquatic communities. High priority waters and their surrounding watersheds are important for aquatic biodiversity conservation, but do not receive any additional legal protections. We now have GIS ESRI shapefiles of GA high priority waters available on our website (http://www.georgiawildlife.com/node/1377). Please contact this office if you would like additional information on high priority waters.

Disclaimer:

Please keep in mind the limitations of our database. The data collected by the Nongame Conservation Section comes from a variety of sources, including museum and herbarium records, literature, and reports from individuals and organizations, as well as field surveys by our staff biologists. In most cases the information is not the result of a recent on-site survey by our staff. Many areas of Georgia have never been surveyed thoroughly. Therefore, the Nongame Conservation Section can only occasionally provide definitive information on the presence or absence of rare species on a given site. Our files are updated constantly as new information is received. **Thus, information provided by our program represents the existing data in our files at the time of the request and should not be considered a final statement on the species or area under consideration.**

If you know of populations of highest priority species that are not in our database, please fill out the appropriate data collection form and send it to our office. Forms can be obtained through our web site (http://www.georgiawildlife.com/node/1376) or by contacting our office. If I can be of further assistance, please let me know.

Sincerely,

Anna Yellin
Environmental Review Coordinator

Data Available on the Nongame Conservation Section Website

- Georgia protected plant and animal profiles are available on our website. These accounts cover basics like descriptions and life history, as well as threats, management recommendations and conservation status. Visit http://www.georgiawildlife.com/node/2721.

- Rare species and natural community information can be viewed by Quarter Quad, County and HUC8 Watershed. To access this information, please visit our GA Rare Species and Natural Community Information page at: http://www.georgiawildlife.com/conservation/species-of-concern?cat=conservation.

- Downloadable files of rare species and natural community data by quarter quad and county are also available. They can be downloaded from: http://www.georgiawildlife.com/node/1370.

United States Department of the Interior

Fish and Wildlife Service
105 West Park Drive, Suite D
Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub-Office
Post Office Box 52560
Fort Benning, Georgia 31995-2560
Phone: (706) 544-6428
Fax: (706) 544-6419

Coastal Sub-Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

May 19, 2015

Colonel Thomas J. Tickner
U. S. Army Corps of Engineers
Regulatory Division
100 West Oglethorpe Avenue
Savannah, Georgia 31401-3640
Attention: Shaun Blocker

Re: USFWS File Number 2015-0579

Dear Colonel Tickner:

The U. S. Fish and Wildlife Service has reviewed Joint Public Notice SAS-2005-01381 – SAS-2015-00235 (JPN), regarding the proposed impacts to 125.13 acres of jurisdictional wetlands, 2,631 linear feet of stream, 0.62 acre of jurisdictional ditch, and 17.56 acres of non-jurisdictional wetland on a 1,904.5 acre project site for the purpose of construction of a mega-site manufacturing facility, in Ellabelle, Bryan County, Georgia. The proposed impacts are associated with the general site development and railroad access. The applicant states that due to the very large footprint of the manufacturing plant there is little flexibility in plant layout and design. This report is submitted in accordance with provisions of the Endangered Species Act of 1973 (ESA), as amended; (16 U.S.C. 1531 et seq.).

Endangered Species Act Comments

The JPN requests information on whether any species listed or proposed for listing may be present in the area. The gopher tortoise *(Gopherus polyphemus)*, a federal candidate species, is known to inhabit the study area. The applicant intends to undertake voluntary relocation efforts for all gopher tortoises on site in conjunction with state and federal agencies prior to development. The U. S. Army Corps of Engineers has determined that the proposed project would not affect any federally listed species. Based on available information, no currently federally listed species are likely to occur on the project site.

General Comments

The Service questions the purpose and need for the proposed project's stream and wetland impacts, and the entire permit application. The stated purpose of was to construct a mega-site manufacturing

facility. There is no known manufacturer who requires this site and the specific wetland impacts requested in the permit application.

We appreciate the opportunity to comment during the planning stages of your project. If you have any further questions, please contact our Coastal Georgia Sub Office staff biologist, Bill Wikoff, at 912-832-8739 extension 5.

Sincerely,

Strant Colwell

Strant T. Colwell
Coastal Georgia Supervisor

cc: John Jensen, GADNR, Forsyth, Georgia
Bradley Smith, GGDNR-EPD, Brunswick, Georgia
Eric Somerville, USEPA, Athens, Georgia
Jaclyn Daly, NMFS, Charleston, South Carolina

ATTACHMENT I:

Cultural Resources Information

ATTACHMENT J:

Compensatory Mitigation Calculations

Worksheet 1: Qualitative Worksheet for Stream Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Reach Name:	Stream Impact #1
Linear Feet of Impact (*Feet*):	833
Stream Type:	Intermittent/Ephemeral Streams
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Stream Qualitative Functional Capacity Score (*SQFC*)	High	1.00
2. Type of Impact (*Impact*)	Discharge of Fill	1.00
3. Product of SQFC and Impact (*SQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of SQFC Impact and Duration (*Total SQFC Impact*) =		1.00
6. Product of Total SQFC Impact and Linear Feet **(*Total 2018 Stream Credits Owed*)** =		**499.80**
7. Conversion of Total 2018 Stream Compensation to Grandfathered Credits **(*Grandfathered Stream Credits Owed*)** =		**5,997.60**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

COASTAL PLAIN QUALITATIVE STREAM ASSESSMENT

Project Name:	Bryan County OEM Site		
Impact Reach Name:	Stream Impact #1		
Stream Type:	Ephemeral/Intermittent		
Catchment Size (in Acres):	185.00	Sq. Mi.:	0.29
SAR Center Coordinates:			
Date:	6/1/2018		

Hydrology - 1

Value		Questions
Yes		The surface and groundwater hydrology of the assessment reach are free of upstream catchment impairments (e.g., diversions, stormwater management structures, wastewater facilities, agricultural ditches)? (Y/N)
Yes		Is the contributing drainage basin of the assessment reach at least 50 percent forested? (Y/N)
FUNCTION SCORE	**High**	

Hydraulics - 2

Value		Questions
Yes		Is the assessment reach connected to it's floodplain at bankfull event? (Y/N)
No		Are there headcuts in the assessment reach? (Y/N)
No		Has the assessment reach been previously straightened? (Y/N)
FUNCTION SCORE	**High**	

Geomorphology - 3

Value		Questions
No		Does the assessment reach have bedform diversity (i.e., the presence of riffle/pool or step/pool complexes)? (Y/N)
No		Is there high bank erosion present throughout the assessment reach? (Y/N)
Yes		Is there large woody debris (LWD) in the assessment reach? (Y/N)
Yes		Is there a woody riparian buffer (i.e., 25 feet in width) adjacent to both sides of the assessment reach? (Y/N)
FUNCTION SCORE	**High**	

Chemistry - 4

Value		Questions
Yes		Is the contributing drainage basin of the assessment reach at least 50 percent of the forested? (Y/N)
No		Is the assessment reach designated as an impaired water on the most recent 303(D)/305(b) list?
FUNCTION SCORE	**High**	

Biology - 5

Value		Questions
Yes		Is there habitat diversity in the assessment reach (i.e., at least 3 of the following: riffles, pools, steps, overhangs, leaf packs, woody debris)?
Yes		Is the contributing drainage basin of the assessment reach at least 50 percent of the forested? (Y/N)
SUM	**High**	

STREAM QUALITATIVE FUNCTIONAL CAPACITY SCORE	**High**

Legend

Green Cell = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.
Dark Grey Cells = These cells do not require input. The corresponding index value is populated from the user input to a previous question.

Qualitative Worksheet Summary For Wetland Adverse Impacts						
Worksheet Number	**Name of Wetland**	**Wetland Type**	**Acres of Impact (ac.)**	**Impact Duration**	**2018 Credits**	**Grandfathered Credits**
1	Site Impact N, O, P, Q, R, S, T & U	Riverine/Lacustrine Fringe Wetlands	27.29	Permanent/Reoccurring	20.47	163.76
2	Site Impact A, C, F, J, K & M	Slope Wetlands	53.01	Permanent/Reoccurring	39.76	318.08
3	Site Impact 1, 2 & 3 (ditch)	Open Water/Ditch/Canal	0.62	Permanent/Reoccurring	0.31	2.48
4	Site Impact H, G & I	Depressional/Flat Wetlands	8.47	Permanent/Reoccurring	8.47	67.76
5	Site Impact B, D & E	Depressional/Flat Wetlands	3.61	Permanent/Reoccurring	3.61	28.88
6	Non-Jurisdictional Site Impact 1,2,3,4,5,6,7 &8	Depressional	17.57	Permanent/Reoccurring	17.57	140.56
7			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
8			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
9			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
10			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed

Summary of Credits Owed			
Wetland Type	**Acres of Impact (ac.)**	**2018 Credits**	**Grandfathered Credits**
Freshwater Tidal Wetlands	0.00	0.00	0.00
Saltwater Tidal Wetlands	0.00	0.00	0.00
Riverine/Lacustrine Fringe Wetlands	27.29	20.47	163.76
Slope Wetlands	53.01	39.76	318.08
Depressional/Flat Wetlands	12.08	12.08	96.64
Open Water/Ditch/Canal	0.62	0.31	2.48

Worksheet 1: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact N, O, P, Q, R, S, T & U
Acres of Impact (Acres):	27.29
Wetland Type:	Riverine/Lacustrine Fringe Wetlands
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	Moderate	0.75
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		0.75
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		0.75
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**20.47**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**163.76**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 2: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact A, C, F, J, K & M
Acres of Impact (Acres):	53.01
Wetland Type:	Slope Wetlands
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	Moderate	0.75
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		0.75
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		0.75
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**39.76**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**318.08**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 3: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact 1, 2 & 3 (ditch)
Acres of Impact (Acres):	0.62
Wetland Type:	Open Water/Ditch/Canal
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	Low	0.50
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		0.50
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		0.50
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**0.31**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**2.48**

Legend

Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 4: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact H, G & I
Acres of Impact (Acres):	8.47
Wetland Type:	Depressional/Flat Wetlands
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	High	1.00
2. Impact Category Description (*Impact Category*)	Discharge of Dredge Material	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		1.00
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**8.47**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**67.76**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 5: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact B, D & E
Acres of Impact (Acres):	3.61
Wetland Type:	Depressional/Flat Wetlands
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	High	1.00
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		1.00
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**3.61**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**28.88**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 6: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Non-Jurisdictional Site Impact 1,2,3,4,5,6,7 &8
Acres of Impact (Acres):	17.57
Wetland Type:	Depressional
Date:	June 1, 2018

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	High	1.00
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		1.00
6. Product of Total WQFC Impact and Acres **(*Total 2018 Wetland Credits Owed*)** =		**17.57**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits **(*Grandfathered Wetland Credits Owed*)** =		**140.56**

Legend

Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

NON-RIVERINE WETLAND QUALITATIVE ASSESSMENT

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact A, C, F, J, K & M
Wetland Type:	Slope
WAA Center Coordinates:	
Date:	6/1/2018

Water Storage -1

Answer		Questions
Yes		Are there above grade fills or structures obstructing hydrologic flows into or out of the wetland, or are there drainage structures, ditches, or man-made impoundments within 100 feet of the assessment area and within the catchment that are hydrologically affecting the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	Moderate	

BioGeoChemical Cycling - 2

Answer		Questions
Yes		Is there large woody debris (LWD) in the wetland? (Y/N)
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
FUNCTION SCORE	Moderate	

Maintain Characteristic Wetland Community - 3

Answer		Questions
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
No		Is there greater than 10 percent invasive cover (i.e., cummulative absolute cover across all strata)? (Y/N)
FUNCTION SCORE	Moderate	

Maintain Faunal Habitat - 4

Answer		Questions
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
Yes		Is there woody debris in the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	Moderate	

WETLAND QUALITATIVE FUNCTIONAL CAPACITY SCORE	**Moderate**

Legend

Green Cell = User must manually input information.
Orange Cells = User must select the choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.
Dark Grey Cells = These cells do not require input. The corresponding value is populated from the user input to a previous question.

NON-RIVERINE WETLAND QUALITATIVE ASSESSMENT

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact G, H, I, N & NJD 1-8
Wetland Type:	Depression
WAA Center Coordinates:	
Date:	6/1/2018

Water Storage -1

Answer		Questions
No		Are there above grade fills or structures obstructing hydrologic flows into or out of the wetland, or are there drainage structures, ditches, or man-made impoundments within 100 feet of the assessment area and within the catchment that are hydrologically affecting the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	High	

BioGeoChemical Cycling - 2

Answer		Questions
Yes		Is there large woody debris (LWD) in the wetland? (Y/N)
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
FUNCTION SCORE	High	

Maintain Characteristic Wetland Community - 3

Answer		Questions
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
No		Is there greater than 10 percent invasive cover (i.e., cummulative absolute cover across all strata)? (Y/N)
FUNCTION SCORE	High	

Maintain Faunal Habitat - 4

Answer		Questions
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
Yes		Is there woody debris in the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	High	

WETLAND QUALITATIVE FUNCTIONAL CAPACITY SCORE	**High**

Legend

Green Cell = User must manually input information.
Orange Cells = User must select the choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.
Dark Grey Cells = These cells do not require input. The corresponding value is populated from the user input to a previous question.

NON-RIVERINE WETLAND QUALITATIVE ASSESSMENT

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact B, D & E
Wetland Type:	Depression
WAA Center Coordinates:	
Date:	6/1/2018

Water Storage -1

Answer		Questions
Yes		Are there above grade fills or structures obstructing hydrologic flows into or out of the wetland, or are there drainage structures, ditches, or man-made impoundments within 100 feet of the assessment area and within the catchment that are hydrologically affecting the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	Moderate	

BioGeoChemical Cycling - 2

Answer		Questions
Yes		Is there large woody debris (LWD) in the wetland? (Y/N)
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
FUNCTION SCORE	High	

Maintain Characteristic Wetland Community - 3

Answer		Questions
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
No		Is there greater than 10 percent invasive cover (i.e., cummulative absolute cover across all strata)? (Y/N)
FUNCTION SCORE	High	

Maintain Faunal Habitat - 4

Answer		Questions
No		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
Yes		Is there woody debris in the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	High	

WETLAND QUALITATIVE FUNCTIONAL CAPACITY SCORE	**High**

Legend

Green Cell = User must manually input information.
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RIVERINE - LACUSTRINE FRINGE - FRESHWATER TIDAL WETLAND QUALITATIVE ASSESSMENT

Project Name:	Bryan County OEM Site
Impact Wetland Name:	Site Impact N, O, P, Q, R, S, T & U
Wetland Type:	Riverine
WAA Center Coordinates:	
Date:	6/1/2018

Water Storage -1

Answer		Questions
Yes		Are there above grade fills or structures obstructing hydrologic flows into or out of the wetland, or are there drainage structures, ditches, or man-made impoundments within 100 feet of the assessment area that are hydrologically affecting the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	Moderate	

BioGeoChemical Cycling - 2

Answer		Questions
Yes		Is there large woody debris (LWD) in the wetland? (Y/N)
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
Yes		Is the wetland hydrologically connected to the adjacent tributary at bankfull events? If the wetland is Lacustrine Fringe and is associated with a man-made impoundment, then the response to this assessment question should be "No". (Y/N)
FUNCTION SCORE	Moderate	

Maintain Characteristic Wetland Community - 3

Answer		Questions
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
No		Is there greater than 10 percent invasive cover (i.e., cumulative absolute cover across all strata)? (Y/N)
FUNCTION SCORE	Moderate	

Maintain Faunal Habitat - 4

Answer		Questions
Yes		Has the vegetative community been adversely altered within the last 20 years? (Y/N)
Yes		Is there woody debris in the wetland? (Y/N)
Yes		Is the contributing drainage basin at least 50 percent forested? (Y/N)
FUNCTION SCORE	Moderate	

WETLAND QUALITATIVE FUNCTIONAL CAPACITY SCORE	**Moderate**

Legend

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Grey Cells = The calculation of these cells is automated.
Dark Grey Cells = These cells do not require input. The corresponding value is populated from the user input to a previous question.

ATTACHMENT K:

Adjacent Land Owner Information

MARTIN ELIZABETH S, TRUSTEE, WILSON
BARBARA M, MARTIN JANICE S ETAL
C/O BARBARA M WILSON
7370 HODGSON MEMORIAL DRIVE, SUITE D-10
SAVANNAH, GA 31406

EVERETT EDWARD S LIVING TRUST DATED
JULY 20 2017
PO BOX 173
SIGNAL MOUNTAIN, TN 37377

MOCK WM B
10325 HWY 280 EAST
ELLABELL, GA 31308-0000

GRIFFIN ANNIE A
251 HOMESTEAD DR
ELLABELL, GA 31308-0000

SMITH MANNIE B SR
ESTATE
PO BOX 779
ELLABELL, GA 31308-0000

PRIDGEN JOHN HENRY JR
15 PRIDGEN LANE
ELLABELL, GA 31308-0000

DUKES KARLA MILLS
38 PRIDGEN LANE
ELLABELL, GA 31308

PRIDGEN JOSEPH
10 PRIDGEN LANE
ELLABELL, GA 31308-0000

WILLIAMS MAE FRANCES
P O BOX 151
ELLABELL, GA 31308-0000

JERNIGAN COLUMBUS JR
P O BOX 213
ELLABELL, GA 31308-0000

BRADSHAW YVONNE
630 WEST 40TH STREET
SAVANNAH, GA 31415-0000

DAVIS RUBY J
35 CAMPFIELD STREET
ELLABELL, GA 31308-0000

BURGESS REBECCA
P O BOX 158
ELLABELL, GA 31308

DEKLE LINDA M
18 LYNN DRIVE
GARDEN CITY, GA 31408

SHARPE KAREN RUTH
111 MIMOSA STREET
RICHMOND HILL, GA 31324

STAFFORD LISA M & STAFFORD TRACY
50 ASPEN LANE
ELLABELL, GA 31308

WILLIAMS REECE A & KELLY A
40 ASPEN LANE
BLACK CREEK, GA 31308

MILES GREGG M & JEANA M
30 ASPEN LANE
ELLABELL, GA 31308

JOHNSON JOSEPH E & ASHLEY S
20 ASPEN LANE
ELLABELL, GA 31308

BRAZZELL JOSEPH L & CECILE
10 ASPEN LANE
ELLABELL, GA 31308

PK WATER SYSTEMS, INC.
205 5TH STREET, BOX 411
MELDRIM, GA 31318

ASPHALT OPERATIONS, LLC
2365 AIMWELL ROAD
VIDALIA, GA 30474