REQUEST FOR JURISDICTIONAL DETERMINATION
FOR PROPERTY LOCATED WITHIN THE STATE OF GEORGIA

APPLICANT:

Name (First Last) __Joe T. Public_____

Address __123 Main Street_____

City____Savannah_____ State_GA_ Zip Code ___31401_____

Phone (912)_555_-_1234___ Fax (912)_555_-_5678__ Email _joetpublic@email.com_____

PROPERTY OWNER: **Same as Applicant** ☑

Name (First Last) _____

Address _____

City_____ State____ Zip Code _____

Phone (___)_____-_____ Fax (___)_____-_____ Email _____

AGENT/CONSULTANT: (if applicable)

Name (First Last) __John Consultant_____

Address __P.O. Box 1234_____

City__Savannah_____ State_GA_ Zip Code __31401_____

Phone (912)_555_-_8888___ Fax (912)_555_-_9999__ Email
_john@consulting.com_____

PROPERTY LOCATION:

Location/Address/Subdivision_123 Lake street / Riverview subdivision_____

City (in/near) _Savannah_____ County __Chatham_____

Directions from nearest interstate (use additional sheet(s) if needed)_____
_____
_____
_____
_____

Latitude _32_._1234_____ Longitude -_81_._1234_____
(In decimal degrees at center of the site. Linear projects should also include decimal degrees location of the start, end, and any turn points of the review/project area. Use additional sheet(s) if needed.)

Property Size (acres and/or dimensions) ___52_____

Nearest named waterbody (Stream/River/Lake) ___Ogeechee River_____

TYPE OF JURISDICTIONAL DETERMINATION:

Please indicate the type of jurisdictional determination (JD) you are requesting by marking the appropriate type below. The Corps encourages the regulated public to utilize the preliminary JDs and expanded preliminary JDs where appropriate.

☐ **Preliminary Jurisdictional Determination** - Preliminary JDs are non-binding "written indications that there may be waters of the United States, including wetlands, on a parcel or indications of the approximate location(s) of waters of the United States or wetlands on a parcel. Preliminary JDs are advisory in nature and may not be appealed." (See 33 C.F.R. 331.2.)

☐ **Expanded Preliminary Jurisdictional Determination** - The intent of using the expanded preliminary JD is to allow a landowner or other "affected party" to move ahead expeditiously to obtain a Corps permit authorization where the party determines that it is in his or her best interest. In most cases, expanded preliminary JDs are also non-binding "written indications that there may be waters of the United States, including wetlands, on a parcel or indications of the approximate location(s) of waters of the United States or wetlands on a parcel." However, Corps verification of a delineation, which is submitted in conjunction with an expanded preliminary JD request, would provide the landowner or affected party with defensible documentation concerning the limits of Corps jurisdiction.

☑ **Approved Jurisdictional Determination** - As defined in Regulatory Guidance Letter 08-02, an approved JD is an official Corps 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/RHA. (See 33 C.F.R. 331.2.)

I, Joe T Public, request a jurisdictional
Print Name
determination the above property, grant the US Army Corps of Engineers permission to conduct an on-site inspection, and certify that I am authorized to grant permission for entry into the property.

SIGNED Joe T. Public **DATE** 11/19/10

****TO COMPLETE THIS REQUEST ALL OF THE REQUIRED INFORMATION IN THE APPLICABLE CHECKLIST MUST BE PROVIDED ****

INVESTIGATION OF JURISDICTIONAL WETLANDS AND WATERS OF THE U.S. FOR THE RIVERVIEW SUBDIVISION APARTMENTS PROJECT SITE CITY OF SAVANNAH, CHATHAM COUNTY, GEORGIA

1.0 INTRODUCTION

This report presents the findings of an investigation conducted by John Consultant to determine the presence or absence of jurisdictional wetlands and "waters of the U.S." for the approximately 52-acre Riverview Subdivision Apartments project site (APNs 291-050-003, -004, -012, and -013) ("study area") located within the City of Savannah, Chatham County, Georgia (Figure 1, *Regional Map*). The study area is located east of Clark Street, south of Riverview Subdivision, and north of State Route 60 (SR-60). The off-site portions of the study area occur along the eastern and western Site boundaries. The study area can be found on the U.S. Geological Survey (USGS) 7.5-minute Riverside East topographic quadrangle map, Section 3, T. 3 S., R. 4 W. (Figure 2, *Vicinity Map*). Topography of the study area is relatively flat and gently slopes to the southwest. Elevation near the center of the study area is approximately 20 feet above mean sea level (MSL).

An assessment of the potential for jurisdictional wetlands and waters was conducted by John Consultant biologists Flora Jones and Fauna Smith on December 19, 2009. The assessment was conducted on the approximately 52-acre property to determine whether or not on-site drainages are subject to the jurisdiction of the U.S. Army Corps of Engineers (ACOE) and to determine the presence or absence of any jurisdiction within the study area.

2.0 EXISTING SITE CONDITIONS

The study area was previously used as a commercial nursery from 1967 to 1991. Prior to this, the study area was used for the farming of row crops. The study area is dominated primarily by ornamental, non-native plant species. Evidence of nursery activities were observed throughout the study area, including broken tile, irrigation lines, paved and gravel parking areas, abandoned buildings and greenhouses, and a network of presently overgrown paths and landscaped areas. Two distinct plant communities characterize the on-site portion of the study area (Figure 3, *Plant Communities*). Descriptions of these plant communities within the study area can be found in the *Biological Resources Assessment, Riverview Subdivision Apartments* (John Consultant 2007) and on the wetland data forms.

The study area contains one drainage feature (referred to in this report as Drainage A), one tributary (referred to in this report as Tributary A1), and an adjacent wetland (referred to in this report as Wetland 1). Both of the non-wetland water features are perennial features and are generally dominated by native tree species. Neither feature was mapped as "blue-line" stream features on the USGS topographic map (USGS 1967, photorevised 1980). However, Drainage A appears on the U.S. Department of Agriculture (USDA) soils map as an "intermittent" aquatic feature (Knecht 1971) (Figure 4, *Soils Map*, on page 6).

The study area is located within the Ogeechee River watershed. Drainage A begins off-site to the east and flows in a westward direction before exiting the study area along the western

boundary (Figure 5, *Jurisdictional Features and Site Photograph Locations*, on page 7). Tributary A1 also originates off-site to the east and flows a short distance before converging with Drainage A on-site. Wetland 1 is a fringe wetland to both Tributary A1 and Draiange A. Downstream of the property directly to the west of the study area, Drainage A flows within a small, well defined earthen channel and supports a plant community dominated by native species including Black tupelo (*Nyssa sylvatica*, OBL**)** Further to the west, Drainage A flows into a two-foot diameter concrete storm drain and presumably flows under the 16 Freeway where it eventually discharges into Ogeechee River (the "River"). The River flows generally to the northwest. Eventually the River reaches the Atlantic Ocean.

During the field investigation, it was not possible to determine the connectivity of Drainage A to "waters of the U.S." due to its diversion within a local storm drain system. However, a presumption of connectivity to the River was made due to its adjacency to the River and the on-site (and immediately off-site) indicators of hydrology identified within the drainage. The interception and collection of the River by the storm water basin mentioned above would classify it as impounded, and would be considered jurisdictional by the ACOE.

3.0 INVESTIGATION METHODS

3.1 Literature Review Methods

Prior to visiting the study area, potential and/or historic drainages and aquatic features were located based on a review of the following: a detailed topographic map (1:60 scale), USGS topographic map (1:2,400 scale) (1967, photo-revised 1980), aerial photographs, and soil survey maps (Knecht 1971). In addition, detailed digital orthophoto quarter quadrangle (DOQQ) imagery produced by the USGS National Mapping Division, Eastern Mapping Center was analyzed. The DOQQ data are digital images derived from aerial photography that have been ortho-rectified with a one-meter ground resolution. The DOQQ data were used with John Consultant's inhouse Geographic Information System (GIS) as a base layer to identify vegetation communities and drainage features as well as existing on-site and surrounding conditions, including access availability and existing structures. Drainage features were then "ground-truthed" during field observations to obtain characteristic parameters and detailed descriptions using a combination of standard measurement tools and Global Positioning System (GPS) equipment. The precise location of transects, upstream and downstream extents of each feature, and sample points were collected in the field using a GPS hand-held unit. The Trimble GeoXT system is an advanced geographic data collection tool that integrates satellite differential and wide area augmentation system capabilities to provide sub meter (50 cm RMS) positional accuracy on a real-time basis. Following data collection, the digital information was uploaded and incorporated within John Consultant's project-specific GIS database to calculate jurisdictional acreages.

3.2 Field Investigation Methods

Based on the initial data collection, one main drainage feature was identified flowing through the center of the study area. This feature was evaluated and identified in the field as being potentially subject to the jurisdiction of the ACOE. This feature along with one associated

tributary and fringe wetland was field verified and mapped utilizing the following methodology. The potential for "waters of the U.S." were investigated in the field based on the absence or presence of a defined OHWM, as well as secondary indicators of hydrology including evidence of erosion, the deposition of vegetation or debris, and changes in vegetation. Because these criteria were met for one drainage feature and one associated tributary, a series of transects were run to determine the extent of jurisdictional non-wetland "waters of the U.S." Identified non-wetland "waters of the U.S." were traversed within or along the channel, and the OHWM was measured. Where channels diverged to form low, intermediate areas between the channels, the entire area between the outermost edge of each channel was considered within the OHWM. Where the intermediate area was equal to or above the height of the uppermost bank of either channel, the OHWM was recorded individually for each channel.

The determination of the presence or absence of ACOE jurisdictional wetlands was investigated using a routine determination according to the methods outlined in the U.S. Army Corps of Engineers' Wetland Delineation Manual (Environmental Laboratory 1987) and the Atlantic and Gulf Coastal Plain Regional Supplement(SOURCE) based on hydrologic and edaphic features of the study area, and on the vegetation composition of each area being investigated. In areas where jurisdictional wetlands would have been suspected, data on vegetation, hydrology, and soils was collected along transects, as described below.

Vegetation

In areas that could potentially support jurisdictional wetlands, transects were conducted to determine the presence or absence of a dominance of wetland indictor plant species related to jurisdictional wetlands. Areal cover of all plant species was recorded along each transect by estimating coverage in two randomly placed circular plots. Tree cover was estimated using 30-foot radius circular plots; sapling, shrub, and herb cover was estimated using 15-foot and 5-foot radius plots. Plant species in each strata were ranked according to their dominance. Species that contributed to a cumulative total of 50 percent of the total dominant coverage plus any species that comprised at least 20 percent of the total dominant coverage was recorded on the wetland data sheets. The wetland indicator status was assigned to each species using the *National List of Plant Species that Occur in Wetlands: Southeast (Region 2)* (Reed 1988).

Hydrology

The presence or absence of wetland hydrology was evaluated at each transect by recording the extent of observed surface flows, depth of inundation, depth to saturated soils, and depth to free water in the soil pits. If present, indicators of wetland or riverine hydrology were recorded, including water marks, drift lines, rack, debris, and sediment deposits. The lateral extent of the hydrologic indicators was used as a guide for locating soil pits to evaluate hydric soils. In portions of the drainage where the flow was divided between two channels with intermediate sand bars, the entire area between the outermost edge of each channel was considered within the OHWM and the wetland hydrology indicator is considered met for the entire area, assuming surface water was present.

Soils

If the criteria for wetland vegetation and hydrology were met, then an examination of the soils was conducted to determine if the soils were hydric. Soil pits were dug to at least a depth of

12 inches. In areas of recent deposition of sand or other overburden material, the soil pit was dug to a depth of 14 inches below the depth of the overburden material. At each soil pit the soil texture and color were recorded by comparison with standard plates within a Munsell soil color chart (1994). Any indicators of hydric soils, such as redoximorphic features, buried organic matter, organic streaking, reduced soil conditions, gleyed or low-chroma soils, or sulfidic odor were also recorded.

4.0 RESULTS

John Consultant biologists used the methods described above to determine the presence or absence of aquatic resources on the study area that would be regulated by the ACOE. Based on our understanding of the study area, John Consultant identified three potentially jurisdictional features. The potential jurisdictional features identified by John Consultant on-site include one perennial drainage (Drainage A), one perennial tributary (Tributary A1) and one fringe wetland that total approximately 1,317 linear feet of streambed and 23.99 acres of wetland. Drainage A and Tributary A1 together support approximately 0.13 acre of ACOE jurisdictional "waters of the U.S.". The locations of these features are presented in Figure 5, *Jurisdictional Features and Site Photograph Locations*. Information obtained from each source (soils map, topographic map, aerial photograph, and field investigation) is described below.

5.1 Soil Survey Review

The Soil Survey for Chatham County (Knecht 1971) was consulted and five soil types within four soil series were identified within the study area (Figure 4, *Soils Map*). The soils series mapped on-site include Fallbrook, Greenfield, Hanford, and Monserate. The soil types mapped within the study area are described in detail below. The soils map and underlying aerial photograph were analyzed for indicators of streams and location of wetlands, seeps, springs, or hydric soils. Drainage A appears on the 1971 soils map as an "intermittent" aquatic feature that begins at the foot of the Riverview Mountains and flows into the Ogeechee River west of the study area. No other aquatic resources appear on the soils map within the study area.

The Fallbrook Series consists of well-drained soils developed on granodiorite and tonalite. A description of **Fallbrook sandy loam, 8 to 15 percent slopes, eroded (FaD2)**, which is mapped on-site, is included below.

- Fallbrook sandy loam, 8 to 15 percent slopes (FaD2), eroded is a rolling soil that occurs on uplands. Permeability of this soil is typically moderate and runoff is medium. The hazard of erosion is moderate. The available water holding capacity is 4.0 to 7.0 inches. The root zone is generally more than 20-inches deep.

The Greenfield Series consists of soils developed in alluvium consisting mainly of granitic materials and occurs on alluvial fans and terraces. A description of **Greenfield sandy loam 2 to 8 percent slopes, eroded (GyC2)**, which is mapped on-site, is included below.

- Greenfield sandy loam, 2 to 8 percent slopes (GyC2) is a gently to moderately sloping soil that occurs on alluvial fans and terraces. Permeability of this soil is moderate, runoff

is slow to medium, and the hazard of erosion is slight to moderate. The available water holding capacity is 7.5 to 10.0 inches, and the root zone is more than 60 inches deep.

The Hanford Series consists of well-drained and somewhat excessively drained soils on alluvial fans and developed in alluvium made up of granitic materials. A description of **Hanford coarse sandy loam, 2 to 8 percent slopes (HcC)**, which is mapped on-site and in association with Drainage A and Wetland 1, is included below.

- Hanford coarse sandy loam, 2 to 8 percent slopes (HcC) is a gently to moderately sloping soil that occurs on alluvial fans. The soil is well-drained and its permeability is moderately rapid. Runoff is slow to medium, the hazard of erosion is slight to moderate, and the available water holding capacity is 5.0 to 7.5 inches. The root zone is more than 60 inches deep.

The Monserate Series consists of well-drained soils that developed in alluvium from predominantly granitic materials and typically occur on terraces and on old alluvial fans. The soil type within this series found within the Site and in association with Drainage A, Tributary A1, and Wetland 1 is **Monserate sandy loam, 8 to 15 percent slopes, eroded (MmD2)**. Also mapped on-site is **Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)**. Descriptions of these soil types are included below.

- **Monserate sandy loam, 8 to 15 percent slopes, eroded (MmD2)** is characterized as having medium runoff, and the hazard of erosion is moderate. Permeability is moderately slow and the available water holding capacity is 4.0 to 6.0 inches.

- **Monserate sandy loam, 5 to 8 percent slopes, eroded (MmC2)** is a moderately sloping soil that typically occurs on terraces and fans. The permeability of this soil is moderately slow, runoff is medium, and the hazard of erosion is moderate. The available water holding capacity is 4.0 to 6.0 inches. The root zone is 20 to 36 inches deep.

None of the soils found within the Site boundaries are included in the *Field Office Official List of Hydric Soil Map Units for Chatham County, Georgia* (USDA 1992). Therefore, the soils mapped on-site are not classified as hyrdic soils.

5.2 Topographic Map Review

The USGS 7.5-minute Meldrin topographic quadrangle map (USGS 1967, photo-revised 1980)) was reviewed to get a sense of possible natural and man-made features occurring within the study area and in its vicinity. Information obtained from the map includes contour lines, streets, streams, railroad lines, and vegetation. The Riverside East map is based on aerial photography taken in 1951, which was subsequently photo-revised in 1966 and 1980 from aerial photography (Figure 2, *Vicinity Map*). The majority of the study area is mapped as undeveloped, although some buildings and a light duty road were mapped within the southern portion of the study area as part of the 1980 photo-revised version. No USGS designated “blue-line” streams appear on the map within the boundaries of the study area.

5.3 Aerial Photograph Review

A review of a 2002 aerial photograph revealed a drainage feature flowing through the study area (Drainage A), which eventually flows into Ogeechee River. The River then flows northwest alongside the A.T.S. Railroad line to just before the Central Avenue and I-16 intersection, where it turns sharply and begins to flow due west, under I-16 and Central Avenue. The River then flows through the Quail Run Open Space area, which is roughly parallel to Central Avenue. The drainage then abruptly stops as it flows into a large storm water basin that is generally surrounded by Central Avenue to the south, Via Pueblo to the west and Bruin Drive to the north. Based on this aerial review, it is uncertain if low flows are allowed to leave the basin. The large spillway and drop outlet structure would appear to only be for very high (emergency) flows. Since this basin appears to intercept all but the most extreme flows, it would be classified as an impounded drainage.

5.4 Field Investigation

Results from the field investigation identified one drainage (Drainage A), one associated tributary (Tributary A1), and fringe wetland (Wetland 1). Drainage A and Tributary A1 were flowing at the time of the survey.

Analysis of the previously collected information aided the jurisdictional determinations made during the field investigation. The following descriptions are detailed accounts of the two drainage features investigated within the study area. Plant species observed within the OHWM of the drainages were noted. The wetland indicator status of each plant species observed within the OHWM of the drainages are noted upon first mention of the plant species in this report.

Drainage A

Drainage A is a perennial, earthen feature that originates off-site to the east. This feature is not a USGS-designated “blue-line” stream. However, it shows up on the USDA soils map as an “intermittent” aquatic feature (Knecht 1971).

Drainage A enters the study area under a barbed wire and chain link fence along the eastern project boundary. At this point, the drainage is approximately 28 feet wide and has three-foot banks. During the investigation, three pool comples were observed within the easternmost portion of the drainage. The deepest pool was six-inches deep, while the shallowest pool was one to two inches deep. These pools were found in an area that was adjacent to a commercial development off-site to the east and under heavily shaded conditions. Approximately 80 feet downstream, the banks are reduced to one-foot on each side. A six-inch PVC pipe follows the drainage along the northern side for over 100 feet. Approximately 120 feet from the start of Drainage A on-site, the drainage narrows to approximately eight feet. Approximately halfway through the study area, a 15-inch concrete pipe sticks out into the drainage, although it does not appear to convey water into the drainage. The other end of the pipe could not be located, but it appeared to be an abandoned resource that did not show evidence of water. Approximately 300 feet from the eastern study area boundary, Drainage A splits into two distinct channels, one that has shallow banks but is approximately eight feet wide, and the other that has more defined, steep banks but is approximately three feet wide. Approximately 140 feet downstream, the two channels re-join. Approximately 40 feet from the end of the first braid, Drainage A splits again into two separate channels for approximately 41 feet. The western one-fourth of the drainage

contains large rocks and pieces of broken asphalt. This area appears more disturbed by the former nursery activities. Drainage A exits the study area along the western boundary under a nursery road through a 15- inch culvert. Representative photographs of Drainage A are presented in Figure 6 and Figure 7, *Site Photographs*.

The streambed itself was unvegetated, and the banks were vegetated with loblooy pine (*Pinus taeda,* FAC*),* water oak (*Quercus Nigra,* FAC*),* common hackberry (*Celtis occidentalis*, FACU), and Black Tupelo (*Nyssa sylcatica,* OBL) in the tree stratum with bracken fern (*Pteridium aquilinum,* FACU) and Virginia chainfern (*Woodwardia virginica,* OBL) in the herb stratum. For more information see attached wetland data forms.

Due to the dominance of hydrophytic plant species and the presence of hydric soils, portion of Drainage A qualifies as a jurisdictional wetland and are discussed in appropriate section below as Wetland 1.

Within the study area, Drainage A measures approximately 889 linear feet on-site of which 181 linear feet are the secondary channels within the two braided portions of the drainage. Drainage A extends an additional 352 linear feet off-site. The ACOE jurisdictional width ranges between 1.5 and 17 feet. Drainage A, including the braided portions, contains approximately 0.11 acre on-site and approximately 0.02 acre off-site of ACOE jurisdictional non-wetland "waters of the U.S.", as measured by the width and extent of the OHWM found throughout its on-site length.

Tributary A1

Tributary A1 is an intermittent, earthen feature that originates off-site to the east. This feature is not a USGS-designated "blue-line" stream, nor does it show up on the USDA soils map as an aquatic feature (USGS 1967 and Knecht 1971). Tributary A1 enters the study area under a chain link fence along the eastern boundary, approximately 60 feet north of where Drainage A enters the study area. During the investigation, some water was found within Tributary A1. Tributary A1 becomes very shallow, almost indefinable for approximately 10 feet before it meets with Drainage A.

The streambed was unvegetated, and the banks were vegetated with mainly loblloy pine and Common Hackberry. Due to the lack of dominance of hydrophytic plant species and the absence of hydric soils, no portion of Tributary A1 qualifies as a jurisdictional wetland.

Representative photographs of Tributary A1 are presented in Figure 7, *Site Photographs*. On-site, Tributary A1 measures approximately 76 linear feet, with an ACOE jurisdictional width ranging between 1.5 to three feet. Tributary A1 contains less than 0.01 acre of ACOE jurisdictional non-wetland "waters of the U.S.", as measured by the width and extent of the OHWM found throughout its on-site length,

Wetland 1

Wetland 1 is identified on US Fish and Wildlife Service NWI maps as Palustrine Forested Broad-leaved deciduous that parallels Drainage A. This feature's width ranges from 5 to 15 feet from the lateral extent of the OHWM of Drainage A.

The area identified as a wetland displayed saturation at a depth of 2 inches and the water table was present at a depth of 8 inches. There were also water marks on the surrounding trees, as well as water stained leaves. The soil showed oxidized rhizospheress on living roots and the Fac-Neutral test was passed.

The dominant vegetation present within the identified wetland areas has a predominance of Red Bay (*Persea borbonia*, FACW), Black Tupelo, Virginia chainfern, and lizard's tail (*Saururus cernuus*, OBL). These areas are abutted with vegetation more characteristic of uplands including common hackberry, bracken fern, and ebony spleenwort (*Asplenium platyneuron*, FACU).

The soils present within the wetland have a hydrogen sulfide odor (A4) and display the hydric soil indicator Depleted Matrix (F3).

- **A4. Hydrogen Sulfide.** *For use in all LRRs.* A hydrogen sulfide odor within 30 cm (12 inches) of the soil surface. **User Notes:** This "rotten egg smell" indicates that sulfate-sulfur has been reduced and therefore the soil is anaerobic. In most hydric soils, the sulfidic odor occurs only when the soils are saturated and anaerobic.

- **F3. Depleted Matrix.** *For use in all LRRs, except for W, X, and Y.* A layer that has a depleted matrix with 60 percent or more chroma of 2 or less and that has a minimum thickness of either: a. 5 cm (2 inches) if the 5 cm is entirely within the upper 15 cm (6 inches) of the soil, or b. 15 cm (6 inches), starting within 25 cm (10 inches) of the soil surface. **User Notes:** A depleted matrix requires a value of 4 or more and chroma of 2 or less (fig. 29). Redox concentrations, including soft iron-manganese masses and/or pore linings, are required in soils with matrix colors of 4/1, 4/2, or 5/2. A, E, and calcic horizons may have low chromas and high values and may therefore be mistaken for a depleted matrix; however, they are excluded from the concept of depleted matrix unless the soil has common or many distinct or prominent redox concentrations occurring as soft masses or pore linings. The low-chroma matrix must be the result of wetness and not a weathering or parent material feature.

Representative photographs of Wetland 1 are presented in Figure 7, *Site Photographs*. Wetland 1 measures approximately 23.99 acres with an ACOE jurisdictional width ranging between 5 to 15 feet.

6.0 SUMMARY AND CONCLUSIONS

John Consultant determined that the study area contains one jurisdictional drainage and one associated tributary that total approximately 1,317 linear feet, of which 965 linear feet is on-site and 352 feet is off-site. Drainage A and Tributary A1 support a total of approximately 0.13 acre of ACOE jurisdictional non-wetland "waters of the U.S." of which 0.11 acre is on-site and 0.02 acre is off-site. Additionally, Wetland 1 supports a total of approximately 23.99 acres of ACOE jurisdictional wetland "waters of the U.S." The drainage features on-site were flowing at the time of the delineation. Main flow from Tributary one was most likely created by runoff from the adjacent commercial development. The drainage features consist of well-drained, sandy soils, and support a mix of wetland and upland plant species along the banks. Due to the

dominance of hydrophytic plant species and the presence of hydric soils throughout some of the on-site drainage features, a portion of the aquatic resources investigated within the study area qualified as jurisdictional wetlands.

7.0 REFERENCES (Fictional)

Cylinder, P., K. Bogdan, E. Davis, A. Herson. 1995. *Wetland Regulation: A Complete Guide to Federal and Georgia Programs*. Solano Press Books, Point Arena, Georgia.

Environmental Laboratory. 1987. *U.S. Army Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

Hickman, J. C. 1993. *The Jepson Manual: Higher Plants of Georgia*. Berkeley: University of Georgia Press.

Knecht, A. 1971. *Soil Survey for Chatham County,Georgia.* United States Department of Agriculture. Soil Conservation Service. Washington, D.C.

Munsell Color. 1994. *Soil Color Charts*. Revised Edition. Macbeth Division of Kollmorgen Instruments Corporation. New York.

JOHN CONSULTANT . 2010. *Biological Resources Assessment, Riverview Subdivision Apartments, City of Savannah, Chatham County, Georgia.*

Reed, P. B., Jr. 1988. *National List of Plant Species that Occur in Wetlands: Southeast (Region 2)*. U.S. Fish and Wildlife Service Biol. Rep. 88(26.10). 135 pp.

The SI Group. August 7, 2006. *Phase I Environmental Site Assessment*. Former Desert Nursery, 21595 Riverview Subdivision, Savannah, Georgia, 92557.

United States Department of Agriculture, Natural Resources Conservation Service. 1992. *Field Office Official List of Hydric Soil Map Units for Chatham County, Georgia,* March 23.

U.S. Geological Survey (USGS). 1967. Meldrin 7.5-minute Topographic
Quadrangle. Photorevised 1980.

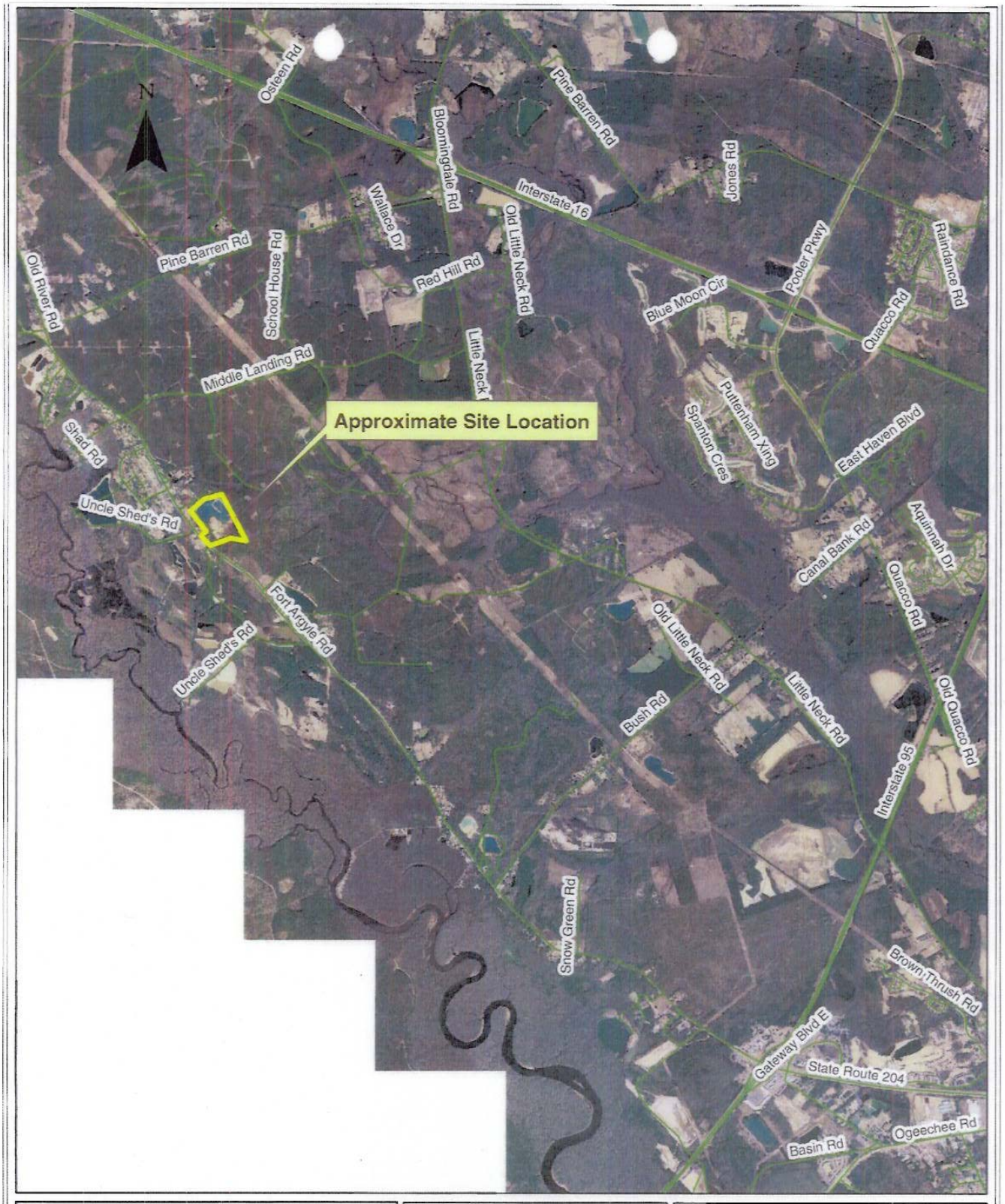
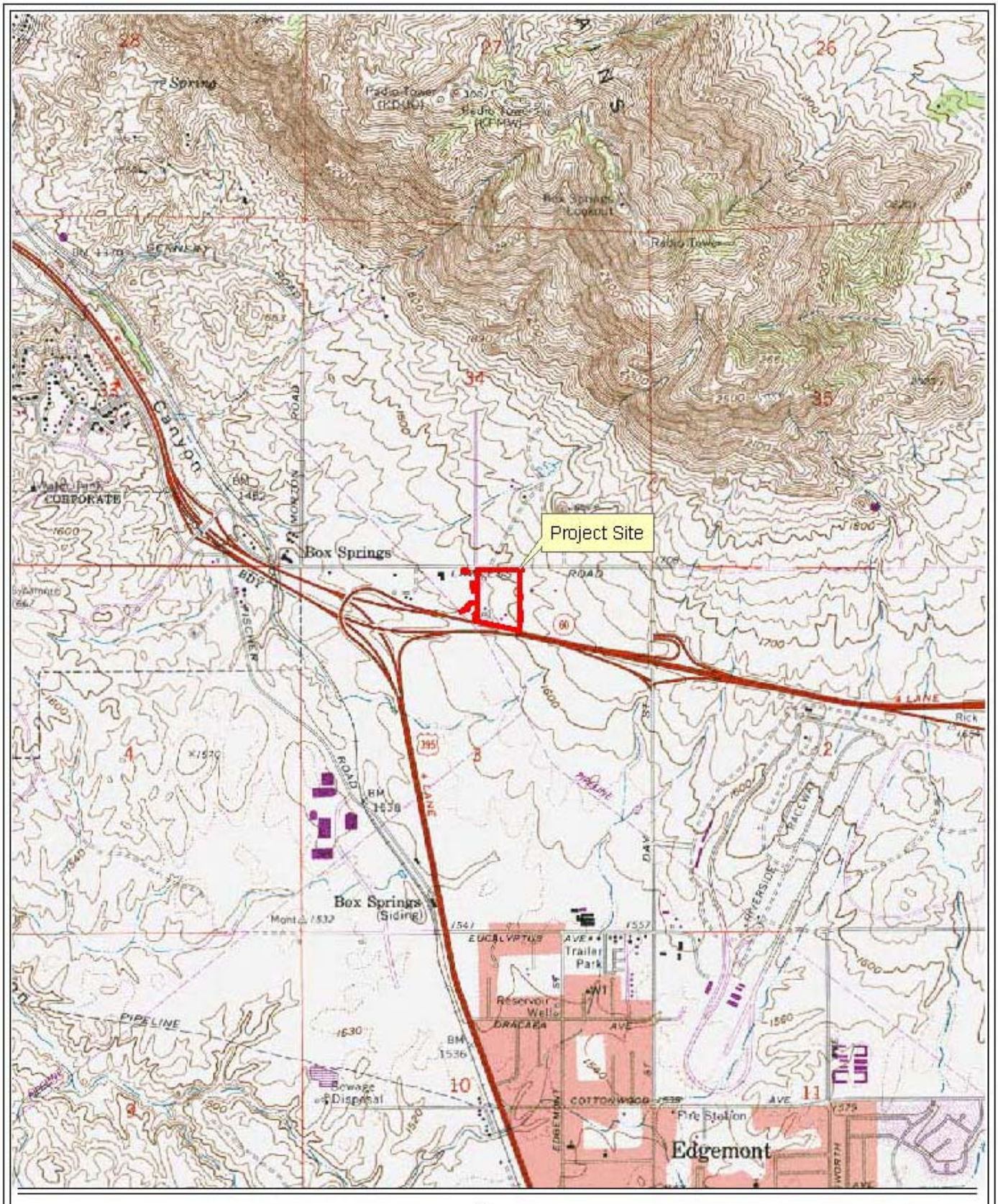


Figure 1

W.H. Carter Tract
Chatham County, GA

Location Map
2004 Aerial Photo
0 1,122,250 4,500 Feet

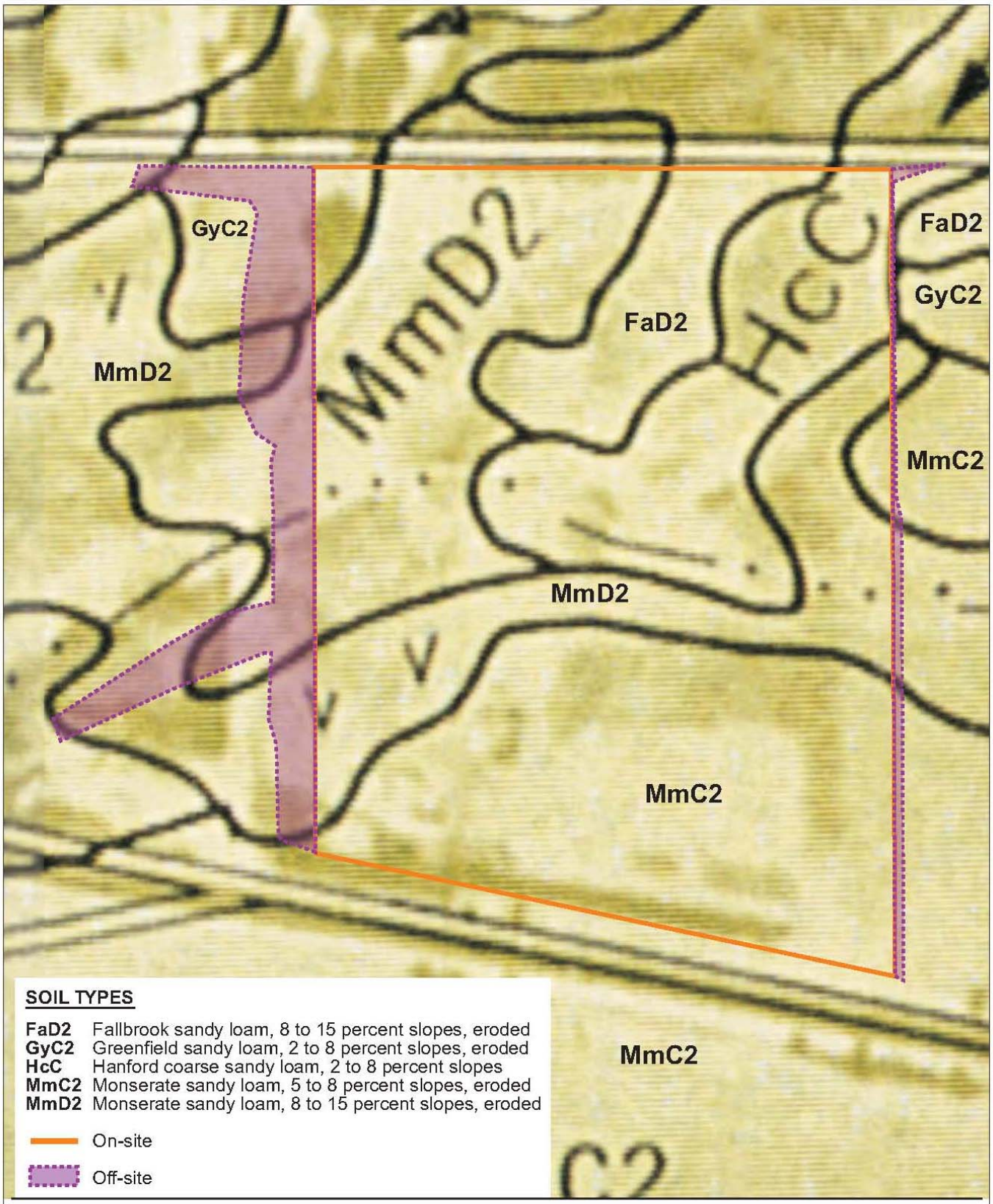


Riverview Subdivision

Figure 2
Apartments
Vicinity Map

Riverview Subdivision

Figure 3
Apartments
Plant Communities



Riverview Subdivision

Figure 4
Apartments
Soils Map

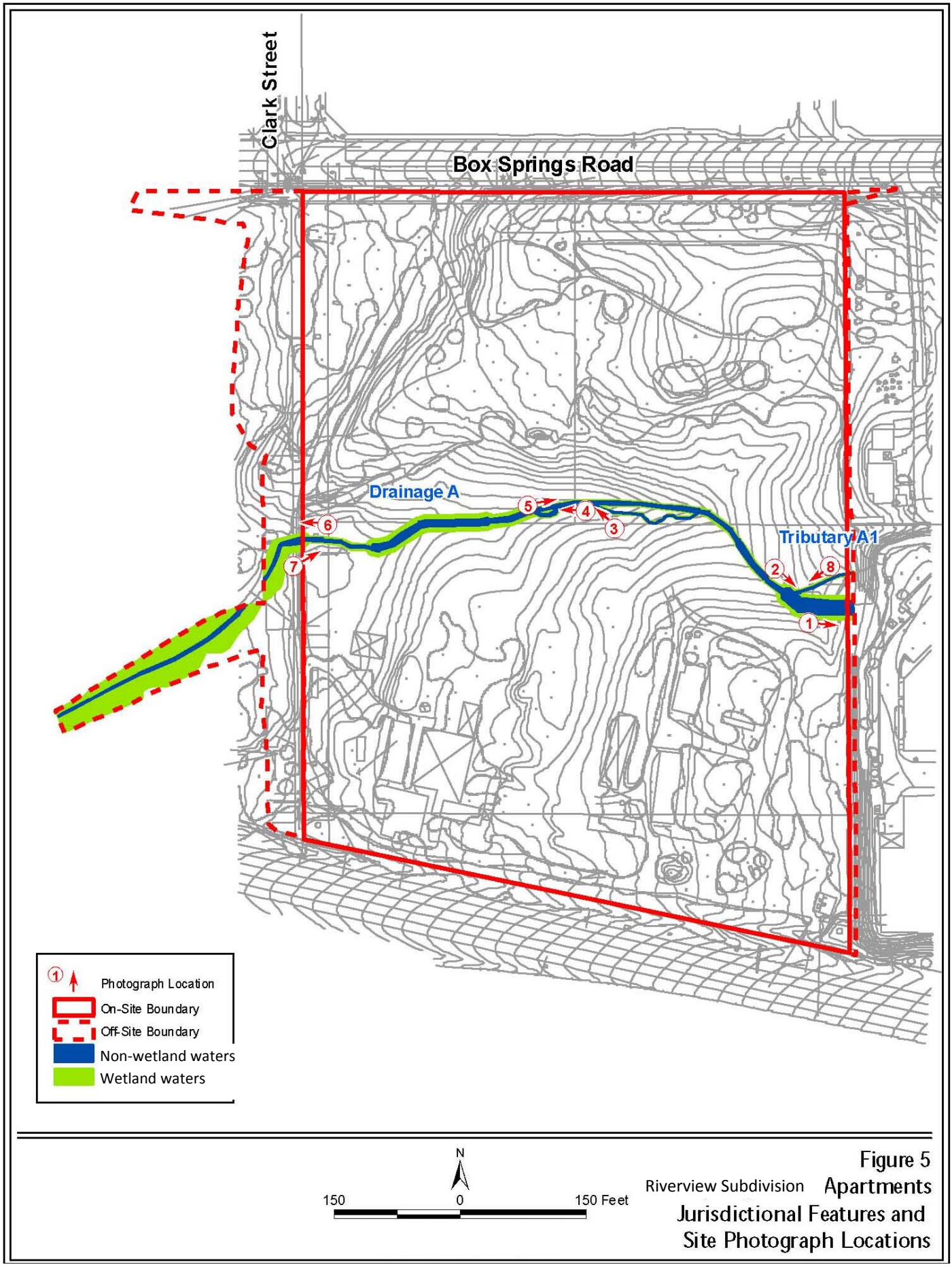


Figure 5
Riverview Subdivision Apartments
Jurisdictional Features and
Site Photograph Locations

Photograph 1: Pool of water at the start of Drainage A on-site along the eastern boundary of the Site.

Photograph 2: Drainage A looking upstream within the eastern quarter of the Site.

Photograph 3: Drainage A looking downstream at the first braided portion of the channel.

Photograph 4: Drainage A looking downstream where the 15-inch pipe is sticking out into the drainage.

Riverview Subdivision

Figure 6
Apartments
Site Photographs

Photograph 5: Drainage A looking upstream at the second braided portion of the channel.

Photograph 6: Drainage A looking downstream at the 15-inch culvert along the western boundary of the Site where the drainage exits the Site.

Photograph 7: Drainage A looking upstream from the western boundary of the Site where the drainage exits the Site.

Photograph 8: Tributary A1 looking upstream from the intersection with Drainage A.

Riverview Subdivision

Figure 7
Apartments
Site Photographs

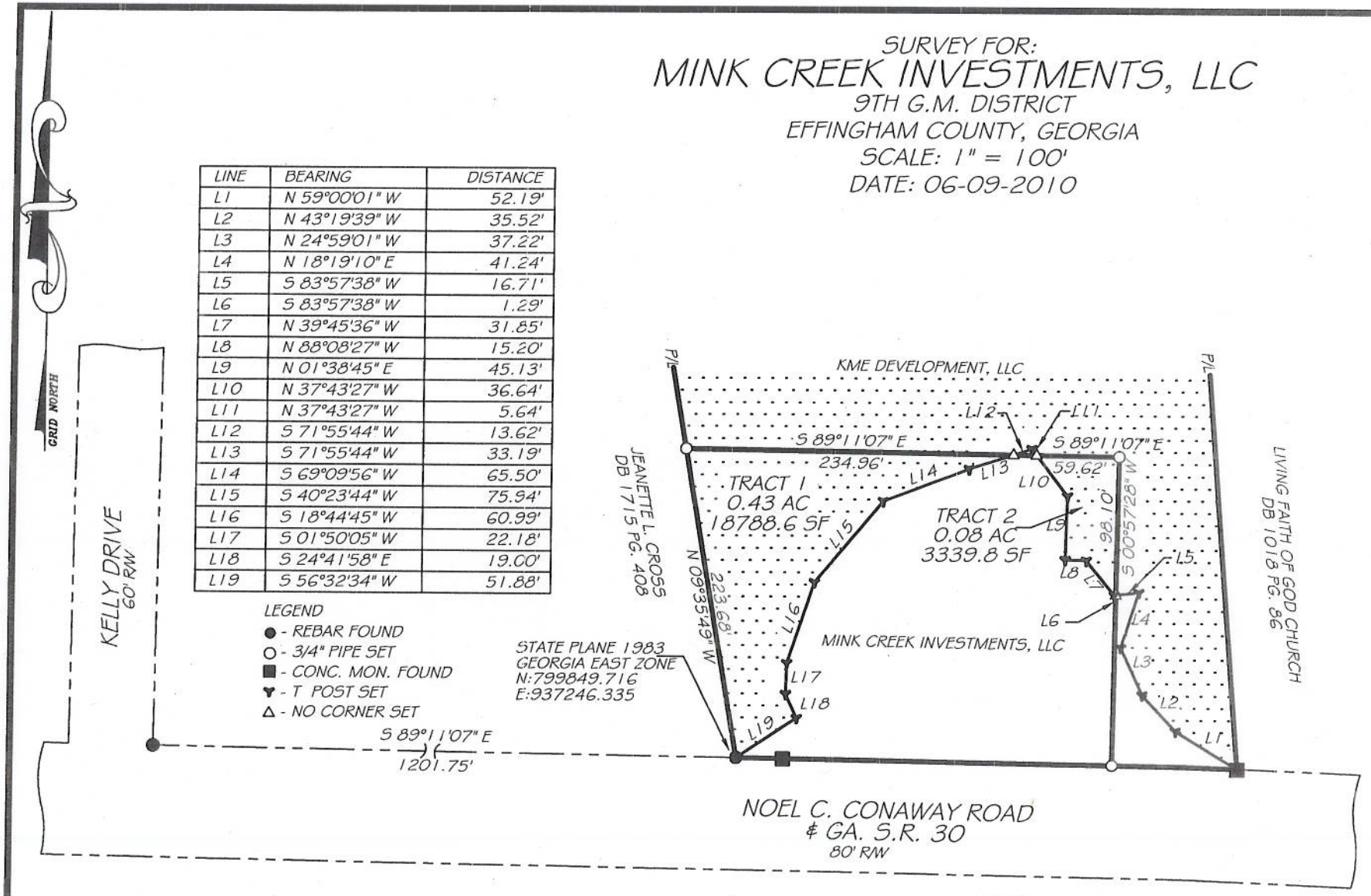
SURVEY FOR:

MINK CREEK INVESTMENTS, LLC

9TH G.M. DISTRICT
EFFINGHAM COUNTY, GEORGIA
SCALE: 1" = 100'
DATE: 06-09-2010

LINE	BEARING	DISTANCE
L1	N 59°00'01" W	52.19'
L2	N 43°19'39" W	35.52'
L3	N 24°59'01" W	37.22'
L4	N 18°19'10" E	41.24'
L5	S 83°57'38" W	16.71'
L6	S 83°57'38" W	1.29'
L7	N 39°45'36" W	31.85'
L8	N 88°08'27" W	15.20'
L9	N 01°38'45" E	45.13'
L10	N 37°43'27" W	36.64'
L11	N 37°43'27" W	5.64'
L12	S 71°55'44" W	13.62'
L13	S 71°55'44" W	33.19'
L14	S 69°09'56" W	65.50'
L15	S 40°23'44" W	75.94'
L16	S 18°44'45" W	60.99'
L17	S 01°50'05" W	22.18'
L18	S 24°41'58" E	19.00'
L19	S 56°32'34" W	51.88'

LEGEND
- ● - REBAR FOUND
- ○ - 3/4" PIPE SET
- ■ - CONC. MON. FOUND
- Y - T POST SET
- △ - NO CORNER SET



1" = 100'
100 0 100 200
SCALE FEET

ERROR OF CLOSURE: 1' IN 25,000'+
ANGULAR ERROR: LESS THAN 5" PER ANGLE
ADJUSTED CLOSURE: 1' = 100,000'
COMPASS RULE ADJUSTMENT
FIELD SURVEYOR: KEITH HOLTON
EQUIP. USED: TOPCON GPT 3005 TOTAL STATION
TOPCON GR-3, GPS RECEIVER
PLAT BY: KIRBY HOLTON
CADD FILE: S:\1010-1196\WETLANDS_060810

I CERTIFY THIS PLAT TO BE A TRUE AND CORRECT REPRESENTATION OF THE LAND PLATTED AND THAT IT CONFORMS TO THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW, GEORGIA LAWS 1978, AND IS SUITABLE FOR RECORDING.

I CERTIFY THAT IN MY OPINION THE PROVISIONS IN O.C.GA. SECTION 15-06-67(d) DOES NOT REQUIRE APPROVAL OF THIS PLAT BY THE PLANNING COMMISSION.

GEORGIA REGISTERED No. 2944 LAND SURVEYOR E. KIRBY HOLTON

STATEWIDE SURVEYING
521 ETHEL STREET
DOUGLAS, GEORGIA 31533
912-384-7723

SAS APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers (Revised 10 Jan 2009)

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): **Aug. 16, 2010**

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: **Savannah District, Riverview subdivision apartments, SAS-2010-09999**

C. PROJECT LOCATION AND BACKGROUND INFORMATION: **For Drainage A and Wetland 1**
State: **GA** County/parish/borough: **Chatham** City: **Savannah**
Center coordinates of site (lat/long in degree decimal format): **Lat. 32.1234° N, Long. -81.1234° W.**
Universal Transverse Mercator:
Name of nearest waterbody: **Ogechee River**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Ogechee River**
Name of watershed or Hydrologic Unit Code (HUC): **03060204 Ogeechee Coastal**
☒ 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 APPLIES):
☒ Office (Desk) Determination. Date: **June 16, 2010**
☒ Field Determination. Date(s): **December 19,2009**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.
☐ 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: .
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]

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There are and are not "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 CWA jurisdictional waters of U.S. in review area (check all that apply): 1
      ☐ TNWs, including territorial seas (complete Sec III A. 1)
      ☐ Wetlands adjacent to TNWs (complete Sec III A 2.)
      ☐ Interstate Waters that flow directly or indirectly into TNWs, explain in Sec III B 1.
      ☐ Wetlands adjacent to Interstate Waters that flow directly or indirectly into TNWs. Explain in section III B 2.
      ☐ Waters that flow directly or indirectly into and have a significant nexus with a TNW (provide data supporting this conclusion in Section III.D.)
      ☒ Wetlands adjacent to waters that flow directly or indirectly into a TNW and the tributary (relevant reach) and its adjacent wetlands have a significant nexus with that TNW (provide data supporting this conclusion in Section III.D.)
      ☐ Impoundments of jurisdictional waters (As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional).
         ☐ Demonstrate that impoundment was created from "waters of the U.S."
         ☐ Demonstrate that water meets the criteria for one of the categories presented above
         ☐ Demonstrate that water is isolated with a nexus to commerce (see below).
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands (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):2
         ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] **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.***

☐ 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: .

b. Identify (estimate) size of all waters of the U.S. selected above in the review area:
Non-wetland waters: **1,317 linear feet: 8 width (ft)** and/or acres.
Wetlands: **23.99 acres.**

2. Non-regulated waters/wetlands (check if applicable):
☐ 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). 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.
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: See Approved JD sheet for Tributary 1.

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): **76** linear feet, **2**width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres.
List type of aquatic resource: .
☐ Wetlands: acres.
☐ Uplands: acres. Explain: .
☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: .

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 only, then skip to Sec IV; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2, then skip to Sec IV; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .
☐ Waters of the State
☐ Waters Covered Under a Court Case
☐ Navigable in Fact Waters (if selected explain below)
Basis for Decision:

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM3 (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

[3]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.

☐ shelving
☐ vegetation matted down, bent, or absent
☐ leaf litter disturbed or washed away
☐ sediment deposition
☐ water staining
☐ other (list):
☐ the presence of wrack line
☐ sediment sorting
☐ scour
☐ multiple observed or predicted flow events
☐ abrupt change in plant community

☐ Discontinuous OHWM.4 Explain: .

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

☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

2. Wetland adjacent to TNW.
Summarize rationale supporting conclusion that wetland is "adjacent": .
Wetland relationship to water (s) of the US, excluding other wetlands
☐ Separated by berm or barrier or the like – (footnote see section Sec 328.3 (c)
☐ Connections
☐ Surface
☐ Shallow subsurface
☐ Ecological

Basis for decision (explain):

B. CHARATERISTICS OF INTERSTATE WATERS/WETLANDS:

1. Interstate Waters that flow directly to or indirectly into TNW

Summarize rationale supporting basis for determination: .
☐ Waters of the State
☐ Waters Covered Under a Court Case
☐ Navigable in Fact Waters (if selected explain below)
Basis for Decision:

(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through Pick List tributaries before entering TNW.
Tributary stream order, if known: .
Project waters are Pick List river miles from TNW.
Project waters are Pick List aerial (straight) miles from TNW.

Identify flow route to TNW5: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM6 (check all indicators that apply):
- ☐ clear, natural line impressed on the bank
- ☐ changes in the character of soil
- ☐ shelving
- ☐ vegetation matted down, bent, or absent
- ☐ leaf litter disturbed or washed away
- ☐ sediment deposition
- ☐ water staining
- ☐ the presence of litter and debris
- ☐ destruction of terrestrial vegetation
- ☐ the presence of wrack line
- ☐ sediment sorting
- ☐ scour
- ☐ multiple observed or predicted flow events
- ☐ abrupt change in plant community

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

☐ other (list):
☐ Discontinuous OHWM.7 Explain: .

Factors other than the OHWM 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):

2. Wetland adjacent to Interstate Waters,
Summarize rationale supporting conclusion that wetland is "adjacent": .
Wetland relationship to water (s) of the US, excluding other wetlands
☐ Separated by berm or barrier or the like – (footnote see section Sec 328.3 (c)
☐ Connections
☐ Surface
☐ Shallow subsurface
☐ Ecological

Basis for decision (explain):

C. Characteristics of Tributary and Its Adjacent Wetlands (If Any):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any. If the JD covers only the waterbody8 (and no adjacent wetlands), complete Sections III.C.1, III.D and IV. If the JD covers a tributary with adjacent wetlands, complete Section III.C.1 for the tributary, Section III.C.2 for any onsite wetlands, and Section III.C.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.D below, then complete Sec IV.

1. Characteristics of the waterbody that flows directly or indirectly into a TNW

(i) General Area Conditions:
Watershed size: **43,000acres**
Drainage area: **1,700 acres**
Average annual rainfall: **50 inches taken from the Savannah Airport, 6 miles east of site**
Average annual snowfall: **0 inches**

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through 2 **tributaries** before entering TNW.
Identify flow route to TNW: **Unnamed Drainage, Storm Drain system (Perennial), to Ogeechee River (Perennial)**
Tributary stream order, if known: **1st.**
Project waters are **14.5 river miles** from TNW.
Project waters are **14 aerial (straight) miles** from TNW.

(b) General Tributary Characteristics (check all that apply):
Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: **Tributary has been channelized in some locations but has not been maintained.**
Tributary properties with respect to top of bank (estimate):
Average width: **4 feet**
Average depth: **2 feet**
Average side slopes: **2:1.**

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

Primary tributary substrate composition (check all that apply):

☐ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type **Pine, Cypress, Scrub/Shrub, Hardwood mix /85% cover**:	
☐ Other. Explain:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **stable, rooted vegetation along both banks, vegetation absent within channel.**
Presence of run/riffle/pool complexes. Explain: **none**
Tributary geometry: **Relatively Straight**
Tributary gradient (approximate average slope): **0.67 % (10'/1500')**

(c) Flow:

Tributary provides for: **perrenial flow**
Estimate average number of flow events in review area/year: **greater than 20**
Rationale to support flow regime: **Flow was observed on April 29th, 2009 after a 2" local rain event on April 25th, 2009. Flow was also observed on May 14th, 2009 after a 1.88" rain event on May 4th, 2009. During July 14th 2010 site visit no flow was noted two days after a 2.14" local rain event.**
Other information on duration and volume:

Surface flow is: **confined and discrete.** Characteristics: **The upper and lower reaches of the tributary have been channalized and the flow is confined in these areas. The middle reaches of the tributary have not been channalized and in these areas, while there is a defined channal, not all surface flow is restricted to the channel.**

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

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM (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.[9] Explain:
Factors other than the OHWM 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: **The water flowing through the upper portion of the relative reach is clear with no known water quality issues. The watershed consists of predominantly farmed uplands and forested wetlands. The lower portions of the relative reach flows through livestock pastures. The livestock contribute to the high level of fecal coliform already present in Storm Drain system.**
Identify specific pollutants, if known: **The unnamed tributary is not a 303(d) listed stream but Storm Drain system immediately downstream of the reach is a 303(d) listed stream for fecal coliform. Additionally, the relative reach is located 4.5 miles upstream of Ogeechee River, a 303(d) listed stream for fecal coliform.**

[9]Ibid.

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

☐ Riparian corridor. Characteristics (type, average width):

☒ Wetland fringe. Characteristics: **Palustrine forested wetland, historical impacted by forestry activities. Primarily consisting of cypress dominated wetlands.**

☒ Habitat for:

☒ Federally Listed species. Explain findings:**Wood Storks observed during visits to the site**.

☐ Fish rearing/spawn areas. Explain findings:

☐ Other environmentally-sensitive species. Explain findings:

☒ Aquatic/wildlife diversity. Explain findings: **Feeding habitat for multiple wading birds such as wood stork, Heron's, etc., multiple species of amphibians such as the little grass frog.**

2. Characteristics of wetlands adjacent to tributary that flows directly or indirectly into TNW

(i) Physical Characteristics:

(a) Wetland Adjacency Determination:

☒ Directly abutting

☐ Not directly abutting

☐ Separated by berm/barrier.

☐ Connection.

☐ Surface

☐ Shallow subsurface

☐ Ecological

Basis for decision (explain): **Wetland is continuous (abutting) the subject tributary. No berm or other barrier feature exists between the tributary and its abutting wetland. Therefore there are not breaks in connectivity between the wetland and the tributary.**

(b) General Wetland Characteristics:

Properties:

Wetland size: **23.99acres**

Wetland type. Explain: **forested wetland**

Wetland quality. Explain: **Some recent logging of cypress has occurred but large portions of the wetland maintain mature cypress stands. Past ditching has occurred in an attempt to drain portions of the wetland but these ditches have been plugged. Watershed consists primarily of agricultural land with limited development.**

(c) General Flow Relationship:

Flow is: **intermittent.** Explain: **Flow was observed on April 29th, 2009 after a 2" local rain event on April 25th, 2009. Flow was also observed on May 14th, 2009 after a 1.88" rain event on May 4th, 2009. During July 14th 2010 site visit no flow was noted two days after a 2.14" local rain event.**

Surface flow is: **Discret and confined**

Characteristics:**The upper and lower reaches of the tributary have been channalized and the flow is confined in these areas. The middle reaches of the tributary have not been channalized and in these areas, while there is a defined channal, not all surface flow is restricted to the channel.**

Subsurface flow: **Unknown.** Explain findings:

☐ Dye (or other) test performed:

(d) Proximity (Relationship) to TNW

Project wetlands are **15.5 river miles** from TNW.

Project waters are **15 aerial (straight) miles** from TNW.

Flow is from: **Wetland through Drainage A into Storm Drain system (Perennial) then southeast to Ogeechee River (Perennial)**

Estimate approximate location of wetland as within the 500 yr or greater floodplain. **Wetland is located outside the 500 yr flood plan.**

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **The water flowing through the upper portion of the relative reach is clear with no known water quality issues. The watershed consists of predominantly farmed uplands and forested**

wetlands. The lower portions of the relative reach flows through livestock pastures. The livestock contribute to the high level of fecal coliform already present in Storm Drain system.
Identify specific pollutants, if known: **The unnamed tributary is not a 303(d) listed stream but Storm Drain system immediately downstream of the reach is a 303(d) listed stream for fecal coliform. Additionally, the relative reach is located 4.5 miles upstream of Ogeechee River, a 303(d) listed stream for fecal coliform.**

(iii) Biological Characteristics. Wetland supports (check all that apply):
- ☐ Riparian buffer. Characteristics (type, average width):
- ☒ Vegetation type/percent cover. Explain: **Cypress 60%, Scrub/shrub 40%, for additional information on vegetation see Corps wetland data sheets**
- ☒ Habitat for:
  - ☒ Federally Listed species. Explain findings: **Wood Storks observed during visits to the site**.
  - ☐ Fish/spawn areas. Explain findings:
  - ☐ Other environmentally-sensitive species. Explain findings:
  - ☒ Aquatic/wildlife diversity. Explain findings: **Feeding habitat for multiple wading birds such as wood stork, Heron's, etc., multiple species of amphibians such as the little grass frog.**

(iv) Other Ecological Characteristics.
- ☐ Explain:

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: 1
Approximately23.99 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)
1.	y	23.99		

Summarize overall biological, chemical and physical functions being performed: See Below

D. 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. 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. 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 water 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 IV:

2. Significant nexus findings for water and its adjacent wetlands, where the water 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 IV:

The subject wetland lies within the 8 digit United States Geological Survey (USGS) Hydrologic Unit Code 03060204 known as the Ogeechee River Coastal watershed. Based on a review of annual population numbers, found at http://recenter.tamu.edu/data/popc/popcs13.html, this watershed has a growing population but predominate land use is still agriculture/silivaculture (http://narsal.uga.edu/glut/county.php). The Ogeechee River watershed encompasses approximately 16 Georgia counties and its largest City is Savannah, Georgia. USGS quadrangle maps, county soil surveys, Google Maps aerial photos and aerial infrared imagery were investigated to determine how the review site is oriented to its relevant reach (RR).

For the purposes of this determination, drainage area is defined as the area, in acres, that flows through the lowest extreme of the RR including uplands and wetlands. Watershed is defined as the area, in acres, that flows through the next reach just downstream of the RR including uplands, wetlands and the drainage area. Project boundaries are defined as the area which has been surveyed and evaluated for jurisdictional waters of the United States. Figure 1, which follows this SAS Approved JD Sheet, shows the project boundaries.

The wetland within the RR comprises 30% of the 1700 – acre drainage area. The RR is located approximately 15 river miles from the Ogeechee River, a TNW. The 23.99 acre wetland addressed in this approved JD is continuous and directly abutting with an unnamed tributary labeled as Drainage A. Drainage A then flows approximately 4.6 miles into the Storm Drain system which flows approximately 10.4 miles into the Ogeechee River a TNW. There is a continuous hydrological connection to the TNW. The RR and its associated wetlands would have both the capacity to carry pollutants and flood waters to the TNW and to reduce the amount of pollutants or flood waters reaching a TNW through their natural water filtration functions. The predominate visible impacts to this RR in recent history have been the occasional timber harvest on surroundings uplands and probably less frequently in the hardwood bottoms. In addition, to the silviculture activities, there are limited agriculture activities within the RR. These include fields of row crops as well as livestock pastures. This reach exhibits some signs of impairment within portions traversing livestock pastures.

The unnamed feature is not a 303(d) listed stream but the Storm Drain system immediately downstream of the reach is a 303(d) listed stream for fecal coliform. Additionally, the relative reach is located 4.5 miles upstream of Ogeechee River, a 303(d) listed stream for fecal coliform. No data is available for the relative reach with regards to biological integrity. The downstream portion of the RR flows through livestock pasture which can be predicted to increase the level of fecal coliform in the system. However, the upper reach of the RR, including the subject 750 acre wetland, have higher water quality and therefore dilute the pollutants in downstream 303(d) listed waters bodies.

Precipitation in this county averages 50 inches annually. This RR is approximately 6,000 linear feet in length and has a drainage area of approximately 1,700 acres. Using these numbers, approximately 7,100 – acre feet of precipitation would fall into this reference reach annually. This RR and associated wetlands retards 7100 acre feet of water annually.

This RR's wetlands are also a source of beneficial materials such as detritus from plants, coarse and fine woody debris, etc, energy, inorganic nutrients, organic matter, and organisms. This material is deposited through foilage drop off , loss of small limbs, etc and is transported down the subject RR during flow events.

This RR's wetlands provide characteristic wildlife feeding habitat for multiple wading birds such as wood stork, Heron's, etc., which feed on small fish, tad poles and crayfish which can all be found within the subject wetland. They also provide habit for multiple species of amphibians such as the little grass frog. The little grass frog prefer moist, grassy environs of ponds and cypress bays all found within the subject wetland. Many the species supported by these wetlands require both wetland and adjacent upland habitats for lifecycle functions, breeding , foraging, etc and the organisms themselves serve as a conduit for energy exchange between the RR and the TNW. These wetlands are important to the maintenance of local populations of many species as shelter, breeding or foraging areas or as sources of drinking water because uplands within the drainage area are prodomantely pine plantations and agricutlual fields with limited wildlife resources.

As discussed in detail above this RR and its assoacited wetlands diluate pollutants down stream, provide wildlife habitat for many species, and remove harmful materials such as sediments and pollutants by retarding flows. For these reasons, this RR and its associated wetlands provide a substantial effect on the chemical physical and biological intergity of the Ogeechee River.

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: **Riverview Subdivision.**
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report. **John Consultant's consulting company dated 10/29/2009**
  - ☐ 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:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:250,000, Meldin**
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **Byran and Chatham County, Georgia**
- ☒ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☒ FEMA/FIRM maps: **Lowndes County, Georgia Panel 245 of 400, effective date September 26, 2008**
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date): **Google 2009**
  or ☒ Other (Name & Date):**From 10/29/2009 site visit**
- ☐ 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: