



December 16, 2015

Mr. Rodney N. Barry, P.E., Division Administrator
Federal Highway Administration
Atlanta Federal Center
61 Forsyth Street, S.W., Suite 17T100
Atlanta, Georgia 30303-3104
ATTN: **Chetna Dixon**

Re: Transmittal of Ecology Resource Survey and Assessment of Effects Report and Request for Determination of Effect
Taliaferro County, P.I. No. 0008301, CR 82/Bethany Church Road at North Fork Ogeechee River
Dear Mr. Barry:

Please find attached the Ecology Resource Survey and Assessment of Effects Report for the above referenced project. Georgia Department of Transportation project PI No. 0008301 proposes to replace the structurally deficient bridge on CR 82/Bethany Church Road at North Fork Ogeechee River, Taliaferro County, Georgia.

The recommended biological determination for all protected species is "no effect". A field survey conducted on July 29, 2015 determined that suitable habitat is not present in the project area for the federal and state protected harperella (*Ptilimnium nodosum*), little amphianthus (*Amphianthus pusillus*), and dwarf sumac (*Rhus michauxii*). ~~Section 7 coordination would not be required due to the recommended "no effect" determinations.~~

~~No impacts to jurisdictional waters of the U.S. would result from the proposed project. A Stream Buffer Variance will not be required.~~

The Department respectfully requests that your office make a determination of "no effect" to the above federally listed species potentially occurring within the project area. Please copy the Department on your correspondence with the U.S. Fish and Wildlife Service notifying them of your effect determination. If you should have any questions or need additional information, please contact [Kristen Boggs](mailto:kboggs@dot.ga.gov) at (404) 631-1143 (kboggs@dot.ga.gov) or [Rick O'Hara](mailto:rohara@dot.ga.gov) at (404) 631-0000 (rohara@dot.ga.gov).

Sincerely,

[Hiral Patel, P.E.](#)
State Environmental Administrator

HP/ [H/gh](#)
Attachment



Ryan Wilkinson, GDOT Project Manager
Rick O'Hara, NEPA Analyst
Will Smith, EPD
Mark LaRue, EPA

Ecology Resource Survey and Assessment of Effects Report
~~December 2015~~

CSBRG-008-00(301)
Taliaferro County
P.I. No. 0008301

CR 82/Bethany Church Road at North Fork Ogeechee River

Prepared by:
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Prepared for:
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Eric Nicoletti, PE, Senior Ecologist

GDOT Reviewer: _____
 Name, Title

Ecology Resource Survey and Assessment of Effects Overview
 Project CSBRG-0008-00(301), Taliaferro County
 PI No. 0008301

Impacts to Federally Jurisdictional Resources		
Resource Type	Length of Impact (feet)	Area of Impact (acres)
Perennial Stream	N/A	N/A
Intermittent Stream	N/A	N/A
Ephemeral Channel	N/A	N/A
TOTAL	N/A	N/A
Wetland	N/A	N/A
Open Water	N/A	N/A
TOTAL	N/A	N/A



Present in the Project Area	
Invasive Species	Y
Bald Eagle Nest, Habitat	N
Critical Habitat	N
Essential Fish Habitat	N
Bat Roosting Habitat	Y
Migratory Bird Habitat	Y

Agency Coordination	
FWCA	NR
SP 107.23H	NR
Buffer Variance	NR
Buffer Mitigation	NR
404 Permit	NR
404 Permit Mitigation	NR



Federal and State Protected Species							
Species	Common Name	Federal Rank	State Rank	Habitat Present	Species Present	Special Provision 107.23H	Biological Determination
<i>Amphianthus pusillus</i>	little amphianthus	T	T	N	N	N	No Effect
<i>Ptilimnium nodosum</i>	harperella	E	E	N	N	N	No effect
<i>Rhus michauxii</i>	dwarf sumac	E	E	N	N	N	No effect

E=Endangered, T=Threatened, N=None

Executive Summary

The proposed Georgia Department of Transportation (GDOT) project CSBRG-0008-00(301), P.I. No. 0008301 would consist of the replacement of the structurally deficient bridge on County Route 82/Bethany Church Road (CR 82) over the North Fork Ogeechee River approximately 2.0 miles southwest of the City of Crawfordville in Taliaferro County, Georgia (see **Figure 1: Project Vicinity Map** and **Figure 2: Survey Area Map**). The length of the project is approximately 1,750 feet (0.33 mile).

~~A field survey of the project corridor was conducted by Garrett Smith (Ecologist) and G. Todd Hill (Principal Ecologist), of VHB Inc. on July 29, 2015 to identify and evaluate jurisdictional waters of the United States, state waters, and habitats with the potential to support protected species. A total area of approximately 14.36 acres were surveyed. Land uses/habitats identified within the project corridor consist of five different habitat types including: mixed pine-hardwood (8.5 acres or 59.2 percent of the total survey area), transportation/utility right-of-way (ROW) (2.69 acres or 18.7 percent), open pasture (1.62 acres or 11.3 percent), bottomland hardwood (1.2 acres or 8.4 percent), and residential (0.35 acre or 2.4 percent). In compliance with Executive Order 13112, a survey was conducted for invasive species that could spread during construction. Invasive species designated as Category 1 by the Georgia Exotic Pest Plant Council (GA-EPPC) observed during the field survey include Japanese honeysuckle (*Lonicera japonica*).~~

An office review of available resources was performed to develop a list of potential federal and state listed species for Taliaferro County, Georgia, which included early coordination efforts with Georgia Department of Natural Resources (GADNR) and United States Fish and Wildlife Service (USFWS) in July 2015. This coordination revealed that three federal listed species have been documented within Taliaferro County: little amphanthus (*Amphanthus pusillus*), harperella (*Ptilimnium nodosum*), and dwarf sumac (*Rhus michauxii*). Suitable habitat does not exist within the project corridor for any of the above listed species. ~~It is anticipated that the proposed project would have~~ no effect on the little amphanthus, harperella, or dwarf sumac. ~~The proposed project will not require Informal or Formal Section 7 coordination. Based upon information from the GA Natural Heritage Element Occurrence Database, no~~ state protected species are documented to occur within three miles of the project corridor. Supplemental Specification 107.23H will be utilized to avoid impacts to migratory bird habitat.

~~Critical habitat has not been designated within Taliaferro County. The closest critical habitat is for the Carolina heelsplitter (*Lasmigona decorata*) located 50.7 miles northeast of the project location. Therefore, it is anticipated that the project would have no adverse modifications on any designated critical habitat for federally listed species. The proposed project is not located near any tidally influenced areas and therefore would have no effect on Essential Fish Habitat (EFH).~~ 

~~All concrete culverts and bridges within the project area were assessed during the ecological field survey for the presence or evidence of roosting bats, nesting migratory birds, and other wildlife of concern. The field survey did not identify any eagle nests or suitable foraging or nesting habitat within the survey corridor. There was one bridge that could be potential habitat for migratory bird or bat species. However, migratory bird nests were not identified within this structure, nor was guano or any other evidence of bat activity found during field investigations. Suitable roosting trees are located in the project area; however, the project would remain within existing right-of-way and would only affect the edges of suitable forest habitat. Therefore, it is anticipated that the proposed project would not affect bats. The proposed project would replace the existing bridge.~~

Two federally jurisdictional waters of the US (Wetland 1 [WL 1], and Perennial Stream 2 [PS 2]) were identified in the project corridor. PS 2 is a buffered state water (BSW). ~~There were no other state waters located in the project corridor.~~ The work associated with the bridge construction would be completed within the 100-foot exempt area; therefore, a stream buffer variance would not be required at this crossing. **The proposed project has been designed to avoid all impacts to jurisdictional waters.** As a

result, no impacts to waters of the US are anticipated, and Fish and Wildlife Coordination Act (FWA) coordination ~~and permitting are not~~ required.

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I. PROJECT OVERVIEW

A. Project Location

The proposed Georgia Department of Transportation (GDOT) project CSBRG-0008-00(301), P.I. No. 0008301 would consist of the replacement of the structurally deficient bridge located on CR 82/Bethany Church Road (CR 82) approximately 2.0 miles southwest of Crawfordville, Georgia in Taliaferro County (see **Figure 1: Project Vicinity Map** and **Figure 2: Survey Area Map**). The proposed project lies within the Upper Ogeechee Watershed Hydrologic Unit Code (HUC) 03060201, which is not considered to be a priority watershed by the United States Environmental Protection Agency (USEPA).



The project is located within the Southern Outer Piedmont ecoregion of Georgia. ~~The Southern Outer Piedmont has lower elevations, less relief, and less precipitation than the Southern Inner Piedmont ecoregion. Loblolly-shortleaf pine is the major forest type, with less oak-hickory and oak-pine than in the Southern Inner Piedmont ecoregion. Gneiss, schist, and granite are the dominant rock types, covered with deep saprolite and mostly red, clayey subsoils.~~ The approximate center of the project is located at latitude 33.5343°N and longitude 82.9218°W.

B. Need and Purpose

GDOT policy stipulates that any bridge with a substandard sufficiency rating will require replacement, since rehabilitation or maintaining it in its present condition is not a cost-effective solution. Furthermore, over the short-term, such bridges can become unsafe structures for the public. The existing bridge at CR 82 has a sufficiency rating of 40.77 as of September 2, 2007 and is currently load limited which indicates it is structurally deficient. **The existing bridge is comprised of one 11-foot travel lane in each direction with 5-foot grassed shoulders on each side of the approach.** Due to the structural integrity of the bridge and the bridge being posted as load limit restricted, replacement is recommended.

C. Project Description

The proposed project consists of the replacement of the structurally deficient bridge at CR 82 over the North Fork Ogeechee River southwest of the City of Crawfordville. The project would begin at mile point 4.289 on CR 82 and would end at mile point 4.590. Bridge construction would be accomplished by closing CR 82 during construction, removing the existing 136-foot by 24-foot reinforced concrete bridge, and replacing it with a **new bridge** in the same location. CR 82 would then be re-opened to traffic. The roadway would consist of one 12-foot asphalt travel lane in each direction with 10-foot grassed shoulders. The existing right-of-way (ROW) varies between approximately 100 to 150 feet; the proposed ROW would also vary between approximately 100 to 150 feet. **The project is approximately 1,750 feet in length.**

D. Survey Methodology

Prior to conducting field surveys, ~~US fish and Wildlife~~ (USFWS) National Wetland Inventory (NWI) mapping, Natural Resource Conservation Service (NRCS) soil survey mapping, and ~~United States~~ Geological Survey (USGS) topographic mapping were reviewed in order to identify areas where state and/or federal waters may be present. Methodology for state and federal waters field determinations was based on guidance from the following resources: 1987 Corps of Engineers Wetlands Delineation Manual (including updates from 1991, 1992, and 1997), April 2012 ~~Interim~~ Regional Supplement to the Corps of Engineers Wetland Delineation Manual (Version 2.0): Eastern Mountains and Piedmont Region,

North Carolina Division of Water Quality Methodology for Identification of Intermittent and Perennial Streams and Their Origins (Version 4.11), and the Georgia Environmental Protection Division (GA-EPD) Field Guide for Determining the Presence of State Waters that Require a Buffer. Methodology for determining the presence of state and/or federally listed species and/or their suitable habitat was based on a review of known county occurrences, early coordination conducted with [GDNR](#), and available life history data from multiple sources including the USFWS [Information Planning and Conservation system](#) (IPaC), and the rare species profiles available on the [GDNR](#) Wildlife Resources Division (WRD) web page. Additional life history information on state and/or federally listed species was obtained from other web-based sources and printed publications (See Section IV: References).

For the purpose of this Ecology Resource Survey and Assessment of Effects Report, a pedestrian field survey of the project corridor was conducted by Garrett G. Smith (Ecologist) and G. Todd Hill (Principal Ecologist), of VHB Inc. on July 29, 2015. Total time required to complete this field survey was approximately 4 work hours. This survey was conducted to identify and characterize waters of the US along with state waters and their buffers. The study area was also evaluated for the presence of habitats with the potential to support federal and state listed species, and evidence of protected species occupying the area. A total of approximately 14.36 acres were surveyed. The survey area consisted of the project limits plus an additional 100-foot buffer. Based on field observations and data recorded by the nearby weather station in Warrenton, Georgia, weather conditions during the field survey on July 29, 2015 consisted of partly cloudy skies, an average temperature of 79 degrees Fahrenheit, and no precipitation. Prior to the survey, [the last precipitation event recorded for the area was 0.01 inch on July 24, 2015. During the month prior to the field survey, approximately 3.45 inches of precipitation was recorded for the city of Warrenton, Georgia; which is lower than, but within the normal range of the 30 year \(1971 – 2000\) average for the month of July, which is 3.79 inches.](#) The total average precipitation in Warrenton, Georgia three months prior to the survey date from the years 1971 to 2000 is [11.00 inches.](#) [The total average precipitation for this area three months prior to the survey date in 2015 was approximately 10.21 inches, which is lower than the historic average.](#) Weather data and qualification statements for Mr. Hill and Mr. Smith may be found in Appendix C. 

E. Habitats and Land Use Areas

The survey was conducted on July 29, 2015 and consisted of an area approximately 1,950 feet in length with a variable width approximately 300 to 350 feet along CR 82. A total area of approximately 14.36 acres were surveyed. Land uses/habitats identified within the project corridor consist of five different habitat types including: mixed pine-hardwood, transportation/utility ROW, open pasture, bottomland hardwood, and residential (see **Figure 3: Habitat Map**).

Mixed pine-hardwood: (Photographs 1 and 2 in Section IV) occupies approximately 8.50 acres or 59.2 percent of the survey area. Plant species noted during the field survey include loblolly pine (*Pinus taeda*), tulip poplar (*Liriodendron tulipifera*), shagbark hickory (*Carya ovata*), white oak (*Quercus alba*), water oak (*Quercus nigra*), and musclewood (*Carpinus caroliniana*). This habitat provides foraging space for deer and other mammals, and it also provides cover for bird and bat species. This land use area did not provide suitable habitat for any of the state or federally protected species.

Transportation/utility ROW: (Photograph 2 in Section IV) occupies approximately 2.69 acres, or 18.7 percent of the survey area. This land use area consists of asphalt pavement, graded grassed shoulders, and maintained grassed utility easements. This area would have little value for wildlife species as they

are almost completely paved and highly disturbed. Plant species noted during the field survey include loblolly pine, fescue grass (*Festuca* sp.), and other ruderal species. This land use area does not provide suitable habitat for any state or federally protected species.

Open pasture: (Photograph 3 in Section IV) occupies approximately 1.62 acres, or 11.3 percent of the survey area. This land use area consists of open area for domesticated grazing animals. Plant species noted during the field survey include fescue grass. This land use area does not provide suitable habitat for any state or federally protected species.

Bottomland hardwood: (Photographs 4 and 5 in Section IV) occupies approximately 1.20 acres, or 8.4 percent of the survey area. Plant species noted during the field survey include tulip poplar, musclewood, shagbark hickory, red maple (*Acer rubrum*), white oak, black oak (*Quercus velutina*), water oak, pecan (*Carya illinoensis*), giant cane (*Arundinaria gigantea*), box elder (*Acer negundo*), and river birch (*Betula nigra*). This habitat provides foraging space for deer and other mammals, and it also provides cover for bird and bat species. This land use area does not provide suitable habitat for any state or federally protected species.

Residential: (Photographs 3 and 8 in Section IV) occupies approximately 0.35 acre, or 2.4 percent of the survey area. Plants noted during the field survey include loblolly pine and fescue grass. This habitat is regularly maintained and highly disturbed. This area has little value for wildlife species. This land use area does not provide suitable habitat for any state or federally protected species.

II. FEDERALLY PROTECTED RESOURCES

A. Protected Species and Habitats

Prior to field surveys for the proposed project, the USFWS IPaC website for Taliaferro County, Georgia and the GADNR County Listing of Locations of Special Concern Animals, Plants, and Natural Communities for Taliaferro County, Georgia were reviewed to determine the proposed project's potential impact to protected species (Section VI, Table 3: Protected Species Summary Table). In addition, early coordination with the GADNR's WRD, Nongame Conservation section, and with the USFWS was initiated to identify federally threatened and endangered species known to be located within a three-mile radius of the proposed survey area (see Appendix A: Agency [Correspondence](#)).

Early coordination efforts with GADNR and USFWS in July 2015 revealed that three federal-listed species have been documented within Taliaferro County: little amphianthus (*Amphianthus pusillus*), harperella (*Ptilimnium nodosum*), and dwarf sumac (*Rhus michauxii*). ~~GADNR and USFWS correspondence and the IPaC and WRD list are located in Appendix A.~~

i. Federally Threatened and Endangered

The following federally protected species have been identified as potentially occurring within Taliaferro County:

Little amphianthus (*Amphianthus pusillus*)

Little amphianthus is a federal and state threatened species. This small annual herb has fibrous roots, white flowers, and floating and submerged leaves, typically occurs in shallow, flat-bottomed pools on the

crest and flattened slopes of unquarried granite outcrops where water collects after a rain. Pools are rock-rimmed and less than one foot deep. It is restricted to the Piedmont physiographic region of the Southeastern United States. Little amphianthus usually flowers in March or April. No granite outcrops present in the project area. No suitable habitat was found for the little amphianthus; therefore, a “no effect” determination is recommended for this species.

Harperella (*Ptilimnium nodosum*)

Harperella is a federal and state endangered species. Its known range includes Georgia, Alabama, South Carolina, North Carolina, Arkansas, Virginia, and West Virginia. This small annual herb has small, white flowers that occur in heads or umbels. Harperella typically occurs in seeps on granite outcrops within the Piedmont. This species flowers from May to July and bears fruit from July to August. There were no granite outcrops present in the project area. No suitable habitat was found for harperella; therefore, a “no effect” determination is recommended for this species.

Dwarf sumac (*Rhus michauxii*)

The dwarf sumac is a federal and state endangered species. Its known range includes Georgia, North Carolina, and Virginia, and it has been extirpated from Florida. The dwarf sumac is found on the Piedmont Plateau in dry, open, rocky, or sandy woodlands over mafic bedrock with high levels of calcium, magnesium, or iron, often on ridges and river bluffs. The dwarf sumac is rare throughout its range and has sustained significant habitat loss, at least in part due to fire suppression. This species flowers from June to August and bears fruit from August to October. Plants may be identified throughout the growing season by hairy leaves and stems. Suitable geologic parameters for the dwarf sumac exist proximate to the site. However, no dry, open rocky woods are present in the project area. No suitable habitat was found for the dwarf sumac; therefore, a “no effect” determination is recommended for this species.

ii. Federal Candidate Species

No federal candidate species have been identified as potentially occurring in Taliaferro County.

iii. Critical Habitat

Critical habitat is a term used in the Endangered Species Act to describe specific geographic area(s) that contain features essential for the conservation of a federally threatened or endangered species. ~~These habitats may require special management or protection to ensure the continued survival of listed species. Critical habitat may include an area not currently occupied by the species but will be needed for its recovery. Final boundaries of critical habitat are published in the Federal Register. No critical habitat has been designated for Taliaferro County. The closest critical habitat is for the Carolina heelsplitter (*Lasmigona decorata*) located 50.7 miles northeast of the project location.~~ Therefore, it is anticipated that the project would have no adverse modifications on any designated critical habitat for federally listed species.

iv. Bald and Golden Eagles

The Bald and Golden Eagle Protection Act of 1940 provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession and commerce of such birds.

Correspondence with the USFWS and GADNR has not identified any active bald eagle nests within one mile of the project corridor. The field survey did not identify any eagle nests or suitable foraging,

roosting, or nesting habitat within the survey corridor. The proposed project would not result in "take" of the bald eagle.

v. Migratory Birds

~~As directed under Executive Order 13186, in furtherance of the Migratory Bird Treaty Act (16 U.S.C. 703 – 711), actions must be taken to avoid or minimize impacts to the 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 (see 50 C.F.R. 10.13, list of Migratory Birds) in the US and its territories.~~

A field survey was conducted on July 29, 2015 to identify migratory birds or habitat that would support migratory bird species. One bridge was noted during the survey, which could provide nesting habitat for migratory birds. However, no evidence of migratory bird nesting was observed. The proposed project would replace the existing bridge. Supplemental Specification 107.23G will be utilized to avoid impacts to migratory bird habitat.

vi. Essential Fish Habitat

In compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), GDOT must identify unavoidable adverse impacts to Essential Fish Habitat (EFH).

In Georgia, EFH is designated for all waters with tidal influence. The proposed project is located in Taliaferro County, which has no tidally influenced areas. Therefore, the proposed project would have no effect on EFH.

B. Invasive Species

In compliance with Executive Order 13112, a survey was conducted for invasive species that could spread during construction. Invasive species designated as Category 1 by the Georgia Exotic Pest Plant Council (GA-EPPC) observed during the field surveys include Japanese honeysuckle (*Lonicera japonica*). Sightings of this invasive species ~~has been~~ recorded in the online tracking system EDDMapS. Invasive species documentation can be viewed in Appendix B. 

GDOT would take measures during project construction to prevent or minimize the spread of these species as appropriate for the time of the year. These measures would include the removal and disposal of vegetative parts in the soil that may reproduce by root raking prior to moving the soil, burning on site any such parts and aboveground parts that bear fruit, controlling or eradicating infestations prior to construction, and cleaning of vehicles and other equipment prior to leaving the infested site. The measures would be those that are appropriate for the particular species and the specific site conditions that exist on the project, as described in Georgia Standard Specifications Section 201: *Clearing and Grubbing of Right-Of-Way*.

C. Waters of the U.S.

Jurisdictional Waters of the U.S. are defined by 33 CFR Part 328.3(b) and are protected by Section 404 of the Clean Water Act (33 USC 1344). The most recent rain event prior to the field survey on July 29, 2015 was recorded as 0.01 inch on July 15, 2015, ~~of the noted~~ by the nearby weather station in Sharon, Georgia (Appendix D). Two federally jurisdictional waters ~~of the noted~~ within the survey area: Wetland 1 (WL 1), and Perennial Stream 2 (PS 2). A description of these waters and anticipated impacts are provided below.

Wetland 1 (WL 1) (Photograph 5) is a palustrine forested wetland (PF01A) on the north side of CR 82. Based on the condition at the time of the field survey and historical imagery obtained, WL 1 does not appear to have been previously impacted and consisted of young to mature aged vegetation. As a result, this wetland would be categorized as Class 1 (USACE). The wetland has a geomorphic connection with **Perennial Stream 2 (PS 2)** and would be considered a jurisdictional water of the US. The wetland is within 1 mile upstream of North Fork Ogeechee River, a Category 4a biologically impaired stream in violation of exceeding fecal coliform quantities. The total area of WL 1 is approximately 5.86 acres, with 0.03 acre located within the survey area. **Common dominant plant species within WL 1 include tulip poplar, musclewood, shagbark hickory, red maple, white oak, black oak, and giant cane. The vegetation criterion was satisfied with 60 percent of the dominant species being obligate, facultative, or facultative wetland. Indicators of wetland hydrology that satisfy the hydrology criterion include saturation at a depth of 16 inches, sparsely vegetated concave surface, moss trim lines, and geomorphic position.** These are primary and secondary indicators of wetland hydrology and satisfy the hydrology criterion. Soils were sampled from a depth of 0 to 16 inches. Soils at a depth of 0 to 6 inches had a matrix color of 2.5 YR 6/4 with 10 percent mottling of 7.5 YR 5/8 and a silty loam texture. Soils at a depth of 6 to 16 inches had a matrix color of 2.5 YR 6/4 with 20 percent mottling of 7.5 YR 5/8 and a silty loam texture. Hydric soil indicators included **Piedmont floodplain soils.** WL 1 is outside of the proposed construction **easement** and would not be impacted.

Perennial Stream (PS 2) (Photographs 4 and 6) is a perennial, warm water stream, named North Fork Ogeechee River. The stream is a jurisdictional water of the US which flows in a southeasterly direction, entering the survey area north of CR 82. PS 2 then flows southeast through the survey area and crosses under CR 82 via a bridge where it eventually exits the survey area south of CR 82. PS 2 has a geomorphic connection with WL 1. The stream is **fully functional** within the project limits. The bankfull width is approximately 20 to 30 feet ~~and~~ approximately 8 feet ~~deep~~. The wetted channel was approximately 5 to 25 feet wide and approximately 1 to 2 feet deep during the July 29, 2015 field survey. This stream is a **BSW** and would be considered a jurisdictional water of the US since the feature exhibits several properties indicative of a permanent water such as strong base flow, distinct bed and bank, and soil evidence of a high water table. ~~If a new highway drainage structure were constructed across the stream, it would need to allow for fish passage since the stream is considered perennial.~~ This stream is listed on the **EPD Final 2012 Integrated 305(b)/303(d)** list for Georgia as a Category 4a for fecal coliform bacteria criteria violations with the source being non-point source pollution. The stream does not contain suitable habitat for any state or federal listed species. The proposed project would not impact PS 2.

D. Avoidance and Minimization of Federal Resource Impacts

The project as proposed has **been designed to avoid direct impacts to ecological resources.** The project as proposed would occur within the existing disturbed areas and would therefore avoid all impacts to state and federal waters and protected species.

Measures During Planning

The proposed project would not impact WL 1 or PS 2 **temporarily** or permanently. Other measures to minimize impacts considered as part of the planning process include the evaluation of alternatives. Bridge replacement was determined to **the most feasible** because of the existing bridge already being in place.

Measures During Construction

Environmental harm would be minimized by standard sedimentation and erosion and hydrological control measures. These included the following:

1. Preservation of roadside vegetation beyond the limits of construction where possible.
2. Early re-vegetation of disturbed areas so as to minimize soil erosion.
3. The use of slope drains, detention/retention structures, surface, subsurface and cross drains, designed as appropriate or needed, so that discharge would occur in locations and in such a manner that surface and subsurface water quality would not be affected (the outlets may require aprons, bank protection, silt basins, and energy dissipaters).
4. Inclusion of construction features for the control of predicted erosion and water pollution in the plans, specifications and contract pay items (Georgia Standard Specifications-2001, Section 161 through 171 identify the pollution control measures which may be used).
5. The dumping of chemicals, fuels, lubricants, bitumens, raw sewage, other harmful waste into or alongside of streams or impoundments, or into natural or man-made channels leading thereto, would be prohibited.
6. Compliance with terms of the National Pollutant Discharge Elimination System (NPDES) permit for construction activities to include preparation and submittal of project Notice of Intent (NOI) and Notice of Termination (NOT). The NPDES permit also requires preparation and implementation of an Erosion, Sedimentation, and Pollution Control Plan and a Comprehensive Monitoring Program. Best management practices outlined in the Erosion, Sedimentation, and Pollution Control Plan must be consistent with, and no less stringent than, practices set forth in the *Manual for Erosion and Sedimentation Control in Georgia*.

E. Permit and Mitigation

The proposed project has been **designed to avoid all impacts** to jurisdictional waters. As a result, no Section 404 permit or compensatory mitigation is required based on the current project design.

III. STATE PROTECTED RESOURCES

A. State Threatened, Endangered, Rare and Unusual Species

The Georgia Endangered Wildlife Act prohibits the capture, killing, or selling of protected species and protects the habitat of these species on public lands. Georgia's Wildflower Preservation Act of 1973 provides for designation of and protection of plant species that are rare, unusual, or in danger of extinction. Prior to completing a field survey of the project corridor, a request was made to GADNR and USFWS for information regarding known occurrences of protected species within **3 miles** of the proposed project. Based upon information from the GA Natural Heritage Element Occurrence Database, no protected species are documented to occur within three miles of the project corridor (Appendix A). ~~The bald eagle (state threatened) is addressed above in Section II. D. Bald and Golden Eagles.~~

B. Bats

One bridge was noted in the project corridor. No body oils ~~or obvious staining was observed that would indicate presence of bats.~~ Also, ~~no guano or other evidence of bat roosting activity was found.~~ Suitable roosting trees were identified proximate to the preferred alignment; however, the project would remain within existing ROW and would affect ~~only the edges~~  ~~(~~ **than 0.001 acre** ~~)~~ of suitable forest habitat.

C. State Waters

State Waters are defined by the Official Code of Georgia 12-7-1 and protected by the Georgia Erosion and Sedimentation Control Act of 1975. In compliance with the ~~National Pollutants Discharge Elimination System (NPDES)~~ permit under Section 402 of the Clean Water Act, any encroachment within the designated 25-foot or 50-foot buffer of a state water will be described, and the need for a variance will be indicated. All ~~resources~~ on this project are ~~federally jurisdictional waters and are therefore not described in this section.~~

D. State Mandated Buffers

In compliance with the NPDES permit under Section 402 of the Clean Water Act and the Georgia Erosion and Sedimentation Act of 1975, any encroachment within the designated 25-foot or 50-foot buffer of a state water is described in this section, and the need for a buffer variance is indicated for proposed impacts.

~~Buffer encroachments that will occur in conjunction with a bridge or culvert are exempt from the need for a buffer variance. As of July, 2007, the roadway drainage feature exemption includes/exempts all buffer encroachments within 50-ft from edge of culvert, or 100-ft from edge of bridge footprint. This exemption also extends to the project ROW, though all encroachments must be necessary for construction to be considered exempt. The July 2007 interpretation includes all tributaries or unassociated state waters, including the water being crossed.~~

The crossing at PS 2 would extend the existing perpendicular crossing of the stream. As the stream flows through bottomland hardwood, dominant vegetation adjacent to the stream includes river birch, red maple, box elder (*Acer negundo*), and tulip poplar. The riparian corridor along PS 2 was greater than 100 feet along east and west banks. The work associated with the bridge construction would be completed within the 100-foot ~~exempt~~ area; therefore, a stream buffer variance would not be required ~~at this crossing.~~

E. Avoidance and Minimization of State Resource Impacts

All water resources on this project are federally jurisdictional waters and avoidance and minimization measures are discussed above in Section II. H. Therefore, avoidance and minimization of state resource impacts are not described in this section.

IV. Bibliography

- Critical Habitat Portal*. (2015). Retrieved July 27, 2015, from US Fish and Wildlife Service:
<http://criticalhabitat.fws.gov/crithab/>.
- EPA Priority Watersheds for the Southeast*. (2012). Retrieved November 17, 2015, from US Environmental Protection Agency:
<http://www.epa.gov/region4/water/watersheds/priority.html#GA>
- Georgia Department of Natural Resources. (2005). *Comprehensive Wildlife Conservation Strategy*. Retrieved July 27, 2015.
- Georgia Department of Natural Resources. (2001). *Georgia Ecoregion Descriptions*. Retrieved July 27, 2015, from GADNR: <http://www1.gadnr.org/cwcs/Documents/ecoregion.html>
- Warrenton, Georgia, WETS Station*. Retrieved November 20, 2015, from
<https://efotg.sc.egov.usda.gov>

V. FIGURES

Figure 1. Project Vicinity Map

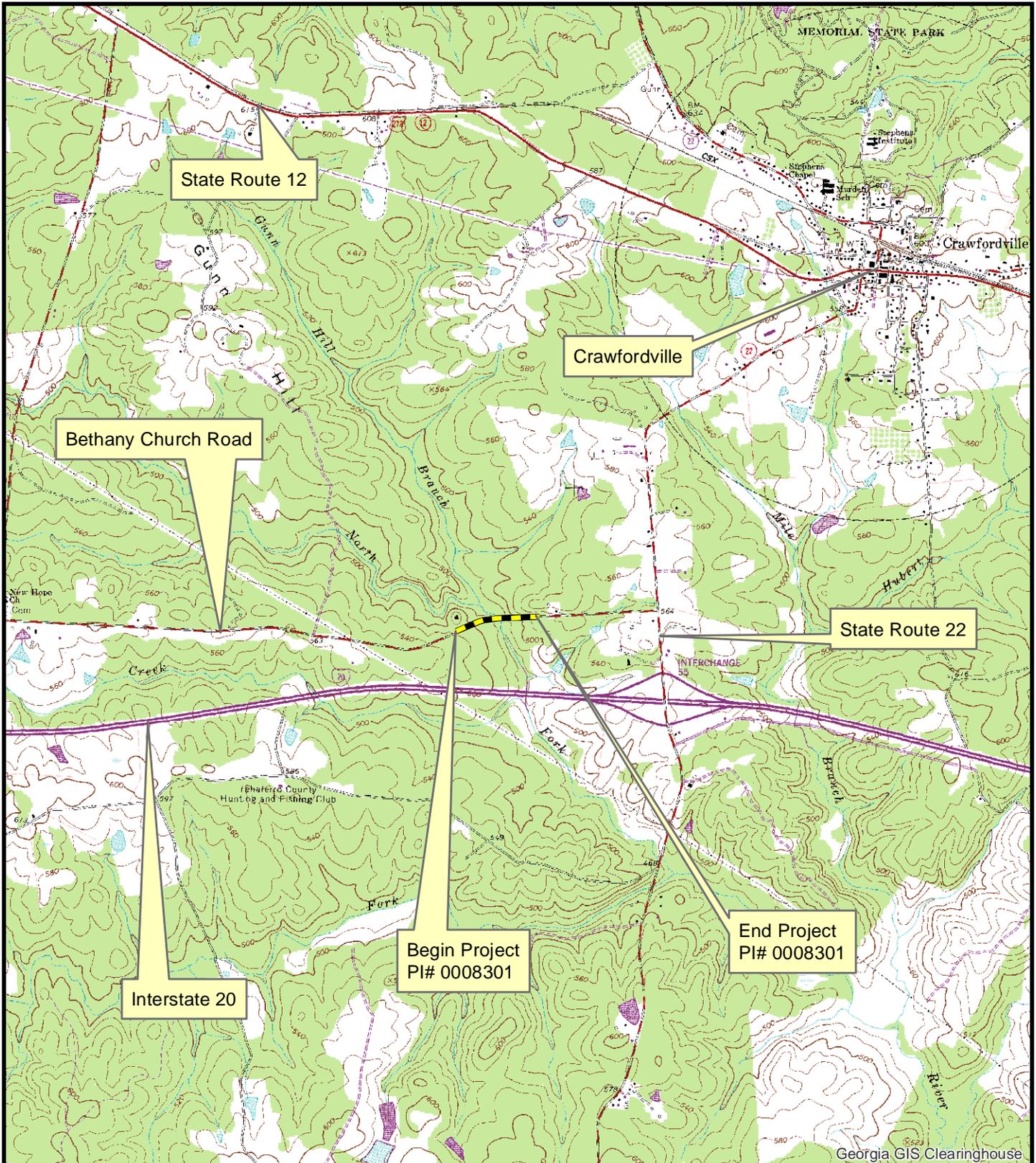
Figure 2. Survey Area Map

Figure 3. Habitat Map

Figure 4. State and Federal Water Map, Topographic

Figure 5. State and Federal Water Map, Aerial

Figure 6. Soil Map



CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA



0008301

Taliaferro County, GA

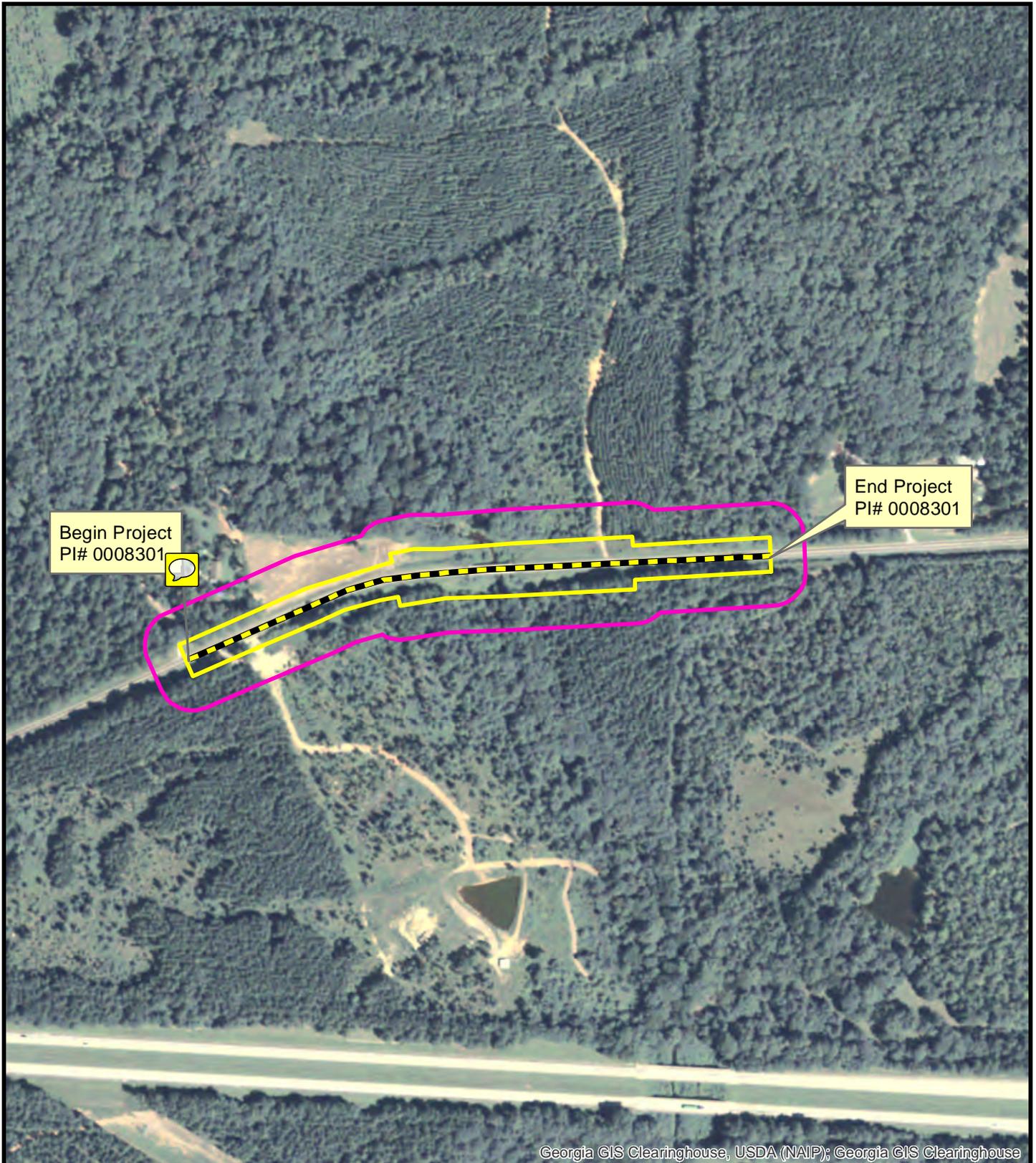
Figure 1: Project Vicinity Map



Legend

 Project Location

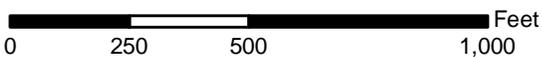




Georgia GIS Clearinghouse, USDA (NAIP); Georgia GIS Clearinghouse

CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA
 PI #0008301
 Taliaferro County, GA

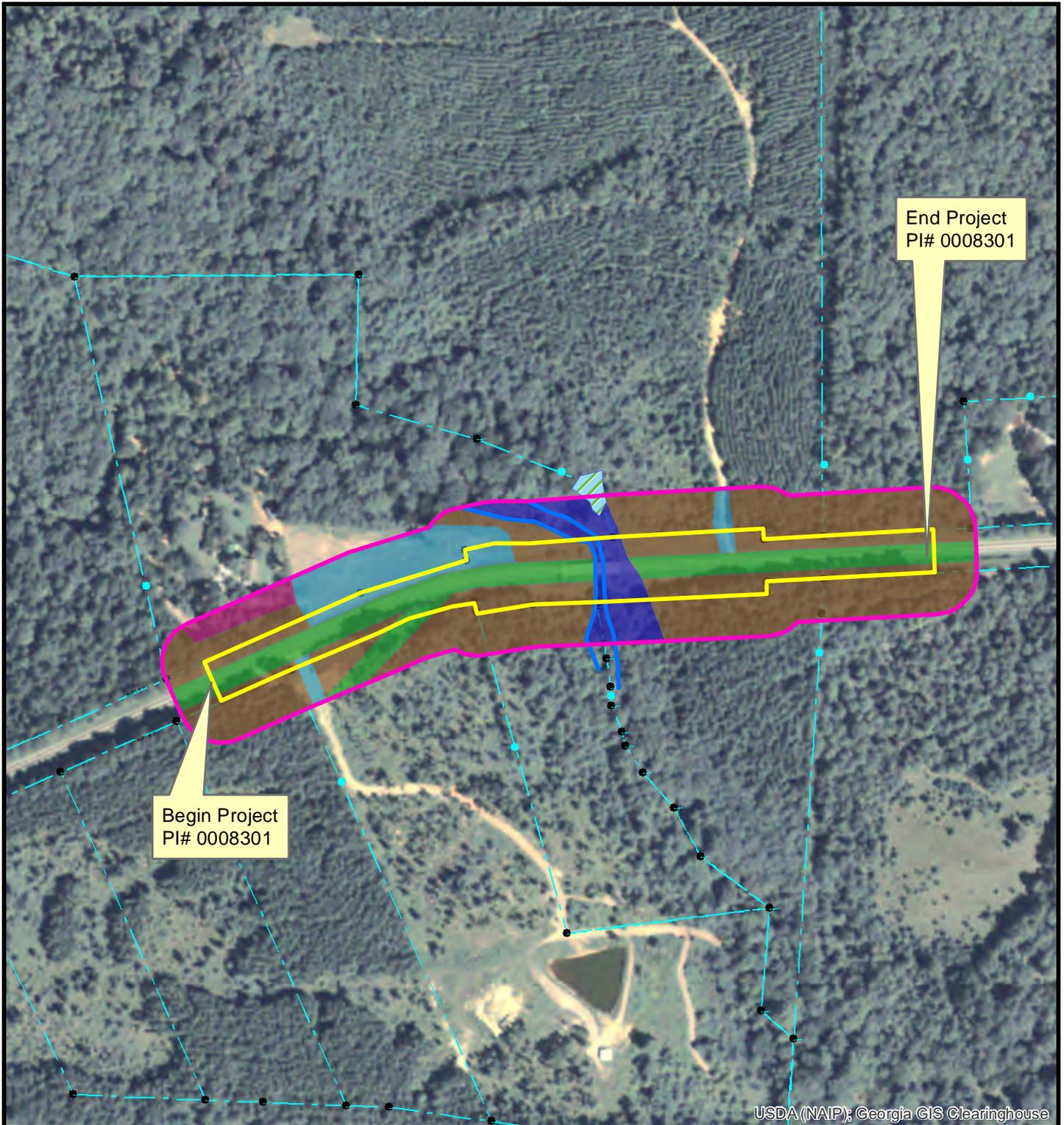
Figure 2: Study Area Map



Legend

-  Project Location
-  Study Area
-  Project Limits

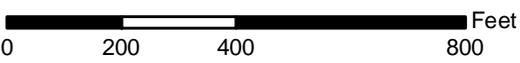




USDA (NAIP); Georgia GIS Clearinghouse

CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA
 PI #0008301
 Taliaferro County, GA

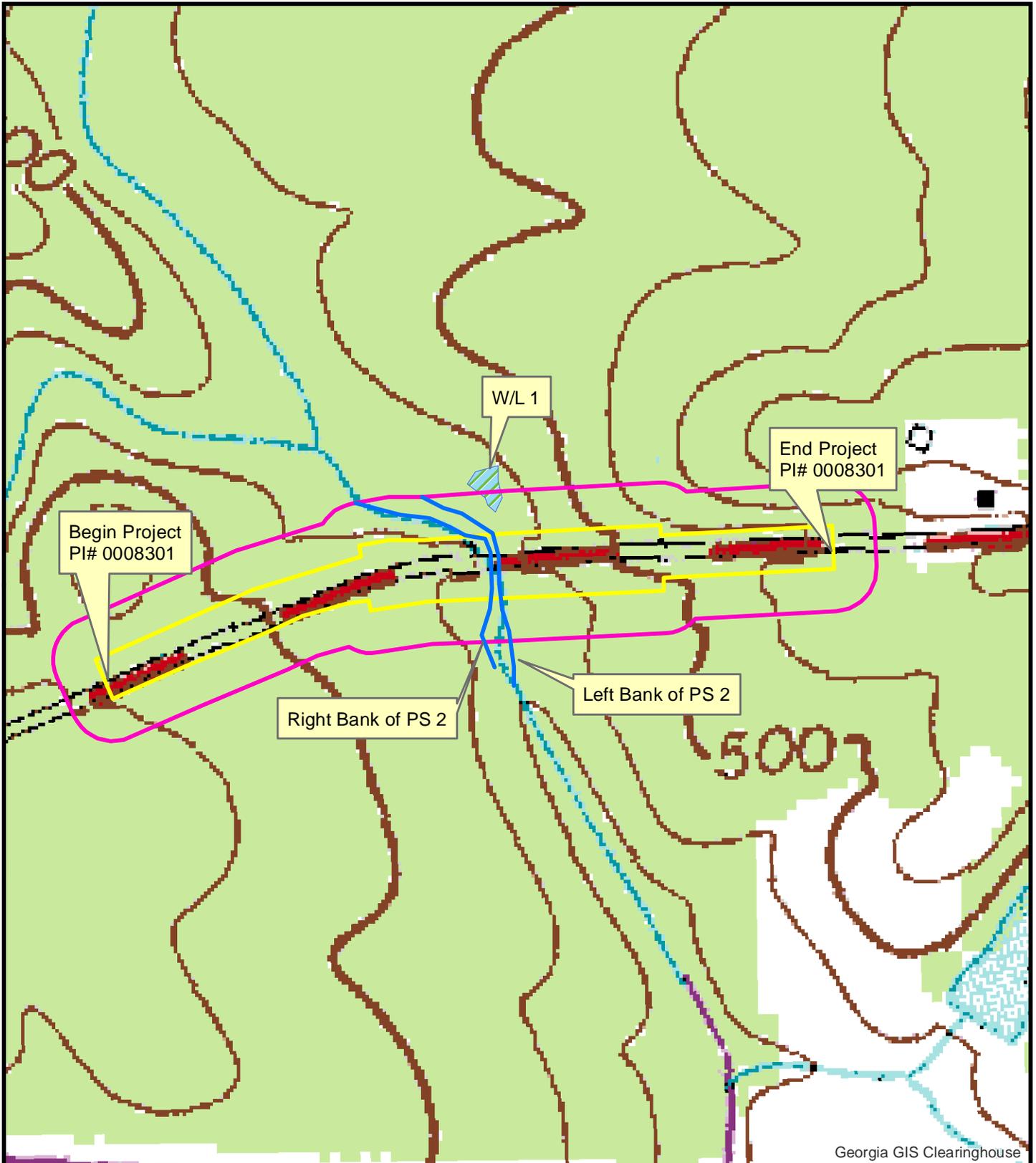
Figure 3: Habitat Map



Legend

- Project Limits
- Study Area
- Streams
- Wetlands
- Habitat Type**
- Bottomland Hardwood
- Mixed Pine/Hardwood
- Open/Pasture
- Residential
- Transportation/Utility ROW





Georgia GIS Clearinghouse

CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA
 PI #0008301
 Taliaferro County, GA

Figure 4: State & Federal Waters Map, Topo

0 225 450 900 Feet

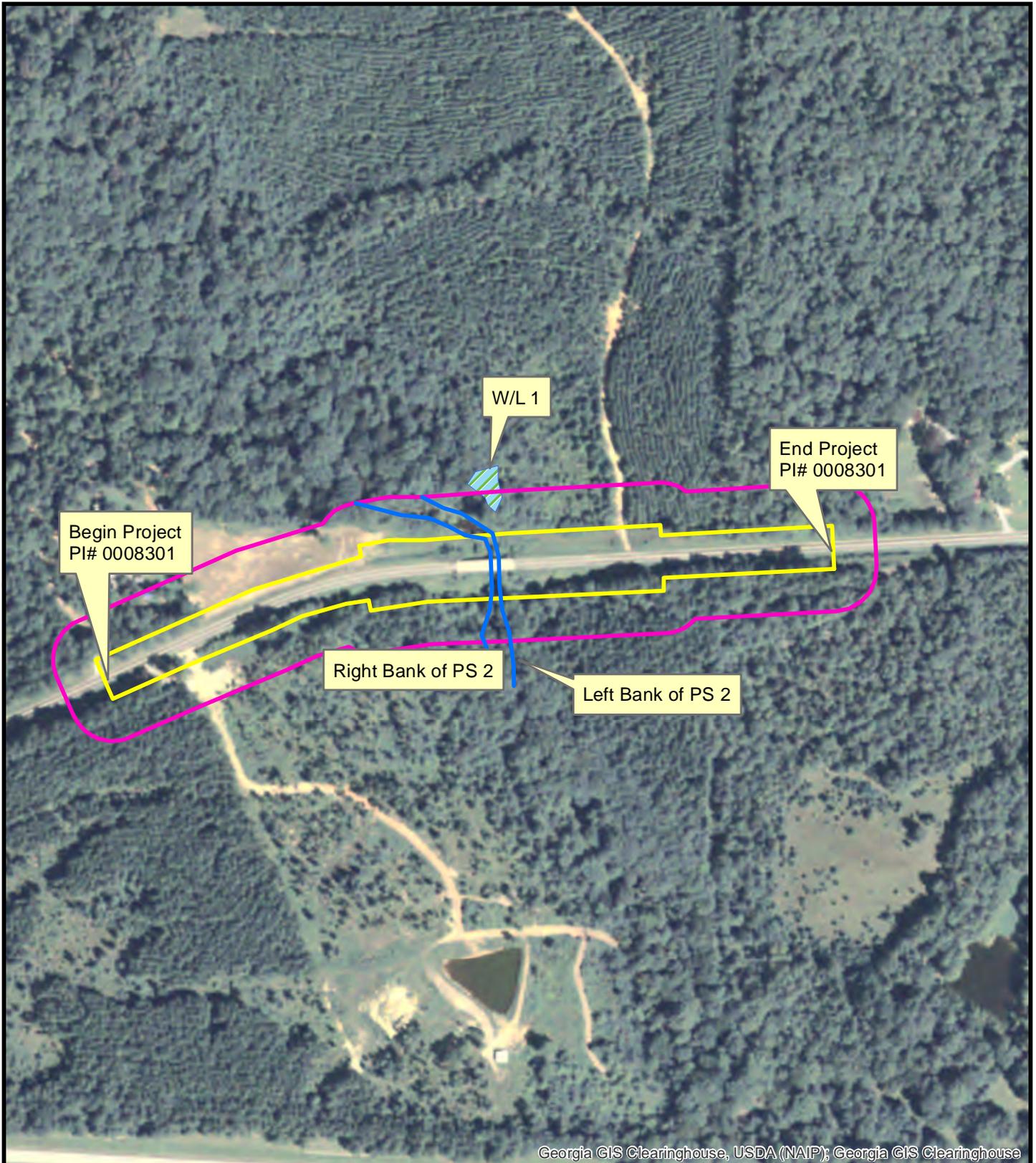
USGS Topographic Quadrangle, Crawfordville, 2014



Legend

-  Streams
-  Study Area
-  Project Limits
-  Wetlands

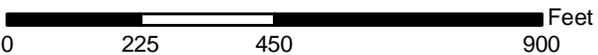




Georgia GIS Clearinghouse, USDA (NAIP); Georgia GIS Clearinghouse

CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA
 PI #0008301
 Taliaferro County, GA

Figure 5: State & Federal Waters Map, Aerial



USDA NAIP 2010

Legend

-  Streams
-  Study Area
-  Project Limits
-  Wetlands





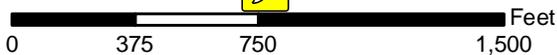
USDA (NAIP); Georgia GIS Clearinghouse

Soils Description

CaD = Cataula coarse sandy loam, 6 to 15 percent slopes, very bouldery, Not Hydric	GeD2 = Georgeville gravelly very fine sandy loam, 6 to 15 percent slopes, moderately eroded, Not Hydric
CcB2 = Cataula-Cecil complex, 2 to 6 percent slopes, moderately eroded, Not Hydric	PrE = Prosperity-Helena complex, 15 to 25 percent slopes, stony, Not Hydric
CdD = Cataula-Shoulderbone complex, 6 to 15 percent slopes, stony, Not Hydric	PsD = Prosperity-Helena-Bush River complex, 6 to 15 percent slopes, Not Hydric
ChA = Chewacla silt loam, 0 to 2 percent slopes, frequently flooded, Partially Hydric	WkD2 = Wynnot-Wilkes-Enon complex, 2 to 15 percent slopes, moderately eroded, Not Hydric

CR 82/Bethany Church Rd @ North Fork Ogeechee River
 2.0 miles southwest of downtown Crawfordville, GA
 PI #0008301
 Taliaferro County, GA

Figure Soils Map



Legend

- Project Location
- Survey Area



VI. TABLES

Table 1. Jurisdictional Stream Summary Table

Table 2. Wetlands, Open Waters, and Ephemeral Channels Summary Table

Table 3. Protected Species Summary Table

Table 1. Jurisdictional Stream Summary

Label	Type	Station #	HUC	SBV	FWCA	Habitat for Protected Species	Channel Width (feet)	Channel Depth (feet)	Latitude (°N)	Longitude (°W)	Impact Type	Impact Length (feet)	Impact Area (acre)
PS02	P	109+70	03060105	No	No	No	20-30	1-2	33.5343	-82.9214	None	0	0
Total												0	0



Table 2. Wetlands, Open Waters & Ephemeral Channels Summary

Label	Resource Type	HUC	Buffer	Habitat for Protected Species	Latitude (°N)	Longitude (°W)	Begins at Station #	Ends at Station #	Impact Type	Temporary Impact Area (acre)	Permanent Impact Area (acre)
WL01	Wetland	03060105	No	No	33.5348	-82.9214	109+20	109+15	None	0	0
Total										0	0

Table 3. Protected Species Summary



Common Name	Scientific Name	Federal Status	State Status	Habitat Present	Survey Season	Survey Date	Individuals Found
harperella#*	<i>Ptilimnium nodosum</i>	E	E	No	May – Aug.	N/A	No
little amphianthus#*	<i>Amphianthus pusillus</i>	T	T	No	March – May	N/A	No
dwarf sumac*	<i>Rhus michauxii</i>	E	E	No	June – Oct.	N/A	No

T=Threatened, E=Endangered, C=Candidate, N=None

~~# IPAC 7-27-2015~~

~~* USFWS Early Coordination 7-27-2015~~

~~% GADNR WRD Early Coordination 7-27-2015~~



VII. PHOTOGRAPHS



Photograph 1. Mixed pine/hardwood – Photographer facing east



Photograph 2. Transportation/utility right-of-way, mixed pine/hardwood – Photographer facing east

	<p>SITE PHOTOGRAPHS CR 82/Bethany Church Road Bridge Replacement 2.0 Miles Southwest of Duluth, GA COUNTY OF TALIAFERRO STATE OF GEORGIA</p>	<p>PROJECT NO. 0008301</p>
		<p>PHOTOGRAPHS TAKEN: 07-29-2015</p>



Photograph 3. Open pasture, residential in background – Photographer facing west



Photograph 4. Bottom-land hardwood with Perennial Stream 2 flowing through – Photographer facing north

	<p>SITE PHOTOGRAPHS CR 82/Bethany Church Road Bridge Replacement 2.0 Miles Southwest of Duluth, GA COUNTY OF TALIAFERRO STATE OF GEORGIA</p>	<p>PROJECT NO. 0008301</p>
		<p>PHOTOGRAPHS TAKEN: 07-29-2015</p>



Photograph 5. Wetland 1 with bottom-land hardwood in background – Photographer facing north



Photograph 6. Perennial Stream 2 – Photographer facing north

SITE PHOTOGRAPHS

CR 82/Bethany Church Road Bridge Replacement
2.0 Miles Southwest of Duluth, GA
COUNTY OF TALIAFERRO STATE OF GEORGIA

PROJECT NO.
0008301

PHOTOGRAPHS
TAKEN: 07-29-2015



Photograph 7. Bridge crossing Perennial Stream 2 – Photographer facing northeast



Photograph 8. Residential – Photographer facing northwest

SITE PHOTOGRAPHS

CR 82/Bethany Church Road Bridge Replacement
2.0 Miles Southwest of Duluth, GA
COUNTY OF TALIAFERRO STATE OF GEORGIA

PROJECT NO.
0008301

PHOTOGRAPHS
TAKEN: 07-29-2015

Appendix

Appendix A: Agency Coordination



July 27, 2015

Ms. Anna Yellin
Environmental Review Coordinator
Georgia Natural Heritage Program
2065 U.S. Hwy 278 SE
Social Circle, GA 30025

Re: Early Coordination Request for,
CR 82/Bethany Church Road over North Fork Ogeechee River
PI #0008301, Taliaferro County

Dear Anna;

The Georgia Department of Transportation (GDOT) is in the beginning stages of project development for the above noted project. The project is located in Taliaferro County, Georgia at the North Fork Ogeechee River Bridge along CR 82/Bethany Church Road, approximately 2 miles southwest of Crawfordville, Georgia. The project proposes to replace the bridge at North Fork Ogeechee River. The approximate length of the proposed project is 0.33 mile.

Enclosed are lists of threatened and endangered species with a distributional range that may include the proposed project. These lists, which were derived from a computerized list of threatened and endangered species provided and updated by the US fish and Wildlife Service and also by the GADNR, will be used during our ecological survey of this project. Please let us know if any additional species should be surveyed for.

The design for the project is being developed concurrently with environmental documentation and in compliance with applicable environmental laws and regulations. This process, developed by GDOT to make projects responsive to social, economic, and environmental concerns, offers you the opportunity to identify site specific conditions to be addressed in the NEPA document.

Please advise us of any known project area conditions of special concern. With your assistance, we can give these issues due consideration and integrate them into the development of the project alignment and design. Your assistance is appreciated. If you have any questions or need additional information, please contact me at (770) 608-0861 or gsmith@gthillplanners.com.

Sincerely,

Garrett G. Smith
Environmental Technician

GTH
Enclosure: Project Location Map
Protected Species Lists



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Georgia Ecological Services Field Office
105 WESTPARK DRIVE, WESTPARK CENTER SUITE D
ATHENS, GA 30606
PHONE: (706)613-9493 FAX: (706)613-6059

Consultation Code: 04EG1000-2015-SLI-1385

July 27, 2015

Event Code: 04EG1000-2015-E-01131

Project Name: CR 82/Bethany Church Rd over North Fork Ogeechee River

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project



To Whom It May Concern:

This list identifies threatened, endangered, proposed and candidate species, as well as critical habitat, that may be affected by your proposed project. This list may change before your project is completed. Under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation.

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*). Projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html).

Wind energy projects should follow the wind energy guidelines <http://www.fws.gov/windenergy/> for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts of communication towers on migratory birds can be found under the "Bird Hazards" tab at: www.fws.gov/migratorybirds.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: CR 82/Bethany Church Rd over North Fork Ogeechee River

Official Species List

Provided by:

Georgia Ecological Services Field Office
105 WESTPARK DRIVE
WESTPARK CENTER SUITE D
ATHENS, GA 30606
(706) 613-9493

Consultation Code: 04EG1000-2015-SLI-1385

Event Code: 04EG1000-2015-E-01131

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: CR 82/Bethany Church Rd over North Fork Ogeechee River

Project Description: 0.33 mile long. 2 miles SW of Crawfordville, GA

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: CR 82/Bethany Church Rd over North Fork Ogeechee River

Endangered Species Act Species List

There are a total of 2 threatened or endangered 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 fish may appear on the species list because a project could affect downstream 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 further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Flowering Plants	Status	Has Critical Habitat	Condition(s)
harperella (<i>Ptilimnium nodosum</i>)	Endangered		
Little amphianthus (<i>Amphianthus pusillus</i>)	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: CR 82/Bethany Church Rd over North Fork Ogeechee River

Critical habitats that lie within your project area

There are no critical habitats within your project area.



Known occurrences of special concern plants, animals and natural communities
Taliaferro County — Fips Code: 13265

Find details for these species at [Georgia Rare Species and Natural Community Data](#) and [NatureServe Explorer](#).

[US] indicates species with federal status (Protected or Candidate).
Species that are federally protected in Georgia are also state protected.

[GA] indicates Georgia protected species.

 link to species profile on our site (not available for all species).

 link to report for element on NatureServe Explorer (only available for animals and plants).

Animal Occurrences

- *Ophisaurus attenuatus attenuatus* (Slender Glass Lizard)  - reptile
- *Procambarus petersi* (Ogeechee crayfish)  - crustacean

Generated from Georgia DNR's NatureServe Biotics conservation database on December 28, 2014



MARK WILLIAMS
COMMISSIONER

DAN FORSTER
DIRECTOR

August 06, 2015

Garrett Smith
GT Hill Planners
533 West Howard Ave., Suite A2
Decatur, GA 30030

Subject: Known occurrences of natural communities, plants and animals of highest priority conservation status on or near PI 0008301- North Fork Ogeechee River Bridge, Taliaferro, Georgia

Dear Mr. Smith:

This is in response to your request of July 27, 2015. Within a three mile radius of the project site, there are the following Natural Heritage Database occurrences:

PI 0008301 CR 82/ Bethany Church Rd. @ North Fork Ogeechee River (Site Center: - 82.923630, 33.533872, WGS84)

Ophisaurus attenuatus (Slender Glass Lizard) [HISTORIC] approx. 2.0 mi N of site

Procambarus petersi (Ogeechee crayfish) [HISTORIC] approx. 1.8 mi NW of site

Procambarus petersi (Ogeechee crayfish) [HISTORIC] approx. 1.1 mi S of site

Ogeechee River Upper 4 (0306020101) [SWAP High Priority Watershed], on site

Recommendations:

We have no records of high priority species within the project area. We have the following recommendations for the applicant to consider. Please minimize disturbance to stream banks, wetlands, and riparian zones during bridge rehabilitation. Conduct activities from a stable stream bank or reinforced platform that does not cause degradation or destabilization of stream banks. Prohibit operation of equipment in the channel or use of the channel as a ford. We recommend that stringent erosion control practices be used during construction activities and that vegetation is re-established on disturbed areas as quickly as possible. Silt fences and other erosion control devices should be inspected and maintained until soil is stabilized by vegetation. Please use natural vegetation and grading techniques (e.g., vegetated swales, turn-offs, vegetated buffer strips) that will ensure that the road or ROW does not serve as a conduit for storm water or pollutants into the stream during or after construction. No uncured concrete or water used to facilitate curing should be discharged directly into the stream; curing water should be pumped into filter bags (i.e., "dirt bags") or detention basins before coffer dams or other diversion structures are dismantled. These measures will help protect water quality in the vicinity of the bridge crossings as well as downstream. Before any bridge work is initiated, please survey the

bridge for roosting birds and bats. If any are present, please delay bridge work until the birds and/or bats are no longer using the site.

Species listed on our website that have no “GA” or “US” status are considered species of concern. These species do not receive any protection under the GA or US Endangered Species Acts, however biologists in GA consider them to be of some conservation concern. Locations of these species are tracked until enough information is gathered to determine if they should be added to the state list or if their populations do not warrant tracking. It is important to consider these species as well when planning projects. Though they are not currently protected, they may be in the future. Surveys efforts that document these species should be reported to our office so information about populations of these species can be used for conservation decisions. Please let me know if you have any other questions regarding GA species of concern.

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>.

Garrett G. Smith

From: Straight, Carrie <carrie_straight@fws.gov>
Sent: Friday, July 31, 2015 12:09 PM
To: gsmith@gthillplanners.com
Cc: Eric Nicoletti; Chamblin, Douglas
Subject: Re: Early Coordination for PI 0008301
Attachments: Bridge_DataSheet_20150722.pdf

Garrett,

I received your request for information for the replacement of County Road 82/Bethany Church Road bridge over the North Fork Ogeechee River project (PI 0008301), Taliaferro County, Georgia dated 27 July 2015.

The project is in the Upper Ogeechee HUC 8 watershed and within the predicted range of endangered Dwarf Sumac (*Rhus michauxii*). If appropriate habitat for Dwarf Sumac occurs, surveys should be conducted during flowering (June through August) or fruiting (August through October).

The IPaC species list for Taliaferro County includes endangered Harperella (*Ptilimnium nodosum*) and threatened Little Amphianthus (*Amphianthus pusillus*). There is a known occurrence of Harperella approximately 8 miles to the west of the project area and there are no known granite outcrops in the project area.

If the project is expected to require the relocation of utility lines or any other service lines, please include the impacts (direct and indirect) on the above species from these additional activities.

Please complete inspections of the bridge to determine if there is evidence of migratory bird species using the structure for nesting and to determine if the structure is being utilized as a roost by bats. Please fill out the attached data sheet and submit the data online to GA DNR (a website address is provided on the datasheet) and submit a scanned copy with your report. Survey for bats between the inclusive dates of May 15-August 15, please include indications of bat presence (guano and staining) even if bats are not present at the time of the survey.

Thank you for the opportunity to provide comments.

Carrie

<°))>< <°))>< <°))>< <°))>< <°))><

Carrie A. Straight, PhD

Fish and Wildlife Biologist
U.S. Fish & Wildlife Service
Georgia Ecological Services
105 Westpark Drive, Suite D
Athens, GA 30606

706.613.9493 x226
Fax 706.613.6059

On Mon, Jul 27, 2015 at 4:35 PM, <gsmith@gthillplanners.com> wrote:

Carrie,

Attached please find our early coordination request for the referenced GDOT project in Taliaferro County, GA

Thanks,

Garrett G. Smith

770.608.0861

[GT Hill Planners](#)

533 West Howard Ave, Suite A2
Decatur GA, 30030

- 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>.

area_name	el_grp_sng	gname	scomname	grank	srank	usesa	sprot	protection	sshabitat	age_text
Taliaferro	Reptile	Ophisaurus attenuatus	Slender Glass Lizard	G5	S3				Open woods; savannas; old fields; sandhills	Known or possibly extirpated
Taliaferro	Crustacean	Procambarus petersi	Ogeechee crayfish	G3	S2				burrows in lotic waters without appreciable silt deposits	Known or possibly extirpated



Appendix B: Field 



WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Bethany Church City/County: Taliaferro Sampling Date: 7/29/15
 Applicant/Owner: GOOT State: GA Sampling Point: Wet 1
 Investigator(s):  Section, Township, Range: —
 Landform (hillslope, terrace, etc.): hill slope/toe slope Local relief (concave, convex, none): concave Slope (%): 1
 Subregion (LRR or MLRA): 136 Lat: 33.5348 Long: -82.9214 Datum: WGS84
 Soil Map Unit Name: Chewacla s1/10 NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
---	--

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>—</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>—</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>16"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	--

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

Remarks:

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

Sampling Point: wet1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Tulip poplar, Liriodendron tulipifera</u>	<u>10</u>	-	- <u>FACU</u>
2. <u>Carpinus cordata</u>	<u>20</u>	- ✓	- <u>FAC</u>
3. <u>Shagbark hickory, Carya ovata</u>	<u>20</u>	- ✓	- <u>FACU</u>
4. <u>Acer rubrum</u>	<u>20</u>	- ✓	- <u>FAC</u>
5. <u>White oak, Quercus alba</u>	<u>20</u>	- ✓	- <u>FAC</u>
6. <u>Black oak, Quercus velutina</u>	<u>5</u>	-	- <u>UPL</u>
7. _____	_____	-	-
8. _____	_____	-	-
<u>0 95</u> = Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>giant cane, Arundo donax</u>	<u>30%</u>	- ✓	- <u>FACU</u>
2. _____	_____	-	-
3. _____	_____	-	-
4. _____	_____	-	-
5. _____	_____	-	-
6. _____	_____	-	-
7. _____	_____	-	-
8. _____	_____	-	-
9. _____	_____	-	-
10. _____	_____	-	-
<u>0 30</u> = Total Cover			
Herb Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	-	-
2. _____	_____	-	-
3. _____	_____	-	-
4. _____	_____	-	-
5. _____	_____	-	-
6. _____	_____	-	-
7. _____	_____	-	-
8. _____	_____	-	-
9. _____	_____	-	-
10. _____	_____	-	-
11. _____	_____	-	-
12. _____	_____	-	-
<u>0</u> = Total Cover			
Woody Vine Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	-	-
2. _____	_____	-	-
3. _____	_____	-	-
4. _____	_____	-	-
5. _____	_____	-	-
6. _____	_____	-	-
<u>0</u> = Total Cover			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (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: <u>0</u> (A)	<u>0</u> (B)
Prevalence Index = B/A = <u>0</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Bethany Church City/County: Taliaferro Sampling Date: 7/27/16
 Applicant/Owner: GOOT State: GA Sampling Point: UPI
 Investigator(s): GS Section, Township, Range: -
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): 136 Lat: 33.5347 Long: -82.9213 Datum: wgs84
 Soil Map Unit Name: Chewacla NWI classification: -

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>-</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>-</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>-</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: UP 1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Water oak Quercus nigra</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>- FAC</u>
2. <u>Shagbark hickory Carya ovata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
3. <u>Betula nigra river birch</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>- FACW</u>
4. <u>Pecan, Carya illinoensis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (A/B)

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>giant cane, Arundo gigantea</u>	<u>60</u>	<input checked="" type="checkbox"/>	<u>- FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>100</u>	x 4 = <u>400</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>0 140</u> (A)	<u>0 500</u> (B)

Prevalence Index = B/A = 2.5

Herb Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Woody Vine Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No

Remarks: (Include photo numbers here or on a separate sheet.)

Appendix C: Background Information

G. Todd Hill



Mr. Hill is a senior environmental scientist with a B.S. in Marine Biology. Mr. Hill has more than 26 years of experience performing ecological and protected species studies for infrastructure and development projects throughout the north and southeastern US. Previous protected species surveys for GDOT projects include pink ladyslipper (*Cypripedium acaule*), flatwoods salamander (*Ambystoma cingulatum*), gopher tortoise (*Gopherus polyphemus*), eastern indigo snake, parrot pitcher plant (*Sarracenia psittacina*), green pitcher plant (*Sarracenia oreophila*), pool sprite (*Amphianthus pusillus*), Georgia plume (*Elliottia racemosa*), dwarf sumac (*Rhus michauxii*), fringed campion (*Silene polypetala*), wood stork (*Myceteria americana*), red-cockaded woodpecker (*Picoides borealis*), Georgia aster (*Symphyotrichum georgianum*), relict trillium (*Trillium reliquum*), Chattahoochee crayfish (*Cambarus howardi*), and bay-star vine (*Schisandra glabra*). Mr. Hill has completed crayfish identification training with Dr. Chris Skelton, and multiple training courses for wetlands identification including plant identification and soils classification and also more recently attended GDOT's Endangered Species Act training course, Duncan's Piedmont Regional Supplement Wetland course, and Biotic Consultant's Wetland Plant Identification course for both the Coastal Plain and the Piedmont.

Eric Nicoletti, PE

Mr. Nicoletti is a Senior Environmental Scientist with a B.S. in Environmental Engineering Sciences. Mr. Nicoletti has more than 8 years of experience performing and assisting with ecological and protected species studies for private and public development and GDOT infrastructure projects throughout the southeastern US, including the Poplar Road/I-85 Interchange, Coastal Regional Commission Multimodal Facility and Athens/Clarke County stormwater improvement initiatives. Mr. Nicoletti has completed multiple training courses for wetlands identification including plant identification and Biotic Consultant's Wetland Plant Identification course for the Piedmont region.



Garrett G. Smith 

Mr. Smith is an Environmental Technician with a B.S. in Environmental Science. Mr. Smith has one year of experience in environmental consulting. His experience includes environmental site assessments, as well as Ecology Resource Surveys. Prior to joining GT Hill Planners, Mr. Smith worked as an environmental scientist for Logic Environmental Inc., where he performed and assisted in Phase I ESA investigations including historical research, site inspections, government file review, and other related sources. Mr. Smith also possesses experience in groundwater monitoring, well purging and sampling, and Geographic Information Systems. Specific project experience includes environmental compliance inspections for the Northwest Corridor (I-75/I575) Project. Ecology Resource Survey Reports for Sandersville Bypass Project, Western Gwinnett Bikeway Project, and Rum Creek Bridge Project.

Justina Everhart

Ms. Everhart is an ecologist with one year of experience in environmental consulting. Her experience includes ecological assessments and wetlands/waters of the U.S. delineations for transportation infrastructure projects including highways, intersection improvements, and industrial and transit-oriented intermodal facilities. Prior to joining GT Hill Planners, Ms. Everhart worked as a Corps Member for the Montana Conservation Corps, where she collaborated with several government organizations (USFS, NPS, and BLM) to complete 900+ hours of service work dedicated to the conservation of Montana's natural resources. Ms. Everhart also possesses experience in Geographic Information Science, lichenized fungi research, and fluorescent dye tracing.

* Percent chance of the growing season occurring between the Beginning and Ending dates.

total 1914-2015 prcp

Station : GA9141, WARRENTON

----- Unit = inches

yr	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	annl
14				2.26	0.76	3.55	4.20	M4.48	2.69	M3.99	4.66	4.97	31.56
15	5.62	3.50	2.27	0.15	4.91	3.45	4.76	8.47	2.98	9.67	2.43	3.45	51.66
16	1.92	5.51	0.72	1.66	1.95	3.88	M12.59	2.85	2.96	1.97	1.05	2.65	39.71
17	5.34	3.44	5.66	4.56	2.69	2.90	3.86	2.16	7.31	2.05	2.18	1.65	43.80
18	5.59	1.94	1.70	3.97	2.58	2.93	5.98	3.98	3.95	5.35	4.46	4.34	46.77
19	5.21	5.82	2.52	2.58	3.91	3.18	12.08	5.79	0.52	1.99	0.57	3.58	47.75
20	6.64	3.76	11.71	5.17	3.78	1.62	7.73	8.60	2.41	0.92	4.14	3.50	59.98
21	5.53	5.39	1.28	2.40	3.55	1.95	6.49	5.72	1.60	0.92	4.51	1.48	40.82
22	3.52	6.13	10.43	5.86	6.77	4.40	3.80	1.31	2.63	5.99	0.38	3.71	54.93
23	4.29	6.10	7.42	4.08	9.84	2.62	3.56	7.70	2.46	0.42	1.76	4.93	55.18
24	4.59	3.32	3.05	7.59	3.40	4.33	2.82	2.95	12.18	1.00	1.03	6.51	52.77
25	11.86	1.61	1.14	1.28	3.53	3.61	2.57	0.60	1.55	4.49	4.20	2.26	38.70
26	6.72	4.43	5.55	2.06	0.49	2.26	5.33	5.41	4.06	1.41	4.05	1.73	43.50
27	1.05		2.95	2.74	1.47	6.23	8.58	2.84	0.49	0.51	1.22	M6.47	34.55
28	1.31	5.52	4.89	6.63	4.90	6.07	4.90	10.28	6.31	3.70	0.48	2.56	57.55
29	4.30	10.88	10.82	3.25	5.03	7.17	2.52	1.47	12.30	10.42	6.15	4.96	79.27
30	4.74	0.57	4.61	1.72	1.15	3.40	7.98	1.70	5.43	2.38	5.50	2.84	42.02
31	3.20	2.82	1.95	2.89	5.00	0.71	4.86	3.18	0.97	0.81	0.00	5.81	32.20
32	7.39	4.69	4.79	2.04	2.03	5.35	2.01	2.92	1.47	3.20	4.11	5.19	45.19
33	2.46	6.17	2.14	2.36	3.14	1.79	4.96	4.00	3.54	3.39	0.53	1.32	35.80
34	2.61	4.07	5.26	8.71	3.76	3.56	4.25	2.75	1.83	5.08	1.08	3.40	46.36
35	3.19	1.92	3.61	5.81	1.48	2.41	5.48	6.17	2.09	0.54	3.07	3.52	39.29
36	10.32	4.98	3.81	10.68	0.03	4.02	4.34	7.69	2.33	2.47	2.35	5.79	58.81
37	6.18	5.94	2.56	8.53	1.92	6.20	3.62	4.99	1.74	4.15	0.98	2.21	49.02
38	1.32	1.17	2.13	8.97	2.95	4.34	2.89	2.46	3.64	0.47	2.59	3.18	36.11
39	2.83	10.02	6.07	2.71	2.04	3.50	11.12	6.36	6.08	0.17	1.07	4.52	56.49
40	4.40	4.94	3.55	2.79	1.30	4.60	5.25	9.33	1.22	0.96	6.32	3.19	47.85
41	2.85	2.55	4.17	1.88	0.36	7.00	4.26	5.14	1.36	3.42	1.24	5.90	40.13
42	3.55	3.83	8.02	1.14	3.83	2.63	3.95	3.20	5.41	1.53	3.53	4.46	45.08
43	5.94	1.37	6.99	3.19	3.34	3.25	4.72	2.62	1.88	0.23	1.82	4.73	40.08
44	4.29	6.91	10.02	6.29	1.64	0.90	3.43	6.77	1.11	2.79	1.65	1.44	47.24
45	2.19	4.05	1.68	3.90	1.78	2.20	6.62	3.14	3.99	1.65	1.82	7.83	40.85
46	3.57	2.42	3.05	5.35	3.77	2.20	2.98	2.02	2.96	6.62	2.58	0.89	38.41
47	6.72	1.61	7.44	3.66	3.17	2.83	2.69	6.42	2.87	3.81	8.68	6.32	56.22
48	4.97	6.50	7.13	3.11	4.85	2.83	6.04	6.12	7.14	3.83	9.35	5.21	67.08
49	1.28	5.45	1.20	4.95	4.83	5.75	1.88	6.29	2.90	4.04	0.44	2.64	41.65
50	1.44	1.96	5.47	0.57	5.28	1.09	6.18	2.00	M3.63	3.30	1.25	3.24	35.41
51	2.83	1.96	4.77	2.60	0.58	4.33	2.77	2.43	2.98	1.58	3.48	5.86	36.17
52	1.85	3.82	9.23	2.29	2.60	5.76	0.71	3.51	5.31	1.63	1.32	4.47	42.50
53	4.25	6.48	4.20	2.42	9.06	3.35	5.97	3.13	6.00	0.82	0.96	8.74	55.38
54	1.55	2.02	3.61	2.50	4.83	1.29	2.46	1.61	2.50	0.65	3.27	2.60	28.89
55	6.24	2.82	2.74	5.61	3.92	2.25	5.77	1.67	2.55	2.57	3.39	0.68	40.21
56	1.78	7.67	6.23	4.35	1.71	0.93	3.97	3.80	6.81	1.80	0.42	4.66	44.13
57	5.57	3.32	4.93	2.79	4.68	2.30	5.00	4.42	8.02	6.22	5.87	M2.96	56.08
58	4.34	6.69	4.10	7.13	0.75	6.28	5.05	1.84	1.70	0.43	1.05	3.91	43.27

59	3.63	5.67	5.90	1.55	7.02	2.18	5.32	2.15	9.02	9.68	2.78	2.13	57.03
60	9.26	8.09	6.36	3.07	4.07	2.84	3.78	2.12	3.34	2.11	0.46	2.05	47.55
61	3.56	10.20	6.53	9.00	6.05	3.09	2.66	5.66	2.18	0.20	1.90	6.28	57.31
62	8.06	4.53	5.84	M6.87	0.52	4.78	4.52	3.42	2.95	4.51	4.09	2.43	52.52
63	6.66	3.76	4.38	4.74	4.21	M7.87	4.30	1.91	4.82	0.20	3.37	4.60	50.82
64	8.44	4.15	9.02	6.46	5.45	3.54	8.75	5.01	3.69	7.63	2.35	5.88	70.37
65	1.46	5.09	7.70	3.70		5.02	3.71	1.41	6.63	M5.03	2.16	1.23	43.14
66	6.96	5.69	3.81	2.82	4.96	5.80	2.64	4.47	2.74	2.04	1.30	3.70	46.93
67	3.45	4.58	5.90	2.83	5.36	3.86	5.82	3.70	0.37	1.29	4.41	4.11	45.68
68	4.92	1.13	1.41	3.30	5.57	5.15	5.02	1.02	3.75	1.99	3.18	3.00	39.44
69	2.51	3.40	4.11	2.73	5.20	1.88	3.59	12.85	2.56	0.36	1.23	4.81	45.23
70	3.17	2.79	6.75	1.25	4.28	2.36	4.61	2.28	1.47	4.63	1.66	6.39	41.64
71	5.04	5.05	11.37	3.16	2.69	2.65	9.03	7.12	4.98	3.34	4.05	3.06	61.54
72	7.20	3.65	4.04	1.70	6.11	6.19	2.88	2.40	0.93	1.47	3.22	6.26	46.05
73	7.70	5.59	5.75	5.09	5.61	5.28		5.40	1.26	0.41	1.05	2.45	45.59
74	7.66	5.70	1.87	6.08	3.86	2.32	4.52	4.65	4.55	0.22	2.20	8.32	51.95
75	5.08	7.69	8.83	5.93	8.66	1.65	8.31	2.77	6.78	M2.44	4.18	4.68	67.00
76	3.30	1.14	5.92	1.20	10.09	5.35	3.60	4.43	5.14	9.30	5.31	6.88	61.66
77M	3.72	1.85	9.10	1.35	3.24	1.80	3.47	7.50	4.17	2.30	5.65	6.38	50.53
78M	6.96	0.88	4.32	4.85	5.85	3.04	1.52	3.71	2.40	1.19	1.55	2.66	38.93
79	5.81	M11.56	M2.15	7.12	2.30	2.42	5.78	2.72	7.55	2.16	2.32	2.80	54.69
80M	5.75	6.78	M12.72	2.82	5.32	3.97	0.45	2.19	5.36	4.88	3.68	1.39	55.31
81	1.04	6.16	3.21	2.89	1.61	7.05	2.32	6.43	0.62	5.02	0.49	8.80	45.64
82	6.25	5.94	3.10	M5.88	1.78	3.88	3.86	1.82	M1.03	3.08	4.35	6.78	47.75
83	5.05	5.08	8.71	9.86	1.74	4.63	2.53	3.16	5.39	2.52	8.06	7.03	63.76
84	5.47	4.30	7.59	M4.54	6.20	4.27	6.54	2.20	0.14	2.23	2.15	1.90	47.53
85	3.49	7.20	0.76	1.67	3.10	6.13	6.63	4.31	0.31	6.30	4.91	1.41	46.22
86	1.58	2.63	2.82	1.00	2.90	1.55	2.58	12.42	3.17	2.01	6.99	3.97	43.62
87	7.14	5.01	M6.79	0.07	1.68	4.80	1.59	0.37	0.41	0.05	2.78	2.25	32.94
88M	5.22	3.31	3.78	6.60	2.20	1.05	2.50	6.60	6.96	4.27	2.88	0.55	45.92
89	2.96	3.19	4.58	5.09	3.98	M4.52	5.39	7.88	8.92	2.88	M2.24	5.23	56.86
90	4.40	3.34	4.25	1.73	2.96	1.45	3.69	5.85	1.53	10.32	1.70	3.37	44.59
91	7.79	1.33	6.46	4.19	7.36	3.66	4.19	8.84	0.20	0.51	1.02	3.82	49.37
92	5.05	4.24	M4.99	M2.03	1.96	4.80	M7.79	5.99	2.53	3.77	7.25	2.88	53.28
93	6.72	M3.90	6.29	M2.91	1.34	M3.72	0.95	1.18	2.16	5.88	2.58	3.14	40.77
94M	4.12	3.85	7.03	0.84	1.45	M6.77	M8.21	7.75	2.35	7.92	3.97	M3.30	57.56
95M	4.49	8.26	1.80	2.17	0.80	M5.26	1.50	7.28	2.92	4.53	M4.64	2.70	46.35
96	4.84	2.74	7.59		4.13	2.80	3.46	M4.69	M1.47	3.69		2.90	38.31
97	5.69	5.40	1.23	3.39	1.64	3.33	M9.82	2.27	M8.92	4.05	6.35	5.27	57.36
98	6.16	7.26	M5.85	7.38	4.63	2.47	2.39	3.31	M10.88	2.84	0.41	2.00	55.58
99	6.19	4.39	3.46	1.79	2.14	3.69	2.95	2.12	5.07	2.45	1.69	1.39	37.33
0	6.74	1.15	3.78	1.15	0.32	3.21	3.46	7.86	8.28	0.20	3.56	2.99	42.70
1	3.97	2.49	10.75	1.40	4.25	7.00	3.38	3.47	1.34	0.94	0.65	2.37	42.01
2M	3.01	3.50	5.41	2.28	4.88	1.21	3.55	2.68	5.10	3.87	3.90	5.74	45.13
3	1.89	4.02	9.17	5.49	7.37	5.73	6.66	4.55	2.47	2.80	1.42	2.47	54.04
4	1.80	5.53	0.84	0.70	M1.28	7.18	4.27	2.05	12.17	1.31	5.04	0.88	43.05
5M	2.10	5.21	6.32	2.11	2.99	M7.12	6.01	5.77	0.21	5.89	1.29	3.88	48.90
6	3.40	3.67	1.18	2.32	1.10	4.58	4.58	3.84	2.53	2.20	3.42	5.10	37.92
7M	5.55	3.59	5.43	1.32	1.69	4.20	5.40	0.52	4.14	0.69	0.42	8.26	41.21
8	3.52	4.72	4.54	2.70	4.75	0.48	2.55	4.54	1.42	5.30	8.45	5.15	48.12
9	2.32	2.33	6.95	5.07	6.52	3.48	3.10	5.10	8.46	M7.35	5.08	7.92	63.68
10M	5.84	2.60	4.32	1.41	3.39	4.67	2.23	2.77	5.40	1.55	0.36	M1.26	35.80
11M	1.74	3.00	5.89	M3.23	M1.62	M2.45	M1.98	2.44	M2.33	M3.46	2.74	M2.25	33.13
12M	2.04	M1.59	M1.99	M1.39	M2.45	M1.89	M4.52	M11.35	M1.58	M1.00	M1.75	M4.74	36.29
13M	2.36	M7.65	4.01	5.01	4.43	M4.90	M8.81	M6.09	1.15	M0.00	M2.75	M8.63	55.79
14M	3.66	M2.54	M4.68	M1.80	M2.37	M4.38	M5.24	M1.17	M4.38	1.61	M3.56	M4.26	39.65
15M	2.88	M4.45	M3.18	M5.11	1.65	M3.45	M5.92	4.78	M3.12	M5.13	M4.41		44.08

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GEORGIA DEPARTMENT OF TRANSPORTATION
HISTORIC BRIDGE INVENTORY REPORT

Serial #: 265-5019-0



County: TALIAFERRO Municipality: GDOT District 2 Owner: COUNTY

Location: 2 MI SW OF CRAWFORDVILLE

Bridge Name: UTM: 17 354875 3688247

Facility Carried: BETHANY CHURCH RD

Feature Intersected: NORTH FORK OGEECHEE RIV

Type: T BEAM

Design:

Material: REINFORCED CONCRETE # Spans: 4 Length: 136 Width: 30.3 # Lanes: 2

Railing Type: STANDARD CONCRETE 2 RAIL HIGH

Date of Construction: 1964 Alteration: Source: GDOT BRIDGE INSPECTION FILE

Designer/Builder:

Current National Register Status of Bridge: Not Previously Evaluated

Local, Determined Eligible, or NR Historic District/Status:

Inventory NR Recommendation: Not Eligible

Setting/Context:

The bridge carries a 2 lane road over a stream in a sparsely developed, forested setting.

Physical Description:

The 4 span, 136'-long T beam bridge with standard-design concrete 2-rail high on high curb railings is supported on H pile and concrete cap beam bents and abutments at the ends. There are cantilevered deck sections.

Summary of Significance:

The T beam bridge constructed in 1964 continues the state's use of the economical bridge type first built in the state in the 1910s and adopted as a standard design in 1917. It is a very common bridge type with over 1,000 pre-1966 examples remaining. This late example has no innovative or distinctive details and is not historically or technologically significant.

Bibliography:

GADOT. Bridge Inspection File & Plans.

GEORGIA DEPARTMENT OF TRANSPORTATION

HISTORIC BRIDGE INVENTORY REPORT

Serial #: 265-5019-0 **County:** TALIAFERRO **District** 2 **City:**

Reviewed By/ Date: MEM

Notes/Comments

**NO
ATTACHMENT**



U.S. Fish and Wildlife Service National Wetlands Inventory

Bethany Church
Road

Jul 28, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

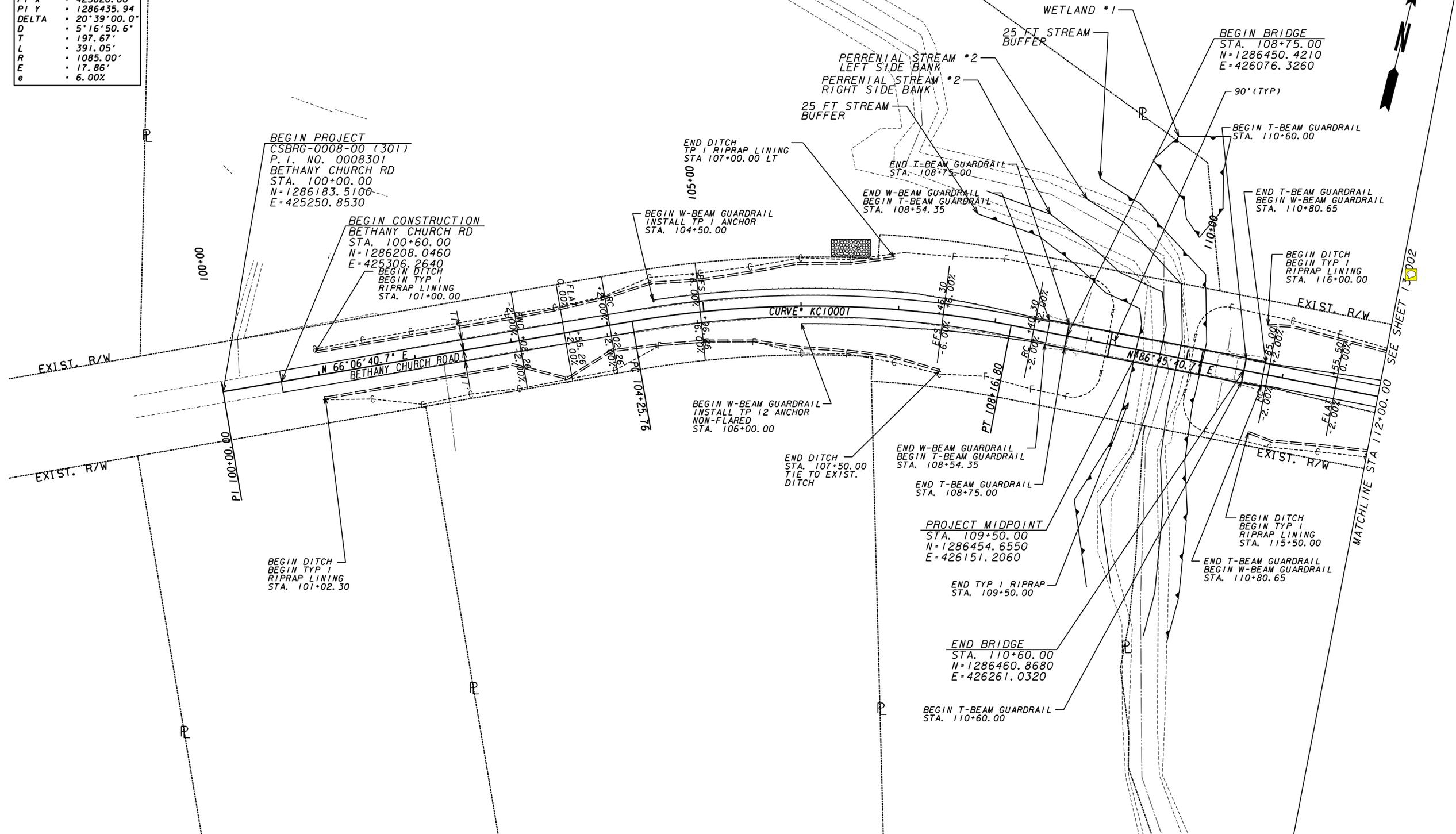
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

Appendix D: Construction Plans

CURVE DATA TABLE
CURVE KC10001

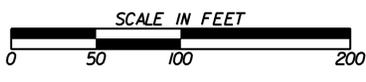
PI STA.	107+76.49
PI X	425820.88
PI Y	1286435.94
DELTA	20°39'00.0"
D	5'16"50.6"
T	197.67'
L	391.05'
R	1085.00'
E	17.86'
e	6.00%



PROPERTY AND EXISTING R/W LINE	---
REQUIRED R/W LINE	---
CONSTRUCTION LIMITS	---
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES	▨
EASEMENT FOR CONSTR OF SLOPES	▩
EASEMENT FOR CONSTR OF DRIVES	▧

BEGIN LIMIT OF ACCESS.....BLA	---
END LIMIT OF ACCESS.....ELA	---
LIMIT OF ACCESS	---
REQ'D R/W & LIMIT OF ACCESS	---

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 Fax 678-336-7744
 Web www.pondco.com

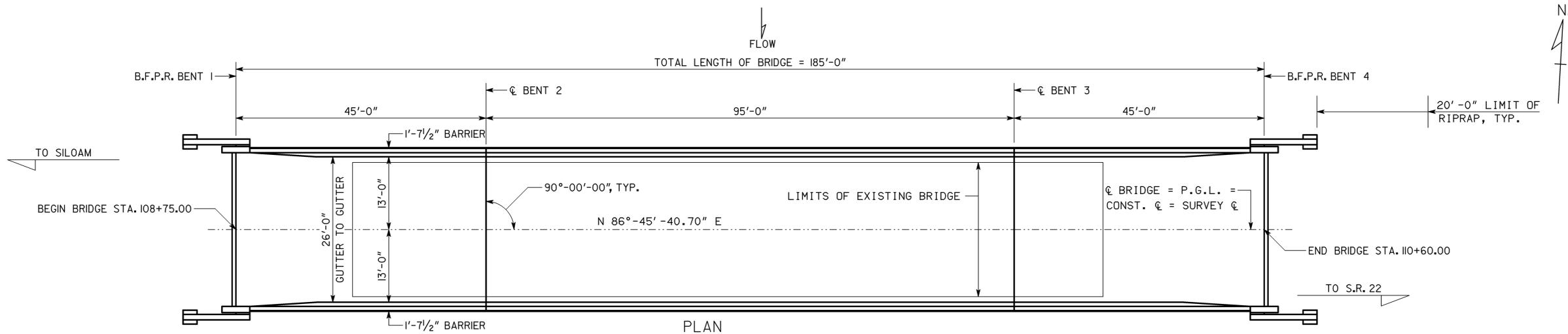


REVISION	DATE	DESCRIPTION

STATE OF GEORGIA
 DEPARTMENT OF TRANSPORTATION
 OFFICE: PROGRAM DELIVERY
MAINLINE PLAN

BETHANY CHURCH ROAD

DRAWING No.
13-001



DRAINAGE DATA

DRAINAGE AREA ----- 24.05 SQ MILES

FLOOD FREQUENCY	TOTAL DISCHARGE	MEAN VELOCITY	AREA OF OPENING UNDER FLOODSTAGE	BACKWATER
10 YEAR	3447 CFS	4.97 FPS	694 SQ FT	0.04 FT
100 YEAR	6462 CFS	6.55 FPS	986 SQ FT	0.40 FT
500 YEAR	9157 CFS	7.69 FPS	1,191 SQ FT	0.77 FT

TRAFFIC DATA

TRAFFIC ----- ADT = 250 (2015)
 ADT = 300 (2035)

DESIGN SPEED ----- 55 MPH

TRUCKS ----- 8%

24 HR TRUCKS ----- 10 %

DIRECTIONAL ----- 60 %

BRIDGE CONSISTS OF

- 1 - 95'-0" BULB TEE, 54 IN, PSC BEAM SPAN ----- SPECIAL DESIGN
 - 2 - 45'-0" TYPE I MOD PSC BEAM SPANS ----- SPECIAL DESIGN
 - 2 - PILE END BENTS ----- SPECIAL DESIGN
 - 2 - CONCRETE INTERMEDIATE BENTS ----- SPECIAL DESIGN
- 24" TYPE I RIP RAP

NOTES

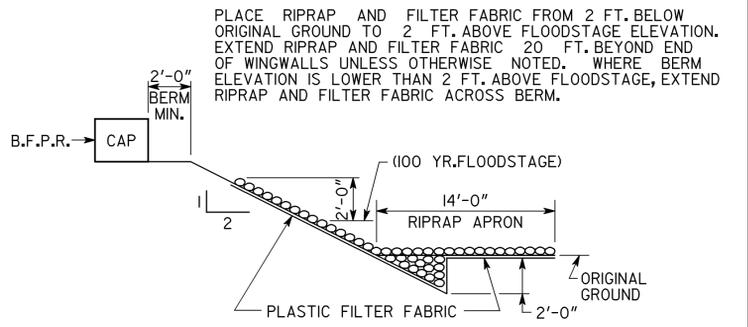
CROSS-SLOPE - THE PROPOSED BRIDGE DECK IS TO BE BUILT ON A NORMAL CROWN OF 2.0%.

BENT LAYOUT - ALL BENTS ARE PARALLEL.

BEAM ELEVATION - MINIMUM BOTTOM OF BEAM ELEVATION FOR PROPOSED BRIDGE SHALL BE NO LOWER THAN ELEVATION 474.36.

BRIDGE REMOVAL - REMOVE EXISTING BRIDGE. REMOVE EXISTING SUBSTRUCTURE AS PER THE SPECIFICATIONS.

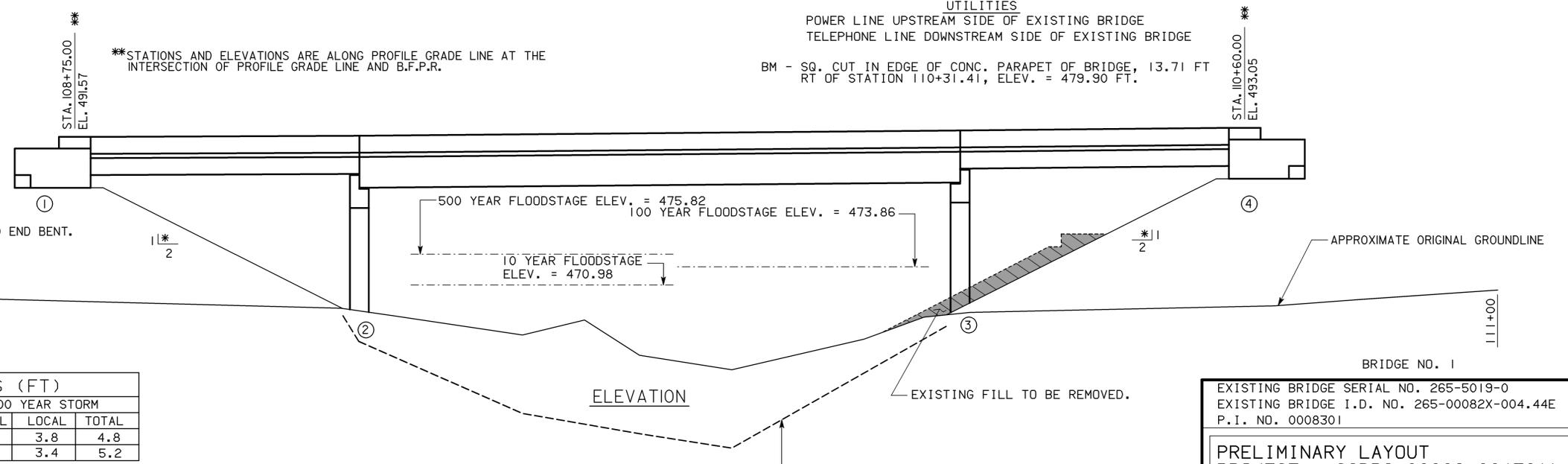
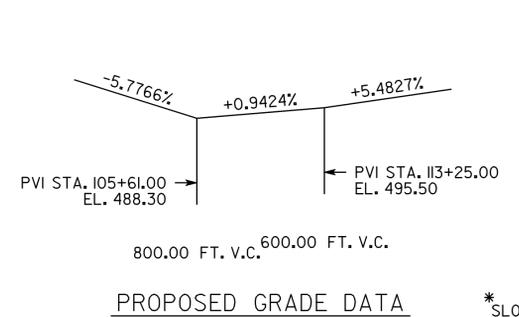
TRAFFIC CONTROLS - CR 82 (BETHANY CHURCH RD.) WILL BE CLOSED TO TRAFFIC DURING THE PROPOSED CONSTRUCTION.



SPECIFICATIONS ----- AASHTO 17TH EDITION, 2002

TYPICAL HS20-44 AND/OR MILITARY LOADING ----- IMPACT ALLOWED

FUTURE PAVING ALLOWANCE ----- 30 LBS PER SQ FT



THEORETICAL SCOUR DEPTHS (FT)

BENT LOCATION	100 YEAR STORM			500 YEAR STORM		
	GENERAL	LOCAL	TOTAL	GENERAL	LOCAL	TOTAL
BENT 2	0.3	3.4	3.7	1.0	3.8	4.8
BENT 3	1.5	2.9	4.4	1.8	3.4	5.2

BERM ELEVATIONS

END BENT	ELEVATIONS
1 LT & RT	485.81
4 LT & RT	487.29

*NOTE: FOR BRIDGE ENDROLL STAKING PURPOSES ONLY.

BRIDGE NO. 1

EXISTING BRIDGE SERIAL NO. 265-5019-0

EXISTING BRIDGE I.D. NO. 265-00082X-004.44E

P.I. NO. 0008301

PRELIMINARY LAYOUT

PROJECT : CSBRG-00008-00(301)

NAME : C.R. 82 (BETHANY CHURCH RD.) OVER N. FORK OGEECHEE RIVER

TALIAFERRO CO.

DRAWN BY : ELS

DATE : FEBRUARY 25, 2010

PREPARED BY : JAB

SCALE : 1" = 10'-0"